

Abatement Plan
Sykesville Oil Site
Sykesville, Maryland

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TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	PLAN OBJECTIVES	1
1.2	BACKGROUND	2
	<i>Site Description and History</i>	2
	<i>Prior Remedial Activities and Site Characterization</i>	3
2.0	SCOPE OF PROPOSED ABATEMENT MEASURES	5
2.1	FACILITY AREA MITIGATION	5
	2.1.1 <i>Performance Monitoring</i>	6
	2.1.2 <i>Nutrient Additives</i>	7
	2.1.3 <i>Investigation Derived Waste</i>	8
2.2	HILL SLOPE AND SEEP AREA	9
2.3	FARM	11
2.4	SAMPLE COLLECTION PROCEDURES	12
	2.4.1 <i>Soil Sampling Using Hand Augers</i>	12
	2.4.2 <i>Soil Sampling Using Direct-Push Sampling Technology</i>	12
	2.4.3 <i>Equipment Decontamination</i>	13
	2.4.4 <i>Field Screening of Soils</i>	13
2.5	QUALITY ASSURANCE PROJECT PLAN	13
3.0	IMPLEMENTATION OF ABATEMENT MEASURES	15
3.1	PERMITS AND APPROVALS	15
	<i>Erosion & Sediment Control Plan</i>	15
	<i>Air Injection and Emissions Permit</i>	15
	<i>Underground Injection Permit</i>	16
3.2	WORKER HEALTH & SAFETY	16
3.3	SITE ACCESS AND COORDINATION	17
3.4	SITE SECURITY	17
3.5	PERFORMANCE MONITORING	17
	3.5.1 <i>Facility</i>	18

3.5.2	<i>Farm</i>	19
3.6	COMPLETION REPORTING	20
4.0	SCHEDULE	21

LIST OF FIGURES

- 1 *Facility Site Location Map*
- 2 *Farm Site Location Map*
- 3 *Facility Bioventing System Layout*
- 4 *Confirmation Soil Sample Locations at the Facility*
- 5 *Confirmation Soil Sample Locations at the Farm*

ATTACHMENT

- A *Carroll County Grading Permit*
- B *MDE General Air Permitting Requirements for Remediation Systems*
- C *MDE Correspondence Regarding Underground Injection of Nutrients for Remediation Sites*
- D *Project Health and Safety Plan*
- E *Maryland Department of Natural Resources Email Regarding Planting of Hybrid Poplars*

1.0 INTRODUCTION

This document has been prepared by Environmental Resources Management, Inc. (ERM) on behalf of Fogle's Septic Clean, Inc. (Fogle's) to fulfill the provisions of Item 9.3 (e) of Section IX of the Administrative Order by Consent (AOC) executed between the U.S. Environmental Protection Agency (EPA) and Fogle's. This "Abatement Plan" has also been prepared in accordance with the requirements of the approved Response Action Plan for the Sykesville Oil Site (RAP) (ERM, May 2005) and will establish the scope and procedures for the permanent remediation of petroleum impacts at the Sykesville Oil Site (Site). As defined in the AOC and for the purposes of this Abatement Plan, the terms oil, free product and diesel fuel are used interchangeably.

1.1 PLAN OBJECTIVES

The specific objectives of this "Abatement Plan" are as follows:

- To identify the most appropriate technologies and approaches for permanently addressing petroleum impacted soils at the Site that were identified and delineated in the Extent of Contamination Study (EOCS);
- To establish procedures and protocols for the safe implementation of the selected abatement measures, and
- To ensure that all abatement activities are performed in accordance with applicable local, state, and federal laws and regulations.

As mentioned previously, the intent of this Abatement Plan is to identify the measures necessary to achieve permanent remediation of petroleum impacts at the Site, i.e., to eliminate the discharge or threat of discharge of free product from the Facility and to mitigate petroleum hydrocarbons in soils at the Site.

Site Description and History

The Fogle's property (the "Facility") is located in a residential/rural area just north of the intersection of Wimmer Lane and Obrecht Road in the town of Sykesville, Carroll County, Maryland (mailing address 580 Obrecht Road) (see Figure 1). The Facility is approximately two and one-third acres in size and contains an office building, and several garage/maintenance shops. The present owner of the Facility is Fogle Properties, LLC.

The overall Site includes a wooded area at the bottom of a steep slope located adjacent to and north of the Facility; the wooded area is owned by Episcopal Ministries to the Aging, Inc. (EMA). An unnamed creek feeding Piney Run runs through this wooded area (the "unnamed creek"). Piney Run is a tributary to the Patapsco River.

In January 2004, a release of oil into the unnamed tributary was reported to the National Response Center (NRC) (spill report #711788). A 10,000-gallon aboveground storage tank (AST) located at the Fogle's facility and used for storage of #2 diesel fuel (hereafter referred to as oil, free product, or fuel) for fueling the Facility's trucks and other work equipment, was identified as a possible source of the release. Subsequent to the discovery of the release, the diesel AST was relocated to another location on the Facility. During the relocation, obviously impacted soils were excavated by Fogle's and sent to the Fogle's farm located at 1711 Dennings Road, New Windsor, Maryland (hereinafter referred to as the "Fogle's Farm"). The area that was excavated was restored to grade with clean fill.

During investigations conducted by EPA in late 2004/early 2005, free product was identified on the water table in a monitoring well located immediately adjacent to the Facility, and elevated levels of petroleum hydrocarbons were also detected in soils at depths between 16 and 27 feet below grade in the area where the 10,000-gallon diesel AST was previously located.

Beginning in early March 2004, and continuing since that time, a variety of response measures have been undertaken by the Maryland Department of the Environment (MDE), EPA, and their contractors (including the US Army Corps of Engineers (USACE)), and Fogle's to abate the release of free product to the stream and remove free product from the ground water. In addition, Fogle's has conducted an Extent of Contamination Study (EOCS) designed to determine the source(s) of the petroleum impact, the extent of impact (both soil and ground water), and to serve as the basis for permanent abatement measures at the Site. These investigative and remedial activities are summarized in the following section.

Prior Remedial Activities and Site Characterization

Installation of Underflow and Adsorbent Booms

To prevent the downstream transport of free product in the unnamed creek, in early 2005 the USACE and its contractor installed a temporary dam with an underflow drain and a series of adsorbent booms both upgradient and downgradient of the dam. Since May 2005, Fogle's has performed periodic (i.e., weekly) inspections and maintenance of the booms, as necessary.

Removal of Free Product from the Site

The USACE and its contractor installed a recovery trench adjacent to the unnamed creek in the area just upgradient of the oil seeps. The trench is filled with gravel and contains four six-inch diameter stand pipes which can be used to recover free product. However, free product has never been observed in these stand pipes since their construction. The USACE and its contractor also installed four recovery trenches (designated Sumps A, B, C and D) further up the hill slope (see Figure 2). The sumps were installed to capture and prevent free product from moving down gradient and entering the unnamed creek. Since May 2005, Fogle's has performed periodic (i.e., weekly) fluid recovery events at the sumps and the results from these recovery events are documented in monthly progress reports. Through December 2006, approximately 4,000 gallons of free product have been recovered.

Extent of Contamination Study

A comprehensive EOCS was proposed to characterize the nature and extent (both lateral and vertical) of free product contamination at the Site. As part of the EOCS study, a soil gas survey and geophysical survey were conducted, and additional soil borings and monitoring wells were installed. Each of these activities is discussed below, with further discussion provided in the Extent of Contamination Study Report (ERM, April 2006).

- Soil Gas Survey - A soil gas survey, using the EMFLUX™ soil gas method, was conducted to determine the aerial extent of the oil contamination and to identify areas that would warrant further investigation. The soil gas survey indicated likely sources of petroleum contamination in the vicinity of the former location of the 10,000-gallon diesel AST (i.e., the "embankment area") and downgradient of the geophysical anomaly (see below).
- Geophysical Survey - A geophysical survey utilizing both ground penetrating radar (GPR) and electromagnetic (EM) induction was conducted to identify any subsurface anomalies (including metallic

objects) that might represent possible sources of contamination (e.g., buried USTs). The geophysical surveys were used in conjunction with the soil gas survey to determine if any debris is present in the areas with elevated soil gas readings thereby providing corroborative data that a potential source of petroleum contamination exists in that location. The only geophysical anomaly identified was in the middle of the driveway to the Fogle's Facility office building. Subsequent excavation in this area indicated that the anomaly was related to an electric cable running beneath the driveway.

- Well Installation and Monitoring - There are currently two monitoring wells (MW-FGL-01 and 02) at the Fogle's Facility and an additional 21 wells at other locations on the Site which can be used to monitor ground water flow direction and free product thickness, as well as, to facilitate/accelerate the recovery of free product. Wells MW-A01, -A02, -A02S, -A03 and -A03S are located adjacent to the Facility's northern boundary. Wells TMW-A1 through A3, TMW-A5 through A9, TMW-B1 and B2, TMW-C1 and C2, TMW-D1, TMW-E1, and TMW-F1 and F2 are located on the EMA property along the hill slope between the Facility and the unnamed creek.
- Soil Borings - The USACE oversaw the completion of ten soil borings (SB FGL-01 through 09 and 7B) at the Facility and an additional five soil borings (SB A-01, B-01 and 02, and C-01 and 02) on the EMA property. ERM completed another ten borings at the Facility and 12 additional borings down slope of the Facility on the EMA property as part of the EOCS to delineate the extent of free product and residual hydrocarbon contamination in soils. The data from these soil borings, in conjunction with the results from the soil gas and geophysical surveys, have served as the basis for this Abatement Plan (see Extent of Contamination Study Report, ERM April 2006).

As a result of the EOCS effort, sufficient information has been collected to provide for characterization of the soils as potential sources of petroleum impacts at the Site. The abatement measures proposed to remediate impacted soils at the Site are addressed in this Abatement Plan.

Based on the results of the EOCS, in-situ bioremediation is proposed for two areas of the Site: 1) the former location of the 10,000-gallon diesel AST (i.e., "the Facility"), and 2) the hill slope down gradient of the Facility leading to the seeps and unnamed creek. A third area of soil impact that is addressed in this Abatement Plan is the Fogle's Farm, where impacted soils were deposited following their excavation from the former location of the 10,000-gallon diesel AST. A more detailed discussion of the proposed activities at these three locations is provided in the subsections that follow.

Any excavated soils (e.g., as a result of trenching or drilling) will be managed according to the observed level of impact. Based on the characteristics of the excavated material, soils removed from the impacted areas will be either: 1) returned to the excavation as clean fill or 2) transported off-site for treatment at a permitted soil treatment facility. Regardless of the intended disposition of the soils, one discrete soil sample will be collected for every 20 cubic yards of material excavated (i.e., 5 discrete soil samples per 100 cubic yards of material) and submitted to a qualified laboratory for analysis of TPH-GRO/DRO by EPA Method SW-846 8015B. These data will be used to determine the concentration of petroleum hydrocarbons present in the soils and for documenting the proper disposal of impacted soils (i.e., pre-treatment concentrations of TPH) as discussed in Section 2.1.3.

Following successful completion of the proposed mitigation activities, as evidenced by the receipt of acceptable confirmatory soil sampling results (see Section 3.5), the treated areas will be graded and restored to original conditions in accordance with Item 9.3 (h) of the AOC.

2.1

FACILITY AREA MITIGATION

Based on the results of the EOCS, an area of elevated petroleum concentrations was identified in the location of the former 10,000-gallon AST. The investigative data indicate that impacted soils extend to a depth of about 30 feet beneath the ground surface (bgs) and encompass an area of approximately 8,600 square feet (ft²) (Figure 2). ERM's approach to mitigate petroleum hydrocarbons in soils in this area consists of enhancing the microbiological activity within the impacted regions. Two techniques that

ERM believes will successfully mitigate petroleum hydrocarbons are bioventing and biosparging. Bioventing consists of delivering air (i.e., oxygen) to the subsurface to stimulate aerobic degradation by indigenous microbes; whereas biosparging consists of injecting non-indigenous microbes and air (i.e., oxygen) to stimulate aerobic degradation. ERM believes that bioventing will achieve the remedial goals without the immediate need for injecting non-indigenous microbes. However, to promote the achievement of remedial goals within the quickest reasonable amount of time, nutrients (nitrogen and phosphorous) may be injected into the bioventing system. [Note that bioventing is an EPA-preferred technology for the cleanup of underground storage tank sites. A copy of the EPA Office of Underground Storage Tank's evaluation of bioventing for the cleanup of petroleum hydrocarbons¹ was provided to EPA's On-Scene Coordinator for review via ERM's letter dated 25 May 2006.]

The bioventing system will consist of approximately 40 injection points installed over an approximately 9,000 ft² area on roughly 15-foot centers. Figure 3 shows a conceptual layout of the bioventing system relative to the area of impacted soils. The injection points will be constructed with approximately 1-inch diameter polyvinyl chloride (PVC) pipe and five foot screen intervals. The majority of points will be installed to the water table (i.e., 30 feet bgs); however, several points will be placed at shallower intervals (e.g., 20 feet bgs) in the most contaminated zones to ensure adequate distribution of oxygen. Each injection point will be piped underground to a manifold and run from a single air compressor. An air compressor capable of delivering 100 cubic feet per minute (cfm) of air will be utilized to provide air into the subsurface at a rate of about 1 pore volume exchange per day.

2.1.1 *Performance Monitoring*

Approximately 10 soil gas monitoring points, also constructed with 1-inch diameter PVC pipe, will be installed in the overburden to monitor the effectiveness of the bioventing system. During operation, soil gas will be screened using an organic vapor analyzer (OVA) with a flame-ionization detector (FID) to determine if hydrocarbons such as petroleum constituents, aromatic volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) are present. Additionally, oxygen (O₂) and carbon

¹ US Environmental Protection Agency. 1995. *How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites, A Guide for Corrective Action Plan Reviewers*. Prepared by the Solid Waste and Emergency Response 5403W, Document No. EPA 510-B-95-007, October 1994. Revised May 1995.

dioxide (CO₂) production will be monitored with electronic meters (e.g., Landtec GA-90, MultiRae IR) to determine the rate at which hydrocarbons are being degraded. For example, approximately 3.5 pounds (lbs) of O₂ are consumed and 3.1 lbs of CO₂ are produced for every pound of hydrocarbon degraded.

Concentrations of CO₂, O₂ and total hydrocarbons in soil gas will be monitored prior to system startup to establish baseline conditions. Soil gas concentrations will continue to be monitored periodically following system startup to evaluate the system performance. When asymptotic behavior begins to occur, alternatives that increase the mass transfer rate may be considered. These alternatives may include pulsing of air flow, nutrient additives, or confirmation sampling. Pulsing of the air flow (i.e., turning the system on and off at specified intervals) may provide better distribution and mixing of the air in the impacted soil zones thereby allowing for greater efficiency, performance and control of air dispersion.

Baseline Soil Conditions

As described in Section 3.5.1, soil samples will be collected prior to the system startup to establish the baseline concentrations of residual petroleum hydrocarbons. Samples will be collected from eleven (11) borings spaced on 30-foot by 30-foot grids within the treatment area footprint (Figure 4). The borings will be surveyed to establish their location for duplication during subsequent sampling events. Soil samples will be collected from continuous 4 foot soil cores between 0 and approximately 30 feet below the ground surface (i.e., the seasonal low water table depth). Soils will be visually examined in the field and screened with an OVA equipped with a FID to qualitatively assess the presence of potential TPH at each boring location. Concentrations of TPH in soil will be quantified by submitting the soil interval with the highest observed FID measurement, or with visual evidence of staining or petroleum odors for laboratory analysis of TPH. This approach will provide data to assess worst-case concentrations and soil attenuation.

Laboratory analyses for TPH GRO and DRO by EPA Method 8015B will be performed by a Maryland-certified laboratory.

2.1.2 *Nutrient Additives*

If concentrations of hydrocarbons in soil are not decreasing at an acceptable rate, ERM will evaluate the need for remedial additives. An acceptable rate of degradation will be determined by the EPA following a review of the initial monitoring data. It is feasible that concentrations of TPH could reduce by 75 percent within 2 years of operation of the bioventing system. Remedial additives may consist of nutrients (e.g., nitrogen and phosphate),

electron acceptors (e.g., sulfate) and non-indigenous microbes. Additives may be injected into each air injection point to promote biological degradation in soil and ground water. A nutrient package will be selected to provide suitable substrate for the microorganism selected. This nutrient package could be manually added once every two to four weeks to each injection point. A small holding tank or drums will be utilized to store and possibly to distribute doses of non-chlorinated water, nutrients, and microbes.

According to Maryland's Ground Water Permits Program, MDE approval is required prior to injection of remedial additives. ERM will submit the appropriate documentation to acquire this approval, if necessary.

2.1.3 *Investigation Derived Waste*

It is estimated that 20 to 30 cubic yards of soil cuttings will be generated by the drilling and trenching activities. These soils will be segregated and handled based on the field observations. At the end of each workday, and at the onset of precipitation events, all stockpiled soils will be covered with plastic and secured to minimize the potential for runoff.

Two categories of soils are expected to be encountered:

- 1) Native fill and clean fill that was placed during the prior excavation of the embankment area (see Section 1.1); and
- 2) Petroleum impacted soils.

Surface material will be removed and stockpiled so that it can be used as clean fill once the trenching is completed. Clean fill will be defined as any soil or gravel material with non-detect FID readings and no visual or olfactory signs of impact. Additionally, the clean fill will have less than 10 mg/kg TPH DRO as determined by EPA Method SW-846 8015B (one discrete soil sample will be collected for every 20 cubic yards of material intended as backfill).

Soils with detectable FID readings or visual indication of gross contamination (e.g., free-phase petroleum contamination) will be segregated (i.e., temporarily stockpiled) and sampled to determine final disposition (see Section 3.5). Currently, it is anticipated that these soils will be transported from the Site to the Clean Earth of Maryland, Inc., Hagerstown, Maryland facility, a permitted oil-contaminated soil storage and treatment facility.

Trucks will be equipped with bed liners and/or seals to prevent impacted soil or water from leaking out during transport. Free liquids encountered during all drilling and trenching activities will be evacuated via vacuum

truck or pump and conveyed from the Site to on-Site storage tanks (perhaps combined with fluids recovered during the weekly extraction events) or direct loaded for transport off-Site to a permitted disposal facility for treatment/disposal.

2.2 *HILL SLOPE AND SEEP AREA*

A conceptual model of the subsurface stratigraphy and migration of free product between the Facility and seep area was developed from the EOCS. Based on this model, as free-product migrates down gradient from the Facility along the water table it is retarded as the water table passes from the soil into the weathered bedrock. Once in the weathered bedrock matrix, the free-product most likely continues down gradient along bedding planes and thin fractures. Impacts to soils along the hill slope have occurred as a result of the water table rising and falling with seasonal precipitation events. The impacted area is estimated to be 90 feet wide and extends from the seep area up the hill slope towards the Facility.

Three techniques that ERM believes will successfully mitigate petroleum hydrocarbons along the hill slope include:

1. Continued pumping from the existing sumps along the hill slope to recover free product,
2. Re-introduction of plants native to the area that have a demonstrated potential to phytoremediate petroleum hydrocarbons; and
3. Addition of an electron acceptor (e.g., sulfate) to ground water to enhance the anaerobic microbiological activity within the saturated weathered bedrock and soils.

Since May 2005, Fogle's has performed periodic (i.e., weekly) fluid recovery events at the sumps and existing temporary monitoring wells using suction pumps. Fluid recovery events will continue to be performed on a periodic basis as this is the most efficient method to recover free product from this area.

The US EPA² and others^{3,4} have shown that plants can be used to remediate petroleum hydrocarbons in contaminated soil, sludge, sediment and ground water. In particular, rhizodegradation, the enhancement of biodegradation in root zone by microorganisms, has been demonstrated to be the most effective means of degrading diesel fuel. The studies indicated that significantly higher populations of heterotrophic bacteria and benzene, toluene and xylene degraders were found in rhizosphere soil around hybrid poplar trees, fescue, ryegrass and white clover. In addition, trees such as poplar can uptake from 10s to 100s of gallon of water a day thus limiting the migration of dissolved hydrocarbons into the unnamed creek. To enhance the degradation of petroleum hydrocarbons present in the shallow subsurface and surface soils, ERM proposes to re-vegetate the seep area to the extent practical with hybrid poplar trees and a mixture of red fescue and ryegrass. The poplar trees would be spaced approximately 10 feet apart in multiple rows oriented parallel to the creek. Typical growth rates range from 3-8 feet per year, depending upon site conditions. As discussed in Section 3.3, ERM will coordinate with EMA prior to performing any site re-grading or re-vegetation.

Studies⁵ have indicated that sulfate reduction is an efficient and viable means of mitigating petroleum hydrocarbons in ground water. Sulfate concentrations of 100-250 milligrams per liter (mg/L) have been shown to be effective at enhancing the degradation of benzene concentrations as high as 55 mg/L. Sulfate is also a preferred electron acceptor for this Site since it has an extremely low ionic toxicity to aquatic biota that may be present in the

² US EPA. *Phytoremediation of Petroleum in Soil & Groundwater*.
<http://www.epa.gov/ORD/NRMRL/lrpcd/rr/phytopet.htm>.

³ University of Saskatchewan Department of Soil Science. *PhytoPet© – A Database of Plants that Play a Role in the Phytoremediation of Petroleum Hydrocarbons*. <http://www.phytopet.usask.ca/mainpg.php>.

⁴ Frick, C.M., R.E. Farrell and J.J. Germida. 1999. *Assessment of Phytoremediation as an In-Situ Technique for Cleaning Oil-Contaminated Sites*.

⁵ Kolhatkar, R. and D. Taggart, Enhanced Bioremediation Using Sulfate and/or Nitrate. BP Amoco Group Environmental Management, Remediation Management Technology Meeting, January 2004.

unnamed creek⁶. To further enhance the anaerobic degradation of petroleum hydrocarbons beneath the water table following removal of free product, ERM will evaluate the benefits of injecting sulfate (i.e., magnesium sulfate) into monitoring wells MW-A01, MW-A02 and MW-A03. The magnesium sulfate would be injected as a 5 to 10 percent solution at a rate of approximately 50 to 100 gallons per month. Periodic ground water analyses for sulfate would be performed to determine its utilization rate. On average, 0.22 pounds of benzene is degraded per pound of sulfate consumed.

2.3 FARM

Soils transported and disposed at the Fogle's Farm were reportedly excavated from the former location of the 10,000-gallon AST. As such, these soils must have contained concentrations of TPH comparable to (or greater than) what was detected at the Facility in samples collected by the ACOE (i.e., 24,000 mg/kg) in early 2005.

During the EOCS, soil samples were collected from six borings to evaluate the current concentrations of TPH in the soils disposed at the Fogle's Farm. The maximum TPH concentrations measured during the EOCS in these soils were less than 1,000 mg/kg TPH-DRO and less than 15 mg/kg TPH-GRO. There were no detections of either TPH-DRO or TPH-GRO in the suspected down gradient runoff sample location (FB-6). The significant reduction (i.e., 24 times) in TPH concentrations in the 18 months following their deposition at the farm indicates that natural processes (i.e., biodegradation and to a lesser extent volatilization) are serving to rapidly attenuate petroleum constituents in the soil. Consequently, it is Fogle's intent to continue monitoring the natural degradation of petroleum hydrocarbons in the soils placed at the farm until concentrations of TPH-GRO and DRO are below 5 mg/kg⁷ as analyzed by EPA Method 8015B. The proposed monitoring program is described in Section 3.5.2.

Additionally, engineering controls will be implemented at the Fogle's Farm to minimize the potential for the transport of sediment via runoff and wind blown dust. These controls will include the following, as necessary:

⁶ Mount, David R., et al. 1997. *Statistical models to predict the toxicity of major ions to Ceriodaphnia Dubia, Daphnia Magna and Pimephales Promelas (Fathead Minnows)*. Environmental Toxicology and Chemistry. Vol. 16:10, pp. 2009-2019.

⁷ As documented in the AOC (Docket No. CWA-03-2005-0150CW, item 9.3f) and in MDE Oil Control Program's letter to ERM dated 6 February 2006.

- The construction and maintenance of a silt fence;
- Dust suppression measures (i.e., controlled moisture applications, vegetative cover, or plastic sheeting); and
- Routine inspections.

2.4 *SAMPLE COLLECTION PROCEDURES*

2.4.1 *Soil Sampling Using Hand Augers*

Soil samples collected for chemical analysis may be obtained using hand augers to collect shallow subsurface soil samples. At each sample location, a 2-inch diameter stainless steel auger will be advanced at six-inch intervals from the ground surface to the target depth of the boring. Each sample will be collected and retained inside the auger.

Following sample collection, the auger will be emptied onto clean plastic for sample collection and visual inspection. The soil core will be screened immediately with a OVA-FID to identify intervals of the soil core with hydrocarbons and an aliquot of soil will be collected immediately. Soil characteristics will be observed and recorded in a field book dedicated to the project. A representative portion of the desired sample interval will be placed into sample containers provided by the analytical laboratory, the containers will be labeled with the appropriate information, and the soil samples will be stored on ice immediately after collection pending shipment to the laboratory. The analytical laboratory will be consulted to determine what preservatives, if any, are required for the chemical analyses to be performed. The laboratory can often provide the preservatives in the sample containers.

2.4.2 *Soil Sampling Using Direct-Push Sampling Technology*

Soil samples collected for chemical analysis may be obtained using hydraulic drive direct-push technology (e.g., Geoprobe® rig) to collect subsurface soil samples. At each sample location, a 1.5-inch diameter MacroCore sampler will be advanced at four-foot intervals from the ground surface to the target depth of the boring. Each sample will be collected and retained in a new non-reactive plastic liner contained inside the four-foot sampler.

Following sample collection, the plastic liner will be split longitudinally to expose the soil core for sample collection and visual inspection. The soil core will be screened immediately with a OVA-FID to identify intervals of the soil core with hydrocarbons and an aliquot of soil will be collected immediately. Soil characteristics will be observed and recorded in a field book dedicated to

the project. A representative portion of the desired sample interval will be placed into sample containers provided by the analytical laboratory, the containers will be labeled with the appropriate information, and the soil samples will be stored on ice immediately after collection pending shipment to the laboratory. The analytical laboratory will be consulted to determine what preservatives, if any, are required for the chemical analyses to be performed. The laboratory can often provide the preservatives in the sample containers.

2.4.3 *Equipment Decontamination*

Sampling tools (e.g., drilling rods, MacroCore samplers, augers, etc.) used during drilling are decontaminated between each sample and/or boring location as appropriate using a soap wash (e.g., Alconox®) followed by a tap water rinse and/or steam cleaning as determined by the field geologist to ensure adequate cleaning and decontamination of drilling and sampling equipment.

2.4.4 *Field Screening of Soils*

A calibrated FID will be used for initial field screening of the soil sample/core by scanning the surface of the material with the FID air intake nozzle and recording the FID reading. Next, representative portions of each soil sample are placed in clean plastic “ziplock” bags or glass sample jars immediately upon recovery. Headspace screening using a FID to detect the presence of hydrocarbons will be conducted in the field on a portion of each soil sample. Each container used for headspace screening will be tightly sealed and allowed to stand a minimum of ten minutes prior to FID screening to allow the soil vapor and the air within the headspace of the container to equilibrate. Headspace measurements are recorded in the field book and presented on the soil boring logs included in the project report.

2.5 *QUALITY ASSURANCE PROJECT PLAN*

Samples collected as described above will be sent to Phase Separation Science’s (PSS) laboratory in Baltimore, Maryland for analysis. PSS maintains accreditations for the full range of organic and inorganic parameters in Maryland. In addition PSS has served as a contract laboratory for both the State of Maryland Laboratories Administration and the Maryland Department of the Environment. A copy of PSS’s Quality Assurance Plan can be found on-line at http://www.phaseonline.com/documents/pss_qap.pdf.

Quality control and quality assurance samples (QA/QC) will be collected and analyzed to verify that the data is acceptable. Quality control samples

will include field duplicate, equipment blank and laboratory method blank samples. Field duplicate samples and equipment blanks will be submitted for analysis of TPH GRO and DRO by EPA Method 8015B at an interval of 1 per 20 samples. Chain-of-custody procedures will be implemented with all samples to document sample handling and transfers.

Field instruments used for the measurement of O₂ and CO₂ production (e.g., Landtec GA-90 or MultiRae IR) and total hydrocarbons (e.g., OVA-FID) will be calibrated at the beginning of each day prior to collection of any samples. Instrument calibration will be performed in accordance with the manufacturers recommended procedures for routine calibration.

PERMITS AND APPROVALS

Prior to the initiation of the abatement activities, several administrative considerations will need to be addressed, including the approval of an Erosion and Sediment Control (E&SC) Plan by Carroll County to perform the proposed trenching activities. Additionally, Fogle's and ERM will coordinate with EMA regarding the proposed mitigation activities, site access and site security.

Erosion & Sediment Control Plan

A project specific E&SC Plan has been developed in accordance with COMAR 26.17.01 and submitted to the Carroll County Soil Conservation District for approval. However, since the area to be disturbed is less than 30,000 square feet, Carroll County requires only that a grading permit for construction activities be approved⁸. ERM submitted the grading permit application to the County on 4 October 2006. A copy of the grading permit is included as Attachment A. The purpose of the grading permit is to ensure that erosion and sediment runoff are minimized from the areas of disturbance (areas of trenching and temporary stockpiles) to the extent practicable. Provisions will include, at a minimum, the installation of perimeter silt fencing and routine inspections. All provisions of the final grading permit will be implemented prior to the initiation of any of the proposed abatement activities.

Air Injection and Emissions Permit

All installations which are potential sources of air pollution are regulated and require a permit or approval from the MDE, except those installations which are specifically exempt under the State's Air Quality Regulations, Code of Maryland Regulations COMAR 26.11.02.10. Based on discussions with Mr. Scott Thompson with MDE's Air Quality Compliance Program, bioventing systems for diesel fuel impacted soils are not considered by the Department to be sources of air pollution that require permitting and are thus considered exempt from permitting (see Attachment B).

⁸ Confirmation email from Mr. Bryan Snyder, Sediment Control Planner for the Carroll County Soil Conservation District, to Mr. Adrian Hughes with ERM on 4 October 2006.

Underground Injection Permit

According to MDE's Underground Injection Control Program and Waste Management Administration, the injection of nutrients (e.g., sulfate) into the ground water system is evaluated on a case by case basis as to its need for a permit. For the Sykesville Oil Site, it is unlikely that a permit would be needed since the injection of nutrients would be part of a remedial treatment system and would be authorized under a Corrective or Response Action Plan (see Attachment C).

In the event that injection of nutrients or microbes is warranted for the Site, ERM will prepare a brief work plan outlining the proposed injection plan and monitoring requirements. The work plan will be submitted to the EPA and to the MDE's Underground Injection Control Program and Waste Management Administration for approval prior to initiating the activities. This work plan will include a discussion of

3.2 WORKER HEALTH & SAFETY

Fogle's will use in-house personnel to perform the drilling, trenching and plumbing activities. The workers shall comply with applicable requirements covering construction activities, as established by the U.S. Environmental Protection Agency (EPA), the U.S. Occupational Safety and Health Administration (OSHA), the Maryland Department of Labor and Industry, and the MDE.

The operation of all equipment will be conducted in accordance with all applicable OSHA and Maryland Health and Safety Administration regulations. Drilling, trenching and equipment operation will be conducted by OSHA 1910.120 trained, experienced operators with knowledge of the safety requirements set forth in 29 CFR Part 1926 Subpart P.

All work will be completed in accordance with the requirements described herein, and the 29 June 2006 Project Health and Safety Plan (HASP) prepared by ERM on behalf of Fogle's. A copy of the revised HASP is included as Attachment D. All work is anticipated to be performed under USEPA Level D PPE requirements and includes the use of eye protection, hard hat and safety boots. Odor control measures and dust suppression measures will be employed when necessary to minimize the generation of nuisance odors and dust from the drilling and trenching areas.

3.3

SITE ACCESS AND COORDINATION

Approximately 188 acres of land to the north, east and southeast of the Facility is owned by EMA. Portions of this property may need to be accessed during the implementation of this Abatement Plan. Prior to the initiation of any of the proposed abatement activities, a site access agreement will be negotiated with EMA. Based on discussions with EMA during a meeting on 21 September 2006, Fogle's and EMA will amend the existing access agreement to cover the extended period for which abatement activities will occur.

As discussed previously in Section 2.2, ERM proposes to re-vegetate the seep area to the extent practical with hybrid poplar trees and a mixture of red fescue and ryegrass to enhance the degradation of petroleum hydrocarbons. ERM contacted the Maryland Department of Natural Resource. Ms. Davis works with the Carroll County region. According to Ms. Davis, the Department of Natural Resources does not have a policy prohibiting the planting of the hybrid poplar tree DN-21 (supplied by Ecolotree) in the State of Maryland. A copy of the email provided to ERM affirming this position is included as Attachment E.

Fogle's will coordinate with EMA prior to performing any site re-vegetation or final re-grading activities. Specifically, Fogle's will provide to EMA, for approval, a site map that illustrates the seep area and the locations of the proposed plantings. In addition, site security measures will be implemented in the areas of excavation to preclude access by unauthorized and/or inadequately trained personnel (i.e., persons not conducting or overseeing the abatement activities).

3.4

SITE SECURITY

Site security will consist of a 4-foot high, high-visibility, temporary construction fence around the perimeter of the activity area to deter access by unauthorized persons. Warning signs will also be displayed at appropriate locations around the perimeter of the excavation areas.

3.5

PERFORMANCE MONITORING

Performance soil sampling will be completed to verify that petroleum impacted soils are being mitigated at the Facility and Fogle's Farm to a sufficient extent to comply with the AOC, as necessary, and to eliminate the potential for ongoing impacts to ground water and/or surface water.

3.5.1

Facility

Soil Gas Monitoring

Concentrations of CO₂, O₂ and total hydrocarbons in soil gas will be recorded once a day during the first week of system operation. For the second, third and fourth weeks of operation CO₂, O₂ and total hydrocarbons will be recorded once a week. During months two and three of operation, CO₂, O₂ and total hydrocarbons will be recorded twice a month. Based on the observed consumption or production rates for CO₂ and O₂ the delivery of oxygen to discrete zones can be better managed to ensure that the system is operating in the most efficient manner.

Performance Monitoring

As described in Section 2.1.1, attenuation of petroleum hydrocarbons in soils at the Facility will be evaluated by collecting soil samples from 30-foot by 30-foot grids within the treatment area footprint (Figure 4). Discrete soil samples will be collected from a multiple depths between 0 and approximately 30 feet below the ground surface (i.e., the seasonal low water table depth). Soils will be visually examined in the field and screened with an OVA equipped with a FID to qualitatively assess the presence of potential TPH at each boring location. Concentrations of TPH in soil will be quantified by submitting the soil interval with the highest observed FID measurement, or with visual evidence of staining or petroleum odors for laboratory analysis of TPH. This approach will provide data to assess worst-case concentrations and soil attenuation.

Laboratory analyses for TPH GRO and DRO by EPA Method 8015B will be performed by PSSI. A field duplicate will be incorporated into the analytical program as a quality assurance sample. The laboratory results will be compared to the results for soil samples collected prior to the system startup to assess the biodegradation of residual petroleum hydrocarbons.

The baseline sampling event will be conducted in December 2006 prior to the system startup. Assuming that the system is in operation by late January 2007, follow-up monitoring events will be conducted to evaluate the system performance and rate of TPH attenuation as follows:

- Three months after startup (i.e., April 2007)
- Six months after startup (i.e., July 2007)
- Twelve months after startup (i.e., January 2008)

Subsequent sampling events will be conducted at six month intervals (i.e., January and July) to determine if TPH-GRO and DRO concentrations are below 5 mg/kg⁹. The collection of samples from individual grids may be eliminated upon meeting the above criteria for that grid provided that three discrete samples (i.e., single samples collected from the within the 30-foot by 30-foot grid) confirm the results are below 5 mg/kg. Fogle's will notify EPA and the MDE prior to collecting the final samples to allow the agencies the opportunity to split any of the samples.

3.5.2 *Farm*

Attenuation of petroleum hydrocarbons in soils at the Farm will be confirmed using composite samples collected from 20-foot by 20-foot grids within the disposal area footprint (Figure 5). Soil analyses conducted for the EOCS indicated that contamination was not present in the samples collected at depths greater than 2 feet; therefore, aliquots will be collected from the 1 – 1.5 foot depth interval only¹⁰. However, field observations (e.g., staining, etc.) may warrant the collection of aliquots from deeper depth intervals. In this situation, EPA's OSC will be consulted prior to collecting the samples.

Each sampling grid area will be divided into quadrants of roughly equivalent size and an aliquot will be collected from the center point of each quadrant. It is anticipated that the aliquots will be collected using a hand auger. Sampling equipment will be decontaminated prior to collecting each soil sample. The individual aliquots for a specific sampling area grid will be placed into a stainless steel bowl and homogenized to form the composite sample. The composite sample will then be placed into the sample container provided by the laboratory.

Laboratory analyses for TPH GRO and DRO by EPA Method 8015B will be performed by PSS, a Maryland certified laboratory. A field duplicate and equipment blank will be incorporated into the analytical program as a QA sample.

The first sampling event will be conducted in early to mid January 2007. Subsequent sampling events will be conducted semi annually (i.e., July and January) until results indicate that TPH-GRO and DRO concentrations are

⁹ As documented in the AOC (Docket No. CWA-03-2005-0150CW, item 9.3f) and in MDE Oil Control Program's letter to ERM dated 6 February 2006.

¹⁰ As requested by the MDE Oil Control Program in its 31 October 2006 response to ERM's revised Abatement Plan, dated 12 October 2006.

below 5 mg/kg¹¹. The collection of samples from individual grids may be eliminated upon meeting the above criteria for that grid provided that three discrete samples (i.e., single samples collected from the within the 20-foot by 20-foot grid) confirm the results are below 5 mg/kg. Fogle's will notify EPA and the MDE prior to collecting the final samples to allow the agencies the opportunity to split any of the samples.

3.6

COMPLETION REPORTING

After the mitigation of petroleum impacted soils from the Facility and Farm is completed, a Completion Report will be prepared and submitted to the EPA to document the successful implementation of abatement activities. The report will include the following:

- Photographs documenting the construction of the bioventing system;
- Design drawings illustrating the layout of the bioventing system and sampling grids;
- Waste shipment records; and
- Confirmation soil sample results.

¹¹ As documented in the AOC (Docket No. CWA-03-2005-0150CW, item 9.3f) and in MDE Oil Control Program's letter to ERM dated 6 February 2006.

The project schedule is contingent upon the approval of this Abatement Plan by EPA and timely acquisition of the necessary permits/approvals for the work (e.g., grading permit). It is anticipated that these administrative activities can be completed within approximately one month. The proposed installation of the air injection points, soil gas monitoring points, and plantings will be initiated as soon as possible after each of these requirements is met.

Fogle's has initiated the purchase of the air blower for the bioventing system and anticipates receiving the system by early January 2006. The anticipated schedule for implementation of the Plan is as follows (through the collection of the 1st post-startup performance monitoring soil samples):

Bioventing System Installation

Carroll Land Services, Inc. surveyed and marked of the air injection points, soil gas monitoring points, trench runs and sampling grids on 13 November 2006. Installation of the bioventing system began on 6 December 2006 and is substantially completed. The following activities are remaining:

- by 26 January 2007 - Conduct pre-startup soil gas monitoring.
- 29 January 2007 - Connect electric supply blower unit to bioventing system and system startup. Fogle's anticipates receiving the blower unit the week of 8 January and completing the electricity supply (requires BGE to connect a 460 volt 3 phase line) to the blower unit by mid-late January.

Baseline Monitoring

ERM collected soil samples from each of the eleven grids during the week of 26 December 2006. The samples were collected following the procedures outlined in Sections 2.4 and 3.5.1 above and submitted to PSS laboratory in Baltimore, Maryland for analysis of TPH-GRO and DRO by EPA Method 8015. The results of these samples will be available in early January 2007.

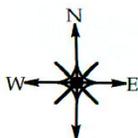
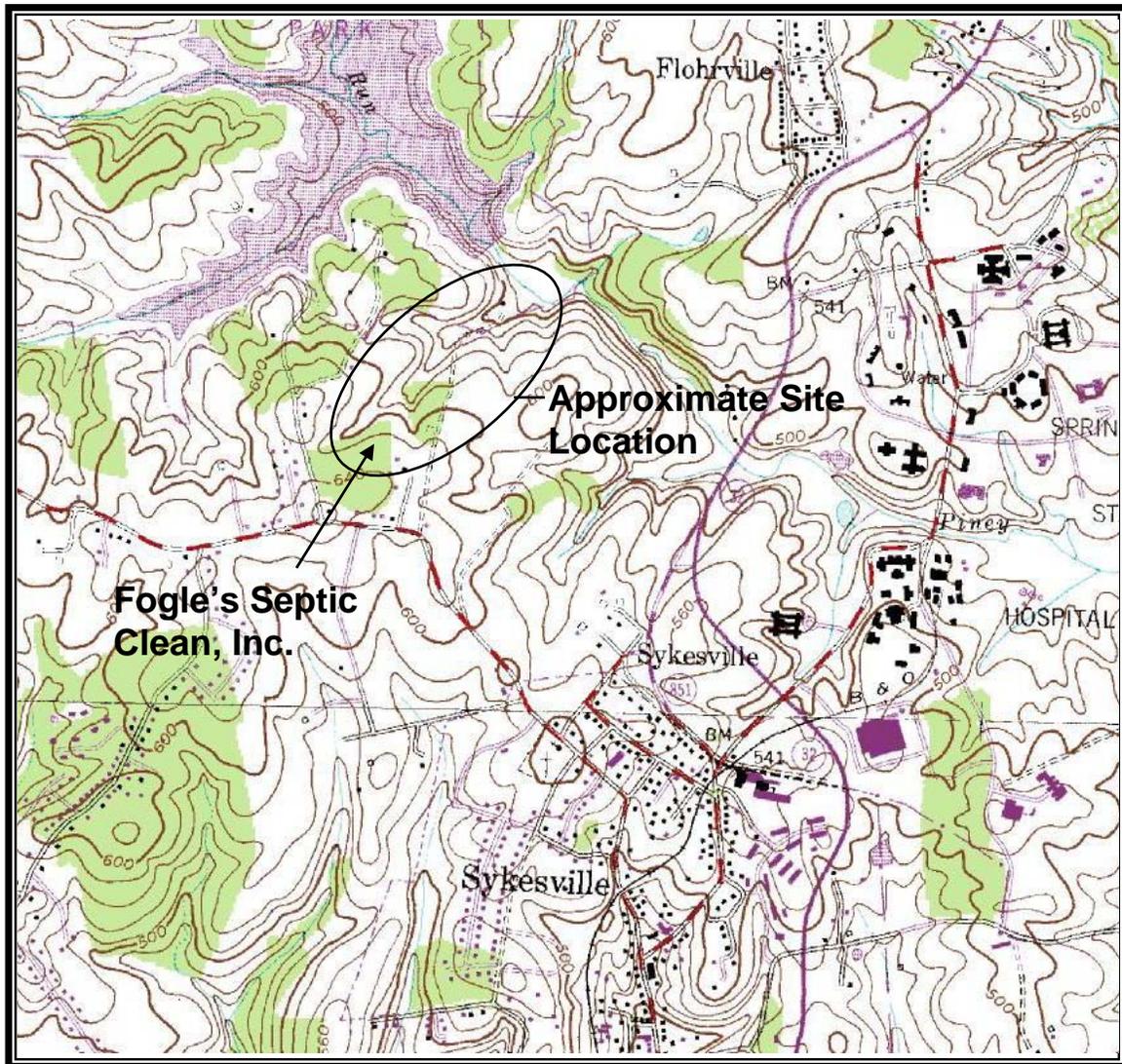
Performance Monitoring

Additional monitoring activities are anticipated to be scheduled as follows, assuming a system startup on 29 January 2007:

- 29, 30, 31 January and 1 and 2 February 2007 - Monitor and record CO₂, O₂ and total VOCs.

- 5 February 2007 - Monitor and record CO₂, O₂ and total VOCs.
- 12 February 2007 - Monitor and record CO₂, O₂ and total VOCs.
- 19 February 2007 - Monitor and record CO₂, O₂ and total VOCs.
- 5 March 2007 - Monitor and record CO₂, O₂ and total VOCs.
- 19 March 2007 - Monitor and record CO₂, O₂ and total VOCs.
- 2 April 2007 - Monitor and record CO₂, O₂ and total VOCs.
- 16 April 2007 - Monitor and record CO₂, O₂ and total VOCs.
- 30 April 2007 - Monitor and record CO₂, O₂ and total VOCs. Collect 1st post-startup performance monitoring soil samples (3 month samples)

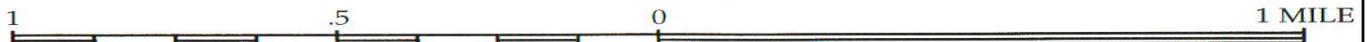
FIGURE 1
FACILITY SITE LOCATION MAP
FOGLE'S SEPTIC CLEAN
SYKESVILLE, MARYLAND



Sykesville Quadrangle
Maryland
7.5 Minute Series

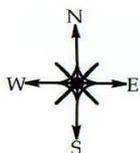
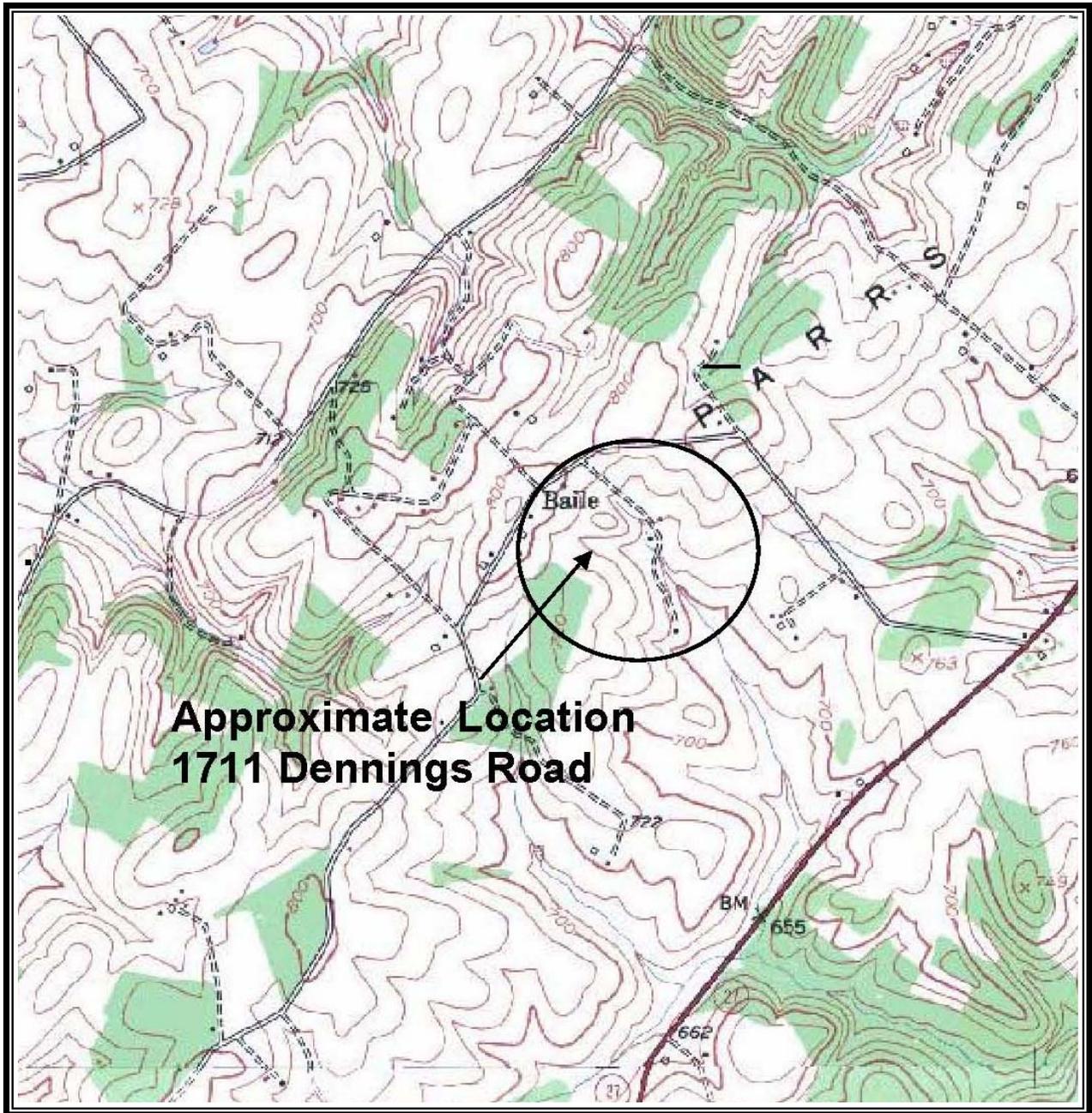


SCALE 1 : 24,000



CONTOUR INTERVAL 20 FEET

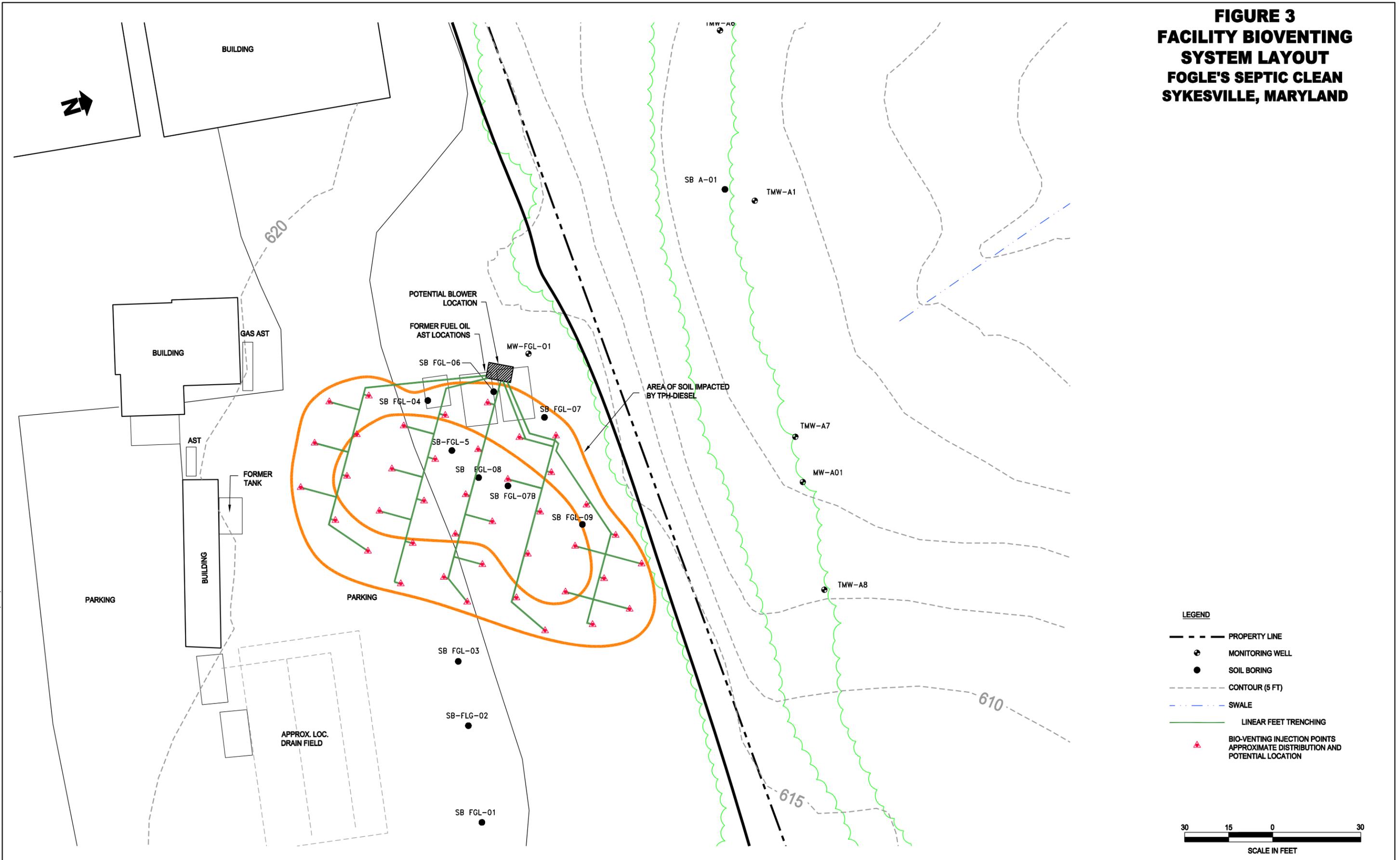
FIGURE 2
FARM SITE LOCATION MAP
FOGLE'S SEPTIC CLEAN
SYKESVILLE, MARYLAND



New Windsor Quadrangle
Maryland
7.5 Minute Series



**FIGURE 3
FACILITY BIOVENTING
SYSTEM LAYOUT
FOGLE'S SEPTIC CLEAN
SYKESVILLE, MARYLAND**



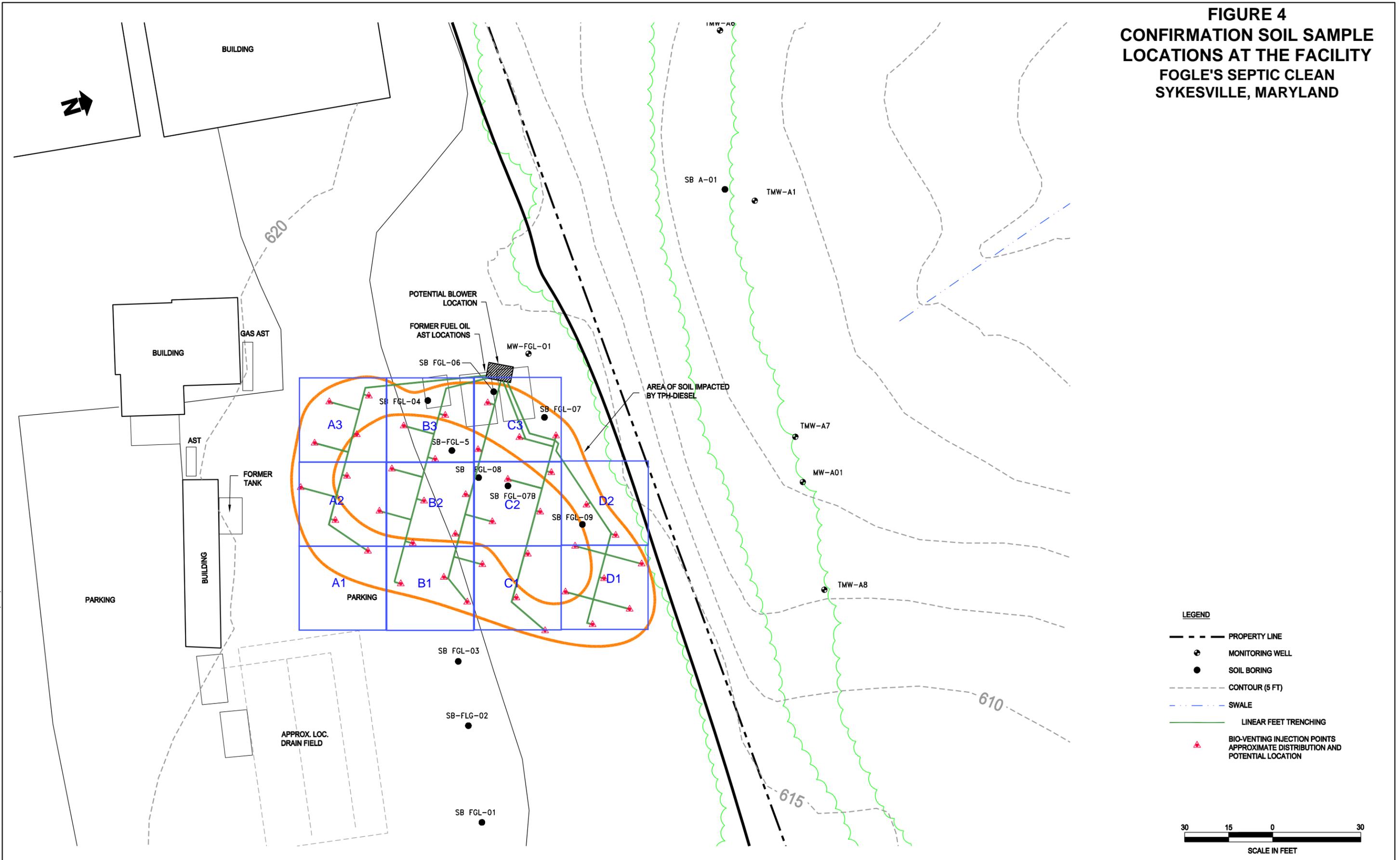
LEGEND

- PROPERTY LINE
- ⊕ MONITORING WELL
- SOIL BORING
- - - CONTOUR (5 FT)
- - - SWALE
- LINEAR FEET TRENCHING
- ▲ BIO-VENTING INJECTION POINTS APPROXIMATE DISTRIBUTION AND POTENTIAL LOCATION



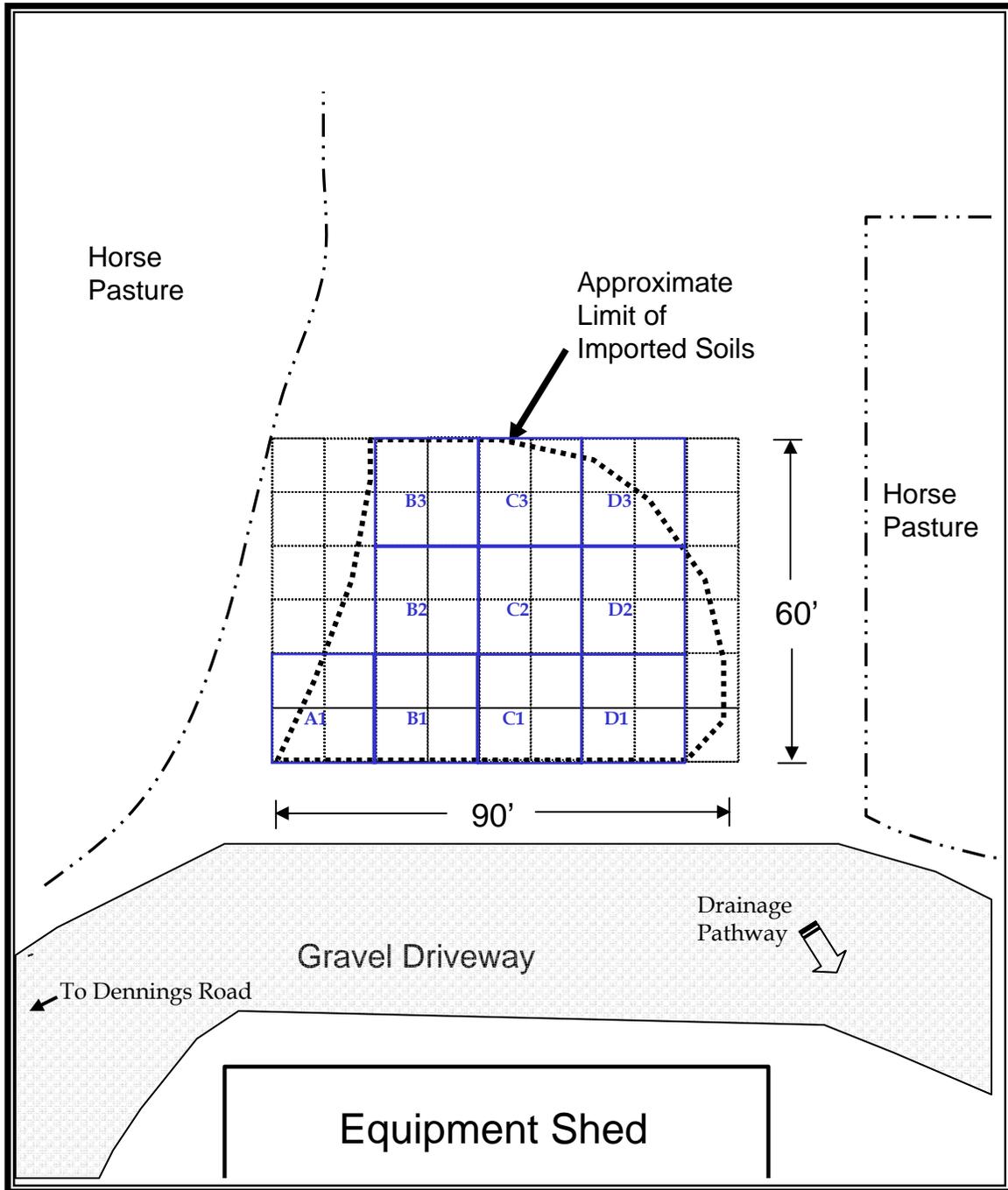
G:\CAD\DRAWINGS\SYKESVILLE\0032112\A202.DWG DATE: 07/27/2006

**FIGURE 4
CONFIRMATION SOIL SAMPLE
LOCATIONS AT THE FACILITY
FOGLE'S SEPTIC CLEAN
SYKESVILLE, MARYLAND**



C:\CAD\DRAWINGS\SYKESVILLE\0032112\A202.DWG DATE: 07/27/2006

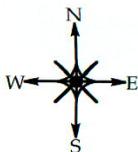
FIGURE 5
CONFIRMATION SOIL SAMPLE LOCATIONS AT THE FARM
1711 DENNINGS ROAD
NEW WINDSOR, MARYLAND



Notes:

Not to Scale

--- Fence



Attachment A

Carroll County Grading Permit

CARROLL COUNTY GRADING PERMIT
Bureau of Resource Management
Environmental Inspection Services Division
225 N. Center Street, Rm. 209
Westminster, Md. 21157

Permit No.: GR-06-0140

Date Applied: 10/10/06
Phone: 386-2210
1-888-302-8978

GRADING PERMIT

Location: 580 OBRECHT ROAD
SYKESVILLE, MD. 21784

District: 5-0
Tax Map: 73
Block: 03
Parcel: 588

Property Owner: FOGLE'S SEPTIC CLEAN, INC.
580 OBRECHT ROAD
SYKESVILLE, MD. 21784

Phone
(410)795-5674

Contractor: SAME AS OWNER
SAME AS OWNER

Phone
(410)-----
License No.: 2491

Developer: SAME AS BELOW

Phone
()-----

Project Name: FOGLE'S SEPTIC CLEAN, INC. -

Work Description:
SYKESVILLE OIL SITE REMEDIATION - INSTALLATION OF 1" DIAMETER, ETC.

Disturbed Area: 8000 sq. ft.

APPROVALS

Date Issued: 10/13/06

Agency	Name	Date
Stormwater Mgmt	MYRON FROCK	10/11/06
Landscape/Forestry	VICKI LUTHER	10/13/06
Public Works		
Environmental Svcs		
Water Resource Mgmt		
City		
Processed	*****	10/10/06
Dev. Review		
Fee Paid	ANGIE BLADEN	10/10/06
Bond	AFFIDAVIT	10/10/06
Grading	GALE J. ENGLER	10/13/06
Soil Conserv.		

Approved by



Permit Fee: \$*****60.00

Check No.: 46560 Receipt No.: 251162 Receipt Date: 10/10/06

- This permit covers the above amount of disturbed area delineated on the approved soil erosion and sediment control plan.

- Grading permit expires one (1) year from the date issued at which time reapplication will be necessary.

- Deviation from the aforementioned will be considered in violation of Grading and Sediment Control, Chapter 121 (Ordinance No. 04-06).

BUREAU OF RESOURCE MANAGEMENT
 ENVIRONMENTAL INSPECTION SERVICES DIVISION
 225 NORTH CENTER STREET, WESTMINSTER, MARYLAND 21157
 (410) 386-2210

SEDIMENT CONTROL PRE-CONSTRUCTION MEETING

This notice has been prepared to familiarize the permittee and contractor with general sediment control requirements. This is not a complete list of permit and plan requirements. Please review your plan thoroughly.

1. All inspection requests must be made by calling 410-386-2210. NO EXCEPTIONS. You will need your grading permit number, type of inspection requested and a phone number where you can be reached. Meetings must be confirmed with the inspector.
2. Read and follow the "Required Sequence of Construction" shown on the approved plan(s). An approved plan modification must be obtained from the Bureau to deviate from the "Required Sequence of Construction".
3. After the pre-construction meeting, you must install tree protection where indicated on the approved Forest Conservation Plan.
4. Call inspector at 410-386-2210 for an inspection of tree protection measures prior to installation of sediment control measures. You must obtain WRITTEN approval from the Office before continuing with grading. A violation may be issued immediately if written approval from the Office is not obtained and grading proceeds.
5. After the pre-construction meeting and/or the inspection for compliance with the Forest Conservation Plan, you may clear only those areas necessary to install the sediment control measures as shown on the approved plan(s). Identify those areas with the inspector at the pre-construction meeting.
6. Install required sediment control measures and stabilize perimeter controls with seed and anchored straw mulch within seven (7) calendar days of installation.
7. Call inspector at 410-386-2210 for an installation inspection. You must obtain WRITTEN approval from the Bureau before continuing with further grading or site development. A Stop Work Order will be posted immediately if written approval from the sediment control inspector is not obtained and grading proceeds.
8. Be certain not to go beyond designated "limits of grading and construction" on the approved plans. All inactive disturbed areas for more than fourteen (14) calendar days must be stabilized with seed and anchored mulch.
9. Keep all streets clean. If mud is tracked onto a street, do not wash the mud into storm drains unless the storm drain is diverted to an approved sediment trapping device.
10. All sediment control devices must be maintained in good and effective condition at all times. You must have a person responsible for sediment control on site who has successfully completed an Erosion and Sediment Control Program pursuant to State law. YOU ARE REQUIRED TO PROVIDE YOUR OWN PERIODIC INSPECTION AND MAKE NECESSARY REPAIRS PROMPTLY. Do not wait for an inspector, as failure to maintain sediment control measures in an effective condition will result in the issuance of a Stop Work Order and/or Civil Citation without prior warning.
11. Sediment control devices may not be removed without WRITTEN permission from the sediment control inspector.
12. All official notices, citations, stop work orders, etc. will be issued to the on-site representative of the permittee.
13. A grading permit does not transfer with ownership. The permittee is required to notify the Bureau within 48 hours of any change in ownership. The new owner and lots/parcels affected must be identified.
14. The grading permit will expire one (1) year after the date of issuance. It is the permittee's responsibility to renew the permit prior to expiration. A renewal notification will be sent to the permittee approximately one (1) month before expiration.
15. Should you have any questions, please contact your sediment control inspector at the number below or call 410-386-2210.
16. Additional comments by the issuing inspector:

Project Name:	Fogle's Septic Clean Inc.	Grading Permit No.:	06-0140
Inspector:	PAUL R STOWER Paul R Stower	410-386-2216	10/24/06
	Printed Name	Signature	Phone No. (410) 259-6529
Permittee:	BARRY BRUCE / FOGLE'S		10/24/06
	Printed Name	Signature	Phone No. (410) 972-0224
Contractor:	MATT ERBE / ERM		10/24/06
	Printed Name	Signature	Phone No. (410) 972-0224

Attachment B

*MDE General Air Permitting Requirements for
Remediation Systems*



"Scott Thompson"
<swthompson@mde.state.md.us>

To: <matt.erbe@erm.com>
cc:
Subject: General Permit Form

06/15/2006 08:38 AM

Matt,

Here is the link for all of our general permits. The third one down is for groundwater air strippers and soil vapor extraction.

http://www.mde.state.md.us/Permits/AirManagementPermits/Air_Permit/index.asp

Let me know if you have any further questions.

Scott Thompson
Air Quality Compliance Program
Maryland Department of the Environment
1800 Washington Blvd.
Suite 715
Baltimore MD 21230
Phone: 410-537-3231
Fax: 410-537-3202

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[Permits to Construct & Operate](#)
[Title 5 Program Information](#)
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Air Quality General Permits to Construct Application Forms

This section contains information on air quality general permits to construct. Instructions and general guidance documents are available as well as downloadable forms. Permit forms are available in Adobe Acrobat (.pdf) format. To view the Adobe Acrobat forms, users will need to download the [Adobe Acrobat Reader](#).

[Instructions](#) for General Permits to Construct

- VEHICLE REFINISHING (AUTOBODY)
 - [Full Package](#): Includes Fact Sheet, General Permit to Construct, Request for Coverage Form
- CHARBROILERS AND PIT BARBECUES
 - [Full Package](#): Includes Fact Sheet, General Permit to Construct, Request for Coverage Form
- GROUNDWATER AIR STRIPPERS AND SOIL VAPOR EXTRACTION
 - [Full Package](#): Includes Fact Sheet, General Permit to Construct, Request for Coverage Form
- PERCHLORETHYLENE (PERC) DRY CLEANING EQUIPMENT
 - [Full Package](#): Includes Fact Sheet, General Permit to Construct, Request for Coverage Form
- SMALL FUEL BURNING (BOILER/HEATER) EQUIPMENT
 - [Full Package](#): Includes Fact Sheet, General Permit to Construct, Request for Coverage Form
- SMALL STATIONARY GASOLINE STORAGE TANKS
 - [Full Package](#): Includes Fact Sheet, General Permit to Construct, Request for Coverage Form
- SHEETFED LITHOGRAPHIC PRINTING
 - [Full Package](#): Includes Fact Sheet, General Permit to Construct, Request for Coverage Form
- MEDIUM-SIZED BOILERS < 40MMBTU
 - [Full Package](#): Includes Fact Sheet, General Permit to Construct, Request for Coverage Form

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1800 Washington Blvd, Baltimore, MD 21230
 Tel: (410) 537-3000 Toll Free: (800) 633-6101
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MARYLAND DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION MANAGEMENT ADMINISTRATION
1800 WASHINGTON BLVD
BALTIMORE, MARYLAND

AIR QUALITY GENERAL PERMIT TO CONSTRUCT PACKAGE

**GROUNDWATER AIR
STRIPPERS
and
SOIL VAPOR EXTRACTION
SYSTEMS**

CONTENTS

FACT SHEET

GENERAL PERMIT TO CONSTRUCT

EXAMPLE REQUEST FOR COVERAGE FORM

REQUEST FOR COVERAGE FORM

July 07, 2003



MARYLAND DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION MANAGEMENT ADMINISTRATION
1800 Washington Blvd, STE 720
Baltimore, Maryland 21230-1720
(410) 537-3230

FACT SHEET

For
GROUND WATER AIR STRIPPER and SOIL VAPOR EXTRACTION SYSTEMS

PURPOSE OF THE FACT SHEET - This fact sheet contains general information on the General Permit to Construct process, some typical questions and responses pertaining to the general permit, and instructions as to how to request coverage under the general permit to construct. The fact sheet is not a permit and should be used as a guide only. For specific regulatory and administrative requirements see the permit document or contact the Department at the telephone number listed above, for additional information.

All installations which are potential sources of air pollution are regulated and require a permit or approval from the Maryland Department of the Environment ("the Department"), except those installations which are specifically exempt under the State's Air Quality Regulations, Code of Maryland Regulations COMAR 26.11.02.10. To allow faster processing of permits, the Department has decided to regulate certain small stationary source installations through the issuance of an air quality general permit to construct.

1. What is the intent of the Air Quality General Permit to Construct Program?

The Air Quality General Permit to Construct Program will increase the efficiency of the Maryland Department of the Environment's permitting process through the issuance of generic permits to a category of sources which are generally very similar in operation, equipment installation, and emissions characteristics. The general permits to construct will improve service to the regulated community by reducing the time necessary to obtain the required permit while still ensuring that the sources are constructed in compliance with all air quality regulatory requirements.

Only those installations considered appropriate by the Department for regulation by this mechanism are covered by a general permit to construct. All other installations are subject to the requirements of an individual permit to construct issued in accordance with COMAR 26.11.02.09.

2. What is an air quality general permit to construct?

General permits to construct are issued to include certain categories of small stationary source installations. All sources within the described category are permitted once a request for coverage form is completed and submitted, subject to the specific conditions contained in the general permit to construct. Each general permit provides emissions limitations and/or operating conditions. Each source covered by the general permit is subject to the same regulatory requirements and enforcement actions as a source covered by an individual permit to construct.

3. Will I need a permit to install an air stripper or soil vapor extraction system?

Air stripper and soil vapor extraction systems are considered by the Department to be sources of air pollution and they have not been exempted from permit requirements; therefore, a permit to construct is required prior to their installation.

4. *Are general permits to construct available for groundwater or soil remediation systems?*

A. General permits are available for soil vapor extraction (SVE) and groundwater air strippers (GWAS) systems where:

- 1) the contamination is the result of gasoline, No.1 & No.2 fuel oils, kerosene, diesel, and jet fuels; and
- 2) the soil is treated in place by means of vapor or groundwater extraction wells.

B. General permits are not available where:

- 1) the contamination is the result of anything other than gasoline or the petroleum based products listed in 4A, above;
- 2) the proposed treatment of contaminated soil is by heating the soil in order to induce thermal decomposition of soil contaminants;
- 3) the proposed treatment of contaminated soil on-site would require excavation, except where the excavation is required for the installation of the SVE or GWAS system; and
- 4) contaminated soil is imported from another site for remediation.

For those installations listed in Section 4 (above) where general permits are not available, contact the Department to determine if an individual air quality permit is required.

5. *Will I need more than one permit, if I intend to install more than one air stripper or soil vapor extraction system at the same site?*

If you propose multiple installations of air strippers and/or soil vapor extraction systems at the same site, you will need separate permits for each air stripper and vapor extraction system. A separate request for coverage under the General Permit to Construct is required for each section of the system that is capable of independent operation. The number of wells at a site has no bearing on the number of permits a site requires.

If you have additional questions as to how the general permit may apply to your proposed installation, please call the Department at (410) 631-3846.

6. *Will I need an air quality permit to modify my installation?*

A modification is a physical change in, or change in the operation of, a source or installation which causes a change in the quantity, nature, or characteristics of emissions from the source or installation. You must obtain a new air quality permit for a modification.

You do not need an air quality permit to add or remove wells, relocate permitted equipment on site, or to make any other change in the installation which will not cause emissions to exceed those stated in the

permit or violate any other condition of the permit.

7. *What requirements must be met for removal of the control device?*

When requesting permission to remove a control device, the permittee shall submit to the Department all pertinent data, including but not limited to, a description of sampling and testing procedures, test results and calculations showing the uncontrolled and controlled emission rates for benzene and total VOC. For purposes of this demonstration, it shall be assumed that the efficiency of the control device is the same for benzene as it is for VOC.

The permittee shall keep the control equipment in place and operating properly until it has been demonstrated to the satisfaction of the Department that for 14 operating days within a 30 day consecutive operating period that:

- (a) Both VOC and benzene emissions are decreasing over time; and
- (b) The maximum uncontrolled emissions of VOC are less than 20 pounds per day and benzene are less than 0.02 pounds per hour.

Note: The demonstration submitted to the Department shall include at a minimum, the results of 14 samples, one sample per day, two of which are to be submitted for laboratory analysis.

8. *How do I obtain coverage under the general permit for my proposed remediation installation?*

You may request a general permit to construct package from the Department. The package will include the Air Quality General Permit to Construct for Air Strippers and Vapor Extraction Systems, the Request for Coverage form, and instructions as to how to submit the completed Request for Coverage and the required permit fee. The general permit to construct includes any construction and/or operating requirements, air emissions limitations, and other regulatory obligations. If your proposed installation meets the requirements of the general permit, and you desire coverage under the general permit, complete, sign, and return a Request for Coverage form along with the required permit fee.

9. *How much does a general permit cost? Is this fee paid once or on an annual basis?*

The fee to obtain coverage under the general permit for an air stripper or a soil vapor extraction system is **\$250 per unit** to be installed. It must be paid only once. There are no other fees for this general permit.

Once you have submitted the completed Request for Coverage form and permit fee, you may install and operate your air stripper or vapor extraction system at the location stated on your request form. If you move the equipment to a new location off-site, a new request for coverage must be filed, and another permit fee must be paid to the Department.

REMEMBER: In order to be covered under the general permit, you must submit the completed request for coverage form(s) along with your permit fee. If you mail in your request, attach your check for payment of the required permit fee to your form.

Mail your Request for Coverage and Permit Fee to:

Air and Radiation Management Administration

**Maryland Department of the Environment
P.O. Box 2037
Baltimore, Maryland 21203-2037**

- 10. *How can I get a general permit to construct package and Request for Coverage form?
What if I have additional questions pertaining to general permits or other air quality
or environmental issues?***

If you require a permit package, or would like to personally deliver your request for coverage and fee payment, please contact the Department at:

Maryland Department of the Environment
Air and Radiation Management Administration
1800 Washington Blvd, STE 720
Baltimore, MD. 21230-1720

If you have additional questions, please call us at:

(410) 537-3230.

AIR QUALITY GENERAL PERMIT TO CONSTRUCT

GROUNDWATER AIR STRIPPER and SOIL VAPOR EXTRACTION SYSTEMS

Part I - Applicability

- (A) This permit applies to a person who owns, constructs (installs), or operates soil vapor extraction equipment (SVE) and/or groundwater air strippers (GWAS) at gasoline stations or other petroleum contaminated sites where the contaminated soil is treated in place by means of vapor or groundwater extraction wells.
- (B) This permit does not apply to:
- (1) soil and groundwater remediation at sites contaminated with anything other than gasoline, kerosene, diesel, No.1 or No.2 fuel oils, or jet fuels;
 - (2) In-situ soil remediation by heating the soil in order to induce thermal decomposition of soil contaminants;
 - (3) treatment of contaminated soil from off-site; and
 - (4) the treatment of contaminated soil on-site which would require excavation, except where the excavation is required for the installation of the SVE or GWAS system.

Installations listed in Section B (above) may be required to obtain an individual air quality permit to construct from the Department.

PART II. - Definitions

"ARMA" - means the Air and Radiation Management Administration

"Department" - means the Maryland Department of the Environment.

"Request for Coverage" - means a completed form obtained from the Department requesting to be covered by this permit.

"Applicant" - see Part IV(D), General Requirements, below.

"Permittee" - see Part IV(D), General Requirements, below.

"In-Situ" - means in place, at a specific site or location

"T-BACT" - means Toxics-Best Available Control Technology, which may include equipment, operating procedures, etc., to reduce emissions of Toxic Air Pollutants (TAPs). See also COMAR 26.11.15.05

"Thermal Oxidizer" - means an emissions control device that uses controlled flame combustion for the thermal destruction of Volatile Organic Compounds (VOC) or Toxic Air

Pollutants (TAPs) in a gaseous discharge stream.

"Catalytic Oxidizer" - means an emissions control device that uses a solid catalyst to promote the destruction by oxidation of VOC or TAPs in a gaseous discharge stream.

PART III. - Specific Requirements for Groundwater Air Stripper (GWAS) and Soil Vapor Extraction (SVE) Systems

(A) Control of Visible Emissions

- (1) COMAR 26.11.06.02C(2) which prohibits the discharge of emissions, other than water in an uncombined form, which is visible to human observers, if the source is located in Baltimore City and the following counties: Anne Arundel, Baltimore, Carroll, Harford, Howard, Montgomery, and Prince George's Counties.
- (2) COMAR 26.11.06.02C(1) which limits visible emissions to 20 percent opacity other than water in an uncombined form, if the source is located in any county not listed in Part III(A)(1) above.

(B) Control of Volatile Organic Compounds and Toxic Air Pollutants

- (1) COMAR 26.11.06.06 which limits Volatile Organic Compounds (VOC) emissions to 20 pounds per day, unless the discharge is reduced by 85 percent or more overall.
- (2) COMAR 26.11.15.05 which requires the permittee to use the Best Available Control Technology for Toxics (T-BACT) to minimize toxic air pollutant emissions.
- (3) COMAR 26.11.15.06 which prohibits the discharge of toxic air pollutants to the extent that the emissions will unreasonably endanger human health.

(C) Control Requirements

- (1) All of the air discharged from the GWAS or SVE system shall pass through activated carbon or a control device with an efficiency of 85 percent or greater.
- (2) If activated carbon is used to control VOC emissions, at least two canisters each containing at least 150 pounds of activated carbon shall be connected in series.
- (3) If a thermal oxidizer is used to control VOC emissions, it shall be designed to achieve at least 0.5 second residence time at 1400F. The thermal oxidizer shall be equipped with temperature monitors and recorders to continuously record the flue gas temperature exiting the thermal oxidizer.
- (4) If a catalytic oxidizer is used to control VOC emissions, it shall be equipped with temperature monitors and recorders to continuously record the temperature at both the inlet and outlet of the catalyst bed.

(D) Operating Requirements

- (1) If activated carbon is used to control VOC emissions:
 - (a) One spare canister shall be on site as a replacement, in addition to the dual canisters connected to the GWAS or SVE system;
 - (b) The first canister shall be replaced when breakthrough occurs. Breakthrough means that the VOC concentration in the gas stream

leaving the last canister is greater than 15 percent of the VOC concentration in the gas stream entering the first canister.

- (2) If a thermal oxidizer is used to control VOC emissions, the flue gas temperature exiting the thermal oxidizer shall not be less than 1400F.
- (3) If a catalytic oxidizer is used to control VOC emissions the inlet flue gas temperature shall not be less than 650F.

(E) Testing and Monitoring Requirements

- (1) In order to monitor the performance of the air emission controls the permittee shall for:
 - (a) Activated Carbon Canisters ("GACs"): measure and record the inlet and outlet VOC concentrations (see Part III(D)(1)) at least once each week when the GWAS or SVE system is operated.
 - (b) Thermal Oxidizers: monitor and continuously record the temperature of the flue gas exiting the oxidizer when the GWAS or SVE system is operated.
 - (c) Catalytic Oxidizers: monitor and continuously record the temperature of the gas stream entering the catalytic bed when the GWAS or SVE system is operated.
- (2) In order to measure the VOC emissions concentrations in the gas stream the permittee shall use a portable VOC detector that is properly calibrated in accordance with the manufacturer's instructions and that has a detection limit of 10 ppm or less of propane in air.
- (3) In lieu of measuring the gaseous VOC discharged from groundwater air strippers prior to the control device, it may be assumed that all of the VOC in the water entering the stripper is transferred to the air stream.

(F) Recordkeeping and Reporting Requirements

- (1) The permittee shall submit a copy of the Notice of Compliance it receives from the Waste Management Administration's Oil Control Program to ARMA once the site is closed.
- (2) Air emissions control equipment performance data and recorder charts (if applicable) required by Part III (E) above, shall be maintained at the site until such time that the Department approves the removal of the control device or the site has obtained a Notice of Compliance from the Waste Management Administration allowing closure of the site.
- (3) An air emissions summary, including the monitoring data required by Part III (E) above, shall be included in the periodic submittal of site remediation status reports required by the Oil Control Program.

PART IV. - General Requirements

(A) Incorporation of Request for Coverage Into Permit

This permit includes the completed Request for Coverage form, which serves as the application for coverage under the permit. If there is any conflict between the specific and general

requirements (Parts III and IV) and the Request for Coverage, the specific and general requirements take precedence. If there is any conflict between the specific and general requirements, the specific requirements take precedence.

(B) Effective Date

Subject to paragraph (C) below, coverage under this permit is effective on the date that the Request for Coverage is completed and the permit fee is paid to the Department. If the fee is paid by check or money order that is mailed to the Department, the fee is considered to be paid on the date of mailing. If the fee is paid to the Department by any other manner other than by mailing a check or money order, the effective date of coverage is the date that the Department receives payment. In order to establish the effective date of coverage under the permit, the permittee should save the canceled check or money order receipt, a copy of the Request for Coverage, and related documents. These documents shall be provided to the Department on request.

(C) Failure to Pay Fee or Provide Complete & Accurate Information

- (1) If a check or money order for the permit fee does not clear for any reason, the permittee will be given 30 days to make proper payment including any interest and other charges that are due. If payment is not made within this time, coverage under the permit shall be considered to have been void from the outset.
- (2) If the information provided in the Request for Coverage is incomplete or inaccurate, coverage under the general permit shall be considered to have been void from the outset. Coverage under the general permit shall not be considered effective until complete and accurate information required to process your request is submitted to the Department.

(D) Applicant

The applicant for this permit shall be the individual who, or other legal entity that, owns or operates the proposed source for which a permit to construct is required. After the permit is effective, the applicant will be referred to as the "permittee."

(E) Location of Source

This permit authorizes the permittee to construct and operate the installation described in the Request for Coverage at the location described in the application. The permit is not valid for any other source at the described location nor is it valid for the described source at any other location.

(F) Duration

Coverage under this permit expires if, as determined in writing by the Department:

- (1) substantial construction or modification is not commenced within 18 months after the effective date of coverage under the permit;
- (2) construction or modification is substantially discontinued for a period of 18 months after it has commenced; or
- (3) construction or modification of the source for which the permit was issued is not completed within a reasonable period after the effective date of coverage under the permit.

(G) Permit to be Available

The permittee shall maintain this permit at the location for which the permit was issued, unless it is clearly impractical to do so, and shall make the permit immediately available to authorized representatives of the Department upon request.

(H) Other Permits May Be Needed

This permit does not constitute a permit for any activity other than expressly authorized by this permit. Specifically, the permittee may not discharge pollutants, waste water, or contaminated liquids into the surface or ground waters of the state without obtaining a permit from the Water Management Administration and/or the Waste Management Administration Oil Control Program, if required.

(I) Permit Not Transferable

This permit is not transferable. The permittee should provide a copy of this permit to any subsequent owner or operator. The subsequent owner or operator should contact the Department to determine if a new permit is required. The provisions of COMAR 26.11 apply to the subsequent owners or operators whether or not the source is covered by a permit.

(J) Compliance With All Laws and Regulations

This permit does not authorize violation of any law or regulation. The permittee shall at all times comply with all applicable laws and regulations, including:

- (1) the Maryland Ambient Air Quality Control statute. Annotated Code of Maryland, Environment Article, 2-101 *et seq.*;
- (2) Maryland air pollution control regulations. Code of Maryland Regulations (COMAR) 26.11, as amended by the Maryland Register;
- (3) the Federal Clean Air Act. 42 United States Code (U.S.C.) 7401 *et seq.*;
- (4) Federal air pollution control regulations. 40 Code of Federal Regulations (CFR) Parts 50-99, as amended by the Federal Register.
- (5) Other State and local permitting requirements.

(K) Odors and Other Nuisances

This permit does not authorize construction or operation in a manner that unreasonably interferes with the proper enjoyment of the property of other persons, such as by causing unreasonable odors, or by otherwise creating air pollution.

(L) Workers' Compensation Act

Submission of the application for this permit constitutes certification that the applicant is in compliance with the Maryland Workers' Compensation Act, as required by The Annotated Code of Maryland, Environment Article, 1-202, and Labor and Employment Article, Title 9. The permit shall be considered to have been void from the outset if this certification is invalid.

(M) Modifications

A "modification" is any physical change in, or change in the operation of, an installation which causes a change in the quantity, nature or characteristics of emissions from the installation. However, this term excludes routine maintenance and routine repair, and increases in the hours of operation or in the production rate, unless these increases are prohibited under any permit or issued approval by the Department.

A modification to the installation or other source for which this general permit to construct applies is prohibited. Before making such a modification, the permittee must apply for and obtain for the modification, coverage under the general permit to construct from the Department or an individual permit to construct if the source would no longer be eligible for a general permit to construct.

(N) Inspections/Right of Entry

The Secretary, Department of the Environment, or the Secretary's authorized representative, including inspectors of the Air and Radiation Management Administration, the local health department, or other agency authorized to perform pollution compliance inspections, shall be afforded access to the Company's property, at any reasonable time and upon presentation of credentials:

- (1) to determine compliance with the permit and applicable regulations;
- (2) to sample any waste, air, or discharge into the atmosphere;
- (3) to inspect any monitoring equipment required by this permit or applicable regulation;
- (4) to have access to and copy any records required to be kept by this permit or by applicable regulations; and
- (5) to obtain any photographic documentation or evidence

(O) Duty To Provide Information

The permittee shall furnish to the Department, within 15 working days of the date of any request or other period of time that may be specified, all documents and other information which the Department requests to determine compliance with this permit and applicable air pollution control laws and regulations.

(P) Penalties for Violations

Maryland law provides for substantial penalties for violations of this permit and applicable air pollution control laws and regulations. These penalties include civil penalties of up to \$25,000 per day per violation, administrative penalties of up to \$2,500 per day per violation (not to exceed \$50,000 per action), injunctive relief, and criminal penalties for knowing violations (including up to one year in jail and a \$25,000 fine per violation per day). Additional criminal penalties apply to any person who knowingly provides false information to the Department or who knowingly tampers with any monitoring device required by State air pollution control law. Federal law may also provide for penalties for violations.

(Q) Violations that Occurred Prior To Obtaining Coverage under this Permit

This permit does not protect the permittee for any violation of laws or regulations that may have occurred prior to the effective date of coverage under the permit, including constructing, modifying, or operating a source without a required permit. The Department will consider all efforts made by the person to come into compliance with the laws and regulations in determining whether to seek a penalty for past violations and the amount of any penalty to be sought.

(R) Revocation or Suspension of Coverage Under a Permit

- (1) The Department may issue an order proposing to revoke or suspend coverage under this permit if it determines that:

- (a) Any condition of the permit has been violated; or
 - (b) The permit was improperly obtained or has been improperly used.
- (2) This proposed order shall be served as a summons or by certified mail. The order shall become final unless the permittee requests a hearing within 10 days after being served. If a hearing is requested, it shall be held pursuant to the Maryland Administrative Procedure Act, Annotated Code of Maryland, State Government Article, 10-201 *et seq.* and Environment Article, 2-605. A person to whom a proposed or final order of revocation or suspension has been issued may not regain coverage under the general permit for the same source or similar source at the same location until it has been determined in writing by the Department that the revocation or suspension is no longer in effect or pending.

(S) Property Rights Not Created By Permit

This permit does not create any property rights.

(T) Severability

If any provision of this permit is determined to be invalid for any reason, the other provisions remain in effect to the extent reasonable, and the invalid provision shall be considered deleted from the permit.

(U) Federal Enforceability

The terms and conditions of this general permit to construct are federally enforceable only to the extent that they reflect regulations or other requirements that have been approved by the U.S. Environmental Protection Agency for inclusion in the Maryland State Implementation Plan (SIP) for the control of air pollution.

PART V. - Request for Coverage Requirements

(A) Request for Coverage

A person who desires to be covered by this general permit to construct shall provide all required information on the Request for Coverage form and submit the form to the Department together with the required fee of \$250 for each GWAS or SVE unit (see Note). The fee must be paid by check or money order payable to: Maryland Department of the Environment (or MDE)/Clean Air Fund.

Note: The fee for each installation shall not be less than \$250. This fee includes any credit for portable equipment as allowed under COMAR 26.11.02.16C.

(B) Required Signatures

The Request for Coverage form shall be signed by the applicant or an authorized representative of the applicant who shall make the following certification:

"I certify under penalty of law that the information submitted in the Request for Coverage is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

(C) Where to Submit

A person shall mail the original of the Request For Coverage form and the required fee to the following address:

**Maryland Department of the Environment
Air and Radiation Management Administration
P.O. Box 2037
Baltimore, Maryland 21203-2037**

The Request for Coverage form and the permit fee may be delivered in person to the Department at the following address:

Maryland Department of the Environment
Air and Radiation Management Administration
1800 Washington Blvd
Baltimore, Maryland

The Air Quality General Permit to Construct is effective on the date that the Request for Coverage is completed, signed, and the permit fee paid to the Department. See Permit Part IV (B) and (C). The Department will mail a letter to the applicant acknowledging the receipt of the Request for Coverage and fee and that the source is now covered by the Air Quality General Permit to Construct for Groundwater Air Strippers and Soil Vapor Extraction Systems.

Questions regarding the Air Quality General Permit to Construct program may be directed to the Department's Air and Radiation Management Administration by calling (410) 537-3230.



Thomas C. Snyder, Director

MARYLAND DEPARTMENT OF THE ENVIRONMENT

Air and Radiation Management Administration / Air Quality Permits Program

1800 Washington Boulevard Baltimore, MD

(410) 537-3230 1-800-633-6101 www.mde.state.md.us

Mail Form and Payment to:

MDE/ARMA, PO Box 2037, Baltimore, MD 21203-2037

Make Checks Payable to:

MDE Clean Air Fund (\$250 per piece of equipment)

Request for Coverage: Air Quality General permit to Construct

SOIL VAPOR EXTRACTION AND GROUNDWATER AIR STRIPPING EQUIPMENT

1) Applicant (Owner or Operator)

Federal Facility? Yes No

Name: Dewey Hafta Phone: 703-555-4328

Mailing Address: 66 Phillips Ave

City: Scaggsville State: MD Zip Code: 25543 County: Howard

2) Location of Equipment (if different from above)

Name: Empty lot Phone: None

Mailing Address: 655 Valdez Way

City: Prince Frederick State: MD Zip Code: 32148 County: Calvert

3) Person Installing This Equipment (if different from above)

Name: Ben Thayer & Don Thatt Contracting Phone: 707-555-4893

Mailing Address: 324 Reef St

City: Burning Well State: PA Zip Code: 38729

4) Construction Information

Site Status: Active Inactive

Type of Contamination: Gasoline Number of Units Being installed: One

Installation Date: 12 / 13 / 2002 Anticipated Removal Date: 05 / 01 / 2003

5) Equipment Information

Manufacturer & Model: Ronco/Super Slurp

Control Device: activated carbon adsorption thermal oxidation catalytic oxidation

Stack (estimated): 6 (feet) 8 (inches) 68 (F) 5 (feet/second)
Height above Ground Diameter Temperature Velocity

6) Operational Information (Estimated Average)

Anticipated VOC emissions per day, per unit:

12 6 3 1 0 0 0 0
Month 1 Month 3 Month 6 Month 12 Month 24 Month 36 Month 48 Month 60

"I CERTIFY UNDER PENALTY OF LAW THAT THE INFORMATION SUBMITTED IN THIS REQUEST FOR COVERAGE IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

Dewey Hafta

Mr. Dewey Hafta

October 24, 2002

Signature

Print/Type Name

Date

Your request for coverage is considered complete upon submittal to The Department of the signed, completed request for coverage form and the permit fee (\$250 per piece of equipment). See the Fact Sheet and General Permit for further details. If you have questions, call us at (410) 537-3230

ACCOUNTING USE ONLY — 5661/703

Form Number MDE/ARMA/PER.002

Revision date: 07/03/03

TTY Users 1-800-735-2258



MARYLAND DEPARTMENT OF THE ENVIRONMENT

Air and Radiation Management Administration / Air Quality Permits Program

1800 Washington Boulevard Baltimore, MD

(410) 537-3230 1-800-633-6101 www.mde.state.md.us

Mail Form and Payment to:

MDE/ARMA, PO Box 2037, Baltimore, MD 21203-2037

Make Checks Payable to:

MDE Clean Air Fund (\$250 per piece of equipment)

Request for Coverage: Air Quality General permit to Construct

SOIL VAPOR EXTRACTION AND GROUNDWATER AIR STRIPPING EQUIPMENT

1) Applicant (Owner or Operator)

Federal Facility? Yes No

Name: _____ Phone: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____ County: _____

2) Location of Equipment (if different from above)

Name: _____ Phone: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____ County: _____

3) Person Installing This Equipment (if different from above)

Name: _____ Phone: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

4) Construction Information

Site Status: Active Inactive

Type of Contamination: _____ Number of Units Being installed: _____

Installation Date: ____/____/____ Anticipated Removal Date: ____/____/____

5) Equipment Information

Manufacturer & Model: _____

Control Device: activated carbon adsorption thermal oxidation catalytic oxidation

Stack (estimated): _____ (feet) _____ (inches) _____ (F) _____ (feet/second)
Height above Ground Diameter Temperature Velocity

6) Operational Information (Estimated Average)

Anticipated VOC emissions per day, per unit:

____ Month 1 ____ Month 3 ____ Month 6 ____ Month 12 ____ Month 24 ____ Month 36 ____ Month 48 ____ Month 60

"I CERTIFY UNDER PENALTY OF LAW THAT THE INFORMATION SUBMITTED IN THIS REQUEST FOR COVERAGE IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

Signature

Print/Type Name

Date

Your request for coverage is considered complete upon submittal to The Department of the signed, completed request for coverage form and the permit fee (\$250 per piece of equipment). See the Fact Sheet and General Permit for further details. If you have questions, call us at (410) 537-3230

ACCOUNTING USE ONLY -- 5661/703

Form Number MDE/ARMA/PER.002

Revision date: 07/03/03

TTY Users 1-800-735-2258



Attachment C

*MDE Correspondence Regarding Underground Injection
of Nutrients for Remediation Sites*



"Edwal Stone"
<estone@mde.state.md.us>

07/21/2006 04:16 PM

To: <Matthew.Erbe@erm.com>, "Horacio Tablada"
<htablada@mde.state.md.us>
cc: "Bob Summers" <bsummers@mde.state.md.us>, "Herb Meade"
<hmeade@mde.state.md.us>, "Mike Eisner"
<meisner@mde.state.md.us>
Subject: Re: Fw: Injection Permit Question

As a point of clarification, Waste Management Administration has the lead on actions associated with petroleum hydrocarbons in groundwater. At the same time, Water Management Administration is responsible for implementing UIC rules, even where authority exists to allow a discharge under EPA's UIC permit by rule authority without issuance of a Maryland state discharge permit. What Mr. Tablada has communicated in his email may be appropriate if the injection is otherwise authorized and regulated by the Department, such as under a CAP.

However, when actions involve the release of other significant pollutants, such as nutrient contaminants but also pollutants which have assigned MCL's, the Water Management Administration may need to further review such projects. In any case our UIC responsibility requires tracking of these injections. Ideally this can be done through appropriate coordination from Waste Management.

Edwal F. Stone, Program Manager
Wastewater Permits Program
Water Management Administration
410-537-3599

>>> Horacio Tablada 07/17/06 11:44 AM >>>

Matt,

No permit is needed since the injection is part of a remedial treatment system and would be authorized under a Corrective Action Plan (CAP) or Response Action Plan (RAP). We have handled several such sites through the Corrective Action Plan (CAP) approval process.

Horacio Tablada, Director
Waste Management Administration
(410) 537-3304

>>> <Matthew.Erbe@erm.com> 07/13/06 5:55 PM >>>

Good Afternoon Mr. Tablada.

ERM is evaluating remedial technologies for a variety of Sites in Maryland.

Of primary interest are technologies enhancing bioremediation of hydrocarbons. For systems such as bioventing utilizing air injection or air extraction it may become necessary to inject an inoculum into the

subsurface (at or above the water table) which provides nutrients (nitrogen, phosphorous, carbon) and or cultured indigenous microorganisms.

The injection would occur every 2 to four months, as necessary, to enhance the indigenous microbial activity.

A second remedial alternative for treating petroleum hydrocarbons in ground water would be to inject doses of magnesium sulfate to maintain an anaerobic state. Studies have shown that sulfate reduction is a viable treatment technology for hydrocarbons in ground water.

Can you tell me if injection permits would be required for these scenarios?

Is there a general permit that you can direct me to that would describe the parameters which trigger the need for the permit?

Any help you can provide is appreciated.

Thanks
Matt

Matthew Erbe
ERM, Inc
200 Harry S Truman Parkway, Suite 400
Annapolis, MD 21401
Tel: (410) 266-0006
Fax:(410) 266-8912
Mobile: (410) 507-6544

----- Forwarded by Matthew Erbe/ERM on 07/12/06 04:46 PM -----

"Mike Eisner"
<meisner@mde.stat> To: <Matthew.Erbe@erm.com>
e.md.us> cc:
Subject: Re: Injection Permit Question
06/22/06 02:26 PM

Hi Matt,

Proposals that are received are evaluated on a case-by-case basis. A permit from the Underground Injection Control (UIC) Program may or may not be required.

The point of contact for groundwater remediation sites in Maryland is our Waste Management Administration. We coordinate with them on projects, that have potential dual authority for oversight, and that may need an UIC permit.

Regards,

Mike Eisner

Groundwater Permits Program
Water Management Administration
410.537.3771

>>> <Matthew.Erbe@erm.com> 06/19/06 1:22 PM >>>

Good Afternoon Mr. Eisner.

ERM is evaluating remedial technologies for a variety of Sites in Maryland.

Of primary interest are technologies enhancing bioremediation of hydrocarbons. For systems such as bioventing utilizing air injection or air extraction it may become necessary to inject an inoculum into the subsurface (at or above the water table) which provides nutrients (nitrogen, phosphorous, carbon) and or cultured indigenous microorganisms.

The injection would occur every 2 to four months, as necessary, to enhance the indigenous microbial activity.

A second remedial alternative for treating petroleum hydrocarbons in ground water would be to inject doses of magnesium sulfate to maintain an anaerobic state. Studies have shown that sulfate reduction is a viable treatment technology for hydrocarbons in ground water.

Can you tell me if injection permits would be required for these

scenarios?

Is there a general permit that you can direct me to that would describe the parameters which trigger the need for the permit?

Any help you can provide is appreciated.

Thanks
Matt

Matthew Erbe
ERM, Inc
200 Harry S Truman Parkway, Suite 400
Annapolis, MD 21401
Tel: (410) 266-0006
Fax:(410) 266-8912
Mobile: (410) 507-6544

This message contains information which may be confidential, proprietary, privileged, or otherwise protected by law from disclosure or use by a third party. If you have received this message in error, please contact us immediately and take the steps necessary to delete the message completely from your computer system. Thank you. Please visit ERM's web site: <http://www.erm.com>

The information contained in this communication may be confidential, is intended only for the use of the recipient named above, and may be legally privileged.
If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication, or any of its contents, is strictly prohibited.
If you have received this communication in error, please re-send this communication to the sender and delete the original message and any copy of it from your computer system. Thank you.

Attachment D

Project Health and Safety Plan

PROJECT HEALTH AND SAFETY PLAN

This form is intended to provide health and safety guidelines for project field activities. The activities described herein should be conducted using good work practices and judgments consistent with OSHA and training.

The Project Manager or designated Site Safety Officer must ensure that all project personnel review and sign this form, and document these activities in project file.

For all items on this form, attach additional pages as necessary.

ADMINISTRATIVE INFORMATION	<i>Site Name and Location</i> Sykesville Oil Site, 580 Obrecht Road, Sykesville, Maryland		
	<i>Client</i> Fogle's Septic Clean, Inc.		
	<i>Project Name</i> Sykesville Oil Site – Implementation of the May 2005 Response Action Plan		
	<i>Project Manager</i> Matthew Erbe	<i>Project #</i> 0032112	<i>Date</i> 7 June 2005 Revised 26 June 2006
<i>Site Health & Safety Officer (SHSO)</i> Nathaniel Warner (or other designee to be determined based on scheduled task)	<i>Principal in Charge</i> Gary Walters	<i>Scheduled Date/Period of Field Tasks</i> 8 June 2005 Start Date. Schedule varies with implementation of the RAP.	
SITE/PROJECT GENERAL INFORMATION	<i>Field Project Scope:</i> In order to comply with the Administrative Order by Consent (Docket No. CWA-03-2005-0150CW) and maintenance of interim response measures initiated by EPA, the following activities will be implemented in accordance with the 27 May 2005 Response Action Plan:		
	<ul style="list-style-type: none"> • Gauging and Vacuum Removal of Oil and Oily Water from Wells; • Geophysical Survey; • Soil Gas Survey; • Soil Borings; • Well Installation and Monitoring; and • Hydraulic Conductivity Testing. • Air Injection Test • Bioventing System Installation • Bioventing System Operation <p>This health and safety plan covers general site activities. In the event that work will involve confined space entry, excavation, or other non-general activity, an amendment to this health and safety plan will be prepared and submitted to EPA for review. ERM's Subcontractors performing work at the Site will also be required to submit to ERM a health and safety plan which at a minimum meets the requirements set forth in this health and safety plan. Contaminated materials recovered from the Site will be properly containerized and transported by a licensed waste hauler.</p>		
<i>History of Site:</i> National Response Center (NRC) spill report #711788, dated 28 January 2004, identified an oil seep emanating from the ground and impacting the unnamed creek running through the Site. MDE initially responded to this release, sampled the material to identify the seeping material as an oil (#2 diesel fuel), and hired a cleanup contractor to mitigate the release and prevent continued impact to surface waters of the State. The project was then referred to the EPA Region III. Subsequent investigations by EPA have established that a source and origin of a discharge of oil into the unnamed creek feeding Piney Run at the Site is contamination which occurred as a result of Fogle's operations at the Facility. On-Site response actions have continued pending further investigation of the source of the contamination.			

Site Description:

The Site is located in a residential/rural area just north of the intersection of Wimmer Lane and Obrecht Road in the town of Sykesville, Carroll County, Maryland. The Fogle’s Septic Clean, Inc. property is approximately 2.3 acres in size and is improved with an office building, and several garage/maintenance shops. The property is covered with gravel around the buildings to the property boundaries. Approximately 188 acres of recreational and agricultural land to the north, east and southeast of the Fogle’s property is owned by Episcopal Ministries to the Aging, Inc. (EMA) and contains the headwaters of Piney Run.

Hazard Assessment Summary (Physical and Chemical)

Physical: Normal working activities around heavy machinery, compressed air, weather, heat/cold stress, slips and falls

Chemical: No. 2 Fuel Oil

CHEMICALS OF CONCERN	Chemical Name	PEL/TLV (ppm)	Highest Reported Concentration (ppm)			Site Location/Source
			Air	Water	Soil	
	No. 2 Fuel Oil	5 mg/m ³	NA	NA	NA	Former AST area on Fogle’s property and extending northeast to unnamed tributary to Piney Run. Also, within contaminated soils on Fogle’s Farm.

Other Potential Hazards or Concerns

Radioactive Materials
Pathogens
Cold X

Oxygen Deficiency
Poisonous Plants & Animals X
Heat X

Underground Utilities X
Aboveground Utilities X
Other X

AIR MONITORING ACTION LEVELS	Monitoring Concern	Action Level (ppm)	Level of Protection	Monitoring Instrument
	Organic Vapors	1	D	OVA-PID
	Explosion	NA	NA	NA
	Dust	NA	NA	NA
	Oxygen	NA	NA	NA

Criteria

A. Monitoring Procedures	B. Contingency Procedures	C. Special Procedures and Precautions
Air monitoring will not be performed on-site for general activities. Air monitoring will be performed for intrusive investigation work.	Contact ERM Project Manager	Implement engineering controls to reduce concern. Possible upgrade to respirators if conditions persist

PROTECTION LEVEL	<p><i>The protection level determined for this project and/or task(s) is:</i></p> <p style="text-align: center;">A B C D <input checked="" type="checkbox"/></p> <p>Note: ERM personnel will not enter any excavation or operate subcontractor’s equipment.</p>							
PERSONAL PROTECTIVE EQUIPMENT REQ = REQUIRED REC = RECOMMENDED NA = NOT APPLICABLE	<i>Equipment</i>	Req	Rec	NA	<i>Equipment</i>	Req	Rec	NA
	Boots (steel toe)	X			Hard Hat (required in vicinity of overhead machinery or planned excavation and soil processing). Not required during routine monitoring of wells or fluid recovery.	X		
	Boots (disposable outer)		X		Safety Glasses.	X		
	Coveralls or Long-sleeved Shirt & Pants		X		Self-contained Breathing Apparatus (SCBA)			X
	Ear Protection (required if working around blowers/compressors, and heavy excavation and soil processing equipment)		X		Tyveks suit or coveralls (regular)			X
	Fully Encapsulated Chemical Resistant Suit			X	Tyveks/Saranex (chemical Resistant)			X
	Full Face Powered Air Purifying Respirator			X	Full Face Negative Pressure Respirator <i>Only for Level C (see criteria above)</i>			X
	Gloves (inner – nitrile, to be changed each sampling event)	X						
	Gloves (outer - leathert)		X					
WORK ZONE REQUIREMENTS	<p><i>Exclusion Zone (EZ):</i> Vicinity of monitoring wells, air injection points, recovery sumps, underflow dam, vacuum truck, test pits, excavations, trenches, compressor/blower, soil processing, or drilling equipment,. The EZ shall include the area within a 10-foot radius of the immediate work area or within a distance equal to the maximum height of the equipment being operated (e.g., drill rig, vacuum truck, etc.), which ever is greater.</p> <p>Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use.</p> <p>Should a spill/release occur, personnel shall contact the Project Manager, immediately, for an inspection of spill area. The Project Manager and site SHSO shall determine if the spill should be contained or the area be evacuated. The Project Manager shall notify the appropriate personnel concerning the status of the spill. The spilled material will be contained from spreading further by the use of adequate absorbent materials present at the job Site. All spilled materials and absorbants shall be disposed in 55-gallon drums. Notifications and reporting, and decontamination procedures will be performed for any spill discharge. Spilled decontaminated waters will also be pumped into drums, using a vacuum pump, until disposal can be arranged.</p> <p>No eating, drinking or smoking is permitted within the exclusion zone.</p> <p><i>Contaminant Reduction Zone (CRZ):</i> Adjacent to and immediately upwind of EZ. No eating, drinking or smoking is permitted within the contaminant reduction zone.</p> <p><i>Support Zone (SZ):</i> All areas surrounding EZ and CRZ.</p>							

<p style="text-align: center;">SITE ACCESS/CONTROL</p>	<p>Access to site activities will be limited to authorized personnel (i.e., ERM, Subcontractors, Client Representatives, and Regulatory Agents). The site is open to trespassers. Monitoring by the Site Safety Officer will ensure that only authorized personnel are in the vicinity of the work zone. High visibility fencing will be placed around any test pits which are not immediately backfilled upon completion. Vehicle traffic is not anticipated in the designated work areas. ERM site representative will be on site at all times.</p> <p>Maryland’s Miss Utility or a private utility locating company will be notified prior to any excavation work to map and identify utilities at the Site.</p>
<p style="text-align: center;">DECONTAMINATION PROCEDURES</p>	<p><i>Personnel and Equipment:</i> Personnel should thoroughly wash hands with soap and potable water before leaving the site, eating or drinking. General equipment decontamination will consist of a non-phosphate detergent (e.g., Alconox) wash with a potable water rinse.</p>
<p style="text-align: center;">MEDICAL INFORMATION</p>	<p><i>Records</i> – Medical records for all ERM employees are kept by the Human Resources Department in Exton, PA. Medical evaluations for contractors are kept by the contractor. See Section 5.0 of ERM’s Health and Safety Manual for guidance on Medical Monitoring. ERM Employees and Subcontractors performing work activities at the Site will have up to date training as required by OSHA 29 C.F.R. §1910.120.</p> <p><i>Incident/Accident Reporting</i> – ERM will investigate all health and safety incidents and near misses. Copies of the Incident/ Near Miss Investigation Report Forms will be forwarded to the Project Manager, Project Health and Safety Officer and the Regional Health and Safety Coordinator (Charles Baker/ERM Exton, PA).</p>
<p style="text-align: center;">EMERGENCY CONTACTS AND RESPONSE PLAN</p>	<p style="text-align: center;">Medical Emergency</p> <p><i>Name/Address of Nearest HOSPITAL:</i> Carroll Hospital Center 200 Memorial Ave. Westminster, MD 21157</p> <p><i>HOSPITAL Telephone Number:</i> (410) 848-3000</p>
<p><i>Route to HOSPITAL (For Route Map See Attachment 1):</i> Turn RIGHT (West) on Obrecht Rd and go 2.5 miles. Turn RIGHT (North) onto SR-97 [Old Washington Rd] and travel 11.3 miles. Turn LEFT (North-West) onto Hook Rd and travel 0.3 miles. Turn RIGHT (North) onto SR-32 [Washington Rd] and travel 0.8 miles. Turn LEFT (North-West) onto Gist Rd and then immediate RIGHT (North-West) onto Memorial Ave. Travel approximately 500 feet and arrive at 200 Memorial Ave, Westminster, MD 21157. Follow signs to emergency/ambulance entrance.</p>	

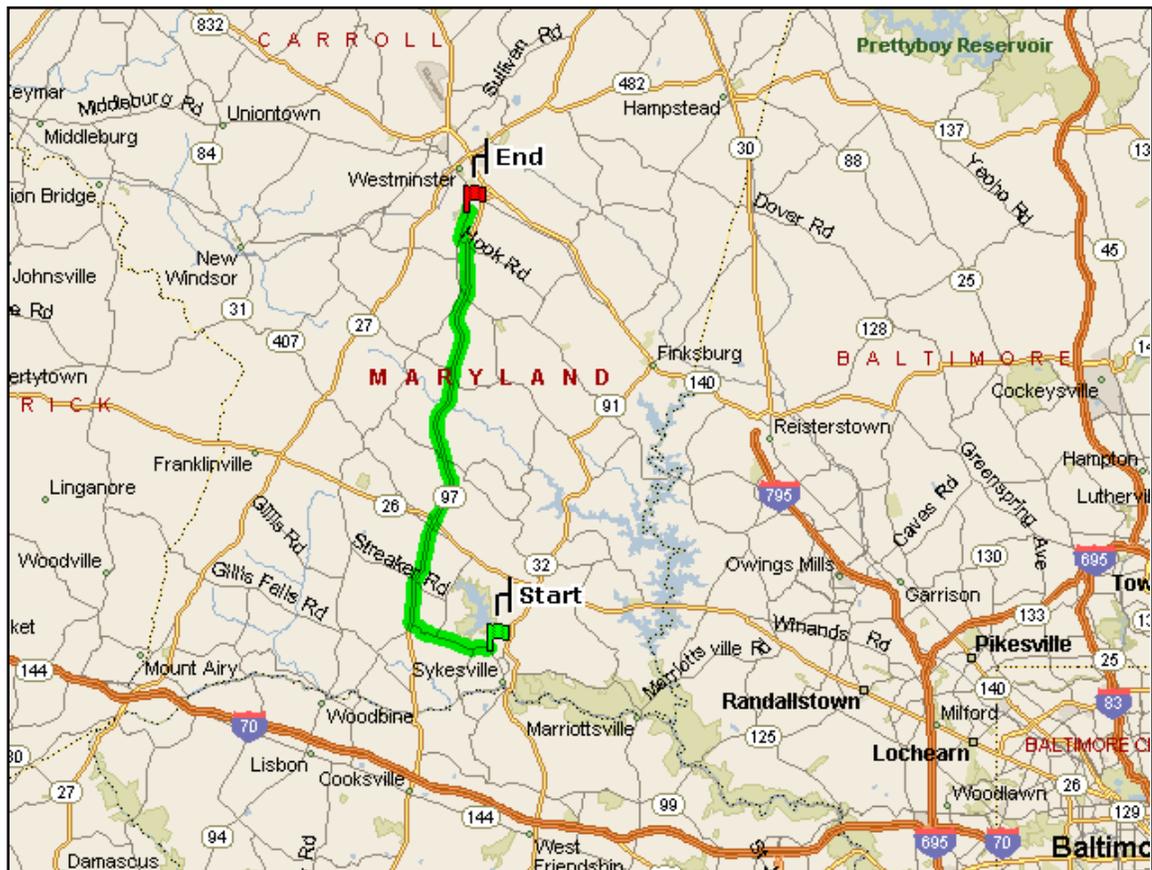
<i>All Human Health Emergencies – Dial 911</i>			
<i>Agency</i>	<i>Contact</i>	<i>City/Location</i>	<i>Telephone Number</i>
Police Dept	Sykesville Police Dept	7547 Main St Sykesville, MD	(410) 795-0757
Fire Dept	Sykesville Freedom Dist Fire	Freedom Ave Sykesville, MD	(410) 795-9311
Ambulance	Carroll Hospital Center	200 Memorial Ave. Westminster, MD	(410) 848-3000
National Spill Response Center	--	2100 2 nd Street, SW Washington, DC	(800) 424-8802
Carroll County Health Department	General Information	290 S. Center Street Westminster, MD	(410) 876-2152
Matthew Erbe	ERM Project Manager	ERM, Inc. Annapolis, MD	(410) 266-0006 (410) 507-6544 cell
Leah Seace	ERM Health and Safety Director	ERM, Inc. Exton, PA	(610) 524-3500
Barry Bruce	Project Coordinator and Client Contact	Fogle's Septic Clean, Inc. Sykesville, MD	(410) 259-6529
<i>Location of Nearest Landline Telephone:</i>	NA	Main Office – Fogle's Septic Clean, Inc.	(410) 795-5670

HEALTH & SAFETY PLAN EVALUATION		To evaluate the effectiveness of this health and safety plan and make future plans responsive to unexpected situations, the Project Manager or the Site Safety Officer must complete the following and file this entire document with the Project File.	
Actual Date/Period of Field Task(s)	Was the Safety Plan followed as presented? Yes No	Was the Safety Plan Adequate? Yes No	
Describe, in detail, any changes to the Safety Plan while on-site			
Reason for Changes			
What changes would you recommend?			
SIGNATURES		Office Health and Safety Coordinator	Date
		Project Manager	Date
		Site and Safety Officer	Date

Attachment 1

Route to Nearest Hospital

Turn RIGHT (West) on Obrecht Rd and go 2.5 miles. Turn RIGHT (North) onto SR-97 [Old Washington Rd] and travel 11.3 miles. Turn LEFT (North-West) onto Hook Rd and travel 0.3 miles. Turn RIGHT (North) onto SR-32 [Washington Rd] and travel 0.8 miles. Turn LEFT (North-West) onto Gist Rd and then immediate RIGHT (North-West) onto Memorial Ave. Travel approximately 500 feet and arrive at 200 Memorial Ave, Westminster, MD 21157. Follow signs to emergency/ambulance entrance. Approximate travel time is 20 minutes.



Attachment E

*Maryland Department of Natural Resources Email
Regarding Planting of Hybrid Poplars*



Matthew Teitt

11/27/2006 03:18 PM

To: Matthew Erbe/ERM@ERM
cc:
Subject: Fw: hybrid poplars

I think this is what we were looking for.

Matt Teitt
Environmental Resources Management
200 Harry S. Truman Parkway
Suite 400
Annapolis, MD 21401
Office (410) 266-0006
Fax (410) 266-8912
matthew.teitt@erm.com

----- Forwarded by Matthew Teitt/ERMINC/ERM on 11/27/2006 03:17 PM -----



**"Hairston-Strang,
Anne"**
<ASTRANG@dnr.state.
md.us>

11/27/2006 03:16 PM

To: "Baker, Donna" <DBAKER@dnr.state.md.us>, <Matthew.Teitt@erm.com>
cc: "Van Hassent, Donald" <DVANHASSENT@dnr.state.md.us>, "Meckley, Patrick" <PMECKLEY@dnr.state.md.us>
Subject: RE: hybrid poplars

Matt,

Hybrid poplars are considered acceptable for phytoremediation plantings. The hybrid poplars should be derived from species usually native to other regions of the US that are not known to be an invasive species in the US. While plants native to Maryland are generally encouraged for environmental plantings, the hybrid poplar is the species with documented results for chemical remediation of several contaminants including atrazine, trichloroethanol, and carbon tetrachloride, and known high use of water desired for phytoremediation. Other native fast-growing species that would be likely to use substantial amounts of water are black willow (*Salix nigra*) and sycamore (*Platanus occidentalis*). Their effect on metabolizing contaminants is not known, and growth rates may not be quite as fast as hybrid poplar.

The most significant caution is to avoid likely invasive species. White poplar (*Populus alba*) is a Eurasian species that has been included on invasive species lists in Tennessee, Wisconsin, Illinois, and New England, accessed in the NRCS PLANTS database. Eastern cottonwood (*Populus deltoides*) is native to the eastern US, but has been noted as an agricultural weed. Cutting back plantings (coppicing) after 10 years, when the trees are likely to start producing abundant airborne seed, may be a suitable strategy for maintaining fast growth/high water uptake and avoiding problems with generation and spread of seed.

Anne Hairston-Strang, Ph.D.
Forest Hydrologist
580 Taylor Ave., E-1
Annapolis, MD 21401
410-260-8509/ 410-260-8595 FAX
astrang@dnr.state.md.us

-----Original Message-----

From: Baker, Donna
Sent: Monday, November 27, 2006 1:07 PM
To: 'Matthew.Teitt@erm.com'
Cc: Hairston-Strang, Anne
Subject: RE: hybrid poplars

Matt,

I spoke with Anne Hairston Strang, the Forest Hydrologist for MD Forest Service, about the hybrid popalr request. She will be preparing a note to send to MDA concerning your request. I will forward this email to Anne also so that she knows that the MDA will also accept an email response from the Forest Service.

Thanks,
Donna

-----Original Message-----

From: Matthew.Teitt@erm.com [mailto:Matthew.Teitt@erm.com]

Sent: Monday, November 20, 2006 1:12 PM

To: Baker, Donna

Cc: Matthew.Erbe@erm.com

Subject: Re: hybrid poplars

Hello Donna,

Thank you for your assistance with this request. I wanted to check with you on the status of this matter and to clarify a few things. I think for our purposes we merely need confirmation from DNR for MDE that it is acceptable to plant this type of tree in Maryland, or if easier, confirmation that DNR does not prohibit the planting of this hybrid poplar in the state. This can either be via a written letter, or simply an email. I hope that this will make this easier. If you have any questions please feel free to contact me or Matt Erbe via email or the phone number below.

Thanks again,

Matt Teitt
Environmental Resources Management
200 Harry S. Truman Parkway
Suite 400
Annapolis, MD 21401
Office (410) 266-0006
Fax (410) 266-8912
matthew.teitt@erm.com

"Baker, Donna" <DBAKER@dnr.state.md.us>

11/14/2006 11:08 AM

To: <matthew.teitt@erm.com>

cc:

Subject: hybrid poplars

Hi Matt,

Can you please send me the name and contact information for the person you are working with at MDE for the Sykesville remediation project? We may need to talk to someone there and also need to know who to direct the letter to.

Thanks,
Donna Davis
MD Forest Service
410-848-9290
dbaker@dnr.state.md.us

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