



OP-TECH

Environmental Services, Inc.

150 Rotterdam Ind. Park
Schenectady, NY 12306
Phone: 518-355-0197
Fax: 518-355-3256
www.op-tech.us
Stock Symbol: OTES.OB

May 12, 2009

New York State Department of Environmental Conservation
Division of Environmental Remediation
317 Washington St.
Watertown, New York 13601

Attn.: Mr. Peter S. Ouderkirk, P.E.

Reference: Subsurface Investigation Work Plan
Matt Petroleum
Utica, New York

Mr. Ouderkirk:

In accordance with your request, OP-TECH has prepared the following Work Plan for conducting subsurface investigation services at the referenced site. This work plan identifies investigation tasks required to comprehensively assess the off site soil and/or groundwater impacts associated with the documented petroleum contamination previously identified on the Matt Petroleum site. The site and surrounding area are depicted on the Site Location Map enclosed as **Exhibit A**.

The intent of OP-TECH's investigation and our primary focus is to determine whether or not the historical petroleum releases documented at the site are negatively impacting the Mohawk River. In order to more accurately assess the significance that the historical petroleum release has had on off site properties or waterways, more specifically the adjacent Mohawk River, additional soil and groundwater information needs to be obtained. The individual tasks proposed are itemized below for consideration.

TASK 1 - SOIL BORING PROGRAM

The focus of the Subsurface Investigation will be on the northern portion of the property as well as points both up and down gradient of the subject property. The soil borings will be advanced in a linear pattern starting along the northern boundary of the subject property and moving approximately 300 feet up stream and 300 feet down stream to identify if petroleum contamination is negatively affecting the Mohawk River. The soil borings will be spaced approximately fifty (50) feet apart, unless petroleum contamination is observed, in which the spacing of the borings will be decreased to further define the extent of the documented impact. The locations of the proposed soil borings are depicted on the Proposed Subsurface Investigation Plan included as **Exhibit B**. The exact location, spacing, and number of soil borings will be based on field observations encountered across the northern property line.

An experienced Geologist will be present to perform continuous soil sampling and environmental monitoring during the subsurface investigation process. The Environmental Scientist/Geologist will conduct the soil screening using the procedures and equipment common to petroleum spill investigation projects, including logging soil types and petroleum volatile organic compound (VOC) concentrations via a properly calibrated photo-ionization detector (PID) meter; photographing and otherwise documenting the investigation proceedings; and collecting soil and groundwater samples for laboratory analysis to

confirm the presence of and concentrations of petroleum constituents in each area. OP-TECH will provide an experienced operator and a Geoprobe® hydraulic push/percussion hammer soil-probing unit. It is assumed for the purposes of this work plan the subsurface investigation will be conducted under Level D PPE.

SOIL SAMPLING

OP-TECH will mobilize the Geoprobe® sampling unit to advance Macro-Core® soil sampling probes at the site. The recovered soil samples will be characterized with respect to predominant soil types (i.e., gravel, sand, silt, clay), color, and relative moisture content (i.e., moist, wet, saturated); examined for characteristic petroleum odors; and screened for the presence of volatile organic compounds (VOC), using a Photo-ionization detector (PID) equipped with a 10.6 eV lamp.

The PID screening will be performed using direct and headspace screening methods, by placing soil samples in sealable plastic bags, and allowing the samples to warm prior to screening with the PID. The PID screening will be performed on the soil headspace of each containerized sample, to provide a general indication as to the VOC concentrations released from the soil into the sample headspace. The results of the soil sample characterization and PID screening will be recorded on the Geoprobe® Investigation Logs for the respective borings.

At locations in which staining, odors, or elevated PID headspace screening results indicate petroleum, solvent, or other impact in the soil, the sampling will continue to depths at which such conditions no longer persist, if possible. At locations at which no obvious staining, petroleum/solvent odors or elevated PID readings are encountered in the soil, the soil sampling will continue to approximately ten (10) feet below the depth at which saturated soil (indicative of the groundwater table) is encountered, or refusal.

One soil sample will be collected from each boring from worst-case petroleum-impact areas (highest PID VOC field screening value), if encountered, or in the saturation zone if there is no detectable petroleum impact detected. Soil samples will be analyzed in accordance with EPA Method 8260 (VOC) and EPA Method 8270 B/N (SVOC). The exact number of soil samples to be analyzed will be determined by conditions encountered during the investigation.

Prior to advancing the first boring, all down-the-hole-sampling tools will be decontaminated using an initial tap water wash, a phosphate-free detergent and tap water wash, and a tap water rinse. While working on the site, the drilling and sampling equipment will also be decontaminated in between borings to prevent the possibility of cross-contamination.

TASK 2 – MONITORING WELL INSTALLATION

For the purpose of obtaining groundwater quality data, OP-TECH will install temporary one-inch diameter PVC monitoring wells in select boreholes where petroleum impacts are observed. The monitoring wells will be field determined by OP-TECH's Project Geologist. The temporary wells will be installed by advancing a 2.125-inch O.D. steel casing equipped with an expendable steel point into field determined boreholes to designated termination depths. A monitoring well constructed of 1-inch diameter Schedule 40 PVC well screen (with 0.010-inch slots) and compatible riser pipe will be installed within the casing at the selected boreholes. Following placement of the well screens, the steel casing will be withdrawn from each borehole. The positioning of the well components and construction of the wells will be field determined by OP-TECH personnel, based on actual subsurface conditions.

Following removal of the steel casing, the annular space surrounding the screen will be filled with No. 2 silica sand, extending approximately one foot above the top of the screen. A seal comprised of hydrated granular bentonite will be placed above the sand pack to grade.

Threaded 1-inch I.D. PVC end caps and plugs will be installed at the respective tops and bottoms of the monitoring wells. The surface components of the wells will be protected with protective flush-mounted curb boxes or stick-up well protectors.

The newly installed monitoring wells will be developed using dedicated bailers as a surge block device for loosening fine-grained material from the well annulus and as a mechanism to remove the water and sediment from the well. The well development process allows greater recharge to the well and allows a more representative analysis of overburden aquifer conditions during groundwater gauging and sampling events. In addition, a more accurate representation of the mobile fraction of contaminants transported by the groundwater is attained when colloidal and fine-grained soil particles are eliminated during the groundwater sampling process. In general, wells are purged until turbidity levels decrease, and well recharge rates increase, indicative of a properly developed well.

GROUNDWATER SAMPLING

An initial groundwater-sampling event will be conducted following the installation of the monitoring wells. Prior to the groundwater sampling activities, static water levels will be measured to the nearest one-hundredth of a foot and the presence of non-aqueous phase liquids (NAPL) will be evaluated at each monitoring well with an oil/water interface probe. The samples will be analyzed for petroleum VOC by EPA Method 8260 and SVOC by EPA Method 8270 B/N to determine if dissolved phase petroleum constituents exist in groundwater at that interval.

TASK 3 – SEDIMENT SAMPLING

OP-TECH will collect sediment samples at the edge of the Mohawk River. The sediment sample cores will be installed at locations that transect the location of the soil borings at the top of the slope. The sediment samples will be collected by hand driven Macro-Core[®] soil sampling probes. The recovered soil samples will be characterized with respect to predominant soil types (i.e., gravel, sand, silt, clay), color, organic content, and relative moisture content (i.e., moist, wet, saturated); examined for characteristic petroleum odors; and screened for the presence of volatile organic compounds (VOC), using a Photo-ionization detector (PID) equipped with a 10.6 eV lamp.

One sediment sample will be collected from each sediment core from worst-case petroleum-impact areas (highest PID VOC field screening value), if encountered. If field screening does not indicate the presence of petroleum contamination, the entire sediment core will be composited into one sample for laboratory analysis. Soil samples will be analyzed in accordance with EPA Method 8260 (VOC) and EPA Method 8270 B/N (SVOC). The exact number of soil samples to be analyzed will be determined by conditions encountered during the investigation. The locations of the proposed sediment samples are depicted on the Proposed Subsurface Investigation Plan included as **Exhibit B**.

TASK 4 – SURFACE WATER SAMPLING

OP-TECH will collect surface water samples in a linear pattern along the subject site as well as points up and down gradient of the subject site. Surface water samples will be collected from water leeching into the bore hole generated during the sediment sampling activities. The samples will be

analyzed for petroleum VOC by EPA Method 8260 and SVOC by EPA Method 8270 B/N to determine if dissolved phase petroleum constituents are migrating off of the site.

TASK 5 – POST INVESTIGATIVE TASKS

BASE MAP PREPARATION

In order to locate all investigative activities with respect to pertinent site features, a base map will be prepared. The base map will depict the location of the soil borings, monitoring wells, and all pertinent site features; including the location of the former USTs. If necessary, the monitoring well positions will be located by measuring ties to existing site features and/or wells for the preparation of this map.

REPORT ASSIMILATION

Following the completion of the Subsurface Investigation field activities and receipt of the laboratory data, a Preliminary Subsurface Investigation Report will be prepared to include a site description; a description of Geoprobe® investigation methodologies and findings; a site map illustrating sampling locations and prominent/pertinent site features; Geoprobe® Investigation Logs describing the subsurface soil conditions and stratigraphy; monitoring well construction details; tabulations of laboratory data; copies of laboratory reports and sample custody documentation; and conclusions and recommendations, based on the findings of the investigation.

FEE SCHEDULE

Fee Schedule-Based on five days on site.

DESCRIPTION OF SERVICES	ESTIMATED COST
Site Preparation - Labor, equipment, and materials to clear site of trees, shrubs and soil piles to gain access for the Geoprobe sampling equipment.	\$3,100.00
Soil Boring Program - Advance approximately 20 soil borings to depths of approximately 20 feet below grade. Collect approximately 20 soil samples and 20 groundwater samples for laboratory analysis. Includes the installation of five (5) one-inch I.D. PVC monitoring wells to a depth of twenty (20) fbg.	\$8,800.00
Sediment and Surface Water Sampling - Collect approximately 20 sediment samples and 20 surface water samples along the Mohawk River for laboratory analysis.	\$3,900.00
Subsurface Investigation Report	\$2,100.00
Total Estimated Subtotal	\$17,900.00
Multiplier	65%
Total Estimated Project Cost	\$11,635.00

Please feel free to contact our office should you have any questions regarding the Subsurface Investigation Work Plan.

Respectfully,
OP-TECH ENVIRONMENTAL SERVICES, INC.



Joe Naselli
Project Manager

EXHIBIT A

SITE LOCATION MAP



SITE LOCATION MAP

Matt Petroleum Site
Leland Avenue
Utica, New York

NYSDEC Site No.: B00192-6

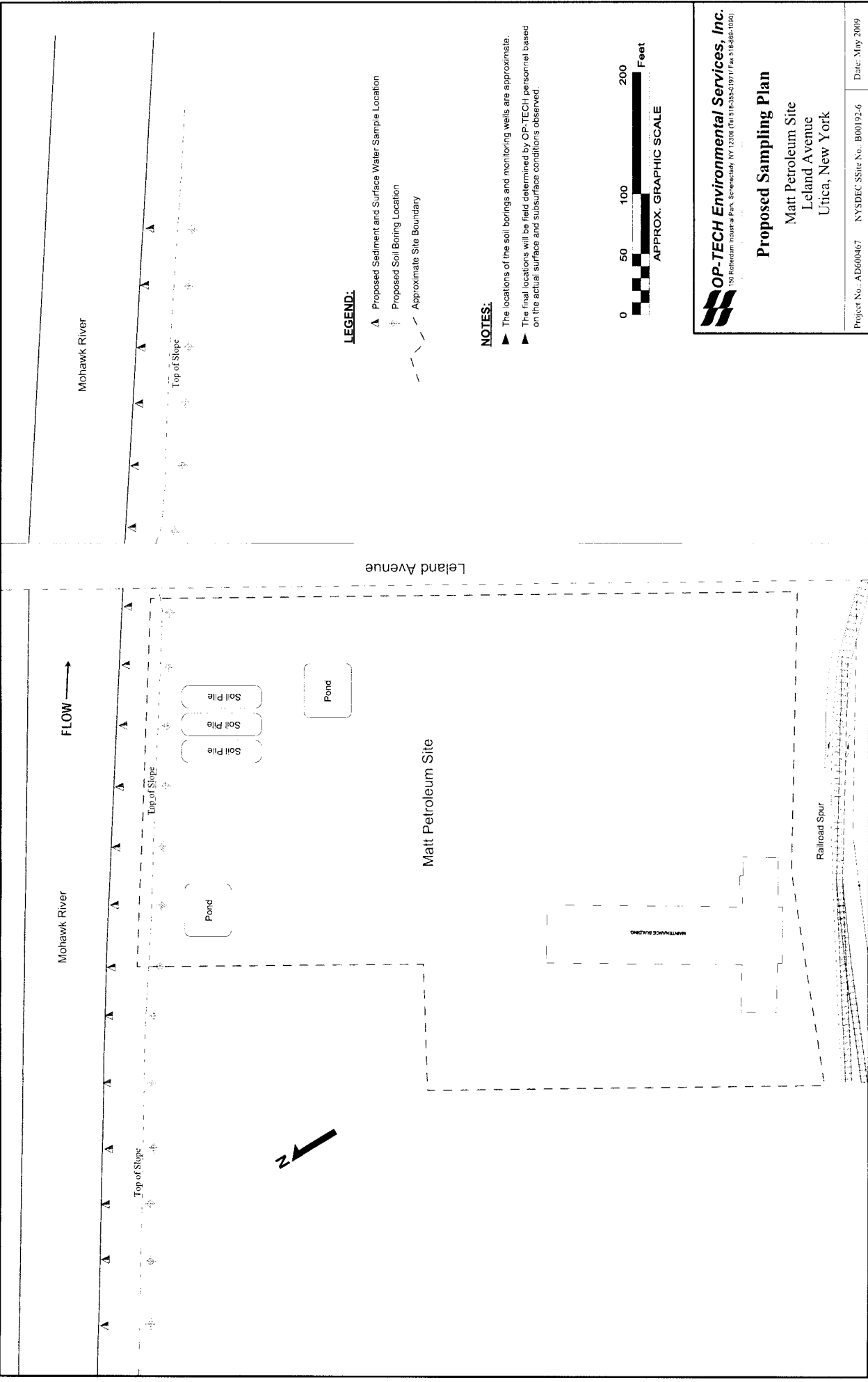
NOT TO SCALE

Date: May 2009

 **OP-TECH Environmental Services, Inc.**
150 Rotterdam Industrial Park Schenectady, NY 12306 (Tel 518-355-0197)

EXHIBIT B

PROPOSED SAMPLING PLAN





OP-TECH Environmental Services, Inc.
150 Rotterdam Industrial Park, Schenectady, NY 12306 (Tel: 518-355-0191 / Fax: 518-355-1092)

Proposed Sampling Plan

Matt Petroleum Site
Leland Avenue
Utica, New York

Project No.: AD600467 NYSDDEC Site No.: B00192-6 Date: May 2009