

FORMER MATT/GRACE PETROLEUM SITE

201 LELAND AVENUE

UTICA, NY 13501

NYSDEC Spill Number 88-09026

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 6

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OP-TECH Project # AD600479

May 28, 2010



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1.0 INTRODUCTION

OP-TECH ENVIRONMENTAL SERVICES, INC. (OP-TECH) has been retained by the New York State Department of Environmental Conservation (NYSDEC) to perform a soil removal project at the Former Matt/Grace Petroleum Site located on Leland Avenue in Utica, New York; hereinafter described as the “subject property” or the “site”. The soil removal project consisted of the excavation, transportation, and off site disposal of approximately 60 percent of the petroleum contaminant mass as well as the excavation, stockpiling and onsite exsitu bioremediation of the remaining 40 percent of the petroleum contaminant mass. A more complete accounting of the activities completed during this mass excavation is included below for consideration.

2.0 SITE CHARACTERISTICS

The subject property consists of a predominantly vacant parcel of land historically used as petroleum bulk storage (PBS) terminal. The only structure that remains on the site is a brick masonry maintenance building currently being used by the City of Utica to store equipment. The property is located along the west side of Leland Avenue, in the City of Utica, Oneida County, New York. The subject property is located in an area of heavy industrial development. Leland Avenue, the City of Utica Fire Training Facility (former PBS facility), and Universal Waste (salvage yard) exist to the east of the site. The City of Utica Bus garage, the East Olive Oil Company and railroad lines exist to the south of the site. A former PBS facility exists to the west of the site. The Mohawk River borders the site to the northeast. The site and surrounding area are depicted on the Site Location Map enclosed as **Exhibit A**.

3.0 BACKGROUND INFORMATION

The historic use of the site as a petroleum bulk storage terminal during the period between the 1950s to the 1990s has resulted in numerous major and minor petroleum releases during the site's

operational period. The facility stored various grades of petroleum products ranging from lighter gasoline and diesel fuel products to heavier No. 6 fuel oil products.

In 2007, an Environmental Restoration Record of Decision (ROD) was developed by the NYS DEC using data collected from previously completed subsurface investigations and pilot studies performed by others. The data collected from the previous subsurface investigation and pilot study in addition to the recommendations of the ROD was used in the development of this soil remediation project

4.0 REMEDIAL ACTIVITIES

Based on the historical information used in the ROD, it was determined that the most effective remedial option is to perform the soil removal work in two phases. The first phase of the project included the removal, transportation, and off-site disposal of a large percentage of the grossly contaminated soil mass. The second phase of the project would include the excavation and onsite exsitu bioremediation of the remaining soil contaminant mass not removed during phase 1 operations. Due to state budget constraints, the phase 2 activities were not completed at this time. OP-TECH removed approximately 50 percent of the remaining soil contaminant mass scheduled to be excavated during phase 2 activities. The soil was stockpiled on site and covered with 6-mil polyethylene sheeting. Upon receiving authorization from the NYSDEC, OP-TECH mobilized to the subject property on January 27, 2010 with the necessary equipment and personnel to commence excavation activities. A 30'x30' grid was developed across the subject site to reference specific areas of the excavation that will be discussed herein. All pertinent site information, the grid, and site details are depicted on the Excavation Detail Map included as **Exhibit B**.

4.1 Soil Field Screening Methodology

The excavated soil and excavation bottom/wall surfaces were continuously field screened during the source removal activities to determine the limits of the contaminated soil mass. Field screening was conducted via use of an Ion Science Phochem+ photoionization detector (PID) equipped with a 10.6 eV lamp capable of measuring approximate concentrations of volatile organic compounds (VOC) commonly found in petroleum products such as gasoline, kerosene/fuel oil, and diesel fuel. The soils were placed in sealable plastic bags and VOCs were measured via headspace inside the bags. Soil screening results exhibiting no or trace (<20 ppm) PID reading were considered “clean” for the purposes of the impacted soil removal project. Soil samples exhibiting no or trace PID VOC concentrations are likely to correspond with laboratory analytical results that would be less than the Recommended Soil Cleanup Objectives (RSCOs) established by the NYSDEC’s 6 NYCRR Part 375. Soils releasing obvious petroleum odors and/or measurable VOC via the PID were considered contaminated and sent off-site for disposal or placed into stockpiles for on site exsitu bioremediation.

4.2 Soil Sampling and Laboratory Analytical Analyses

To confirm the success of the excavation project in removing accessible petroleum impacted material, representative composite soil samples were collected for laboratory analysis in general accordance with appropriate NYSDEC guidance. Confirmation soil samples were collected from the excavation bottom and side walls where field screening indicated no or trace concentrations of VOC or where excavation activities could proceed no further due to the presence of property boundaries, structures or as directed by the DEC. One composite side wall soil sample was collected in 30 linear foot intervals and one composite bottom soil sample was collected for every 900 square feet of excavation area. The locations of the confirmation samples can be identified based on their relative position in the 30'x30' grid established on the subject site. The samples were given names that correspond with the grid cells that they were collected and then sub-classified as either "sidewall" or "bottom". For example, sample "H6 bottom" is the bottom sample collected from grid cell H6.

Soil samples were sent to Upstate Laboratories Inc. in Syracuse, New York and analyzed for the presence of volatile organic compounds (VOC) and semi-volatile volatile organic compounds (SVOC) by EPA Method 8260 STARS and 8270 B/N STARS, respectively. The analytical results were compared to the 6 NYCRR Part 375 Recommended Soil Cleanup Objectives (RSCO) as an indicator of the success of the contaminated soil removal project.

4.3 Dewatering and Onsite Groundwater Treatment

Groundwater encountered within the excavation was pumped directly into a series of three (3) 21,000-gallon fractionalization tanks using a network of hoses and pumps. Once the necessary settling time was achieved the petroleum-impacted groundwater was pumped through a treatment system built on site for the soil remediation project. The groundwater treatment system consisted of four (4) particulate bag filters and two (2) 2,000-pound liquid phase granular activated carbon filter (LGAC) vessels. The petroleum-impacted groundwater was pumped through the treatment system at a flow rate that did not exceed the carbon contact time as recommended by the carbon manufacturer to treat the petroleum constituents that exist at the site. Following laboratory confirmation of the treated groundwater, the effluent was discharged into a catch basin of the City of Utica storm water system located at the southeastern portion of the site.

4.4 Transportation and Disposal

OP-TECH was responsible for removal and disposal of all wastes generated at the site in association with the work. Disposal material included, but was not limited to, subsurface petroleum-impacted soil, and additional site materials used during the project. Petroleum-impacted soil was transported to both the Ontario County Landfill, located in Flint, New York and Seneca Meadows

Landfill, located in Waterloo, NY. using Page Transportation, Inc. owned NYS DEC Part 364 permitted trucks. A total of 46,475.79 tons of petroleum impacted soil was transported to the Landfills for subsequent disposal. An additional 10,000 cubic yards of petroleum impacted soil was excavated, stockpiled, and left onsite in anticipation of Phase 2 exsitu bioremediation activities.

The soil remediation project also included the removal of a 2,000-gallon underground storage tank (UST) that was encountered during the excavation of grid cells B2 and C2. The tank along with the associated piping was removed and cleaned by OP-TECH to be cut for metal recycling.

Finally, miscellaneous construction and demolition (C&D) debris encountered at the site was transported to the Oneida-Herkimer Solid Waste Authority for subsequent disposal using rolloff containers provided by Robinson Rolloff, Inc. Copies of the waste disposal documentation are included as **Exhibit C**.

5.0 SUMMARY OF SOIL EXCAVATION ACTIVITIES

The excavation began on February 8, 2010 and proceeded until March 23, 2010. Three (3) track mounted excavators were utilized to conduct the impacted soil removal project. Generally, excavation activities began in the northwestern portion of the site, and progressed eastward along the Mohawk River that bordered the subject property and then southward towards railroad tracks adjacent to the property. An access road was created through the middle of the site to allow for one way truck traffic entering and exiting the site.

Analysis of soil layers observed during the excavation activities indicates that the overburden material of the site, although highly variable, generally consisted of brown medium to fine grained sand with varying amounts of silt from the ground surface to approximately 9.0 feet below grade (fbg). Within the upper horizon of this sand layer, fragments of brick and coal, which are indicative of industrial fill, were also observed. Beneath the overburden material a dark gray clay layer, which increased in thickness toward the Mohawk River, exists at depths ranging from 9.0 fbg to 15.0 fbg. In select portions of the site, a layer on gray coarse to fine gravel exists beneath the clay layer at depths ranging from approximately 15.0 fbg to 20.0 fbg.

In general the impacted soil was excavated and moved to an area away from the main excavation using two (2) articulating dump trucks to a temporary staging area where it could be loaded directly into tractor trailer trucks lined with a polyethylene barrier. During times of high truck traffic and in an effort to keep trucks moving in and out of the site, some of the trucks were directly loaded from the excavation.

Due to the close proximity of the Mohawk River, backfill was being placed at the same time that the contaminated material was being removed in order to minimize the amount of water infiltration into the excavation. Throughout the majority of the site sand and gravel was imported from local quarries to backfill the excavation. A subsurface clay berm was installed at the north end of the site along the

Mohawk River to help minimize the migration of residual petroleum contamination left at the subject site. Following the completion of the soil removal activities throughout the central portion of the site, OP-TECH began the excavation of obtainable petroleum contaminated soil located between the clay berm and the Mohawk River. Clough Harbour and Associates (CHA) was contracted to create a design plan for the river bank slope stabilization and restoration which was applied to the area once the excavation was completed. Copies of CHA's "Slope Reconstruction Plan" and "Landscape Plan" are included in **Exhibit D**.

For discussion purposes, the excavation activities will be summarized by the corresponding week of soil removal activities. A general description of the excavation activities for each week will be provided; including the lateral and vertical extent of the excavation. Selected project photographs documenting the impacted soil removal project are enclosed as **Exhibit E**.

5.1 Impacted Soil Removal Activities for the partial week of February 1st through February 5th

Prior to starting the soil removal activities, the clean surface water that had collected in a depression located at the northwest corner of the site was pumped out to prepare for excavation in that area. Once the depression was drained, the excavation activities began in northwest corner of the property (grid cells R5 and S5). The contaminated material that was excavated was transported via an articulating dump truck to a temporary staging area located approximately in grid square M5. The material was consolidated and then loaded directly into trailers for transportation to the disposal facility. During the excavation contaminated material was encountered from approximately three 3-10 feet below grade (fbg). The PID readings on the material ranged from 400- 4000 ppm. No petroleum contaminated soil was loaded out for disposal during this week.

5.2 Impacted Soil Removal Activities for the week of February 8th through February 12th

During the week of February 8th through February 12th, contaminated soil was removed from an area along the northern boundary of the site (Mohawk River) with the excavation face progressing towards the southern and eastern edges of the site. The western edge of the excavation was bounded by a concrete retaining wall that separated the adjacent property, another former PBS facility, from the site. Excavation was performed up to and within a foot of the wall without compromising the structural integrity of the wall.

The area of removal consisted of grid cells: (Q5, 6, 7, 8, 9), (R5, 6, 7, 8, 9), (S5, 6, 7, 8, 9). In general the material from 0-10 fbg was averaging readings in the 400-500 ppm range. This material consisted mostly of silty clay with various wood debris and industrial fill (i.e. brick, wood and metal debris). From 11- 15 fbg a vein of black gravel was encountered that registered PID readings in the

1500-2000 ppm range. There was approximately 7,099.63 tons of petroleum impacted material hauled off site during this week.

5.3 Impacted Soil Removal Activities for the week of February 15th through February 19th

During the second full week of excavation activities (February 15th through February 19th), petroleum contaminated soil removal continued progressing along the northern and western boundaries of the site with the excavation face progressing towards the southern and eastern edges of the site. Once again, the western boundary of the excavation was still limited by the concrete retaining wall that was in place. There was an area that was left open from the previous week's excavation activities between the open excavation face and the area that had been backfilled allowing for a significant amount of water to collect that then warranted pumping. During this week water continued to collect in a similar area as the excavation progressed. The water was pumped early in the morning throughout the week allowing the excavation and backfilling to progress without any problems. Clay continued to be used to backfill along the northern boundary of the site as was previously discussed.

The area of removal consisted of grid cells: (O7, O8, O9, O10, O11), (P6, P7, P8, P9, 10, P11), (Q8, Q9, Q10, Q11), (R9, R10, R11), (S9, S10, S11). In general the material encountered from 0 to 5 fbg was predominately comprised of mixed topsoil and industrial fill. PID readings ranged anywhere from 30-50 ppm. At 6-10 fbg the material transitioned into a gravel layer around 9 fbg. The material in this cross section registered PID readings in the 400-500 ppm range. The excavation was terminated once dark gray clay was reached at approximately 12-13 fbg. The clay material had no evidence of contamination both visually and using olfactory methods. The material registered PID readings less than 10 ppm when head space readings were conducted. There was approximately 10,374.25 tons of material hauled off site during this week.

5.4 Impacted Soil Removal Activities for the week of February 22nd through February 26th

During the third full week of excavation activities (February 22nd through February 25th), contaminated soil continued to be removed along the western boundary of the site with the excavation face progressing towards the southern and eastern edges of the site. Once again, the western boundary of the excavation was still limited by the concrete retaining wall that was in place. During this week the eastern and northern edge of the excavation limits were reached at approximately eighty (80) feet from Leland Avenue. The southern excavation face was squared off at weeks end and ended approximately 180 feet along the concrete retaining wall that was part of the western site boundary. Now that the excavation had progressed far enough from the river at the northern end of the site dewatering activities were minimized.

On February 24, 2010, a second operator started excavating material from the southwestern corner of the site progressing along the western property boundary that was adjacent to the former PBS facility property. The excavation progressed approximately 120 feet along the western property boundary and fifty (50) feet to the west towards the City's maintenance building on site. During this week a 2,000-gallon UST was encountered. The petroleum impacted water within the UST was evacuated using an OP-TECH owned NYS DEC Part 364 permitted vacuum truck and treated onsite. Once rendered free of all liquids, OP-TECH cut open and decontaminated the UST in accordance with NYS DEC PBS regulations. The UST was then removed from the excavation and transported to a metal recycling facility.

The areas of removal for both excavations consisted of grid cells: (A1, A2), (B1, B2), (C1, C2), (D1, D2) and (N5, N6, N7, N8, N9, N10, N11), (O5, O6, O7, O8, O9, O10, O11, O12), (P5, P11, P12), (Q11, Q12), (R11, R12), (S11, S12). The material encountered in the southeast corner of the site consisted of mixed topsoil and industrial fill. An abandoned 4.0" I.D. pipe that ran parallel to the western site boundary was encountered at an approximate depth of 2-3 fbg. In the same vicinity there were also veins of gravel that ran perpendicular the site that may have been the remnants of an old drainage system. This material appeared dark gray and contained visual and olfactory evidence of petroleum contamination. Field PID readings of samples collected from the gravel veins were approximately 400 ppm. The remaining material from 4.0 fbg to approximately 10.0 fbg consisted of mostly industrial fill. Field PID readings on the material within the 4.0 fbg to 10.0 fbg soil horizon ranged from 50 – 120 ppm.

Due to melting snow and frost the transportation of petroleum impacted soil was stopped on February 26, 2010 in an effort to dry up the site and re-stabilize the temporary road being utilized to handle truck traffic on site. OP-TECH also moved the loading area to make room for the excavation along the concrete retaining wall in the area of grid cells L5 and M5. There was approximately 7,579.54 tons of material hauled off site during this week.

5.5 Impacted Soil Removal Activities for the week of March 1st through March 5th

During the fourth week of excavation activities (March 1st through March 5th), contaminated soil continued to be removed along the western property boundary. The excavation limits were reached along the entire western property boundary.

The area of removal consisted of grid cells: (F1, F2, F3), (G1, G2, G3, G4), (H2, H3, H4), (I3, I4), (J3, J4, J5), (K4, K5, K6), (L5, L6, L7), (M5, M6, M7, M8). The material encountered along the western site boundary from grid squares F-G continued to consist of mixed topsoil and industrial fill. As previously discussed the abandoned 4.0" I.D. pipe and veins of black gravel (identified in the previous week) was encountered running parallel to the site boundary. The excavation progressed to a total depth of 8.0 fbg where the layer of dark gray clay was encountered. There was approximately 8,271.24 tons of material hauled off site during this week.

5.6 Impacted Soil Removal Activities for the week of March 8th through March 12th

During the fifth week of excavation activities (March 8th through March 12th), the petroleum contaminated soil behind the maintenance building was excavated. The excavation proceeded to the edge of the building in a manner that would not compromise the structural integrity of the building. The area was backfilled immediately after the contaminated material was removed and confirmatory samples were taken. Later in the week the excavation was extended out and around the northwest building corner and over to the northeast building corner. From this point the excavation progress to the north where it merged with the previous week's excavation.

The area of removal consisted of grid cells: B3, (C3, C4), (D3, D4), (E3, E4), (F3, F4), G4, (H4, H5, H6), (I4, I5, I6), (J5, J6), K6. The material encountered consisted mainly of mixed topsoil and industrial fill. As the excavation progressed along the building edge there were several pipelines that protruded out from under the building. The excavation walls showed visual and olfactory signs of petroleum contamination. Field PID head space readings collected in this area ranged from 50-500 ppm. The material encountered from grid squares H-K was heavily impacted with grossly contaminated No. 6 fuel oil. The remnants of a boiler collection pan and associated piping encountered in this area contained pooled petroleum product. The dark gray clay layer that signified the lower excavation limit was encountered 8.0 fbg to 10.0 fbg along the backside of the building and extended down to 11.0 fbg to 12.0 fbg working further north from the building. There was approximately 13,183.84 tons of material hauled off site during this week.

5.7 Impacted Soil Removal Activities for the week of March 15th through March 19th

During the sixth week of the project (March 15th through March 19th), the final site restoration and clean-up activities began. In addition, OP-TECH also began sorting the remaining excavated soil into windrows for onsite exsitu bioremediation. There were no active areas of excavation during this week.

5.8 Impacted Soil Removal Activities for the week of March 22nd through March 26th

During the seventh and final week of excavation a section of contaminated soil was removed that extended approximately forty (40) feet eastward from the excavation face that was left during the fifth week of operations. From here the excavation was squared off parallel to the maintenance building.

The area of removal consisted of grid cells: (H6, H7), (I6, I7), (J6, J7), (K6, K7), L7. The material encountered during the excavation consisted of mixed topsoil and industrial fill. PID field head space readings collected from this area ranged from 30-80 ppm. The dark gray clay layer that signified the lower excavation limit was encountered at 8.0-10.0 fbg.

6.0 LABORATORY ANALYSIS

6.1 Confirmation Endpoint Soil Sample Laboratory Analysis

Based on the sampling plan previously discussed in Section 4.2, samples were collected and sent to Upstate Laboratories for laboratory analysis inherent to EPA Methods 8260 STARS and 8270 STARS. Laboratory analysis has identified select VOCs and SVOCs in the majority of the endpoint soil samples collected throughout the duration of the project. However, with the exception of samples I4 bottom, E2 sidewall, H6 sidewall, I6 sidewall, J6 sidewall, K6 sidewall, T10 sidewall, and T11 sidewall, all endpoint soil samples analyzed contained VOC and SVOC concentrations below 6 NYCRR Part 375 Unrestricted Use Recommended Soil Cleanup Objectives (RSCO). Soil samples I4 bottom, E2 sidewall, H6 sidewall, I6 sidewall, J6 sidewall, K6 sidewall, T10 sidewall, and T11 sidewall all contained elevated concentrations of select VOCs and SVOCs above NYS DEC RSCOs. The laboratory results are summarized in the Soil Laboratory Analytical Results Data Table enclosed as **Exhibit F**. Copies of the laboratory analytical results and sample chain of custody documentation for the endpoint soil samples are enclosed as a portion of **Exhibit G**.

6.2 Groundwater Treatment Effluent Laboratory Analysis

During the course of the remediation project, OP-TECH treated approximately 148,000 gallons of petroleum-impacted groundwater. One initial water sample (baseline) was collected from a sampling port located on the effluent of the treatment system prior to the first discharge event. Based on the SPDES permit issued by the NYSDEC, one effluent sample was required to be collected per month while the system was in operation. Due to the short time frame of the project, one final effluent sample was collected on March 5, 2010. Laboratory analysis of both of the effluent samples revealed that no VOCs or SVOCs were detected above the laboratory method detection limits (MDL). A copy of the NYS DEC SPDES permit and effluent sample results are included in **Exhibit H**.

7.0 SITE RESTORATION

Following the completed soil excavation project, OP-TECH began restoring the site. Site restoration activities included final site grading, the construction of a permanent access road, the construction of a drainage swale, as well as the excavation and reconstruction of the Mohawk River bank. In addition, the stockpiled soil was sorted and piled into windrows where it would be ready for on site bioremediation scheduled during the phase 2 portion of this project. Final grade at the site was left lower than initial grade to allow for placement of the treated soil following the bioremediation portion of the

project. A drainage swale was also constructed to divert standing water away from the stockpiled soil. The overall grade of the site was designed to reduce surface water ponding and promote positive drainage across the site.

Reconstruction of the river bank was performed in accordance with CHA's "Slope Reconstruction Plan" which was designed to stabilize the bank to reduce erosion. Although CHA's "Landscape Plan" was not implemented at this time, OP-TECH covered the slope with erosion control matting, grass seed, and silt fence.

Following the completed restoration activities an American Land title Association (ALTA) survey was performed at the site by Susan Anacker, Land Surveying, Inc. A copy of the ALTA survey and title abstract is included in **Exhibit I**.

8.0 IN-SITU CONTAMINATION

In select areas of the site, petroleum contaminated soil was left insitu due to either its close proximity existing structures, the Mohawk River, or where project budget constraints inhibited the excavation. These areas include but are not limited to the area directly beneath the maintenance building, the central portion of the site (grid columns H to M rows 8 to 11), and finally a narrow area along the Mohawk River that was inaccessible using conventional excavation methods.

It is anticipated that approximately 8,000 – 10,000 cubic yards of accessible petroleum impacted soil exists in the central portion of the site. Approximately 4,000 – 5,000 cubic yards of inaccessible petroleum impacted soil exists below the maintenance building and along the Mohawk River. In addition approximately 10,000 cubic yards of petroleum impacted soil currently exists in the stockpiles constructed during site restoration activities.

9.0 CONCLUSIONS AND RECOMMENDATIONS

- * Source removal activities from February 5, 2010 through March 23, 2010 resulted in the off site disposal of 46,475.79 tons of petroleum impacted soil at either the Ontario County Landfill in Flint, New York or Seneca Meadows Landfill in Waterloo, New York. An additional 10,000 cubic yards of petroleum impacted soil was excavated and stored on site in stockpiles in anticipation of onsite exsitu bioremediation that was scheduled to be performed in a second phase of this project.
- * The excavation activities were successful in removing most of the accessible petroleum impacted soil at the subject site. There were however, areas where laboratory analysis detected total VOC concentrations in side-wall samples above NYCCR Part 375 RSCO at sample

locations along the western, northern and eastern walls of the excavation area. It is OP-TECH's recommendation that further investigation be conducted on the adjacent property that was also a former PBS facility. Regardless of the analytical results from the soils samples taken along the adjacent property, there were obvious petroleum odors and sheens coming from material that was present in the sidewalls of the excavation.

- * Although some impacted material remains at the site, a significant portion of the petroleum impacted soil was removed and disposed at an offsite location. The remainder of the material was left on site where it was stockpiled in windrows. Due to the financial constraints placed on the project there was no way to further treat the material that was left on site as was originally intended. It OP-TECH's recommendation that this material be continuously 'turned' to stimulate the bioremediation process and later spread on site when laboratory sampling confirms that the stockpiled soil meets the requirements set forth by the NYCCR Part 375 RSCO. It is estimated that the soil turning / bioremediation process will take approximately three (3) months to complete. The estimated cost to complete the bioremediation process as well as excavating and stockpiling of the remaining contaminated soil mass in the center of the site is approximately \$350,000.00.

- * In order to minimize erosion across the site and along the Mohawk River, OP-TECH recommends that CHA's "Landscape Plans be implemented. OP-TECH also recommends that grass seed be applied to the entire site upon completion of the proposed bioremediation work. The estimated cost to perform the landscape work is approximately \$25,000.00.

If you have any questions, please feel free to contact our office at (518) 355-0197.

Respectfully Submitted,

OP-TECH ENVIRONMENTAL SERVICES, INC



Joe Naselli

Project Manager

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID						
			H6 Bottom	I6 Bottom	J6 Bottom	K6 Bottom	H7 Bottom	I7 Bottom	J7 Bottom
1,2,4-Trimethylbenzene	3,600	190,000	55	ND	21	12	43	32	18
1,3,5-Trimethylbenzene	8,400	190,000	28	14	27	15	30	29	24
4-Isopropyltoluene	*	*	ND	ND	ND	ND	ND	ND	ND
Benzene	60	44,000	ND	21	7	ND	13	ND	19
Ethylbenzene	1,000	390,000	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	*	*	ND	5	5	3	3	ND	7
Total Xylene	2,600	500,000	25	ND	20	15	ND	ND	22
MTBE	930	500,000	29	ND	ND	ND	ND	62	ND
n-Butylbenzene	12,000	500,000	ND	3	ND	ND	ND	ND	ND
n-Propylbenzene	3,900	500,000	ND	ND	4	ND	6	ND	ND
Naphthalene	12,000	500,000	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	11,000	500,000	ND	ND	ND	ND	3	ND	ND
tert-Butylbenzene	5,900	500,000	ND	ND	ND	ND	ND	ND	ND
Toluene	700	500,000	8	ND	5	4	ND	ND	5
TOTAL VOCS	---	---	145	43	89	49	98	123	95
Acenaphthene	20,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluorene	30,000	500,000	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Anthracene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Pyrene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Benz(a)anthracene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
OP-TECH Environmental Services, Inc. Chrysoene	1,000	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	800	56,000	ND	ND	ND	ND	ND	ND	ND

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID						
			H6 Bottom	I6 Bottom	J6 Bottom	K6 Bottom	H7 Bottom	I7 Bottom	J7 Bottom
1,2,4-Trimethylbenzene	3,600	190,000	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	8,400	190,000	42	ND	ND	ND	ND	ND	ND
4-Isopropyltoluene	*	*	ND	ND	ND	ND	ND	ND	ND
Benzene	60	44,000	45	ND	ND	ND	ND	ND	ND
Ethylbenzene	1,000	390,000	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	*	*	20	ND	ND	10	ND	ND	7
Total Xylene	2,600	500,000	ND	ND	ND	ND	ND	ND	ND
MTBE	930	500,000	ND	2	ND	ND	ND	ND	ND
n-Butylbenzene	12,000	500,000	20	ND	ND	ND	3,000	ND	ND
n-Propylbenzene	3,900	500,000	10	ND	ND	10	ND	ND	ND
Naphthalene	12,000	500,000	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	11,000	500,000	20	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	5,900	500,000	ND	ND	ND	ND	ND	ND	ND
Toluene	700	500,000	ND	ND	ND	ND	ND	ND	ND
TOTAL VOCS	---	---	157	2	ND	20	3,000	ND	7
Acenaphthene	20,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluorene	30,000	500,000	ND	ND	ND	ND	ND	ND	ND

Phenanthrene	100,000	500,000	ND	ND	ND	ND	3,000	ND	ND
Anthracene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100,000	500,000	ND	ND	ND	ND	2,000	ND	ND
Pyrene	100,000	500,000	ND	ND	ND	ND	2,000	ND	ND
Benz(a)anthracene	1,000	5,600	ND	ND	ND	ND	600	ND	ND
Chrysene	1,000	56,000	ND	ND	ND	ND	800	ND	ND
Benzo(b)fluoranthene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	800	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	330	560	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	5,600	ND	ND	ND	ND	ND	ND	ND
TOTAL SVOCS	---	---	0	0	0	0	8,400	0	0

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID						
			D3 Bottom	E3 Bottom	F3 Bottom	G3 Bottom	H3 Bottom	D4 Bottom	G4 Bottom
1,2,4-Trimethylbenzene	3,600	190,000	3	2	ND	ND	ND	10	ND
1,3,5-Trimethylbenzene	8,400	190,000	3	3	ND	ND	ND	ND	ND
4-Isopropyltoluene	*	*	ND	ND	ND	ND	ND	ND	ND
Benzene	60	44,000	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1,000	390,000	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	*	*	2	ND	ND	ND	ND	ND	ND
Total Xylene	2,600	500,000	ND	3	ND	ND	ND	ND	ND
MTBE	930	500,000	ND	ND	ND	ND	ND	8	ND
n-Butylbenzene	12,000	500,000	ND	3	ND	ND	ND	ND	ND
n-Propylbenzene	3,900	500,000	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12,000	500,000	4	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	11,000	500,000	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	5,900	500,000	ND	ND	ND	ND	ND	ND	ND
Toluene	700	500,000	ND	3	ND	ND	ND	ND	ND
TOTAL VOCS	---	---	12	14	ND	ND	ND	18	ND
Acenaphthene	20,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluorene	30,000	500,000	ND	ND	ND	ND	ND	ND	ND

Phenanthrene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Anthracene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Pyrene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Benz(a)anthracene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Chrysene	1,000	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	800	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1,000	1,000	ND	500	300	200	ND	200	ND
Dibenz(a,h)anthracene	330	560	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	5,600	ND	ND	ND	ND	ND	ND	ND
TOTAL SVOCs	---	---	0	500	300	200	0	200	0

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID						
			C3 Bottom	D4 Side	E4 Side	F4 Side	G4 Side	K5 Bottom	L5 Bottom
1,2,4-Trimethylbenzene	3,600	190,000	10	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	8,400	190,000	ND	ND	ND	ND	ND	ND	ND
4-Isopropyltoluene	*	*	ND	ND	ND	ND	ND	ND	ND
Benzene	60	44,000	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1,000	390,000	ND	ND	ND	ND	ND	ND	ND

Isopropylbenzene	*	*	ND	ND	ND	ND	ND	ND	ND
Total Xylene	2,600	500,000	ND	ND	ND	ND	ND	ND	ND
MTBE	930	500,000	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	12,000	500,000	ND	ND	ND	1,000	ND	ND	ND
n-Propylbenzene	3,900	500,000	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12,000	500,000	20	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	11,000	500,000	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	5,900	500,000	ND	ND	ND	ND	ND	ND	ND
Toluene	700	500,000	ND	ND	ND	ND	ND	ND	ND
TOTAL VOCS	---	---	30	ND	ND	1,000	ND	ND	ND
Acenaphthene	20,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluorene	30,000	500,000	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100,000	500,000	ND	200	11,000	ND	10,000	ND	60
Anthracene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Pyrene	100,000	500,000	ND	70	ND	ND	7,000	ND	ND
Benz(a)anthracene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Chrysene	1,000	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	800	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1,000	1,000	200	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	330	560	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	5,600	ND	ND	ND	ND	ND	ND	ND
TOTAL SVOCS	---	---	200	270	11,000	0	17,000	0	60

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID						
			J4 Bottom	I4 Bottom	I3 Bottom	I3 Side	H2 Side	H2 Bottom	F1 Bottom
1,2,4-Trimethylbenzene	3,600	190,000	85	370	ND	ND	23	ND	ND
1,3,5-Trimethylbenzene	8,400	190,000	36	160	ND	ND	21	ND	ND
4-Isopropyltoluene	*	*	ND	23	ND	ND	20	ND	ND
Benzene	60	44,000	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1,000	390,000	ND	9	ND	ND	ND	ND	ND
Isopropylbenzene	*	*	84	10	ND	ND	10	ND	ND
Total Xylene	2,600	500,000	30	120	ND	ND	ND	ND	ND
MTBE	930	500,000	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	12,000	500,000	22	41	ND	ND	37	ND	ND
n-Propylbenzene	3,900	500,000	ND	10	ND	ND	23	ND	ND
Naphthalene	12,000	500,000	43	350	ND	ND	ND	ND	ND
sec-Butylbenzene	11,000	500,000	ND	27	ND	ND	21	ND	ND
tert-Butylbenzene	5,900	500,000	ND	ND	ND	ND	ND	ND	ND
Toluene	700	500,000	ND	ND	ND	ND	ND	ND	ND
TOTAL VOCS	---	---	300	1,120	ND	ND	155	ND	ND
Acenaphthene	20,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluorene	30,000	500,000	ND	ND	ND	ND	ND	ND	ND

Phenanthrene	100,000	500,000	650	100	ND	70	ND	ND	ND
Anthracene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100,000	500,000	ND	ND	ND	200	ND	ND	ND
Pyrene	100,000	500,000	ND	ND	ND	200	ND	ND	ND
Benz(a)anthracene	1,000	5,600	ND	ND	ND	100	ND	ND	ND
Chrysene	1,000	56,000	ND	ND	ND	100	ND	ND	ND
Benzo(b)fluoranthene	1,000	5,600	ND	ND	ND	70	ND	ND	ND
Benzo(k)fluoranthene	800	56,000	ND	ND	ND	100	ND	ND	ND
Benzo(a)pyrene	1,000	1,000	ND	2,200	ND	200	ND	ND	ND
Dibenz(a,h)anthracene	330	560	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	100,000	500,000	ND	ND	ND	100	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	5,600	ND	ND	ND	90	ND	ND	ND
TOTAL SVOCS	---	---	650	2,300	0	1,230	0	0	0

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID						
			F1 Side	K4 Bottom	K4 Side	G1 Bottom	G1 Side	J3 Bottom	J3 Side
1,2,4-Trimethylbenzene	3,600	190,000	ND	ND	ND	ND	ND	ND	5
1,3,5-Trimethylbenzene	8,400	190,000	ND	ND	ND	ND	ND	ND	14
4-Isopropyltoluene	*	*	ND	ND	ND	ND	ND	ND	ND

Benzene	60	44,000	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1,000	390,000	ND	ND	ND	ND	ND	ND	2
Isopropylbenzene	*	*	ND	ND	ND	ND	ND	ND	3
Total Xylene	2,600	500,000	ND	ND	ND	ND	ND	ND	6
MTBE	930	500,000	ND	ND	ND	ND	ND	ND	13
n-Butylbenzene	12,000	500,000	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	3,900	500,000	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12,000	500,000	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	11,000	500,000	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	5,900	500,000	ND	ND	ND	ND	ND	ND	ND
Toluene	700	500,000	ND	ND	ND	ND	ND	ND	3
TOTAL VOCs	---	---	ND	ND	ND	ND	ND	ND	46
Acenaphthene	20,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluorene	30,000	500,000	ND	ND	ND	ND	ND	ND	100
Phenanthrene	100,000	500,000	700	ND	ND	ND	20,000	ND	1,200
Anthracene	100,000	500,000	ND	ND	ND	ND	ND	ND	300
Fluoranthene	100,000	500,000	ND	ND	ND	ND	ND	ND	2,500
Pyrene	100,000	500,000	ND	ND	ND	ND	ND	ND	1,900
Benz(a)anthracene	1,000	5,600	ND	ND	ND	ND	ND	ND	1,200
Chrysene	1,000	56,000	ND	ND	ND	ND	ND	ND	990
Benzo(b)fluoranthene	1,000	5,600	ND	ND	ND	ND	ND	ND	770
Benzo(k)fluoranthene	800	56,000	ND	ND	ND	ND	ND	ND	930
Benzo(a)pyrene	1,000	1,000	ND	ND	ND	ND	ND	ND	840
Dibenz(a,h)anthracene	330	560	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	100,000	500,000	ND	ND	ND	ND	ND	ND	400

Indeno(1,2,3-cd)pyrene	500	5,600	ND	ND	ND	ND	ND	ND	400
TOTAL SVOCS	---	---	700	0	0	0	20,000	0	11,530

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID						
			C2 Bottom	B2 Bottom	D2 Bottom	E2 Bottom	F2 Bottom	G2 Bottom	P6 Bottom
1,2,4-Trimethylbenzene	3,600	190,000	ND	ND	ND	3	2	ND	ND
1,3,5-Trimethylbenzene	8,400	190,000	ND	ND	ND	ND	ND	ND	ND
4-Isopropyltoluene	*	*	ND	ND	ND	ND	ND	ND	ND
Benzene	60	44,000	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1,000	390,000	3	ND	2	3	ND	ND	ND
Isopropylbenzene	*	*	ND	ND	ND	2	2	ND	ND
Total Xylene	2,600	500,000	5	5	9	15	8	5	ND
MTBE	930	500,000	7	ND	11	ND	10	ND	ND
n-Butylbenzene	12,000	500,000	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	3,900	500,000	ND	ND	ND	ND	2	ND	ND
Naphthalene	12,000	500,000	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	11,000	500,000	ND	ND	ND	ND	4	ND	ND
tert-Butylbenzene	5,900	500,000	ND	ND	ND	ND	ND	ND	ND
Toluene	700	500,000	ND	3	6	6	3	3	ND
TOTAL VOCS	---	---	15	8	28	29	31	8	ND
Acenaphthene	20,000	500,000	ND	ND	ND	ND	ND	ND	ND

Fluorene	30,000	500,000	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Anthracene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Pyrene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Benz(a)anthracene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Chrysene	1,000	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	800	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	330	560	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	5,600	ND	ND	ND	ND	ND	ND	ND
TOTAL SVOCS	---	---	0	0	0	0	0	0	0

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID						
			P7 Bottom	R11 Bottom	R11 W.Wall	S11 Bottom	S11 N.Wall	O6 Bottom	N6 Bottom
1,2,4-Trimethylbenzene	3,600	190,000	ND	10	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	8,400	190,000	ND	ND	ND	ND	ND	ND	ND

4-Isopropyltoluene	*	*	ND	ND	ND	ND	ND	ND	ND
Benzene	60	44,000	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1,000	390,000	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	*	*	ND	10	ND	ND	ND	ND	ND
Total Xylene	2,600	500,000	ND	ND	ND	ND	ND	ND	ND
MTBE	930	500,000	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	12,000	500,000	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	3,900	500,000	ND	10	ND	ND	ND	ND	ND
Naphthalene	12,000	500,000	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	11,000	500,000	ND	10	ND	ND	ND	ND	ND
tert-Butylbenzene	5,900	500,000	ND	ND	ND	ND	ND	ND	ND
Toluene	700	500,000	ND	ND	ND	ND	ND	ND	ND
TOTAL VOCS	---	---	ND	40	ND	ND	ND	ND	ND
Acenaphthene	20,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluorene	30,000	500,000	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100,000	500,000	ND	90	ND	ND	ND	ND	ND
Anthracene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Pyrene	100,000	500,000	ND	60	ND	ND	50	ND	ND
Benz(a)anthracene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Chrysene	1,000	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	800	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	330	560	ND	ND	ND	ND	ND	ND	ND

Benzo(g,h,i)perylene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	5,600	ND	ND	ND	ND	ND	ND	ND
TOTAL SVOCS	---	---	0	150	0	0	50	0	0

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID						
			L5 Bottom	M5 Bottom	Q11 Bottom	Q11 W.Wall	B1 Bottom	B1 SideWalls	C1 Bottom
1,2,4-Trimethylbenzene	3,600	190,000	ND	ND	ND	ND	10	ND	ND
1,3,5-Trimethylbenzene	8,400	190,000	ND	ND	ND	ND	ND	ND	ND
4-Isopropyltoluene	*	*	ND	ND	ND	ND	ND	ND	ND
Benzene	60	44,000	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1,000	390,000	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	*	*	ND	ND	ND	ND	ND	ND	ND
Total Xylene	2,600	500,000	ND	ND	ND	ND	ND	ND	ND
MTBE	930	500,000	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	12,000	500,000	ND	ND	ND	ND	ND	1,100	ND
n-Propylbenzene	3,900	500,000	ND	ND	ND	ND	ND	700	ND
Naphthalene	12,000	500,000	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	11,000	500,000	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	5,900	500,000	ND	ND	ND	ND	ND	ND	ND
Toluene	700	500,000	ND	ND	ND	ND	ND	ND	ND
TOTAL VOCS	---	---	ND	ND	ND	ND	10	1,800	ND

Acenaphthene	20,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluorene	30,000	500,000	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100,000	500,000	ND	ND	ND	ND	ND	1,200	ND
Anthracene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100,000	500,000	ND	ND	ND	ND	ND	200	ND
Pyrene	100,000	500,000	ND	ND	ND	ND	ND	300	ND
Benz(a)anthracene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Chrysene	1,000	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	800	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	330	560	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	5,600	ND	ND	ND	ND	ND	ND	ND
TOTAL SVOCS	---	---	0	0	0	0	0	1,700	0

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID						
			C1 SideWalls	D1 Bottom	D1 SideWall	E1 Bottom	E1 Side Walls	S5 Bottom	S5 N.Wall
1,2,4-Trimethylbenzene	3,600	190,000	ND	ND	ND	ND	ND	10	32
1,3,5-Trimethylbenzene	8,400	190,000	ND	ND	ND	ND	ND	9	29

4-Isopropyltoluene	*	*	ND	ND	ND	ND	ND	ND	ND
Benzene	60	44,000	ND	10	ND	ND	ND	ND	ND
Ethylbenzene	1,000	390,000	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	*	*	ND	ND	94	ND	5,900	10	ND
Total Xylene	2,600	500,000	ND	ND	ND	ND	ND	ND	63
MTBE	930	500,000	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	12,000	500,000	1,100	ND	200	ND	11,000	20	10
n-Propylbenzene	3,900	500,000	700	ND	160	ND	10,000	32	ND
Naphthalene	12,000	500,000	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	11,000	500,000	ND	ND	140	ND	6,000	10	ND
tert-Butylbenzene	5,900	500,000	ND	ND	30	ND	1,000	ND	ND
Toluene	700	500,000	ND	ND	ND	ND	ND	ND	ND
TOTAL VOCS	---	---	1,800	10	624	ND	33,900	91	134
Acenaphthene	20,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluorene	30,000	500,000	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100,000	500,000	670	ND	ND	ND	11,000	ND	ND
Anthracene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100,000	500,000	ND	ND	ND	ND	ND	100	ND
Pyrene	100,000	500,000	100	ND	3,000	ND	ND	100	ND
Benz(a)anthracene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Chrysene	1,000	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	1,000	5,600	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	800	56,000	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	330	560	ND	ND	ND	ND	ND	ND	ND

Benzo(g,h,i)perylene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	5,600	ND	ND	ND	ND	ND	ND	ND
TOTAL SVOCs	---	---	770	0	3,000	0	11,000	200	0

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID						
			Q6 S.Wall	S6 N.Wall	R7 S.Wall	S6 Bottom	R7 Bottom	Q6 Bottom	R5 Bottom
1,2,4-Trimethylbenzene	3,600	190,000	27	2,200	34,000	29	ND	ND	ND
1,3,5-Trimethylbenzene	8,400	190,000	37	580	2,600	9	ND	ND	ND
4-Isopropyltoluene	*	*	ND	ND	2,000	ND	ND	ND	ND
Benzene	60	44,000	ND	ND	ND	ND	ND	25	ND
Ethylbenzene	1,000	390,000	ND	730	3,800	11	ND	10	ND
Isopropylbenzene	*	*	ND	100	2,200	2	ND	ND	ND
Total Xylene	2,600	500,000	ND	2,500	4,000	43	ND	ND	ND
MTBE	930	500,000	ND	ND	ND	ND	ND	10	ND
n-Butylbenzene	12,000	500,000	ND	ND	2,500	ND	ND	ND	ND
n-Propylbenzene	3,900	500,000	ND	300	4,700	3	ND	ND	ND
Naphthalene	12,000	500,000	20	790	3,500	7	ND	ND	ND
sec-Butylbenzene	11,000	500,000	ND	ND	1,000	ND	ND	ND	ND
tert-Butylbenzene	5,900	500,000	ND	ND	ND	ND	ND	ND	ND
Toluene	700	500,000	ND	ND	ND	ND	ND	20	ND

TOTAL VOCS	---	---	84	7,200	60,300	104	ND	65	ND
Acenaphthene	20,000	500,000	ND	100	ND	ND	ND	ND	ND
Fluorene	30,000	500,000	ND	200	100	ND	ND	ND	ND
Phenanthrene	100,000	500,000	ND	1,400	1,000	ND	ND	ND	ND
Anthracene	100,000	500,000	ND	470	300	ND	ND	ND	ND
Fluoranthene	100,000	500,000	ND	1,500	1,800	ND	ND	ND	ND
Pyrene	100,000	500,000	ND	1,300	1,300	ND	ND	ND	ND
Benz(a)anthracene	1,000	5,600	ND	660	860	ND	ND	ND	ND
Chrysene	1,000	56,000	ND	700	830	ND	ND	ND	ND
Benzo(b)fluoranthene	1,000	5,600	ND	460	800	ND	ND	ND	ND
Benzo(k)fluoranthene	800	56,000	ND	550	710	ND	ND	ND	ND
Benzo(a)pyrene	1,000	1,000	ND	450	730	ND	ND	ND	ND
Dibenz(a,h)anthracene	330	560	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	100,000	500,000	ND	400	630	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	5,600	ND	400	610	ND	ND	ND	ND
TOTAL SVOCS	---	---	0	8,590	9,670	0	0	0	0

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID							
			R5	Q5	Q5	R9	R9	S9	S9	
			E.Wall	W.Wall	Bottom	W.Wall	Bottom	N.Wall	Bottom	

1,2,4-Trimethylbenzene	3,600	190,000	520	ND	ND	ND	22	ND	ND
1,3,5-Trimethylbenzene	8,400	190,000	300	ND	ND	10	ND	ND	ND
4-Isopropyltoluene	*	*	ND	ND	ND	ND	ND	ND	ND
Benzene	60	44,000	ND	ND	ND	ND	ND	ND	20
Ethylbenzene	1,000	390,000	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	*	*	ND	ND	ND	ND	25	ND	ND
Total Xylene	2,600	500,000	ND	ND	ND	ND	ND	ND	27
MTBE	930	500,000	ND	10	20	ND	ND	ND	ND
n-Butylbenzene	12,000	500,000	ND	ND	ND	ND	ND	10	ND
n-Propylbenzene	3,900	500,000	ND	ND	ND	ND	ND	10	ND
Naphthalene	12,000	500,000	ND	ND	ND	22	ND	ND	ND
sec-Butylbenzene	11,000	500,000	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	5,900	500,000	ND	ND	ND	ND	ND	ND	ND
Toluene	700	500,000	ND	ND	ND	ND	ND	ND	ND
TOTAL VOCS	---	---	820	10	20	32	47	20	47
Acenaphthene	20,000	500,000	ND	ND	ND	ND	ND	ND	ND
Fluorene	30,000	500,000	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100,000	500,000	200	ND	ND	4,800	ND	ND	ND
Anthracene	100,000	500,000	ND	ND	ND	2,000	ND	ND	ND
Fluoranthene	100,000	500,000	200	ND	ND	8,000	ND	ND	ND
Pyrene	100,000	500,000	200	ND	ND	7,600	ND	ND	ND
Benz(a)anthracene	1,000	5,600	80	ND	ND	4,000	ND	ND	ND
Chrysene	1,000	56,000	ND	ND	ND	4,900	ND	ND	ND
Benzo(b)fluoranthene	1,000	5,600	ND	ND	ND	3,000	ND	ND	ND
Benzo(k)fluoranthene	800	56,000	ND	ND	ND	4,000	ND	ND	ND

Benzo(a)pyrene	1,000	1,000	ND	ND	ND	4,000	ND	ND	ND
Dibenz(a,h)anthracene	330	560	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	5,600	ND	ND	ND	ND	ND	ND	ND
TOTAL SVOCS	---	---	680	0	0	42,300	0	0	0

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID						
			Q8 Bottom	Q8 S.Wall	Q9 W.Wall	Q9 Bottom	T5 SideWall	T6 SideWall	T7 SideWall
1,2,4-Trimethylbenzene	3,600	190,000	350	10	35	130	560,000	ND	ND
1,3,5-Trimethylbenzene	8,400	190,000	76	140	370	30	130,000	ND	ND
4-Isopropyltoluene	*	*	49	55	200	ND	ND	ND	ND
Benzene	60	44,000	30	ND	ND	ND	ND	ND	ND
Ethylbenzene	1,000	390,000	200	41	25	40	180,000	ND	ND
Isopropylbenzene	*	*	99	10	24	20	660,000	ND	ND
Total Xylene	2,600	500,000	286	40	50	83	250,000	ND	ND
MTBE	930	500,000	ND	9	7	ND	ND	ND	ND
n-Butylbenzene	12,000	500,000	36	20	65	ND	55,000	ND	ND
n-Propylbenzene	3,900	500,000	130	23	23	30	67,000	ND	ND
Naphthalene	12,000	500,000	100	61	41	ND	97,000	ND	ND
sec-Butylbenzene	11,000	500,000	29	20	49	ND	20,000	ND	ND
tert-Butylbenzene	5,900	500,000	ND	ND	20	ND	ND	ND	ND

Toluene	700	500,000	20	ND	ND	ND	ND	ND	ND
TOTAL VOCS	---	---	1,405	429	909	333	2,019,000	ND	ND
Acenaphthene	20,000	500,000	ND	ND	2,000	ND	ND	ND	ND
Fluorene	30,000	500,000	ND	ND	2,000	ND	ND	ND	ND
Phenanthrene	100,000	500,000	ND	8,700	16,000	ND	ND	100	70
Anthracene	100,000	500,000	ND	3,000	5,500	ND	ND	ND	ND
Fluoranthene	100,000	500,000	ND	16,000	16,000	ND	ND	ND	ND
Pyrene	100,000	500,000	ND	12,000	14,000	ND	ND	ND	ND
Benz(a)anthracene	1,000	5,600	ND	7,700	6,200	ND	ND	ND	ND
Chrysene	1,000	56,000	ND	9,100	6,800	ND	ND	ND	ND
Benzo(b)fluoranthene	1,000	5,600	ND	5,000	4,000	ND	ND	ND	ND
Benzo(k)fluoranthene	800	56,000	ND	6,700	5,700	ND	ND	ND	ND
Benzo(a)pyrene	1,000	1,000	ND	6,400	5,400	ND	ND	ND	ND
Dibenz(a,h)anthracene	330	560	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	100,000	500,000	ND	4,000	3,000	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	5,600	ND	4,000	3,000	ND	ND	ND	ND
TOTAL SVOCS	---	---	0	82,600	89,600	0	0	100	70

LABORATORY ANALYTICAL RESULTS SUMMARY DATA TABLE

EXCAVATION EXTENT ANALYSES for Former Matt / Grace Petroleum Facility

SOIL LABORATORY ANALYTICAL RESULTS DATA SUMMARY TABLE (STARS 8260 and 8270 B/N)

PARAMETER	Part 375 Unrestricted	Part 375 Restricted Commercial	Sample ID							K
			T8 SideWall	T9 SideWall	T10 SideWall	T11 SideWall	H Sidewall	I Sidewall	J Sidewall	

1,2,4-Trimethylbenzene	3,600	190,000	ND	ND	15,000	ND	66	1,000	ND	ND
1,3,5-Trimethylbenzene	8,400	190,000	ND	ND	ND	3,000	1,500	4,900	ND	14,000
4-Isopropyltoluene	*	*	ND	ND	5,200	4,000	ND	ND	ND	ND
Benzene	60	44,000	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1,000	390,000	ND	ND	12,000	2,000	ND	ND	ND	ND
Isopropylbenzene	*	*	ND	ND	4,500	4,000	30	1,000	ND	ND
Total Xylene	2,600	500,000	ND	ND	10,700	ND	95	ND	ND	ND
MTBE	930	500,000	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	12,000	500,000	ND	ND	4,500	3,000	110	ND	ND	ND
n-Propylbenzene	3,900	500,000	ND	ND	7,800	5,200	64	2,000	ND	ND
Naphthalene	12,000	500,000	ND	ND	4,000	ND	ND	ND	ND	ND
sec-Butylbenzene	11,000	500,000	ND	ND	3,000	2,000	60	2,000	ND	ND
tert-Butylbenzene	5,900	500,000	ND	ND	ND	ND	30	ND	ND	ND
Toluene	700	500,000	ND	ND	2,000	ND	20	ND	ND	ND
TOTAL VOCs	---	---	ND	ND	68,700	23,200	1,975	10,900	ND	14,000
Acenaphthene	20,000	500,000	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	30,000	500,000	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100,000	500,000	1,000	60	ND	100	2,000	10,000	9,200	7,400
Anthracene	100,000	500,000	ND	ND	ND	ND	ND	3,000	3,000	2,000
Fluoranthene	100,000	500,000	60	ND	ND	ND	700	4,000	3,000	2,000
Pyrene	100,000	500,000	90	ND	ND	ND	900	5,000	5,000	3,000
Benz(a)anthracene	1,000	5,600	ND	ND	ND	ND	ND	2,000	1,000	1,000
Chrysene	1,000	56,000	ND	ND	ND	ND	ND	2,000	2,000	1,000
Benzo(b)fluoranthene	1,000	5,600	ND	ND	ND	ND	ND	1,000	ND	800
Benzo(k)fluoranthene	800	56,000	ND	ND	ND	ND	ND	2,000	ND	1,000

Benzo(a)pyrene	1,000	1,000	ND	ND	ND	ND	ND	2,000	ND	600
Dibenz(a,h)anthracene	330	560	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	100,000	500,000	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	5,600	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL SVOCS	---	---	1,150	60	0	100	3,600	31,000	23,200	18,800

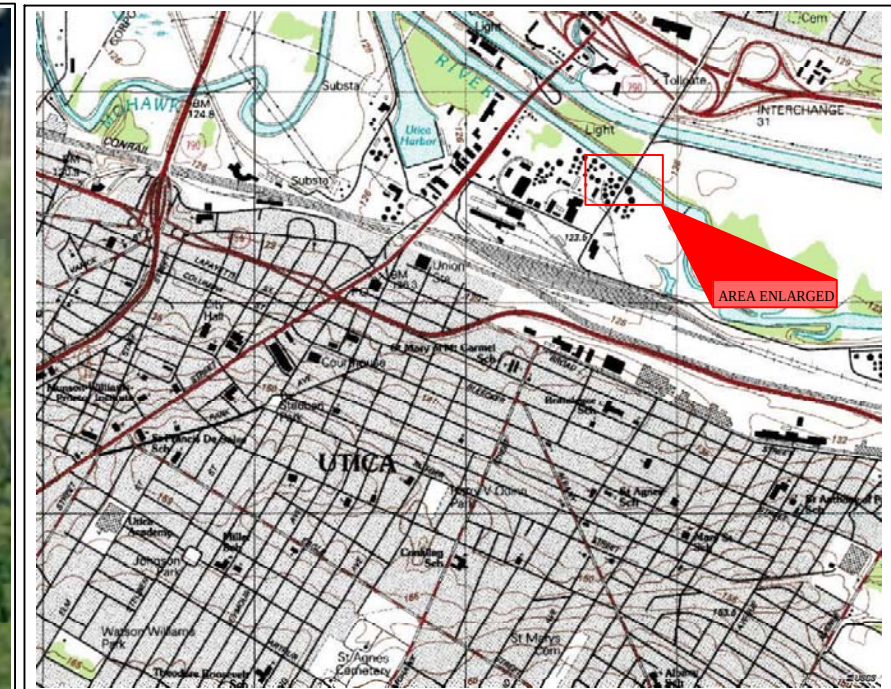
Bold = Laboratory analytical results above the acceptable NYS DEC Part 375 Unrestricted Clean-up Objectives.

* = Parameters are not listed in 6 NYCRR Part 375

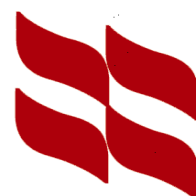
Bold (RED) = Laboratory analytical results above the acceptable NYS DEC Part 375 Restricted (Commercial) Clean-up Objectives.

All results are in ug/kg or ppb (parts per billion)

ND = None Detected



Site Location



OP-TECH Environmental Services, Inc.

150 Rotterdam Industrial Park Schenectady, NY 12306 (Tel 518-355-0197)

SITE LOCATION MAP

Matt Petroleum Site
Leland Avenue
Utica, New York

NYSDEC Site No.: B00192-6

NOT TO SCALE

Date: May 2009