MEMORANDUM

TO: Mr. Joseph Biondolillo; City of Rochester DEQ

FROM: Gregory R. Senecal

DATE: January 15, 2003

RE: Vortex Excavation – Port of Rochester Parking Lot Improvements
LaBella Project No. 202218

This memo is intended to update the City of Rochester DEQ on the status of petroleum-impaired soils encountered during the installation of a storm sewer system during the Port of Rochester Improvement Project. On October 21, 2002 suspect petroleum impaired soil was identified by a LaBella Associates (LaBella) Construction Inspector at a newly installed "Vortex" located adjacent to the Port of Rochester Job Trailer. The location of the Vortex installation is depicted on the Port of Rochester Improvement Plans, attached.

On October 21, 2002, LaBella's Construction Inspector instructed DiFiore Construction to stockpile the suspect petroleum impaired soil on polyethylene sheeting approximately 150 feet west of the Vortex excavation. The LaBella Inspector also notified LaBella's Environmental personnel of the situation so that confirmation of the suspect petroleum impaired soil could be made. LaBella subsequently obtained headspace measurements of total Volatile Organic Compounds (VOCs) from the stockpiled soil with a Photovac Flame Ionization Detector (FID). Headspace measurements varied from 75 to 375 parts per million (ppm). Two grab soil samples were collected at the location of the highest headspace measurement, 375 ppm. At the time the LaBella Environmental personnel visited the Site, the concrete vortex structure (DS 2-4) had been installed and subsurface conditions could not readily be assessed.

The Vortex excavation was approximately 20.5 feet in length by 13.5 feet in width and 10 feet in depth. The suspect impaired soil appeared to be located approximately 8 to 10 feet Below the Ground Surface (BGS) and above a slag layer. There did not appear to be any freestanding water in the visible portions (edges) of the Vortex excavation.

Waste Characterization:

To characterize the suspect petroleum impaired soil stockpiled at the Site, one soil sample was sent to Paradigm Laboratories of Rochester, New York and analyzed for:

- VOCs by USEPA Method 8021 NYSDEC STARS Compounds
- Semi-VOCs (SVOCs) by USEPA Method 8270 NYSDEC STARS Compounds only
- Total lead by USEPA Method 6010
- Toxicity Characteristic Leaching Procedure (TCLP) for lead only by USEPA Method 6010

- Ignitability by UESPA Method 1010

The analytical results for each constituent of the petroleum hydrocarbon related VOC scan indicate that Volatile Organic Compounds were not present in the soil collected and analyzed from the Vortex excavation with the exception of 17.1 ppm of p-Isopropyltoluene, well below the NYSDEC TAGM 4046 Soil Cleanup Objectives to Protect Groundwater Quality established at 10,000 ppb.

The analytical results from the soil sample collected from the Vortex excavation for petroleum hydrocarbon related Semi-Volatile Organic Compounds by USEPA Method 8270 are summarized in the Table below. The individual constituents are compared to the NYSDEC TAGM 4046 Soil Cleanup Objectives to Protect Groundwater Quality.

Waste Characterization
Vortex Excavation
(Semi-VOCs by USEPA Method 8270)

Compound	Soil Sample Vortex Excavation 8.0 – 10.0 feet BGS (ug/Kg)	NYSDEC TAGM 4046 Soil Cleanup Objective to Protect Groundwater Quality (ppb)
Naphthalene	ND<530	13,000
Acenaphthene	ND<530	92,000
Fluorene	ND<530	350,000
Fluoranthene	1,250	1,900,000
Anthracene	ND<530	700,000
Phenanthrene	ND<530	220,000
Benzo (a) anthracene	943	3,000
Chrysene	**1,010**	400
Pyrene	1,950	665,000
Benzo (b) fluoranthene	648	1,100
Benzo (k) fluoranthene	537	1,100
Benzo (g,h,i) perylene	539	800,000
Benzo (a) pyrene	1,060	11,000
Dibenz (a,h) anthracene	ND<530	165,000,000
Indeno (1,2,3-cd) pyrene	ND<530	3,200

Bold denotes constituents above NYSDEC Guidance Values
NOTE = ug/Kg is approximately equivalent to ppb
N/A = Not Applicable
ND = Not Detected

The analytical results from the soil sample collected from the Vortex excavation for total Lead indicate that the soil contained 109 mg/Kg, of total Lead. This level of Lead in soil is well below the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) Published Background Range for the Eastern USA established at 200 to 500 mg/Kg.

Based on the slightly elevated level of total lead, the waste characterization sample was also analyzed for TCLP lead. The analytical result from the TCLP analysis indicated that the soil leached <0.500 mg/L of lead from the sample extract, well below the USEPA RCRA Regulatory Limit for Hazardous Waste of 5.0 mg/L.

Additionally, the soil sample collected from the Vortex excavation was submitted for flashpoint analysis. The analytical results indicated that the soil had a flashpoint of greater than 70 degrees Celsius. This level of flammability indicated that the soil would not be considered a characteristic hazardous waste when removed from the Site.

Based on the analytical results from the waste characterization sample it was determined that the waste soil generated from the Vortex excavation could be managed as solid waste in accordance with 6 NYCRR Part 364, including transportation by NYSDEC Part 364 Permitted vehicles and off site disposal at a NYSDEC Part 360 Permitted Solid Waste Disposal Facility.

Adjacent Storm Sewer Installation:

On December 3, 2002 DiFiore Construction installed a new storm sewer between drainage structures DS 2-4 (Vortex) and DS 2-5, totaling approximately 95 linear feet. During the installation, LaBella Environmental personnel monitored the soil within the excavation for evidence of impairment and collected soil samples to further characterize the petroleum-impaired areas.

Fifteen soil samples were collected from the bottom and sidewalls of the storm sewer excavation. In addition, soil obtained from the immediate vicinity of the soil samples was placed in a plastic zip lock bags for total VOC headspace measurements with a Photovac 2020 Photoionization Detector. Headspace measurements ranged from non-detect to 1.2 ppm on the PID, however, visual observation of the sidewalls of the excavation indicated that intermittent lenses of petroleum impairment extended to DS 2-5 from the Vortex (DS 2-3) excavation. Based on observations made at the time of the fieldwork and the PID headspace measurements, seven soil samples were submitted to Paradigm Laboratories of Rochester, New York for SVOCs analysis by USEPA Method 8270 NYSDEC STARS Compounds only. The laboratory analysis was limited to SVOC target compounds because only limited low-levels of VOCs and lead were detected in the soil sample collected for initial waste characterization.

Of the seven soil samples analyzed, two contained detectable concentrations of SVOC related compounds. The table below summarizes the analytical results from the two soil samples that contained levels of SVOCs above method detection limits.

Additional Characterization
Storm Sewer Excavation
(Semi-VOCs by USEPA Method 8270)

Compound	Soil Sample S1 Bottom 12.0 - 12.5 feet BGS (ug/Kg)	Soil Sample S10 Bottom 10.0 - 10.5 feet BGS (ug/Kg)	NYSDEC TAGM 4046 Soil Cleanup Objective to Protect Groundwater Quality (ppb)

Naphthalene	ND<519	ND<5,490	13,000
Acenaphthene	ND<519	ND<5,490	92,000
Fluorene	ND<519	ND<5,490	350,000
Fluoranthene	3,980	ND<5,490	1,900,000
Anthracene	969	ND<5,490	700,000
Phenanthrene	4,000	ND<5,490	220,000
Benzo (a) anthracene	1,550	**15,900**	3,000
Chrysene	**1,760**	ND<5,490	400
Pyrene	4,280	5,750	665,000
Benzo (b) fluoranthene	**1,810**	ND<5,490	1,100
Benzo (k) fluoranthene	632	ND<5,490	1,100
Benzo (g,h,i) perylene	984	ND<5,490	800,000
Benzo (a) pyrene	1,580	ND<5,490	11,000
Dibenz (a,h) anthracene	ND<519	ND<5,490	165,000,000
Indeno (1,2,3-cd) pyrene	1,020	ND<5,490	3,200

Bold denotes constituents above NYSDEC Guidance Values
NOTE = ug/Kg is approximately equivalent to ppb
N/A = Not Applicable
ND = Not Detected

In addition, two of the samples were analyzed for Total Petroleum Hydrocarbons (TPH) analysis by USEPA Method 310.13. The results are:

- Soil Sample S-1 260,000 ug/Kg Classification: Heavy Weight PHC as Lube Oil
- Soil Sample S-10 40,900,000 ug/Kg Classification: Heavy Weight PHC as Lube Oil

The figure depicting the soil sample locations and the analytical data, including chain of custody logs are attached to this Memo.

As a result of the new storm sewer installation, 53.08 tons of petroleum-impaired soil was shipped off-Site by RVA Trucking. All waste soil was disposed of at Mill Seat Landfill, a NYSDEC Part 360 Landfill owned by Waste Management.

Copies of the scale tickets provided by Mill Seat Landfill are attached.

At this time, approximately 30 cubic yards of petroleum-impaired soil remain staged on and covered with polyethylene sheeting at the Port of Rochester Site pending disposal.

Based on the visual observations at the time of the December 3, 2002 sewer installation, the thickness of the lenses of impacted soil appeared to decrease as the sewer trench distance increased from the vortex excavation.

If you have any questions or comments please call me at (585) 295-6243.

Respectfully Submitted;

LABELLA ASSOCIATES, P.C.