Barton & Loguidice, P.C.

To:	Ralph Marino, Superintendent Horseheads Central School District	**Date:**	November 5, 2009
From:	Scott D. Nostrand, P.E. Senior Vice President	**File:**	528.016.001
Re:	October 28-29 Subsurface Investigation Fueling Station Parcel		

On October 28-29, 2009, B&L completed the field phase of a subsurface investigation on the Fueling Station Parcel that has been reported to be the location of waste fill. The investigation included the installation of thirteen (13) soil borings and the completion of three (3) monitoring wells to collect both groundwater level data and groundwater quality samples. Four (4) test pits were also excavated on the parcel to assess shallow soil contents. At the District's request, shallow borings were also advanced on the high school baseball field, football practice area, football stadium field, varsity and JV soccer fields, and the adjoining soccer practice field.

Soils were visually observed for evidence of waste or fill material, as well as field-screened with a PID meter for the presence of volatile organic compounds. Soil samples and groundwater samples have been submitted to an analytical laboratory and results are expected back the week of November 9th.

Following is a summary of B&L's field observations during this subsurface investigation:

Fueling Station Parcel

Soil Borings

- Boring locations included areas on the unpaved portion of the lot (which supports bermed soils), including north of the bermed soil (near ditch), within the existing bermed soils, and south of bermed soils, as well as areas on the paved portion of the lot used for parking and fueling operations. Boring depths ranged from 14 to 16 feet with continuous soil sample collection over the entire depth.
- No volatile organic compounds were detected in the field using the PID meter.
- No visual evidence of waste or potentially hazardous fill materials was observed at the boring locations. No visual staining was observed and no chemical/petroleum odors were noted.
- At one of the boring locations situated on the berm feature, B&L observed concrete rubble, bricks, and scraps of a blue tarp mixed in with the sand and gravel comprising the upper 6 feet of the berm. Below 6 feet in depth, B&L observed native soils including a dark organic top soil zone (pre-berm original ground surface) underlain by clayey silts with sand and gravel.

Test Pits

- Four test pits were excavated through the berm feature by District personnel utilizing a small track-mounted Kubota backhoe. Test pit depths ranged from 3 to approximately 7 feet.
- No volatile organic compounds were detected in the field using the PID meter.
- No visual evidence of waste or potentially hazardous fill materials were observed at the test pit locations. No visual staining was observed and no chemical/petroleum odors were noted.
- Two of the test pits were situated in the vicinity of the boring where miscellaneous fill material had been identified. The test pits confirmed the debris material did not extend below a depth of approximately 6 feet. Additional materials identified included soda cans, scrap wood planks, and a metal guardrail partially exposed on the surface of the berm. A composite soil sample was collected of the excavated materials from this area and submitted for laboratory analysis.
- Additional scrap wooden planks and concrete rubble were identified in the upper 3 feet of a test pit advanced through the western portion of the berm, near the current mulch pile.

Athletic Fields

- Shallow soil borings were advanced in the baseball outfield, football practice area behind the stadium, on the football stadium field, and on the varsity, JV and practice soccer fields.
- No visual evidence of waste or foreign fill material was observed.
- No PID detections of volatile organic compounds.
- Athletic field soils consisted generally of an upper topsoil/turf zone, underlain by a coarse sand and fine gravel layer within the upper 1-2 feet, followed by undisturbed native soils including clayey silts or additional sands and gravels. At the JV and practice soccer fields, B&L observed a dark organic soil horizon approximately 3 feet below the ground surface that appeared to be the original ground surface prior to construction and grading of the fields.

These field observations will be further detailed in B&L's summary letter report, which will be provided to the District once the laboratory results have been received.

SDN/akg