COLVIN BOULEVARD SEWER REPAIR SUPPLEMENTAL SUBSURFACE INVESTIGATION REPORT

COLVIN BOULEVARD AND 96TH STREET

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1.0 INTRODUCTION

This Report has been prepared to document activities performed by Glenn Springs Holdings, Inc. (GSH), an affiliate of Occidental Chemical Corporation (OCC), to implement the recommendations presented in the March 4, 2011 Sanitary Sewer Investigation and Remediation Report (SSIR Report) written by Conestoga-Rovers & Associates (CRA) on behalf of GSH. The SSIR Report was prepared to document activities performed by GSH to investigate and address chemical impacts to sediments found within a sanitary sewer pipe along Colvin Boulevard east of 96th Street in Niagara Falls, New York (Figure 1.1). The impacted sediments have been addressed and the sanitary sewer repaired. The "Colvin Sewer Repair – Supplemental Subsurface Investigation Work Plan" (Work Plan) was submitted to the New York State Department of Environmental Conservation (NYSDEC), the New York State Department of Health (NYSDOH), and the United States Environmental Protection Agency (USEPA) (Agencies) in June 2011 and outlined the procedures to collect additional data related to potential residual impacts and provide monitoring locations in the sewer repair area. The location of the sewer replacement area is presented on Figure 1.2. The Work Plan was approved by the Agencies on June 20, 2011

This report summarizes the activities that were completed in accordance with the Work Plan, including:

- Installation and monitoring of two bedrock groundwater monitoring wells (installed to evaluate bedrock groundwater quality in the vicinity of the residually impacted sewer bedding material)
- Installation of three soil borings along the Colvin Boulevard Sanitary Sewer system to the east of the repair area (installed to verify the limited extent of residual impacts in the sewer bedding around the section of repaired sewer)
- Installation of one overburden flush-mount observation/monitoring well within the bedding material of the newly repaired Colvin Boulevard sanitary sewer line at the sewer-downgradient end of the repair (installed to monitor presence of residual non-aqueous phase liquid [NAPL] in the sewer bedding material within the sewer-downgradient section of the repaired sewer)

1.1 BACKGROUND

On January 11, 2011, a contractor employed by the City of Niagara Falls (CNF) and the Niagara Falls Water Board (NFWB) found chemical-impacted sediments during work to correct a deflection (i.e., low spot) within a 50-foot length of sanitary sewer piping. The

sanitary sewer repair area is located approximately 20 feet beneath Colvin Boulevard east of 96th Street in Niagara Falls, New York. This sewer repair site was the last of 17 sewer repairs near the Love Canal containment area.

NFWB informed GSH of the impacted sediments. GSH verbally notified the NYSDEC and NYSDOH of the discovery of the impacted sediments. GSH immediately commenced an investigation to determine the potential source of the impacted sediments.

GSH and its environmental consultant, CRA, met with representatives from the NFWB, CNF, USEPA, NYSDEC, and NYSDOH to present the preliminary results of the investigation and discuss a path forward that included GSH completing the Colvin Boulevard sanitary sewer replacement. Following the meeting, GSH submitted a letter to the NYSDEC presenting the preliminary results of the investigation and a work plan to replace the 50-foot sewer section and address any impacts found.

The fieldwork was conducted from February 1, 2011 through February 23, 2011 and included:

- Replaced approximately 50 feet of sanitary sewer beneath Colvin Boulevard between 97th and 96th Streets
- Removed impacted soil materials down to bedrock to the extent possible from within the sewer trench
- Removed liquids from the excavation, which included sanitary sewer water and a limited amount of NAPL
- Collected confirmatory samples from the bottom, sidewalls, and end walls of the sewer trench
- Removed sediments from the Colvin Boulevard sanitary sewer from 97th Street to the 91st Street lift station
- Conducted a video inspection of the sanitary sewer from 97th Street to the 91st Street lift station to verify the sewer was free of sediment
- Interim restoration (due to weather conditions) of the road surface above the repaired section of Colvin Boulevard consisting of cold patch

Final restoration of the road surface above the repaired sanitary sewer section was completed in late May/early June 2011. Landscaping repairs were completed in August and September 2011.

After completion of the fieldwork, the SSIR Report was issued. The SSIR Report summarized the fieldwork completed and presented the collected data. Based on an assessment of the data, the SSIR Report recommended the installation of soil borings and monitoring wells in the vicinity of the Colvin Boulevard sanitary sewer repair to collect additional investigative data. In June 2011, the Work Plan for the installation of the monitoring network was submitted to and approved by the Agencies.

1.2 REPORT ORGANIZATION

This report is organized as follows:

- Section 1.0 – Introduction and Background
- Section 2.0 – Investigation Activities
- Section 3.0 – Conclusions
- Section 4.0 – Recommendations

2.0 INVESTIGATION ACTIVITIES

Investigation activities performed by GSH in accordance with the Work Plan included the following:

- Installation of two bedrock monitoring wells, one to the northwest of the Colvin Boulevard sanitary sewer repair area (groundwater-downgradient) and one to the south of the Colvin Boulevard sanitary sewer repair area (groundwater-upgradient).
- Installation of one overburden monitoring well within the bedding material of the newly repaired Colvin Boulevard sanitary sewer at the western end of the sewer repair.
- Hydraulic conductivity testing of the two bedrock monitoring wells and the overburden monitoring well.
- Installation of three soil borings along the Colvin Boulevard sanitary sewer system to the east of the repair area.
- Collection of two groundwater samples from each of the two new bedrock monitoring wells. The two sets of groundwater samples were collected on July 13 and August 16, 2011.
- Monitoring of the overburden monitoring well installed within the Colvin Boulevard sanitary sewer for NAPL presence on a weekly basis after development.

Earth Dimensions, Inc. (Earth Dimensions) of Elma, New York, was retained to complete the well installation and soil boring activities. Earth Dimensions retained Comet Flasher (Comet) of Buffalo, New York to provide traffic control for the drilling activities that occurred in the center of Colvin Boulevard. The street remained open during drilling activities but was reduced to one lane with traffic being coordinated using two flagmen. Traffic was not rerouted during the work activities, and all traffic control measures were removed at the end of each workday. Colvin Boulevard was open to two-lane traffic overnight.

All work activities were conducted in accordance with a Site-specific Health and Safety Plan (HASP) prepared in accordance with 29 Code of Federal Regulations (CFR) Part 1910 and 29 CFR 1926. The HASP specified protective measures and procedures that were followed during the field activities to minimize exposure of workers and the surrounding community to potential hazardous Site-related materials. All personnel working at the Site were 40-Hour HAZWOPER trained.

Drilling activities were conducted in accordance with the Work Plan between June 27 and July 12, 2011. Although the Work Plan was approved by the Agencies on June 20, 2011, the NYSDEC requested that work not begin on Colvin Boulevard until an updated Fact Sheet was approved by NYSDEC and distributed to local residents. The Fact Sheet was produced by GSH and approved by NYSDEC on June 23, 2011. The NYSDEC-approved Fact Sheet was distributed to local residents prior to the commencement of the installation activities. A copy is included in Appendix A.

Groundwater sampling was conducted in July and August 2011. NAPL monitoring activities were conducted in July through early October 2011.

All work activities were performed between approximately 7:00 a.m. and 4:00 p.m. to minimize impact to residents.

Progress updates were emailed to the USEPA, NYSDEC, NYSDOH, CNF, and NFWB throughout the project, generally on a daily basis during drilling activities.

2.1 BEDROCK WELL INSTALLATION ACTIVITIES

Two bedrock monitoring wells were installed at the Site. MW-01 was installed to the south of the Colvin Boulevard sanitary sewer repair area. MW-02 was installed to the north and west of the Colvin Boulevard sanitary sewer repair area. The locations of the bedrock monitoring wells are shown on Figure 2.1.

2.1.1 DRILLING ACTIVITIES

Prior to the mobilization of the drilling contractor, GSH marked out the proposed drilling locations with white pin flags or white spray paint. Dig Safely New York, Inc. was notified of the drilling activities and marked-out the utilities present along Colvin Boulevard and the City right-of-way directly adjacent to Colvin Boulevard. The proposed locations of the monitoring wells and soil borings were then adjusted to avoid the marked utilities. The locations of the soil borings were also adjusted based on figures provided by a City Engineer that indicated water and sewer piping that had not been previously identified during the utility locates.

Soil borings for the two bedrock wells were advanced to the top of the bedrock layer using 6¼-inch hollow stem augers. Bedrock was encountered at MW-01 at approximately 30.8 feet below ground surface (bgs), while bedrock was encountered at MW-02 at approximately 31.8 feet bgs. The soils at MW-01 and MW-02 were classified

utilizing the Unified Soil Classification System (USCS) and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

The stratigraphy logs for MW-01 and MW-02 are included in Appendix B. No odors or visible impacts were observed in the soils from the two bedrock wells. No PID readings were observed from the soils. Due to the lack of visual and olfactory impacts, no headspace readings were collected from the soils, and no samples were collected for laboratory analysis.

2.1.2 OVERBURDEN WELL CASING INSTALLATION

After competent bedrock was identified at the two bedrock wells (30.8 feet bgs at MW-01 and 31.8 feet bgs at MW-02), a 4¼-inch roller bit was used to drill approximately 2 feet into the bedrock, enabling the placement of a 4-inch diameter steel casing to be sealed into the top of the bedrock unit to seal off the overburden to prevent transport between the overburden and the bedrock units. A grout plug was placed into the casings prior to installation.

The casings were set with grout placed into the annular space between the well pipe and borehole by positive displacement using a tremie tube. The grout mixture consisted of Portland cement, bentonite, and potable water. After 24 hours, a hydrostatic test was performed on both bedrock wells to ensure that the grout had set properly and that the shallow overburden was sealed off from the bedrock. The hydrostatic tests were conducted on July 7 and July 8, 2011 and conducted in accordance with standard CRA protocols. The casings of the bedrock wells were filled to the top with potable water, and the water level within the casing was recorded over a period of time. Neither well experienced a drop in water level after a period of a minimum 30 minutes. Therefore, both well casings were deemed hydrostatically sealed.

2.1.3 BEDROCK CORING

Once the overburden well casings were deemed sealed, bedrock coring commenced. Both MW-01 and MW-02 were cored to 5 feet below the bottom of the steel casing with a 4-inch diameter rock-coring bit.

MW-01 was cored from a depth of 32.9 feet bgs to 37.9 feet bgs. The bedrock recovery from MW-01 was 4.6 feet, with a water loss of 15 percent and a rock quality designation (RQD) of 34.7 percent. The bedrock from 32.9 feet bgs to 37.9 feet bgs was highly fractured, with no solid core larger than 0.15 inch from 33.1 feet bgs to 34.1 feet bgs.

Horizontal fractures were observed in the bedrock core at 34.2 feet bgs, 34.5 feet bgs, 34.6 feet bgs, 35.1 feet bgs, 35.3 feet bgs, 36.4 feet bgs, 36.5 feet bgs, and 37.1 feet bgs. The details of the bedrock coring at MW-01 are included in the stratigraphy log for MW-01, which is included in Appendix B.

MW-02 was cored from a depth of 33.8 feet bgs to 38.8 feet bgs. The bedrock recovery from MW-02 was 4.6 feet, with a water loss of approximately 50 percent and an RQD of 21.7 percent. Horizontal fractures were observed in the bedrock core at 34.2 feet bgs, 34.5 feet bgs, 34.7 feet bgs, 34.9 feet bgs, 35.4 feet bgs, 35.6 feet bgs, 36.1 feet bgs, 36.2 feet bgs, 36.6 feet bgs, 37.3 feet bgs, 37.4 feet bgs, 37.5 feet bgs, 37.6 feet bgs, 37.7 feet bgs, and 37.8 feet bgs. A vertical fracture was observed from 33.9 feet bgs to 35.0 feet bgs. The details of the bedrock coring at MW-02 are included in the stratigraphy log for MW-02, which is included in Appendix B.

At both bedrock wells, the coring was terminated at 5 feet below the bottom of the steel casing, as the 5-foot interval produced sufficient water recharge for sampling. Both MW-01 and MW-02 were then developed by purging approximately 200 gallons (approximately 10 well volumes) from each well. The wells were completed by installing a flush-mount, water-tight curb box over the wells. The installation of the bedrock wells was conducted between June 27 and July 12, 2011.

2.2 OVERBURDEN MONITORING WELL INSTALLATION ACTIVITIES

One overburden monitoring well (MW-03) was installed within the bedding material of the newly repaired Colvin Boulevard sanitary sewer line in the sewer-downgradient area of the repair (the sewer flows from east to west). The purpose of this well was to monitor for the presence of residual NAPL that was observed during construction/repair activities in the bedding material. MW-03 was placed at a location approximately 39 feet east of the sanitary manhole located at the intersection of Colvin Boulevard and 96th Street (96th Street manhole), approximately 27 feet east of the west end of the sewer repair excavation area, and approximately 3 feet south of the newly repaired sanitary sewer. This placed the boring location approximately 12 feet east of a natural gas line that runs across Colvin Boulevard in a north/south direction. The original proposed location for MW-03 was approximately 26 feet east of the 96th Street manhole; however, the location was moved due to the presence of overhead power lines and the natural gas line. The location of MW-03 is presented on Figure 2.1.

MW-03 was installed on July 1, 2011. The monitoring well was installed in a soil boring that was advanced into the sewer bedding material to the top of the bedrock, approximately 30.5 feet beneath Colvin Boulevard. The soil boring was installed using

4¼-inch hollow stem augers. Due to the area having been recently excavated and backfilled with new granular material, no continuous soil sampling was conducted. However, soil was screened using a PID as it was brought to the surface by the hollow-stem auger in the form of soil cuttings. From 0 to approximately 27 feet bgs, no odors, PID readings above background, or visible impacts were observed in the soil cuttings. Water was encountered at the borehole for MW-03 at 11.2 feet bgs. PID readings above background were observed in the soil cuttings beginning at a depth of approximately 27 feet bgs. The highest PID reading detected in the soil cuttings was 8.2 ppm, at approximately 27 to 28 feet bgs. A sample of the soil cuttings from 27 to 28 feet bgs was placed in a jar for headspace screening. After 5 minutes, the headspace had a maximum PID reading of 145 ppm.

Based on the results of the soil and headspace screening, CRA collected a sample of the soil cuttings from approximately 27 to 28 feet bgs at MW-03 laboratory analysis. Sample S-009954-070111-SM-010 (Sample 010) was collected on July 1, 2011 and sent to TestAmerica Laboratories in Pittsburgh, Pennsylvania, to be analyzed for volatile organic compounds (VOCs) plus tentatively identified compounds (TICs), semi-volatile organic compounds (SVOCs), and pesticides. TestAmerica is a certified Environmental Laboratory Approval Program (ELAP) testing laboratory.

MW-03 was installed in the soil boring, utilizing a 2-inch diameter stainless steel pipe with a 10-foot long continuous stainless steel #10 slot screen. MW-03 was screened from 20 feet bgs to 30 feet bgs, with a sand pack installed to 2 feet above the screened interval. The well screen was installed so that it straddled (overlapped) the bedding material around the newly repaired sanitary sewer pipe and the clay beneath the bedding material above the top of the bedrock. The intent of this overlap is to collect NAPL in the well that may accumulate at the bottom of the bedding material, above the confining layer of clay. A 6.5-foot bentonite seal was installed over the sand pack, and a grout seal was installed to 1 foot below ground surface. A flush-mount well box was installed at MW-03, in the center of Colvin Boulevard.

2.3 HYDRAULIC CONDUCTIVITY TESTING

After installation of MW-01, MW-02, and MW-03, single well response tests (slug tests) were conducted. Two rising head and two falling head tests were conducted at each location. The data collected at each location was analyzed using Aqtesolv™ software to calculate the hydraulic conductivity for each individual test. The four results for each well were averaged to give an average hydraulic conductivity for that well. The slug tests were conducted following the standard CRA protocols, outlined in the Work Plan. The hydraulic conductivity results are presented in Table 2.1. The geometric mean

hydraulic conductivities were 4.9 x 10-5 centimeters per second (cm/sec), 1.1 x 10-4 cm/sec, and 7.3 x 10-4 cm/sec in MW-01, MW-02, and MW-03, respectively.

2.4 INSTALLATION OF SOIL BORINGS

Three soil borings (SB-01, SB-02, and SB-03) were installed along the Colvin Boulevard sanitary sewer to the east of the former repair area. These soil borings were installed to determine if additional impacts were present east of the former repair area. The locations of the soil borings are presented on Figure 2.1. SB-01 was installed approximately 135 feet east of the 96th Street manhole (approximately 122 feet east of the west end of the sewer repair area). SB-02 was installed approximately 186 feet east of the 96th Street manhole (approximately 173 feet east of the west end of the sewer repair area). SB-03 was installed approximately 240 feet east of the 96th Street manhole (approximately 227 feet east of the west end of the sewer repair area). The three borings were placed approximately 3 feet north of the sanitary sewer pipe.

The soil borings were advanced through the sewer bedding material to the top of the bedrock using 4¼-inch hollow stem augers with continuous split-spoon sampling. The sampled soil was classified utilizing the USCS and screened with a PID. The soil materials in SB-01, SB-02, and SB-03 were observed to be soft clay extending from a depth of approximately 1.5 to 2 feet bgs down to a depth of approximately 20 to 24 feet bgs, where the soil transitioned to stiff sandy silt, with a mix of sand and gravel. Bedrock was encountered to 28.5 feet bgs at SB-01, 28.2 feet bgs at SB-02, and 26.7 feet bgs at SB-03. Classifications for the soils encountered in the three soil borings are provided in the stratigraphic logs that are presented in Appendix B.

2.4.1 FIELD SCREENING

At SB-01, SB-02, and SB-03, no visible impacts were observed and PID readings were non-detect from 0 to 20 feet bgs. Varying degrees of chemical odor, as well PID readings above background were detected in the soils starting at approximately 20 feet bgs at the three boring locations. A summary of the PID readings for SB-01, SB-02, and SB-03 are presented in Table 2.2 and in the stratigraphic logs in Appendix B.

SB-01

At SB-01, PID readings above background were detected starting at 20 feet bgs and were detected in each split spoon sample until bedrock was encountered at 28.5 feet bgs. For the split spoon from 24 to 26 feet bgs, NAPL was visible in the spoon, down to 25 feet

bgs. NAPL was not visible below 25 feet bgs; however, chemical odors and PID readings were detected down to bedrock. PID readings of 204 ppm (at 25.5 feet bgs) and 45.8 ppm (at 27 feet bgs) were observed.

CRA collected samples from the following intervals for headspace screening at SB-01: 20 to 21 feet bgs, 24.5 to 25.5 feet bgs, and 27.5 to 28.5 feet bgs. After placing the soil in jars, covering the jars with aluminum foil, and waiting 5 to 10 minutes, the headspace was then screened using a PID. For the soil from 20 to 21 feet bgs, the PID reading from the spilt spoon was 26.2 ppm, while the headspace reading was 78.3 ppm. For the soil from 24.5 to 25.5 feet bgs, the PID reading from the spilt spoon was 204 ppm, while the headspace reading was 410 ppm. For the soil from 27.5 to 28.5 feet bgs, the PID reading from the spilt spoon was 45.8 ppm, while the headspace reading was 234 ppm.

SB-02

At SB-02, PID readings above background were detected starting at 20 feet bgs and were detected in each split spoon sample down to 24 to 26 feet bgs. PID readings were non-detect in the split spoon sample from 26 to 28.2 feet bgs (top of bedrock). Chemical odors and PID readings were not detected below 26 feet bgs. No NAPL was visible in the split spoons at SB-02. The highest split-spoon PID reading of 26.5 ppm was measured at 22.5 feet bgs. A PID reading of 23.9 ppm was also measured at 21.0 feet bgs.

CRA collected samples for headspace screening at SB-02 from 21 to 22 feet bgs and 25.5 to 26.5 feet bgs. After placing the soil in jars, covering the jars with aluminum foil, and waiting 5 to 10 minutes, the headspace was then screened using a PID. For the soil from 21 to 22 feet bgs, the PID reading from the spilt spoon was 23.9 ppm, while the headspace reading was 194 ppm. For the soil from 25.5 to 26.5 feet bgs, the PID reading from the spilt spoon was 0.9 ppm, while the headspace reading was 16.5 ppm.

SB-03

Based on the observations of potential impacts at SB-01 and SB-02, a third soil boring was installed along the bedding material of the Colvin Boulevard sanitary sewer, east of SB-02. SB-03 was placed approximately 240 feet east of the 96th Street manhole and approximately 66 feet west of the 97th Street manhole.

SB-03 was installed until bedrock was encountered at 26.7 feet bgs. No NAPL or visible impacts were detected in the soils at SB-03. A slight odor was observed in the soils from 20 to 21 feet bgs; however, the highest PID reading from the split spoon was 0.2 ppm.

No PID readings above background were detected in the soil below 21 feet bgs. A headspace reading of 0.4 ppm was measured from the soil from 20 to 21 feet bgs.

2.4.2 SOIL SAMPLING

In addition to Sample 010 (from the soil boring for MW-03 as described in Section 2.2), CRA collected the following samples based on the visual and olfactory evidence of chemical impacts (including NAPL) to the soils at SB-01, SB-02, and SB-03:

- Sample 011: S-009954-070511-SM-011 – Soil collected at SB-01 from 27.5 to 28.5 feet bgs
- Sample 012: S-009954-070611-SM-012 – Soil collected at SB-02 from 21 to 22 feet bgs
- Sample 013: S-009954-070611-SM-013 – Soil collected at SB-02 from 25.5 to 26.5 feet bgs
- Sample 014: S-009954-071111-SM-014 – Soil collected at SB-03 from 25 to 26 feet bgs

A sample summary is presented in Table 2.3.

Samples 001 through 009 were collected as headspace samples, with the potential to be submitted to the laboratory for analysis. However, as discussed in Section 2.4.1, the headspace readings indicated that it was not necessary to submit the samples (they did not represent the highest PID detections at the soil boring location) for laboratory analysis.

All samples were submitted to TestAmerica Laboratories, Inc. of Pittsburg, Pennsylvania, for analysis of VOCs plus TICs, SVOCs, and pesticides. Analytical reports and data validations for the soil samples are presented in Appendix C.

The soil analytical data results are presented in Table 2.4. Detected compounds have been compared to NYSDEC Part 375 and CP-51 Soil Cleanup Objectives for unrestricted use and restricted use for protection of public health under both residential and commercial scenarios. Results exceeding the criteria have been boxed.

2.4.3 SOIL BORING ABANDONMENT

Once all soil borings were complete, the open boreholes were abandoned by filling the borings with a cement bentonite grout. All drilling waste, soil cuttings, and used

Personal Protective Equipment (PPE) were drummed and transferred to the Love Canal Drum Barn to be appropriately disposed.

2.5 COLLECTION OF GROUNDWATER SAMPLES

Two sets of groundwater samples were collected from each of the two new bedrock monitoring wells (MW-01 and MW-02); one set on July 13 and the other on August 16, 2011. Groundwater samples were collected following *GSH Field Procedure FP-04b, APL Sampling-3 Well Volume Method*, which was included in the Work Plan as Appendix D, and is consistent with the sampling procedure used for the Love Canal Long-term monitoring program.

Prior to sampling, both MW-01 and MW-02 were purged using a peristaltic pump. Three well volumes were purged from each well before samples were collected. Field parameters (pH, specific conductivity, temperature) were monitored during purging.

The groundwater samples were submitted to TestAmerica-Pittsburgh and analyzed for VOCs plus TICs, SVOCs, and pesticides. All collected purge water was transferred to the Love Canal Treatment Facility (LCTF) for treatment.

A summary of the groundwater samples is presented in Table 2.5, and the groundwater analytical data are presented in Table 2.6.

Analytical reports and data validations for the 2011 groundwater samples are presented in Appendix C.

2.6 NAPL PRESENCE MONITORING

As part of the investigation activities, the sanitary sewer bedding monitoring well (MW-03) was monitored for NAPL presence on a weekly basis following well development. The monitoring consisted of using an oil/water interface probe to measure any accumulated fluids in the well. The results of the NAPL presence monitoring are presented in Table 2.7.

2.7 SITE SURVEY

The three new monitoring wells and the installed soil borings were surveyed for location relative to North American Datum (NAD) 27. Additionally, the top of each new well

casing was surveyed to the nearest 0.01 foot relative to the National Geodetic Vertical Datum (NGVD) 29 and the survey point was marked on the well casing. The Site survey was conducted on August 5, 2011. The results of the survey are presented in Table 2.8 and on the stratigraphic logs in Appendix B.

2.8 EQUIPMENT DECONTAMINATION

All equipment that came in contact with potentially impacted soil, sediment, or water was decontaminated at the Love Canal Site within the containment area in the Drum Barn. Decontamination involved removal of any solid materials (i.e., hollow-stem augers) and then washing the equipment with potable water using a high-pressure steam machine. Wash water as collected in the barn's concrete floor drains, which drain by gravity to the drum barn sump. From there, wash water was handled as described in Section 2.9 below.

2.9 WASTE HANDLING AND DISPOSAL

Wastes generated during remedial activities included liquids, sediment, and soils. These materials were managed as described below.

Liquid materials generated from drilling were placed in 55-gallon drums and transported from the work area via forklift to the Love Canal Drum Barn. Liquids were then decanted off and discharged to the drum barn sump. From there, the liquids were transferred to the underground holding tank at P-3A, pumped to and treated by the Love Canal leachate treatment system, and discharged as permitted to the NFWB sanitary sewer system. All liquid wastes generated during the subsurface investigation activities were treated through the LCTF.

Decontamination water was also pumped from the Drum Barn sump to the underground holding tank at P-3A and then pumped to and treated by the LCTF and discharged as permitted to the NFWB sanitary sewer system.

Solid waste in the form of soil cuttings generated during drilling activities were placed in 55-gallon drums and transported to the Love Canal Drum Barn. A total of 14 drums with soil cuttings were generated and are awaiting disposal as nonhazardous waste at a secure off-Site landfill, in accordance with applicable Federal and State regulations. The drums are considered nonhazardous based on the profile of the solid waste generated from the Colvin Boulevard Sewer Repair activities. The solid waste generated from those repair activities was characterized for disposal through analysis of the waste from

multiple roll-offs and the analytical results demonstrated that the solid waste was nonhazardous. The solid waste came directly from the sewer repair area and is considered to represent the "worst-case" solid waste conditions in the Colvin Boulevard area. Therefore, the solid waste generated from the installation of MW-01, MW-02, MW-03, SB-01, SB-02, and SB-03, which were installed either outside of the repair area or within the clean fill of the repair area, is not as impacted as the solid waste from the sewer repair, and can be designated as nonhazardous as well.

The final disposition information for the waste generated by the drilling activities will be provided to the NYSDEC under separate cover.

2.10 COMMUNITY AIR MONITORING

In order to ensure the safety of the project workers as well as the residents of the Black Creek neighborhood, continuous air monitoring was conducted during all work activities. A PID equipped with a 10.6 eV lamp was used along with an oxygen (O_2)/ lower explosive limit (LEL) meter and a hydrogen sulfide (H_2S) meter to monitor air quality along the perimeter of the work area and within the work areas.

Air quality measurements were collected using PID, O_2/LEL, and H_2S meters continuously in the work area and once per hour at the perimeter of the work area (north, south, east, and west). Readings were recorded in a field notebook and field worksheets. A summary of the ranges of daily readings is presented in Table 2.9, as well as the maximum readings within the breathing zone of the work area.

All readings were compared to the HASP Action Levels to determine the appropriate action to be taken based on the readings. PID readings in the breathing zone of the work area ranged between 0 and 4.2 parts per million (ppm) which are all below the Action Level of 10 ppm. All PID readings in the breathing zone at the perimeter of the work area ranged between 0 and 0.5 ppm; all below the Action Level of 1 ppm.

Oxygen levels were all within acceptable range (19.5 to 23.5 percent). H_2S and CO were not detected. LEL monitoring indicated a maximum LEL of 4 percent, below the Action Level of 10 percent.

2.11 COMMUNITY OUTREACH

As discussed in Section 2.0, CRA distributed a Fact Sheet – Project Status Update to residences in the vicinity of the work area as directed by GSH in June 2011

(Appendix A). The purpose of the Fact Sheet was to inform residents of the work activities along Colvin Boulevard and to provide contacts for any questions they might have. The Fact Sheet provided an update about the project, estimated completion dates, and a local phone number for the residents to call for information about the work. Fact Sheets were also present at the work area for distribution to any residents or any passersby that had questions.

3.0 DISCUSSION

3.1 SOIL ANALYTICAL RESULTS

The soil analytical data for MW-03, SB-01, SB-02, and SB-03 are presented on Table 2.4. The concentrations are compared to NYSDEC Part 375 and CP-51 Soil Cleanup Objective for unrestricted use and restricted use for protection of public health under both residential and commercial scenarios.

No VOCs or SVOCs were detected at concentrations that exceeded restricted commercial use soil cleanup objectives (RCSCOs). However, pesticide alpha-BHC was present in the 21 to 22 feet bgs sample from SB-02 at a concentration of 3.8 mg/kg, exceeding the RCSCO of 0.02 mg/kg.

No VOCs were detected at concentrations that exceeded restricted residential use soil cleanup objectives (RRSCOs). Only one SVOC, hexachlorobenzene, was detected exceeding the RRSCO of 0.41 mg/kg at the following locations:

Location	Depth (ft bgs)	Concentration (mg/kg)
MW-01	27 to 28	2.7
SB-01	27.5 to 28.5	0.89
SB-02	21 to 22	0.46

In addition, several pesticides are present at concentrations exceeding their respective RRSCOs as follows:

Location	Depth (ft bgs)	Parameter	RRSCO	Concentration (mg/kg)
MW-01	27 to 28	aldrin	0.19	0.23 J
MW-01	27 to 28	alpha-BHC	0.097	3.1
MW-01	27 to 28	lindane	0.28	6.3
SB-02	21 to 22	aldrin	0.19	0.4
SB-02	21 to 22	alpha-BHC	0.097	3.8
SB-02	21 to 22	beta-BHC	0.072	0.18
SB-02	21 to 22	lindane	0.28	7.8

Only four VOCs are present in the soils at concentrations exceeding their respective unrestricted residential soil cleanup objectives (URSCOs) as follows:

	Depth (ft BGS)	Parameter	URSCO	Concentration (mg/kg)
MW-01	27 to 28	1,2-dichlorobenzene	1.1	4.3 J
MW-01	27 to 28	1,4-dichlorobenzene	1.8	5.7 J
MW-01	27 to 28	chlorobenzene	1.1	1.7 J
SB-01	27.5 to 28.5	1,2-dichlorobenzene	1.1	1.2 J
SB-02	25.5 to 26.5	Total xylenes	0.26	0.38 J

Only one SVOC, hexachlorobenzene, was detected exceeding the URSCO of 0.33 mg/kg at the following locations:

Location	Depth (ft bgs)	Concentration (mg/kg)
MW-01	27 to 28	2.7
SB-01	27.5 to 28.5	0.89
SB-02	21 to 22	0.46

Several pesticides were detected in the soil at concentrations exceeding their respective URSCOs as follows:

Location	Depth (ft bgs)	Parameter	URSCO	Concentration (mg/kg)
MW-01	27 to 28	aldrin	0.005	0.23
MW-01	27 to 28	alpha-BHC	0.002	3.1
MW-01	27 to 28	delta-BHC	0.04	3.1
MW-01	27 to 28	lindane	0.1	6.3
SB-01	27.5 to 28.5	alpha-BHC	0.002	0.024
SB-02	21 to 22	aldrin	0.005	0.4
SB-02	21 to 22	alpha-BHC	0.002	3.8
SB-02	21 to 22	beta-BHC	0.036	0.18
SB-02	21 to 22	delta-BHC	0.04	5.4
SB-02	21 to 22	lindane	0.1	7.8
SB-02	25.5 to 26.5	4,4'-DDD	0.0033	0.006
SB-02	25.5 to 26.5	4,4'-DDE	0.0033	0.29
SB-02	25.5 to 26.5	4,4'-DDT	0.0033	0.069
SB-02	25.5 to 26.5	aldrin	0.005	0.034
SB-02	25.5 to 26.5	dieldrin	0.005	0.016

A review of the bedrock elevations from MW-01, MW-02, MW-03, SB-01, SB-02, and SB-03 indicates that the bedrock along the sewer slopes from the east to the west, dropping as much as 4.5 feet from SB-03 (elevation of 545.00 ft) to the east and MW-03 (elevation of 540.5 ft) to the west.

Table 2.10 presents both the July 2011 soil analytical data, as well as the February 2011 soil confirmatory sample analytical data collected as part of the sewer repair activities. These data were presented in the SSIR Report. The SSIR Report concluded that residual chemical impacts remain in the sewer repair area; however, soil observations and samples collected along the endwalls and sidewalls indicate that the residual impacts likely did not extend beyond the sewer repair area. The data presented on Table 2.10 are arranged such that the February and July 2011 samples are shown in the order that they are located from west to east. For example, the first sample shown, "West Endwall" is the soil confirmatory sample collected in February 2011 from the west wall of the sewer repair excavation area, which was the western-most sample collected. The last sample shown on the table, "SB-03" is the soil sample collected in July 2011, which is the easternmost sample. The analytical data from SB-03 demonstrates that the residual impacts do not extend further eastward. It should be noted that there were no detections present at SB-03 with concentrations in exceedance of the three soil cleanup objectives. SB-03 is located the farthest upgradient (approximately 150 feet east) of the sewer repair area, and field observations at the time of the boring installation indicated that no further borings were necessary for installation further east than SB-03 (no impacts detected in the soils from the boring, and PID detections from 0.0 ppm to 0.4 ppm (i.e. background)). The NYSDEC and NYSDOH approved the field decision to not install borings further east of SB-03. The analytical data presented on Tables 2.4 and 2.10 supports the field decision. A review of both the field data (visual, olfactory, PID detections, and depth to bedrock) and analytical data supports the conclusion from the March 2011 report that residual chemical impacts remain in the sewer repair area likely within the sewer piping bedding material and do not extend farther east.

3.2 GROUNDWATER ANALYTICAL RESULTS

Table 2.11 presents the 2010 annual groundwater analytical data from the Love Canal Long-Term Monitoring Program (LCLTMP) monitoring wells surrounding the sewer repair site as well as the 2011 groundwater results from MW-01 and MW-02. The LCLTMP groundwater data are not compared to a specific set of criteria but are compared to historic data to evaluate trends. The 2010 data were presented in the "2010 Periodic Review Report" (February 2011), and was found to be consistent with historic groundwater data trends, and therefore representative of current Love Canal Site conditions. Based on this conclusion, a comparison of the 2010 LCLTMP groundwater data to the 2011 Colvin Boulevard groundwater data was deemed appropriate. It should be noted that a majority of the LCLTMP wells surrounding MW-01 and MW-02 are overburden wells. Monitoring well 3257 is the only bedrock monitoring well in the area of MW-01 and MW-02. Therefore, the 2010 groundwater analytical results from bedrock monitoring well 3257 are presented in the table for comparison to the 2011

groundwater analytical data from MW-01 and MW-02. The 2010 groundwater analytical data from overburden monitoring wells 7130 and 7132 are also presented with the 2011 data in Table 2.6 for comparative purposes. Figure 2.2 presented the locations of the LCLTMP wells in relation to wells MW-01 and MW-02.

Detected compounds in Table 2.11 have been boxed. As stated above, the LCLTMP groundwater analytical results are not compared to a specific set of criteria. The data in Table 2.11 show that although there are low-level detections of pesticides in MW-01 and MW-02; the groundwater quality at these locations is comparable to the area groundwater quality. There are detections of 4,4'-DDD and alpha/beta/delta/gamma-BHC at MW-01 and MW-02; however, the concentrations are less than the non-detect values for groundwater samples collected from the surrounding wells. Therefore, the groundwater conditions at MW-01 and MW-02 are consistent with the area bedrock and overburden groundwater conditions.

3.3 NAPL MONITORING RESULTS

Since its installation in July 2011, monitoring well MW-03 has been inspected on a weekly basis for the presence of NAPL. Table 2.7 summarizes the results of the inspections. No NAPL or visible sheen has been observed since the well was installed. As discussed previously in Section 2.2, the purpose of this well s was to monitor for the presence of residual NAPL that was observed in the sewer bedding material during the sewer repair/construction activities. Although NAPL was observed sporadically during the sewer repair activities, it did not appear to be mobile and recovery of the observed NAPL was limited due to the lack of volume and mobility. Due to the limited mobility and suspected low volume of residual NAPL, GSH has recommended that additional monitoring of MW-03 be continued on a quarterly basis with annual re-evaluation for the need to continue monitoring.

4.0 CONCLUSIONS AND RECOMMENDATIONS

As previously outlined, the objectives of the Work Plan were to:

- Evaluate bedrock groundwater quality in the vicinity of the residually impacted sewer bedding material
- Verify the limited extent of residual impacts in the sewer bedding material, and
- Install an observation well within the sewer repair area to monitor for the presence of NAPL

Based on the 2011 groundwater data for MW-01 and MW-02 and the comparison analysis completed with historical groundwater data for surrounding overburden and bedrock groundwater monitoring wells, low level detections of pesticides in MW-01 and MW-02 were observed; however the groundwater quality at these locations is consistent with the area groundwater quality and in some instances the MW-01 and MW-02 detections are less than the non-detect values for groundwater samples collected from the surrounding wells. Therefore, the groundwater conditions at MW-01 and MW-02 are consistent with the area bedrock and overburden groundwater conditions.

Based on the installation and monitoring activities performed and the evaluation of the soil and groundwater analytical data, it has been concluded that residual chemical impacts remain within the area of the sewer repair, confirming the conclusions of the SSIR Report. Soil analytical results from samples collected in February 2011 and July 2011 at the east end of the trench wall and at the farthest boring east of the sewer repair excavation area (SB-03) showed concentrations below NYSDEC Part 375 unrestricted soil cleanup objectives.

As discussed in Section 3.3, MW-03 was monitored weekly for the presence of NAPL from July 2011 through October 2011. No visible NAPL or sheen were observed during the inspections. Although NAPL was observed sporadically during the sewer repair activities, it did not appear to be mobile and recovery of the observed NAPL was limited by the lack of volume and mobility. Due to the limited mobility and suspected low volume of residual NAPL, GSH recommends that monitoring well MW-03 be inspected on a quarterly basis with annual re-evaluation for the need to continue monitoring.

Based on these conclusions, the following recommendations are proposed:

- Add monitoring wells MW-01 and MW-02 to the annual LCLTMP program
- Conduct NAPL checks at MW-03 quarterly for 1 year, with the frequency to be reevaluated on an annual basis.

FIGURES

SOURCE: USGS QUADRANGLE MAP;
TONAWANDA WEST, NEW YORK, 1980

figure 1.1

SITE MAP
COLVIN BOULEVARD SEWER REPAIR
SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

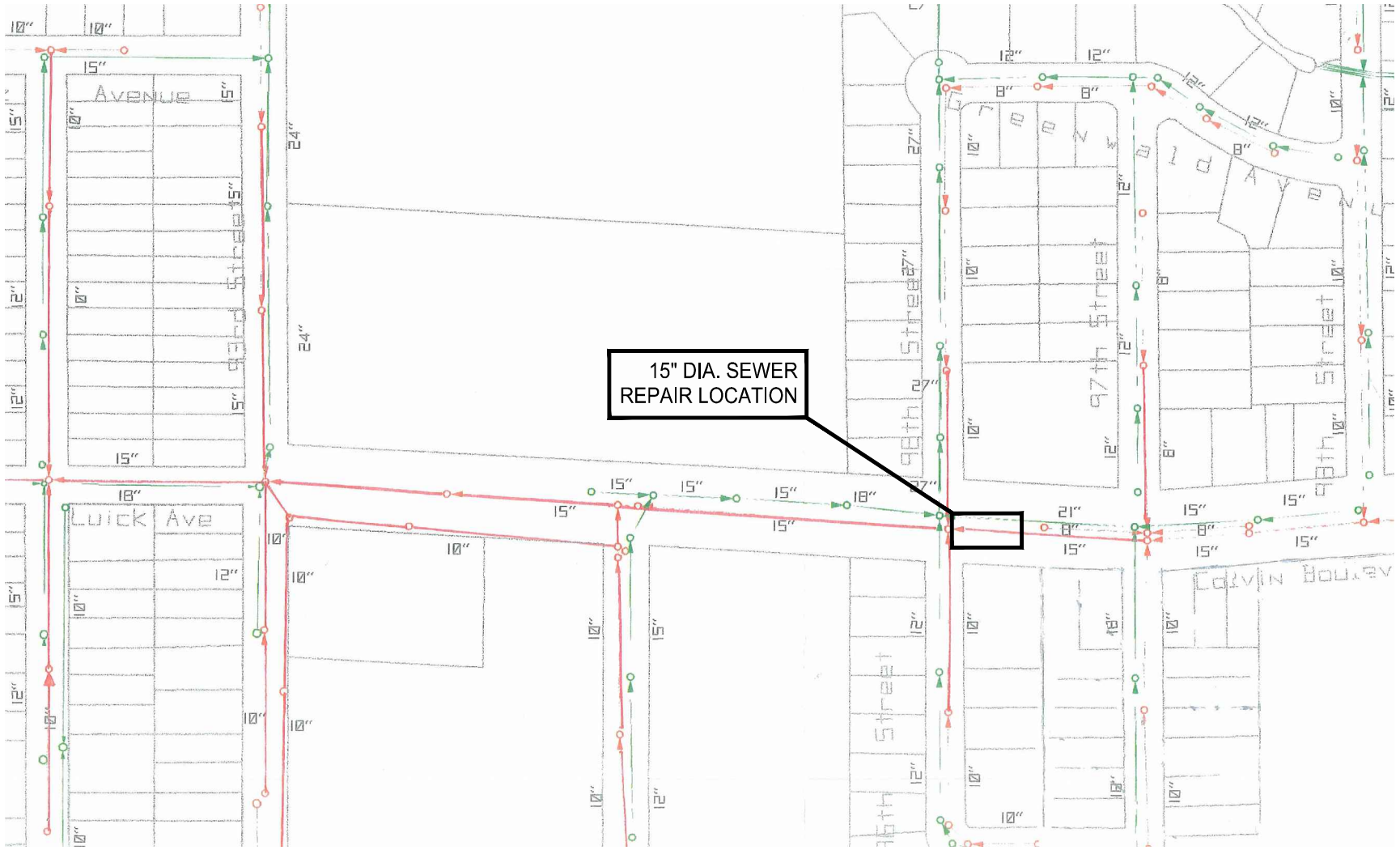


figure 1.2

LOCATION OF SEWER REPLACEMENT AREA
COLVIN BOULEVARD SEWER REPAIR
SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

SOURCE: NIAGARA FALLS WATER BOARD

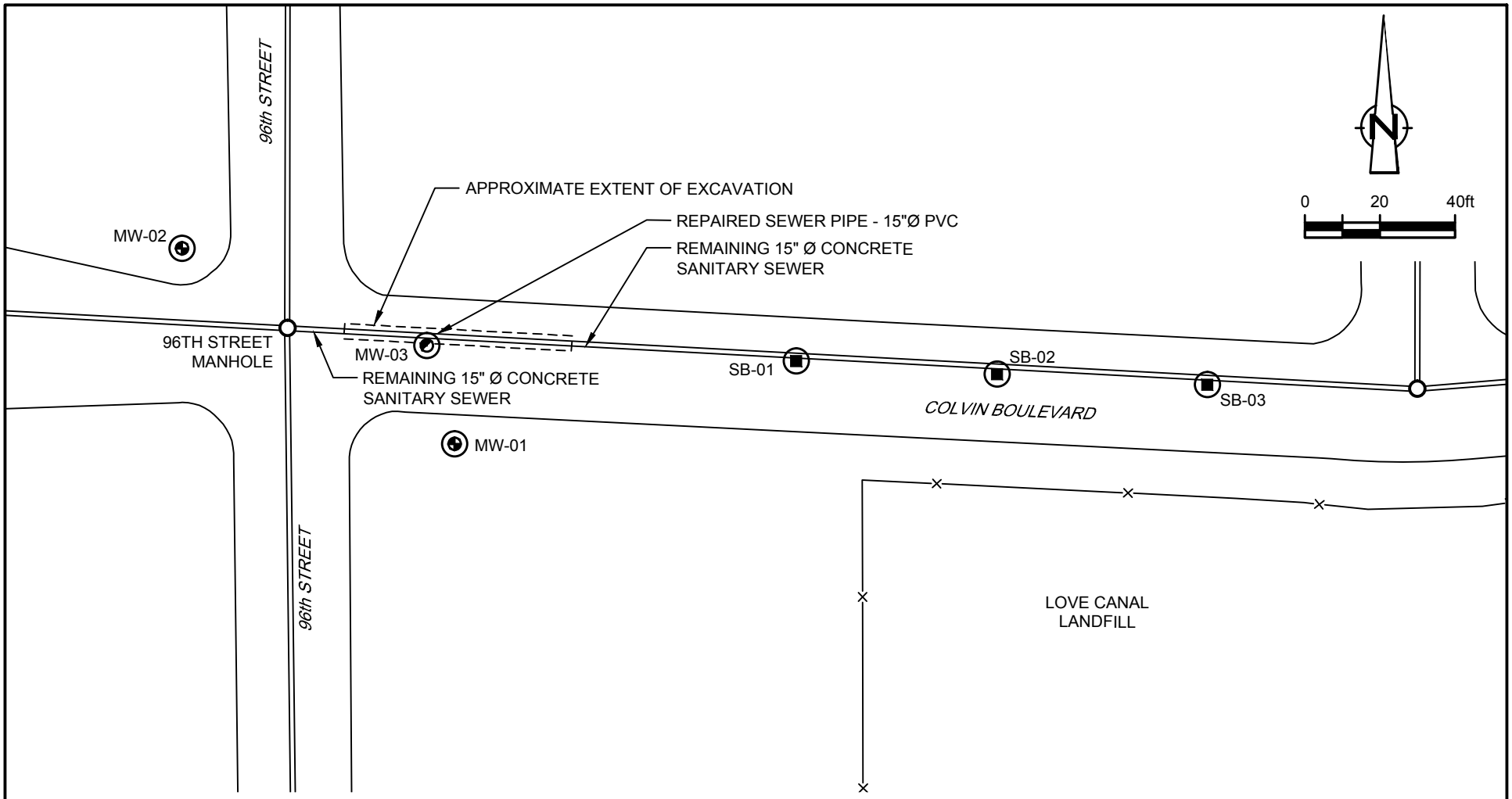


figure 2.1

MONITORING WELL AND SOIL BORING
COLVIN BOULEVARD SEWER REPAIR
SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

09954-00(023)GN-BU004 OCT 11/2011

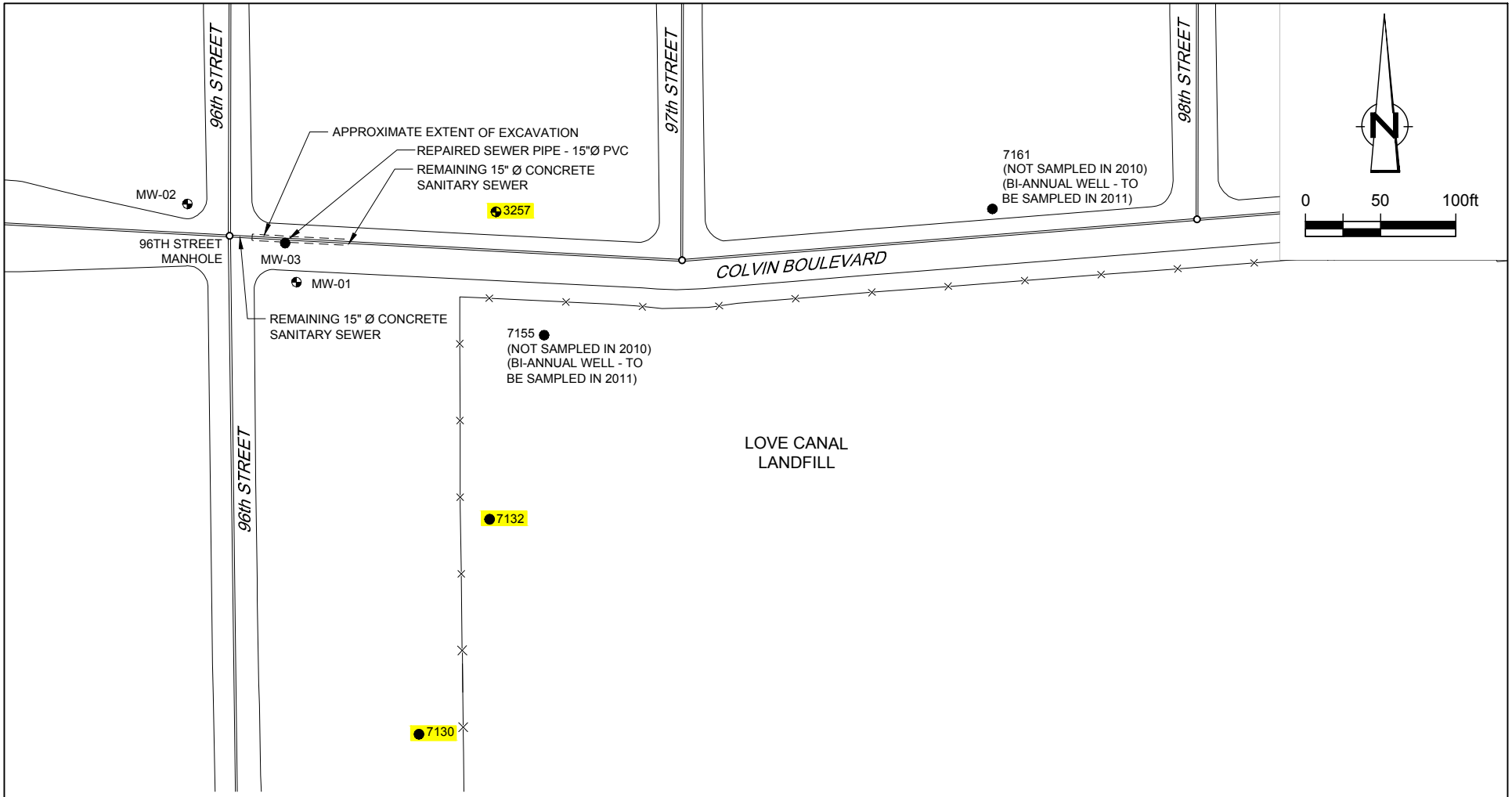
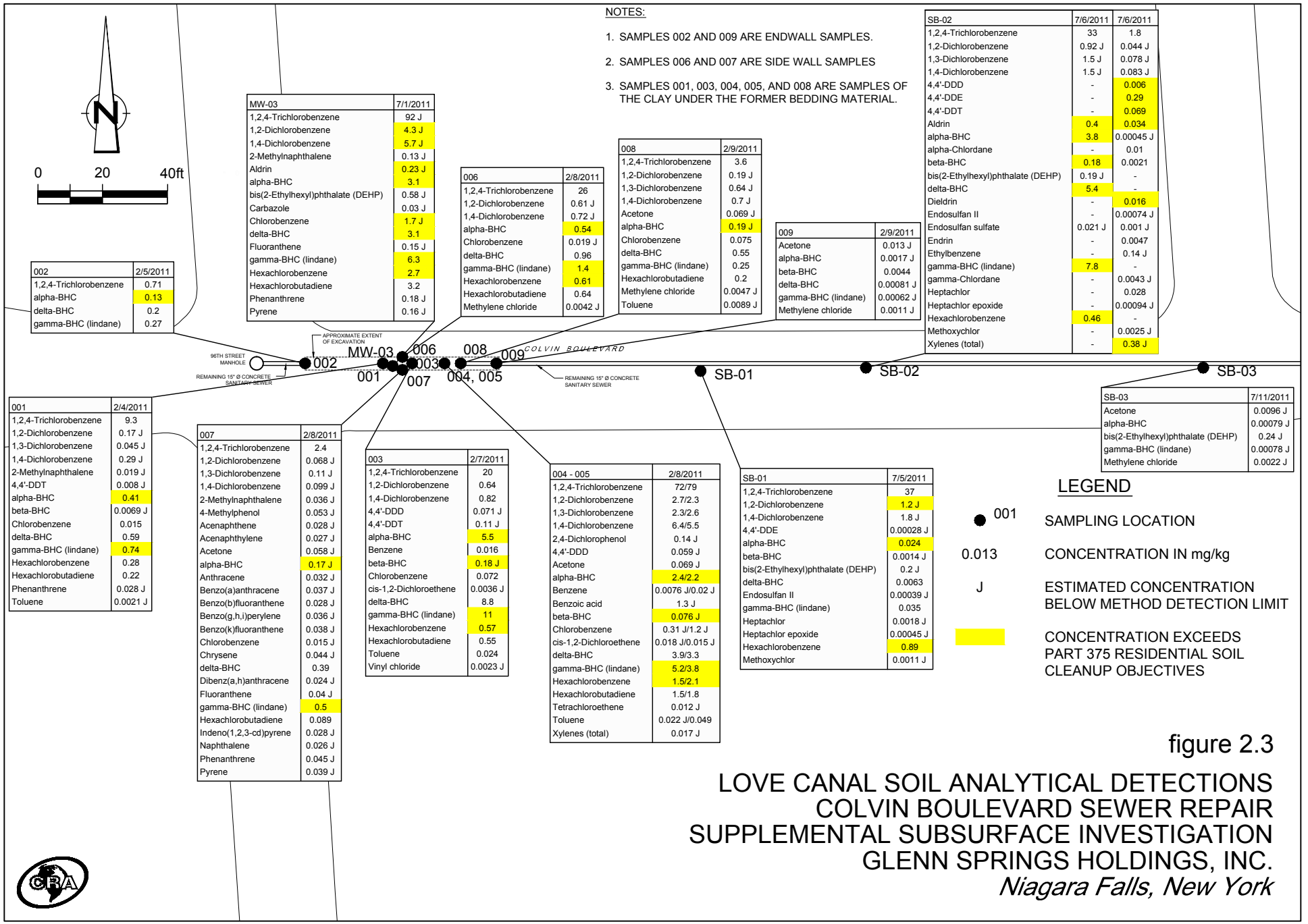


figure 2.2

LOCATION OF LOVE CANAL LONG-TERM MONITORING PROGRAM WELLS
COLVIN BOULEVARD SEWER REPAIR
SUPPLEMENTARY SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

CRA

09954-00(023)GN-BU002 OCT 11/2011



MW-03	7/1/2011
1,2,4-Trichlorobenzene	92 J
1,2-Dichlorobenzene	4.3 J
1,4-Dichlorobenzene	5.7 J
2-Methylnaphthalene	0.13 J
Aldrin	0.23 J
alpha-BHC	3.1
bis(2-Ethylhexyl)phthalate (DEHP)	0.58 J
Carbazole	0.03 J
Chlorobenzene	1.7 J
delta-BHC	3.1
Fluoranthene	0.15 J
gamma-BHC (lindane)	6.3
Hexachlorobenzene	2.7
Hexachlorobutadiene	3.2
Phenanthrene	0.18 J
Pyrene	0.16 J

002	2/5/2011
1,2,4-Trichlorobenzene	0.71
alpha-BHC	0.13
delta-BHC	0.2
gamma-BHC (lindane)	0.27

006	2/8/2011
1,2,4-Trichlorobenzene	26
1,2-Dichlorobenzene	0.61 J
1,4-Dichlorobenzene	0.72 J
alpha-BHC	0.54
Chlorobenzene	0.019 J
delta-BHC	0.96
gamma-BHC (lindane)	1.4
Hexachlorobenzene	0.61
Hexachlorobutadiene	0.64
Methylene chloride	0.0042 J

008	2/9/2011
1,2,4-Trichlorobenzene	3.6
1,2-Dichlorobenzene	0.19 J
1,3-Dichlorobenzene	0.64 J
1,4-Dichlorobenzene	0.7 J
Acetone	0.069 J
alpha-BHC	0.19 J
Chlorobenzene	0.075
delta-BHC	0.55
gamma-BHC (lindane)	0.25
Hexachlorobutadiene	0.2
Methylene chloride	0.0047 J
Toluene	0.0089 J

009	2/9/2011
Acetone	0.013 J
alpha-BHC	0.0017 J
beta-BHC	0.0044
delta-BHC	0.00081 J
gamma-BHC (lindane)	0.00062 J
Methylene chloride	0.0011 J

SB-02	7/6/2011	7/6/2011
1,2,4-Trichlorobenzene	33	1.8
1,2-Dichlorobenzene	0.92 J	0.044 J
1,3-Dichlorobenzene	1.5 J	0.078 J
1,4-Dichlorobenzene	1.5 J	0.083 J
4,4'-DDD	-	0.006
4,4'-DDE	-	0.29
4,4'-DDT	-	0.069
Aldrin	0.4	0.034
alpha-BHC	3.8	0.00045 J
alpha-Chlordane	-	0.01
beta-BHC	0.18	0.0021
bis(2-Ethylhexyl)phthalate (DEHP)	0.19 J	-
delta-BHC	5.4	-
Dieldrin	-	0.016
Endosulfan II	-	0.00074 J
Endosulfan sulfate	0.021 J	0.001 J
Endrin	-	0.0047
Ethylbenzene	-	0.14 J
gamma-BHC (lindane)	7.8	-
gamma-Chlordane	-	0.0043 J
Heptachlor	-	0.028
Heptachlor epoxide	-	0.00094 J
Hexachlorobenzene	0.46	-
Methoxychlor	-	0.0025 J
Xylenes (total)	-	0.38 J

001	2/4/2011
1,2,4-Trichlorobenzene	9.3
1,2-Dichlorobenzene	0.17 J
1,3-Dichlorobenzene	0.045 J
1,4-Dichlorobenzene	0.29 J
2-Methylnaphthalene	0.019 J
4,4'-DDT	0.008 J
alpha-BHC	0.41
beta-BHC	0.0069 J
Chlorobenzene	0.015
delta-BHC	0.59
gamma-BHC (lindane)	0.74
Hexachlorobenzene	0.28
Hexachlorobutadiene	0.22
Phenanthrene	0.028 J
Toluene	0.0021 J

007	2/8/2011
1,2,4-Trichlorobenzene	2.4
1,2-Dichlorobenzene	0.068 J
1,3-Dichlorobenzene	0.11 J
1,4-Dichlorobenzene	0.099 J
2-Methylnaphthalene	0.036 J
4-Methylphenol	0.053 J
Acenaphthene	0.028 J
Acenaphthylene	0.027 J
Acetone	0.058 J
alpha-BHC	0.17 J
Anthracene	0.032 J
Benzo(a)anthracene	0.037 J
Benzo(b)fluoranthene	0.028 J
Benzo(g,h,i)perylene	0.036 J
Benzo(k)fluoranthene	0.038 J
Chlorobenzene	0.015 J
Chrysene	0.044 J
delta-BHC	0.39
Dibenz(a,h)anthracene	0.024 J
Fluoranthene	0.04 J
gamma-BHC (lindane)	0.5
Hexachlorobutadiene	0.089
Indeno(1,2,3-cd)pyrene	0.028 J
Naphthalene	0.026 J
Phenanthrene	0.045 J
Pyrene	0.039 J

003	2/7/2011
1,2,4-Trichlorobenzene	20
1,2-Dichlorobenzene	0.64
1,4-Dichlorobenzene	0.82
4,4'-DDD	0.071 J
4,4'-DDT	0.11 J
alpha-BHC	5.5
Benzene	0.016
beta-BHC	0.18 J
Chlorobenzene	0.072
cis-1,2-Dichloroethene	0.0036 J
delta-BHC	8.8
gamma-BHC (lindane)	11
Hexachlorobenzene	0.57
Hexachlorobutadiene	0.55
Toluene	0.024
Vinyl chloride	0.0023 J

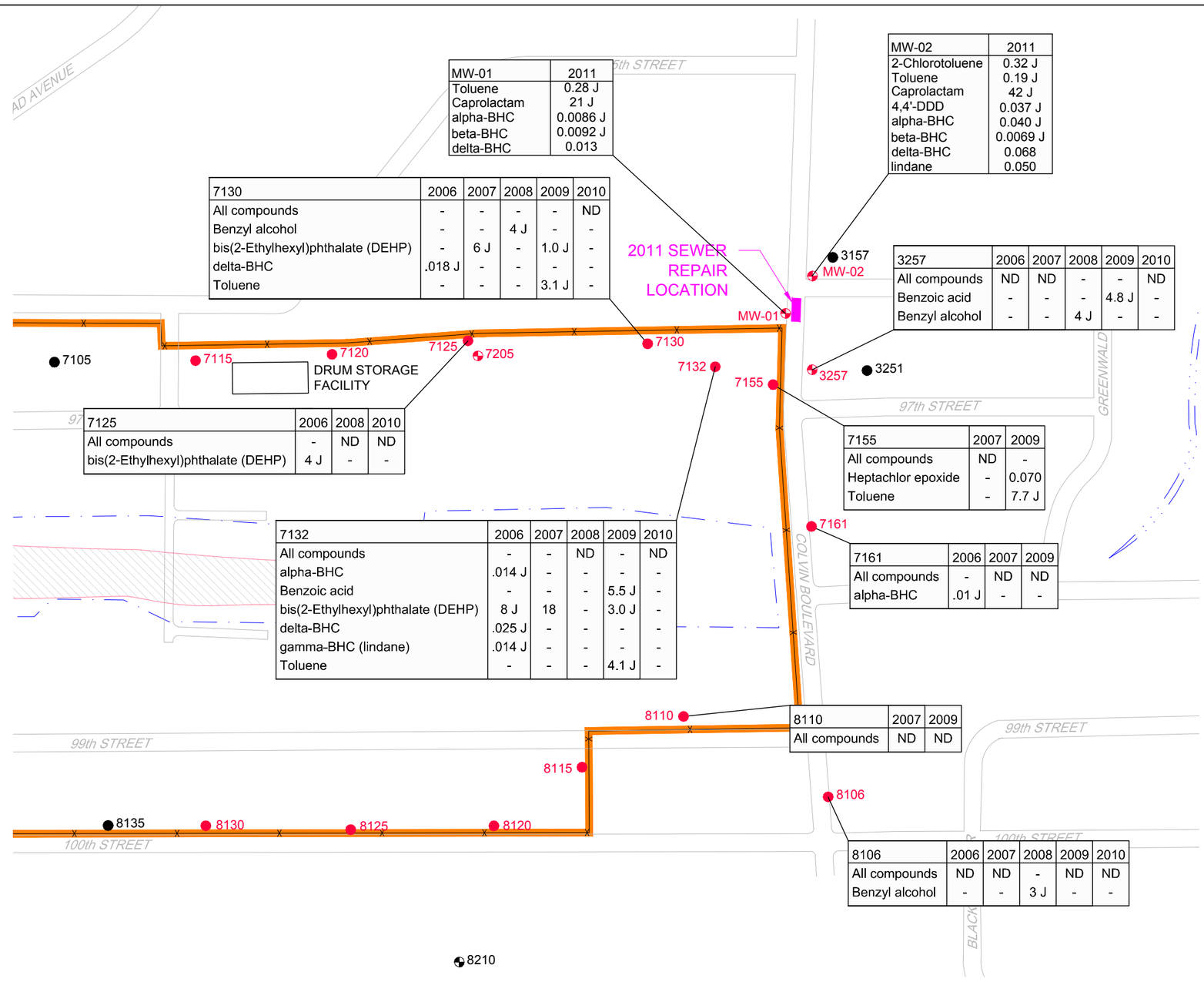
004 - 005	2/8/2011
1,2,4-Trichlorobenzene	72/79
1,2-Dichlorobenzene	2.7/2.3
1,3-Dichlorobenzene	2.3/2.6
1,4-Dichlorobenzene	6.4/5.5
2,4-Dichlorophenol	0.14 J
4,4'-DDD	0.059 J
Acetone	0.069 J
alpha-BHC	2.4/2.2
Benzene	0.0076 J/0.02 J
Benzoic acid	1.3 J
beta-BHC	0.076 J
Chlorobenzene	0.31 J/1.2 J
cis-1,2-Dichloroethene	0.018 J/0.015 J
delta-BHC	3.9/3.3
gamma-BHC (lindane)	5.2/3.8
Hexachlorobenzene	1.5/2.1
Hexachlorobutadiene	1.5/1.8
Tetrachloroethene	0.012 J
Toluene	0.022 J/0.049
Xylenes (total)	0.017 J

SB-01	7/5/2011
1,2,4-Trichlorobenzene	37
1,2-Dichlorobenzene	1.2 J
1,4-Dichlorobenzene	1.8 J
4,4'-DDE	0.00028 J
alpha-BHC	0.024
beta-BHC	0.0014 J
bis(2-Ethylhexyl)phthalate (DEHP)	0.2 J
delta-BHC	0.0063
Endosulfan II	0.00039 J
gamma-BHC (lindane)	0.035
Heptachlor	0.0018 J
Heptachlor epoxide	0.00045 J
Hexachlorobenzene	0.89
Methoxychlor	0.0011 J

SB-03	7/11/2011
Acetone	0.0096 J
alpha-BHC	0.00079 J
bis(2-Ethylhexyl)phthalate (DEHP)	0.24 J
gamma-BHC (lindane)	0.00078 J
Methylene chloride	0.0022 J

figure 2.3

LOVE CANAL SOIL ANALYTICAL DETECTIONS
COLVIN BOULEVARD SEWER REPAIR
SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York



MW-01	2011
Toluene	0.28 J
Caprolactam	21 J
alpha-BHC	0.0086 J
beta-BHC	0.0092 J
delta-BHC	0.013

MW-02	2011
2-Chlorotoluene	0.32 J
Toluene	0.19 J
Caprolactam	42 J
4,4'-DDD	0.037 J
alpha-BHC	0.040 J
beta-BHC	0.0069 J
delta-BHC	0.068
lindane	0.050

7130	2006	2007	2008	2009	2010
All compounds	-	-	-	-	ND
Benzyl alcohol	-	-	4 J	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	-	6 J	-	1.0 J	-
delta-BHC	.018 J	-	-	-	-
Toluene	-	-	-	3.1 J	-

3257	2006	2007	2008	2009	2010
All compounds	ND	ND	-	-	ND
Benzoic acid	-	-	-	4.8 J	-
Benzyl alcohol	-	-	4 J	-	-

7125	2006	2008	2010
All compounds	-	ND	ND
bis(2-Ethylhexyl)phthalate (DEHP)	4 J	-	-

7155	2007	2009
All compounds	ND	-
Heptachlor epoxide	-	0.070
Toluene	-	7.7 J

7132	2006	2007	2008	2009	2010
All compounds	-	-	ND	-	ND
alpha-BHC	.014 J	-	-	-	-
Benzoic acid	-	-	-	5.5 J	-
bis(2-Ethylhexyl)phthalate (DEHP)	8 J	18	-	3.0 J	-
delta-BHC	.025 J	-	-	-	-
gamma-BHC (lindane)	.014 J	-	-	-	-
Toluene	-	-	-	4.1 J	-

7161	2006	2007	2009
All compounds	-	ND	ND
alpha-BHC	.01 J	-	-

8110	2007	2009
All compounds	ND	ND

8106	2006	2007	2008	2009	2010
All compounds	ND	ND	-	ND	ND
Benzyl alcohol	-	-	3 J	-	-

LEGEND

- LOVE CANAL SITE BOUNDARY
- FENCE LINE
- BARRIER DRAIN
- 9120 OVERBURDEN OBSERVATION WELL
- 10270 BEDROCK OBSERVATION WELL
- APPROXIMATE LIMITS OF DISPOSED WASTE
- 8120 MONITORING INCLUDED IN CHEMICAL MONITORING PROGRAM
- ND NOT DETECTED
- J ESTIMATED CONCENTRATION BELOW METHOD DETECTION LIMIT

figure 2.4

LOVE CANAL GROUNDWATER ANALYTICAL DETECTIONS
COLVIN BOULEVARD SEWER REPAIR
SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.

Niagara Falls, New York

TABLES

TABLE 2.1

HYDRAULIC CONDUCTIVITY RESULTS
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Well ID	*Falling Head (cm/sec)*	*Rising Head (cm/sec)*	*Geometric Mean (cm/sec)*
MW-01	4.97E-05	4.77E-05	4.91E-05
	4.82E-05	4.90E-05	
	5.49E-05	4.55E-05	
MW-02	4.31E-05	6.50E-05	1.14E-04
	1.54E-04	1.69E-04	
	1.67E-04	1.83E-04	
MW-03	7.05E-04	6.75E-04	7.28E-04
	8.04E-04	6.64E-04	
	7.52E-04	7.81E-04	

Notes:
cm/sec Centimeters Per Second.

TABLE 2.2

SOIL BORING PID MEASUREMENTS
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

MW-03

Depth (ft bgs)	*Soil Cuttings Reading (ppm)*	*Headspace Readings (ppm)*
27-28	8.2	145

SB-01

Soil Interval	*Spoon Readings (ppm)*	*Headspace Readings (ppm)*
0-20	0	-
20-22	26.2	78.3
22-24	5	-
24-26	204	410
26-28	45.8	234
28-30	33.5	-

SB-02

Soil Interval	*Spoon Readings (ppm)*	*Headspace Readings (ppm)*
0-20	0	-
20-22	23.9	194
22-24	26.5	-
24-26	0.9	16.5
26-28	0	-

SB-03

Soil Interval	*Spoon Readings (ppm)*	*Headspace Readings (ppm)*
0-20	0	-
20-22	0.2	0.4
22-24	0	-
24-26	0	0
26-28	0	-

Notes:

ft bgs	Feet below ground surface.
ppm	Parts Per Million.
-	No soil sample collected for headspace measurement.

TABLE 2.3

CONFIRMATORY SOIL SAMPLE COLLECTION AND ANALYSIS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

					Analysis/Parameters		
Sample I.D.	***Location***	***Depth (feet below ground surface)***	***Collection Date (mm/dd/yy)***	***Collection Time (hr:min)***	***VOCs plus TICs***	***SVOCs plus TICs***	***Pesticides***
S-009954-070111-SM-010	MW-03	27 - 28	7/1/2011	11:05	X	X	X
S-009954-070511-SM-011	SB-01	27.5 - 28.5	7/5/2011	12:10	X	X	X
S-009954-070611-SM-012	SB-02	21 - 22	7/6/2011	10:10	X	X	X
S-009954-070611-SM-013	SB-02	25.5 - 26.5	7/6/2011	10:50	X	X	X
S-009954-071111-SM-014	SB-03	25 - 26	7/11/2011	10:55	X	X	X

Notes:
TICs Tentatively Identified Compounds.
SVOCs Semi-volatile Organic Compounds.
VOCs Volatile Organic Compounds.

TABLE 2.4

SOIL ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:					*MW-03*	*SB-01*	*SB-02*	*SB-02*	*SB-03*
Sample ID:					*S-009954-070111-SM-010*	*S-009954-070511-SM-011*	*S-009954-070611-SM-012*	*S-009954-070611-SM-013*	*S-009954-071111-SM-014*
Sample Date:					*7/1/2011*	*7/5/2011*	*7/6/2011*	*7/6/2011*	*7/11/2011*
Sample Depth:					*(27-28) ft BGS*	*(27.5-28.5) ft BGS*	*(21-22) ft BGS*	*(25.5-26.5) ft BGS*	*(25-26) ft BGS*
Parameters	*Units*	*Restricted Commercial* a	*Restricted Residential* b	*Unrestricted Residential* c					
Volatile Organic Compounds									
1,1,1-Trichloroethane	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
1,1,2,2-Tetrachloroethane	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
1,1,2-Trichloroethane	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
1,1-Dichloroethane	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
1,1-Dichloroethene	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
1,2,4-Trichlorobenzene	mg/kg	500	100	100[i]	92	37	33	1.8	0.0053 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
1,2-Dibromoethane (Ethylene dibromide)	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
1,2-Dichlorobenzene	mg/kg	500	100	1.1	4.3 J[c]	1.2 J[c]	0.92 J	0.044 J	0.0053 U
1,2-Dichloroethane	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
1,2-Dichloropropane	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
1,3-Dichlorobenzene	mg/kg	280	17	2.4	7 U	5.7 U	1.5 J	0.078 J	0.0053 U
1,4-Dichlorobenzene	mg/kg	130	9.8	1.8	5.7 J[c]	1.8 J	1.5 J	0.083 J	0.0053 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
2-Hexanone	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Acetone	mg/kg	500	100	0.05	28 U	23 U	23 U	1.1 U	0.0096 J
Benzene	mg/kg	44	2.9	0.06	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Bromodichloromethane	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Bromoform	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Bromomethane (Methyl bromide)	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Carbon disulfide	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Carbon tetrachloride	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Chlorobenzene	mg/kg	500	100	1.1	1.7 J[c]	5.7 U	5.8 U	0.27 U	0.0053 U
Chloroethane	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Chloroform (Trichloromethane)	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Chloromethane (Methyl chloride)	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
cis-1,2-Dichloroethene	mg/kg	500	59	0.25	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
cis-1,3-Dichloropropene	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Cyclohexane	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Dibromochloromethane	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Dichlorodifluoromethane (CFC-12)	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Ethylbenzene	mg/kg	390	40	1.0	7 U	5.7 U	5.8 U	0.14 J	0.0053 U
Isopropyl benzene	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Methyl acetate	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Methyl cyclohexane	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Methyl tert butyl ether (MTBE)	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Methylene chloride	mg/kg	500	51	0.05	7 U	5.7 U	5.8 U	0.27 U	0.0022 J
Styrene	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Tetrachloroethene	mg/kg	150	5.5	1.3	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Toluene	mg/kg	500	100	0.7	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
trans-1,2-Dichloroethene	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
trans-1,3-Dichloropropene	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Trichloroethene	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Trichlorofluoromethane (CFC-11)	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Trifluorotrichloroethane (Freon 113)	mg/kg	na	na	na	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Vinyl acetate	mg/kg	na	na	na	-	-	-	-	-
Vinyl chloride	mg/kg	13	0.21	0.02	7 U	5.7 U	5.8 U	0.27 U	0.0053 U
Xylenes (total)	mg/kg	500	100	0.26	21 U	17 U	17 U	0.38 J[c]	0.016 U
Semi-volatile Organic Compounds									
1,2,4-Trichlorobenzene	mg/kg	500	100	100[i]	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	500	100	1.1	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	280	17	2.4	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	130	9.8	1.8	-	-	-	-	-
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/kg	na	na	na	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
2,4,5-Trichlorophenol	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
2,4,6-Trichlorophenol	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
2,4-Dichlorophenol	mg/kg	500	100	100	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
2,4-Dimethylphenol	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U

TABLE 2.4

SOIL ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:					*MW-03*	*SB-01*	*SB-02*	*SB-02*	*SB-03*
Sample ID:					*S-009954-070111-SM-010*	*S-009954-070511-SM-011*	*S-009954-070611-SM-012*	*S-009954-070611-SM-013*	*S-009954-071111-SM-014*
Sample Date:					*7/1/2011*	*7/5/2011*	*7/6/2011*	*7/6/2011*	*7/11/2011*
Sample Depth:					*(27-28) ft BGS*	*(27.5-28.5) ft BGS*	*(21-22) ft BGS*	*(25.5-26.5) ft BGS*	*(25-26) ft BGS*
Parameters	*Units*	*Restricted Commercial* a	*Restricted Residential* b	*Unrestricted Residential* c					
Semi-volatile Organic Compounds (cont)									
2,4-Dinitrophenol	mg/kg	na	na	na	4.8 U	1.9 U	1.9 U	1.8 U	1.8 U
2,4-Dinitrotoluene	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
2,6-Dinitrotoluene	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
2-Chloronaphthalene	mg/kg	na	na	na	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
2-Chlorophenol	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
2-Methylnaphthalene	mg/kg	500	100	0.41	0.13 J	0.076 U	0.076 U	0.072 U	0.072 U
2-Methylphenol	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
2-Nitroaniline	mg/kg	na	na	na	4.8 U	1.9 U	1.9 U	1.8 U	1.8 U
2-Nitrophenol	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
3&4-Methylphenol	mg/kg	na	na	na	0.93 U	0.37 U	-	-	0.35 U
3,3'-Dichlorobenzidine	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
3-Nitroaniline	mg/kg	na	na	na	4.8 U	1.9 U	1.9 U	1.8 U	1.8 U
4,6-Dinitro-2-methylphenol	mg/kg	na	na	na	4.8 U	1.9 U	1.9 U	1.8 U	1.8 U
4-Bromophenyl phenyl ether	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
4-Chloro-3-methylphenol	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
4-Chloroaniline	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
4-Chlorophenyl phenyl ether	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
4-Methylphenol	mg/kg	500	34	0.33	-	-	0.38 U	0.36 U	-
4-Nitroaniline	mg/kg	na	na	na	4.8 U	1.9 U	1.9 U	1.8 U	1.8 U
4-Nitrophenol	mg/kg	na	na	na	4.8 U	1.9 U	1.9 U	1.8 U	1.8 U
Acenaphthene	mg/kg	500	100	20	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Acenaphthylene	mg/kg	500	100	100	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Acetophenone	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
Anthracene	mg/kg	500	100	100	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Atrazine	mg/kg	na	na	na	0.93 U	R	R	R	R
Benzaldehyde	mg/kg	na	na	na	0.93 U	0.37 UJ	0.38 UJ	0.36 UJ	0.35 UJ
Benzo(a)anthracene	mg/kg	na	na	na	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Benzo(a)pyrene	mg/kg	na	na	na	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Benzo(b)fluoranthene	mg/kg	5.6	1	1	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Benzo(g,h,i)perylene	mg/kg	500	100	100	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Benzo(k)fluoranthene	mg/kg	56	1	0.8	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Benzoic acid	mg/kg	500	100	100	-	-	-	-	-
Benzyl alcohol	mg/kg	na	na	na	-	-	-	-	-
Biphenyl (1,1-Biphenyl)	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
bis(2-Chloroethoxy)methane	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
bis(2-Chloroethyl)ether	mg/kg	na	na	na	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
bis(2-Ethylhexyl)phthalate (DEHP)	mg/kg		50		0.58 J	0.2 J	0.19 J	0.72 U	0.24 J
Butyl benzylphthalate (BBP)	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
Caprolactam	mg/kg	na	na	na	4.8 U	1.9 U	1.9 U	1.8 U	1.8 U
Carbazole	mg/kg	na	na	na	0.03 J	0.076 U	0.076 U	0.072 U	0.072 U
Chrysene	mg/kg	56	1	1	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Dibenz(a,h)anthracene	mg/kg	0.56	0.33	0.33	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Dibenzofuran	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
Diethyl phthalate	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
Dimethyl phthalate	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
Di-n-butylphthalate (DBP)	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
Di-n-octyl phthalate (DnOP)	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
Fluoranthene	mg/kg	500	100	100	0.15 J	0.076 U	0.076 U	0.072 U	0.072 U
Fluorene	mg/kg	na	na	na	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Hexachlorobenzene	mg/kg	6	0.41	0.33	2.7[DX]	0.89[DX]	0.46[DX]	0.072 U	0.072 U
Hexachlorobutadiene	mg/kg	500	100	100[1]	3.2	0.076 U	0.076 U	0.072 U	0.072 U
Hexachlorocyclopentadiene	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
Hexachloroethane	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
Indeno(1,2,3-cd)pyrene	mg/kg	5.6	0.5	0.5	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Isophorone	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
Naphthalene	mg/kg	500	100	12	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Nitrobenzene	mg/kg	na	na	na	1.9 U	0.76 U	0.76 U	0.72 U	0.72 U
N-Nitrosodi-n-propylamine	mg/kg	na	na	na	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
N-Nitrosodiphenylamine	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U
Pentachlorophenol	mg/kg	na	na	na	0.93 U	0.37 U	0.38 U	0.36 U	0.35 U

TABLE 2.4

SOIL ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:					*MW-03*	*SB-01*	*SB-02*	*SB-02*	*SB-03*
Sample ID:					*S-009954-070111-SM-010*	*S-009954-070511-SM-011*	*S-009954-070611-SM-012*	*S-009954-070611-SM-013*	*S-009954-071111-SM-014*
Sample Date:					*7/1/2011*	*7/5/2011*	*7/6/2011*	*7/6/2011*	*7/11/2011*
Sample Depth:					*(27-28) ft BGS*	*(27.5-28.5) ft BGS*	*(21-22) ft BGS*	*(25.5-26.5) ft BGS*	*(25-26) ft BGS*
Parameters	*Units*	*Restricted Commercial* a	*Restricted Residential* b	*Unrestricted Residential* c					
Semi-volatile Organic Compounds (cont)									
Phenanthrene	mg/kg	500	100	100	0.18 J	0.076 U	0.076 U	0.072 U	0.072 U
Phenol	mg/kg	na	na	na	0.19 U	0.076 U	0.076 U	0.072 U	0.072 U
Pyrene	mg/kg	500	100	100	0.16 J	0.076 U	0.076 U	0.072 U	0.072 U
Pesticides									
4,4'-DDD	mg/kg	92	2.6	0.0033	0.24 U	0.0019 U	0.097 U	0.006[c]	0.0018 U
4,4'-DDE	mg/kg	62	1.8	0.0033	0.24 U	0.00028 J	0.097 U	0.29[c]	0.0018 UJ
4,4'-DDT	mg/kg	47	1.7	0.0033	0.24 U	0.0019 U	0.097 U	0.069[c]	0.0018 U
Aldrin	mg/kg	0.68	0.19	0.005	0.23 J[a,c]	0.0019 U	0.4[a,c]	0.034[c]	0.0018 U
alpha-BHC	mg/kg	3.4	0.097	0.02	3.1[a,c]	0.024[c]	3.8[a,b,c]	0.00045 J	0.00079 J
alpha-Chlordane	mg/kg	24	0.91	0.094	0.24 U	0.0019 U	0.097 U	0.01	0.0018 U
beta-BHC	mg/kg	3	0.072	0.036	0.24 U	0.0014 J	0.18[a,c]	0.0021	0.0018 U
delta-BHC	mg/kg	500	100	0.04	3.1[c]	0.0063	5.4[c]	0.0018 U	0.0018 UJ
Dieldrin	mg/kg	1.4	0.039	0.005	0.24 U	0.0019 U	0.097 U	0.016[c]	0.0018 U
Endosulfan I	mg/kg	na	na	na	0.24 U	0.0019 U	0.097 U	0.0018 U	0.0018 U
Endosulfan II	mg/kg	200	4.8	2.4	0.24 U	0.00039 J	0.097 U	0.00074 J	0.0018 U
Endosulfan sulfate	mg/kg	200	4.8	2.4	0.24 U	0.0019 U	0.021 J	0.001 J	0.0018 U
Endrin	mg/kg	89	2.2	0.014	0.24 U	0.0019 U	0.097 U	0.0047	0.0018 U
Endrin aldehyde	mg/kg	na	na	na	0.24 U	0.0019 U	0.097 U	0.0018 U	R
Endrin ketone	mg/kg	na	na	na	0.24 U	0.0019 U	0.097 U	0.0018 U	0.0018 U
gamma-BHC (lindane)	mg/kg	9.2	0.28	0.1	6.3[a,c]	0.035	7.8[a,c]	0.0018 U	0.00078 J
gamma-Chlordane	mg/kg			0.54	0.24 U	0.0019 U	0.097 U	0.0043 J	0.0018 U
Heptachlor	mg/kg	15	0.42	0.042	0.24 U	0.0018 J	0.097 U	0.028	0.0018 U
Heptachlor epoxide	mg/kg	0.077	0.077	0.077	0.24 U	0.00045 J	0.097 U	0.00094 J	0.0018 U
Methoxychlor	mg/kg	100	100	100	0.46 U	0.0011 J	0.19 U	0.0025 J	0.0035 UJ
Toxaphene	mg/kg	na	na	na	9.4 U	0.075 U	3.8 U	0.073 U	0.072 U

Notes:
mg/kg Milligram per Kilogram.
na Not Applicable (no detections of parameter)
J Estimated.
U Not detected.
na No criteria available.
Concentration exceeds applicable NYSDEC Part 375 Soil Cleanup Objectives or CP-51 Objectives

TABLE 2.5

GROUNDWATER SAMPLE COLLECTION AND ANALYSIS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

				Analysis/Parameters		
Sample I.D.	***Location***	***Collection Date*** (mm/dd/yy)	***Collection Time*** (hr:min)	***VOCs plus TICs***	SVOCs	***Pesticides***
LC-MW1-0711	MW-01	7/13/2011	14:10	X	X	X
MW-1-0811	MW-01	8/16/2011	12:30	X	X	X
LC-MW2-0711	MW-02	7/13/2011	14:30	X	X	X
MW-2-0811	MW-02	8/16/2011	13:40	X	X	X

Notes:
SVOCs Semi-volatile Organic Compounds.
TICs Tentatively Identified Compounds.
VOCs Volatile Organic Compounds.

GROUNDWATER ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:		*MW-01*	*MW-01*	*MW-02*	*MW-02*
Sample ID:		*LC-MW1-0711*	*MW-1-0811*	*LC-MW2-0711*	*MW-2-0811*
Sample Date:		*7/13/2011*	*8/16/2011*	*7/13/2011*	*8/16/2011*
Parameters	***Units***				
Volatile Organic Compounds					
1,1,1,2-Tetrachloroethane	ug/L	-	1.0 U	-	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	-	1.0 U	-
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	ug/L	-	1.0 U	-	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	-	1.0 U	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	-	1.0 U	-
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	ug/L	-	1.0 U	-	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	-	1.0 U	-
1,3,5-Trichlorobenzene	ug/L	-	1.0 U	-	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2,3,6-Trichlorotoluene	ug/L	-	1.0 U	-	1.0 U
2,3/3,4-Dichlorotoluene	ug/L	-	2.0 U	-	2.0 U
2,4,5-Trichlorotoluene	ug/L	-	1.0 U	-	1.0 U
2,4/2,5/2,6-Dichlorotoluene	ug/L	-	3.0 U	-	3.0 U
2,4-Dichlorobenzotrifluoride	ug/L	-	1.0 U	-	1.0 U
2,5-Dichlorobenzotrifluoride	ug/L	-	1.0 U	-	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	5.0 U	-	5.0 U	-
2-Chlorotoluene	ug/L	-	1.0 U	-	0.32 J
2-Hexanone	ug/L	5.0 U	-	5.0 U	-
3,4-Dichlorobenzotrifluoride	ug/L	-	1.0 U	-	1.0 U
3-Chlorotoluene	ug/L	-	1.0 U	-	1.0 U
4-Chlorotoluene	ug/L	-	1.0 U	-	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	5.0 U	-	5.0 U	-
Acetone	ug/L	5.0 U	-	5.0 U	-
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	-	1.0 U	-
Carbon disulfide	ug/L	1.0 U	-	1.0 U	-
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	-	1.0 U	-
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	-	1.0 U	-
cis-1,2-Dichloroethene	ug/L	1.0 U	-	1.0 U	-
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	-	1.0 U	-
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	-	1.0 U	-
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	1.0 U	-	1.0 U	-
Methyl acetate	ug/L	1.0 U	-	1.0 U	-
Methyl cyclohexane	ug/L	1.0 U	-	1.0 U	-

GROUNDWATER ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:		*MW-01*	*MW-01*	*MW-02*	*MW-02*
Sample ID:		*LC-MW1-0711*	*MW-1-0811*	*LC-MW2-0711*	*MW-2-0811*
Sample Date:		*7/13/2011*	*8/16/2011*	*7/13/2011*	*8/16/2011*
Parameters	***Units***				
Volatile Organic Compounds Cont.'d					
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	-	1.0 U	-
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m-Monochlorobenzotrifluoride	ug/L	-	1.0 U	-	1.0 U
o-Monochlorobenzotrifluoride	ug/L	-	1.0 U	-	1.0 U
p-Monochlorobenzotrifluoride	ug/L	-	1.0 U	-	1.0 U
Styrene	ug/L	1.0 U	-	1.0 U	-
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	0.28 J	1.0 U	0.19 J
trans-1,2-Dichloroethene	ug/L	1.0 U	-	1.0 U	-
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	-	1.0 U	-
Trifluorotrichloroethane (Freon 113)	ug/L	1.0 U	-	1.0 U	-
Vinyl acetate	ug/L	-	-	-	-
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	3.0 U	-	3.0 U	-
Semi-volatile Organic Compounds					
1,2,3,4-Tetrachlorobenzene	ug/L	-	9.5 U	-	9.4 U
1,2,4,5-Tetrachlorobenzene	ug/L	-	9.5 U	-	9.4 U
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	1.9 U	-	1.9 U	-
2,3-Dichlorophenol	ug/L	-	9.5 U	-	9.4 U
2,4,5-Trichlorophenol	ug/L	9.4 U	9.5 U	9.4 U	9.4 U
2,4,6-Trichlorophenol	ug/L	9.4 U	9.5 U	9.4 U	9.4 U
2,4-Dichlorophenol	ug/L	1.9 U	9.5 U	1.9 U	9.4 U
2,4-Dimethylphenol	ug/L	9.4 U	-	9.4 U	-
2,4-Dinitrophenol	ug/L	47 U	-	47 U	-
2,4-Dinitrotoluene	ug/L	9.4 U	-	9.4 U	-
2,5-Dichlorophenol	ug/L	-	9.5 U	-	9.4 U
2,6-Dichlorophenol	ug/L	-	9.5 U	-	9.4 U
2,6-Dinitrotoluene	ug/L	9.4 U	-	9.4 U	-
2-Chloronaphthalene	ug/L	1.9 U	-	1.9 U	-
2-Chlorophenol	ug/L	9.4 U	9.5 U	9.4 U	9.4 U
2-Methylnaphthalene	ug/L	1.9 U	-	1.9 U	-
2-Methylphenol	ug/L	9.4 U	-	9.4 U	-
2-Nitroaniline	ug/L	47 U	-	47 U	-
2-Nitrophenol	ug/L	9.4 U	-	9.4 U	-
3,3'-Dichlorobenzidine	ug/L	9.4 U	-	9.4 U	-
3-Nitroaniline	ug/L	47 U	-	47 U	-
4,6-Dinitro-2-methylphenol	ug/L	47 U	-	47 U	-
4-Bromophenyl phenyl ether	ug/L	9.4 U	-	9.4 U	-
4-Chloro-3-methylphenol	ug/L	9.4 U	9.5 U	9.4 U	9.4 U
4-Chloroaniline	ug/L	9.4 U	-	9.4 U	-
4-Chlorophenol	ug/L	-	9.5 U	-	9.4 U
4-Chlorophenyl phenyl ether	ug/L	9.4 U	-	9.4 U	-
4-Methylphenol	ug/L	9.4 U	-	9.4 U	-

GROUNDWATER ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:		*MW-01*	*MW-01*	*MW-02*	*MW-02*
Sample ID:		*LC-MW1-0711*	*MW-1-0811*	*LC-MW2-0711*	*MW-2-0811*
Sample Date:		*7/13/2011*	*8/16/2011*	*7/13/2011*	*8/16/2011*
Parameters	***Units***				
Semi-Volatile Organic Compounds Cont.'d					
4-Nitroaniline	ug/L	47 U	-	47 U	-
4-Nitrophenol	ug/L	47 U	-	47 U	-
Acenaphthene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U
Acenaphthylene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U
Acetophenone	ug/L	9.4 U	-	9.4 U	-
Anthracene	ug/L	1.9 U	-	1.9 U	-
Atrazine	ug/L	9.4 U	-	9.4 U	-
Benzaldehyde	ug/L	9.4 U	-	9.4 U	-
Benzo(a)anthracene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U
Benzo(a)pyrene	ug/L	1.9 U	-	1.9 U	-
Benzo(b)fluoranthene	ug/L	1.9 U	-	1.9 U	-
Benzo(g,h,i)perylene	ug/L	1.9 U	-	1.9 U	-
Benzo(k)fluoranthene	ug/L	1.9 U	-	1.9 U	-
Biphenyl (1,1-Biphenyl)	ug/L	9.4 U	-	9.4 U	-
bis(2-Chloroethoxy)methane	ug/L	9.4 U	-	9.4 U	-
bis(2-Chloroethyl)ether	ug/L	1.9 U	-	1.9 U	-
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	19 U	-	19 U	-
Butyl benzylphthalate (BBP)	ug/L	9.4 U	9.5 U	9.4 U	9.4 U
Caprolactam	ug/L	21 J	-	42 J	-
Carbazole	ug/L	1.9 U	-	1.9 U	-
Chrysene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U
Dibenz(a,h)anthracene	ug/L	1.9 U	-	1.9 U	-
Dibenzofuran	ug/L	9.4 U	-	9.4 U	-
Diethyl phthalate	ug/L	9.4 U	9.5 U	9.4 U	9.4 U
Dimethyl phthalate	ug/L	9.4 U	9.5 U	9.4 U	9.4 U
Di-n-butylphthalate (DBP)	ug/L	9.4 U	9.5 U	9.4 U	9.4 U
Di-n-octyl phthalate (DnOP)	ug/L	9.4 U	9.5 U	9.4 U	9.4 U
Fluoranthene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U
Fluorene	ug/L	1.9 U	-	1.9 U	-
Hexachlorobenzene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U
Hexachlorobutadiene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U
Hexachlorocyclopentadiene	ug/L	9.4 U	48 U	9.4 U	47 U
Hexachloroethane	ug/L	9.4 U	-	9.4 U	-
Indeno(1,2,3-cd)pyrene	ug/L	1.9 U	-	1.9 U	-
Isophorone	ug/L	9.4 U	-	9.4 U	-
Naphthalene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U
Nitrobenzene	ug/L	19 U	-	19 U	-
N-Nitrosodi-n-propylamine	ug/L	1.9 U	-	1.9 U	-
N-Nitrosodiphenylamine	ug/L	9.4 U	9.5 U	9.4 U	9.4 U
Pentachlorophenol	ug/L	9.4 U	48 U	9.4 U	47 U
Phenanthrene	ug/L	1.9 U	-	1.9 U	-
Phenol	ug/L	1.9 U	-	1.9 U	-
Pyrene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U
Pesticides					
4,4'-DDD	ug/L	0.047 U	-	0.037 J	-
4,4'-DDE	ug/L	0.047 U	-	0.047 U	-
4,4'-DDT	ug/L	0.047 U	-	0.047 U	-
Aldrin	ug/L	0.047 U	-	0.047 U	-
alpha-BHC	ug/L	0.047 U	0.0086 J	0.040 J	0.031

GROUNDWATER ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:		*MW-01*	*MW-01*	*MW-02*	*MW-02*
Sample ID:		*LC-MW1-0711*	*MW-1-0811*	*LC-MW2-0711*	*MW-2-0811*
Sample Date:		*7/13/2011*	*8/16/2011*	*7/13/2011*	*8/16/2011*
Parameters	***Units***				
Pesticides (cont)					
alpha-Chlordane	ug/L	0.047 U	-	0.047 U	-
beta-BHC	ug/L	0.047 U	0.0092 J	0.047 U	0.0069 J
delta-BHC	ug/L	0.047 U	0.013	0.056	0.068
Dieldrin	ug/L	0.047 U	-	0.047 U	-
Endosulfan I	ug/L	0.047 U	-	0.047 U	-
Endosulfan II	ug/L	0.047 U	-	0.047 U	-
Endosulfan sulfate	ug/L	0.047 U	-	0.047 U	-
Endrin	ug/L	0.047 U	-	0.047 U	-
Endrin aldehyde	ug/L	0.047 U	-	0.047 U	-
Endrin ketone	ug/L	0.047 U	-	0.047 U	-
gamma-BHC (lindane)	ug/L	0.047 U	0.0062 U	0.044 J	0.050
gamma-Chlordane	ug/L	0.047 U	-	0.047 U	-
Heptachlor	ug/L	0.047 U	-	0.047 U	-
Heptachlor epoxide	ug/L	0.047 U	-	0.047 U	-
Methoxychlor	ug/L	0.094 U	-	0.094 U	-
Toxaphene	ug/L	3.8 U	-	3.8 U	-
Field Parameters					
pH	su	7.72	6.98	7.65	7.37
Specific Conductivity	MHOs	4.28	4.05	3.84	3.35
Temperature	°C	16.76	15.11	16.98	17.26

Notes:

µg/L	Micrograms per Liter.
su	Standard Unit.
MHOs	Milliohms.
°C	Degrees Celsius.

TABLE 2.7

NAPL PRESENCE MONITORING RESULTS
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Date	*LNAPL Depth (ft bgs)*	*LNAPL Thickness (ft)*	*LNAPL Volume (gal)*	*Comments*
07/19/2011	-	-	-	No NAPL or visible sheen, however a chemical odor was noticeable
08/05/2011	-	-	-	No NAPL or visible sheen
08/10/2011	-	-	-	No NAPL or visible sheen
08/19/2011	-	-	-	No NAPL or visible sheen
08/26/2011	-	-	-	No NAPL or visible sheen
09/01/2011	-	-	-	No NAPL or visible sheen
09/09/2011	-	-	-	No NAPL or visible sheen
09/16/2011	-	-	-	No NAPL or visible sheen
09/23/2011	-	-	-	No NAPL or visible sheen
09/30/2011	-	-	-	No NAPL or visible sheen, slight chemical odor
10/07/2011	-	-	-	No NAPL or visible sheen, slight chemical odor

Notes:

LNAPL Light Non-Aqueous Phase Liquid
ft bgs feet below ground surface
gal gallons
- No detection

TABLE 2.8

MONITORING WELL AND SOIL BORING CONSTRUCTION SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

						Elevation		Bottom of Well				Sandpack Interval		Screened Interval	
Well I.D.	*X-Coordinate*	*Y-Coordinate*	*Date Installed*	*Well Diameter (inches)*	*Well Material*	*Ground (feet NGVD)*	*TOR (feet NGVD)*	*Installed Depth (feet BTOR)*	*Installed Depth (feet BGS)*	*Elevation (feet NGVD)*	*Screen Length (ft)*	*Installed Depth (feet BGS)*	*Elevation (feet NGVD)*	*Installed Depth (feet BGS)*	*Elevation (feet NGVD)*
MW-01	1124218.111	1049984.229	6/29/11	4	Stainless[1]	571.97	571.55	37.5	37.9	534.07	NA[2]	NA[2] to NA[2]	NA[2] to NA[2]	NA[2] to NA[2]	NA[2] to NA[2]
MW-02	1124279.260	1049878.545	6/27/11	4	Stainless[1]	571.39	571.10	38.5	38.8	532.59	NA[2]	NA[2] to NA[2]	NA[2] to NA[2]	NA[2] to NA[2]	NA[2] to NA[2]
MW-03	1124252.326	1049935.797	7/1/11	2	Stainless	571.03	570.71	29.9	30.2	540.83	10.0	18.0 to 30.2	553.0 to 540.8	20.0 to 30.0	551.0 to 541.0
SB-01	1124250.060	1050029.512	7/5/11	4	NA[3]	571.66	NA[3]	NA[3]	28.5	543.16	NA[3]	NA[3] to NA[3]	NA[3] to NA[3]	NA[3] to NA[3]	NA[3] to NA[3]
SB-02	1124247.852	1050087.726	7/6/11	4	NA[3]	571.89	NA[3]	NA[3]	28.2	543.69	NA[3]	NA[3] to NA[3]	NA[3] to NA[3]	NA[3] to NA[3]	NA[3] to NA[3]
SB-03	1124247.332	1050135.847	7/11/11	4	NA[3]	571.70	NA[3]	NA[3]	26.7	545.00	NA[3]	NA[3] to NA[3]	NA[3] to NA[3]	NA[3] to NA[3]	NA[3] to NA[3]

Notes:

NA	Data Not Applicable.
ft	Feet.
bgs	Below Ground Surface.
TOC	Top of Casing.
NGVD	National Geodetic Vertical Datum.
Stainless	Stainless Steel.
TOR	Top of Riser.
BTOR	Below Top of Riser.
(1)	Refers To Overburden Casing.
(2)	Bedrock Well; No Well Materials Installed. Five-Foot Open Corehole.
(3)	Soil Boring; No Well Installed.

TABLE 2.9

SUMMARY OF DAILY AIR MONITORING RESULTS
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

	Daily PID Reading (ppm)		*Daily Range of Readings*			
Date	*Perimeter of Work Area (Range of Readings)*	*Breathing Zone of Work Area (Max)*	*Daily Oxygen Reading (%)*	*Hydrogen Sulfide (ppm)*	*Carbon Monoxide (ppm)*	*LEL (%)*
06/27/2011	0.0	0.0	20.9	0	0	0
06/28/2011	0.0 - 0.2	0.0	20.7 - 20.9	0	0	0
06/29/2011	0.0	0.0	20.9	0	0	0
06/30/2011	0.0	0.0	20.9 - 21.9	0	0	0 - 2
07/01/2011	0.0 - 0.8	1.8	20.9	0	0	0 - 1
07/05/2011	0.0	0.0	20.9 - 21.4	0	0	0 - 4
07/06/2011	0.0	0.0	20.9 - 21.2	0	0	0 - 4
07/07/2011	0.0	0.0	20.9	0	0	0 - 4
07/08/2011	0.0	0.0	20.9	0	0	0 - 3
07/11/2011	0.0	0.0	20.9 - 21.3	0	0	0 - 4

Notes:
PID Photoionization detector.
ppm Parts per million.
LEL Lower Explosive Limit.

TABLE 2.10

SOIL COMPARISON SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:					*West Endwall*	*MW-03*	*Floor, 24 ft*	*North Sidewall, 30 ft*	*South Sidewall, 30 ft*	*Floor, 33 ft*	*Floor, 43 ft*	*Floor, 43 ft*	*Floor, 48 ft*	*East Endwall*	*SB-01*
Sample ID:					*SO-009954-020511-SM-002*	*S-009954-070111-SM-010*	*SO-009954-020411-SM-001*	*SO-009954-020811-SM-006*	*SO-009954-020811-SM-007*	*SO-009954-020711-JP-003*	*SO-009954-020811-SM-004*	*SO-009954-020811-SM-005*	*SO-009954-020911-SM-008*	*SO-009954-020911-SM-009*	*S-009954-070511-SM-011*
Sample Date:					*2/5/2011*	*7/1/2011*	*2/4/2011*	*2/8/2011*	*2/8/2011*	*2/7/2011*	*2/8/2011*	*2/8/2011*	*2/9/2011*	*2/9/2011*	*7/5/2011*
Sample Depth:					-	*(27-28) ft BGS*	-	-	-	-	-	-	-	-	*(27.5-28.5) ft BGS*
												(Duplicate)			
Parameters	*Units*	*Restricted Commercial* a	*Restricted Residential* b	*Unrestricted Residential* c											
Volatile Organic Compounds															
1,1,1-Trichloroethane	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
1,1,2,2-Tetrachloroethane	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
1,1,2-Trichloroethane	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
1,1-Dichloroethane	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
1,1-Dichloroethene	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
1,2,4-Trichlorobenzene	mg/kg	500	100	100[a]	-	92	-	-	-	-	-	-	-	-	37
1,2-Dibromo-3-chloropropane (DBCP)	mg/kg	na	na	na	-	7 U	-	-	-	-	-	-	-	-	5.7 U
1,2-Dibromoethane (Ethylene dibromide)	mg/kg	na	na	na	-	7 U	-	-	-	-	-	-	-	-	5.7 U
1,2-Dichlorobenzene	mg/kg	500	100	1.1	-	4.3 J[c]	-	-	-	-	-	-	-	-	1.2 J[c]
1,2-Dichloroethane	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
1,2-Dichloropropane	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
1,3-Dichlorobenzene	mg/kg	280	17	2.4	-	7 U	-	-	-	-	-	-	-	-	5.7 U
1,4-Dichlorobenzene	mg/kg	130	9.8	1.8	-	5.7 J[c]	-	-	-	-	-	-	-	-	1.8 J
2-Butanone (Methyl ethyl ketone) (MEK)	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
2-Hexanone	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Acetone	mg/kg	500	100	0.05	0.026 U	28 U	0.022 U	0.11 U	0.058 J[c]	0.026 U	0.069 J	0.13 U	0.069 J	0.013 J	23 U
Benzene	mg/kg	44	2.9	0.06	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.016	0.0076 J	0.02 J	0.033 U	0.0062 U	5.7 U
Bromodichloromethane	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Bromoform	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Bromomethane (Methyl bromide)	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Carbon disulfide	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Carbon tetrachloride	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Chlorobenzene	mg/kg	500	100	1.1	0.0065 U	1.7 J[c]	0.015	0.019 J	0.015 J	0.072	0.31 J	1.2 J	0.075	0.0062 U	5.7 U
Chloroethane	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Chloroform (Trichloromethane)	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Chloromethane (Methyl chloride)	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
cis-1,2-Dichloroethene	mg/kg	500	59	0.25	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0036 J	0.018 J	0.015 J	0.033 U	0.0062 U	5.7 U
cis-1,3-Dichloropropene	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Cyclohexane	mg/kg	na	na	na	-	7 U	-	-	-	-	-	-	-	-	5.7 U
Dibromochloromethane	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Dichlorodifluoromethane (CFC-12)	mg/kg	na	na	na	-	7 U	-	-	-	-	-	-	-	-	5.7 U
Ethylbenzene	mg/kg	390	40	1.0	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Isopropyl benzene	mg/kg	na	na	na	-	7 U	-	-	-	-	-	-	-	-	5.7 U
Methyl acetate	mg/kg	na	na	na	-	7 U	-	-	-	-	-	-	-	-	5.7 U
Methyl cyclohexane	mg/kg	na	na	na	-	7 U	-	-	-	-	-	-	-	-	5.7 U
Methyl tert butyl ether (MTBE)	mg/kg	na	na	na	-	7 U	-	-	-	-	-	-	-	-	5.7 U
Methylene chloride	mg/kg	500	51	0.05	0.0065 U	7 U	0.0055 U	0.0042 J	0.031 U	0.0064 U	0.033 U	0.033 U	0.0047 J	0.0011 J	5.7 U
Styrene	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Tetrachloroethene	mg/kg	150	5.5	1.3	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.012 J	0.033 U	0.0062 U	5.7 U
Toluene	mg/kg	500	100	0.7	0.0065 U	7 U	0.0021 J	0.028 U	0.031 U	0.024	0.022 J	0.049	0.0089 J	0.0062 U	5.7 U
trans-1,2-Dichloroethene	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
trans-1,3-Dichloropropene	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Trichloroethene	mg/kg	na	na	na	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Trichlorofluoromethane (CFC-11)	mg/kg	na	na	na	-	7 U	-	-	-	-	-	-	-	-	5.7 U
Trifluorotrichloroethane (Freon 113)	mg/kg	na	na	na	-	7 U	-	-	-	-	-	-	-	-	5.7 U
Vinyl acetate	mg/kg	na	na	na	0.0065 U	-	0.0055 U	0.028 U	0.031 U	0.0064 U	0.033 U	0.033 U	0.033 U	0.0062 U	-
Vinyl chloride	mg/kg	13	0.21	0.02	0.0065 U	7 U	0.0055 U	0.028 U	0.031 U	0.0023 J	0.033 U	0.033 U	0.033 U	0.0062 U	5.7 U
Xylenes (total)	mg/kg	500	100	0.26	0.019 U	21 U	0.017 U	0.085 U	0.094 U	0.019 U	0.1 U	0.017 J	0.098 U	0.019 U	17 U

TABLE 2.10

SOIL COMPARISON SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:					*West Endwall*	*MW-03*	*Floor, 24 ft*	*North Sidewall, 30 ft*	*South Sidewall, 30 ft*	*Floor, 33 ft*	*Floor, 43 ft*	*Floor, 43 ft*	*Floor, 48 ft*	*East Endwall*	*SB-01*
Sample ID:					*SO-009954-020511-SM-002*	*S-009954-070111-SM-010*	*SO-009954-020411-SM-001*	*SO-009954-020811-SM-006*	*SO-009954-020811-SM-007*	*SO-009954-020711-JP-003*	*SO-009954-020811-SM-004*	*SO-009954-020811-SM-005*	*SO-009954-020911-SM-008*	*SO-009954-020911-SM-009*	*S-009954-070511-SM-011*
Sample Date:					*2/5/2011*	*7/1/2011*	*2/4/2011*	*2/8/2011*	*2/8/2011*	*2/7/2011*	*2/8/2011*	*2/8/2011*	*2/9/2011*	*2/9/2011*	*7/5/2011*
Sample Depth:					-	*(27-28) ft BGS*	-	-	-	-	-	-	-	-	*(27.5-28.5) ft BGS*
Parameters	*Units*	*Restricted Commercial* a	*Restricted Residential* b	*Unrestricted Residential* c								*(Duplicate)*			
Semi-volatile Organic Compounds															
1,2,4-Trichlorobenzene	mg/kg	500	100	100[a]	0.71	-	9.3	26	2.4	20	72	79	3.6	0.81 U	-
1,2-Dichlorobenzene	mg/kg	500	100	1.1	0.42 U	-	0.17 J	0.61 J	0.068 J	0.64	2.7	2.3	0.19 J	0.81 U	-
1,3-Dichlorobenzene	mg/kg	280	17	2.4	0.42 U	-	0.045 J	0.75 U	0.11 J	0.42 U	2.3	2.6	0.64 J	0.81 U	-
1,4-Dichlorobenzene	mg/kg	130	9.8	1.8	0.42 U	-	0.29 J	0.72 J	0.099 J	0.82	6.4	5.5	0.7 J	0.81 U	-
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/kg	na	na	na	0.086 U	0.19 U	0.074 U	0.15 U	0.083 U	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
2,4,5-Trichlorophenol	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
2,4,6-Trichlorophenol	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
2,4-Dichlorophenol	mg/kg	500	100	100	0.086 U	0.19 U	0.074 U	0.15 U	0.083 U	0.086 U	0.14 J	0.18 U	0.17 U	0.16 U	0.076 U
2,4-Dimethylphenol	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
2,4-Dinitrophenol	mg/kg	na	na	na	2.2 U	4.8 U	1.9 U	3.9 U	2.1 U	2.2 U	4.5 U	4.5 U	4.4 U	4.2 U	1.9 U
2,4-Dinitrotoluene	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
2,6-Dinitrotoluene	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
2-Chloronaphthalene	mg/kg	na	na	na	0.086 U	0.19 U	0.074 U	0.15 U	0.083 U	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
2-Chlorophenol	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
2-Methylnaphthalene	mg/kg	500	100	0.41	0.086 U	0.13 J	0.019 J	0.15 U	0.036 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
2-Methylphenol	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
2-Nitroaniline	mg/kg	na	na	na	2.2 U	4.8 U	1.9 U	3.9 U	2.1 U	2.2 U	4.5 U	4.5 U	4.4 U	4.2 U	1.9 U
2-Nitrophenol	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
3&4-Methylphenol	mg/kg	na	na	na	-	0.93 U	-	-	-	-	-	-	-	-	0.37 U
3,3'-Dichlorobenzidine	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
3-Nitroaniline	mg/kg	na	na	na	2.2 U	4.8 U	1.9 U	3.9 U	2.1 U	2.2 U	4.5 U	4.5 U	4.4 U	4.2 U	1.9 U
4,6-Dinitro-2-methylphenol	mg/kg	na	na	na	2.2 U	4.8 U	1.9 U	3.9 U	2.1 U	2.2 U	4.5 U	4.5 U	4.4 U	4.2 U	1.9 U
4-Bromophenyl phenyl ether	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U

TABLE 2.10

SOIL COMPARISON SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:					*West Endwall*	*MW-03*	*Floor, 24 ft*	*North Sidewall, 30 ft*	*South Sidewall, 30 ft*	*Floor, 33 ft*	*Floor, 43 ft*	*Floor, 43 ft*	*Floor, 48 ft*	*East Endwall*	*SB-01*
Sample ID:					*SO-009954-020511-SM-002*	*S-009954-070111-SM-010*	*SO-009954-020411-SM-001*	*SO-009954-020811-SM-006*	*SO-009954-020811-SM-007*	*SO-009954-020711-JP-003*	*SO-009954-020811-SM-004*	*SO-009954-020811-SM-005*	*SO-009954-020911-SM-008*	*SO-009954-020911-SM-009*	*S-009954-070511-SM-011*
Sample Date:					*2/5/2011*	*7/1/2011*	*2/4/2011*	*2/8/2011*	*2/8/2011*	*2/7/2011*	*2/8/2011*	*2/8/2011*	*2/9/2011*	*2/9/2011*	*7/5/2011*
Sample Depth:					-	*(27-28) ft BGS*	-	-	-	-	-	-	-	-	*(27.5-28.5) ft BGS*
Parameters	*Units*	*Restricted Commercial* a	*Restricted Residential* b	*Unrestricted Residential* c								*(Duplicate)*			
Semi-volatile Organic Compounds (cont)															
4-Chloro-3-methylphenol	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
4-Chloroaniline	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
4-Chlorophenyl phenyl ether	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
4-Methylphenol	mg/kg	500	34	0.33	0.42 U	-	0.36 U	0.75 U	0.053 J	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	-
4-Nitroaniline	mg/kg	na	na	na	2.2 U	4.8 U	1.9 U	3.9 U	2.1 U	2.2 U	4.5 U	4.5 U	4.4 U	4.2 U	1.9 U
4-Nitrophenol	mg/kg	na	na	na	2.2 U	4.8 U	1.9 U	3.9 U	2.1 U	2.2 U	4.5 U	4.5 U	4.4 U	4.2 U	1.9 U
Acenaphthene	mg/kg	500	100	20	0.086 U	0.19 U	0.074 U	0.15 U	0.028 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Acenaphthylene	mg/kg	500	100	100	0.086 U	0.19 U	0.074 U	0.15 U	0.027 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Acetophenone	mg/kg	na	na	na	-	0.93 U	-	-	-	-	-	-	-	-	0.37 U
Anthracene	mg/kg	500	100	100	0.086 U	0.19 U	0.074 U	0.15 U	0.032 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Atrazine	mg/kg	na	na	na	-	0.93 U	-	-	-	-	-	-	-	-	0.37 *
Benzaldehyde	mg/kg	na	na	na	-	0.93 U	-	-	-	-	-	-	-	-	0.37 *
Benzo(a)anthracene	mg/kg	na	na	na	0.086 U	0.19 U	0.074 U	0.15 U	0.037 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Benzo(a)pyrene	mg/kg	na	na	na	0.086 U	0.19 U	0.074 U	0.15 U	0.083 U	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Benzo(b)fluoranthene	mg/kg	5.6	1	1	0.086 U	0.19 U	0.074 U	0.15 U	0.028 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Benzo(g,h,i)perylene	mg/kg	500	100	100	0.086 U	0.19 U	0.074 U	0.15 U	0.036 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Benzo(k)fluoranthene	mg/kg	56	1	0.8	0.086 U	0.19 U	0.074 U	0.15 U	0.038 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Benzoic acid	mg/kg	500	100	100	2.2 U	-	1.9 U	3.9 U	2.1 U	2.2 U	4.5 U	1.3 J	4.4 U	4.2 U	-
Benzyl alcohol	mg/kg	na	na	na	0.42 U	-	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	-
Biphenyl (1,1-Biphenyl)	mg/kg	na	na	na	-	0.93 U	-	-	-	-	-	-	-	-	0.37 U
bis(2-Chloroethoxy)methane	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
bis(2-Chloroethyl)ether	mg/kg	na	na	na	0.086 U	0.19 U	0.074 U	0.15 U	0.083 U	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
bis(2-Ethylhexyl)phthalate (DEHP)	mg/kg		50		0.86 U	0.58 J	0.74 U	1.5 U	0.83 U	0.86 U	1.8 U	1.8 U	1.7 U	1.6 U	0.2 J
Butyl benzylphthalate (BBP)	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
Caprolactam	mg/kg	na	na	na	-	4.8 U	-	-	-	-	-	-	-	-	1.9 U
Carbazole	mg/kg	na	na	na	-	0.03 J	-	-	-	-	-	-	-	-	0.076 U
Chrysene	mg/kg	56	1	1	0.086 U	0.19 U	0.074 U	0.15 U	0.044 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Dibenz(a,h)anthracene	mg/kg	0.56	0.33	0.33	0.086 U	0.19 U	0.074 U	0.15 U	0.024 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Dibenzofuran	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
Diethyl phthalate	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
Dimethyl phthalate	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
Di-n-butylphthalate (DBP)	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
Di-n-octyl phthalate (DnOP)	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
Fluoranthene	mg/kg	500	100	100	0.086 U	0.15 J	0.074 U	0.15 U	0.04 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Fluorene	mg/kg	na	na	na	0.086 U	0.19 U	0.074 U	0.15 U	0.083 U	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Hexachlorobenzene	mg/kg	6	0.41	0.33	0.086 U	2.7[ex]	0.28	0.61	0.083 U	0.57[ex]	1.5	2.1	0.17 U	0.16 U	0.89[ex]
Hexachlorobutadiene	mg/kg	500	100	100[4]	0.086 U	3.2	0.22	0.64	0.089	0.55	1.5	1.8	0.2	0.16 U	0.076 U
Hexachlorocyclopentadiene	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
Hexachloroethane	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
Indeno(1,2,3-cd)pyrene	mg/kg	5.6	0.5	0.5	0.086 U	0.19 U	0.074 U	0.15 U	0.028 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Isophorone	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
Naphthalene	mg/kg	500	100	12	0.086 U	0.19 U	0.074 U	0.15 U	0.026 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Nitrobenzene	mg/kg	na	na	na	0.86 U	1.9 U	0.74 U	1.5 U	0.83 U	0.86 U	1.8 U	1.8 U	1.7 U	1.6 U	0.76 U
N-Nitrosodi-n-propylamine	mg/kg	na	na	na	0.086 U	0.19 U	0.074 U	0.15 U	0.083 U	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
N-Nitrosodiphenylamine	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
Pentachlorophenol	mg/kg	na	na	na	0.42 U	0.93 U	0.36 U	0.75 U	0.41 U	0.42 U	0.87 U	0.88 U	0.86 U	0.81 U	0.37 U
Phenanthrene	mg/kg	500	100	100	0.086 U	0.18 J	0.028 J	0.15 U	0.045 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Phenol	mg/kg	na	na	na	0.086 U	0.19 U	0.074 U	0.15 U	0.083 U	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U
Pyrene	mg/kg	500	100	100	0.086 U	0.16 J	0.074 U	0.15 U	0.039 J	0.086 U	0.18 U	0.18 U	0.17 U	0.16 U	0.076 U

TABLE 2.10

SOIL COMPARISON SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:					*West Endwall*	*MW-03*	*Floor, 24 ft*	*North Sidewall, 30 ft*	*South Sidewall, 30 ft*	*Floor, 33 ft*	*Floor, 43 ft*	*Floor, 43 ft*	*Floor, 48 ft*	*East Endwall*	*SB-01*
Sample ID:					*SO-009954-020511-SM-002*	*S-009954-070111-SM-010*	*SO-009954-020411-SM-001*	*SO-009954-020811-SM-006*	*SO-009954-020811-SM-007*	*SO-009954-020711-JP-003*	*SO-009954-020811-SM-004*	*SO-009954-020811-SM-005*	*SO-009954-020911-SM-008*	*SO-009954-020911-SM-009*	*S-009954-070511-SM-011*
Sample Date:					*2/5/2011*	*7/1/2011*	*2/4/2011*	*2/8/2011*	*2/8/2011*	*2/7/2011*	*2/8/2011*	*2/8/2011*	*2/9/2011*	*2/9/2011*	*7/5/2011*
Sample Depth:					-	*(27-28) ft BGS*	-	-	-	-	-	-	-	-	*(27.5-28.5) ft BGS*
Parameters	*Units*	*Restricted Commercial* a	*Restricted Residential* b	*Unrestricted Residential* c								*(Duplicate)*			
Pesticides															
4,4'-DDD	mg/kg	92	2.6	0.0033	0.022 U	0.24 U	0.019 U	0.19 U	0.21 U	0.071 J[c]	0.22 U	0.059 J[c]	0.22 U	0.0021 U	0.0019 U
4,4'-DDE	mg/kg	62	1.8	0.0033	0.022 U	0.24 U	0.019 U	0.19 U	0.21 U	0.22 U	0.22 U	0.23 U	0.22 U	0.0021 U	0.00028 J
4,4'-DDT	mg/kg	47	1.7	0.0033	0.022 U	0.24 U	0.008 J[c]	0.19 U	0.21 U	0.11 J[c]	0.22 U	0.23 U	0.22 U	0.0021 U	0.0019 U
Aldrin	mg/kg	0.68	0.19	0.005	0.022 U	0.23 J[cs]	0.019 U	0.19 U	0.21 U	0.22 U	0.22 U	0.23 U	0.22 U	0.0021 U	0.0019 U
alpha-BHC	mg/kg	3.4	0.097	0.02	0.13[cs]	3.1[cs]	0.41b[c]	0.54[cs]	0.17 J[cs]	5.5[cs]	2.4[cs]	2.2[cs]	0.19 J[cs]	0.0017 J	0.024[c]
alpha-Chlordane	mg/kg	24	0.91	0.094	0.022 U	0.24 U	0.019 U	0.19 U	0.21 U	0.22 U	0.22 U	0.23 U	0.22 U	0.0021 U	0.0019 U
beta-BHC	mg/kg	3	0.072	0.036	0.022 U	0.24 U	0.0069 J	0.19 U	0.21 U	0.18 J[cs]	0.22 U	0.076 J[cs]	0.22 U	0.0044	0.0014 J
delta-BHC	mg/kg	500	100	0.04	0.2[c]	3.1[c]	0.59[c]	0.96[c]	0.39[c]	8.8[c]	3.9[c]	3.3[c]	0.55[c]	0.00081 J	0.0063
Dieldrin	mg/kg	1.4	0.039	0.005	0.022 U	0.24 U	0.019 U	0.19 U	0.21 U	0.22 U	0.22 U	0.23 U	0.22 U	0.0021 U	0.0019 U
Endosulfan I	mg/kg	na	na	na	0.022 U	0.24 U	0.019 U	0.19 U	0.21 U	0.22 U	0.22 U	0.23 U	0.22 U	0.0021 U	0.0019 U
Endosulfan II	mg/kg	200	4.8	2.4	0.022 U	0.24 U	0.019 U	0.19 U	0.21 U	0.22 U	0.22 U	0.23 U	0.22 U	0.0021 U	0.00039 J
Endosulfan sulfate	mg/kg	200	4.8	2.4	0.022 U	0.24 U	0.019 U	0.19 U	0.21 U	0.22 U	0.22 U	0.23 U	0.22 U	0.0021 U	0.0019 U
Endrin	mg/kg	89	2.2	0.014	0.022 U	0.24 U	0.019 U	0.19 U	0.21 U	0.22 U	0.22 U	0.23 U	0.22 U	0.0021 U	0.0019 U
Endrin aldehyde	mg/kg	na	na	na	-	0.24 U	-	-	-	-	-	-	-	-	0.0019 U
Endrin ketone	mg/kg	na	na	na	0.022 U	0.24 U	0.019 U	0.19 U	0.21 U	0.22 U	0.22 U	0.23 U	0.22 U	0.0021 U	0.0019 U
gamma-BHC (lindane)	mg/kg	9.2	0.28	0.1	0.27[c]	6.3[cs]	0.74[cs]	1.4[cs]	0.5[cs]	11[cs]	5.2[cs]	3.8[cs]	0.25[c]	0.00062 J	0.035
gamma-Chlordane	mg/kg			0.54	0.022 U	0.24 U	0.019 U	0.19 U	0.21 U	0.22 U	0.22 U	0.23 U	0.22 U	0.0021 U	0.0019 U
Heptachlor	mg/kg	15	0.42	0.042	0.022 U	0.24 U	0.019 U	0.19 U	0.21 U	0.22 U	0.22 U	0.23 U	0.22 U	0.0021 U	0.0018 J
Heptachlor epoxide	mg/kg	0.077	0.077	0.077	0.022 U	0.24 U	0.019 U	0.19 U	0.21 U	0.22 U	0.22 U	0.23 U	0.22 U	0.0021 U	0.00045 J
Methoxychlor	mg/kg	100	100	100	0.043 U	0.46 U	0.036 U	0.37 U	0.41 U	0.42 U	0.43 U	0.44 U	0.43 U	0.004 U	0.0011 J
Toxaphene	mg/kg	na	na	na	0.86 U	9.4 U	0.73 U	7.5 U	8.4 U	8.6 U	8.8 U	8.9 U	8.7 U	0.082 U	0.075 U

Notes:
mg/kg Milligram per Kilogram.
na Not Applicable (no detections of parameter)
J Estimated.
U Not detected.
Concentration exceeds applicable NYSDEC Part 375 Soil Cleanup Objectives or CP-51 Objectives

TABLE 2.10

SOIL COMPARISON SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:					*SB-02*	*SB-02*	*SB-03*
Sample ID:					*S-009954-070611-SM-012*	*S-009954-070611-SM-013*	*S-009954-071111-SM-014*
Sample Date:					*7/6/2011*	*7/6/2011*	*7/11/2011*
Sample Depth:					*(21-22) ft BGS*	*(25.5-26.5) ft BGS*	*(25-26) ft BGS*
Parameters	*Units*	*Restricted Commercial* a	*Restricted Residential* b	*Unrestricted Residential* c			
Volatile Organic Compounds							
1,1,1-Trichloroethane	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
1,1,2,2-Tetrachloroethane	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
1,1,2-Trichloroethane	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
1,1-Dichloroethane	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
1,1-Dichloroethene	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
1,2,4-Trichlorobenzene	mg/kg	500	100	100'	33	1.8	0.0053 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
1,2-Dibromoethane (Ethylene dibromide)	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
1,2-Dichlorobenzene	mg/kg	500	100	1.1	0.92 J	0.044 J	0.0053 U
1,2-Dichloroethane	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
1,2-Dichloropropane	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
1,3-Dichlorobenzene	mg/kg	280	17	2.4	1.5 J	0.078 J	0.0053 U
1,4-Dichlorobenzene	mg/kg	130	9.8	1.8	1.5 J	0.083 J	0.0053 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
2-Hexanone	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Acetone	mg/kg	500	100	0.05	23 U	1.1 U	0.0096 J
Benzene	mg/kg	44	2.9	0.06	5.8 U	0.27 U	0.0053 U
Bromodichloromethane	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Bromoform	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Bromomethane (Methyl bromide)	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Carbon disulfide	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Carbon tetrachloride	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Chlorobenzene	mg/kg	500	100	1.1	5.8 U	0.27 U	0.0053 U
Chloroethane	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Chloroform (Trichloromethane)	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Chloromethane (Methyl chloride)	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
cis-1,2-Dichloroethene	mg/kg	500	59	0.25	5.8 U	0.27 U	0.0053 U
cis-1,3-Dichloropropene	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Cyclohexane	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Dibromochloromethane	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Dichlorodifluoromethane (CFC-12)	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Ethylbenzene	mg/kg	390	40	1.0	5.8 U	0.14 J	0.0053 U
Isopropyl benzene	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Methyl acetate	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Methyl cyclohexane	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Methyl tert butyl ether (MTBE)	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Methylene chloride	mg/kg	500	51	0.05	5.8 U	0.27 U	0.0022 J
Styrene	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Tetrachloroethene	mg/kg	150	5.5	1.3	5.8 U	0.27 U	0.0053 U
Toluene	mg/kg	500	100	0.7	5.8 U	0.27 U	0.0053 U
trans-1,2-Dichloroethene	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
trans-1,3-Dichloropropene	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Trichloroethene	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Trichlorofluoromethane (CFC-11)	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Trifluorotrichloroethane (Freon 113)	mg/kg	na	na	na	5.8 U	0.27 U	0.0053 U
Vinyl acetate	mg/kg	na	na	na	-	-	-
Vinyl chloride	mg/kg	13	0.21	0.02	5.8 U	0.27 U	0.0053 U
Xylenes (total)	mg/kg	500	100	0.26	17 U	0.38 J	0.016 U

TABLE 2.10

SOIL COMPARISON SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:					*SB-02*	*SB-02*	*SB-03*
Sample ID:					*S-009954-070611-SM-012*	*S-009954-070611-SM-013*	*S-009954-071111-SM-014*
Sample Date:					*7/6/2011*	*7/6/2011*	*7/11/2011*
Sample Depth:					*(21-22) ft BGS*	*(25.5-26.5) ft BGS*	*(25-26) ft BGS*
Parameters	*Units*	*Restricted Commercial* a	*Restricted Residential* b	*Unrestricted Residential* c			
Semi-volatile Organic Compounds							
1,2,4-Trichlorobenzene	mg/kg	500	100	100[4]	-	-	-
1,2-Dichlorobenzene	mg/kg	500	100	1.1	-	-	-
1,3-Dichlorobenzene	mg/kg	280	17	2.4	-	-	-
1,4-Dichlorobenzene	mg/kg	130	9.8	1.8	-	-	-
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/kg	na	na	na	0.076 U	0.072 U	0.072 U
2,4,5-Trichlorophenol	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
2,4,6-Trichlorophenol	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
2,4-Dichlorophenol	mg/kg	500	100	100	0.076 U	0.072 U	0.072 U
2,4-Dimethylphenol	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
2,4-Dinitrophenol	mg/kg	na	na	na	1.9 U	1.8 U	1.8 U
2,4-Dinitrotoluene	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
2,6-Dinitrotoluene	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
2-Chloronaphthalene	mg/kg	na	na	na	0.076 U	0.072 U	0.072 U
2-Chlorophenol	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
2-Methylnaphthalene	mg/kg	500	100	0.41	0.076 U	0.072 U	0.072 U
2-Methylphenol	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
2-Nitroaniline	mg/kg	na	na	na	1.9 U	1.8 U	1.8 U
2-Nitrophenol	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
3&4-Methylphenol	mg/kg	na	na	na	-	-	0.35 U
3,3'-Dichlorobenzidine	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
3-Nitroaniline	mg/kg	na	na	na	1.9 U	1.8 U	1.8 U
4,6-Dinitro-2-methylphenol	mg/kg	na	na	na	1.9 U	1.8 U	1.8 U
4-Bromophenyl phenyl ether	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U

TABLE 2.10

SOIL COMPARISON SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:					*SB-02*	*SB-02*	*SB-03*
Sample ID:					*S-009954-070611-SM-012*	*S-009954-070611-SM-013*	*S-009954-071111-SM-014*
Sample Date:					*7/6/2011*	*7/6/2011*	*7/11/2011*
Sample Depth:					*(21-22) ft BGS*	*(25.5-26.5) ft BGS*	*(25-26) ft BGS*
Parameters	*Units*	*Restricted Commercial* a	*Restricted Residential* b	*Unrestricted Residential* c			
Semi-volatile Organic Compounds (cont)							
4-Chloro-3-methylphenol	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
4-Chloroaniline	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
4-Chlorophenyl phenyl ether	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
4-Methylphenol	mg/kg	500	34	0.33	0.38 U	0.36 U	-
4-Nitroaniline	mg/kg	na	na	na	1.9 U	1.8 U	1.8 U
4-Nitrophenol	mg/kg	na	na	na	1.9 U	1.8 U	1.8 U
Acenaphthene	mg/kg	500	100	20	0.076 U	0.072 U	0.072 U
Acenaphthylene	mg/kg	500	100	100	0.076 U	0.072 U	0.072 U
Acetophenone	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
Anthracene	mg/kg	500	100	100	0.076 U	0.072 U	0.072 U
Atrazine	mg/kg	na	na	na	0.38 *	0.36 *	0.35 *
Benzaldehyde	mg/kg	na	na	na	0.38 *	0.36 *	0.35 *
Benzo(a)anthracene	mg/kg	na	na	na	0.076 U	0.072 U	0.072 U
Benzo(a)pyrene	mg/kg	na	na	na	0.076 U	0.072 U	0.072 U
Benzo(b)fluoranthene	mg/kg	5.6	1	1	0.076 U	0.072 U	0.072 U
Benzo(g,h,i)perylene	mg/kg	500	100	100	0.076 U	0.072 U	0.072 U
Benzo(k)fluoranthene	mg/kg	56	1	0.8	0.076 U	0.072 U	0.072 U
Benzoic acid	mg/kg	500	100	100	-	-	-
Benzyl alcohol	mg/kg	na	na	na	-	-	-
Biphenyl (1,1-Biphenyl)	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
bis(2-Chloroethoxy)methane	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
bis(2-Chloroethyl)ether	mg/kg	na	na	na	0.076 U	0.072 U	0.072 U
bis(2-Ethylhexyl)phthalate (DEHP)	mg/kg		50		0.19 J	0.72 U	0.24 J
Butyl benzylphthalate (BBP)	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
Caprolactam	mg/kg	na	na	na	1.9 U	1.8 U	1.8 U
Carbazole	mg/kg	na	na	na	0.076 U	0.072 U	0.072 U
Chrysene	mg/kg	56	1	1	0.076 U	0.072 U	0.072 U
Dibenz(a,h)anthracene	mg/kg	0.56	0.33	0.33	0.076 U	0.072 U	0.072 U
Dibenzofuran	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
Diethyl phthalate	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
Dimethyl phthalate	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
Di-n-butylphthalate (DBP)	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
Di-n-octyl phthalate (DnOP)	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
Fluoranthene	mg/kg	500	100	100	0.076 U	0.072 U	0.072 U
Fluorene	mg/kg	na	na	na	0.076 U	0.072 U	0.072 U
Hexachlorobenzene	mg/kg	6	0.41	0.33	0.46 [x]	0.072 U	0.072 U
Hexachlorobutadiene	mg/kg	500	100	100[4]	0.076 U	0.072 U	0.072 U
Hexachlorocyclopentadiene	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
Hexachloroethane	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
Indeno(1,2,3-cd)pyrene	mg/kg	5.6	0.5	0.5	0.076 U	0.072 U	0.072 U
Isophorone	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
Naphthalene	mg/kg	500	100	12	0.076 U	0.072 U	0.072 U
Nitrobenzene	mg/kg	na	na	na	0.76 U	0.72 U	0.72 U
N-Nitrosodi-n-propylamine	mg/kg	na	na	na	0.076 U	0.072 U	0.072 U
N-Nitrosodiphenylamine	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
Pentachlorophenol	mg/kg	na	na	na	0.38 U	0.36 U	0.35 U
Phenanthrene	mg/kg	500	100	100	0.076 U	0.072 U	0.072 U
Phenol	mg/kg	na	na	na	0.076 U	0.072 U	0.072 U
Pyrene	mg/kg	500	100	100	0.076 U	0.072 U	0.072 U

TABLE 2.10

SOIL COMPARISON SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:					*SB-02*	*SB-02*	*SB-03*
Sample ID:					*S-009954-070611-SM-012*	*S-009954-070611-SM-013*	*S-009954-071111-SM-014*
Sample Date:					*7/6/2011*	*7/6/2011*	*7/11/2011*
Sample Depth:					*(21-22) ft BGS*	*(25.5-26.5) ft BGS*	*(25-26) ft BGS*
Parameters	*Units*	*Restricted Commercial* a	*Restricted Residential* b	*Unrestricted Residential* c			
Pesticides							
4,4'-DDD	mg/kg	92	2.6	0.0033	0.097 U	0.006	0.0018 U
4,4'-DDE	mg/kg	62	1.8	0.0033	0.097 U	0.29	0.0018 UJ
4,4'-DDT	mg/kg	47	1.7	0.0033	0.097 U	0.069	0.0018 U
Aldrin	mg/kg	0.68	0.19	0.005	0.4	0.034	0.0018 U
alpha-BHC	mg/kg	3.4	0.097	0.02	3.8	0.00045 J	0.00079 J
alpha-Chlordane	mg/kg	24	0.91	0.094	0.097 U	0.01	0.0018 U
beta-BHC	mg/kg	3	0.072	0.036	0.18	0.0021	0.0018 U
delta-BHC	mg/kg	500	100	0.04	5.4	0.0018 U	0.0018 UJ
Dieldrin	mg/kg	1.4	0.039	0.005	0.097 U	0.016	0.0018 U
Endosulfan I	mg/kg	na	na	na	0.097 U	0.0018 U	0.0018 U
Endosulfan II	mg/kg	200	4.8	2.4	0.097 U	0.00074 J	0.0018 U
Endosulfan sulfate	mg/kg	200	4.8	2.4	0.021 J	0.001 J	0.0018 U
Endrin	mg/kg	89	2.2	0.014	0.097 U	0.0047	0.0018 U
Endrin aldehyde	mg/kg	na	na	na	0.097 U	0.0018 U	R
Endrin ketone	mg/kg	na	na	na	0.097 U	0.0018 U	0.0018 U
gamma-BHC (lindane)	mg/kg	9.2	0.28	0.1	7.8	0.0018 U	0.00078 J
gamma-Chlordane	mg/kg			0.54	0.097 U	0.0043 J	0.0018 U
Heptachlor	mg/kg	15	0.42	0.042	0.097 U	0.028	0.0018 U
Heptachlor epoxide	mg/kg	0.077	0.077	0.077	0.097 U	0.00094 J	0.0018 U
Methoxychlor	mg/kg	100	100	100	0.19 U	0.0025 J	0.0035 UJ
Toxaphene	mg/kg	na	na	na	3.8 U	0.073 U	0.072 U

Notes:
mg/kg Milligram per Kilogram.
na Not Applicable (no detections of parameter)
J Estimated.
U Not detected.
Concentration exceeds applicable NYSDEC Part 375 Soil Cleanup Objectives or CP-51 Objectives

TABLE 2.11

2010/2011 GROUNDWATER ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:		*MW-01*	*MW-01*	*MW-02*	*MW-02*	*3257*	*3257*	*7130*	*7132*
Sample ID:		*LC-MW1-0711*	*MW-1-0811*	*LC-MW2-0711*	*MW-2-0811*	*LC3257-610*	*LC8225-610*	*LC-7130-610*	*LC-7132-610*
Sample Date:		*7/13/2011*	*8/16/2011*	*7/13/2011*	*8/16/2011*	*6/23/2010*	*6/23/2010 (Duplicate)*	*6/16/2010*	*6/16/2010*
Parameters	*Units*								
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethane	ug/L	1.0 U	-	1.0 U	-	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2,3-Trichlorobenzene	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	-	1.0 U	-	-	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	-	1.0 U	-	-	-	-	-
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethene (total)	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
1,2-Dichloropropane	ug/L	1.0 U	-	1.0 U	-	5.0 U	5.0 U	5.0 U	5.0 U
1,3,5-Trichlorobenzene	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-
2,3,6-Trichlorotoluene	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
2,3/3,4-Dichlorotoluene	ug/L	-	2.0 U	-	2.0 U	-	-	-	-
2,4,5-Trichlorotoluene	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
2,4/2,5/2,6-Dichlorotoluene	ug/L	-	3.0 U	-	3.0 U	-	-	-	-
2,4-Dichlorobenzotrifluoride	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
2,5-Dichlorobenzotrifluoride	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	5.0 U	-	5.0 U	-	5.0 U	5.0 U	5.0 U	5.0 U
2-Chlorotoluene	ug/L	-	1.0 U	-	0.32 J	-	-	-	-
2-Hexanone	ug/L	5.0 U	-	5.0 U	-	5.0 U	5.0 U	5.0 U	5.0 U
3,4-Dichlorobenzotrifluoride	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
3-Chlorotoluene	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
4-Chlorotoluene	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	5.0 U	-	5.0 U	-	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	5.0 U	-	5.0 U	-	20 U	20 U	20 U	20 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	-	1.0 U	-	5.0 U	5.0 U	5.0 U	5.0 U
Carbon disulfide	ug/L	1.0 U	-	1.0 U	-	9.3 U	8.8 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chloroethane	ug/L	1.0 U	-	1.0 U	-	5.0 U	5.0 U	5.0 U	5.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	-	1.0 U	-	5.0 U	5.0 U	5.0 U	5.0 U

TABLE 2.11

2010/2011 GROUNDWATER ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:		*MW-01*	*MW-01*	*MW-02*	*MW-02*	*3257*	*3257*	*7130*	*7132*
Sample ID:		*LC-MW1-0711*	*MW-1-0811*	*LC-MW2-0711*	*MW-2-0811*	*LC3257-610*	*LC8225-610*	*LC-7130-610*	*LC-7132-610*
Sample Date:		*7/13/2011*	*8/16/2011*	*7/13/2011*	*8/16/2011*	*6/23/2010*	*6/23/2010 (Duplicate)*	*6/16/2010*	*6/16/2010*
Parameters	***Units***								
Volatile Organic Compounds Cont.'d									
cis-1,2-Dichloroethene	ug/L	1.0 U	-	1.0 U	-	5.0 U	5.0 U	5.0 U	5.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cyclohexane	ug/L	1.0 U	-	1.0 U	-	-	-	-	-
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	-	1.0 U	-	-	-	-	-
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Isopropyl benzene	ug/L	1.0 U	-	1.0 U	-	-	-	-	-
Methyl acetate	ug/L	1.0 U	-	1.0 U	-	-	-	-	-
Methyl cyclohexane	ug/L	1.0 U	-	1.0 U	-	-	-	-	-
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	-	1.0 U	-	-	-	-	-
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
m-Monochlorobenzotrifluoride	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
o-Monochlorobenzotrifluoride	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
p-Monochlorobenzotrifluoride	ug/L	-	1.0 U	-	1.0 U	-	-	-	-
Styrene	ug/L	1.0 U	-	1.0 U	-	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	ug/L	1.0 U	0.28 J	1.0 U	0.19 J	5.0 U	5.0 U	5.0 U	5.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	-	1.0 U	-	5.0 U	5.0 U	5.0 U	5.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	-	1.0 U	-	-	-	-	-
Trifluorotrichloroethane (Freon 113)	ug/L	1.0 U	-	1.0 U	-	-	-	-	-
Vinyl acetate	ug/L	-	-	-	-	5.0 U	5.0 U	5.0 U	5.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Xylenes (total)	ug/L	3.0 U	-	3.0 U	-	15 U	15 U	15 U	15 U
Semi-volatile Organic Compounds									
1,2,3,4-Tetrachlorobenzene	ug/L	-	9.5 U	-	9.4 U	-	-	-	-
1,2,4,5-Tetrachlorobenzene	ug/L	-	9.5 U	-	9.4 U	-	-	-	-
1,2,4-Trichlorobenzene	ug/L	-	-	-	-	9.4 U	9.6 U	10 U	9.9 U
1,2-Dichlorobenzene	ug/L	-	-	-	-	9.4 U	9.6 U	10 U	9.9 U
1,3-Dichlorobenzene	ug/L	-	-	-	-	9.4 U	9.6 U	10 U	9.9 U
1,4-Dichlorobenzene	ug/L	-	-	-	-	9.4 U	9.6 U	10 U	9.9 U
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
2,3-Dichlorophenol	ug/L	-	9.5 U	-	9.4 U	-	-	-	-
2,4,5-Trichlorophenol	ug/L	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U	9.6 U	10 U	9.9 U
2,4,6-Trichlorophenol	ug/L	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U	9.6 U	10 U	9.9 U
2,4-Dichlorophenol	ug/L	1.9 U	9.5 U	1.9 U	9.4 U	1.9 U	1.9 U	2.0 U	2.0 U
2,4-Dimethylphenol	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U
2,4-Dinitrophenol	ug/L	47 U	-	47 U	-	47 U	48 U	50 U	50 U
2,4-Dinitrotoluene	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U

TABLE 2.11

2010/2011 GROUNDWATER ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:		*MW-01*	*MW-01*	*MW-02*	*MW-02*	*3257*	*3257*	*7130*	*7132*
Sample ID:		*LC-MW1-0711*	*MW-1-0811*	*LC-MW2-0711*	*MW-2-0811*	*LC3257-610*	*LC8225-610*	*LC-7130-610*	*LC-7132-610*
Sample Date:		*7/13/2011*	*8/16/2011*	*7/13/2011*	*8/16/2011*	*6/23/2010*	*6/23/2010 (Duplicate)*	*6/16/2010*	*6/16/2010*
Parameters	*Units*								
Semi-volatile Organic Compounds (cont.)									
2,5-Dichlorophenol	ug/L	-	9.5 U	-	9.4 U	-	-	-	-
2,6-Dichlorophenol	ug/L	-	9.5 U	-	9.4 U	-	-	-	-
2,6-Dinitrotoluene	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U
2-Chloronaphthalene	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
2-Chlorophenol	ug/L	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U	9.6 U	10 U	9.9 U
2-Methylnaphthalene	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
2-Methylphenol	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U
2-Nitroaniline	ug/L	47 U	-	47 U	-	47 U	48 U	50 U	50 U
2-Nitrophenol	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U
3,3'-Dichlorobenzidine	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U
3-Nitroaniline	ug/L	47 U	-	47 U	-	47 U	48 U	50 U	50 U
4,6-Dinitro-2-methylphenol	ug/L	47 U	-	47 U	-	47 U	48 U	50 U	50 U
4-Bromophenyl phenyl ether	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U
4-Chloro-3-methylphenol	ug/L	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U	9.6 U	10 U	9.9 U
4-Chloroaniline	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U
4-Chlorophenol	ug/L	-	9.5 U	-	9.4 U	-	-	-	-
4-Chlorophenyl phenyl ether	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U
4-Methylphenol	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U
4-Nitroaniline	ug/L	47 U	-	47 U	-	47 U	48 U	50 U	50 U
4-Nitrophenol	ug/L	47 U	-	47 U	-	47 U	48 U	50 U	50 U
Acenaphthene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U	1.9 U	1.9 U	2.0 U	2.0 U
Acenaphthylene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U	1.9 U	1.9 U	2.0 U	2.0 U
Acetophenone	ug/L	9.4 U	-	9.4 U	-	-	-	-	-
Anthracene	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
Atrazine	ug/L	9.4 U	-	9.4 U	-	-	-	-	-
Benzaldehyde	ug/L	9.4 U	-	9.4 U	-	-	-	-	-
Benzo(a)anthracene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U	1.9 U	1.9 U	2.0 U	2.0 U
Benzo(a)pyrene	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
Benzo(b)fluoranthene	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
Benzo(g,h,i)perylene	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
Benzo(k)fluoranthene	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
Benzoic acid	ug/L	-	-	-	-	47 U	48 U	50 UJ	50 UJ
Benzyl alcohol	ug/L	-	-	-	-	9.4 U	9.6 U	10 U	9.9 U
Biphenyl (1,1-Biphenyl)	ug/L	9.4 U	-	9.4 U	-	-	-	-	-
bis(2-Chloroethoxy)methane	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U
bis(2-Chloroethyl)ether	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	19 U	-	19 U	-	19 U	19 U	20 U	20 U
Butyl benzylphthalate (BBP)	ug/L	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U	9.6 U	10 U	9.9 U
Caprolactam	ug/L	21 J	-	42 J	-	-	-	-	-
Carbazole	ug/L	1.9 U	-	1.9 U	-	-	-	-	-

TABLE 2.11

2010/2011 GROUNDWATER ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:		*MW-01*	*MW-01*	*MW-02*	*MW-02*	*3257*	*3257*	*7130*	*7132*
Sample ID:		*LC-MW1-0711*	*MW-1-0811*	*LC-MW2-0711*	*MW-2-0811*	*LC3257-610*	*LC8225-610*	*LC-7130-610*	*LC-7132-610*
Sample Date:		*7/13/2011*	*8/16/2011*	*7/13/2011*	*8/16/2011*	*6/23/2010*	*6/23/2010 (Duplicate)*	*6/16/2010*	*6/16/2010*
Parameters	***Units***								
Semi-volatile Organic Compounds Cont.'d									
Chrysene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U	1.9 U	1.9 U	2.0 U	2.0 U
Dibenz(a,h)anthracene	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
Dibenzofuran	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U
Diethyl phthalate	ug/L	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U	9.6 U	10 U	9.9 U
Dimethyl phthalate	ug/L	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U	9.6 U	10 U	9.9 U
Di-n-butylphthalate (DBP)	ug/L	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U	9.6 U	10 U	9.9 U
Di-n-octyl phthalate (DnOP)	ug/L	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U	9.6 U	10 U	9.9 U
Fluoranthene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U	1.9 U	1.9 U	2.0 U	2.0 U
Fluorene	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
Hexachlorobenzene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U	1.9 U	1.9 U	2.0 U	2.0 U
Hexachlorobutadiene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U	1.9 U	1.9 U	2.0 U	2.0 U
Hexachlorocyclopentadiene	ug/L	9.4 U	48 U	9.4 U	47 U	9.4 U	9.6 UJ	10 UJ	9.9 UJ
Hexachloroethane	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U
Indeno(1,2,3-cd)pyrene	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
Isophorone	ug/L	9.4 U	-	9.4 U	-	9.4 U	9.6 U	10 U	9.9 U
Naphthalene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U	1.9 U	1.9 U	2.0 U	2.0 U
Nitrobenzene	ug/L	19 U	-	19 U	-	19 U	19 U	20 U	20 U
N-Nitrosodi-n-propylamine	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
N-Nitrosodiphenylamine	ug/L	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U	9.6 U	10 U	9.9 U
Pentachlorophenol	ug/L	9.4 U	48 U	9.4 U	47 U	9.4 U	9.6 U	10 U	9.9 U
Phenanthrene	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
Phenol	ug/L	1.9 U	-	1.9 U	-	1.9 U	1.9 U	2.0 U	2.0 U
Pyrene	ug/L	1.9 U	9.5 U	1.9 U	9.4 U	1.9 U	1.9 U	2.0 U	2.0 U
PCBs									
Aroclor-1016 (PCB-1016)	ug/L	-	-	-	-	0.39 U	0.38 U	0.38 U	0.39 U
Aroclor-1221 (PCB-1221)	ug/L	-	-	-	-	0.39 U	0.38 U	0.38 U	0.39 U
Aroclor-1232 (PCB-1232)	ug/L	-	-	-	-	0.39 U	0.38 U	0.38 U	0.39 U
Aroclor-1242 (PCB-1242)	ug/L	-	-	-	-	0.39 U	0.38 U	0.38 U	0.39 U
Aroclor-1248 (PCB-1248)	ug/L	-	-	-	-	0.39 U	0.38 U	0.38 U	0.39 U
Aroclor-1254 (PCB-1254)	ug/L	-	-	-	-	0.39 U	0.38 U	0.38 U	0.39 U
Aroclor-1260 (PCB-1260)	ug/L	-	-	-	-	0.39 U	0.38 U	0.38 U	0.39 U

TABLE 2.11

2010/2011 GROUNDWATER ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SEWER REPAIR - SUPPLEMENTAL SUBSURFACE INVESTIGATION
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK

Sample Location:		*MW-01*	*MW-01*	*MW-02*	*MW-02*	*3257*	*3257*	*7130*	*7132*
Sample ID:		*LC-MW1-0711*	*MW-1-0811*	*LC-MW2-0711*	*MW-2-0811*	*LC3257-610*	*LC8225-610*	*LC-7130-610*	*LC-7132-610*
Sample Date:		*7/13/2011*	*8/16/2011*	*7/13/2011*	*8/16/2011*	*6/23/2010*	*6/23/2010 (Duplicate)*	*6/16/2010*	*6/16/2010*
Parameters	***Units***								
Pesticides									
4,4'-DDD	ug/L	0.047 U	-	0.037 J	-	0.049 UJ	0.048 U	0.048 U	0.048 U
4,4'-DDE	ug/L	0.047 U	-	0.047 U	-	0.049 UJ	0.048 U	0.048 U	0.048 U
4,4'-DDT	ug/L	0.047 U	-	0.047 U	-	0.049 UJ	0.048 U	0.048 U	0.048 U
Aldrin	ug/L	0.047 U	-	0.047 U	-	0.049 UJ	0.048 U	0.048 U	0.048 U
alpha-BHC	ug/L	0.047 U	0.0086 J	0.040 J	0.031	0.049 UJ	0.048 U	0.048 U	0.048 U
alpha-Chlordane	ug/L	0.047 U	-	0.047 U	-	0.049 UJ	0.048 U	0.048 U	0.048 U
beta-BHC	ug/L	0.047 U	0.0092 J	0.047 U	0.0069 J	0.049 UJ	0.048 U	0.048 U	0.048 U
delta-BHC	ug/L	0.047 U	0.013	0.056	0.068	0.049 UJ	0.048 U	0.048 U	0.048 U
Dieldrin	ug/L	0.047 U	-	0.047 U	-	0.049 UJ	0.048 U	0.048 U	0.048 U
Endosulfan I	ug/L	0.047 U	-	0.047 U	-	0.049 UJ	0.048 U	0.048 U	0.048 U
Endosulfan II	ug/L	0.047 U	-	0.047 U	-	0.049 UJ	0.048 U	0.048 U	0.048 U
Endosulfan sulfate	ug/L	0.047 U	-	0.047 U	-	0.049 UJ	0.048 U	0.048 U	0.048 U
Endrin	ug/L	0.047 U	-	0.047 U	-	0.049 UJ	0.048 U	0.048 U	0.048 U
Endrin aldehyde	ug/L	0.047 U	-	0.047 U	-	-	-	-	-
Endrin ketone	ug/L	0.047 U	-	0.047 U	-	0.049 UJ	0.048 U	0.048 U	0.048 U
gamma-BHC (lindane)	ug/L	0.047 U	0.0062 U	0.044 J	0.050	0.049 UJ	0.048 U	0.048 U	0.048 U
gamma-Chlordane	ug/L	0.047 U	-	0.047 U	-	0.049 UJ	0.048 U	0.048 U	0.048 U
Heptachlor	ug/L	0.047 U	-	0.047 U	-	0.049 UJ	0.048 U	0.048 U	0.048 U
Heptachlor epoxide	ug/L	0.047 U	-	0.047 U	-	0.049 UJ	0.048 U	0.048 U	0.048 U
Methoxychlor	ug/L	0.094 U	-	0.094 U	-	0.098 UJ	0.095 U	0.095 U	0.097 U
Toxaphene	ug/L	3.8 U	-	3.8 U	-	3.9 UJ	3.8 U	3.8 U	3.9 U
Field Parameters									
pH	su	7.72	6.98	7.65	7.37	6.80	-	7.54	7.91
Specific Conductivity	MHOs	4.28	4.05	3.84	3.35	5.63	-	1.17	1.16
Temperature	°C	16.76	15.11	16.98	17.26	14.90	-	13.22	13.94

Notes:

µg/L	Micrograms per Liter.
su	Standard Unit.
MHOs	Milliohms.
°C	Degrees Celsius.

APPENDIX A

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION FACT SHEET

Outdoor Activities
Animals, Plants, Aquatic Life
Chemical & Pollution Control
Environmental Cleanup & Brownfields
Regional Remediation Project Information
Region 9 - Environmental Remediation Project Information
LaSalle Sanitary Sewer Repair and Cleaning Project Update
Energy and Climate
Lands and Waters
Education
Permits and Licenses
Public Involvement and News
Regulations and Enforcement
Publications, Forms, Maps
About DEC

LaSalle Sanitary Sewer Repair and Cleaning Project Update

The NYS Department of Environmental Conservation (DEC), in cooperation with the NYS Department of Health (DOH), Niagara Falls Water Board and the City of Niagara Falls, is providing you this update to inform you of upcoming work that will be occurring as part of the Colvin Avenue sewer line investigation and repair project.

Initial work was completed earlier this spring. The upcoming activities are part of the project's required follow up actions that were identified in the previous fact sheet, and will involve the installation of monitoring wells as well as completing several soil borings. Upcoming work will be performed by Glenn Springs Holdings, Inc., and will begin in late June, 2011.

What will upcoming work include?

- Glenn Springs Holdings, Inc. will be installing three monitoring wells and completing several soil borings in late June 2011. The wells will be added to the Love Canal Long-Term Monitoring Program to monitor groundwater quality in the vicinity of the sewer repair area, and are being installed as a precautionary measure.
- These activities are scheduled to begin late June 2011 and, weather permitting, take approximately a week to complete.
- A drilling rig and other equipment will be used to bore holes into the ground and roadway for the collection of soil samples and the installation of monitoring wells.
- The west-bound lane of Colvin Boulevard, between 96th and 97th Streets, may be closed intermittently, during work activities. The east-bound lane of Colvin Boulevard will remain open and traffic control will be provided during the work period.

Important Links

March 2011 Sanitary Sewer Investigation and Remediation Report (67 Page PDF, 2.08 MB)

PDF Help

For help with PDFs on this page, please call 716-851-7220.

Contact for this Page

NYSDEC
Region 9 Office
270 Michigan Avenue
Buffalo, NY 14203
716-851-7220
Send us an email

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Erie
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- Residents in the immediate area of work will receive a postcard notifying them of the upcoming activities described above. Should further work be planned or required, the public will be notified through additional updates.

Why was sewer repair and cleaning work occurring?

Repairs to the Colvin Boulevard sanitary sewer took place as part of the Niagara Falls Water Board LaSalle Sanitary Sewer Repair Project. The project involved cleaning and repair work for 17 different sections of sewer line in the vicinity of the Love Canal site to improve the conditions of the lines and prevent storm and ground water infiltration.

The LaSalle Sanitary Sewer Repair Project occurred as part of an ongoing effort to reduce sanitary sewer overflows. Sanitary sewer overflow events happen when there are large quantities of rain or melting snow and the sewer lines become overloaded by storm water inflow or groundwater infiltration. A number of municipalities throughout the state have been asked to undertake projects such as these to improve local water quality.

Why did DEC become involved in the sewer line repair and cleaning project?

- As contractors worked to routinely clean and repair a section of sewer line located below the intersection of 96th Street and Colvin Boulevard as part of the LaSalle Sanitary Sewer Cleaning and Repair Project, a 50 foot section of sewer pipe was excavated at 96th Street and Colvin Boulevard. During excavation of this section of pipe, a chemical odor and visibly impacted soil were noticed. The contractor notified the City of Niagara Falls and work halted. DEC was notified of the incident as required by State regulations.
- The Niagara Falls Water Board staff contacted Glenn Springs Holding Inc., (a subsidiary of Occidental Chemical) which operates and maintains the nearby Love Canal treatment facility. Glenn Springs Holdings Inc. assumed the repair work with a qualified contractor, completing repair work in this area on February 21st.
- Because of the chemical odor noticed during repair work at the 96th Street and Colvin Boulevard section of sewer pipe, DEC required Glenn Springs Holdings to conduct an investigation in the project area to determine the source and extent of potential contamination found during the sewer repair work. DEC required that Glenn Springs Holdings Inc. review the operation of the Love Canal's remedial systems and develop a remediation work plan for this area that

included soil and sediment sampling and analysis for any Love Canal indicator chemicals during the sewer repair.

What did investigation work involve and what do results indicate?

DEC received a report from Glenn Springs Holdings Inc., detailing their findings from remedial sampling and investigation work at 96th Street and Colvin Boulevard. The following points summarize the contents of this report:

- One of the first actions taken was to check the integrity of current remedial treatment systems in place at the Love Canal facility. The Love Canal remedial system has three main components, including the landfill cap and barrier drain, leachate treatment, and long-term groundwater monitoring. All systems were found to be operating properly and effectively.
- Soil samples were taken in the area where evidence of contamination was observed. Samples of the contamination indicate the presence of chlorobenzene chemicals similar to those from the historic Love Canal era. Results of the investigation suggest that the source is an isolated pocket of historical contamination, and indicate that contamination is not the result of recent migration from the Love Canal facility, but rather is contamination which was outside the Love Canal facility when the treatment systems were installed.
- Samples collected after remediation work was completed at this location confirm that the chlorobenzenes in the excavation have been found to be reduced and are at minimal levels.

The report of the findings is available for viewing by clicking on the link in the right column of this page. Due to size limitations on the website, the report is an abbreviated version of the full report and does not include some appendices and tabular data. A full version of the report is available for review at DEC's Region 9 Office in Buffalo. Please call (716) 851-7220 to make an appointment if you wish to view the full document.

What actions were taken to address the contaminated material found?

- The 50-foot section of pipe where evidence of contamination was discovered was removed, in addition to impacted granular bedding material around the section of pipe down to bedrock.

- New bedding material was placed two feet around the pipe and the remainder of the excavation was backfilled and compacted with native materials removed from the excavation. Prior to backfilling, the stockpiled native material was inspected to ensure there were no odors or evidence of chemical impacts before use as backfill.
- As a precautionary measure, the sections of sanitary sewer beneath Colvin Boulevard between 97th Street and the 91st Street lift station were cleaned to remove any sediment that may have been present upon completion of sewer repair. In some sections of sewer, numerous cleanings with high pressure water were performed to ensure the removal of all sediment.
- During cleaning, wash water and sediment were collected in the downstream manhole and removed by vacuum truck. Use of an above-ground pump and piping system and the installation of sewer plugs in the downstream manhole in each section of sewer prevented sediment from entering downstream sections while cleaning.
- Once the sewers were cleaned, the pipes were video-inspected from 97th Street to the lift Station and 91st Street to ensure that all sediment had been removed. The lift station was also inspected.
- In order to ensure the safety of project workers and residents of the Black Creek neighborhood, continuous air monitoring was conducted during all work to ensure that air quality met regulatory levels.

How could historic contamination in the sewer not have been found previously?

- The contaminated section of pipe was found to be at a lower elevation than other sections of pipe, forming an isolated pocket. Hydraulic cleaning of the sewer system was performed in 1985 and 1986. However, due to the lower elevation of this section of pipe, cleaning may not have been effective within this isolated location.
- The low spot in the sanitary sewer has acted as a sediment trap which may be the reason why the bedding materials were impacted in this particular section of sewer pipe. Impacts to the bedding materials in the low section of pipe were likely the result of the sewer pipe sinking over time prior to Love Canal investigations and remediation. As the sewer piping sank, the joints in the pipe sections became compromised, allowing discharge into the sewer bedding, prior to implementation of the original Love Canal remedial

actions. The low spot in the pipe has been repaired and eliminated.

Important Points

- Of the 17 sections of sewer line in the LaSalle area that underwent cleaning and repair, evidence of contamination was observed only at a single site (96th and Colvin). The LaSalle Sewer Repair Project included excavation work at 16 other locations on City streets located near or adjacent to the Love Canal Landfill; evidence of contamination was not found at any of these other sites during sewer repair and cleaning.
- Testing and laboratory data provided to date suggests that the chemicals found do not extend beyond the sewer repair area; they remained contained within an isolated pocket in a low-lying section of pipe buried within restrictive clay soils beneath the road's surface.
- Investigation suggests that contaminated sediments found within this section of sanitary sewer along Colvin Boulevard immediately east of 96th Street are not a result of current operations at the Love Canal site.
- The contamination found was at a depth of approximately 20 to 22 feet beneath the surface of the road, isolated within a low-lying section of sewer line embedded within clay soils, which restrict migration of material.

What's Next?

- As a precautionary measure, Glenn Springs Holdings Inc. will be installing a groundwater monitoring well in the general area of the sewer line repair in late June of 2011.
- The low section of pipe has been replaced and repaired and the contamination found was removed. The area where the contamination was found is 20 feet below the surface of the road and surrounded by clay soils. Based on the investigation and findings, appropriate actions have been taken to remedy contamination found and to ensure that human health and the environment are protected.

Who can I contact if I have questions?

Should you have additional questions, please feel welcome to contact the representatives below.

Environment-Related Information

Gregory Sutton
NYSDEC Region 9 Office
270 Michigan Ave.
Buffalo, NY 14203

Phone: (716) 851-7220
Email: gpsutton@gw.dec.state.ny.us

Health-Related Information

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584 Delaware Ave.
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APPENDIX B

STRATIGRAPHIC AND INSTRUMENTATION LOGS

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: LOVE CANAL
PROJECT NUMBER: 009954
CLIENT: GLENN SPRINGS HOLDINGS
LOCATION: NIAGARA FALLS, NEW YORK
LOCATION DESCRIPTION: COLVIN BLVD AND 96TH ST

HOLE DESIGNATION: MW-01
DATE COMPLETED: June 29, 2011
DRILLING METHOD: HSA
FIELD PERSONNEL: S. MCEVOY

NORTHING: 1124218
EASTING: 1049984

TOP OF CASING 571.98
GROUND SURFACE 571.97
TOP OF RISER 571.55

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft
0	GP-GRAVEL, stones	571.47
2	CL/ML-SILTY CLAY, with coarse gravel, stiff, low plasticity, olive gray, dry	570.47
4	CL-CLAY, medium stiff, light brown, dry, no odor - stiff, light gray at 2.0ft BGS	567.97
6	CL/ML-CLAY TO SILTY CLAY, low plasticity, stiff, light brown/light gray, dry, no odor	565.97
8	CL/ML-SILTY CLAY, stiff, medium plasticity, olive gray, dry, no odor - medium stiff, light brown/light gray at 9.0ft BGS	
10	- soft, high plasticity, light brown/light gray at 10.5ft BGS	
12	- moist at 11.0ft BGS	
14	CL-CLAY, with small amount of fine gravel, very soft, high plasticity, light brown/light gray, moist to wet	557.97
16	- large rock, no odor at 17.0ft BGS	
18	CL-CLAY, some fine gravel, soft, high plasticity, light brown/light gray, moist, no odor	553.97
20	CL/ML-SILTY CLAY, with coarse gravel, medium stiff, medium plasticity, light brown/light gray, no odor	552.47
22	with rock fragments and coarse gravel layered, low plasticity, limestone fragments	549.97
24	CL-CLAY, with coarse gravel, limestone fragments, stiff, brittle, light gray, no odor, - moist at 24.0ft BGS	
26	SM-SILTY SAND, fine sand, loose, light gray/light brown, moist, no odor	546.47 545.47
28	CL/ML-SILTY CLAY, coarse sand, medium stiff, light gray, moist, no odor	543.97
30	SP-SAND, fine grained, with fine gravel, medium dense, light gray, wet, no odor - rock fragments, fractured limestone, some fine sand, dark gray, wet, no odor at 29.0ft BGS	541.22
32	BEDROCK END OF OVERBURDEN HOLE @ 30.8ft BGS	
34		

MONITORING WELL: 4" CASING; 6-1/4" BOREHOLE

SAMPLE NUMBER	INTERVAL	REC (%)	BLOW COUNTS	PID (ppm)
1HSA		63	12	0.0
2HSA		83	17	0.0
3HSA		92	23	0.0
4HSA		92	26	0.0
5HSA		100	11	0.0
6HSA		100	5	0.0
7HSA		100	3	0.0
8HSA		100	4	0.0
9HSA		67	5	0.0
10HSA		75	10	0.0
11HSA		100	40	0.0
12HSA		100	42	0.0
13HSA		100	65	0.0
14HSA		75	25	0.0
15HSA		100	31	0.0
16HSA		67	100/2"	0.0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 009954WIN.GPJ CRA_CORP.GDT 10/12/11

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: LOVE CANAL
PROJECT NUMBER: 009954
CLIENT: GLENN SPRINGS HOLDINGS
LOCATION: NIAGARA FALLS, NEW YORK
LOCATION DESCRIPTION: COLVIN BLVD AND 96TH ST

HOLE DESIGNATION: MW-01
DATE COMPLETED: June 29, 2011
DRILLING METHOD: HSA
FIELD PERSONNEL: S. MCEVOY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITORING WELL	RUN NUMBER	CORE RECOVERY %	RQD %
30	SP-SAND, fine grained, with fine gravel, medium dense, light gray, wet, no odor - rock fragments, fractured limestone, some fine sand, dark gray, wet, no odor at 29.0ft BGS	543.97				
	BEDROCK	541.22	6" BOREHOLE			
32						
34	- very fractured, no solid core bigger than 0.15" from 33.1 to 34.1ft at 33.1ft BGS - horizontal fractures at 34.2, 34.5, 34.6, 35.1, 35.3, 36.4, 36.5 and 37.1ft at 34.2ft BGS		4" CORING			35
36						
38	END OF BOREHOLE @ 37.9ft BGS	534.07				
	NOTE: WATER LOSS = 15%					
40						
42						
44						
46						
48						
50						
52						
54						
56						
58						
60						
62						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: LOVE CANAL
PROJECT NUMBER: 009954
CLIENT: GLENN SPRINGS HOLDINGS
LOCATION: NIAGARA FALLS, NEW YORK
LOCATION DESCRIPTION: COLVIN BLVD AND 96TH ST

HOLE DESIGNATION: MW-02
DATE COMPLETED: June 27, 2011
DRILLING METHOD: HSA
FIELD PERSONNEL: J. POLOVICH

NORTHING: 1124279
EASTING: 1049879

	ELEV. ft
GROUND SURFACE	571.39
TOP OF CASING	571.24
TOP OF RISER	571.10

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft
0	TOPSOIL, with brown organics	570.69
	SC-SAND/SILTY CLAY, some organics, medium brown, dry, no odor	569.39
2	CL/ML-SILTY CLAY, medium stiff, olive gray, dry, no odor	
4	- hard, brittle, low plasticity at 4.0ft BGS	
6	- slightly plastic, light gray/brown at 7.0ft BGS	
8		
10	- soft, high plasticity, light gray/brown at 9.5ft BGS	560.89
	CL-CLAY, soft, high plasticity, light gray/light brown, moist, no odor	
12	- minor rock fragments at 13.0ft BGS	
14	CL/ML-SILTY CLAY, very soft, light gray/light brown, moist, no odor	557.39
16		
	CLS-SANDY CLAY, mixed with pebbles/stones, very soft, high plasticity, moist to wet	554.39
18		
20		
	- rock fragments, limestone, crystalline structure, layered, gray at 20.9ft BGS	550.39
22	CL-CLAY, with rock fragments, high sand content, dense, angular limestone fragments, brown	
24	- rock fragments at 23.0ft BGS	547.39
	AUGER REFUSAL	545.89
26	CL-CLAY, with rock fragments, soft, gray, moist, no odor	544.89
	SP-SAND, medium grained, minor black grains, gray, saturated, no odor	
28	- rock fragments at 28.4ft BGS	542.89
	SP-SAND, running sand, probably sluff, gray	
30		
	TILL MATERIAL, clay, hard, mixed with running sand, rocks, light brown/light gray	539.89
32	END OF OVERBURDEN HOLE @ 31.8ft BGS	
34		

MONITORING WELL: 4" CASING; 6-1/4" BOREHOLE; ▽ WATER FOUND

SAMPLE NUMBER	INTERVAL	REC (%)	BLOW COUNTS	PID (ppm)
1HSA		50	5	0.0
2HSA		54	13	0.0
3HSA		75	18	0.0
4HSA		75	10	0.0
5HSA		100	11	0.0
6HSA		100	4	0.0
7HSA		100	1	0.0
8HSA		100	1	0.0
9HSA		100		0.0
10HSA		100	5	0.0
11HSA		79	48	0.0
12HSA		100	93	0.0
13HSA		8		0.0
14HSA		83	50	0.0
15HSA		33	75	0.0
16HSA		88	100/3"	0.0
17HSA		100		0.0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

WATER FOUND ▽

OVERBURDEN LOG 009954WIN.GPJ CRA_CORP.GDT 10/12/11

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: LOVE CANAL
PROJECT NUMBER: 009954
CLIENT: GLENN SPRINGS HOLDINGS
LOCATION: NIAGARA FALLS, NEW YORK
LOCATION DESCRIPTION: COLVIN BLVD AND 96TH ST

HOLE DESIGNATION: MW-02
DATE COMPLETED: June 27, 2011
DRILLING METHOD: HSA
FIELD PERSONNEL: J. POLOVICH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITORING WELL	RUN NUMBER	CORE RECOVERY %	RQD %
32	TILL MATERIAL, clay, hard, mixed with running sand, rocks, light brown/light gray	539.89				
	BEDROCK	539.59	6" BOREHOLE			
34	- horizontal fractures at 34.2, 34.5, 34.7, 34.9, 35.4, 35.6, 36.1, 36.2, 36.6, 37.3, 37.4, 37.5, 37.6, 37.7 and 37.8ft at 34.2ft BGS		4" CORING			
36						22
38	END OF BOREHOLE @ 38.8ft BGS	532.59				
40	NOTE: WATER LOSS = ~50%					
42						
44						
46						
48						
50						
52						
54						
56						
58						
60						
62						
64						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: LOVE CANAL
PROJECT NUMBER: 009954
CLIENT: GLENN SPRINGS HOLDINGS
LOCATION: NIAGARA FALLS, NEW YORK
LOCATION DESCRIPTION: COLVIN BLVD AND 96TH ST

HOLE DESIGNATION: MW-03
DATE COMPLETED: July 1, 2011
DRILLING METHOD: HSA
FIELD PERSONNEL: S. MCEVOY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE BLOW COUNTS
	NORTHING: 1124252 EASTING: 1049936 — TOP OF CASING 571.05; GROUND SURFACE 571.03; TOP OF RISER 570.71						
0	FILL		CONCRETE				
2			BENTONITE GROUT				
4			2" STAINLESS STEEL CASING				
6							
8			4-1/4" BOREHOLE				
10							
12			BENTONITE				
14							
16							
18							
20							
22			2" STAINLESS STEEL SCREEN				
24							
26			SAND PACK				
28							
30	END OF BOREHOLE @ 30.5ft BGS	540.53	BENTONITE				
32			WELL DETAILS Screened interval: 551.03 to 541.03ft 20.00 to 30.00ft BGS Length: 10ft Diameter: 2in Slot Size: 0.010				
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: LOVE CANAL
PROJECT NUMBER: 009954
CLIENT: GLENN SPRINGS HOLDINGS
LOCATION: NIAGARA FALLS, NEW YORK
LOCATION DESCRIPTION: COLVIN BLVD AND 96TH ST

HOLE DESIGNATION: MW-03
DATE COMPLETED: July 1, 2011
DRILLING METHOD: HSA
FIELD PERSONNEL: S. MCEVOY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE BLOW COUNTS	
36			Material: STAINLESS STEEL Seal: 559.53 to 553.03ft 11.50 to 18.00ft BGS Material: BENTONITE Sand Pack: 553.03 to 540.83ft 18.00 to 30.20ft BGS Material: SAND					
38								
40								
42								
44								
46								
48								
50								
52								
54								
56								
58								
60								
62								
64								
66								
68								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: LOVE CANAL
PROJECT NUMBER: 009954
CLIENT: GLENN SPRINGS HOLDINGS
LOCATION: NIAGARA FALLS, NEW YORK

HOLE DESIGNATION: SB-01
DATE COMPLETED: July 5, 2011
DRILLING METHOD: HSA
FIELD PERSONNEL: S. MCEVOY

NORTHING: 1124250
EASTING: 1050030

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	SAMPLE NUMBER	INTERVAL	REC (%)	BLOW COUNTS	PID (ppm)
	GROUND SURFACE	571.66					
0	BLACKTOP	571.16					
	SP-SAND, fine sand with coarse gravel, loose, light gray, dry, no odor		1HSA		29	66	0.0
2							
	CL/ML-SILTY CLAY, medium stiff, low plasticity, olive gray, dry, no odor	568.66	2HSA		63	11	0.0
4			3HSA		63	8	0.0
6	- no fines, medium stiff, medium plasticity at 6.0ft BGS		4HSA		63	7	0.0
8	- soft, medium plasticity at 8.0ft BGS		5HSA		71	6	0.0
10	- medium dense at 10.0ft BGS	561.16	6HSA		63	5	0.0
	CL/ML-SILTY CLAY, no fines, soft, medium plasticity, light gray/light brown, moist, no odor						
12	- medium stiff, slightly moist at 12.0ft BGS		7HSA		63	8	0.0
14	- soft at 14.0ft BGS		8HSA		83	5	0.0
16	- medium stiff, low plasticity at 16.0ft BGS		9HSA		67	8	0.0
18							
	- large white stones/coarse gravel at 18.9ft BGS	552.66	10HSA		83	25	0.0
20	CL/ML-SILTY CLAY, with medium to fine sand, medium stiff, low plasticity, light brown/light gray, dry, no odor	551.66					
	MLS-SANDY SILT, with fine gravel, bits of rock, some fine sand, medium dense, light brown/light gray, dry, noticeable odor		11HSA		100	66	26.2
22	CL/ML-SILT/CLAYEY SILT, with coarse sand and rock, stiff, low plasticity, light brown, dry	549.66	12HSA		92	42	65.0
24	MLS-SANDY SILT, with medium gravel and rock, very stiff, light brown/light gray, moist, heavy chemical odor, visible LNAPL at top of spoon	547.66	13HSA		63	56	204
26	- with medium gravel, stiff, light brown, wet, heavy chemical odor at 26.0ft BGS		14HSA		97	29	45.8
28	SP-SAND, with pieces of bedrock, medium grained, loose, wet, chemical odor	543.66	15HSA		100		33.5
	- REFUSAL at 28.5ft BGS	543.16					
30	END OF BOREHOLE @ 28.5ft BGS						
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

OVERBURDEN LOG 009954WIN.GPJ CRA_CORP.GDT 10/12/11

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: LOVE CANAL
PROJECT NUMBER: 009954
CLIENT: GLENN SPRINGS HOLDINGS
LOCATION: NIAGARA FALLS, NEW YORK

HOLE DESIGNATION: SB-02
DATE COMPLETED: July 6, 2011
DRILLING METHOD: HSA
FIELD PERSONNEL: S. MCEVOY

NORTHING: 1124248
EASTING: 1050088

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	SAMPLE NUMBER	INTERVAL	REC (%)	BLOW COUNTS	PID (ppm)
	GROUND SURFACE	571.89					
	BLACKTOP	571.39					
	SP-SAND, some fine sand, blacktop sub-base, with coarse gravel, loose, light gray, dry, no odor		1HSA		38	21	0.0
2	- CL/ML-SILTY CLAY, medium stiff, low plasticity, olive gray, dry, no odor at 2.0ft BGS		2HSA		79	13	0.0
4			3HSA		75	10	0.0
	- a few roots, sand, olive gray/light brown at 5.5ft BGS						
6	- a few roots, soft, medium plasticity, olive gray/dark gray at 6.0ft BGS		4HSA		71	5	0.0
8	- soft, medium plasticity, light gray/light brown, slightly moist at 8.0ft BGS		5HSA		58	2	0.0
10			6HSA		79	3	0.0
12			7HSA		54	2	0.0
14	- piece of wood (root), soft, medium plasticity, light brown/light gray, wet at 14.0ft BGS		8HSA		46	3	0.0
16	- soft, medium plasticity, light gray/olive gray, moist at 16.0ft BGS		9HSA		50	3	0.0
	- small root at 17.0ft BGS						
18	- soft, medium plasticity, light gray/olive gray, moist at 18.0ft BGS		10HSA		58	3	0.0
20	CL/ML-SILTY CLAY, fine gravel, very stiff, low plasticity, light gray, wet, noticeable odor	551.89	11HSA		83	68	23.9
22	- mixed with medium sand, hard, low plasticity, light brown/light gray, wet, odor present at 22.0ft BGS		12HSA		92	81	26.5
24							4.5
	MLS-SANDY SILT, with coarse sand, small rocks, loose, light gray, wet, slight odor	546.89 546.39	13HSA		71	53	0.0 0.9
26	GP-GRAVEL, fine grained, with rock, pieces of bedrock, loose, light gray, wet, no odor		14HSA		42	100/ 2"	0.0
28	SP-SAND, fine grained, wet, sluff from auger	543.89 543.69	15HSA				
	- REFUSAL at 28.2ft BGS						
30	END OF BOREHOLE @ 28.2ft BGS						
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 009954WIN.GPJ CRA_CORP.GDT 10/12/11

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: LOVE CANAL
PROJECT NUMBER: 009954
CLIENT: GLENN SPRINGS HOLDINGS
LOCATION: NIAGARA FALLS, NEW YORK

HOLE DESIGNATION: SB-03
DATE COMPLETED: July 11, 2011
DRILLING METHOD: HSA
FIELD PERSONNEL: S. MCEVOY

NORTHING: 1124247
EASTING: 1050136

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	SAMPLE NUMBER	INTERVAL	REC (%)	BLOW COUNTS	PID (ppm)
	GROUND SURFACE	571.70					
	PAVEMENT	571.20					
	SP-SAND, pulverized concrete, fine grained, light gray, dry, no odor		1HSA		42	61	0.0
2	CL/ML-CLAYEY SILT, with a few fines, stiff, low plasticity, olive gray, dry, no odor	569.70	2HSA		71	11	0.0
4			3HSA		63	5	0.0
	CL/ML-SILTY CLAY, medium stiff, medium plasticity, olive gray, dry, no odor	566.70					
6	- soft at 6.0ft BGS		4HSA		75	4	0.0
8	- soft, medium plasticity, light gray/light brown at 8.0ft BGS		5HSA		75	5	0.0
10	- soft, medium plasticity, light gray/light brown, moist at 10.0ft BGS		6HSA		100	4	0.0
12			7HSA		100	2	0.0
14	- very soft, medium plasticity, light gray/light brown, moist at 14.0ft BGS		8HSA		100		0.0
16	- mixed with coarse sand, very soft, light brown/light gray, wet at 16.0ft BGS		9HSA		71	3	0.0
18			10HSA		100	81	0.0
	CL/ML-CLAYEY SILT, mixed with coarse sand and fine gravel, a few large rocks hard, low plasticity, light brown/light gray, dry, no odor	553.20					
20	- fractured silt, very hard, very slight odor from 20-21ft at 20.0ft BGS		11HSA		100	85	0.2
22		549.70					
	MLS-SANDY SILT, mixed with fine sand, hard, light brown/light gray, dry, no odor		12HSA		100	78	0.0
24	- large rocks at 22.5ft BGS - large rocks at 23.5ft BGS - stiff, dry at 24.0ft BGS		13HSA		100	94	
26	- AUGER REFUSAL at 26.0ft BGS - sluff, loose, wet, no odor at 26.5ft BGS	545.00	14HSA		75	100/ 2"	
28	END OF BOREHOLE @ 26.7ft BGS						
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 009954WIN.GPJ CRA_CORP.GDT 10/12/11

APPENDIX C

DATA VALIDATIONS

CONESTOGA-ROVERS & ASSOCIATES

2055 Niagara Falls Blvd., Suite #3
Niagara Falls, New York 14304
Telephone: (716) 297-6150 Fax: (716) 297-2265
www.CRAworld.com

MEMORANDUM

TO: Darrell Crockett

REF. NO.: 009954

FROM: Sheri Finn/bjw/19

DATE: October 14, 2011

C.C.: Clint Babcock, Dennis Hoyt, Jane Polovich

E-Mail and Hard Copy if Requested

RE: **Analytical Results**
Love Canal Colvin Boulevard Sampling Program
Niagara Falls, New York
July 2011

INTRODUCTION

Samples were collected at the Love Canal Site (Site) in support of the 2nd Round Colvin Boulevard Sampling Program. Samples were collected in July 2011 and were analyzed for the following:

Analytical Parameters	*Analytical Method*	*Laboratory*
Volatile Organic Compounds (VOCs)	SW-846 8260	Test America, Pittsburgh Pennsylvania
Semi-Volatile Organic Compounds (SVOCs)	SW-846 8270	Test America, Pittsburgh Pennsylvania
Pesticides	SW-846 8081	Test America, Pittsburgh Pennsylvania

A summary of the analytical results are presented in Tables 1A and 1B. Evaluation of the data was based on information obtained from finished data sheets, blank data, duplicate results, and spike recoveries.

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Samples were prepared and/or analyzed within the method required holding times.

Method blanks were prepared and analyzed with the samples and results were non-detect for the compounds of interest with the exception of some pesticides. Associated pesticide sample results were non-detect and no qualification was necessary.

One trip blank was prepared and analyzed with the samples for volatile analysis. All results were non-detect for the compounds of interest with the exception of acetone and methylene chloride. Associated sample results were non-detect and no qualification was necessary.

All VOC, SVOC and pesticide surrogate recoveries met the method-specified criteria indicating acceptable analytical efficiency.

Laboratory control sample (LCS) and/or laboratory control sample duplicates (LCSD) were analyzed for all parameters. All results were acceptable, indicating good analytical accuracy and precision with the exception of atrazine and benzaldehyde. Associated sample results were qualified as shown in Table 2.

Matrix spike (MS) and matrix spike duplicates (MSD) were prepared and analyzed for all parameters. Associated data were qualified as shown in Table 3.

Dual columns were used for pesticides analysis. Several analyses had a percent difference greater than 40 percent and the associated sample results were qualified as estimated.

CONCLUSION

Based on the QC review, the data summarized in Table 1 were judged to be usable with the qualifications and exceptions noted.

TABLE 1A

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	*MW-01*	*MW-02*
	Sample ID:	*LC-MW1-0711*	*LC-MW2-0711*
	Sample Date:	*7/13/2011*	*7/13/2011*
Parameters	***Units***		
Volatile Organic Compounds			
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U
2-Hexanone	µg/L	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	5.0 U	5.0 U
Acetone	µg/L	5.0 U	5.0 U
Benzene	µg/L	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U
Carbon disulfide	µg/L	1.0 U	1.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U
Cyclohexane	µg/L	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U
Isopropyl benzene	µg/L	1.0 U	1.0 U
Methyl acetate	µg/L	1.0 U	1.0 U
Methyl cyclohexane	µg/L	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U
Methylene chloride	µg/L	1.0 U	1.0 U
Styrene	µg/L	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U
Toluene	µg/L	1.0 U	1.0 U

TABLE 1A

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	*MW-01*	*MW-02*
	Sample ID:	*LC-MW1-0711*	*LC-MW2-0711*
	Sample Date:	*7/13/2011*	*7/13/2011*
Parameters	*Units*		
Volatile Organic Compounds (Cont'd.)			
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U
Trifluorotrichloroethane (Freon 113)	µg/L	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U
Xylenes (total)	µg/L	3.0 U	3.0 U
Semi-volatile Organic Compounds			
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	1.9 U	1.9 U
2,4,5-Trichlorophenol	µg/L	9.4 U	9.4 U
2,4,6-Trichlorophenol	µg/L	9.4 U	9.4 U
2,4-Dichlorophenol	µg/L	1.9 U	1.9 U
2,4-Dimethylphenol	µg/L	9.4 U	9.4 U
2,4-Dinitrophenol	µg/L	47 U	47 U
2,4-Dinitrotoluene	µg/L	9.4 U	9.4 U
2,6-Dinitrotoluene	µg/L	9.4 U	9.4 U
2-Chloronaphthalene	µg/L	1.9 U	1.9 U
2-Chlorophenol	µg/L	9.4 U	9.4 U
2-Methylnaphthalene	µg/L	1.9 U	1.9 U
2-Methylphenol	µg/L	9.4 U	9.4 U
2-Nitroaniline	µg/L	47 U	47 U
2-Nitrophenol	µg/L	9.4 U	9.4 U
3,3'-Dichlorobenzidine	µg/L	9.4 U	9.4 U
3-Nitroaniline	µg/L	47 U	47 U
4,6-Dinitro-2-methylphenol	µg/L	47 U	47 U
4-Bromophenyl phenyl ether	µg/L	9.4 U	9.4 U
4-Chloro-3-methylphenol	µg/L	9.4 U	9.4 U
4-Chloroaniline	µg/L	9.4 U	9.4 U
4-Chlorophenyl phenyl ether	µg/L	9.4 U	9.4 U
4-Methylphenol	µg/L	9.4 U	9.4 U
4-Nitroaniline	µg/L	47 U	47 U
4-Nitrophenol	µg/L	47 U	47 U
Acenaphthene	µg/L	1.9 U	1.9 U
Acenaphthylene	µg/L	1.9 U	1.9 U
Acetophenone	µg/L	9.4 U	9.4 U
Anthracene	µg/L	1.9 U	1.9 U
Atrazine	µg/L	9.4 U	9.4 U
Benzaldehyde	µg/L	9.4 U	9.4 U
Benzo(a)anthracene	µg/L	1.9 U	1.9 U
Benzo(a)pyrene	µg/L	1.9 U	1.9 U

TABLE 1A

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	*MW-01*	*MW-02*
	Sample ID:	*LC-MW1-0711*	*LC-MW2-0711*
	Sample Date:	*7/13/2011*	*7/13/2011*
Parameters	*Units*		
Semi-volatile Organic Compounds (Cont'd.)			
Benzo(b)fluoranthene	µg/L	1.9 U	1.9 U
Benzo(g,h,i)perylene	µg/L	1.9 U	1.9 U
Benzo(k)fluoranthene	µg/L	1.9 U	1.9 U
Biphenyl (1,1-Biphenyl)	µg/L	9.4 U	9.4 U
bis(2-Chloroethoxy)methane	µg/L	9.4 U	9.4 U
bis(2-Chloroethyl)ether	µg/L	1.9 U	1.9 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	19 U	19 U
Butyl benzylphthalate (BBP)	µg/L	9.4 U	9.4 U
Caprolactam	µg/L	21 J	42 J
Carbazole	µg/L	1.9 U	1.9 U
Chrysene	µg/L	1.9 U	1.9 U
Dibenz(a,h)anthracene	µg/L	1.9 U	1.9 U
Dibenzofuran	µg/L	9.4 U	9.4 U
Diethyl phthalate	µg/L	9.4 U	9.4 U
Dimethyl phthalate	µg/L	9.4 U	9.4 U
Di-n-butylphthalate (DBP)	µg/L	9.4 U	9.4 U
Di-n-octyl phthalate (DnOP)	µg/L	9.4 U	9.4 U
Fluoranthene	µg/L	1.9 U	1.9 U
Fluorene	µg/L	1.9 U	1.9 U
Hexachlorobenzene	µg/L	1.9 U	1.9 U
Hexachlorobutadiene	µg/L	1.9 U	1.9 U
Hexachlorocyclopentadiene	µg/L	9.4 U	9.4 U
Hexachloroethane	µg/L	9.4 U	9.4 U
Indeno(1,2,3-cd)pyrene	µg/L	1.9 U	1.9 U
Isophorone	µg/L	9.4 U	9.4 U
Naphthalene	µg/L	1.9 U	1.9 U
Nitrobenzene	µg/L	19 U	19 U
N-Nitrosodi-n-propylamine	µg/L	1.9 U	1.9 U
N-Nitrosodiphenylamine	µg/L	9.4 U	9.4 U
Pentachlorophenol	µg/L	9.4 U	9.4 U
Phenanthrene	µg/L	1.9 U	1.9 U
Phenol	µg/L	1.9 U	1.9 U
Pyrene	µg/L	1.9 U	1.9 U
Pesticides			
4,4'-DDD	µg/L	0.047 U	0.037 J
4,4'-DDE	µg/L	0.047 U	0.047 U
4,4'-DDT	µg/L	0.047 U	0.047 U
Aldrin	µg/L	0.047 U	0.047 U
alpha-BHC	µg/L	0.047 U	0.040 J
alpha-Chlordane	µg/L	0.047 U	0.047 U

TABLE 1A

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	*MW-01*	*MW-02*
	Sample ID:	*LC-MW1-0711*	*LC-MW2-0711*
	Sample Date:	*7/13/2011*	*7/13/2011*
Parameters	*Units*		
Pesticides (Cont'd.)			
beta-BHC	µg/L	0.047 U	0.047 U
delta-BHC	µg/L	0.047 U	0.056
Dieldrin	µg/L	0.047 U	0.047 U
Endosulfan I	µg/L	0.047 U	0.047 U
Endosulfan II	µg/L	0.047 U	0.047 U
Endosulfan sulfate	µg/L	0.047 U	0.047 U
Endrin	µg/L	0.047 U	0.047 U
Endrin aldehyde	µg/L	0.047 U	0.047 U
Endrin ketone	µg/L	0.047 U	0.047 U
gamma-BHC (lindane)	µg/L	0.047 U	0.044 J
gamma-Chlordane	µg/L	0.047 U	0.047 U
Heptachlor	µg/L	0.047 U	0.047 U
Heptachlor epoxide	µg/L	0.047 U	0.047 U
Methoxychlor	µg/L	0.094 U	0.094 U
Toxaphene	µg/L	3.8 U	3.8 U

Notes:

J - Estimated concentration.
U - Not present at or above the associated value.

TABLE 1B

ANALYTICAL RESULTS SUMMARY
SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	*MW-03*	*SB-01*	*SB-02*
	Sample ID:	*S-009954-070111-SM-010*	*S-009954-070511-SM-011*	*S-009954-070611-SM-012*
	Sample Date:	*7/1/2011*	*7/5/2011*	*7/6/2011*
	Sample Depth:	*(27-28) ft BGS*	*(27.5-28.5) ft BGS*	*(21-22) ft BGS*
Parameters	*Units*			
Volatile Organic Compounds				
1,1,1-Trichloroethane	µg/kg	7000 U	5700 U	5800 U
1,1,2,2-Tetrachloroethane	µg/kg	7000 U	5700 U	5800 U
1,1,2-Trichloroethane	µg/kg	7000 U	5700 U	5800 U
1,1-Dichloroethane	µg/kg	7000 U	5700 U	5800 U
1,1-Dichloroethene	µg/kg	7000 U	5700 U	5800 U
1,2,4-Trichlorobenzene	µg/kg	92000 J	37000	33000
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	7000 U	5700 U	5800 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	7000 U	5700 U	5800 U
1,2-Dichlorobenzene	µg/kg	4300 J	1200 J	920 J
1,2-Dichloroethane	µg/kg	7000 U	5700 U	5800 U
1,2-Dichloropropane	µg/kg	7000 U	5700 U	5800 U
1,3-Dichlorobenzene	µg/kg	7000 U	5700 U	1500 J
1,4-Dichlorobenzene	µg/kg	5700 J	1800 J	1500 J
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	7000 U	5700 U	5800 U
2-Hexanone	µg/kg	7000 U	5700 U	5800 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	7000 U	5700 U	5800 U
Acetone	µg/kg	28000 U	23000 U	23000 U
Benzene	µg/kg	7000 U	5700 U	5800 U
Bromodichloromethane	µg/kg	7000 U	5700 U	5800 U
Bromoform	µg/kg	7000 U	5700 U	5800 U
Bromomethane (Methyl bromide)	µg/kg	7000 U	5700 U	5800 U
Carbon disulfide	µg/kg	7000 U	5700 U	5800 U
Carbon tetrachloride	µg/kg	7000 U	5700 U	5800 U
Chlorobenzene	µg/kg	1700 J	5700 U	5800 U
Chloroethane	µg/kg	7000 U	5700 U	5800 U
Chloroform (Trichloromethane)	µg/kg	7000 U	5700 U	5800 U

TABLE 1B

ANALYTICAL RESULTS SUMMARY
SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	***MW-03***	***SB-01***	***SB-02***
	Sample ID:	***S-009954-070111-SM-010***	***S-009954-070511-SM-011***	***S-009954-070611-SM-012***
	Sample Date:	***7/1/2011***	***7/5/2011***	***7/6/2011***
	Sample Depth:	***(27-28) ft BGS***	***(27.5-28.5) ft BGS***	***(21-22) ft BGS***
Parameters	***Units***			
Volatile Organic Compounds (Cont'd.)				
Chloromethane (Methyl chloride)	µg/kg	7000 U	5700 U	5800 U
cis-1,2-Dichloroethene	µg/kg	7000 U	5700 U	5800 U
cis-1,3-Dichloropropene	µg/kg	7000 U	5700 U	5800 U
Cyclohexane	µg/kg	7000 U	5700 U	5800 U
Dibromochloromethane	µg/kg	7000 U	5700 U	5800 U
Dichlorodifluoromethane (CFC-12)	µg/kg	7000 U	5700 U	5800 U
Ethylbenzene	µg/kg	7000 U	5700 U	5800 U
Isopropyl benzene	µg/kg	7000 U	5700 U	5800 U
Methyl acetate	µg/kg	7000 U	5700 U	5800 U
Methyl cyclohexane	µg/kg	7000 U	5700 U	5800 U
Methyl tert butyl ether (MTBE)	µg/kg	7000 U	5700 U	5800 U
Methylene chloride	µg/kg	7000 U	5700 U	5800 U
Styrene	µg/kg	7000 U	5700 U	5800 U
Tetrachloroethene	µg/kg	7000 U	5700 U	5800 U
Toluene	µg/kg	7000 U	5700 U	5800 U
trans-1,2-Dichloroethene	µg/kg	7000 U	5700 U	5800 U
trans-1,3-Dichloropropene	µg/kg	7000 U	5700 U	5800 U
Trichloroethene	µg/kg	7000 U	5700 U	5800 U
Trichlorofluoromethane (CFC-11)	µg/kg	7000 U	5700 U	5800 U
Trifluorotrichloroethane (Freon 113)	µg/kg	7000 U	5700 U	5800 U
Vinyl chloride	µg/kg	7000 U	5700 U	5800 U
Xylenes (total)	µg/kg	21000 U	17000 U	17000 U
Semi-volatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	190 U	76 U	76 U
2,4,5-Trichlorophenol	µg/kg	930 U	370 U	380 U
2,4,6-Trichlorophenol	µg/kg	930 U	370 U	380 U

TABLE 1B

ANALYTICAL RESULTS SUMMARY
SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	***MW-03***	***SB-01***	***SB-02***
	Sample ID:	***S-009954-070111-SM-010***	***S-009954-070511-SM-011***	***S-009954-070611-SM-012***
	Sample Date:	***7/1/2011***	***7/5/2011***	***7/6/2011***
	Sample Depth:	***(27-28) ft BGS***	***(27.5-28.5) ft BGS***	***(21-22) ft BGS***
Parameters	***Units***			
Semi-volatile Organic Compounds (Cont'd.)				
2,4-Dichlorophenol	µg/kg	190 U	76 U	76 U
2,4-Dimethylphenol	µg/kg	930 U	370 U	380 U
2,4-Dinitrophenol	µg/kg	4800 U	1900 U	1900 U
2,4-Dinitrotoluene	µg/kg	930 U	370 U	380 U
2,6-Dinitrotoluene	µg/kg	930 U	370 U	380 U
2-Chloronaphthalene	µg/kg	190 U	76 U	76 U
2-Chlorophenol	µg/kg	930 U	370 U	380 U
2-Methylnaphthalene	µg/kg	130 J	76 U	76 U
2-Methylphenol	µg/kg	930 U	370 U	380 U
2-Nitroaniline	µg/kg	4800 U	1900 U	1900 U
2-Nitrophenol	µg/kg	930 U	370 U	380 U
3&4-Methylphenol	µg/kg	930 U	370 U	380 U
3,3'-Dichlorobenzidine	µg/kg	930 U	370 U	380 U
3-Nitroaniline	µg/kg	4800 U	1900 U	1900 U
4,6-Dinitro-2-methylphenol	µg/kg	4800 U	1900 U	1900 U
4-Bromophenyl phenyl ether	µg/kg	930 U	370 U	380 U
4-Chloro-3-methylphenol	µg/kg	930 U	370 U	380 U
4-Chloroaniline	µg/kg	930 U	370 U	380 U
4-Chlorophenyl phenyl ether	µg/kg	930 U	370 U	380 U
4-Nitroaniline	µg/kg	4800 U	1900 U	1900 U
4-Nitrophenol	µg/kg	4800 U	1900 U	1900 U
Acenaphthene	µg/kg	190 U	76 U	76 U
Acenaphthylene	µg/kg	190 U	76 U	76 U
Acetophenone	µg/kg	930 U	370 U	380 U
Anthracene	µg/kg	190 U	76 U	76 U
Atrazine	µg/kg	930 U	R	R

TABLE 1B

ANALYTICAL RESULTS SUMMARY
SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	*MW-03*	*SB-01*	*SB-02*
	Sample ID:	*S-009954-070111-SM-010*	*S-009954-070511-SM-011*	*S-009954-070611-SM-012*
	Sample Date:	*7/1/2011*	*7/5/2011*	*7/6/2011*
	Sample Depth:	*(27-28) ft BGS*	*(27.5-28.5) ft BGS*	*(21-22) ft BGS*
Parameters	*Units*			
Semi-volatile Organic Compounds (Cont'd.)				
Benzaldehyde	µg/kg	930 U	370 UJ	380 UJ
Benzo(a)anthracene	µg/kg	190 U	76 U	76 U
Benzo(a)pyrene	µg/kg	190 U	76 U	76 U
Benzo(b)fluoranthene	µg/kg	190 U	76 U	76 U
Benzo(g,h,i)perylene	µg/kg	190 U	76 U	76 U
Benzo(k)fluoranthene	µg/kg	190 U	76 U	76 U
Biphenyl (1,1-Biphenyl)	µg/kg	930 U	370 U	380 U
bis(2-Chloroethoxy)methane	µg/kg	930 U	370 U	380 U
bis(2-Chloroethyl)ether	µg/kg	190 U	76 U	76 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	580 J	200 J	190 J
Butyl benzylphthalate (BBP)	µg/kg	930 U	370 U	380 U
Caprolactam	µg/kg	4800 U	1900 U	1900 U
Carbazole	µg/kg	30 J	76 U	76 U
Chrysene	µg/kg	190 U	76 U	76 U
Dibenz(a,h)anthracene	µg/kg	190 U	76 U	76 U
Dibenzofuran	µg/kg	930 U	370 U	380 U
Diethyl phthalate	µg/kg	930 U	370 U	380 U
Dimethyl phthalate	µg/kg	930 U	370 U	380 U
Di-n-butylphthalate (DBP)	µg/kg	930 U	370 U	380 U
Di-n-octyl phthalate (DnOP)	µg/kg	930 U	370 U	380 U
Fluoranthene	µg/kg	150 J	76 U	76 U
Fluorene	µg/kg	190 U	76 U	76 U
Hexachlorobenzene	µg/kg	2700	890	460
Hexachlorobutadiene	µg/kg	3200	76 U	76 U
Hexachlorocyclopentadiene	µg/kg	930 U	370 U	380 U
Hexachloroethane	µg/kg	930 U	370 U	380 U

TABLE 1B

ANALYTICAL RESULTS SUMMARY
SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	***MW-03***	***SB-01***	***SB-02***
	Sample ID:	***S-009954-070111-SM-010***	***S-009954-070511-SM-011***	***S-009954-070611-SM-012***
	Sample Date:	***7/1/2011***	***7/5/2011***	***7/6/2011***
	Sample Depth:	***(27-28) ft BGS***	***(27.5-28.5) ft BGS***	***(21-22) ft BGS***
Parameters	***Units***			
Semi-volatile Organic Compounds (Cont'd.)				
Indeno(1,2,3-cd)pyrene	µg/kg	190 U	76 U	76 U
Isophorone	µg/kg	930 U	370 U	380 U
Naphthalene	µg/kg	190 U	76 U	76 U
Nitrobenzene	µg/kg	1900 U	760 U	760 U
N-Nitrosodi-n-propylamine	µg/kg	190 U	76 U	76 U
N-Nitrosodiphenylamine	µg/kg	930 U	370 U	380 U
Pentachlorophenol	µg/kg	930 U	370 U	380 U
Phenanthrene	µg/kg	180 J	76 U	76 U
Phenol	µg/kg	190 U	76 U	76 U
Pyrene	µg/kg	160 J	76 U	76 U
Pesticides				
4,4'-DDD	µg/kg	240 U	1.9 U	97 U
4,4'-DDE	µg/kg	240 U	0.28 J	97 U
4,4'-DDT	µg/kg	240 U	1.9 U	97 U
Aldrin	µg/kg	230 J	1.9 U	400
alpha-BHC	µg/kg	3100	24	3800
alpha-Chlordane	µg/kg	240 U	1.9 U	97 U
beta-BHC	µg/kg	240 U	1.4 J	180
delta-BHC	µg/kg	3100	6.3	5400
Dieldrin	µg/kg	240 U	1.9 U	97 U
Endosulfan I	µg/kg	240 U	1.9 U	97 U
Endosulfan II	µg/kg	240 U	0.39 J	97 U
Endosulfan sulfate	µg/kg	240 U	1.9 U	21 J
Endrin	µg/kg	240 U	1.9 U	97 U
Endrin aldehyde	µg/kg	240 U	1.9 U	97 U

TABLE 1B

ANALYTICAL RESULTS SUMMARY
SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	***MW-03***	***SB-01***	***SB-02***
	Sample ID:	***S-009954-070111-SM-010***	***S-009954-070511-SM-011***	***S-009954-070611-SM-012***
	Sample Date:	***7/1/2011***	***7/5/2011***	***7/6/2011***
	Sample Depth:	***(27-28) ft BGS***	***(27.5-28.5) ft BGS***	***(21-22) ft BGS***
Parameters	***Units***			
Pesticides (Cont'd.)				
Endrin ketone	µg/kg	240 U	1.9 U	97 U
gamma-BHC (lindane)	µg/kg	6300	35	7800
gamma-Chlordane	µg/kg	240 U	1.9 U	97 U
Heptachlor	µg/kg	240 U	1.8 J	97 U
Heptachlor epoxide	µg/kg	240 U	0.45 J	97 U
Methoxychlor	µg/kg	460 U	1.1 J	190 U
Toxaphene	µg/kg	9400 U	75 U	3800 U

TABLE 1B

ANALYTICAL RESULTS SUMMARY
SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	*SB-02*	*SB-03*
	Sample ID:	*S-009954-070611-SM-013*	*S-009954-071111-SM-014*
	Sample Date:	*7/6/2011*	*7/11/2011*
	Sample Depth:	*(25.5-26.5) ft BGS*	*(25-26) ft BGS*
Parameters	*Units*		
Volatile Organic Compounds			
1,1,1-Trichloroethane	µg/kg	270 U	5.3 U
1,1,2,2-Tetrachloroethane	µg/kg	270 U	5.3 U
1,1,2-Trichloroethane	µg/kg	270 U	5.3 U
1,1-Dichloroethane	µg/kg	270 U	5.3 U
1,1-Dichloroethene	µg/kg	270 U	5.3 U
1,2,4-Trichlorobenzene	µg/kg	1800	5.3 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	270 U	5.3 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	270 U	5.3 U
1,2-Dichlorobenzene	µg/kg	44 J	5.3 U
1,2-Dichloroethane	µg/kg	270 U	5.3 U
1,2-Dichloropropane	µg/kg	270 U	5.3 U
1,3-Dichlorobenzene	µg/kg	78 J	5.3 U
1,4-Dichlorobenzene	µg/kg	83 J	5.3 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	270 U	5.3 U
2-Hexanone	µg/kg	270 U	5.3 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	270 U	5.3 U
Acetone	µg/kg	1100 U	9.6 J
Benzene	µg/kg	270 U	5.3 U
Bromodichloromethane	µg/kg	270 U	5.3 U
Bromoform	µg/kg	270 U	5.3 U
Bromomethane (Methyl bromide)	µg/kg	270 U	5.3 U
Carbon disulfide	µg/kg	270 U	5.3 U
Carbon tetrachloride	µg/kg	270 U	5.3 U
Chlorobenzene	µg/kg	270 U	5.3 U
Chloroethane	µg/kg	270 U	5.3 U
Chloroform (Trichloromethane)	µg/kg	270 U	5.3 U

TABLE 1B

ANALYTICAL RESULTS SUMMARY
SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	***SB-02***	***SB-03***
	Sample ID:	***S-009954-070611-SM-013***	***S-009954-071111-SM-014***
	Sample Date:	***7/6/2011***	***7/11/2011***
	Sample Depth:	***(25.5-26.5) ft BGS***	***(25-26) ft BGS***
Parameters	***Units***		
Volatile Organic Compounds (Cont'd.)			
Chloromethane (Methyl chloride)	µg/kg	270 U	5.3 U
cis-1,2-Dichloroethene	µg/kg	270 U	5.3 U
cis-1,3-Dichloropropene	µg/kg	270 U	5.3 U
Cyclohexane	µg/kg	270 U	5.3 U
Dibromochloromethane	µg/kg	270 U	5.3 U
Dichlorodifluoromethane (CFC-12)	µg/kg	270 U	5.3 U
Ethylbenzene	µg/kg	140 J	5.3 U
Isopropyl benzene	µg/kg	270 U	5.3 U
Methyl acetate	µg/kg	270 U	5.3 U
Methyl cyclohexane	µg/kg	270 U	5.3 U
Methyl tert butyl ether (MTBE)	µg/kg	270 U	5.3 U
Methylene chloride	µg/kg	270 U	2.2 J
Styrene	µg/kg	270 U	5.3 U
Tetrachloroethene	µg/kg	270 U	5.3 U
Toluene	µg/kg	270 U	5.3 U
trans-1,2-Dichloroethene	µg/kg	270 U	5.3 U
trans-1,3-Dichloropropene	µg/kg	270 U	5.3 U
Trichloroethene	µg/kg	270 U	5.3 U
Trichlorofluoromethane (CFC-11)	µg/kg	270 U	5.3 U
Trifluorotrichloroethane (Freon 113)	µg/kg	270 U	5.3 U
Vinyl chloride	µg/kg	270 U	5.3 U
Xylenes (total)	µg/kg	380 J	16 U
Semi-volatile Organic Compounds			
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	72 U	72 U
2,4,5-Trichlorophenol	µg/kg	360 U	350 U
2,4,6-Trichlorophenol	µg/kg	360 U	350 U

TABLE 1B

ANALYTICAL RESULTS SUMMARY
SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	*SB-02*	*SB-03*
	Sample ID:	*S-009954-070611-SM-013*	*S-009954-071111-SM-014*
	Sample Date:	*7/6/2011*	*7/11/2011*
	Sample Depth:	*(25.5-26.5) ft BGS*	*(25-26) ft BGS*
Parameters	*Units*		
Semi-volatile Organic Compounds (Cont'd.)			
2,4-Dichlorophenol	µg/kg	72 U	72 U
2,4-Dimethylphenol	µg/kg	360 U	350 U
2,4-Dinitrophenol	µg/kg	1800 U	1800 U
2,4-Dinitrotoluene	µg/kg	360 U	350 U
2,6-Dinitrotoluene	µg/kg	360 U	350 U
2-Chloronaphthalene	µg/kg	72 U	72 U
2-Chlorophenol	µg/kg	360 U	350 U
2-Methylnaphthalene	µg/kg	72 U	72 U
2-Methylphenol	µg/kg	360 U	350 U
2-Nitroaniline	µg/kg	1800 U	1800 U
2-Nitrophenol	µg/kg	360 U	350 U
3&4-Methylphenol	µg/kg	360 U	350 U
3,3'-Dichlorobenzidine	µg/kg	360 U	350 U
3-Nitroaniline	µg/kg	1800 U	1800 U
4,6-Dinitro-2-methylphenol	µg/kg	1800 U	1800 U
4-Bromophenyl phenyl ether	µg/kg	360 U	350 U
4-Chloro-3-methylphenol	µg/kg	360 U	350 U
4-Chloroaniline	µg/kg	360 U	350 U
4-Chlorophenyl phenyl ether	µg/kg	360 U	350 U
4-Nitroaniline	µg/kg	1800 U	1800 U
4-Nitrophenol	µg/kg	1800 U	1800 U
Acenaphthene	µg/kg	72 U	72 U
Acenaphthylene	µg/kg	72 U	72 U
Acetophenone	µg/kg	360 U	350 U
Anthracene	µg/kg	72 U	72 U
Atrazine	µg/kg	R	R

TABLE 1B

ANALYTICAL RESULTS SUMMARY
SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	***SB-02***	***SB-03***
	Sample ID:	***S-009954-070611-SM-013***	***S-009954-071111-SM-014***
	Sample Date:	***7/6/2011***	***7/11/2011***
	Sample Depth:	***(25.5-26.5) ft BGS***	***(25-26) ft BGS***
Parameters	***Units***		
Semi-volatile Organic Compounds (Cont'd.)			
Benzaldehyde	µg/kg	360 UJ	350 UJ
Benzo(a)anthracene	µg/kg	72 U	72 U
Benzo(a)pyrene	µg/kg	72 U	72 U
Benzo(b)fluoranthene	µg/kg	72 U	72 U
Benzo(g,h,i)perylene	µg/kg	72 U	72 U
Benzo(k)fluoranthene	µg/kg	72 U	72 U
Biphenyl (1,1-Biphenyl)	µg/kg	360 U	350 U
bis(2-Chloroethoxy)methane	µg/kg	360 U	350 U
bis(2-Chloroethyl)ether	µg/kg	72 U	72 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	720 U	240 J
Butyl benzylphthalate (BBP)	µg/kg	360 U	350 U
Caprolactam	µg/kg	1800 U	1800 U
Carbazole	µg/kg	72 U	72 U
Chrysene	µg/kg	72 U	72 U
Dibenz(a,h)anthracene	µg/kg	72 U	72 U
Dibenzofuran	µg/kg	360 U	350 U
Diethyl phthalate	µg/kg	360 U	350 U
Dimethyl phthalate	µg/kg	360 U	350 U
Di-n-butylphthalate (DBP)	µg/kg	360 U	350 U
Di-n-octyl phthalate (DnOP)	µg/kg	360 U	350 U
Fluoranthene	µg/kg	72 U	72 U
Fluorene	µg/kg	72 U	72 U
Hexachlorobenzene	µg/kg	72 U	72 U
Hexachlorobutadiene	µg/kg	72 U	72 U
Hexachlorocyclopentadiene	µg/kg	360 U	350 U
Hexachloroethane	µg/kg	360 U	350 U

TABLE 1B

ANALYTICAL RESULTS SUMMARY
SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	***SB-02***	***SB-03***
	Sample ID:	***S-009954-070611-SM-013***	***S-009954-071111-SM-014***
	Sample Date:	***7/6/2011***	***7/11/2011***
	Sample Depth:	***(25.5-26.5) ft BGS***	***(25-26) ft BGS***
Parameters	***Units***		
Semi-volatile Organic Compounds (Cont'd.)			
Indeno(1,2,3-cd)pyrene	µg/kg	72 U	72 U
Isophorone	µg/kg	360 U	350 U
Naphthalene	µg/kg	72 U	72 U
Nitrobenzene	µg/kg	720 U	720 U
N-Nitrosodi-n-propylamine	µg/kg	72 U	72 U
N-Nitrosodiphenylamine	µg/kg	360 U	350 U
Pentachlorophenol	µg/kg	360 U	350 U
Phenanthrene	µg/kg	72 U	72 U
Phenol	µg/kg	72 U	72 U
Pyrene	µg/kg	72 U	72 U
Pesticides			
4,4'-DDD	µg/kg	6.0	1.8 UJ
4,4'-DDE	µg/kg	290	1.8 UJ
4,4'-DDT	µg/kg	69	1.8 U
Aldrin	µg/kg	34	1.8 U
alpha-BHC	µg/kg	0.45 J	0.79 J
alpha-Chlordane	µg/kg	10	1.8 U
beta-BHC	µg/kg	2.1	1.8 U
delta-BHC	µg/kg	1.8 U	1.8 UJ
Dieldrin	µg/kg	16	1.8 UJ
Endosulfan I	µg/kg	1.8 U	1.8 U
Endosulfan II	µg/kg	0.74 J	1.8 UJ
Endosulfan sulfate	µg/kg	1.0 J	1.8 UJ
Endrin	µg/kg	4.7	1.8 UJ
Endrin aldehyde	µg/kg	1.8 U	R

TABLE 1B

ANALYTICAL RESULTS SUMMARY
SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

	Sample Location:	***SB-02***	***SB-03***
	Sample ID:	***S-009954-070611-SM-013***	***S-009954-071111-SM-014***
	Sample Date:	***7/6/2011***	***7/11/2011***
	Sample Depth:	***(25.5-26.5) ft BGS***	***(25-26) ft BGS***
Parameters	***Units***		
Pesticides (Cont'd.)			
Endrin ketone	µg/kg	1.8 U	1.8 UJ
gamma-BHC (lindane)	µg/kg	1.8 U	0.78 J
gamma-Chlordane	µg/kg	4.3 J	1.8 U
Heptachlor	µg/kg	28	1.8 U
Heptachlor epoxide	µg/kg	0.94 J	1.8 U
Methoxychlor	µg/kg	2.5 J	3.5 UJ
Toxaphene	µg/kg	73 U	72 U

Notes:

J - Estimated concentration.
R - Rejected.
U - Not present at or above the associated value.
UJ - Estimated reporting limit.

TABLE 2

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS
GROUNDWATER/SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

Parameter	*Compound*	*LCS Date*	*Associated Sample ID*	*LCS %Rec*	*LCSD %Rec*	*RPD (percent)*	*Control Limits*		*Qualified Sample Results*	*Units*
							%Rec	*%RPD*		
SVOCs	Benzaldehyde	07/08/11	S-009954-070511-SM-011	29	26	13	30-150	40	370 UJ	µg/kg
			S-009954-070611-SM-012						380 UJ	µg/kg
			S-009954-070611-SM-013						360 UJ	µg/kg
	Benzaldehyde	07/15/11	S-009954-071111-SM-014	21	NA	NA	30-150	NA	350 UJ	µg/kg
SVOCs	Atrazine	07/08/11	S-009954-070511-SM-011	0	0	NC	30-150	40	R	µg/kg
			S-009954-070611-SM-012						R	µg/kg
			S-009954-070611-SM-013						R	µg/kg
	Atrazine	07/15/11	S-009954-071111-SM-014	0	NA	NA	30-150	NA	R	µg/kg

Notes:

LCS Laboratory Control Sample.
LCSD Laboratory Control Sample Duplicate.
RPD Relative Percent Difference.
NA Not applicable.
UJ Not detected, estimated reporting limit.
R Rejected.

TABLE 3

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES
GROUNDWATER/SOIL SAMPLING
GLENN SPRINGS HOLDINGS, INC.
LOVE CANAL
JULY 2011

Parameter	*Associated Sample ID*	*Analyte*	*MS Recovery (percent)*	*MSD Recovery (percent)*	*RPD*	*Control Limits*		*Qualified Sample Result*	*Units*
						Recovery (percent)	*RPD (percent)*		
SVOCs	S-009954-071111-SM-014	Benzaldehyde	26	31	17	30-150	40	350 UJ	µg/kg
		Atrazine	0	0	NC	30-150	40	R	µg/kg
Pesticides	S-009954-071111-SM-014	Endosulfan sulfate	35	55	44	55-140	26	1.8 UJ	µg/kg
		Endosulfan II	49	70	36	70-128	33	1.8 UJ	µg/kg
		Endrin ketone	49	68	33	70-132	20	1.8 UJ	µg/kg
		Dieldrin	60	75	23	70-123	20	1.8 UJ	µg/kg
		Endrin	59	73	22	70-127	20	1.8 UJ	µg/kg
		Methoxychlor	60	85	34	70-143	26	3.5 UJ	µg/kg
		4,4'-DDE	54	72	28	70-133	20	1.8 UJ	µg/kg
		Endrin aldehyde	6	12	67	65-122	20	R	µg/kg
		delta-BHC	32	36	11	40-124	20	1.8 UJ	µg/kg
		4,4'-DDD	52	72	32	70-135	20	1.8 UJ	µg/kg
VOCs	S-009954-070111-SM-010	1,2,4-trichlorobenzene	142	189	14	51-136	40	92000 J	µg/kg

Notes:

MS Matrix Spike.
MSD Matrix Spike Duplicate.
RPD Relative Percent Difference.
NC Not calculated.
J Estimated.
UJ Not detected, estimated reporting limit.
R Rejected.