



SANITARY SEWER INVESTIGATION AND REMEDICATION

COLVIN BOULEVARD AND 96TH STREET

**GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK**

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**MARCH 2011
REF. NO. 009954 (21)**

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EXECUTIVE SUMMARY

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 along Colvin Boulevard, just east of 96th Street in Niagara Falls, New York. The sewer repair site was the last of 17 repairs near the Love Canal containment area, which is operated by Glenn Springs Holdings, Inc., an affiliate of Occidental Chemical Corporation (OCC).

NFWB informed GSH of the impacted sediments on January 11, 2011. GSH verbally notified the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) on January 11, 2011 and provided written notification (via email) on January 14, 2011. GSH immediately commenced an investigation to determine the potential source of the impacted sediments.

On January 26, 2011, GSH and its environmental consultant Conestoga-Rovers & Associates (CRA) met with representatives from the NFWB, CNF, United States Environmental Protection Agency (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. On January 28, 2011, GSH submitted a letter to NYSDEC formally presenting the preliminary results of the investigation and a work plan to replace the 50-foot sewer section and address any impacts found.

The investigation completed by GSH into the source of the impacted sediments concluded the following:

- The Love Canal remedial system is operating as designed and is protective of human health and the environment. As demonstrated by NYSDEC annual Site inspections, the landfill cap is in-place and undisturbed.
- Love Canal treated effluent does not flow through the section of sewer that was repaired and was not the source of chemistry observed.
- Based on the "Sampling Manual, Love Canal Site, Long-Term Groundwater Monitoring Program" (CRA 1996, updated 2001), bedrock groundwater flow is to the north or northwest.
- The analytical monitoring data (essentially non detects) and hydraulic monitoring data (inward gradients) collected under the Love Canal Long-term Groundwater Monitoring Program show that the remedial system at Love Canal is effective,

operating as designed, and is not the source of the chemistry observed in the section of sanitary sewer pipe beneath Colvin Boulevard just east of 96th Street.

- The approximate 50-foot long low spot in the Colvin Boulevard sanitary sewer has acted as a sediment trap.
- A 1983 Malcolm Pirnie, Inc. report states that the bedding materials of the sanitary sewers in the vicinity of Love Canal were found to be native clay materials and essentially un-impacted. The sewers also were found to be structurally sound and essentially water tight. No specific information for the section of sanitary sewer between 97th Street and 96th Street was provided in the Malcolm Pirnie, Inc. report.
- The Colvin Boulevard sanitary sewer was hydraulically cleaned in 1985/1986 but video inspection was not performed to confirm that all sediments were removed. As such, there is the potential that all sediments were not removed from the isolated low spot during the hydraulic cleaning and had remained there since the mid 1980s.
- The CNF did not identify any other areas of potential impact to the sewer systems around the Love Canal site based on a video inspection in 2000 and the 16 other repairs completed during the 2010/2011 LaSalle Area Spot Sewer Repair project.
- The chemistry present in the sanitary sewer along Colvin Boulevard east of 96th Street is an isolated event based on Love Canal activities conducted in 1985/1986, prior to the current remedy implementation.

GSH commenced fieldwork on February 1, 2011 and completed the work on February 23, 2011. GSH completed the following activities:

- 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 an amount of non-aqueous phase liquid (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.
- Completed interim restoration (due to weather conditions) of the road surface above the repaired section of Colvin Boulevard.

- Final restoration of the Colvin Boulevard road surface will be completed in late spring 2011. Any required landscaping and topsoil and sod placement will also be completed in the spring.
- During all intrusive repair activities, continuous air monitoring of the excavation area was performed to monitor for worker safety. In addition to the continuous air monitoring at the excavation area, air monitoring was completed at the perimeter of the work zone at 1-hour intervals to ensure the safety of the residents of the Black Creek neighborhood.

Based on these activities, the following was concluded:

- Video inspection of the repaired and cleaned Colvin Boulevard sanitary sewer confirmed that no sediments were present in the section of sanitary sewer between 97th Street and the lift station at 91st Street. Therefore, since residual sediments were removed from within the sanitary sewer line, there is no future potential for sediments to impact water quality in the sewer or air quality in the vicinity of the sewer.
- Confirmatory soil sampling completed showed that residual chemical impacts remain within the bottom of the trench; however, soil samples collected at the east and west end walls indicated that the residual impacts do not extend beyond the sewer repair area.
- It is likely that the low spot in the sewer developed 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. This is likely the reason why the bedding materials were impacted in this section of sewer but not historically in other sections of sewer in the early 1980s. Based on the investigations conducted in the early 1980s and since the video inspection of the sewers conducted by the CNF in 2000 showed no evidence of deterioration in the other sections of sewer, there is negligible potential for the bedding to be impacted in other sections of sewer around Love Canal.
- Sixteen other sewer locations repaired during the 2010/2011 LaSalle Area Spot Sewer Repair Project did not find any evidence of impact to the associated bedding materials.
- The residual impacts do not pose a threat to human health and the environment since there is no mechanism for dermal, inhalation, and ingestion exposure or for the residuals to migrate into the environment. This conclusion is based on the following conditions:

- They are located approximately 20 to 22 feet below ground surface
 - They are located at the bottom of the excavation trench at the top of bedrock that appears to be competent
 - They are contained within clay walls
 - They are capped by native clay soils and the asphalt paved road (Colvin Boulevard)
- To protect any potential future construction worker exposure, GSH will work with the CNF/NFWB to establish a protocol to be followed when any subsurface work is being conducted in the vicinity of Love Canal.
- As precautionary measure, GSH will install and monitor two bedrock groundwater monitoring wells; one to be installed to the north of the Colvin Boulevard sanitary sewer repair area (downgradient) and one to be installed to the south of the Colvin Boulevard sanitary sewer repair area (upgradient). These wells will be installed to monitor bedrock groundwater quality.
- As a precautionary measure, GSH will install up to two soil borings along the Colvin Boulevard Sanitary Sewer system to the east of the repair area to verify no additional chemistry is present east of the repair area. GSH will also install one observation well within the bedding material of the newly installed sanitary sewer line to monitor for the presence of NAPL, which was observed to be present during construction activities.

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1.0 INTRODUCTION

This Report has been prepared to document activities performed by Glenn Springs Holdings, Inc., an affiliate of Occidental Chemical Corporation (OCC), 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. The impacted sediments were found on January 11, 2011, by a contractor employed by the City of Niagara Falls (CNF) and the Niagara Falls Water Board (NFWB), during work to correct a deflection (i.e., low spot) within the sanitary sewer piping beneath Colvin Boulevard between 96th Street and 97th Street.

1.1 REPORT ORGANIZATION

This report is organized as follows:

- Section 1.0 – Introduction
- Section 2.0 – Background
- Section 3.0 – Investigation Results
- Section 4.0 – Remedial Activities
- Section 5.0 – Conclusions
- Section 6.0 – Recommendations

2.0 BACKGROUND

Repairs to the Colvin Boulevard sanitary sewer east of 96th Street were being conducted as part of the NFWB LaSalle Area Spot Sewer Repair project. This project included the repair of 17 sewers in the vicinity of Love Canal to improve the conditions of the sanitary lines and prevent water infiltration. These repairs were identified by the NFWB based on the results of a video inspection of the LaSalle area sewer system conducted by the NFWB in April and May 2000. The Colvin Boulevard sanitary sewer line is an active sewer that extends from 102nd Street west to a lift station near 91st Street. The sewer flows in an east to west direction. Based on information provided by the CNF, the sewer pipe is constructed of a 15-inch diameter vitrified tile (VT) pipe and is buried approximately 20 feet below ground (street) surface (bgs).

The video inspection identified a deflection (i.e., low spot) in a 50-foot section of the sanitary sewer beneath the median area of Colvin Boulevard immediately east of the 96th Street. As part of the NFWB LaSalle Area Spot Sewer Repair project, this section of sewer was to be excavated and replaced to eliminate the low spot. The location of the 50-foot section of sanitary sewer is shown on Figure 2.1 and a plan and profile of the area to be repaired is shown on Figure 2.2.

The contractor for the NFWB was excavating to replace the 50-foot section of sanitary sewer on January 11, 2011. Upon breaking into the sewer pipe, the contractor encountered a chemical odor. There were reportedly no visual or olfactory indications of chemical presence in the sewer bedding around the top of the sewer. The contractor halted work, and subsequently installed a temporary pipe, and secured the area until the nature and presence of the odor could be investigated and the potential risk to human health and the environment evaluated. This event was immediately reported to the CNF and the NFWB. Due to the proximity to Love Canal, the NFWB notified GSH's environmental consultant, Conestoga-Rovers & Associates (CRA), on January 11, 2011. CRA immediately notified GSH and GSH verbally notified the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) on January 11, 2011. Subsequently, the United States Environmental Protection Agency (USEPA) was also notified.

The LaSalle Spot Sewer Repair project included excavation work at 16 other locations on streets located near or adjacent to Love Canal. These locations are shown on Figure 2.3. According to CNF/NFWB, the section of sanitary sewer along Colvin Boulevard east of 96th Street, where the odors were encountered, is the only section of sewer repaired under the LaSalle Area Spot Sewer Repair project that exhibited any evidence of odors or potential chemical impact.

Upon notification on January 11, 2011, GSH and CRA immediately began a review of the current operations of the treatment facility at Love Canal to determine if current operations could potentially have had an impact on the section of sewer being repaired. CRA personnel also inspected the excavation on January 11, 2011. CRA contacted the NFWB on January 13, 2011, as directed by GSH, to obtain additional information and offered to provide any assistance that the NFWB may require. NFWB stated that assistance was not required at this point in time. A formal notification was submitted to NYSDEC and NYSDOH by GSH on January 14, 2011 once additional information was received from the CNF/NFWB regarding the presence of impacted sediments. GSH and CRA also began an extensive document search to determine what historical activities, if any, had taken place in and around the section of sanitary sewer on Colvin Boulevard at 96th Street.

On January 17, 2011, a consultant for the CNF collected a mixed soil/sediment sample. It is unclear from discussions with CNF personnel and the consultant's report as to the exact location where the sample was collected and the sample matrix (i.e., roll-off vs. in-place, soil vs. sediment). Test America Laboratories, Inc. of Amherst, New York, analyzed the sample for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), and Total Organic Carbon (TOC). The laboratory analytical package is presented in Appendix A. A summary of the primary detected parameters is presented in Table 2.1. The analysis indicated the presence of the following primary compounds:

- Benzene
- Monochlorobenzene
- cis-1,2-Dichloroethene
- 1,2-Dichlorobenzene
- 1,4-Dichlorobenzene
- 1,2,4-Trichlorobenzene
- Toluene
- Hexachlorobenzene
- Hexachlorobutadiene

On January 20, 2011, the NYSDEC verbally requested GSH to prepare a response to the chemistry found within the sanitary sewer. NYSDEC followed up this request with a letter on January 25, 2011.

On January 26, 2011, GSH and 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 replacing the 50-foot section of sewer and addressing any impacts found.

On January 28, 2011, GSH submitted a response to NYSDEC's January 25, 2011 letter. The response incorporated discussions from the January 26, 2011 meeting and included the following:

- The results of the investigation to date
- A work plan entitled "Spot Sewer Repair and Sediment Sampling Work Plan, LaSalle Area - Colvin Boulevard and 96th Street" (Work Plan) presenting measures GSH would implement to address the chemical impacts and complete the sewer repair

The following two sections of this report present the final results of the investigation conducted and the measures implemented to address the chemical impacts and repair the sanitary sewer.

A chronology of significant events is presented in Table 2.2.

3.0 INVESTIGATION RESULTS

GSH conducted an investigation to determine the source of the chemical impacts observed in the Colvin Boulevard sanitary sewer east of 96th Street in three parts as follows:

- Review of performance of Love Canal remedial systems
- Evaluation of the remedy implemented to address the sanitary sewer system around Love Canal in the 1980s
- Review of video inspections performed on the Colvin Boulevard sanitary sewer in April and May 2000

3.1 PERFORMANCE OF LOVE CANAL REMEDIAL SYSTEMS

The Love Canal remedial system has the following three components:

1. Landfill Cap and Barrier Drain
2. Leachate Treatment System
3. Long-Term Groundwater Monitoring
 - a. Chemical Monitoring
 - b. Hydraulic Monitoring

As demonstrated by NYSDEC annual Site inspections, the landfill cap is in-place and undisturbed; therefore, the investigation concentrated on evaluation of the Leachate Treatment System and the Long-Term Groundwater Monitoring Program.

Leachate Treatment System

Leachate collected at Love Canal by the barrier drain is treated through the on-Site leachate treatment system. The treated effluent is discharged to the sanitary sewer system under a Significant Industrial User (SIU) permit with the NFWB, which sets limits on the required conditions of the treated leachate prior to discharge. Daily and quarterly monitoring is conducted on the treated leachate prior to discharge to ensure that the treated leachate quality meets the standards set forth in the SIU permit. Monitoring results are submitted monthly and quarterly to the NFWB. NFWB records indicate that permit limits have been met since at least 1995, when OCC took over operation of the treatment system. The NFWB also conducts annual inspections of the

leachate treatment system to determine if the condition and operation of the system meets NFWB standards. The most recent inspection was conducted on January 6, 2011. The results of that inspection demonstrate that the treatment system is functioning as designed and no operational issues were noted. A copy of the January 6, 2011 NFWB inspection form is presented in Appendix B.

Effluent from the Love Canal treatment system is discharged to the sanitary sewer on 95th Street. This sewer flows north to the intersection at Colvin Boulevard and 95th Street, where it connects to the sanitary sewer on Colvin Boulevard as shown on Figure 3.1. From this point, the sewer flows west along Colvin Boulevard to the intersection of 91st Street and Colvin Boulevard. As shown on the figure, the treated effluent from Love Canal enters the Colvin Boulevard sanitary sewer downstream of the section of sewer being replaced. Therefore, Love Canal treated effluent does not flow through the section of sewer being replaced and could not be the source of chemistry observed.

Long-Term Groundwater Monitoring

Groundwater monitoring at Love Canal is conducted in accordance with the agency approved monitoring plan entitled "Sampling Manual, Love Canal Site, Long-term Groundwater Monitoring Program", dated February 19, 2001.

Chemical Monitoring

Select monitoring wells on and around Love Canal are sampled on an annual basis to monitor the condition of the groundwater in and around the Love Canal. Several overburden and bedrock groundwater monitoring wells along the north boundary and in the northwest corner of Love Canal (closest to the sewer repair area) are sampled annually for VOCs, SVOCs, Pesticides, and Polychlorinated Biphenyls (PCBs). The locations of these wells in relation to the section of sewer being repaired are shown on Figure 3.2. All results have been non-detect with the exception of a few detections below 10 parts per billion (ppb). The analytical results for the past 5 years (2006 through 2010), deemed most representative of current conditions at the Site, are presented in Table 3.1.

The installed depths of these wells are presented in the table that follows:

<i>Well ID</i>	<i>Type</i>	<i>Well Depth (ft bgs)</i>
7125	OB	24.5
7130	OB	27.0
7132	OB	28.0
7155	OB	25.6
7161	OB	21.7
8110	OB	24.0
8106	OB	17.0
3257	BR	29.4
Colvin Blvd Sanitary Sewer	---	20

OB - Overburden Well

BR - Bedrock Well

Based on the well depths presented above, the monitoring wells are likely screened at approximately the same or greater depth than the sewer.

Hydraulic Monitoring

Overburden and bedrock groundwater monitoring wells are monitored on a quarterly basis for groundwater elevations. Several of these are overburden monitoring wells within clusters along the alignment of the collection system. The locations of these wells are shown on Figure 3.3. As shown on Figure 3.3, Cluster 1180 (located along Colvin Boulevard east of the sewer excavation site) and Cluster 1170 (located in the northwest portion of the landfill south of the sewer excavation site) show inward gradients towards the barrier drain both currently and historically.

The "Sampling Manual, Love Canal Site, Long-Term Groundwater Monitoring Program," dated February 19, 2001, provides a summary of bedrock geology and hydrogeology beneath the Love Canal site. The upper bedrock is part of the Lockport Formation. The bedrock surface is about 540 feet above mean sea level and is relatively smooth with a gentle slope to the south. The thickness of the Lockport Formation ranges from 162 to 178 feet. The Lockport Formation is comprised of an Upper and Lower Lockport Dolomite underlain by Rochester Shale. The main groundwater aquifer for the Lockport Formation lies in the Upper Lockport Dolomite, specifically in the upper 10 to 15 feet of the formation. Groundwater flow is indicated to be to the north or northwest, away from the Niagara River. The Niagara River appears to act as a source of bedrock recharge and the nearby Niagara Gorge to the north-northwest acts as a bedrock groundwater sink. A review of 2010 bedrock groundwater elevation data confirmed

that bedrock groundwater flow in the northern section of the Love Canal Site is to the north-northwest as shown on Figure 3.4.

The results of monitoring activities are presented in the Love Canal "Periodic Review Report," which is submitted annually to the NYSDEC and USEPA. All annual reports have shown that the remedial system is operating as designed and is protective of human health and the environment.

The analytical monitoring data (essentially non detects) and hydraulic monitoring data (inward gradients) evaluated above show that the remedial system at Love Canal is effective, operating as designed, and is not the source of the chemistry observed in the section of sanitary sewer pipe on Colvin Boulevard just east of 96th Street.

3.2 HISTORICAL SANITARY SEWER INVESTIGATIONS AND REMEDY

In the early 1980s, the storm and sanitary sewers surrounding Love Canal were extensively investigated. Samples of water, sediment, and bedding materials were collected and analyzed for VOCs, SVOCs, Pesticides, PCBs, and Dioxins, and Furans. Based upon the analytical results, remedial alternatives were developed to address issues within and surrounding the storm and sanitary sewers. The investigation results and remedial alternatives evaluated were presented in the "Site Investigations and Remedial Action Alternatives, Love Canal" report, by Malcolm Pirnie, Inc. in 1983. The remedial alternatives were further evaluated in the "Love Canal Sewer and Creek Remedial Alternatives Evaluation and Risk Assessment" report, by CH2M in 1985. Both of these reports detailed extensively an alternative that included cleaning the storm and sanitary sewers surrounding Love Canal and video inspection of select storm and sanitary sewers.

The 1983 Malcolm Pirnie, Inc. report states that the bedding materials of the sewers in the vicinity of Love Canal were found to be native clay materials and essentially un-impacted, which indicates that the exterior of the sewers were not contaminant migration pathways. The sewers were found to be structurally sound and essentially water tight.

Sample results from the 1983 Malcolm Pirnie, Inc. report show elevated chlorinated organic concentrations in the sediments within the sanitary sewer along Colvin Boulevard east of 96th Street but not west of 96th Street. The sample locations are presented on Figure 3.5. Areas of impacted sediments are shown on Figure 3.6. A

summary of the analytical data is presented in Table 3.2. Sediment was present at manholes MH257 (101st Street – furthest east from the sewer excavation site on figure), MH262 (100th Street), MH264 (99th Street), MH265 (98th Street), and MH267 (97th Street). However, sediments were not found in MH274, which is located at the corner of 96th Street. The absence of sediment in MH274 indicates that the low spot in the sewer pipe identified by the video inspection conducted by the NFWB in 2000 (which is located approximately 10 feet east of MH274) acts as a "sediment trap." Therefore, it is reasonable to conclude that contaminated sediments present upstream from MH274 could have possibly been flushed down to the low spot, prior to 1983 and the original Love Canal remedial actions, and settled there, being unable to move further west to MH274.

The remedy implemented in 1985 and 1986 to address the sanitary sewers included hydraulic cleaning in certain sections and video inspection and hydraulic cleaning in other sections of the sewer. These sewer sections to be cleaned are shown on Figure 3.7.

No completion records for the sewer remediation have been found to date. Review of the USEPA document list also shows no listing for a final construction report for the sewer remediation. However, based upon review of the CH2M Hill report and 1985 and 1987 Record of Decisions (RODs), the sewer remediation along Colvin Boulevard was performed in accordance with the remedial action proposed in the 1983 Malcolm Pirnie, Inc. report. The section of sanitary sewer along Colvin Boulevard was hydraulically cleaned, but not video inspected. As discussed above, the identified low spot in the Colvin Boulevard sanitary east of the intersection with 96th Street acts as a sediment trap. Also, it is not uncommon that when sediment collects in a low spot of a sewer, consistent and regular flow over that low spot can compact the sediment to the extent that hydraulic cleaning may not be effective in removing the sediment. Therefore, the potential exists that sediment remained within the low spot deposited prior to 1983, even after hydraulic cleaning was performed in 1985/1986.

3.3 2000 SANITARY SEWER INSPECTION

In April and May 2000, the sanitary sewers along Colvin Boulevard and to the north and south were video inspected. The NFWB provided GSH with the videotapes of these inspections. GSH reviewed the video inspection information for the section of sanitary sewer beneath Colvin Boulevard from 95th Street to 102nd Street. This section of the Colvin Boulevard sanitary sewer parallels the north end of the Love Canal Site. Overall, the integrity and competency of the sewer was observed to be in good to excellent condition. After review of the videotapes, it was evident that the sanitary sewer along

Colvin Boulevard to the east of 97th Street and west of the sewer excavation area at 96th Street to 95th Street was in good condition, showed no signs of deterioration or infiltration, and was free of sediment. At the section of sewer pipe where the current sewer excavation repair area is located (just east of 96th Street), the camera did show that a low point exists. The camera became submerged for approximately 45 feet. The sewer further upstream to 101st Street (parallel to the north end of Love Canal) showed the sanitary sewer to be in good condition, with no signs of deterioration or infiltration, and to be free of sediment.

Based on the review of the 1983 Malcolm Pirnie, Inc. Report and a review of the 2000 sewer inspection videos provided by the NFWB, it appears that all service utilities emanating from the Love Canal area were either plugged or severed during the remedial activities completed in the 1980s.

4.0 REMEDIAL ACTIVITIES

Remedial activities performed by GSH included the following:

- Replace the 50-foot sanitary sewer section
- Clean the sanitary sewer from 97th Street to the lift station at 91st Street
- Clean the lift station at 91st Street
- Video-inspect the sanitary sewer from 97th Street to the lift station at 91st Street

Op-Tech Environmental Services (Op-Tech) of Syracuse, New York, was retained to complete the sewer replacement and assist in sewer cleaning. Op-Tech retained the following subcontractors to assist:

- Roy's Plumbing Heating and Cooling (Roy's) of Tonawanda, New York
- Kandey Company, Inc. (Kandey) of West Seneca, New York

Roy's provided sewer jetting services and Kandey provided sewer video inspection services.

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 hazardous Site-related materials. All personnel working at the Site were 40-Hour HAZWOPER trained.

All work activities were performed between approximately 7:00 am and 6:00 pm to minimize impact to residents; however, bypass pumps were operated 24 hours per day during sewer repair activities.

Progress updates were emailed to USEPA, NYSDEC, NYSDOH, CNF, and NFWB throughout the project, generally on a daily basis. Copies of the progress updates are provided in Appendix C.

A photographic log documenting the activities performed is presented in Appendix D.

4.1 SEWER REPAIR ACTIVITIES

Sewer repair activities were conducted in accordance with the Work Plan between February 1 and 18, 2011. NYSDEC approved the Work Plan and requested minor changes via email dated January 31, 2011. The requested minor changes were implemented as discussed in Section 4.1.2.

The sewer repair area was secured by temporary chainlink fence that was previously installed by the CNF's contractor. Traffic along Colvin Boulevard was re-routed to the north via 96th Street and 97th Street.

4.1.1 EXCAVATION OF DAMAGED SANITARY SEWER PIPING

Prior to the removal or replacement of any existing sewer sections, a sewer plug was installed in the downstream outlet of the manhole located at 97th Street and the sewer flow bypassed to the manhole on 96th Street using aboveground pumps and piping. The sewer plug prevented water from entering the downstream section of sewer while repairs were being conducted. The pumps were operated 24 hours per day during repair activities to prevent sewage from backing up in upstream sewer sections.

Once the sewer flow was bypassed, excavation commenced to remove the existing sewer pipe. Excavation commenced at the downstream section (west end) where the CNF contractor left off and proceeded upstream to the east. The excavation extended from approximately 13 feet east of the manhole at 96th Street to approximately 72 feet east of the manhole at 96th Street.

Trench boxes were used to stabilize the trench during excavation. All materials lying above the pipe bedding were stockpiled on polyethylene sheeting for reuse during backfilling activities. All piping and bedding material was placed in lined roll-offs. Full roll-offs were moved and staged at Love Canal.

During all intrusive repair activities, continuous air monitoring of the excavation area was performed to monitor for worker safety. In addition to the continuous air monitoring at the excavation area, air monitoring was completed at the perimeter of the work zone at 1-hour intervals to ensure the safety of the residents of the Black Creek neighborhood. The results of the air monitoring are further discussed in Section 4.6 - Community Air Monitoring Results.

Dewatering of the excavation on a continuous basis was not required except for the removal of minor amounts of water that would accumulate in the excavation during work activities. The source of the water that accumulated in the excavation did not appear to be groundwater seeping into the excavation but appeared to be the result of seepage from several other sources, specifically:

- The saturated granular bedding material at the bottom of the trench was saturated from sanitary flow that entered the excavation when work was halted by the previous CNF contractor (a temporary pipe was placed in the excavation, but was not connected to the existing piping)
- The sanitary water trapped within the sagging sewer line
- Infiltration located at 179.50 feet upstream from the manhole at 96th Street (identified during the 2011 video inspection completed by GSH)
- Minor amounts of water leaking past the sewer plug installed upstream at the 97th Street manhole

The materials surrounding the trench were observed to be clay extending from a depth of approximately 1.5 to 2 feet bgs to bedrock at approximately 22 feet bgs with a 6 to 8-inch layer of granular bedding material located at a depth of approximately 20 to 21 feet bgs. No water seepage from the trench walls was observed through the duration that the trench was open.

Granular bedding materials were not expected to be encountered based on the historic bedding investigation results presented in the 1983 Malcolm Pirnie, Inc. Report; however, as noted in Section 3.2, no specific bedding samples were collected from the section of sanitary sewer beneath Colvin Boulevard between 97th Street and 96th Street during that investigation.

The temporary pipe installed by the CNF contractor prior to ceasing their activities was removed prior to any substantial excavation. It was observed that the temporary pipe was not sealed to the existing sewer, which allowed sanitary flow to continue to enter the excavation area.

Immediately west of the portion of pipe removed by the CNF contractor, a broken PVC pipe section was unearthed during excavation. The PVC pipe was connected to the concrete pipe extending from the manhole at 96th Street and sealed at the joint with a poured concrete collar located 13 feet east of the 96th Street manhole. The pipe appeared to have been present for some period of time. The break in the pipe was located approximately 10 feet east of the concrete collar. The pipe was observed to be nearly full

of granular materials and sediment. CNF representatives were not aware that this section of sewer had been repaired in the past. The pipe was cut just downstream of the break to provide a connection point for the new pipe in concurrence with the CNF On-Site representative. Once the broken section of PVC pipe was removed, sand bags were placed over the downstream section as a precautionary measure to prevent potentially impacted sediments and odors from possibly migrating downstream. The sand bags were replaced by a sewer plug the following day.

The remainder of the pipe encountered was concrete (not VT as indicated on CNF drawings) and was observed to be in good condition.

As stated previously, the CNF contractor broke into the sewer pipe on January 11, 2011. When GSH contractors removed the plywood cover placed by the CNF/NFWB contractor over the excavation on February 1, 2011, water was observed flowing through the broken pipe/excavation. Given this, the unsealed temporary pipe subsequently in place for approximately three weeks with the excavation open and only covered with plywood, and the broken PVC pipe nearly full of granular material and sediment, there was potential that impacted materials were washed downstream into the sewer sections west of 96th Street.

Once the pipe and bedding was exposed, visual and olfactory (odor) evidence of chemical impact was observed in the bedding materials underneath the existing pipe. Visual and olfactory evidence also was observed in the clay material underneath the granular material but to a lesser degree than what was present in the granular material. Visual indicators were dark staining of the clay and granular bedding material beneath the sanitary sewer piping. It is speculated that the staining was the result of biological decay resulting from leaking sanitary waste and the chemical impacts. A non-aqueous phase liquid (NAPL) was observed to be present in the excavation at varying times throughout the work activities. The NAPL material appeared to be dark brown to black in color and floated at the surface of the water. As water seeped into the excavation from the saturated granular bedding material, discernible amounts of NAPL would sporadically be observed to seep in as well. NAPL was removed from the excavation with a vacuum truck whenever observed. The greatest visual and olfactory evidence of chemical impact (including NAPL) was found in the central and western portions of the excavation. Due to the evidence of chemical impact, all bedding materials and the underlying native clay were removed until bedrock was encountered for the entire length of the trench to the extent possible. Some minor amounts of clay (3 to 6 inches) could not be removed due to the slightly uneven bedrock surface, the teeth of the excavator bucket, and restrictions posed by the trench boxes. The bedrock surface

appeared to be solid as there was no visible evidence of fracturing rock as the excavator bucket scraped over the bedrock.

Based on the evidence of chemical impact, the open excavation and any roll-offs in the work area were covered every night to prevent potential fugitive odors. Once new bedding was placed, the excavation was no longer covered at night.

As noted in Section 3, it was originally believed that the chemically impacted materials were only present in the sewer pipe within the low spot. The 1983 Malcolm Pirnie, Inc. report states that the bedding materials of the sanitary sewers in the vicinity of Love Canal were found to be native clay materials and essentially un-impacted. The sewers also were found to be structurally sound and essentially water tight. No specific information for the section of sanitary sewer between 97th Street and 96th Street was provided in the Malcolm Pirnie report. It is likely that the low spot in the sewer developed 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. This is likely the reason why the bedding materials were impacted in this section of sewer but not historically in other sections of sewer in the early 1980s. Based on the investigations conducted in the early 1980s and since the video inspection of the sewers conducted by the CNF in 2000 showed no evidence of deterioration in the other sections of sewer, there is negligible potential for the bedding to be impacted in other sections of sewer around Love Canal. The other 16 sewer locations repaired during the 2010/2010 LaSalle Area Spot Sewer Repair Project also did not find any evidence of impact to the bedding materials.

4.1.2 CONFIRMATORY SOIL SAMPLING

The original NYSDEC-approved confirmatory soil sampling scope of work, based on their approval of the Work Plan and comments dated January 31, 2011, was as follows:

- Collect a soil sample at each 10-foot interval of removed pipe based on the results of field screening with a photonization detector (PID) and composite into one sample for analysis
- Collect discrete samples at any and all points if the soil/sediment appears to be visually impacted, has elevated PID readings or olfactory evidence of impact, and/or NAPL is present
- Collect a discrete sample at the beginning and end of the trench and submit each for analysis

- Analyze all soil/sediment samples for Love Canal indicator chemicals; complete VOC, SVOC and Pesticide scan

Based on the visual and olfactory evidence of chemical impacts (including NAPL) to the bedding and underlying clay, samples were not collected at each 10-foot interval but were collected based on the location of the greatest evidence of visual and olfactory impacts. A sample summary is presented in Table 4.1. The locations of the samples are presented on Figure 4.1. Samples were collected of bedding material at each end wall (002 west end and 009 east end), residual clay remaining in the trench below the removed bedding material (001, 003, 004, 005, and 008), and clay material along the north and south side wall (006 north and 007 south). Samples from the bottom of the excavation were collected using the excavator bucket to retrieve the sample from the excavation and the samples were then collected from the excavator bucket and placed directly into laboratory-supplied containers. At the direction of CRA personnel, soil samples from the endwalls and sidewalls were collected by hand by the contractor and then placed directly into the laboratory-supplied containers by CRA personnel.

All samples were submitted to Test America Laboratories, Inc. of Pittsburgh, Pennsylvania, for rush analysis. Test America is a certified Environmental Laboratory Approval Program (ELAP) testing laboratory. Analytical reports and data validations for the confirmatory soil samples are presented in Appendix E.

A summary of detected compounds is presented in Table 4.2 and on Figure 4.2. The detected compound concentrations are 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 in both Table 4.2 and Figure 4.2. As shown in Table 4.2 and on Figure 4.2, no VOCs or SVOCs exceeded commercial use soil cleanup objectives. Two pesticides, alpha-BHC and gamma-BHC, in one sample (003) marginally exceed commercial use soil cleanup objectives. The concentration of these two compounds was 5.5 milligram per kilogram (mg/kg) and 11 mg/kg and the commercial soil cleanup objectives are 3 mg/kg and 9.2 mg/kg, respectively.

No VOCs were detected at concentrations that exceeded residential soil cleanup objectives. One SVOC, hexachlorobenzene (HCB), was detected above the residential soil cleanup objective in samples 003 (0.57 mg/kg), 004/005 (1.5/2.1 mg/kg), and 006 (0.61 mg/kg). The residential soil cleanup objective for HCB is 0.41 mg/kg. Three detected pesticides, alpha-BHC, delta-BHC, and gamma BHC, exceeded residential soil cleanup objectives.

It should be noted that all detected compounds in the east end wall sample were below unrestricted use soil cleanup objectives and only three detected compounds, alpha-BHC, delta-BHC, and gamma BHC, exceeded unrestricted use soil cleanup objectives in the west end wall sample. Only one of these, alpha-BHC, also exceeded residential and commercial soil cleanup objectives.

Based on the confirmatory soil sampling data, residual impacts remain at the bottom of the trench; however, the end wall sample results show that the residual impacts do not extend east or west beyond the sewer repair area.

The residual impacts do not pose a threat to human health and the environment due to the following:

- The residual impacts are located at a depth of approximately 20 to 22 feet bgs. As such, the only potential exposure pathway would be a future construction worker; which could readily be controlled.
- The trench walls were found to be clay from approximately 1.5 to 2 feet bgs to bedrock (approximately 20 to 22 feet bgs). The clay will prevent any potential lateral migration.
- The bedrock surface was found to be competent, which would mitigate any potential vertical migration.
- No groundwater infiltration was observed entering the excavation; however, water was present in the excavation from other sources (predominantly the sanitary sewer itself and the granular bedding materials) as outlined previously in Section 4.1.1.
- The asphalt road surface provides a relatively impermeable surface that is graded to catchbasins to capture stormwater (some of which were replaced with new during sewer replacement), which would mitigate surface water infiltration.
- The replaced sewer has water tight joints, which would prevent exfiltration from the sewer.
- The lack of observed groundwater infiltration into the excavation, the clay trench walls, the asphalt road surface overlying the area, and the watertight sewer joints result in negligible potential for water to enter the trench. Therefore, there is no mechanism to hydraulically flush any residuals into bedrock in addition to the fact that bedrock appeared to be competent based on the lack of flaking or excavatable fractured bedrock during excavation activities.

As a precautionary measure, GSH recommends the implementation of the following:

- Installation and monitoring of two bedrock groundwater monitoring wells; one to be installed to the north of the Colvin Boulevard sanitary sewer repair area (downgradient) and one to be installed to the south of the Colvin Boulevard sanitary sewer repair area (upgradient). These wells would be installed in the median areas to monitor bedrock groundwater quality at a depth of approximately 5 to 15 feet below top of bedrock. The wells would be sampled two times for VOCs, SVOCs, and Pesticides at a minimum interval of 1 month. The data from the two sampling events would be used to evaluate future monitoring requirements.
- Installation of up to two soil borings along the Colvin Boulevard Sanitary Sewer system to the east of the repair area to verify no additional chemistry is present east of the repair area. A soil sample would be collected from the bedding material surrounding the existing sanitary sewer 20 feet beneath Colvin Boulevard and analyzed for VOCs, SVOCs, and Pesticides.
- Installation of one flush-mount monitoring well within the bedding material of the newly installed Colvin Boulevard sanitary sewer line at the downgradient end of the repair to monitor for the presence of NAPL that was observed during construction activities.

To protect any potential future construction worker exposure, GSH will work with the CNF/NFWB to ensure that the residual impacts are documented on their record sewer drawings and to establish a protocol such that GSH is notified of, and will potentially assist with, any subsurface work being conducted in the vicinity of Love Canal.

4.1.3 SEWER PIPING REPLACEMENT

Once the impacted pipe and bedding materials were removed to the satisfaction of GSH's oversight engineer/consultant and the CNF On-Site representative and confirmatory samples collected, new granular bedding material and 15-inch SDR 35 polyvinyl chloride (PVC) sewer pipe with water tight couplings were installed. The new PVC pipe extended from approximately 19 feet east of the manhole at 96th Street to approximately 61 feet east of the manhole at 96th Street. The PVC piping was connected to the existing concrete pipe using a mechanical coupling (Fernco coupling) to ensure a water tight seal. As all the sewer joints have watertight seals, there is no potential for residual chemically impacted soil remaining at the bottom of the trench to enter the sewer or impact water quality within the sewer.

Once the new pipe was placed and grade verified, additional granular bedding material was placed to a level of approximately 2 feet above the top of pipe. Extra granular fill was placed in the west end of the excavation up to and around a natural gas line crossing the excavation at a depth of approximately 4.5 feet bgs to support the natural gas line. The granular fill was placed in approximate one-foot lifts and compacted with mechanical tamper.

The remainder of the excavation was backfilled and compacted with native materials removed from the excavation to road subgrade level. Prior to backfilling, the stockpiled native material was inspected to ensure there were no odors or evidence of chemical impacts before use as backfill. No odors or photoionization detector (PID) readings were detected from the native soils used as backfill. Native materials that could not be backfilled (excess, frozen, etc.) were placed in lined roll-off boxes temporarily staged near the excavation. Native materials were placed in approximate two-foot lifts and compacted with the excavator bucket and mechanical tamper.

Granular materials were placed and compacted on top of the backfilled native materials. Cold asphalt patch then was installed to restore the road surface. The cold patch will be replaced, low spots in the subgrade filled and compacted, and hot asphalt placed in late spring to complete road restoration. Any required landscaping and topsoil and sod placement will also be completed in the spring.

All work was performed in accordance with the NFWB/CNF project specifications, except for the use of native soils removed during excavation as backfill. NFWB/CNF project specifications required that the entire excavation be backfilled with granular materials. Given that native materials were originally present and that they were present under the remainder of the road, CNF personnel approved the use of native material instead of granular material on February 2, 2011. All work was supervised by CNF's on-Site representative and completed to the satisfaction of the CNF's on-Site representative.

At a request from the CNF, GSH also replaced a catchbasin on the northeast corner of Colvin Boulevard and 96th Street and storm sewer piping leading to a catchbasin on the southeast corner of Colvin Boulevard and 96th Street that had been removed and broken by the CNF/NFWB contractor.

4.2 SEWER CLEANING ACTIVITIES

As indicated in section 4.1, there was potential that sediments were washed downstream due to historic sewer repair work and/or the excavation being left open by the CNF/NFWB between January 11, 2011 and February 2, 2011. Therefore, as a precautionary measure, the section of sanitary sewer beneath Colvin Boulevard between 97th Street and the lift station at 91st Street were hydraulically cleaned to remove any sediment that may have been present (see Figure 4.3) upon completion of the sewer repair. The lift station was also inspected to determine if any visually impacted liquids were present. None were observed. Cleaning of the sanitary sewer downstream of the lift station at 91st Street was not required as the lift station is the end and lowest point in the Colvin Boulevard sanitary sewer. As such, sediments would accumulate in the lift station and would not be able to migrate further downstream.

Sewer cleaning activities were conducted between February 12 and 23, 2011. Cleaning was conducted in sections between an upstream and downstream manhole. Cleaning proceeded from furthest upstream section (97th Street to 96th Street) to the furthest downstream section (92nd Street to the lift station at 91st Street).

A sewer plug was installed in the downstream manhole of each section and the sewer flow was bypassed using aboveground pumps and piping. The sewer plug prevented sediments from entering downstream sections during cleaning.

Each section was cleaned using high-pressure water. On some sections of sewer, numerous runs were performed to ensure that all the sediment was removed. Wash water and sediment were collected in the downstream manhole and removed by vacuum truck.

Significant solid materials were removed from the sewer between 93rd Street and 96th Street. The material included sediment, granular bedding material, bricks, and other miscellaneous debris. NAPL was not observed during the sewer cleaning activities in any section of the Colvin Boulevard sanitary sewer or within the 91st Street Lift Station.

4.3 VIDEO INSPECTION

Once the sewers were cleaned, the pipes were video-inspected from 97th Street to the lift station at 91st Street to ensure that all sediment had been removed (see Figure 4.3). Video inspection of the sewer was completed between February 15 and 22, 2011.

As with the sewer cleaning, video inspection was conducted in sections from an upstream manhole to a downstream manhole. A sewer plug was installed in the downstream manhole and the sewer flow bypassed using aboveground pumps and piping to facilitate the inspection.

The results of the video inspection (logs and video) are contained on a compact disk (CD) included in Appendix F. As shown on the video, no sediments were present in the section of sanitary sewer between 97th Street and the lift station at 91st Street. Therefore, there is no future potential for sediments to impact water quality in the sewer or air quality in the vicinity of the sewer.

It should be noted that at 179.5 feet east of the manhole at 96th Street, infiltration was noted at the joint of the sewer piping in the 12 o'clock position. This infiltration is noteworthy only since the LaSalle Sanitary Spot 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 stormwater inflow or groundwater infiltration. A number of municipalities throughout the State, including the NFWB, have been asked to undertake projects such as these to improve local water quality. As such, this infiltration point may warrant repair by the NFWB which would involve the implementation of procedures being established between the NFWB, CNF, and GSH for future subsurface work activities near Love Canal (see Section 6 for further details).

4.4 EQUIPMENT DECONTAMINATION

All equipment that came in contact with potentially impacted soil, sediment, or water was decontaminated at the Love Canal Site within containment in the drum barn. Decontamination involved removal of any solid materials (i.e., excavator bucket) and then washing the equipment with high-pressure potable water. Wash water was 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 4.5.

4.5 WASTE HANDLING AND DISPOSAL

Wastes generated during remedial activities included liquids (comprised of water and NAPL), sediment, and soil/debris. These materials were managed as described below.

Liquid materials generated from sewer cleaning and sewer repairs were transported from the work area via vacuum truck to the Love Canal Site. Any suspended solids (sediments) were allowed to settle in the vacuum truck overnight. 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.

Decontamination water was pumped from the drum barn sump to the underground holding tank at P-3A and then pumped to and treated by the Love Canal leachate treatment system, and discharged as permitted to the NFWB sanitary sewer system.

Sediments that settled out of the liquids in the vacuum truck were removed and placed in sealed drums. The drums are stored in the drum storage area in the drum barn pending characterization. A total of four drums were generated. All drums will be disposed of off-site in accordance with federal and state regulations.

Lined roll-offs were staged for use within the excavation area. Once full, the roll-offs were covered and transported to the Love Canal site. A total of 15 full roll-offs are staged at the Love Canal site. Four roll-offs contain piping and bedding material. Ten roll-offs contain native excavated material from above the former sanitary sewer that could not be used as backfill (i.e., excess, frozen materials, etc.). One roll-off contains material removed from the CNF/NFWB contractor's roll-off. All roll-offs will be disposed off-site in accordance with federal and state regulations.

All characterization data and final disposition information for the drums and lined roll-offs will be provided to the NYSDEC under separate cover. This data will be compiled once the laboratory analysis is complete and the material has been manifested and transported.

4.6 COMMUNITY AIR MONITORING RESULTS

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 (O₂)/lower explosive limit (LEL) meter and a hydrogen sulfide (H₂S) meter to monitor air quality within the excavation and along the perimeter of the work area (i.e., at the exclusion zone fence line).

PID, O₂/LEL, and H₂S measurements were collected continuously in the excavation/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 daily readings is presented in Table 4.3.

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 excavation area ranged between 0 and 4.2 parts per million (ppm), all below the Action Level of 10 ppm when work activities would have to cease. All PID readings in the breathing zone at the perimeter of the work area ranged between 0 and 0.7 ppm, all below the Action Level of 1 ppm when a respirator would be required.

Oxygen levels were all within acceptable range (19.5 to 23.5 percent). H₂S was not detected and only one low-level detection of carbon monoxide was detected (1 ppm), well below the Action Level of 35 ppm. LEL monitoring indicated a maximum LEL of 1 percent, well below the Action Level of 10 percent.

4.7 COMMUNITY OUTREACH

Due to the nature and duration of the project, CRA personnel visited 68 residences in the vicinity of the work area as directed by GSH on February 17, 2011. The purpose of the visits was to explain the work activities being conducted and to answer any questions the residents might have. A fact post card was also left at all residences. The card provided an update about the project, estimated completion dates, and a local phone number for the residents to call for information about the work.

5.0 CONCLUSIONS

Based on the investigation and remedial activities performed, the following conclusions have been made:

1. The Love Canal remedial system is operating as designed and is protective of human health and the environment.
2. The presence of chemistry in the sediments within the sanitary sewer along Colvin Boulevard immediately east of 96th Street is not a result of current operations at the Love Canal site.
3. The approximate 50-foot long low spot in the sanitary sewer has acted as a sediment trap.
4. The sanitary sewer was hydraulically cleaned in 1985/1986 but video inspection was not performed to confirm that all sediments were removed. As such, there is the potential that all sediments were not removed from the isolated low spot during the hydraulic cleaning.
5. The sanitary sewer along Colvin Boulevard was video inspected in April and May 2000. Review of the video inspection showed the low-spot in the sewer and the sanitary sewer along Colvin Boulevard to the east of 97th Street and west of the sewer excavation area at 96th Street to 95th Street was in good condition, showed no signs of deterioration or infiltration, and was free of sediment.
6. The CNF did not identify any other areas of potential impact to the sewer systems around Love Canal based on the 2000 video inspection and the 16 other repairs completed during the 2010/2011 LaSalle Area Spot Sewer Repair project.
7. The chemistry present in the sanitary sewer along Colvin Boulevard east of 96th Street is an isolated event based on Love Canal activities in 1985/1986 prior to the current remedy implementation.
8. Visual and olfactory evidence of chemical impact was observed in the bedding materials beneath the sewer along the 50-foot low spot during sewer pipe removal. Although NAPL was also observed, it was removed from the excavation with a vacuum truck whenever present. As a result of the chemical impacts and NAPL presence, all bedding materials and the underlying native clay were removed until bedrock was encountered for the entire length of the trench to the extent possible. Some minor amounts of clay (3 to 6 inches) could not be removed due to the slightly uneven bedrock surface, the teeth of the excavator bucket, and restrictions posed by the trench boxes.
9. The impacts to the bedding materials in this area 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. This is likely the reason why the bedding materials were impacted in this section of sewer but not historically in other sections of sewer in the early 1980s. Based on the sewer investigations (bedding and sediments) conducted in the early 1980s, and since the video inspection of the sewers conducted by the CNF in 2000 showed no evidence of deterioration in the other sections of sewer, there is negligible potential for the bedding to be impacted in other sections of sewer around the Love Canal site.

10. Confirmatory soil sampling completed after the impacted bedding and clay materials were removed showed that residual chemical impacts remain within the bottom of the trench; however, samples collected at the east and west end walls had detected concentrations below NYSDEC Part 375 unrestricted soil cleanup objectives (east) or only one compound, alpha-BHC, that exceeded restricted use residential and commercial criteria (west). These data show that the residual impacts do not extend beyond the sewer repair area.
11. All new PVC piping joints have watertight seals; therefore there is no potential for residual chemically-impacted soil remaining at the bottom of the trench to enter the sewer or impact water quality within the sewer.
12. Residual impacts do not pose a threat to human health and the environment due to the following:
 - a. The residual impacts are located at a depth of approximately 20 to 22 feet bgs. As such, the only potential exposure pathway would be a future construction worker; which will be addressed by the implementation of control procedures developed by GSH in conjunction with the CNF/NFWB.
 - b. The trench walls were found to be clay from approximately 1.5 to 2 feet bgs to bedrock (at approximately 20 to 22 feet bgs). The clay will prevent any potential lateral migration.
 - c. The bedrock surface is considered to be solid based on an inability to excavate the top surface of the rock and therefore vertical migration would be limited.
 - d. No groundwater infiltration was observed entering the excavation; however water was present in the excavation from other sources (predominantly the sanitary sewer itself and granular bedding materials).
 - e. The asphalt road surface provides a relatively impermeable surface that is graded to catchbasins to capture stormwater (some of which were

replaced during the sewer replacement), which would mitigate surface water infiltration.

- f. The replaced sewer has water tight joints, which would prevent exfiltration from the sewer.
 - g. The lack of observed groundwater infiltration into the excavation, the clay trench walls, the asphalt road surface overlying the area, and the watertight sewer joints result in negligible potential for water to enter the trench. Therefore, there is no mechanism to hydraulically flush any residuals into bedrock in addition to the fact that bedrock appeared to be competent based on the lack of flaking or excavatable fractured bedrock during excavation activities.
13. Video inspection of the replaced and cleaned sewer showed that no sediments were present in the section of sanitary sewer between 97th Street and the lift station at 91st Street. Therefore, there is no future potential for sediments to impact water quality in the sewer or air quality in the vicinity of the sewer.

6.0 RECOMMENDATIONS

Based on the conclusions from the investigation and remedial activities performed, the following recommendations are made:

- Work with the CNF/NFWB to establish procedures such that:
 - The area of residual impacts are documented on their record sewer drawings
 - GSH is notified in advance of any subsurface activities to be conducted in the vicinity of Love Canal
 - GSH will provide assistance to the CNF/NFWB when subsurface work is being performed near the Love Canal site should environmental issues arise and ensure that construction worker exposure is controlled
- Install and monitor two bedrock groundwater monitoring wells; one to be installed to the north of the Colvin Boulevard sanitary sewer repair area (downgradient) and one to be installed to the south of the Colvin Boulevard sanitary sewer repair area (upgradient). These wells would be installed in the median areas to monitor bedrock groundwater quality at a depth of approximately 5 to 15 feet below top of bedrock. The wells would be sampled two times for VOCs, SVOCs, and Pesticides at a minimum interval of one month. The data from the two sampling events will be used to evaluate future monitoring requirements.
- Install up to two soil borings along the Colvin Boulevard Sanitary Sewer system to the east of the repair area to verify no additional chemistry is present east of the repair area. A soil sample will be collected from the bedding material surrounding the existing sanitary sewer 20 feet beneath Colvin Boulevard and analyzed for VOCs, SVOCs, and Pesticides.
- Install one flush-mount monitoring well within the bedding material of the newly installed Colvin Boulevard sanitary sewer line at the downgradient end of the repair to monitor for the presence of NAPL that was observed to be present during construction activities.

The attached Figure 6.1 shows the location of the recommended well and boring installations.

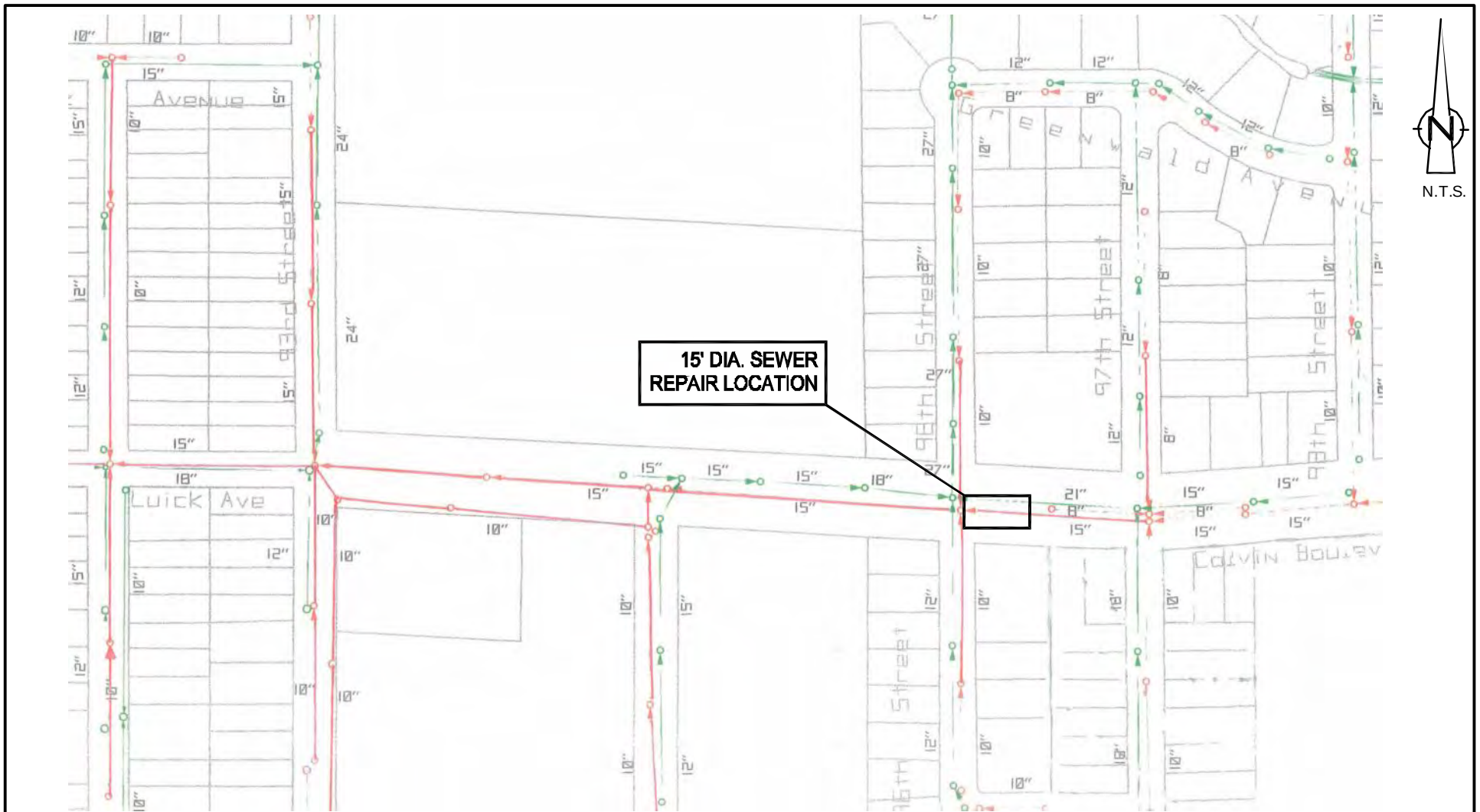


figure 2.1

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



SOURCE: NIAGARA FALLS WATER BOARD

09954-D23101(021)GN-WA006 FEB 23/2011



ADDRESS: 9610 COLVIN (W/S)
MH REF NO. 197

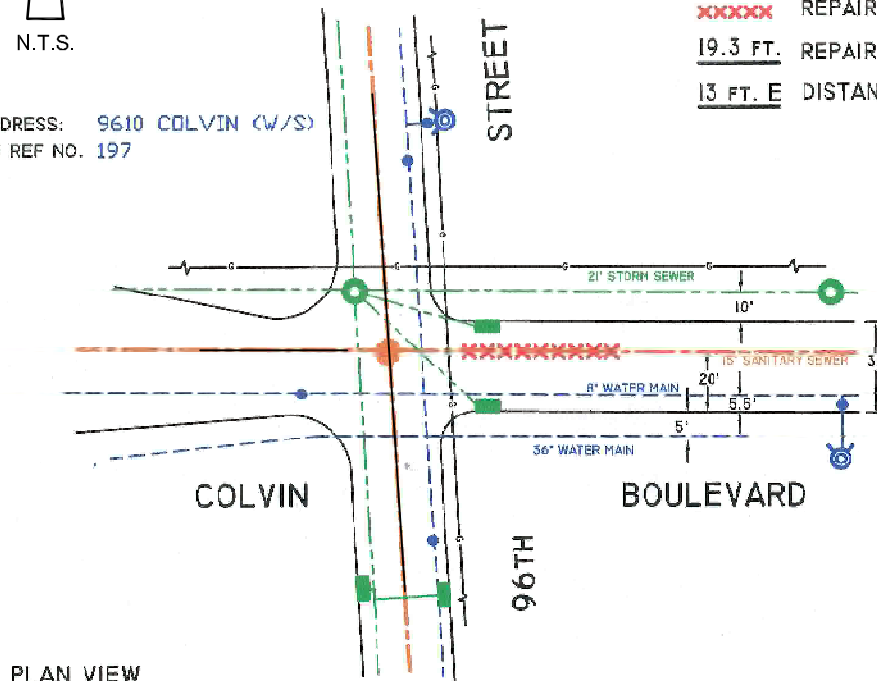
SCOPE: 15" DIA. SANITARY SEWER REPAIR

50 L.F. 15" DIA. SDR 35 PVC PIPING

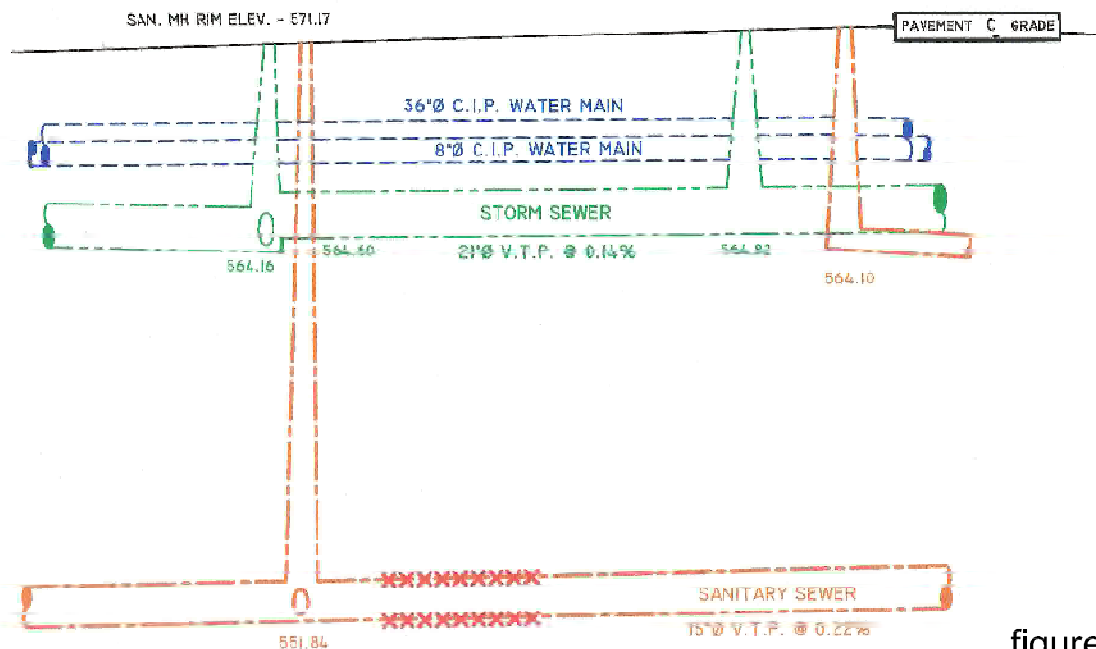
XXXXX REPAIR LOCATION (APPROX.)

19.3 FT. REPAIR DEPTH (APPROX.)

13 FT. E DISTANCE FROM MANHOLE (APPROX.)



PLAN VIEW



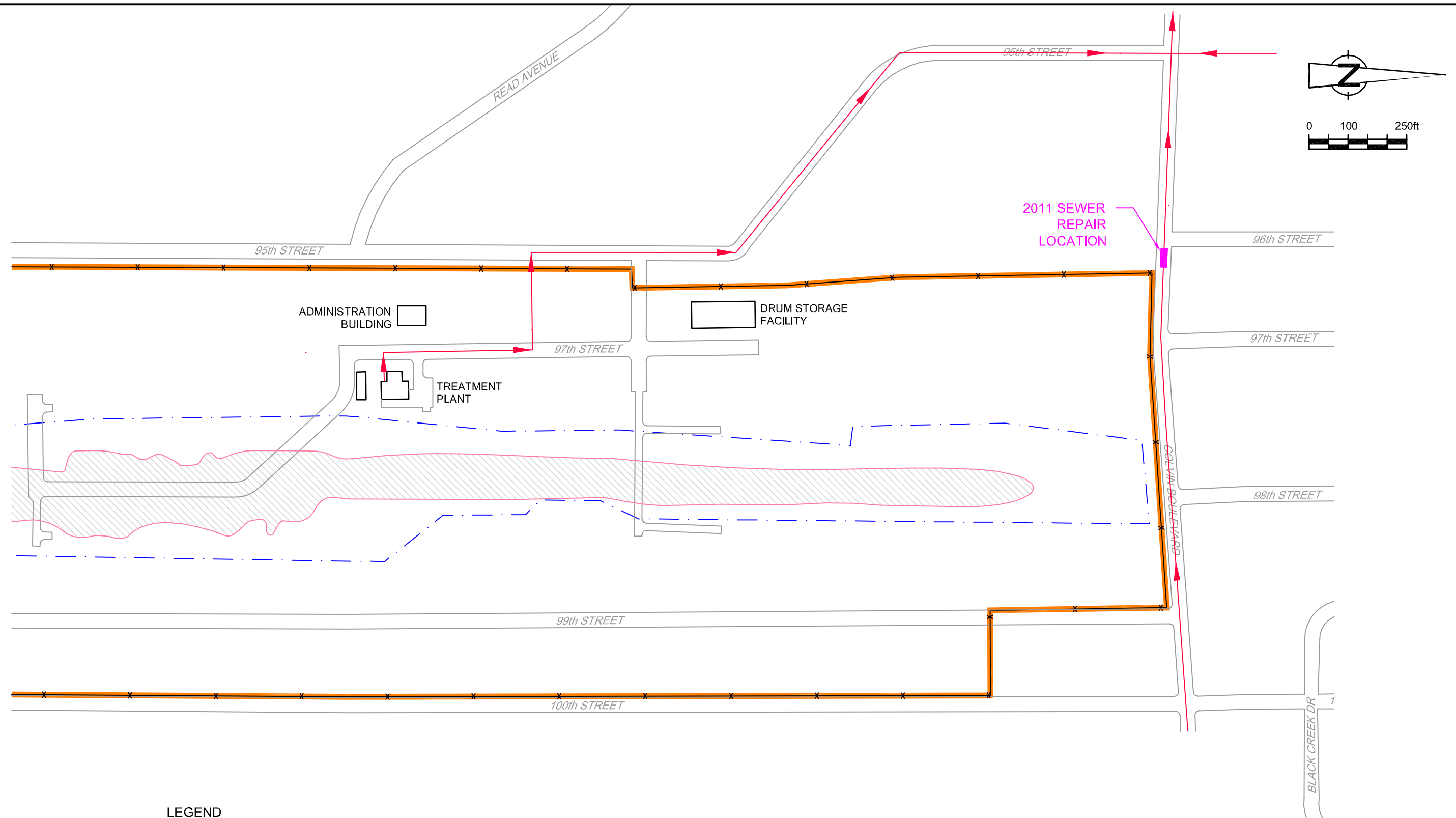
PROFILE VIEW

figure 2.2

PLAN PROFILE OF SEWER REPLACEMENT AREA
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York



SOURCE: NIAGARA FALLS WATER BOARD



LEGEND

- LOVE CANAL SITE BOUNDARY
- FENCE LINE
- BARRIER DRAIN
- APPROXIMATE LIMITS OF DISPOSED WASTE

figure 3.1

**LOVE CANAL TREATMENT SYSTEM SEWER DISCHARGE ROUTE
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York**



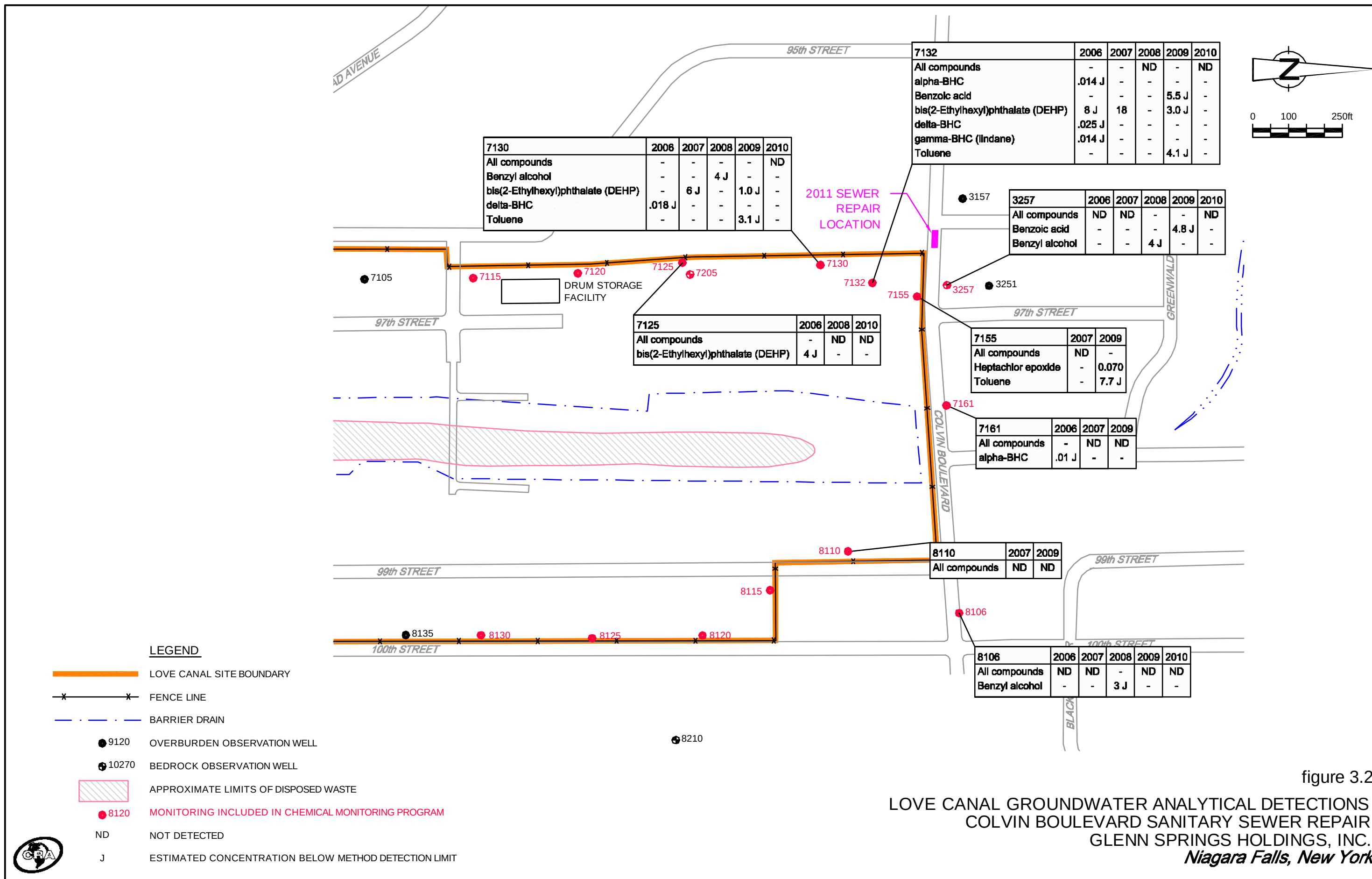


figure 3.2
LOVE CANAL GROUNDWATER ANALYTICAL DETECTIONS
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

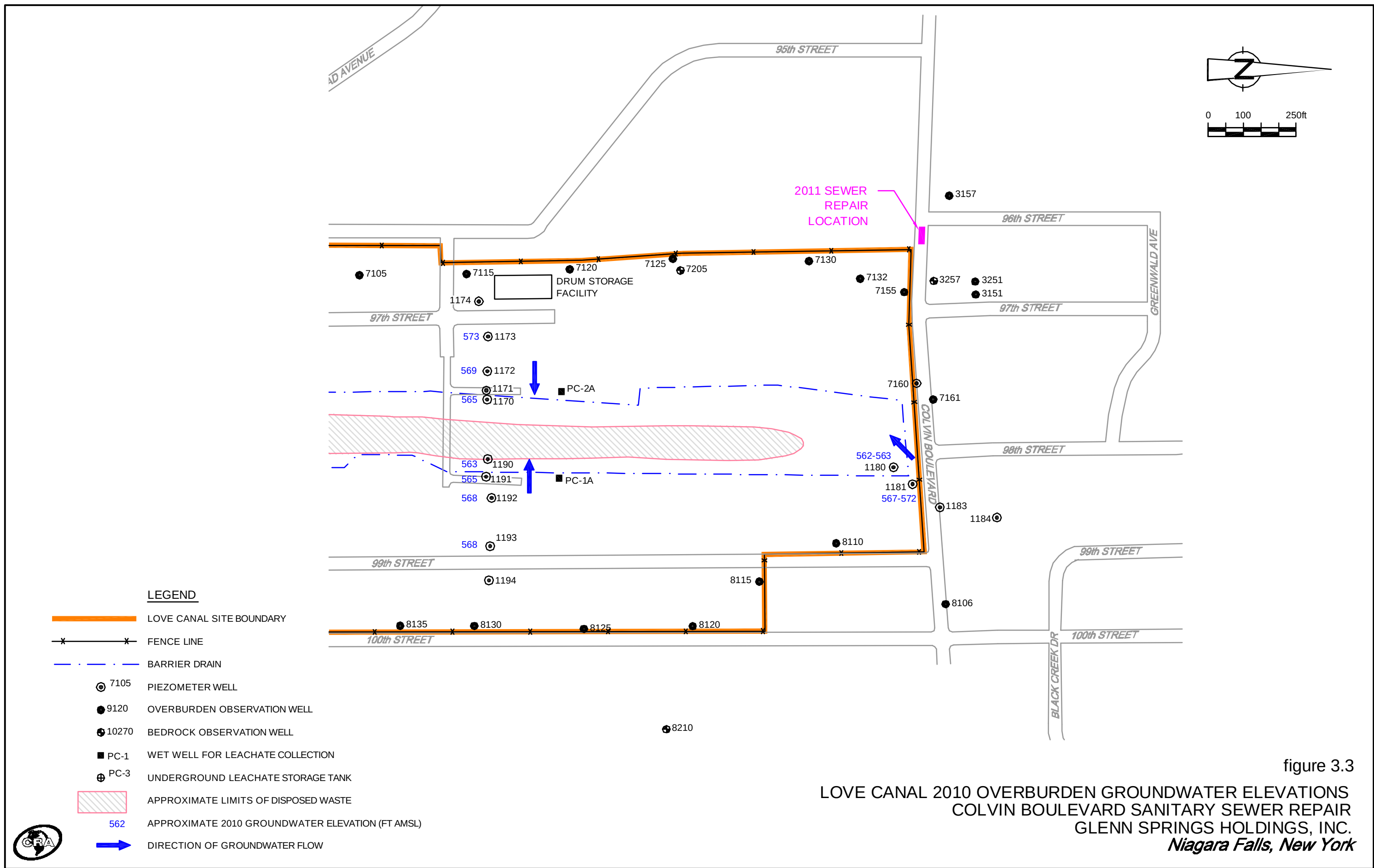
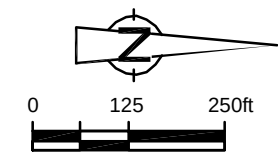
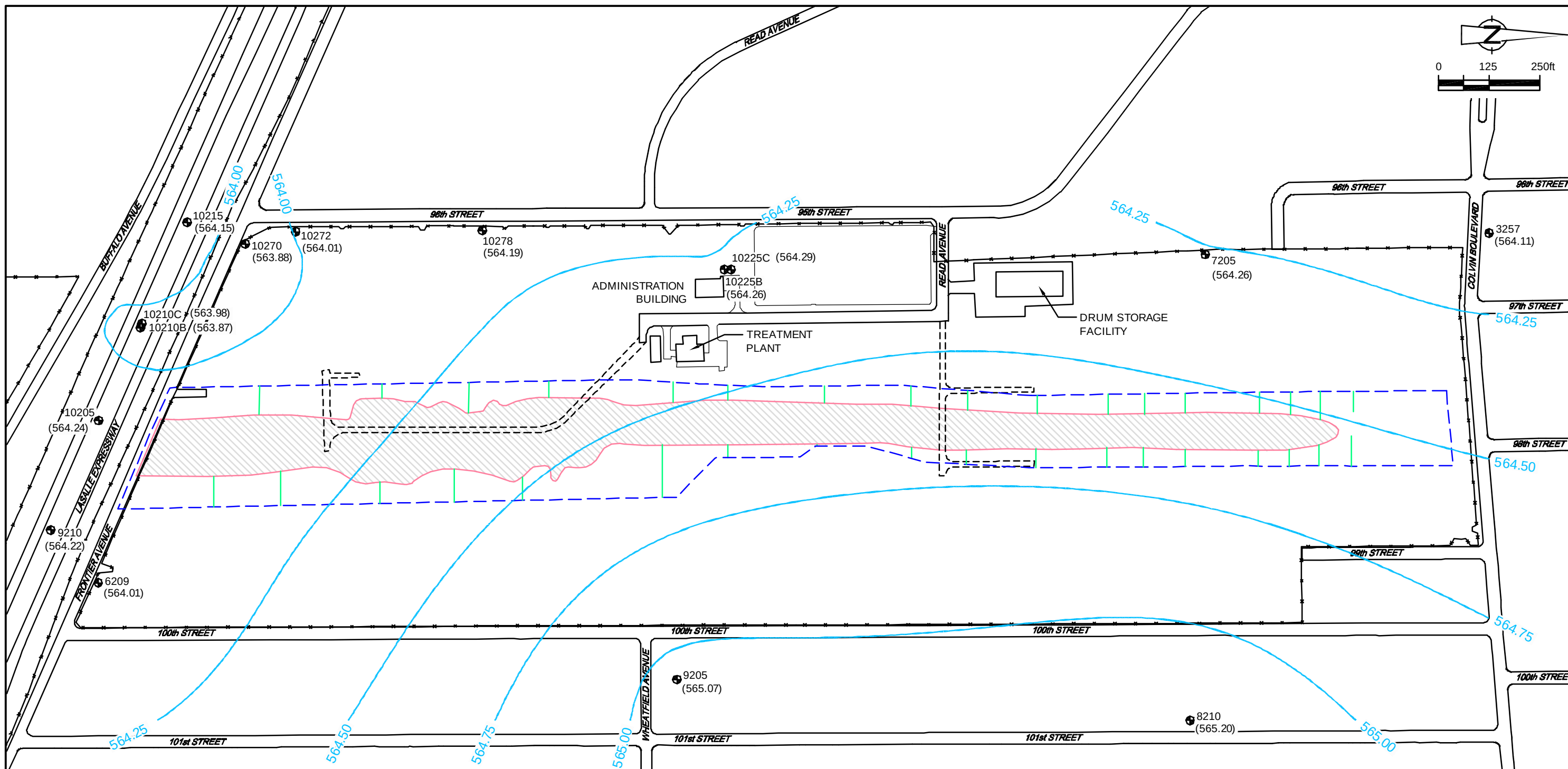


figure 3.3
 LOVE CANAL 2010 OVERBURDEN GROUNDWATER ELEVATIONS
 COLVIN BOULEVARD SANITARY SEWER REPAIR
 GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York



- LEGEND**
- x—x— FENCE LINE
 - - - - - APPROXIMATE BARRIER DRAIN
 - APPROXIMATE LATERAL LOCATION
 - [Hatched Box] APPROXIMATE LIMITS OF DISPOSED WASTE
 - 10270 BEDROCK OBSERVATION WELL
 - (565.07) BEDROCK GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION (JUNE 2010)
 - 565.00— BEDROCK GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR (JUNE 2010)

figure 3.4
 2010 BEDROCK GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS
 COLVIN BOULEVARD SANITARY SEWER REPAIR
 GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York



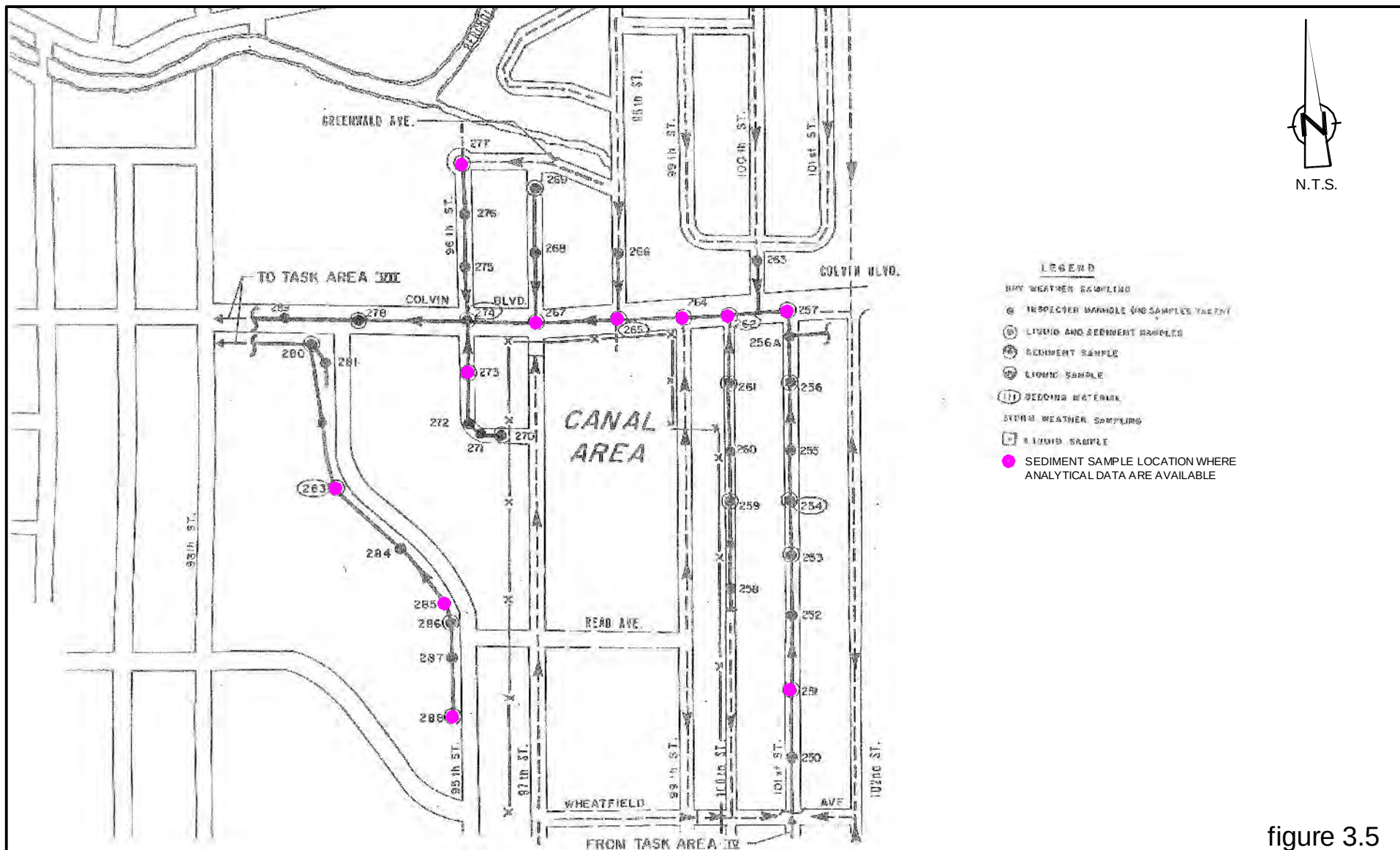
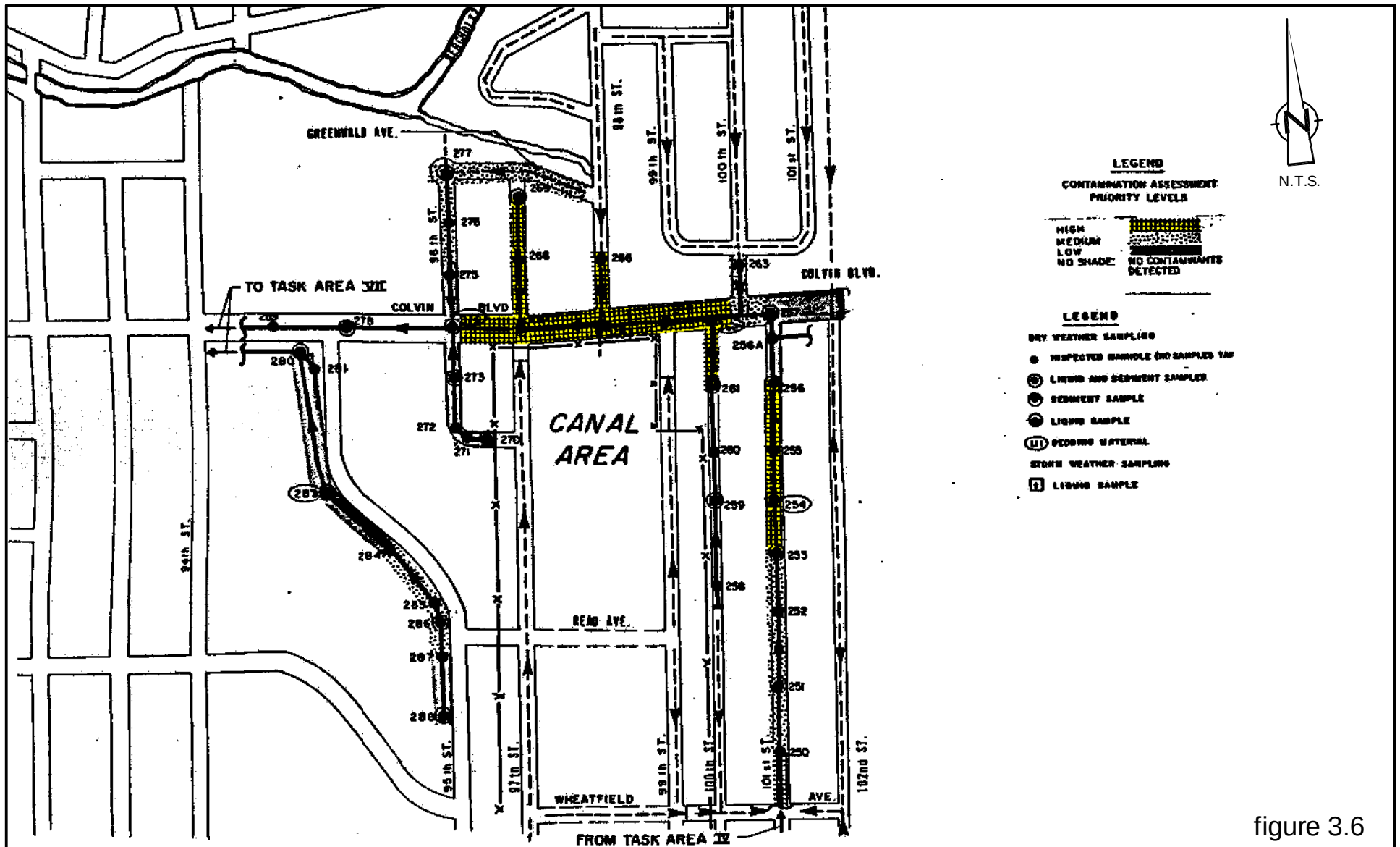


figure 3.5

HISTORIC SANITARY SEWER SEDIMENT SAMPLE LOCATIONS
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York



SOURCE: SITE INVESTIGATIONS AND REMEDIAL ACTION ALTERNATIVES, "LOVE CANAL", MALCOLM PIRNIE, INC., OCTOBER 1983



HISTORIC SANITARY SEWER IMPACTED SEDIMENT AREAS
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York



SOURCE: SITE INVESTIGATIONS AND REMEDIAL ACTION ALTERNATIVES, "LOVE CANAL", MALCOLM PIRNIE, INC., OCTOBER 1983

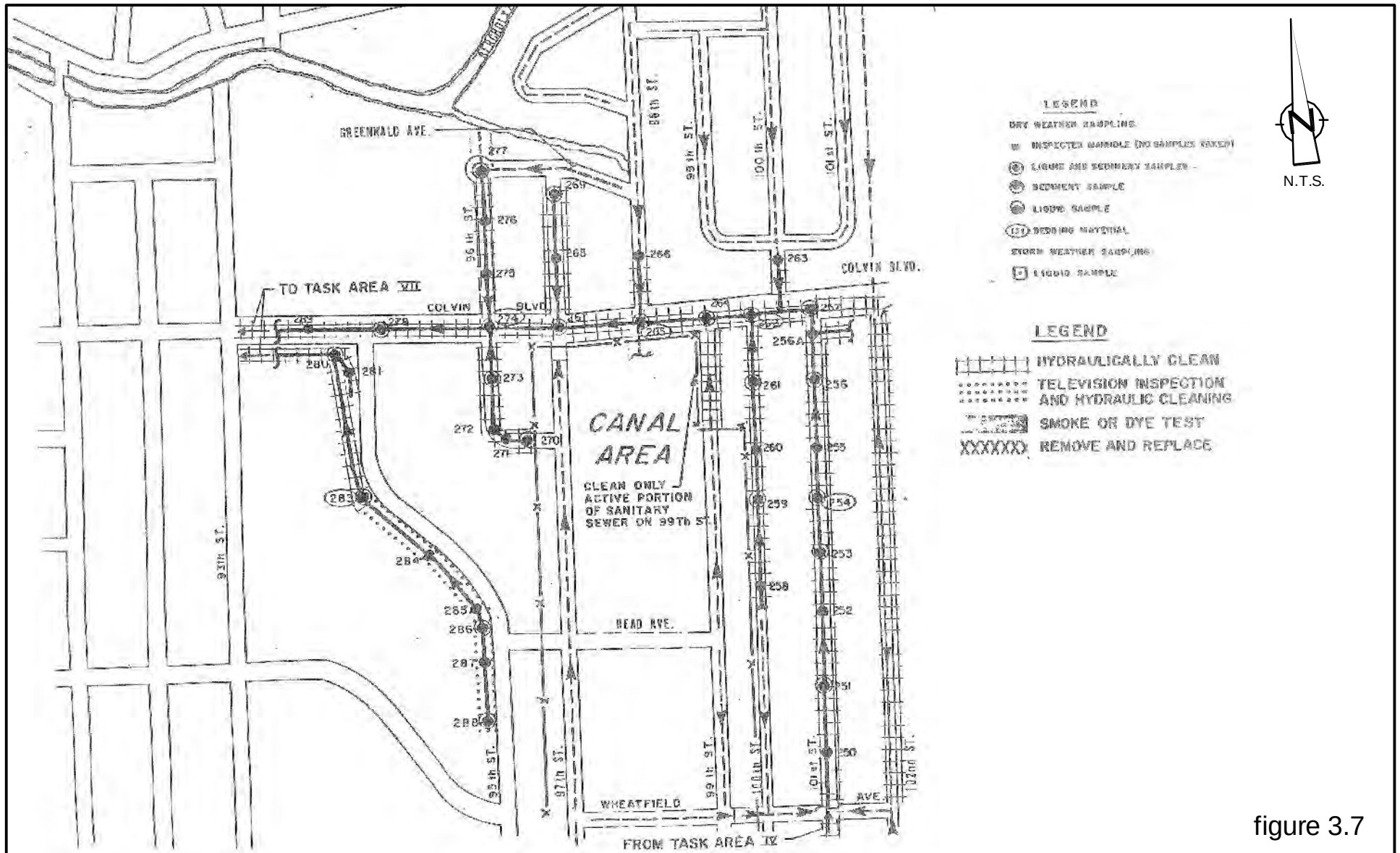
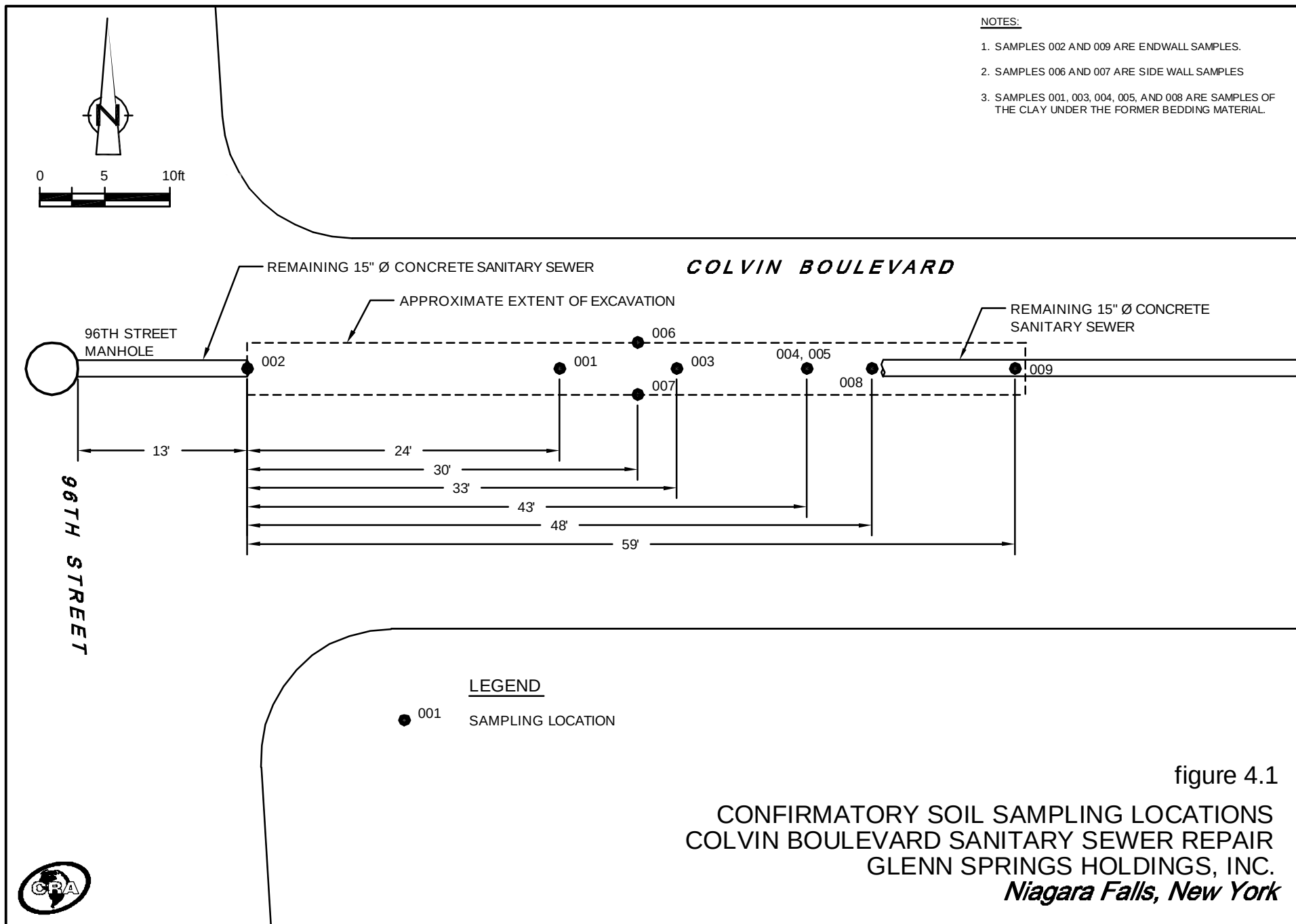
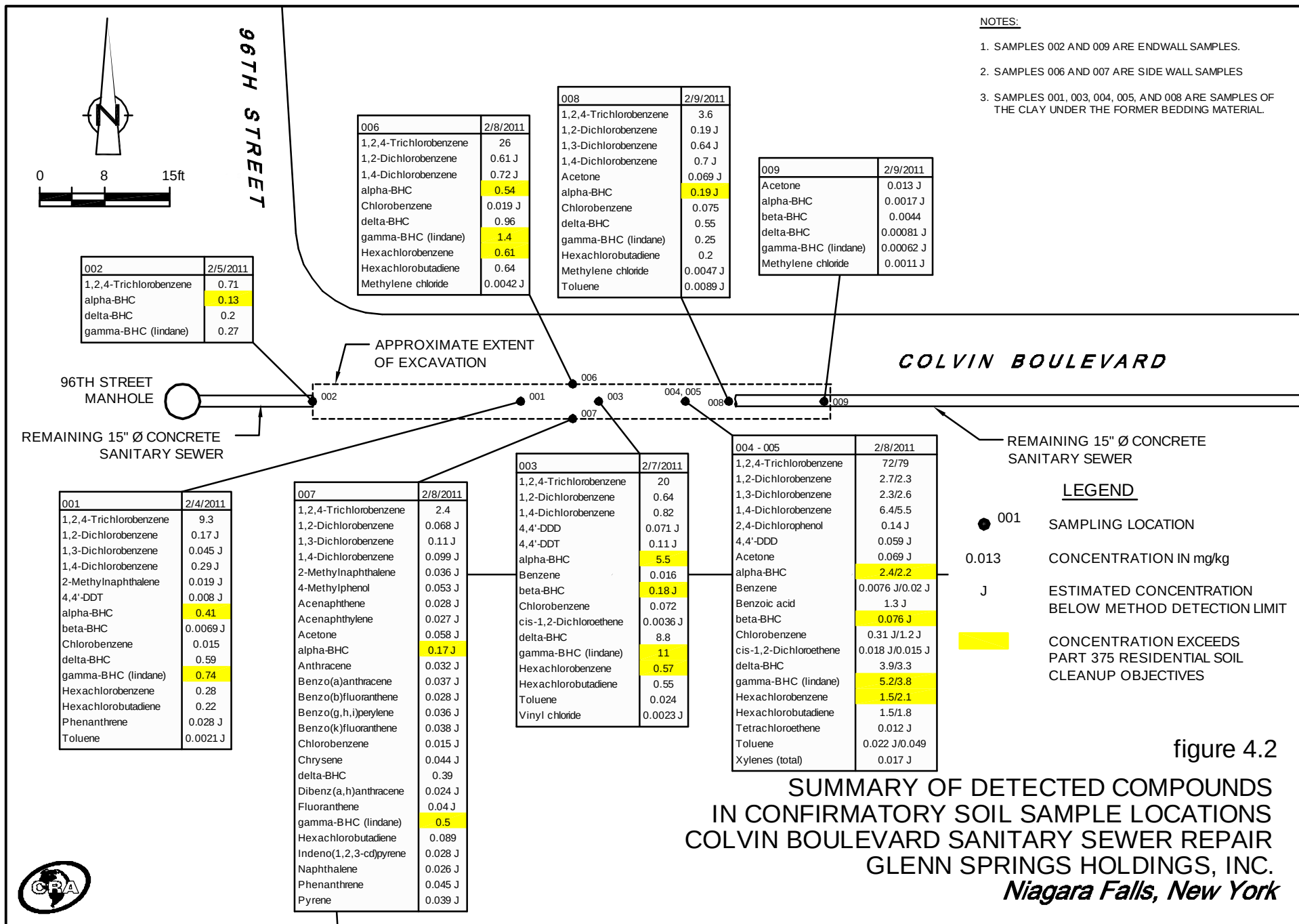


figure 3.7
 HISTORIC SANITARY SEWER REMEDIAL ACTION PLAN
 COLVIN BOULEVARD SANITARY SEWER REPAIR
 GLENN SPRINGS HOLDINGS, INC.
 Niagara Falls, New York



SOURCE: SITE INVESTIGATIONS AND REMEDIAL ACTION ALTERNATIVES, LOVE CANAL", MALCOLM PIRNIE, INC., OCTOBER 1983





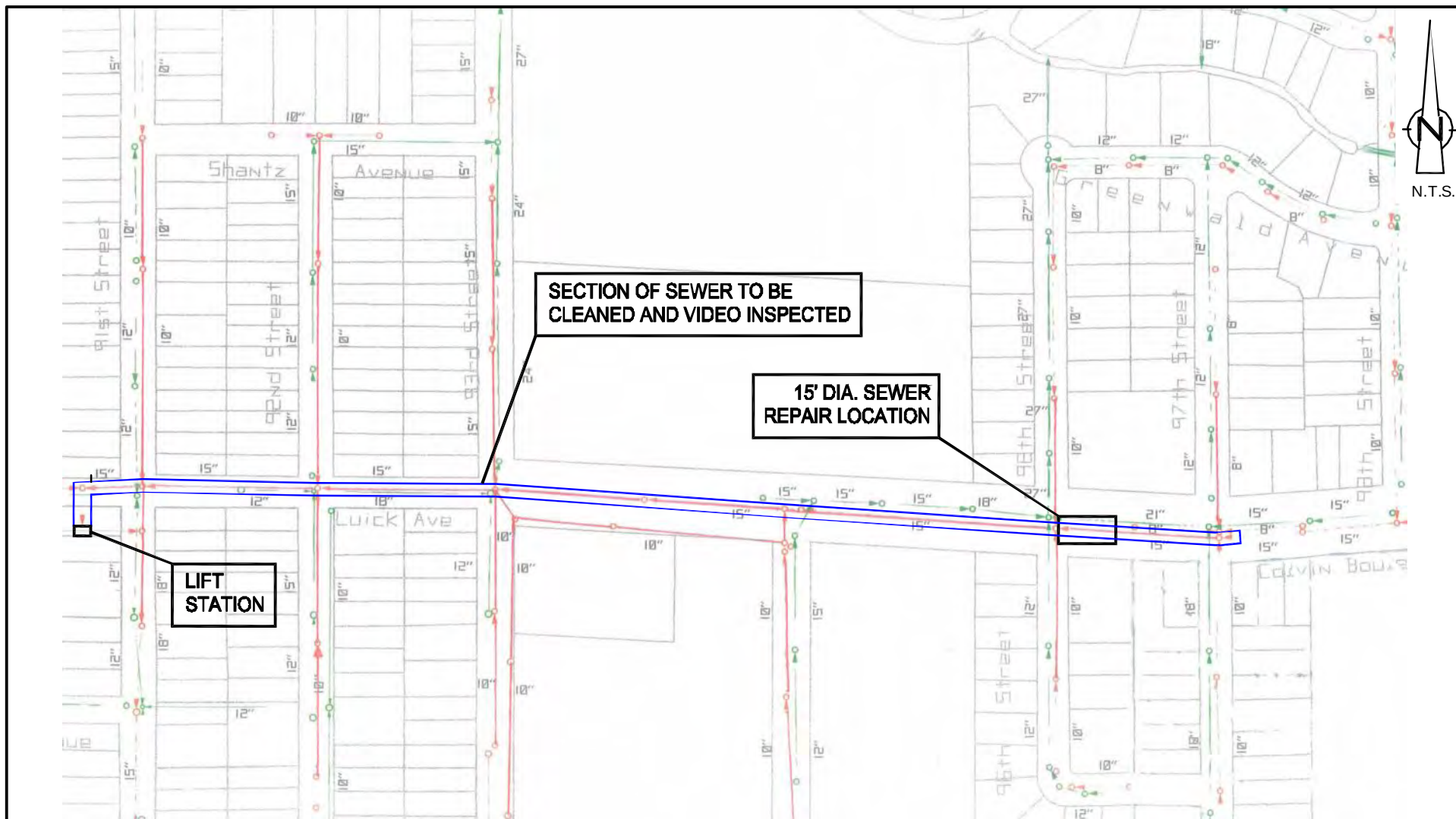


figure 4.3

LOCATION OF SEWER CLEANING AND VIDEO INSPECTION
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York



SOURCE: NIAGARA FALLS WATER BOARD

09954-D23101(021)GN-WA006 FEB 23/2011

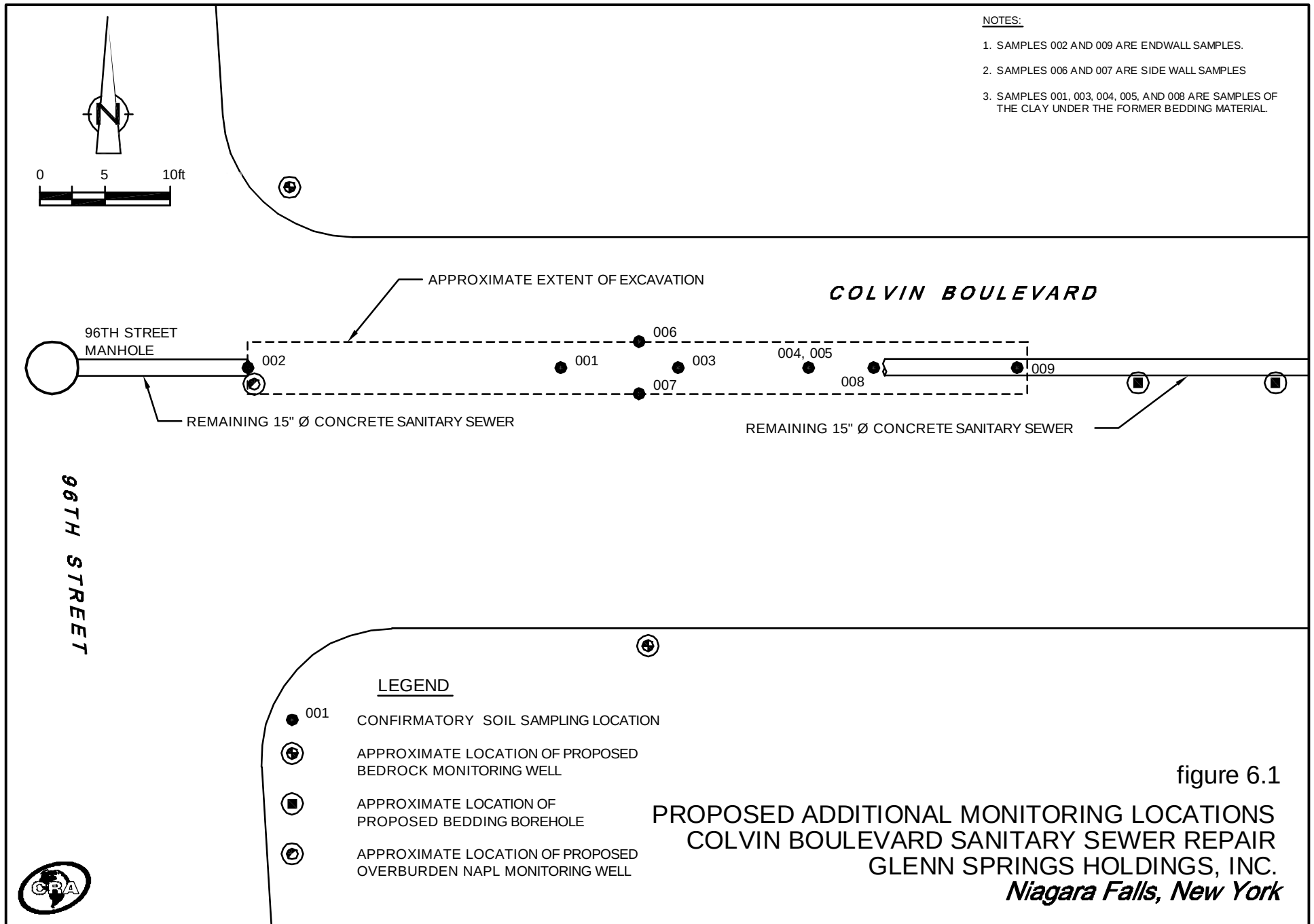


figure 6.1

TABLE 2.1

**SUMMARY OF DETECTED COMPOUNDS IN SEDIMENT/SOIL SAMPLE
COLLECTED BY THE CITY OF NIAGARA FALLS
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK**

Sample Location	<i>96th/Colvin</i>
Sample ID	<i>SS-1</i>
Sample Date	<i>1/11/2011</i>
	<i>Units</i>

SVOAs

1,2,4-Trichlorobenzene	mg/kg	1600
1,2-Dichlorobenzene	mg/kg	4.5 J
1,3-Dichlorobenzene	mg/kg	12
1,4-Dichlorobenzene	mg/kg	10 J
bis(2-Ethylhexyl)phthalate (DEHP)	mg/kg	0.18 J
Hexachlorobenzene	mg/kg	17
Hexachlorobutadiene	mg/kg	14

VOAs

Benzene	mg/kg	0.12 J
Chlorobenzene	mg/kg	8.1
cis-1,2-Dichloroethene	mg/kg	0.051 J
Cyclohexane	mg/kg	ND
Toluene	mg/kg	0.37

Notes:

mg/kg - milligrams per kilogram

"--" - Not Sampled.

ND - Not Detected.

J - Estimated concentration below method detection limit

TABLE 2.2

**CHRONOLOGY OF SIGNIFICANT EVENTS
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK**

<i>Date</i>	<i>Activity</i>
January 11, 2011	- Contractor for City of Niagara Falls (CNF)/Niagara Falls Water Board (NFWB) discovers impacted sediments within the sanitary sewer - NFWB notifies Glenn Springs Holdings, Inc. (GSH) and their consultant, Conestoga-Rovers & Associates (CRA), of impacted sediments - GSH verbally notified New York State of Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) - GSH and CRA immediately commenced investigation to determine the potential source of the impacted sediments
January 13, 2011	- GSH offers assistance to NFWB
January 14, 2011	- GSH submits formal notification to NYSDEC and NYSDOH. NFWB declines assistance at this point in time
January 25, 2011	- NYSDEC submits formal request to GSH via letter to investigate the impacts
January 26, 2011	- GSH meets with NYSDEC, NYSDOH, CNF, NFWB, and United States Environmental Protection Agency (USEPA) to present the preliminary results of investigation and discuss path forward that included GSH replacing the sewer section and addressing any impacts found
January 28, 2011	- GSH submits to NYSDEC, NYSDOH, USEPA, CNF, and NFWB a response to NYSDEC's request that includes investigation report and work plan presenting measures to address the impacts and complete the sewer replacement
January 31, 2011	- NYSDEC approves the work plan with minor additions
February 1, 2011	- GSH commence activities to replace the 50-foot section of sewer
February 12, 2011	- GSH commences sewer cleaning activities between 97th Street and the lift station at 91st Street
February 15, 2011	- GSH commences video inspection of sewer between 97th Street and the lift station at 91st Street
February 17, 2011	- GSH visited 68 residences in the vicinity of the work area to explain the activities being conducted and to answer any questions. A fact card was also left at all residences that provided an update about the project, estimated completion dates, and local phone number to call for information regarding the work
February 18, 2011	- GSH completes sewer replacement and reopens Colvin Boulevard to traffic
February 22, 2011	- GSH completes sewer cleaning and video inspection of sewers
February 23, 2011	- GSH completes visual inspection of the lift station at 91st Street
February 23, 2011	- GSH submits "Sanitary Sewer Investigation and Remediation" report to NYSDEC, NYSDOH, USEPA, CNF, and NFWB

TABLE 3.1
SUMMARY OF LOVE CANAL GROUNDWATER CHEMICAL MONITORING DATA
2006 TO 2010
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK

Sample Location:	3257	3257	3257	3257	3257	3257	7125	7125	7125	7125	7130	7130	7130	7130	7130	7132	7132	7132	7132	7132	7155	
Sample ID:	LC-3257-606	LC-3257-607	LC-3257-608	LC-3257-609	LC3257-610	LC8225-610	LC-7125-606	LC-7125-608	LC-7125-610	LC-8215-610	LC-7130-606	LC-7130-707	LC-7130-608	LC-7130-609	LC-7130-610	LC-7132-606	LC-7132-707	LC-7132-608	LC-7132-609	LC-7132-610	LC-7155-707	
Sample Date:	6/20/2006	6/26/2007	6/24/2008	6/25/2009	6/23/2010	6/23/2010	6/21/2006	6/10/2008	6/16/2010	6/16/2010	6/21/2006	7/13/2007	6/12/2008	6/24/2009	6/16/2010	6/22/2006	7/16/2007	6/10/2008	6/24/2009	6/16/2010	7/16/2007	
Parameters	Units																					
Volatile Organic Compounds																						
1,1,1-Trichloroethane	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
1,1,2,2-Tetrachloroethane	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
1,1,2-Trichloroethane	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
1,1-Dichloroethane	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
1,1-Dichloroethene	ug/L	10 UJ	10 U	10 U	10 U	5.0 U	5.0 U	10 UJ	10 U	5.0 U	5.0 U	10 UJ	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
1,2-Dichloroethane	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
1,2-Dichloropropane	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
2-Hexanone	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 UJ	5.0 U	5.0 U	10 U	10 U	10 UJ	10 U	5.0 U	10 U	10 U	10 UJ	10 U	5.0 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Acetone	ug/L	10 UJ	10 UJ	10 U	10 U	20 U	20 U	10 UJ	10 U	20 U	20 U	10 UJ	10 U	10 UJ	10 U	20 U	10 U	10 U	10 U	10 U	20 U	10 U
Benzene	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Bromodichloromethane	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Bromoform	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 UJ	10 U	10 U	5.0 U	10 U	10 UJ	10 U	10 U	5.0 U	10 UJ
Bromomethane (Methyl bromide)	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Carbon disulfide	ug/L	10 U	10 U	10 U	10 U	9.3 U	8.8 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Carbon tetrachloride	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Chlorobenzene	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Chloroethane	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Chloroform (Trichloromethane)	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Chloromethane (Methyl chloride)	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 UJ	10 U	10 U	5.0 U	10 U	10 UJ	10 U	10 U	5.0 U	10 UJ
cis-1,2-Dichloroethene	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
cis-1,3-Dichloropropene	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Dibromochloromethane	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Ethylbenzene	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Methylene chloride	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Styrene	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Tetrachloroethene	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Toluene	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	3.1 J	5.0 U	10 U	10 U	10 U	4.1 J	5.0 U	10 U
trans-1,2-Dichloroethene	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
trans-1,3-Dichloropropene	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Trichloroethene	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Vinyl acetate	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 UJ	5.0 U	5.0 U	10 U	10 U	10 UJ	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Vinyl chloride	ug/L	10 U	10 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Xylenes (total)	ug/L	10 U	10 U	10 U	10 U	15 U	15 U	10 U	10 U	15 U	15 U	10 U	10 U	10 U	10 U	15 U	10 U	10 U	10 U	10 U	15 U	10 U

TABLE 3.1
SUMMARY OF LOVE CANAL GROUNDWATER CHEMICAL MONITORING DATA
2006 TO 2010
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK

Sample Location:	3257	3257	3257	3257	3257	3257	7125	7125	7125	7125	7130	7130	7130	7130	7130	7132	7132	7132	7132	7132	7155
Sample ID:	LC-3257-606	LC-3257-607	LC-3257-608	LC-3257-609	LC3257-610	LC8225-610	LC-7125-606	LC-7125-608	LC-7125-610	LC-8215-610	LC-7130-606	LC-7130-707	LC-7130-608	LC-7130-609	LC-7130-610	LC-7132-606	LC-7132-707	LC-7132-608	LC-7132-609	LC-7132-610	LC-7155-707
Sample Date:	6/20/2006	6/26/2007	6/24/2008	6/25/2009	6/23/2010	6/23/2010	6/21/2006	6/10/2008	6/16/2010	6/16/2010	6/21/2006	7/13/2007	6/12/2008	6/24/2009	6/16/2010	6/22/2006	7/16/2007	6/10/2008	6/24/2009	6/16/2010	7/16/2007
						(Duplicate)				(Duplicate)											
Parameters	Units																				
Semi-volatile Organic Compounds																					
1,2,4-Trichlorobenzene	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
1,2-Dichlorobenzene	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
1,3-Dichlorobenzene	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
1,4-Dichlorobenzene	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
2,4,5-Trichlorophenol	ug/L	25 U	25 U	25 U	25 U	9.4 U	25 U	25 U	9.4 U	9.5 U	25 U	25 U	25 U	25 U	10 U	25 U	25 U	25 U	25 U	9.9 U	25 U
2,4,6-Trichlorophenol	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
2,4-Dichlorophenol	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
2,4-Dimethylphenol	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
2,4-Dinitrophenol	ug/L	25 UJ	25 UJ	25 U	25 UJ	47 U	25 UJ	25 U	47 U	48 U	25 UJ	25 U	25 U	25 UJ	50 U	25 UJ	25 U	25 U	25 UJ	50 U	25 U
2,4-Dinitrotoluene	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
2,6-Dinitrotoluene	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
2-Chloronaphthalene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
2-Chlorophenol	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
2-Methylnaphthalene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
2-Methylphenol	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
2-Nitroaniline	ug/L	25 U	25 U	25 U	25 U	47 U	25 U	25 U	47 U	48 U	25 U	25 U	25 U	25 U	50 U	25 U	25 U	25 U	25 U	50 U	25 U
2-Nitrophenol	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
3,3'-Dichlorobenzidine	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
3-Nitroaniline	ug/L	25 U	25 U	25 U	25 U	47 U	25 U	25 U	47 U	48 U	25 U	25 U	25 U	25 U	50 U	25 U	25 U	25 U	25 U	50 U	25 U
4,6-Dinitro-2-methylphenol	ug/L	25 UJ	25 U	25 U	25 U	47 U	25 UJ	25 U	47 U	48 U	25 UJ	25 U	25 U	25 U	50 U	25 UJ	25 U	25 U	25 U	50 U	25 U
4-Bromophenyl phenyl ether	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
4-Chloro-3-methylphenol	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
4-Chloroaniline	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
4-Chlorophenyl phenyl ether	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	9.9 U	10 U
4-Methylphenol	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
4-Nitroaniline	ug/L	25 U	25 UJ	25 U	25 U	47 U	25 U	25 U	47 U	48 U	25 U	25 U	25 U	25 U	50 U	25 U	25 U	25 U	25 U	50 U	25 U
4-Nitrophenol	ug/L	25 U	25 U	25 U	25 U	47 U	25 U	25 U	47 U	48 U	25 U	25 U	25 U	25 U	50 U	25 U	25 U	25 U	25 U	50 U	25 U
Acenaphthene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 UJ	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Acenaphthylene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Anthracene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Benzo(a)anthracene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Benzo(a)pyrene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Benzo(b)fluoranthene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Benzo(g,h,i)perylene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Benzo(k)fluoranthene	ug/L	10 UJ	10 U	10 U	10 U	1.9 U	10 UJ	10 U	1.9 U	1.9 U	10 UJ	10 U	10 U	10 U	2.0 U	10 UJ	10 U	10 U	10 U	2.0 U	10 U
Benzoic acid	ug/L	50 U	50 U	50 U	4.8 J	47 U	50 U	50 U	47 UJ	48 U	50 U	50 U	50 U	25 UJ	50 UJ	50 U	50 U	50 U	5.5 J	50 UJ	50 U
Benzyl alcohol	ug/L	10 U	10 U	4 J	10 U	9.4 U	10 U	24 U	9.4 U	9.5 U	10 U	10 U	4 J	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
bis(2-Chloroethoxy)methane	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
bis(2-Chloroethyl)ether	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	10 U	10 U	10 U	10 U	19 U	10 U	4 J	19 U	19 U	10 U	6 J	10 U	1.0 J	20 U	8 J	18	10 U	3.0 J	20 U	10 U
Butyl benzylphthalate (BBP)	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
Chrysene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Dibenz(a,h)anthracene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Dibenzofuran	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
Diethyl phthalate	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
Dimethyl phthalate	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
Di-n-butylphthalate (DBP)	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
Di-n-octyl phthalate (DnOP)	ug/L	10 UJ	10 U	10 U	10 U	9.4 U	10 UJ	10 U	9.4 U	9.5 U	10 UJ	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	9.9 U	10 U
Fluoranthene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Fluorene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Hexachlorobenzene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 UJ	10 U	1.9 U	1.9 U	10 UJ	10 U	10 U	10 U	2.0 U	10 UJ	10 U	10 U	10 U	2.0 U	10 U
Hexachlorobutadiene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 UJ	10 U	1.9 U	1.9 U	10 UJ	10 U	10 U	10 U	2.0 U	10 UJ	10 U	10 U	10 U	2.0 U	10 U
Hexachlorocyclopentadiene	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 UJ	9.5 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	9.9 UJ	10 U
Hexachloroethane	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
Indeno(1,2,3-cd)pyrene	ug/L	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Isophorone	ug/L	10 U	10 U	10 U	10 U	9.4 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U

TABLE 3.1
SUMMARY OF LOVE CANAL GROUNDWATER CHEMICAL MONITORING DATA
2006 TO 2010
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK

Sample Location:		3257	3257	3257	3257	3257	3257	7125	7125	7125	7125	7130	7130	7130	7130	7130	7132	7132	7132	7132	7132	7155
Sample ID:		LC-3257-606	LC-3257-607	LC-3257-608	LC-3257-609	LC3257-610	LC8225-610	LC-7125-606	LC-7125-608	LC-7125-610	LC-8215-610	LC-7130-606	LC-7130-707	LC-7130-608	LC-7130-609	LC-7130-610	LC-7132-606	LC-7132-707	LC-7132-608	LC-7132-609	LC-7132-610	LC-7155-707
Sample Date:		6/20/2006	6/26/2007	6/24/2008	6/25/2009	6/23/2010	(Duplicate)	6/21/2006	6/10/2008	6/16/2010	(Duplicate)	6/21/2006	7/13/2007	6/12/2008	6/24/2009	6/16/2010	6/22/2006	7/16/2007	6/10/2008	6/24/2009	6/16/2010	7/16/2007
Parameters	Units																					
Naphthalene	ug/L	10 U	10 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Nitrobenzene	ug/L	10 U	10 U	10 U	10 U	19 U	19 U	10 U	10 U	19 U	19 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	20 U	10 U
N-Nitrosodi-n-propylamine	ug/L	10 U	10 UJ	10 U	10 U	1.9 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
N-Nitrosodiphenylamine	ug/L	10 U	10 U	10 U	10 U	9.4 U	9.6 U	10 U	10 U	9.4 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.9 U	10 U
Pentachlorophenol	ug/L	25 UJ	25 U	25 U	25 U	9.4 U	9.6 U	25 UJ	25 U	9.4 U	9.5 U	25 UJ	25 U	25 U	25 U	10 U	25 UJ	25 U	25 U	25 U	9.9 U	25 U
Phenanthrene	ug/L	10 U	10 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Phenol	ug/L	10 U	10 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Pyrene	ug/L	10 U	10 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	1.9 U	1.9 U	10 UJ	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	2.0 U	10 U
Pesticides																						
4,4'-DDD	ug/L	.1 U	0.10 U	0.10 U	0.10 U	0.049 UJ	0.048 U	.1 U	0.10 U	0.048 U	0.047 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	0.10 U
4,4'-DDE	ug/L	.1 U	0.10 U	0.10 U	0.10 U	0.049 UJ	0.048 U	.1 U	0.10 U	0.048 U	0.047 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	0.10 U
4,4'-DDT	ug/L	.1 U	0.10 U	0.10 U	0.10 U	0.049 UJ	0.048 U	.1 U	0.10 U	0.048 U	0.047 U	.1 U	0.10 U	0.10 UJ	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	0.10 U
Aldrin	ug/L	.05 U	0.050 U	0.050 U	0.050 U	0.049 UJ	0.048 U	.05 U	0.050 U	0.048 U	0.047 U	.05 U	0.050 U	0.050 UJ	0.050 U	0.048 U	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	0.050 U
alpha-BHC	ug/L	.05 U	0.050 U	0.050 U	0.050 U	0.049 UJ	0.048 U	.05 U	0.050 U	0.048 U	0.047 U	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.014 J	0.050 U	0.050 U	0.050 U	0.048 U	0.050 U
alpha-Chlordane	ug/L	.05 U	0.050 U	0.050 U	0.050 U	0.049 UJ	0.048 U	.05 U	0.050 U	0.048 U	0.047 U	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	0.050 U
beta-BHC	ug/L	.05 U	0.050 U	0.050 U	0.050 U	0.049 UJ	0.048 U	.05 U	0.050 U	0.048 U	0.047 U	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	0.050 U
delta-BHC	ug/L	.05 U	0.050 U	0.050 U	0.050 U	0.049 UJ	0.048 U	.05 U	0.050 U	0.048 U	0.047 U	.018 J	0.050 U	0.050 U	0.050 U	0.048 U	.025 J	0.050 U	0.050 U	0.050 U	0.048 U	0.050 U
Dieldrin	ug/L	.1 U	0.10 U	0.10 U	0.10 U	0.049 UJ	0.048 U	.1 U	0.10 U	0.048 U	0.047 U	.1 U	0.10 U	0.10 UJ	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	0.10 U
Endosulfan I	ug/L	.05 U	0.050 U	0.050 U	0.050 U	0.049 UJ	0.048 U	.05 U	0.050 U	0.048 U	0.047 U	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	0.050 U
Endosulfan II	ug/L	.1 U	0.10 U	0.10 U	0.10 U	0.049 UJ	0.048 U	.1 U	0.10 U	0.048 U	0.047 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	0.10 U
Endosulfan sulfate	ug/L	.1 U	0.10 U	0.10 U	0.10 U	0.049 UJ	0.048 U	.1 U	0.10 U	0.048 U	0.047 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	0.10 U
Endrin	ug/L	.1 U	0.10 U	0.10 U	0.10 U	0.049 UJ	0.048 U	.1 U	0.10 U	0.048 U	0.047 U	.1 U	0.10 U	0.10 UJ	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	0.10 U
Endrin aldehyde	ug/L	.1 U	0.10 U	-	-	-	-	.1 U	-	-	-	.1 U	0.10 U	-	-	-	.1 U	0.10 U	-	-	-	0.10 U
Endrin ketone	ug/L	.1 U	0.10 U	0.10 U	0.10 U	0.049 UJ	0.048 U	.1 U	0.10 U	0.048 U	0.047 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	0.10 U
gamma-BHC (lindane)	ug/L	.05 U	0.050 U	0.050 UJ	0.050 U	0.049 UJ	0.048 U	.05 U	0.050 U	0.048 U	0.047 U	.05 U	0.050 U	0.050 UJ	0.050 U	0.048 U	.014 J	0.050 U	0.050 U	0.050 U	0.048 U	0.050 U
gamma-Chlordane	ug/L	.05 U	0.050 U	0.050 U	0.050 U	0.049 UJ	0.048 U	.05 U	0.050 U	0.048 U	0.047 U	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	0.050 U
Heptachlor	ug/L	.05 U	0.050 U	0.050 U	0.050 U	0.049 UJ	0.048 U	.05 U	0.050 U	0.048 U	0.047 U	.05 U	0.050 U	0.050 UJ	0.050 U	0.048 U	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	0.050 U
Heptachlor epoxide	ug/L	.05 U	0.050 U	0.050 U	0.050 U	0.049 UJ	0.048 U	.05 U	0.050 U	0.048 U	0.047 U	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	0.050 U
Methoxychlor	ug/L	.5 U	0.50 U	0.50 U	0.50 U	0.098 UJ	0.095 U	.5 U	0.50 U	0.095 U	0.094 U	.5 U	0.50 U	0.50 U	0.50 U	0.095 U	.5 U	0.50 U	0.50 U	0.50 U	0.097 U	0.50 U
Toxaphene	ug/L	5 U	5.0 U	5.0 U	5.0 U	3.9 UJ	3.8 U	5 U	5.0 U	3.8 U	3.8 U	5 U	5.0 U	5.0 U	5.0 U	3.8 U	5 U	5.0 U	5.0 U	5.0 U	3.9 U	5.0 U
PCBs																						
Aroclor-1016 (PCB-1016)	ug/L	1 U	1.0 U	1.0 U	1.0 U	0.39 U	0.38 U	1 U	1.0 U	0.38 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.39 U	1.0 U
Aroclor-1221 (PCB-1221)	ug/L	2 U	2.0 U	2.0 U	1.0 U	0.39 U	0.38 U	2 U	2.0 U	0.38 U	0.38 U	2 U	2.0 U	2.0 U	1.0 U	0.38 U	2 U	2.0 U	2.0 U	1.0 U	0.39 U	2.0 U
Aroclor-1232 (PCB-1232)	ug/L	1 U	1.0 U	1.0 U	1.0 U	0.39 U	0.38 U	1 U	1.0 U	0.38 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.39 U	1.0 U
Aroclor-1242 (PCB-1242)	ug/L	1 U	1.0 U	1.0 U	1.0 U	0.39 U	0.38 U	1 U	1.0 U	0.38 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.39 U	1.0 U
Aroclor-1248 (PCB-1248)	ug/L	1 U	1.0 U	1.0 U	1.0 U	0.39 U	0.38 U	1 U	1.0 U	0.38 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.39 U	1.0 U
Aroclor-1254 (PCB-1254)	ug/L	1 U	1.0 U	1.0 U	1.0 U	0.39 U	0.38 U	1 U	1.0 U	0.38 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.39 U	1.0 U
Aroclor-1260 (PCB-1260)	ug/L	1 U	1.0 U	1.0 U	1.0 U	0.39 U	0.38 U	1 U	1.0 U	0.38 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.39 U	1.0 U

Notes:

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

TABLE 3.1
SUMMARY OF LOVE CANAL GROUNDWATER CHEMICAL MONITORING DATA
2006 TO 2010
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK

Sample Location:		7155	7161	7161	7161	7205	7205	7205	7205	7205	8106	8106	8106	8106	8106
Sample ID:		LC-7155-609	LC-7161-606	LC-7161-707	LC-7161-609	LC-7205-606	LC-7205-707	LC-7205-608	LC-7205-609	LC-7205-610	LC-8106-606	LC-8106-607	LC-8106-608	LC-8106-609	LC-8106-610
Sample Date:		6/24/2009	6/20/2006	7/17/2007	6/25/2009	6/21/2006	7/18/2007	6/10/2008	7/8/2009	6/16/2010	6/20/2006	6/26/2007	6/24/2008	6/23/2009	6/16/2010
Parameters	Units														
Volatile Organic Compounds															
1,1,1-Trichloroethane	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
1,1,2,2-Tetrachloroethane	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
1,1,2-Trichloroethane	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
1,1-Dichloroethane	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
1,1-Dichloroethene	ug/L	10 U	10 UJ	10 U	10 U	10 UJ	10 U	10 U	10 U	5.0 U	10 UJ	10 U	10 U	10 U	5.0 U
1,2-Dichloroethane	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
1,2-Dichloropropane	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
2-Hexanone	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Acetone	ug/L	10 U	10 UJ	10 U	10 U	10 UJ	10 U	10 UJ	10 U	20 U	10 UJ	10 UJ	10 U	10 U	20 U
Benzene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Bromodichloromethane	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Bromoform	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Bromomethane (Methyl bromide)	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Carbon disulfide	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Carbon tetrachloride	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Chlorobenzene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Chloroethane	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Chloroform (Trichloromethane)	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Chloromethane (Methyl chloride)	ug/L	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
cis-1,2-Dichloroethene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
cis-1,3-Dichloropropene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Dibromochloromethane	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Ethylbenzene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Methylene chloride	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Styrene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Tetrachloroethene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Toluene	ug/L	7.7 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
trans-1,2-Dichloroethene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
trans-1,3-Dichloropropene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Trichloroethene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Vinyl acetate	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Vinyl chloride	ug/L	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	5.0 U
Xylenes (total)	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	15 U	10 U	10 U	10 U	10 U	15 U

TABLE 3.1
SUMMARY OF LOVE CANAL GROUNDWATER CHEMICAL MONITORING DATA
2006 TO 2010
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK

Sample Location:	7155	7161	7161	7161	7205	7205	7205	7205	7205	8106	8106	8106	8106	8106
Sample ID:	LC-7155-609	LC-7161-606	LC-7161-707	LC-7161-609	LC-7205-606	LC-7205-707	LC-7205-608	LC-7205-609	LC-7205-610	LC-8106-606	LC-8106-607	LC-8106-608	LC-8106-609	LC-8106-610
Sample Date:	6/24/2009	6/20/2006	7/17/2007	6/25/2009	6/21/2006	7/18/2007	6/10/2008	7/8/2009	6/16/2010	6/20/2006	6/26/2007	6/24/2008	6/25/2009	6/16/2010
Parameters	Units													
Semi-volatile Organic Compounds														
1,2,4-Trichlorobenzene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
1,2-Dichlorobenzene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
1,3-Dichlorobenzene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
1,4-Dichlorobenzene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
2,4,5-Trichlorophenol	ug/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	10 U	25 U	25 U	25 U	25 U	9.4 U
2,4,6-Trichlorophenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
2,4-Dichlorophenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
2,4-Dimethylphenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
2,4-Dinitrophenol	ug/L	25 UJ	25 UJ	25 UJ	25 U	25 UJ	25 UJ	25 U	50 U	25 UJ	25 UJ	25 U	25 UJ	47 U
2,4-Dinitrotoluene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
2,6-Dinitrotoluene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
2-Chloronaphthalene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
2-Chlorophenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
2-Methylnaphthalene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
2-Methylphenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
2-Nitroaniline	ug/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	50 U	25 U	25 U	25 U	25 U	47 U
2-Nitrophenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
3,3'-Dichlorobenzidine	ug/L	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
3-Nitroaniline	ug/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	50 U	25 U	25 U	25 U	25 U	47 U
4,6-Dinitro-2-methylphenol	ug/L	25 U	25 UJ	25 U	25 U	25 UJ	25 U	25 U	50 U	25 UJ	25 U	25 U	25 U	47 U
4-Bromophenyl phenyl ether	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
4-Chloro-3-methylphenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
4-Chloroaniline	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
4-Chlorophenyl phenyl ether	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
4-Methylphenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
4-Nitroaniline	ug/L	25 U	25 U	25 U	25 U	25 U	25 U	25 UJ	50 U	25 U	25 U	25 U	25 U	47 U
4-Nitrophenol	ug/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	50 U	25 U	25 U	25 U	25 U	47 U
Acenaphthene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Acenaphthylene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Anthracene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Benzo(a)anthracene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Benzo(a)pyrene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Benzo(b)fluoranthene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Benzo(g,h,i)perylene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Benzo(k)fluoranthene	ug/L	10 U	10 UJ	10 U	10 U	10 UJ	10 U	10 U	2.0 U	10 UJ	10 U	10 U	10 U	1.9 U
Benzoic acid	ug/L	25 UJ	50 U	50 U	25 U	50 U	50 U	25 U	50 U	50 U	50 U	50 U	25 UJ	47 U
Benzyl alcohol	ug/L	10 U	10 U	10 U	10 U	10 U	17 U	10 U	10 U	10 U	10 U	3 J	10 U	9.4 U
bis(2-Chloroethoxy)methane	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
bis(2-Chloroethyl)ether	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	10 U	10 U	10 U	10 U	4 J	10 U	10 U	1.2 J	20 U	10 U	10 U	10 U	19 U
Butyl benzylphthalate (BBP)	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
Chrysene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Dibenz(a,h)anthracene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Dibenzofuran	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
Diethyl phthalate	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
Dimethyl phthalate	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
Di-n-butylphthalate (DBP)	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
Di-n-octyl phthalate (DnOP)	ug/L	10 U	10 UJ	10 U	10 U	10 UJ	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	9.4 U
Fluoranthene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Fluorene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Hexachlorobenzene	ug/L	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Hexachlorobutadiene	ug/L	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Hexachlorocyclopentadiene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
Hexachloroethane	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
Indeno(1,2,3-cd)pyrene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Isophorone	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U

TABLE 3.1
SUMMARY OF LOVE CANAL GROUNDWATER CHEMICAL MONITORING DATA
2006 TO 2010
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK

Sample Location:		7155	7161	7161	7161	7205	7205	7205	7205	7205	8106	8106	8106	8106	8106
Sample ID:		LC-7155-609	LC-7161-606	LC-7161-707	LC-7161-609	LC-7205-606	LC-7205-707	LC-7205-608	LC-7205-609	LC-7205-610	LC-8106-606	LC-8106-607	LC-8106-608	LC-8106-609	LC-8106-610
Sample Date:		6/24/2009	6/20/2006	7/17/2007	6/25/2009	6/21/2006	7/18/2007	6/10/2008	7/8/2009	6/16/2010	6/20/2006	6/26/2007	6/24/2008	6/23/2009	6/16/2010
Parameters	Units														
Naphthalene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Nitrobenzene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	19 U
N-Nitrosodi-n-propylamine	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
N-Nitrosodiphenylamine	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.4 U
Pentachlorophenol	ug/L	25 U	25 UJ	25 U	25 UJ	25 UJ	25 U	25 U	25 U	10 U	25 UJ	25 U	25 U	25 U	9.4 U
Phenanthrene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Phenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Pyrene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	1.9 U
Pesticides															
4,4'-DDD	ug/L	0.10 U	.1 U	0.10 U	0.10 UJ	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U
4,4'-DDE	ug/L	0.10 U	.1 U	0.10 U	0.10 UJ	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U
4,4'-DDT	ug/L	0.10 U	.1 U	0.10 U	0.10 UJ	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U
Aldrin	ug/L	0.050 U	.05 U	0.050 U	0.050 UJ	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.051 U	0.050 U	0.048 U
alpha-BHC	ug/L	0.050 U	.01 J	0.050 U	0.050 UJ	.023 J	0.014 J	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.051 U	0.050 U	0.048 U
alpha-Chlordane	ug/L	0.050 U	.05 U	0.050 U	0.050 UJ	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.051 U	0.050 U	0.048 U
beta-BHC	ug/L	0.050 U	.05 U	0.050 U	0.050 UJ	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.051 U	0.050 U	0.048 U
delta-BHC	ug/L	0.050 U	.05 U	0.050 U	0.050 UJ	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.051 U	0.050 U	0.048 U
Dieldrin	ug/L	0.10 U	.1 U	0.10 U	0.10 UJ	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U
Endosulfan I	ug/L	0.050 U	.05 U	0.050 U	0.050 UJ	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.051 U	0.050 U	0.048 U
Endosulfan II	ug/L	0.10 U	.1 U	0.10 U	0.10 UJ	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U
Endosulfan sulfate	ug/L	0.10 U	.1 U	0.10 U	0.10 UJ	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U
Endrin	ug/L	0.10 U	.1 U	0.10 U	0.10 UJ	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U
Endrin aldehyde	ug/L	-	.1 U	0.10 U	-	.1 U	0.10 U	-	-	-	.1 U	0.10 U	-	-	-
Endrin ketone	ug/L	0.10 U	.1 U	0.10 U	0.10 UJ	.1 U	0.10 U	0.10 U	0.10 U	0.048 U	.1 U	0.10 U	0.10 U	0.10 U	0.048 U
gamma-BHC (lindane)	ug/L	0.050 U	.05 U	0.050 U	0.050 UJ	.0099 J	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.051 UJ	0.050 U	0.048 U
gamma-Chlordane	ug/L	0.050 U	.05 U	0.050 U	0.050 UJ	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.051 U	0.050 U	0.048 U
Heptachlor	ug/L	0.050 U	.05 U	0.050 U	0.050 UJ	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.051 U	0.050 U	0.048 U
Heptachlor epoxide	ug/L	0.070	.05 U	0.050 U	0.050 UJ	.05 U	0.050 U	0.050 U	0.050 U	0.048 U	.05 U	0.050 U	0.051 U	0.050 U	0.048 U
Methoxychlor	ug/L	0.50 U	.5 U	0.50 U	0.50 UJ	.5 U	0.50 U	0.50 U	0.50 U	0.096 U	.5 U	0.50 U	0.51 U	0.50 U	0.097 U
Toxaphene	ug/L	5.0 U	5 U	5.0 U	5.0 UJ	5 U	5.0 U	5.0 U	5.0 U	3.8 U	5 U	5.0 U	5.1 U	5.0 U	3.9 U
PCBs															
Aroclor-1016 (PCB-1016)	ug/L	1.0 U	1 U	1.0 U	1.0 UJ	1 U	1.0 U	1.0 U	1.0 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.39 U
Aroclor-1221 (PCB-1221)	ug/L	1.0 U	2 U	2.0 U	1.0 UJ	2 U	2.0 U	2.0 U	1.0 U	0.38 U	2 U	2.0 U	2.1 U	1.0 U	0.39 U
Aroclor-1232 (PCB-1232)	ug/L	1.0 U	1 U	1.0 U	1.0 UJ	1 U	1.0 U	1.0 U	1.0 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.39 U
Aroclor-1242 (PCB-1242)	ug/L	1.0 U	1 U	1.0 U	1.0 UJ	1 U	1.0 U	1.0 U	1.0 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.39 U
Aroclor-1248 (PCB-1248)	ug/L	1.0 U	1 U	1.0 U	1.0 UJ	1 U	1.0 U	1.0 U	1.0 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.39 U
Aroclor-1254 (PCB-1254)	ug/L	1.0 U	1 U	1.0 U	1.0 UJ	1 U	1.0 U	1.0 U	1.0 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.39 U
Aroclor-1260 (PCB-1260)	ug/L	1.0 U	1 U	1.0 U	1.0 UJ	1 U	1.0 U	1.0 U	1.0 U	0.38 U	1 U	1.0 U	1.0 U	1.0 U	0.39 U

Notes:

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

TABLE 3.2

**SUMMARY OF HISTORIC SEWER SEDIMENT ANALYTICAL DATA
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK**

Sample Location		MH-257-Sewer	MH-257-Sewer	MH-262-Sewer	MH-262-Sewer	MH-264-Sewer	MH-264-Sewer	MH-265-Sewer	MH-265-Sewer	MH-267-Sewer	MH-267-Sewer
Sample ID		SEWSAN_257	SEWSAN_257	SEWSAN_262	SEWSAN_262	SEWSAN_264	SEWSAN_264	SEWSAN_265	SEWSAN_265	SEWSAN_267	SEWSAN_267
Sample Date		1/6/1983	1/6/1983	1/5/1983	1/3/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983
Sample Type		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)	
	<i>Units</i>										
<i>Dioxin/Furans</i>											
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	ppb	-	-	-	-	-	30	-	-	-	-
<i>Pesticides</i>											
4,4'-DDD	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
4,4'-DDE	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
4,4'-DDT	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Aldrin	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
alpha-BHC	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Aroclor-1016 (PCB-1016)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Aroclor-1221 (PCB-1221)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Aroclor-1232 (PCB-1232)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Aroclor-1242 (PCB-1242)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Aroclor-1248 (PCB-1248)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Aroclor-1254 (PCB-1254)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Aroclor-1260 (PCB-1260)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
beta-BHC	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Chlordane	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
delta-BHC	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Dieldrin	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Endosulfan I	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Endosulfan II	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Endosulfan sulfate	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Endrin	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Endrin aldehyde	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
gamma-BHC (lindane)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Heptachlor	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Heptachlor epoxide	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Toxaphene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
<i>SVOAs</i>											
1,1'-Thiobisdodecane	ppb	-	-	-	-	-	-	-	-	-	-
1,2,3,4-Tetrachlorobenzene	ppb	-	-	-	-	-	-	-	-	-	-
1,2,3,5-Tetrachlorobenzene	ppb	-	-	56000	32000	-	-	-	220000	-	17000
1,2,3-Trichlorobenzene	ppb	-	-	-	-	-	-	-	-	-	-
1,2,4,5-Tetrachlorobenzene	ppb	-	-	-	100000	-	-	-	-	-	-
1,2,4-Trichlorobenzene	ppb	-	ND	ND	39000	5200	ND	160000	ND	7200	ND
1,2,4-Trithiolane	ppb	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ppb	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dimethoxyethane	ppb	-	-	-	-	-	-	-	-	-	-
1,2-Diphenylhydrazine	ppb	-	-	-	-	-	-	-	-	-	-
1,3,5-Trichlorobenzene	ppb	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ppb	ND	ND	ND	ND	ND	ND	-	4800	ND	ND
1,4-Dichlorobenzene	ppb	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ppb	-	-	-	-	-	-	-	-	-	-
1-Chloronaphthalene	ppb	-	-	-	-	-	-	-	-	-	-
1-Cyclopentyl heneicosane	ppb	-	-	-	-	-	-	-	-	-	-
1-Dodecanol	ppb	-	-	-	-	-	-	-	-	-	-
1-Heptadecanol	ppb	-	-	-	-	-	-	-	-	-	-

TABLE 3.2

**SUMMARY OF HISTORIC SEWER SEDIMENT ANALYTICAL DATA
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK**

Sample Location		MH-257-Sewer	MH-257-Sewer	MH-262-Sewer	MH-262-Sewer	MH-264-Sewer	MH-264-Sewer	MH-265-Sewer	MH-265-Sewer	MH-267-Sewer	MH-267-Sewer
Sample ID		SEWSAN_257	SEWSAN_257	SEWSAN_262	SEWSAN_262	SEWSAN_264	SEWSAN_264	SEWSAN_265	SEWSAN_265	SEWSAN_267	SEWSAN_267
Sample Date		1/6/1983	1/6/1983	1/5/1983	1/3/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983
Sample Type		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)	
	Units										
1-Hexadecene	ppb	-	-	-	-	-	-	-	-	-	-
1-Hexadecyne	ppb	-	-	-	-	-	-	-	-	-	-
1H-Indole	ppb	-	-	-	-	-	-	-	-	-	-
1-Methyl-4-(1-methylethyl)-1,4-cyclohexadiene	ppb	-	-	-	-	-	-	-	-	-	-
1-Octadecene	ppb	-	-	-	-	-	-	-	-	-	-
2,2,3,3-Tetramethylpentane	ppb	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
2,4,4-Trimethyl-1-pentene (Diisobutylene)	ppb	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
2,4-Dichlorophenol	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
2,4-Dichlorotoluene	ppb	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
2,4-Dinitrophenol	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
2,4-Dinitrotoluene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
2,5,8,11,14-Pentaoxapentadecane	ppb	-	-	-	-	-	-	-	-	-	-
2,6-Dimethyloctane	ppb	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
2-Chloronaphthalene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
2-Chlorophenol	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
2-Heptadecanone	ppb	-	-	-	-	-	-	-	-	-	-
2-Methyl-1-pentene	ppb	-	-	-	-	-	-	-	-	-	-
2-Methyl-2-propanamine	ppb	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	ppb	-	-	-	-	-	-	-	-	-	-
2-Methyltridecane	ppb	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
3,3'-Dichlorobenzidine	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
3,4-Dichloroaniline	ppb	-	-	-	-	-	-	-	-	-	-
3,4-Dichlorotoluene	ppb	-	-	-	-	-	-	-	-	-	-
3-Methyl-1H-indole	ppb	-	-	-	-	-	-	-	-	-	-
3-Pentanamine	ppb	-	3500	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
4-Bromophenyl phenyl ether	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
4-Chloro-3-methylphenol	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
4-Chlorophenyl phenyl ether	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
4-Nitrophenol	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Acenaphthene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Acenaphthylene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Anthracene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Anthracene/Phenanthrene	ppb	-	-	-	10400	-	-	-	-	-	-
Benzidine	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Benzo(a)anthracene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Benzo(a)anthracene/Chrysene	ppb	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Benzo(b)fluoranthene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Benzo(g,h,i)perylene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Benzo(k)fluoranthene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
bis(2-Chloroethoxy)methane	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
bis(2-Chloroethyl)ether	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
bis(2-Ethylhexyl)phthalate (DEHP)	ppb	ND	9200	-	ND	ND	4800	10000	ND	ND	5200
Butanoic acid	ppb	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Chrysene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND

TABLE 3.2

**SUMMARY OF HISTORIC SEWER SEDIMENT ANALYTICAL DATA
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK**

Sample Location		MH-257-Sewer	MH-257-Sewer	MH-262-Sewer	MH-262-Sewer	MH-264-Sewer	MH-264-Sewer	MH-265-Sewer	MH-265-Sewer	MH-267-Sewer	MH-267-Sewer
Sample ID		SEWSAN_257	SEWSAN_257	SEWSAN_262	SEWSAN_262	SEWSAN_264	SEWSAN_264	SEWSAN_265	SEWSAN_265	SEWSAN_267	SEWSAN_267
Sample Date		1/6/1983	1/6/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983
Sample Type		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)	
	<i>Units</i>										
Diacetone alcohol	ppb	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Diethyl phthalate	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Dimethyl phthalate	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Di-n-butylphthalate (DBP)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Di-n-octyl phthalate (DnOP)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Dodecanoic acid	ppb	-	-	-	-	-	-	-	-	-	-
Eicosane	ppb	-	-	-	-	-	-	-	-	-	-
Fluoranthene	ppb	-	4000	-	ND	-	ND	-	ND	-	ND
Fluorene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Heneicosane	ppb	-	-	-	-	-	-	-	-	-	-
Heptacosane	ppb	-	-	-	-	-	-	-	-	-	-
Heptadecane	ppb	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	ppb	-	ND	-	22000	-	ND	-	20000	-	6000
Hexachlorobutadiene	ppb	-	ND	-	13000	-	ND	-	18000	-	ND
Hexachlorocyclopentadiene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Hexachloroethane	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Hexadecanoic acid	ppb	-	-	-	-	-	-	-	-	-	-
Hexadecanol	ppb	-	-	-	-	-	-	-	-	-	-
Hexamethylcyclotrisiloxane	ppb	-	-	-	-	4200	-	-	-	-	-
Hexathiepane	ppb	-	-	-	-	-	-	-	-	-	-
Hexatriacontane	ppb	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Isophorone	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Methyl formate	ppb	-	-	-	-	-	-	-	-	-	-
Naphthalene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
N-Dodecane	ppb	-	-	-	-	-	-	-	-	-	-
N-Hexadecane	ppb	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
N-Nitrosodimethylamine	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
N-Nitrosodi-n-propylamine	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
N-Nitrosodiphenylamine	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
N-Tetradecane	ppb	-	-	-	-	-	-	-	-	-	-
N-Undecane	ppb	-	-	-	-	-	-	-	-	-	-
Octadecane	ppb	-	-	-	-	-	-	-	-	-	-
Octamethylcyclotetrasiloxane	ppb	-	-	-	-	-	-	-	-	-	-
o-Decyl-hydroxylamine	ppb	-	-	-	-	-	-	-	-	-	-
Pentachlorobenzene	ppb	-	-	-	76000	-	1800	-	110000	-	10000
Pentachlorophenol	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Pentacosane	ppb	-	-	-	-	10000	-	-	-	-	-
Pentadecane	ppb	-	-	-	-	-	-	-	-	-	-
Pentafluorobenzene	ppb	-	-	-	-	-	-	-	-	-	-
Pentanoic acid	ppb	-	-	-	-	-	-	-	-	-	-
Pentatriacontane	ppb	-	-	-	-	-	-	-	-	-	-
Phenanthrene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Phenol	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Propionic acid	ppb	-	-	-	-	-	-	-	-	-	-
Pyrene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Tetradecanoic acid	ppb	-	-	-	-	-	-	-	-	-	-
Tricosane	ppb	-	-	-	-	-	-	-	-	-	-
Tridecane	ppb	-	-	-	-	-	-	-	-	-	-

TABLE 3.2

**SUMMARY OF HISTORIC SEWER SEDIMENT ANALYTICAL DATA
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK**

Sample Location		MH-257-Sewer	MH-257-Sewer	MH-262-Sewer	MH-262-Sewer	MH-264-Sewer	MH-264-Sewer	MH-265-Sewer	MH-265-Sewer	MH-267-Sewer	MH-267-Sewer
Sample ID		SEWSAN_257	SEWSAN_257	SEWSAN_262	SEWSAN_262	SEWSAN_264	SEWSAN_264	SEWSAN_265	SEWSAN_265	SEWSAN_267	SEWSAN_267
Sample Date		1/6/1983	1/6/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983	1/5/1983
Sample Type		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)	
Units											
VOAs											
1,1,1-Trichloroethane	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
1,1,2,2-Tetrachloroethane	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
1,1,2-Trichloroethane	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
1,1-Dichloroethane	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
1,1-Dichloroethene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
1,2-Dichloroethane	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
1,2-Dichloropropane	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
2-Chloroethyl vinyl ether	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
2-Chlorotoluene	ppb	-	-	-	-	-	-	-	-	-	-
Acetone	ppb	-	-	-	-	-	-	-	-	-	-
Benzene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Bromodichloromethane	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Bromoform	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Bromomethane (Methyl bromide)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Carbon tetrachloride	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Chlorobenzene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Chloroethane	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Chloroform (Trichloromethane)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Chloromethane (Methyl chloride)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
cis-1,3-Dichloropropene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Cyclohexane	ppb	-	-	-	-	-	-	-	-	-	24000
Dibromochloromethane	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Ethylbenzene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Methyl cyclohexane	ppb	-	-	-	-	-	-	-	-	-	-
Methylene chloride	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
m-Xylene	ppb	-	-	-	-	-	-	-	-	-	-
Pentane	ppb	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Toluene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
trans-1,2-Dichloroethene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
trans-1,3-Dichloropropene	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Trichloroethane	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Trichloroethene	ppb	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane (CFC-11)	ppb	-	ND	-	ND	-	ND	-	ND	-	ND
Vinyl chloride	ppb	-	ND	-	ND	-	ND	-	ND	-	ND

Notes:

ND - Not detected

"- " - Not analyzed for

TABLE 4.1

**CONFIRMATORY SOIL SAMPLE COLLECTION AND ANALYSIS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK**

Sample I.D.	Location	Distance From West End of Excavation (feet)	Collection Date (mm/dd/yy)	Collection Time (hr:min)	<u>Analysis/Parameters</u>			Comments
					VOCs plus TICs	SVOCs plus TICs	Pesticides	
SO-009954-020411-SM-001	Floor	24	2/4/2011	12:00	X	X	X	
SO-009954-020511-SM-002	West endwall	NA	2/5/2011	13:50	X	X	X	
SO-009954-020711-JP-003	Floor	33	2/7/2011	10:50	X	X	X	
SO-009954-020811-SM-004	Floor	43	2/8/2011	0:00	X	X	X	
SO-009954-020811-SM-005	Floor	43	2/8/2011	10:00	X	X	X	Field duplicate of SO-009954-020811-SM-004
SO-009954-020811-SM-006	North sidewall	30	2/8/2011	11:00	X	X	X	
SO-009954-020811-SM-007	South sidewall	30	2/8/2011	11:30	X	X	X	
SO-009954-020911-SM-008	Floor	48	2/9/2011	14:45	X	X	X	
SO-009954-020911-SM-009	East endwall	59	2/9/2011	14:55	X	X	X	

Notes:

VOCs Volatile Organic Compounds
SVOCs Semi-Volatile Organic Compounds
TICs Tentatively Identified Compounds

TABLE 4.2

**SUMMARY OF DETECTED COMPOUNDS IN CONFIRMATORY SOIL SAMPLES
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK**

<i>Sample Location:</i>					<i>East endwall</i>	<i>Floor, 24'</i>	<i>Floor, 33'</i>	<i>Floor, 43'</i>	<i>Floor, 43'</i>
<i>Sample ID:</i>					SO-009954-020911-SM-009	SO-009954-020411-SM-001	SO-009954-020711-JP-003	SO-009954-020811-SM-004	SO-009954-020811-SM-005
<i>Sample Date:</i>					2/9/2011	2/4/2011	2/7/2011	2/8/2011	2/8/2011 (Duplicate)
<i>Parameters</i>	<i>Units</i>	<i>Restricted Commercial a</i>	<i>Restricted Residential b</i>	<i>Unrestricted Residential c</i>					
<i>Volatile Organic Compounds</i>									
Acetone	mg/kg	500	100	0.05	0.013 J	ND	ND	0.069 J ^c	ND
Benzene	mg/kg	44	2.9	0.06	ND	ND	0.016	0.0076 J	0.02 J
Chlorobenzene	mg/kg	500	100	1.1	ND	0.015	0.072	0.31 J	1.2 J ^c
cis-1,2-Dichloroethene	mg/kg	500	59	0.25	ND	ND	0.0036 J	0.018 J	0.015 J
Methylene chloride	mg/kg	500	51	0.05	0.0011 J	ND	ND	ND	ND
Tetrachloroethene	mg/kg	150	5.5	1.3	ND	ND	ND	ND	0.012 J
Toluene	mg/kg	500	100	0.7	ND	0.0021 J	0.024	0.022 J	0.049
Vinyl chloride	mg/kg	13	0.21	0.02	ND	ND	0.0023 J	ND	ND
Xylenes (total)	mg/kg	500	100	0.26	ND	ND	ND	ND	0.017 J
<i>Semi-volatile Organic Compounds</i>									
1,2,4-Trichlorobenzene	mg/kg	500	100	100 ¹	ND	9.3	20	72	79
1,2-Dichlorobenzene	mg/kg	500	100	1.1	ND	0.17 J	0.64	2.7 ^c	2.3 ^c
1,3-Dichlorobenzene	mg/kg	280	17	2.4	ND	0.045 J	ND	2.3	2.6 ^c
1,4-Dichlorobenzene	mg/kg	130	9.8	1.8	ND	0.29 J	0.82	6.4 ^c	5.5 ^c
2,4-Dichlorophenol	mg/kg	500	100	100	ND	ND	ND	0.14 J	ND
2-Methylnaphthalene	mg/kg	500	100	0.41	ND	0.019 J	ND	ND	ND
4-Methylphenol	mg/kg	500	34	0.33	ND	ND	ND	ND	ND
Acenaphthene	mg/kg	500	100	20	ND	ND	ND	ND	ND
Acenaphthylene	mg/kg	500	100	100	ND	ND	ND	ND	ND
Anthracene	mg/kg	500	100	100	ND	ND	ND	ND	ND
Benzo(a)anthracene	mg/kg	5.6	1	1	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	mg/kg	5.6	1	1	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	mg/kg	500	100	100	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	mg/kg	56	1	0.8	ND	ND	ND	ND	ND
Benzoic acid	mg/kg	500	100	100	ND	ND	ND	ND	1.3 J
Chrysene	mg/kg	56	1	1	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	mg/kg	0.56	0.33	0.33	ND	ND	ND	ND	ND
Fluoranthene	mg/kg	500	100	100	ND	ND	ND	ND	ND
Hexachlorobenzene	mg/kg	6	0.41	0.33	ND	0.28	0.57 ^{cc}	1.5 ^{cc}	2.1 ^{cc}
Hexachlorobutadiene	mg/kg	500	100	100 ¹	ND	0.22	0.55	1.5	1.8
Indeno(1,2,3-cd)pyrene	mg/kg	5.6	0.5	0.5	ND	ND	ND	ND	ND
Naphthalene	mg/kg	500	100	12	ND	ND	ND	ND	ND
Phenanthrene	mg/kg	500	100	100	ND	0.028 J	ND	ND	ND
Pyrene	mg/kg	500	100	100	ND	ND	ND	ND	ND

TABLE 4.2

**SUMMARY OF DETECTED COMPOUNDS IN CONFIRMATORY SOIL SAMPLES
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK**

Sample Location:

Sample ID:

Sample Date:

Parameters	Units					East endwall	Floor, 24'	Floor, 33'	Floor, 43'	Floor, 43'
		Restricted Commercial	Restricted Residential	Unrestricted Residential		SO-009954-020911-SM-009 2/9/2011	SO-009954-020411-SM-001 2/4/2011	SO-009954-020711-JP-003 2/7/2011	SO-009954-020811-SM-004 2/8/2011	SO-009954-020811-SM-005 2/8/2011 (Duplicate)
Pesticides										
4,4'-DDD	mg/kg	92	2.6	0.0033	ND	ND	ND	0.071 J ^c	ND	0.059 J ^c
4,4'-DDT	mg/kg	47	1.7	0.0033	ND	0.008 J ^c	0.11 J ^c	0.11 J ^c	ND	ND
alpha-BHC	mg/kg	3.4	0.097	0.02	0.0017 J	0.41 ^{oc}	5.5 ^{2oc}	5.5 ^{2oc}	2.4 ^{oc}	2.2 ^{oc}
beta-BHC	mg/kg	3	0.072	0.036	0.0044	0.0069 J	0.18 J ^{oc}	0.18 J ^{oc}	ND	0.076 J ^{oc}
delta-BHC	mg/kg	500	100	0.04	0.00081 J	0.59 ^c	8.8 ^c	8.8 ^c	3.9 ^c	3.3 ^c
gamma-BHC (lindane)	mg/kg	9.2	0.28	0.1	0.00062 J	0.74 ^{oc}	11 ^{oc}	11 ^{oc}	5.2 ^{oc}	3.8 ^{oc}

Notes:

ND - not detected

mg/kg - milligrams per kilogram

J - estimated concentration below method detection limit

2.7^c - concentration exceeds applicable NYSDEC Part 375 Soil Cleanup Objectives

NA - none available

1 Per NYSDEC Part 375 and CP-51, values were capped at 100 mg/kg

TABLE 4.2

**SUMMARY OF DETECTED COMPOUNDS IN CONFIRMATORY SOIL SAMPLES
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK**

					<i>Floor, 48'</i>	<i>North sidewall, 30'</i>	<i>South sidewall, 30'</i>	<i>West endwall</i>
					<i>SO-009954-020911-SM-008</i>	<i>SO-009954-020811-SM-006</i>	<i>SO-009954-020811-SM-007</i>	<i>SO-009954-020511-SM-002</i>
					<i>2/9/2011</i>	<i>2/8/2011</i>	<i>2/8/2011</i>	<i>2/5/2011</i>
<i>Sample Location:</i>								
<i>Sample ID:</i>								
<i>Sample Date:</i>								
<i>Parameters</i>	<i>Units</i>	<i>Restricted Commercial</i>	<i>Restricted Residential</i>	<i>Unrestricted Residential</i>				
		<i>a</i>	<i>b</i>	<i>c</i>				
<i>Volatile Organic Compounds</i>								
Acetone	mg/kg	500	100	0.05	0.069 J ^c	ND	0.058 J ^c	ND
Benzene	mg/kg	44	2.9	0.06	ND	ND	ND	ND
Chlorobenzene	mg/kg	500	100	1.1	0.075	0.019 J	0.015 J	ND
cis-1,2-Dichloroethene	mg/kg	500	59	0.25	ND	ND	ND	ND
Methylene chloride	mg/kg	500	51	0.05	0.0047 J	0.0042 J	ND	ND
Tetrachloroethene	mg/kg	150	5.5	1.3	ND	ND	ND	ND
Toluene	mg/kg	500	100	0.7	0.0089 J	ND	ND	ND
Vinyl chloride	mg/kg	13	0.21	0.02	ND	ND	ND	ND
Xylenes (total)	mg/kg	500	100	0.26	ND	ND	ND	ND
<i>Semi-volatile Organic Compounds</i>								
1,2,4-Trichlorobenzene	mg/kg	500	100	100 ¹	3.6	26	2.4	0.71
1,2-Dichlorobenzene	mg/kg	500	100	1.1	0.19 J	0.61 J	0.068 J	ND
1,3-Dichlorobenzene	mg/kg	280	17	2.4	0.64 J	-	0.11 J	ND
1,4-Dichlorobenzene	mg/kg	130	9.8	1.8	0.7 J	0.72 J	0.099 J	ND
2,4-Dichlorophenol	mg/kg	500	100	100	ND	ND	ND	ND
2-Methylnaphthalene	mg/kg	500	100	0.41	ND	ND	0.036 J	ND
4-Methylphenol	mg/kg	500	34	0.33	ND	ND	0.053 J	ND
Acenaphthene	mg/kg	500	100	20	ND	ND	0.028 J	ND
Acenaphthylene	mg/kg	500	100	100	ND	ND	0.027 J	ND
Anthracene	mg/kg	500	100	100	ND	ND	0.032 J	ND
Benzo(a)anthracene	mg/kg	5.6	1	1	ND	ND	0.037 J	ND
Benzo(b)fluoranthene	mg/kg	5.6	1	1	ND	ND	0.028 J	ND
Benzo(g,h,i)perylene	mg/kg	500	100	100	ND	ND	0.036 J	ND
Benzo(k)fluoranthene	mg/kg	56	1	0.8	ND	ND	0.038 J	ND
Benzoic acid	mg/kg	500	100	100	ND	ND	ND	ND
Chrysene	mg/kg	56	1	1	ND	ND	0.044 J	ND
Dibenz(a,h)anthracene	mg/kg	0.56	0.33	0.33	ND	ND	0.024 J	ND
Fluoranthene	mg/kg	500	100	100	ND	ND	0.04 J	ND
Hexachlorobenzene	mg/kg	6	0.41	0.33	ND	0.61 ^{ac}	ND	ND
Hexachlorobutadiene	mg/kg	500	100	100 ¹	0.2	0.64	0.089	ND
Indeno(1,2,3-cd)pyrene	mg/kg	5.6	0.5	0.5	ND	ND	0.028 J	ND
Naphthalene	mg/kg	500	100	12	ND	ND	0.026 J	ND
Phenanthrene	mg/kg	500	100	100	ND	ND	0.045 J	ND
Pyrene	mg/kg	500	100	100	ND	ND	0.039 J	ND

TABLE 4.2

**SUMMARY OF DETECTED COMPOUNDS IN CONFIRMATORY SOIL SAMPLES
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK**

Sample Location:

Sample ID:

Sample Date:

Parameters	Units	Restricted Commercial	Restricted Residential	Unrestricted Residential				
Pesticides								
4,4'-DDD	mg/kg	92	2.6	0.0033	ND	ND	ND	ND
4,4'-DDT	mg/kg	47	1.7	0.0033	ND	ND	ND	ND
alpha-BHC	mg/kg	3.4	0.097	0.02	0.19 ^{J^{oc}}	0.54 ^{oc}	0.17 ^{J^{oc}}	0.13 ^{oc}
beta-BHC	mg/kg	3	0.072	0.036	ND	ND	ND	ND
delta-BHC	mg/kg	500	100	0.04	0.55 ^c	0.96 ^c	0.39 ^c	0.2 ^c
gamma-BHC (lindane)	mg/kg	9.2	0.28	0.1	0.25 ^c	1.4 ^{oc}	0.5 ^{oc}	0.27 ^c

Notes:

ND - not detected

mg/kg - milligrams per kilogram

J - estimated concentration below method detection limit

2.7^c - concentration exceeds applicable NYSDEC Part 375 Soil Cleanup Objectives

NA - none available

1 Per NYSDEC Part 375 and CP-51, values were capped at 100 mg/kg

TABLE 4.3

**SUMMARY OF DAILY AIR MONITORING RESULTS
COLVIN BOULEVARD SANITARY SEWER REPAIR
NIAGARA FALLS, NEW YORK**

<i>Date</i>	<i>Daily PID Reading (ppm)</i>		<i>Daily Oxygen Reading (%)</i>	<i>Hydrogen Sulfide (ppm)</i>	<i>Carbon Monoxide (ppm)</i>	<i>LEL (%)</i>
	<i>Breathing Zone of Perimeter of Work Area</i>	<i>Breathing Zone of Work Area (Max)</i>				
02/03/2011	0.0-0.4	3.0	20.9	0.0	0.0	0 - 1
02/04/2011	0.0-0.5	4.2	20.9 - 21.1	0	0	0 - 1
02/05/2011	0.0 - 0.6	0.4	20.9 - 21.1	0	0	0
02/07/2011	0.0	0.5	20.9	0	0 - 1	0
02/08/2011	0.0 - 0.7	3.2	20.9 - 21.3	0	0	0 - 1
02/09/2011	0.0	0.4	20.9 - 21.3	0	0	0 - 1
02/10/2011 ⁽¹⁾	0.0	3.2	20.9 - 21.4	0	0	0 - 1
02/11/2011	0.0	0.0	20.9 - 21.1	0	0	0 - 1
02/12/2011	0.0	0.0	20.9	0	0	0
02/13/2011	0.0 - 0.2	0.0	20.9	0	0	0
02/14/2011	0.0 - 0.4	0.0	20.9 - 21.1	0	0	0 - 1
02/15/2011	0.0 - 0.2	0.0	20.9- 21.1	0	0	0 - 1
02/16/2011	0.0 - 0.1	0.0	20.9 - 21.1	0	0	0 - 1
02/17/2011	0.0 - 0.1	0.0	20.9 - 21.1	0	0	0 - 1
02/18/2011	0.0	0.0	20.9	0	0	0
02/21/2011	0.0	0.0	20.9	0	0	0
02/22/2011	0.0	0.0	20.9	0	0	0
02/23/2011	0.0	0.0	20.9	0	0	0

Notes:

PID Photoionization detector

ppm parts per million

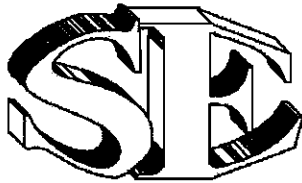
LEL Lower Explosive Limit

- No detection

(1) Last day impacted materials removed from trench. All piping and bedding placement was complete

APPENDIX A

ANALYTICAL REPORT FOR SEDIMENT SAMPLE COLLECTED BY THE CITY OF NIAGARA FALLS



STOHL ENVIRONMENTAL, LLC

Environmental – Asbestos, Lead and Mold Consultants

**4169 Allendale Pkwy., Suite 100
Blasdell New York 14219**

**☎ (716) 312-0070
■ (716) 312-8092**

January 17, 2011

Mr. Thomas Radomski
City of Niagara Falls Engineering Department
745 Main Street, Suite 303
Niagara Falls, New York 14301

Re: Sampling Activities/Laboratory Analytical Results
96th Street at Colvin Boulevard
Niagara Falls, New York

RECEIVED BY
City of NF Engineering Department
_____: MPD_____
_____: RTB JAN 17 2011 MJA_____
_____: RTG_____
FILE: _____

Dear Mr. Radomski:

As you are aware, potential impacts were encountered by City workers while replacing portion of a sub-grade sewer line on Colvin Boulevard at 96th Street in the City of Niagara Falls, New York on January 17, 2011; the location is proximate to Love Canal. Stohl Environmental, LLC (Stohl), was contracted to collect soil samples for laboratory analysis. Specifically, Stohl collected soil samples from a roll-off dumpster near the excavation where impacted soils/materials had reportedly been placed. Impacted soils were generally black in color and apparent chemical/sewage odors were noted.

Soil samples were placed into the appropriate pre-cleaned laboratory-supplied sample containers. The containers were sealed and labeled with the project name, sample location identifier, date and technician initials. The sample was then placed into an iced cooler for storage prior to delivery to TestAmerica, Inc. on January 17, 2011; TestAmerica is included in the National Environmental Laboratory Accreditation Conference (NELAC).

Soil samples were analyzed by the laboratory/TestAmerica for volatile organic compounds (VOCs), semi-volatile organic compounds (S-VOCs) and total organic carbon (TOC). VOCs and S-VOCs are generally associated with gasoline/petroleum compounds and can be found in chemicals associated with industrial operations. These compounds were chosen due to the chemical odors noted. TOC was chosen due to the source of the soils.

Numerous VOC and S-VOC analytes were detected above laboratory detection limits, concentrations of some compounds exceed New York State Department of Environmental Conservation (NYSDEC) guidance values (tabulated results are attached). 1,2,4-trichlorobenzene was among the compounds detected at a significantly elevated concentration of 1,600,000 parts per billion (ppb). While the source of the impacts is unknown, the compounds found are indicative of chemical operations (as opposed to manufacturing). The sewer line containing the impact reportedly flows west along Colvin Boulevard; the only non-residential up-gradient facility is reportedly the Love Canal Superfund Site.



STOHL ENVIRONMENTAL, LLC

Environmental – Asbestos, Lead and Mold Consultants

There is insufficient data to assess the source of this impact. However, due to the nature and concentration of the chemicals and the sampling location's proximity to Love Canal, the NYSDEC should be contacted as soon as possible for guidance.

We trust that this satisfies your current needs. Please call with questions.

Sincerely,

Bryan Mayback
Sr. Project Manager

Robert J. Szustakowski
GM, Environmental Division

Attachment

Table1**Soil Analytical Data**

2011-113

Intersection at 96th and Colvin Niagara Falls, New York

Sample ID Date	Unit of Measurement	SS-1 1/11/2011	Part 375 Residential Use SCOs*
1,4-Dichlorobenzene	ug/kg		9800
1,2-Dichlorobenze	ug/kg	4500	100000
1,2,4-Trichlorobenzene	ug/kg		20000/3400**
Benzene	ug/kg	120	2900
Chlorobenzene	ug/kg	8100	100000
1,3-Dichlorobenzene	ug/kg	12000	17000
cis-1,2-Dichloroethene	ug/kg	51	59000
Toluene	ug/kg	370	100000
Anthracene	ug/kg	92	100000
Benzo(a)anthracene	ug/kg	96	1000
Benzo(a)pyrene	ug/kg	95	1000
Benzo(b)fluoranthene	ug/kg	110	1000
Benzo(ghi)perylene	ug/kg	67	100000
Benzo(k)fluoranthene	ug/kg	42	1000
bis(2-Ethylhexyl)phthalate	ug/kg	180	NS
Chrysene	ug/kg	120	1000
Fluoranthene	ug/kg	180	100000
Hexachlorobenzene	ug/kg	17000	NS
Hexachlorobutadiene	ug/kg	14000	NS
Indeno(1,2,3-cd)pyrene	ug/kg	200	500
2-Mehtylnapthalene	ug/kg	47	NS
4-Methyphenol	ug/kg	120	NS
Naphthalene	ug/kg	33	100000
Phenanthrene	ug/kg	190	100000
Pyrene	ug/kg	130	100000
TOC	mg/kg	5790	NS

Notes:

Only analytes detected are shown in the table above. Refer to the laboratory report for a complete list of analytes.

VOCs = volatile organic compounds

SVOCs = semivolatile organic compounds

TOC = total organic carbon

ug/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

NS = not specified

*Residential use soil cleanup objectives (SCOs) as presented in 6 NYCRR Part 375-6.8(a), dated December 14, 2006 (effective date).

**There is no Part 375 residential standard for 1,2,4-Trichlorobenzene. As such, the protection of ecological resources/groundwater guidance values listed in CP-51/Soil Cleanup Guidance were utilized.

█ = Analyte exceeds NYSDEC guidance value.

TESTAMERICA LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: C1A130417 TestAmerica Buffalo MS Analytical Date Reported: 1/14/11 PAGE 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD

Client Sample ID: SS-1

Sample #: 001 Date Sampled: 01/11/11 16:00 Date Received: 01/13/11 Matrix: SOLID

Volatile Organics by GC/MS

In Review

Acetone	ND	130000	ug/kg	SW846 8260B
Benzene	ND	33000	ug/kg	SW846 8260B
Bromodichloromethane	ND	33000	ug/kg	SW846 8260B
Bromoform	ND	33000	ug/kg	SW846 8260B
Bromomethane	ND	33000	ug/kg	SW846 8260B
2-Butanone	ND	33000	ug/kg	SW846 8260B
Carbon disulfide	ND	33000	ug/kg	SW846 8260B
Carbon tetrachloride	ND	33000	ug/kg	SW846 8260B
Chlorobenzene	ND	33000	ug/kg	SW846 8260B
Chloroethane	ND	33000	ug/kg	SW846 8260B
Chloroform	ND	33000	ug/kg	SW846 8260B
Chloromethane	ND	33000	ug/kg	SW846 8260B
Cyclohexane	ND	33000	ug/kg	SW846 8260B
Dibromochloromethane	ND	33000	ug/kg	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	33000	ug/kg	SW846 8260B
1,2-Dibromoethane	ND	33000	ug/kg	SW846 8260B
1,3-Dichlorobenzene	ND	33000	ug/kg	SW846 8260B
1,4-Dichlorobenzene	10000 J	33000	ug/kg	SW846 8260B
1,2-Dichlorobenzene	4500 J	33000	ug/kg	SW846 8260B
Dichlorodifluoromethane	ND	33000	ug/kg	SW846 8260B
1,1-Dichloroethane	ND	33000	ug/kg	SW846 8260B
1,2-Dichloroethane	ND	33000	ug/kg	SW846 8260B
1,1-Dichloroethene	ND	33000	ug/kg	SW846 8260B
cis-1,2-Dichloroethene	ND	33000	ug/kg	SW846 8260B
trans-1,2-Dichloroethene	ND	33000	ug/kg	SW846 8260B
1,2-Dichloropropane	ND	33000	ug/kg	SW846 8260B
cis-1,3-Dichloropropene	ND	33000	ug/kg	SW846 8260B
trans-1,3-Dichloropropene	ND	33000	ug/kg	SW846 8260B
Ethylbenzene	ND	33000	ug/kg	SW846 8260B
2-Hexanone	ND	33000	ug/kg	SW846 8260B
Isopropylbenzene	ND	33000	ug/kg	SW846 8260B
Methyl acetate	ND	33000	ug/kg	SW846 8260B
Methylene chloride	ND	33000	ug/kg	SW846 8260B
Methylcyclohexane	ND	33000	ug/kg	SW846 8260B
4-Methyl-2-pentanone	ND	33000	ug/kg	SW846 8260B
Methyl tert-butyl ether	ND	33000	ug/kg	SW846 8260B

(Continued on next page)

TESTAMERICA LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

 The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: C1A130417 TestAmerica Buffalo MS Analytical Date Reported: 1/14/11 PAGE 2

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Client Sample ID: SS-1				
Sample #: 001 Date Sampled: 01/11/11 16:00 Date Received: 01/13/11 Matrix: SOLID				
Volatile Organics by GC/MS				In Review
Styrene	ND	33000	ug/kg	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	33000	ug/kg	SW846 8260B
1,2,4-Trichloro- benzene	1600000	33000	ug/kg	SW846 8260B
Tetrachloroethene	ND	33000	ug/kg	SW846 8260B
1,1,1-Trichloroethane	ND	33000	ug/kg	SW846 8260B
1,1,2-Trichloroethane	ND	33000	ug/kg	SW846 8260B
Trichloroethene	ND	33000	ug/kg	SW846 8260B
Trichlorofluoromethane	ND	33000	ug/kg	SW846 8260B
1,1,2-Trichloro- 1,2,2-trifluoroethane	ND	33000	ug/kg	SW846 8260B
Toluene	ND	33000	ug/kg	SW846 8260B
Vinyl chloride	ND	33000	ug/kg	SW846 8260B
Xylenes (total)	ND	99000	ug/kg	SW846 8260B

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Volatile Organics by GC/MS				In Review
Acetone	ND	1300	ug/kg	SW846 8260B
Benzene	120 J	330	ug/kg	SW846 8260B
Bromodichloromethane	ND	330	ug/kg	SW846 8260B
Bromoform	ND	330	ug/kg	SW846 8260B
Bromomethane	ND	330	ug/kg	SW846 8260B
2-Butanone	ND	330	ug/kg	SW846 8260B
Carbon disulfide	ND	330	ug/kg	SW846 8260B
Carbon tetrachloride	ND	330	ug/kg	SW846 8260B
Chlorobenzene	8100	330	ug/kg	SW846 8260B
Dibromochloromethane	ND	330	ug/kg	SW846 8260B
1,2-Dibromo-3-chloro- propane	ND	330	ug/kg	SW846 8260B
Chloroethane	ND	330	ug/kg	SW846 8260B
Chloroform	ND	330	ug/kg	SW846 8260B
Chloromethane	ND	330	ug/kg	SW846 8260B
Cyclohexane	ND	330	ug/kg	SW846 8260B
1,2-Dibromoethane	ND	330	ug/kg	SW846 8260B
1,2-Dichlorobenzene	23000 E	330	ug/kg	SW846 8260B

(Continued on next page)

TESTAMERICA LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

 The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: C1A130417 TestAmerica Buffalo MS Analytical Date Reported: 1/14/11 PAGE 3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD

Client Sample ID: SS-1

Sample #: 001 Date Sampled: 01/11/11 16:00 Date Received: 01/13/11 Matrix: SOLID

Volatile Organics by GC/MS

In Review

1,3-Dichlorobenzene	12000	330	ug/kg	SW846 8260B
1,4-Dichlorobenzene	43000 E	330	ug/kg	SW846 8260B
Dichlorodifluoromethane	ND	330	ug/kg	SW846 8260B
1,1-Dichloroethane	ND	330	ug/kg	SW846 8260B
1,2-Dichloroethane	ND	330	ug/kg	SW846 8260B
1,1-Dichloroethene	ND	330	ug/kg	SW846 8260B
cis-1,2-Dichloroethene	51 J	330	ug/kg	SW846 8260B
trans-1,2-Dichloroethene	ND	330	ug/kg	SW846 8260B
1,2-Dichloropropane	ND	330	ug/kg	SW846 8260B
cis-1,3-Dichloropropene	ND	330	ug/kg	SW846 8260B
trans-1,3-Dichloropropene	ND	330	ug/kg	SW846 8260B
Ethylbenzene	ND	330	ug/kg	SW846 8260B
Trichlorofluoromethane	ND	330	ug/kg	SW846 8260B
2-Hexanone	ND	330	ug/kg	SW846 8260B
Isopropylbenzene	ND	330	ug/kg	SW846 8260B
Methyl acetate	ND	330	ug/kg	SW846 8260B
Methylcyclohexane	ND	330	ug/kg	SW846 8260B
Methylene chloride	ND	330	ug/kg	SW846 8260B
4-Methyl-2-pentanone	ND	330	ug/kg	SW846 8260B
Styrene	ND	330	ug/kg	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	330	ug/kg	SW846 8260B
Tetrachloroethene	ND	330	ug/kg	SW846 8260B
Toluene	370	330	ug/kg	SW846 8260B
1,2,4-Trichloro-benzene	210000 E	330	ug/kg	SW846 8260B
1,1,1-Trichloroethane	ND	330	ug/kg	SW846 8260B
1,1,2-Trichloroethane	ND	330	ug/kg	SW846 8260B
Trichloroethene	ND	330	ug/kg	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	330	ug/kg	SW846 8260B
Vinyl chloride	ND	330	ug/kg	SW846 8260B
Xylenes (total)	ND	990	ug/kg	SW846 8260B
Methyl tert-butyl ether	ND	330	ug/kg	SW846 8260B

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

E Estimated result. Result concentration exceeds the calibration range.

(Continued on next page)

TESTAMERICA LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

 The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: C1A130417 TestAmerica Buffalo MS Analytical Date Reported: 1/14/11 PAGE 4

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD

Client Sample ID: SS-1

Sample #: 001 Date Sampled: 01/11/11 16:00 Date Received: 01/13/11 Matrix: SOLID

Semivolatile Organic Compounds by GC/MS

Reviewed

Acenaphthene	ND	87	ug/kg	SW846 8270C
Acenaphthylene	ND	87	ug/kg	SW846 8270C
Acetophenone	ND	430	ug/kg	SW846 8270C
Anthracene	92	87	ug/kg	SW846 8270C
Atrazine	ND	430	ug/kg	SW846 8270C
Benzo (a) anthracene	96	87	ug/kg	SW846 8270C
Benzo (a) pyrene	95	87	ug/kg	SW846 8270C
Benzo (b) fluoranthene	110	87	ug/kg	SW846 8270C
Benzo (ghi) perylene	67 J	87	ug/kg	SW846 8270C
Benzo (k) fluoranthene	42 J	87	ug/kg	SW846 8270C
Benzaldehyde	ND	430	ug/kg	SW846 8270C
1,1'-Biphenyl	ND	430	ug/kg	SW846 8270C
bis(2-Chloroethoxy) methane	ND	430	ug/kg	SW846 8270C
bis(2-Chloroethyl)- ether	ND	87	ug/kg	SW846 8270C
bis(2-Ethylhexyl) phthalate	180 J	870	ug/kg	SW846 8270C
4-Bromophenyl phenyl ether	ND	430	ug/kg	SW846 8270C
Butyl benzyl phthalate	ND	430	ug/kg	SW846 8270C
Caprolactam	ND	2200	ug/kg	SW846 8270C
Carbazole	ND	87	ug/kg	SW846 8270C
4-Chloroaniline	ND	430	ug/kg	SW846 8270C
4-Chloro-3-methylphenol	ND	430	ug/kg	SW846 8270C
2-Chloronaphthalene	ND	87	ug/kg	SW846 8270C
2-Chlorophenol	ND	430	ug/kg	SW846 8270C
4-Chlorophenyl phenyl ether	ND	430	ug/kg	SW846 8270C
Chrysene	120	87	ug/kg	SW846 8270C
Dibenz (a, h) anthracene	ND	87	ug/kg	SW846 8270C
Dibenzofuran	ND	430	ug/kg	SW846 8270C
3,3'-Dichlorobenzidine	ND	430	ug/kg	SW846 8270C
2,4-Dichlorophenol	ND	87	ug/kg	SW846 8270C
Diethyl phthalate	ND	430	ug/kg	SW846 8270C
2,4-Dimethylphenol	ND	430	ug/kg	SW846 8270C
Dimethyl phthalate	ND	430	ug/kg	SW846 8270C

(Continued on next page)

TESTAMERICA LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: C1A130417 TestAmerica Buffalo MS Analytical Date Reported: 1/14/11 PAGE 5

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD

Client Sample ID: SS-1

Sample #: 001 Date Sampled: 01/11/11 16:00 Date Received: 01/13/11 Matrix: SOLID

Semivolatiles Organic Compounds by GC/MS

Reviewed

Di-n-butyl phthalate	ND	430	ug/kg	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	2200	ug/kg	SW846 8270C
2,4-Dinitrophenol	ND	2200	ug/kg	SW846 8270C
2,4-Dinitrotoluene	ND	430	ug/kg	SW846 8270C
2,6-Dinitrotoluene	ND	430	ug/kg	SW846 8270C
Di-n-octyl phthalate	ND	430	ug/kg	SW846 8270C
Fluoranthene	180	87	ug/kg	SW846 8270C
Fluorene	ND	87	ug/kg	SW846 8270C
Hexachlorobenzene	17000	87	ug/kg	SW846 8270C
Hexachlorobutadiene	14000	87	ug/kg	SW846 8270C
Hexachlorocyclopentadiene	ND	430	ug/kg	SW846 8270C
Hexachloroethane	ND	430	ug/kg	SW846 8270C
Indeno (1,2,3-cd) pyrene	200	87	ug/kg	SW846 8270C
Isophorone	ND	430	ug/kg	SW846 8270C
2-Methylnaphthalene	47 J	87	ug/kg	SW846 8270C
2-Methylphenol	ND	430	ug/kg	SW846 8270C
4-Methylphenol	120 J	430	ug/kg	SW846 8270C
Naphthalene	33 J	87	ug/kg	SW846 8270C
2-Nitroaniline	ND	2200	ug/kg	SW846 8270C
3-Nitroaniline	ND	2200	ug/kg	SW846 8270C
4-Nitroaniline	ND	2200	ug/kg	SW846 8270C
Nitrobenzene	ND	870	ug/kg	SW846 8270C
2-Nitrophenol	ND	430	ug/kg	SW846 8270C
4-Nitrophenol	ND	2200	ug/kg	SW846 8270C
N-Nitrosodi-n-propylamine	ND	87	ug/kg	SW846 8270C
N-Nitrosodiphenylamine	ND	430	ug/kg	SW846 8270C
2,2'-oxybis (1-Chloropropane)	ND	87	ug/kg	SW846 8270C
Pentachlorophenol	ND	430	ug/kg	SW846 8270C
Phenanthrene	190	87	ug/kg	SW846 8270C
Phenol	ND	87	ug/kg	SW846 8270C
Pyrene	130	87	ug/kg	SW846 8270C
2,4,5-Trichlorophenol	ND	430	ug/kg	SW846 8270C

(Continued on next page)

TESTAMERICA LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: C1A130417 TestAmerica Buffalo MS Analytical Date Reported: 1/14/11 PAGE 6

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD

Client Sample ID: SS-1

Sample #: 001 Date Sampled: 01/11/11 16:00 Date Received: 01/13/11 Matrix: SOLID

Semivolatile Organic Compounds by GC/MS

Reviewed

2,4,6-Trichloro-phenol	ND	430	ug/kg	SW846 8270C

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Inorganic Analysis

Reviewed

TOC Lloyd Kahn	5790	2490	mg/kg	EPA Lloyd Kahn
Lloyd Kahn				
Total Residue as Percent Solids	75.6	1.0	%	SM20 2540G

Results and reporting limits have been adjusted for dry weight.



STOHL ENVIRONMENTAL, LLC

Environmental – Asbestos, Lead and Mold Consultants

4169 Allendale Pkwy., Suite 100
Blasdell New York 14219

RECEIVED BY

☎ (716) 312-0070

☎ (716) 312-8092

City of NF Engineering Department

— RTB JAN 14 2011

MPD —

MJA —

RTG —

FILE: RAW DATA only

FAX COVER SHEET:

To: Thomas Radomski

From: Bryan Mayback

Fax: 286-4348

Pages: 7 (including cover page)

Phone: 286-4415

Date: January 14, 2011

Re: Soil Sampling (Colvin Blvd. at 96th St)

CC: Mike Kronening

☒ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ As Requested

• Comments:

Mr. Radomski,

We received the results late this afternoon. I spoke with Mike K. who asked me to contact Robert Bizelli (I did so and left a message with my supervisors cell phone number; Robert Szustakowski, 716-923-5377). Attached is the laboratory data. Due to the matrix of the sample, the sample had to be diluted. As such, do not use compound concentrations with an E data qualifier. We will work on tabulating the data; we will provide the tabulated data to you next week. Please contact Robert Szustakowski to discuss results (again, he can be reached at 923-5377).

Thanks,

Bryan Mayback
Stohl Environmental
716-312-0070

TESTAMERICA LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: C1A130417 TestAmerica Buffalo MS Analytical Date Reported: 1/14/11 PAGE 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD

Client Sample ID: SS-1

Sample #: 001 Date Sampled: 01/11/11 16:00 Date Received: 01/13/11 Matrix: SOLID

Volatile Organics by GC/MS

In Review

Acetone	ND	130000	ug/kg	SW846 8260B
Benzene	ND	33000	ug/kg	SW846 8260B
Bromodichloromethane	ND	33000	ug/kg	SW846 8260B
Bromoform	ND	33000	ug/kg	SW846 8260B
Bromomethane	ND	33000	ug/kg	SW846 8260B
2-Butanone	ND	33000	ug/kg	SW846 8260B
Carbon disulfide	ND	33000	ug/kg	SW846 8260B
Carbon tetrachloride	ND	33000	ug/kg	SW846 8260B
Chlorobenzene	ND	33000	ug/kg	SW846 8260B
Chloroethane	ND	33000	ug/kg	SW846 8260B
Chloroform	ND	33000	ug/kg	SW846 8260B
Chloromethane	ND	33000	ug/kg	SW846 8260B
Cyclohexane	ND	33000	ug/kg	SW846 8260B
Dibromochloromethane	ND	33000	ug/kg	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	33000	ug/kg	SW846 8260B
1,2-Dibromoethane	ND	33000	ug/kg	SW846 8260B
1,3-Dichlorobenzene	ND	33000	ug/kg	SW846 8260B
1,4-Dichlorobenzene	10000 J	33000	ug/kg	SW846 8260B
1,2-Dichlorobenzene	4500 J	33000	ug/kg	SW846 8260B
Dichlorodifluoromethane	ND	33000	ug/kg	SW846 8260B
1,1-Dichloroethane	ND	33000	ug/kg	SW846 8260B
1,2-Dichloroethane	ND	33000	ug/kg	SW846 8260B
1,1-Dichloroethene	ND	33000	ug/kg	SW846 8260B
cis-1,2-Dichloroethene	ND	33000	ug/kg	SW846 8260B
trans-1,2-Dichloroethene	ND	33000	ug/kg	SW846 8260B
1,2-Dichloropropane	ND	33000	ug/kg	SW846 8260B
cis-1,3-Dichloropropene	ND	33000	ug/kg	SW846 8260B
trans-1,3-Dichloropropene	ND	33000	ug/kg	SW846 8260B
Ethylbenzene	ND	33000	ug/kg	SW846 8260B
2-Hexanone	ND	33000	ug/kg	SW846 8260B
Isopropylbenzene	ND	33000	ug/kg	SW846 8260B
Methyl acetate	ND	33000	ug/kg	SW846 8260B
Methylene chloride	ND	33000	ug/kg	SW846 8260B
Methylcyclohexane	ND	33000	ug/kg	SW846 8260B
4-Methyl-2-pentanone	ND	33000	ug/kg	SW846 8260B
Methyl tert-butyl ether	ND	33000	ug/kg	SW846 8260B

(Continued on next page)

TESTAMERICA LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: C1A130417 TestAmerica Buffalo MS Analytical Date Reported: 1/14/11 PAGE 2

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD

Client Sample ID: SS-1

Sample #: 001 Date Sampled: 01/11/11 16:00 Date Received: 01/13/11 Matrix: SOLID

Volatile Organics by GC/MS

In Review

Styrene	ND	33000	ug/kg	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	33000	ug/kg	SW846 8260B
1,2,4-Trichloro-benzene	1600000	33000	ug/kg	SW846 8260B
Tetrachloroethene	ND	33000	ug/kg	SW846 8260B
1,1,1-Trichloroethane	ND	33000	ug/kg	SW846 8260B
1,1,2-Trichloroethane	ND	33000	ug/kg	SW846 8260B
Trichloroethene	ND	33000	ug/kg	SW846 8260B
Trichlorofluoromethane	ND	33000	ug/kg	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	33000	ug/kg	SW846 8260B
Toluene	ND	33000	ug/kg	SW846 8260B
Vinyl chloride	ND	33000	ug/kg	SW846 8260B
Xylenes (total)	ND	99000	ug/kg	SW846 8260B

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Volatile Organics by GC/MS

In Review

Acetone	ND	1300	ug/kg	SW846 8260B
Benzene	120 J	330	ug/kg	SW846 8260B
Bromodichloromethane	ND	330	ug/kg	SW846 8260B
Bromoform	ND	330	ug/kg	SW846 8260B
Bromomethane	ND	330	ug/kg	SW846 8260B
2-Butanone	ND	330	ug/kg	SW846 8260B
Carbon disulfide	ND	330	ug/kg	SW846 8260B
Carbon tetrachloride	ND	330	ug/kg	SW846 8260B
Chlorobenzene	8100	330	ug/kg	SW846 8260B
Dibromochloromethane	ND	330	ug/kg	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	330	ug/kg	SW846 8260B
Chloroethane	ND	330	ug/kg	SW846 8260B
Chloroform	ND	330	ug/kg	SW846 8260B
Chloromethane	ND	330	ug/kg	SW846 8260B
Cyclohexane	ND	330	ug/kg	SW846 8260B
1,2-Dibromoethane	ND	330	ug/kg	SW846 8260B
1,2-Dichlorobenzene	23000 E	330	ug/kg	SW846 8260B

(Continued on next page)

TESTAMERICA LABORATORIES, INC. **PRELIMINARY DATA SUMMARY**

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: C1A130417 TestAmerica Buffalo MS Analytical Date Reported: 1/14/11 PAGE 3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD

Client Sample ID: SS-1

Sample #: 001 Date Sampled: 01/11/11 16:00 Date Received: 01/13/11 Matrix: SOLID

Volatile Organics by GC/MS

In Review

1,3-Dichlorobenzene	12000	330	ug/kg	SW846 8260B
1,4-Dichlorobenzene	43000 E	330	ug/kg	SW846 8260B
Dichlorodifluoromethane	ND	330	ug/kg	SW846 8260B
1,1-Dichloroethane	ND	330	ug/kg	SW846 8260B
1,2-Dichloroethane	ND	330	ug/kg	SW846 8260B
1,1-Dichloroethene	ND	330	ug/kg	SW846 8260B
cis-1,2-Dichloroethene	51 J	330	ug/kg	SW846 8260B
trans-1,2-Dichloroethene	ND	330	ug/kg	SW846 8260B
1,2-Dichloropropane	ND	330	ug/kg	SW846 8260B
cis-1,3-Dichloropropene	ND	330	ug/kg	SW846 8260B
trans-1,3-Dichloropropene	ND	330	ug/kg	SW846 8260B
Ethylbenzene	ND	330	ug/kg	SW846 8260B
Trichlorofluoromethane	ND	330	ug/kg	SW846 8260B
2-Hexanone	ND	330	ug/kg	SW846 8260B
Isopropylbenzene	ND	330	ug/kg	SW846 8260B
Methyl acetate	ND	330	ug/kg	SW846 8260B
Methylcyclohexane	ND	330	ug/kg	SW846 8260B
Methylene chloride	ND	330	ug/kg	SW846 8260B
4-Methyl-2-pentanone	ND	330	ug/kg	SW846 8260B
Styrene	ND	330	ug/kg	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	330	ug/kg	SW846 8260B
Tetrachloroethene	ND	330	ug/kg	SW846 8260B
Toluene	370	330	ug/kg	SW846 8260B
1,2,4-Trichloro-benzene	210000 E	330	ug/kg	SW846 8260B
1,1,1-Trichloroethane	ND	330	ug/kg	SW846 8260B
1,1,2-Trichloroethane	ND	330	ug/kg	SW846 8260B
Trichloroethene	ND	330	ug/kg	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	330	ug/kg	SW846 8260B
Vinyl chloride	ND	330	ug/kg	SW846 8260B
Xylenes (total)	ND	990	ug/kg	SW846 8260B
Methyl tert-butyl ether	ND	330	ug/kg	SW846 8260B

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

E Estimated result. Result concentration exceeds the calibration range.

(Continued on next page)

TESTAMERICA LABORATORIES, INC. **PRELIMINARY DATA SUMMARY**

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: C1A130417 TestAmerica Buffalo MS Analytical Date Reported: 1/14/11 PAGE 4

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD

Client Sample ID: SS-1

Sample #: 001 Date Sampled: 01/11/11 16:00 Date Received: 01/13/11 Matrix: SOLID

Semivolatile Organic Compounds by GC/MS

Reviewed

Acenaphthene	ND	87	ug/kg	SW846 8270C
Acenaphthylene	ND	87	ug/kg	SW846 8270C
Acetophenone	ND	430	ug/kg	SW846 8270C
Anthracene	92	87	ug/kg	SW846 8270C
Atrazine	ND	430	ug/kg	SW846 8270C
Benzo(a)anthracene	96	87	ug/kg	SW846 8270C
Benzo(a)pyrene	95	87	ug/kg	SW846 8270C
Benzo(b)fluoranthene	110	87	ug/kg	SW846 8270C
Benzo(ghi)perylene	67 J	87	ug/kg	SW846 8270C
Benzo(k)fluoranthene	42 J	87	ug/kg	SW846 8270C
Benzaldehyde	ND	430	ug/kg	SW846 8270C
1,1'-Biphenyl	ND	430	ug/kg	SW846 8270C
bis(2-Chloroethoxy) methane	ND	430	ug/kg	SW846 8270C
bis(2-Chloroethyl)- ether	ND	87	ug/kg	SW846 8270C
bis(2-Ethylhexyl) phthalate	180 J	870	ug/kg	SW846 8270C
4-Bromophenyl phenyl ether	ND	430	ug/kg	SW846 8270C
Butyl benzyl phthalate	ND	430	ug/kg	SW846 8270C
Caprolactam	ND	2200	ug/kg	SW846 8270C
Carbazole	ND	87	ug/kg	SW846 8270C
4-Chloroaniline	ND	430	ug/kg	SW846 8270C
4-Chloro-3-methylphenol	ND	430	ug/kg	SW846 8270C
2-Chloronaphthalene	ND	87	ug/kg	SW846 8270C
2-Chlorophenol	ND	430	ug/kg	SW846 8270C
4-Chlorophenyl phenyl ether	ND	430	ug/kg	SW846 8270C
Chrysene	120	87	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	ND	87	ug/kg	SW846 8270C
Dibenzofuran	ND	430	ug/kg	SW846 8270C
3,3'-Dichlorobenzidine	ND	430	ug/kg	SW846 8270C
2,4-Dichlorophenol	ND	87	ug/kg	SW846 8270C
Diethyl phthalate	ND	430	ug/kg	SW846 8270C
2,4-Dimethylphenol	ND	430	ug/kg	SW846 8270C
Dimethyl phthalate	ND	430	ug/kg	SW846 8270C

(Continued on next page)

TESTAMERICA LABORATORIES, INC. **PRELIMINARY DATA SUMMARY**

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: C1A130417 TestAmerica Buffalo MS Analytical Date Reported: 1/14/11 PAGE 5

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD

Client Sample ID: SS-1

Sample #: 001 Date Sampled: 01/11/11 16:00 Date Received: 01/13/11 Matrix: SOLID

Semivolatile Organic Compounds by GC/MS

Reviewed

Di-n-butyl phthalate	ND	430	ug/kg	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	2200	ug/kg	SW846 8270C
2,4-Dinitrophenol	ND	2200	ug/kg	SW846 8270C
2,4-Dinitrotoluene	ND	430	ug/kg	SW846 8270C
2,6-Dinitrotoluene	ND	430	ug/kg	SW846 8270C
Di-n-octyl phthalate	ND	430	ug/kg	SW846 8270C
Fluoranthene	180	87	ug/kg	SW846 8270C
Fluorene	ND	87	ug/kg	SW846 8270C
Hexachlorobenzene	17000	87	ug/kg	SW846 8270C
Hexachlorobutadiene	14000	87	ug/kg	SW846 8270C
Hexachlorocyclopentadiene	ND	430	ug/kg	SW846 8270C
Hexachloroethane	ND	430	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	200	87	ug/kg	SW846 8270C
Isophorone	ND	430	ug/kg	SW846 8270C
2-Methylnaphthalene	47 J	87	ug/kg	SW846 8270C
2-Methylphenol	ND	430	ug/kg	SW846 8270C
4-Methylphenol	120 J	430	ug/kg	SW846 8270C
Naphthalene	33 J	87	ug/kg	SW846 8270C
2-Nitroaniline	ND	2200	ug/kg	SW846 8270C
3-Nitroaniline	ND	2200	ug/kg	SW846 8270C
4-Nitroaniline	ND	2200	ug/kg	SW846 8270C
Nitrobenzene	ND	870	ug/kg	SW846 8270C
2-Nitrophenol	ND	430	ug/kg	SW846 8270C
4-Nitrophenol	ND	2200	ug/kg	SW846 8270C
N-Nitrosodi-n-propylamine	ND	87	ug/kg	SW846 8270C
N-Nitrosodiphenylamine	ND	430	ug/kg	SW846 8270C
2,2'-oxybis(1-Chloropropane)	ND	87	ug/kg	SW846 8270C
Pentachlorophenol	ND	430	ug/kg	SW846 8270C
Phenanthrene	190	87	ug/kg	SW846 8270C
Phenol	ND	87	ug/kg	SW846 8270C
Pyrene	130	87	ug/kg	SW846 8270C
2,4,5-Trichlorophenol	ND	430	ug/kg	SW846 8270C

(Continued on next page)

TESTAMERICA LABORATORIES, INC.
PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: C1A130417 TestAmerica Buffalo MS Analytical Date Reported: 1/14/11 PAGE 6

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>

Client Sample ID: SS-1

Sample #: 001 Date Sampled: 01/11/11 16:00 Date Received: 01/13/11 Matrix: SOLID

Semivolatile Organic Compounds by GC/MS

2,4,6-Trichloro-phenol	ND	430	ug/kg	SW846 8270C

Reviewed

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Inorganic Analysis

TOC Lloyd Kahn	5790	2490	mg/kg	EPA Lloyd Kahn
Lloyd Kahn				
Total Residue as Percent Solids	75.6	1.0	%	SM20 2540G

Reviewed

Results and reporting limits have been adjusted for dry weight.



STOHL ENVIRONMENTAL, LLC

Environmental - Asbestos, Lead and Mold Consultants

4169 Allendale Pkwy., Suite 100
Blasdell New York 14219

RECEIVED

City of NF Engineering Department

☎ (716) 312-0070

☎ (716) 312-8092

RTB JAN 12 2011

FILE: _____

FAX COVER SHEET:

To: Thomas Radomski

From: Bryan Mayback

Fax: 286-4348

Pages: 1

Phone: 286-4415

Date: January 12, 2011

Re: Soil Sampling (Colvin Blvd. at 96th St)

CC: Mike Kronening

☒ **Urgent** ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **As Requested**

• Comments:

Mr. Radomski,

As you are aware, potential impacts were encountered while replacing portion of a sewer line on Colvin Boulevard at 96th Street in Niagara Falls (the location is northwest of the Love Canal area). In talking with the subcontractors who were on-site, it sounds like the material originated from within the sewer piping itself. Impacted materials (including the removed portion of piping) were placed on poly within a roll-off dumpster near the excavation. I collected soil samples impacted with the material while on-site on 1/11/11. The samples were submitted to a local laboratory and are awaiting analysis. We recommend the following analyses at this time: VOCs, SVOCs (volatile organic compounds, and semi-volatile organic compounds, common to petroleum compounds) and TOC (total organic carbon, can determine if the material is organic).

The following presents laboratory analysis costs in conjunction with turn-around times. Note that laboratory analysis costs are expensive due to the equipment, time, etc. involved with determining if VOC, SVOC and TOC compounds are present.

24 hour = \$815
48 hour = \$715
3 business day = \$615
5 business day = \$530
10 business day = \$410

1/12/2011 @ 1311
instructed Bryan
24 hr turn around
@ EKS

Please let us know which turn-around time you desire and we will contact the laboratory.

Thanks,

Bryan Mayback
Stohl Environmental
716-312-0070

APPENDIX B

NIAGARA FALLS WATER BOARD LOVE CANAL TREATMENT SYSTEM INSPECTION REPORT



January 6, 2011

Mr. Darrell Crockett – Facility Manager
Occidental Chemical Corporation
Love Canal
805 – 97th Street
Niagara Falls, New York 14304

Dear Mr. Crockett:

Enclosed please find the results of the Plant Inspection that was conducted at your facility on Thursday January 6, 2011 @ 10:00AM.

If you have any questions, I can be reached at 283-9770 ext 261.

Sincerely,

NIAGARA FALLS WATER BOARD
WASTEWATER FACILITIES

A handwritten signature in cursive script that reads "Joel R. Paradise".

Joel R. Paradise
Senior Industrial Waste Inspector

JRP: mc

Enc.

Cc: A. Zaepfel → J. Paradise → **File: 44- I**



NIAGARA FALLS WATER BOARD
SEMIANNUAL PLANT INSPECTION
INDUSTRIAL PRETREATMENT PROGRAM

PAGE 1 OF 6

Name and Address of SIU

Occidental Chemical Corporation
Love Canal Treatment Facility
805 – 97th Street
Niagara Falls, NY 14304

Permit Number 44
SIC Codes 4951
Date of Last Inspection 01-07-10
CATEGORICAL IU? NO
Day/Date and Time of Inspection
Thursday, January 6, 2011 @ 10:00AM

SIU Representative(s)

Darrell Crockett

Inspectors Name(s)

Joel Paradise

Contact Phone No.: 998-5804

PART I FLOW RECORDING AND SAMPLING INSTRUMENTATION

a) Flow measurement instrument meets permit requirements?

☒ YES ☐ NO

b) Primary flow measurement device properly installed?

☒ YES ☐ NO

c) Type of flow measurement device -

Weir ☐

Flume(s) ☐

Water meter ☐

Mag meter ☒

d) Does device measure flow adequately?

☒ YES ☐ NO

e) Is primary measuring device properly operated and maintained? [1960.6]

☒ YES ☐ NO

f) Are secondary instruments (recorders, integrators) properly operated and maintained? [1960.6]

☒ YES ☐ NO N/A

g) Calibration frequency adequate? (date of last calibration): **Quarterly – December 21, 2010**

☒ YES ☐ NO N/A

PART II SAMPLE COLLECTION

a)	Does permit require SIU to submit Periodic Self Monitoring Reports? [40 CFR403.12h]	☒ YES	NO	
b)	If "yes", does the sample collection frequency and pollutant type conform with permit requirements?	☒ YES	NO	
c)	Are the sample collection locations as described in the permit adequate for representative sample collection? [1960.6 (a)]	☒ YES	NO	
d)	Does the method of sample collection conform with permit requirements, Sewer Use Ordinance and Federal Standards ?	☒ YES	NO	N/A
i)	Sample refrigerated throughout collection and storage ?	☒ YES	NO	N/A
ii)	Are samples properly preserved?	☒ YES	NO	N/A
iii)	Are samples collected using flow proportion composite or grab sampling where appropriate? [40 CFR12(b)(5)(iii)].	☒ YES	NO	N/A
iv)	Sample holding times appropriate? [40 CFR136.3]	☒ YES	NO	N/A

PART III LABORATORY FACILITIES

a)	Is a commercial laboratory used?	☒ YES	NO	
i)	Name of laboratory: TestAmerica Pittsburgh			
ii)	Address: 301 Alpha Drive Pittsburgh, PA 15238			
iii)	Is laboratory State certified?	☒ YES	NO	
b)	Does SIU perform its own analysis?	YES	☒ NO	
i)	Is the SIU's laboratory State certified?	YES	NO	☒ N/A
ii)	Are your laboratory wastes properly disposed of?	YES	NO	☒ N/A
c)	Are EPA approved testing methods used?	☒ YES	NO	

PART IV RECORDS AND REPORTS

a)	Are monitoring records and reports retained in SIU files for at least three years ? [1960.5 (d)(3)]	☒ YES	☐ NO	
b)	Are <u>all</u> records of sludge volume and disposal practices maintained in files? [1960.5 (d)(2)]	☒ YES	☐ NO	☐ N/A
c)	Have all hazardous waste discharges been reported to POTW? [40 CFR403.12(p)].	☒ YES	☐ NO	☒ N/A
d)	If hazardous waste is discharged, is a waste minimization plan developed and implemented?	☒ YES	☐ NO	☐ N/A
e)	Does the SIU have a valid wastewater discharge permit retained on file? [40 CFR403.8(f)(1)(iii)(A)-(E)]	☒ YES	☐ NO	
f)	Have <u>all</u> required reports been submitted on time?	☒ YES	☐ NO	
g)	Do Self Monitoring reports contain necessary information (samplers name, date & time, sample type, flow, preservation, chain of custody, results) ? [40 CFR403.8(f)(3)(vi)].	☒ YES	☐ NO	

PART V PLANT OPERATION AND MAINTENANCE

a)	Have there been any accidental discharge(s) that entered the sewer system?	☐ YES	☒ NO	
	Have they been reported to the POTW as well as other appropriate agencies? [1960.6 (d)]	☐ YES	☐ NO	☒ N/A
b)	Is a spill notification procedure conspicuously posted in process areas of the plant?	☒ YES	☐ NO	☐ N/A
c)	Is there any evidence of spills?	☐ YES	☒ NO	☐ N/A
d)	Are <u>all</u> hazardous sludges and solids properly disposed of?	☒ YES	☐ NO	☐ N/A

e) Has this facility been evaluated **OR** re-evaluated for its' potential to experience a slug discharge?

YES NO

1) Is a **Slug Control Plan** required for this facility [40 CFR403.8(f)(2)(vi)] ?

YES NO

A. Has the facility Developed and Implemented a **Slug Control Plan**?

YES NO N/A

a. The date of the plan's last update: N/A

YES NO N/A

b. Is the latest update on file at the NFWB?

YES NO N/A

c. Does it contain the correct Water Board phone numbers and extensions.

YES NO N/A

2) Has the facility experienced a slug discharge since The last inspection?

f) Have there been any significant **manufacturing** or **process** changes? [1960.5 (c)]
List: **None**

YES NO N/A

Who was contacted **prior** to implementation of these changes?
N/A Date: N/A

g) Describe your hazardous waste storage area(s).
Double contained in the decontamination/storage facility.

Do they meet DEC & EPA containment requirements?

YES NO N/A

Are all containers correctly labeled and time limits adhered to?

YES NO N/A

Describe your method of disposal:

Incineration as needed through Clean Harbors Inc. at their Deer Park Texas Facility, approximately once per quarter.

h) Regarding the blueprints that you submitted with your last permit application, **have there been any significant changes made to your process or sewer lines?**

YES NO

Have revised blueprints been sent to the WWTP?

YES NO N/A

PART VI PRETREATMENT

- a) Briefly describe all required pretreatment.
Clarifier → Bag filter → Carbon treatment → WWTP

- b) Are all pretreatment facilities properly maintained?

YES

NO N/A

- c) How many pH probes does your pH monitoring system contain? **0**

List the frequency for calibration.

N/A

- d) To your knowledge, has **anyone** discharged any un-permitted waste or waste not properly pretreated into the sewer system? [40 CFR 403.179]

YES

NO

- e) Were WWTP personal notified?

YES

NO

N/A

-- Prior to discharge to sewer?

YES

NO

N/A

-- During or after discharge?

YES

NO

N/A

Who? **N/A** Date: **N/A** Time: **N/A**

SIU personal who contacted WWTP: **N/A**

Was written notification given to the WWTP **within five (5) working days** of the start of the event?
 [40 CFR 403.17a]

YES

NO

N/A

Sent to: **N/A** From: **N/A** Date: **N/A**

- f) List any pretreatment changes that were made in the past 12 months.

None

Who was contacted **prior** to implementation of these pretreatment changes?

N/A

PART VII COMPLIANCE AND ENFORCEMENT

a)	Has the SIU had any violations since the last inspection? List: None	YES	☒ NO
b)	If numeric violations were noted by SIU, was a repeat sample collection and analysis performed within 30 days and the results submitted to the POTW [40 CFR403.12(g)] ?	YES	NO ☒ N/A
c)	Is SIU currently on an administrative order and/or compliance schedule?	YES	☒ NO
d)	If yes, have milestone dates on schedule been met?	YES	NO ☒ N/A
e)	Was escalating enforcement action required to achieve compliance? Describe: None Required	YES	☒ NO

PART VIII RECOMMENDATIONS, REQUIREMENTS AND COMMENTS:

APPENDIX C

DAILY FIELD PROGRESS REPORTS

Polovich, Jane

Subject: FW: Love Canal Sewer Repair - Update 2/1/11 ~COR-009954~

From: Polovich, Jane

Sent: Wednesday, February 02, 2011 5:12 AM

To: Gregory Sutton; 'bsadowski@gw.dec.state.ny.us'; 'basile.michael@epa.gov'; 'duda.damian@epa.gov'; 'Matthew J. Forcucci'; Paul Drof; Rick Roll; 'Al Zaepfel'; 'robert.buzzelli@niagarafallsny.gov'; 'howard.skivington@niagarafallsny.gov'; 'dwilliamson@nfwb.org'

Cc: 'Joseph_Branch@oxy.com'; 'Clint_Babcock@oxy.com'; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun; Project Email Hold

Subject: Love Canal Sewer Repair - Update 2/1/11 ~COR-009954~

Good Morning,

The weather at the repair site yesterday consisted of light snow, 10-18 degrees F. On site observers included Clint Babcock (GSH), Brian Sadowski (DEC), Matt Forcucci (DOH) and Howard Skivington (City of NF). The OpTech crew began mobilizing to the site. An excavator, loader, compactor, and 5 sections of 14" PVC pipe were delivered to the site. The roll-off that was left during previous sewer work was moved to the east side of the site as its previous position interfered with the current repair work. A small opening was created in the wooden cover in place over the excavation. PID and 4-gas readings were taken from inside small opening of the wooden structure before it was removed. The highest PID reading was 0.4 ppm. The wooden structure was then removed, piece by piece. A slight odor sulphur (typical of a sanitary sewer) was observed, but no chlorinated organic chemical odor was observed as the structure was removed. All observers onsite agreed that it was acceptable to completely remove the structure. The excavation is now open.

Perimeter air monitoring was conducted hourly along the perimeter of the work area. A PID reading of 8.0 ppm was observed next to the excavation at 10:00 AM; however, the reading went down to below 1.0 ppm within a few minutes. OpTech prepped the site for additional mobilization activities, removing snow and clearing space for roll-offs, which will be delivered today.

The weather forecast for today is for an additional 2 to 4 inches of snow mixed with sleet. The Winter Storm Warning issued last night has been downgraded to a Winter Weather Advisory. As of current, work on the sewer will continue today unless conditions become unsafe. If that changes I will send out an email notification to everyone.

Jane

Jane Polovich

Conestoga-Rovers & Associates (CRA)

2055 Niagara Falls Blvd., Suite 3
Niagara Falls, New York 14304

Phone: 716.297.6150

Fax: 716.297.2265

Email: jpolovich@CRAworld.com

www.CRAworld.com

Think before you print 

Perform every task the safe way, the right way, every time!

3/4/2011

Polovich, Jane

From: Polovich, Jane
Sent: Thursday, February 03, 2011 10:33 AM
To: Gregory Sutton; 'Brian Sadowski'; 'basile.michael@epa.gov'; 'duda.damian@epa.gov'; 'Matthew J. Forcucci'; Paul Drof; Rick Roll; 'Al Zaepfel'; 'dwilliamson@nfwb.org'; 'robert.buzzelli@niagarafallsny.gov'; 'howard.skivington@niagarafallsny.gov'
Cc: 'Joseph_Branch@oxy.com'; 'Clint_Babcock@oxy.com'; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun
Subject: FW: Colvin Blvd Sewer Repair - Update 2/11/2011 - CORRECTION TO DATE

Mr. Sadowski just pointed out to me that I used the wrong date in my email header - it should have read "Update 2/2/11".

Apologies,
Jane

Jane Pietraszek-Polovich
(716) 297-6150 x 314

From: Polovich, Jane
Sent: Thursday, February 03, 2011 9:08 AM
To: Gregory Sutton; 'bsadowski@gw.dec.state.ny.us'; 'basile.michael@epa.gov'; 'duda.damian@epa.gov'; 'Matthew J. Forcucci'; Paul Drof; Rick Roll; 'Al Zaepfel'; 'robert.buzzelli@niagarafallsny.gov'; 'howard.skivington@niagarafallsny.gov'; 'dwilliamson@nfwb.org'
Cc: 'Joseph_Branch@oxy.com'; 'Clint_Babcock@oxy.com'; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun
Subject: Colvin Blvd Sewer Repair - Update 2/11/2011

The weather at the site yesterday consisted of snow and freezing rain, with temperatures about 18 - 24 degrees F. Observing onsite were Brian Sadowski (DEC), Matt Forucci (DOH) and H. Skivington (CNF). Niagara Falls Mayor Paul Dyster was onsite for approximately 20 minutes to observe the excavation activities. He spoke with H. Skivington and M. Forcucci, but did not speak with CRA or OpTech personnel.

A camera operator from Channel 2 News was onsite in the afternoon to record excavation activities for approximately 40 minutes. Channel 2 only recorded video, and did not speak to any CRA or OpTech personnel.

Godwin Pumps was onsite to deliver a pump and associated piping to be used in the event that OpTech decides to bypass the Colvin Blvd. sanitary sewer. Bypass system has not yet been set up. The OpTech crew removed one of the trench boxes that remained in the excavation, because it has been installed incorrectly by a previous contractor. OpTech extended the excavation to the west, approximately 45' east of the Colvin Blvd manhole. Two new trench boxes were installed in the excavation, on top of the other. Soil was removed from the center of the trench boxes and placed on the outside of the trench boxes, still in the excavation. Additional material was excavated from above the pipe and stockpiled to the east of the excavation. Concrete and asphalt was broken up and placed in a 20-yd roll-off.

In the morning, the crew noticed a gas smell coming from the excavation. A natural gas line is currently running across the excavation, running north to south along 96th St. CRA utilized a 4-gas meter and a PID to monitor the air near the excavation. The 4-gas meter had a LEL reading of 0%. Highest PID reading was 0.7 ppm. However, due to the gas odor, H. Skivington called National Fuel to inspect the

line. National Fuel determined that there was a leak in the pipe, using soapy water to detect the leak. A repair crew was immediately called, and the leak was repaired. Pipe was repaired within an hour of the odor being detected.

H. Skivington stated that he spoke with R. Buzzelli this afternoon. He stated that native material that is excavated from above the pipe can be used for backfilling. Granular fill must be used around the new pipe, but native material can be used above the fill, keeping in mind the use of basic filling criteria - amount of fill at top to bring to grade, immediate fill around the pipe, etc. No concrete or asphalt can be used as backfill. J. Polovich confirmed this information through a phone call with R. Buzzelli in the afternoon.

An old catch basin was broken up and removed as part of the digging activities. The catch basin was approx. 33' east of the Colvin Blvd. manhole. H. Skivington stated that the catch basin was already broken during previous excavation activities, and approved the demo of the catch basin.

Containers onsite: Two 20-yd roll-offs. One is empty, one is partially full with concrete and asphalt.

Please let me know if you have any questions or comments,

Jane

Jane Polovich
Conestoga-Rovers & Associates (CRA)
2055 Niagara Falls Blvd., Suite 3
Niagara Falls, New York 14304

Phone: 716.297.6150
Fax: 716.297.2265
Email: jpolovich@CRAworld.com
www.CRAworld.com

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Perform every task the safe way, the right way, every time!

From Polovich, Jane **Date** Friday, February 04, 2011 9:22:33 AM
To Gregory Sutton; Brian Sadowski; basile.michael@epa.gov; duda.damian@epa.gov; Matthew J. Forcucci; Paul Drof; Rick Roll; Al Zaepfel; robert.buzzelli@niagarafallsny.gov; dwilliamson@nfwb.org; howard.skivington@niagarafallsny.gov
Cc Joseph_Branch@oxy.com; Clint_Babcock ext; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun; Project Email Hold
Subject Colvin Blvd. Sewer Repair - Update 2/3/11 ~COR-009954~

 [2-3-11 025.jpg](#) (5.4 MB [HTML](#))

The weather yesterday (2/3/11) was partly sunny, with a mix of clouds with temperatures of 8 to 20 degrees F. Observers onsite included B. Sadowski (DEC) for 1 hour, and H. Skivington (CNF).

The Op-Tech crew installed the sanitary sewer by-pass system. A pump was placed at the manhole at the intersection of Colvin Blvd and 97th St. Bypass piping was installed and ran to the manhole at the intersection of Colvin Blvd. and 96th St. The bypass flow began in the afternoon.

Op-Tech completed the installation of trench boxes on the east side of the excavation. Trench boxes were installed so that the bottoms were at the same depth as the sanitary sewer, allowing for confined space entry by Op-Tech personnel. Soil was excavated from in between the plates of the trench boxes, and the excavated material was placed on the outside of the plates, filling the spaces between the excavation walls and the trench box plates.

Crew uncovered the 15" diameter green PVC sewer pipe that ran east from the concrete pipe at the west wall of the excavation. The 15" diameter PVC sewer pipe was connected to the 15" diameter concrete sewer pipe and sealed at a pipe bell with a concrete water plug. The PVC sewer pipe was then broken at approximately 10' east of the concrete bell. H. Skivington stated that the crew had permission to cut the PVC pipe back to where the break stops (leaving approximately 10' of sound PVC in place, connected to the 15" diameter concrete sewer pipe to the west), cutting the pipe so there is a clean cross-sectional cut, and install new pipe so that it connects with the existing 10' of sound 15" diameter PVC pipe at it's east end. The existing 15" diameter PVC pipe was nearly full with granular fill and sediments. Op-Tech recommended that they bring in a vacuum truck to clean the remainder of the 10' PVC section, as well as any material that remains in the concrete pipe heading west to the 96th St. manhole. S. McEvoy and D. Hoyt agreed with this course of action. The vac truck will be onsite today.

The crew excavated further to the east along the floor of the excavation. Pieces of concrete sewer and bedding material were removed. The sewer pipe and bedding material were segregated and will be placed in a roll-off for disposal. Assorted pieces of concrete sewer were removed to 23' east of the west wall of the excavation, where the PVC and concrete pipe are joined. CRA did not sample the floor where piping was removed, because there was still standing water on the floor and CRA has not yet verified that the floor is clean. Samples will be collected after the PVC pipe is cleaned and additional material is scraped from the floor.

Containers onsite: Two 20-yd roll-offs at the work area, both empty. One full roll-off was moved to Love Canal, staged on the north side of the storage barn.

Today the plan is for Op-Tech to clean the remainder of the 10' PVC section, cut the existing pipe and replace it with the new pipe.

Jane

Jane Polovich
Conestoga-Rovers & Associates (CRA)
2055 Niagara Falls Blvd., Suite 3
Niagara Falls, New York 14304

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www.CRAworld.com

Think before you print 
Perform every task the safe way, the right way, every time!

From Polovich, Jane **Date** Monday, February 07, 2011 5:36:51 AM
To Gregory Sutton; Brian Sadowski; basile.michael@epa.gov; duda.damian@epa.gov; Matthew J. Forcucci; Paul Drof; Rick Roll; Al Zaepfel; robert.buzzelli@niagarafallsny.gov; dwilliamson@nfwb.org; howard.skivington@niagarafallsny.gov
Cc 'Joseph_Branch@oxy.com'; Clint_Babcock ext; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun; Project Email Hold
Subject Colvin Blvd Sewer Repair - Update 2/4/11 ~COR-009954~

The weather Friday February 4, 2011 was partly sunny with a mix of clouds, windy, temperatures 18 to 24 degrees F. Observers on site included Brian Sadowski (DEC) for 1 hour, and Howard Skivington (CNF).

Bypassing activities continued from the 97th Street manhole to the 96th Street manhole (bypassing continued throughout the evening).

Op-Tech had a vacuum truck onsite. They cleaned the 15" PVC sewer pipe heading west from the excavation up to the 96th Street manhole, for a distance of approximately 20'. All sediments and wash waters were collected by the vacuum truck. Once the pipe was clean, it was cut back to 6' east of the west side of the excavation, creating a clean cross-sectional cut. Op-Tech installed sandbags at the inlet pipe located within the 96th Street manhole to prevent backflow into the excavation.

Op-Tech continued excavating granular fill and clay. They reached the bedding material and underlying clay beneath the area where the section 15" PVC sewer pipe had been removed. This bedding material and clay had a noticeable odor, as would be expected at the point of a pipe break at the low spot in the sewer line. Visual evidence of contamination was noted - the granular bedding material was stained in some areas, however the clay material appeared clean although it did have an odor. All piping and bedding materials were placed in a roll-off. PID readings taken from within an inch of the material ranged from 70-90 ppm. Readings in the breathing zone had a maximum reading of 4.2 ppm, so work was able to continue. PID readings from around the perimeter of the work area ranged from 0.0 to 0.5 ppm. There were no CO or H2S hits, and the LEL monitor had a maximum reading of 1% at the perimeter. Despite the lack of PID readings, there was a noticeable odor coming from the excavation and the excavated materials. The odor was noticed at the excavation and at the perimeter of the work area.

Op-Tech continued excavating further to the east, removing approximately 2 to 3 additional feet of concrete sanitary piping. Concrete piping has now been removed to a point approximately 25' east of the west side of the excavation. Bedding and clay materials also had odors here as well, within the east trench box. CRA collected a test sample of the clay material from a point approximately 24' east of the west side of the excavation and placed it in a sample jar, covering it with aluminum foil and the jar cap. The clay material had a PID reading of 125 ppm while still in the excavator bucket. CRA took two headspace readings of the test sample. After 20 minutes, the headspace reading had a maximum value of 528 ppm. After 50 minutes, the headspace reading had a maximum value of 1,100 ppm. The clay was excavated nearly down to the bedrock layer, with approximately 4-6" of clay remaining on top of the bedrock layer that the excavator could not remove (due to the close proximity of trench boxes and the natural gas line, and the teeth of the bucket). Nearly all of the original granular fill has been removed to a point 25' east of the west side of the excavation.

S. McEvoy discussed the high PID readings with D. Hoyt. After consulting with C. Babcock, it was decided that the Op-Tech crew could place granular fill on top of the remaining 4 to 6" of clay and install new 15" PVC sewer pipe. Prior to the installation of the new granular fill, CRA collected a sample of the minor amounts of clay material that could not be removed from the floor of the excavation 24' east of the west side of the excavation (Sample 001). The sample will be analyzed for VOCs, SVOCs and Pesticides. The sample will be sent to an ELAP certified lab for analysis.

The crew began laying down granular fill on the bottom of the excavation. They installed a 14' length of 15" diameter PVC pipe and attached it to the existing 15" PVC pipe that ran east from the 96th Street manhole. The pipe was then covered with granular fill. At this point not enough daylight remained to continue working.

B. Sadowski called S. McEvoy and requested that the excavation be covered in an attempt to mitigate any potential odor coming from the excavation. A layer of visqueen was placed and anchored over top of the excavation.

H. Skivington stated at 16:30 that City Hall had received a few complaints about odors from the work area.

At 16:40, GSH requested that S. McEvoy and H. Skivington go to the home of Mrs. Melanie Herr, who had complained of odors coming from a floor vent in her basement. Ms Herr had contacted the DEC about the odor earlier that day. As a result of that contact, Mr Gregory Sutton (DEC) had contacted C. Babcock mid-afternoon on Friday and made him aware of the potential issue. C. Babcock advised S. McEvoy (CRA) to go to Ms. Herr's residence, and requested that H. Skivington accompany him as a CNF representative. Mr. Sutton also requested that GSH and CRA review the excavation work procedures to see if any activities were taking place that could be related to the potential issue at the Herr residence. All excavation activities in the past few days were reviewed. The sewer leading downstream from the work area was sandbagged off early Thursday morning, prior to the DEC notification of the homeowner's concern, so that there could be no way for potential odors from the work area to migrate several blocks downstream, even with a bad lateral leading to a house.

Investigation of the excavation activities concluded that no activities have been conducted, by the work crew, that would have

forced air through the sewer downstream of the work area. A review of the excavation activities have found nothing associated with current procedures that could have caused the odors several blocks downstream from the work area, and could not identify any other activity unrelated to GSH/CRA work, that could have created the issue. Due to the location of the residence several blocks west of the excavation site and no findings of a possible link to the sewer excavation activities, GSH/CRA cannot perform additional investigation activities downstream beyond the sandbagged isolation point in the 96th Street manhole without further involvement from the CNF.

Ms Herr's residence is located at 940 93rd Street, on the corner of 93rd Street and Colvin Blvd. This location is "downstream" from the excavation area. S. McEvoy and H. Skivington observed a floor drain, and a riser pipe coming several inches out of the floor of the basement with a loose metal cap on it, next to what appeared to be a sewer vent that comes up from the floor and exits through a wall at about 8' high. There is also a second riser pipe sticking several inches out of the floor with a fixed cap on it. The purpose of the two riser pipes is unknown; however, one or both could be cleanouts and the one with a loose metal cap appeared to have standing water in it. The Herrs indicated that they had noticed an odor from the floor vents for a few weeks. They also stated that a large amount of air had rushed through the floor riser a number of times, starting on 2/3/11, with enough force to pop off the metal riser cap. The NFWB had been there earlier in the day, and had stated that there was an odor in the manhole located at the intersection of Colvin Blvd and 93rd Street. S. McEvoy did note an odor coming from the riser, but not from the floor drain. While an odor was present in the basement, there was no odor present on the 1st floor (living area) of the residence. Until CNF can assist with further investigations, as a precaution to prevent potential odors from entering the basement, S. McEvoy returned an hour later and installed a 4" lock plug in the riser and a 1.5" lock plug in the floor drain. These activities are further detailed in the email from C. Babcock to the stakeholders sent at 3:15 Saturday morning.

Daily PID readings: 0.0 - 0.5 ppm at the perimeter of the work area, a max of 4.2 ppm in the breathing zone of the excavation, and a range of 70-125 from the material excavated from the bedding material (readings taken within an inch of the material).

Daily O2 readings: ranged from 20.9 - 21.1 %

No H2S or CO readings

Daily LEL readings: ranged from 0-1%.

Containers onsite: Two 20-yd roll-offs at the work area, one empty, one partially full. One full roll-off is staged at Love Canal, staged on the north side of the storage barn.

Have a good day,
Jane

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From Polovich, Jane **Date** Monday, February 07, 2011 5:37:14 AM
To Gregory Sutton; Brian Sadowski; basile.michael@epa.gov; duda.damian@epa.gov; Matthew J. Forcucci; Paul Drof; Rick Roll; Al Zaepfel; robert.buzzelli@niagarafallsny.gov; dwilliamson@nfwb.org; howard.skivington@niagarafallsny.gov
Cc 'Joseph_Branch@oxy.com'; Clint_Babcock ext; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun; Project Email Hold
Subject Colvin Blvd Sewer Repair - Update 2/5/11 ~COR-009954~

The weather Saturday February 5, 2011 was sunny in the morning turning to heavy snow in the afternoon, with temperatures ranging from 22 to 34 degrees F. Observers onsite included H. Skivington (CNF), and J. Polovich (CRA) for 1.5 hours.

Bypassing activities continued from the 97th Street manhole to the 96th Street manhole. Bypassing will continue throughout the weekend. A 15" plug was inserted in the inlet line entering the 96th Street manhole from the east. The plug was inserted and inflated.

Op-Tech continued backfilling the new 14' section of 15" diameter PVC sewer pipe in the west side of the excavation. Additional granular fill was placed on top of the pipe in the center of the west trench box. S. McEvoy spoke with H. Skivington and the Op-Tech operator about placing native excavated material back in the trench above the granular fill. The concern was that the native material was frozen, and that if it were placed in the trench, there would be void spaces such that when it thawed which could impact the natural gas line. The decision was made to backfill the west side of the excavation (where the natural gas line is located) with granular fill up to the natural gas line, while inside the trench box. The native material would then be used to backfill outside the trench box.

Op-Tech continued backfilling on the west side of the excavation. The two sections of the trench box on the west side were removed from the trench. The granular fill was mechanically tamped down. Excavation began further east, to a point 50' from the west side of the excavation. At the end of the work day the crew had not yet reached the depth of the sanitary pipe on the east side. A trench box was placed in the east end of the excavation to hold it open. The center trench box remains in place. Excavation work will continue at this point on Monday.

S. McEvoy collected a sample of the clay material on the west endwall of the excavation (Sample 002) at the point that the pipe entered the west wall. This sample was collected to show that the westernmost excavation point had been dug back far enough to reach "clean" soil. There were no detections on the PID readings on the sample material as it was collected. Headspace readings from the sample were collected after it was placed in the sample jars. After one hour, the headspace reading was 1.5 ppm. After two hours, the headspace reading was 14.6 ppm. This sample will be sent to an ELAP certified lab for analysis of VOCs, SVOCs and Pesticides.

During the work day an odor was detected from the excavation, and the odor was slightly noticeable at the perimeter of the work area. The odor was less noticeable than during Fridays excavation activities. Visqueen was placed over the excavation at the end of the work day.

PID readings: 0.0 - 0.6 ppm at the perimeter of the work area, a maximum of 0.4 ppm in the breathing zone of the excavation.

O2 readings: ranged from 20.9 - 21.1 %

No H2S, LEL or CO detections.

Containers onsite: Two 20-yd roll-offs at the work area, one empty, one partially full. One full roll-off is staged at Love Canal, staged on the north side of the storage barn.

Have a good morning,
Jane

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From Polovich, Jane**Date** Tuesday, February 08, 2011 11:14:54 AM**To****Cc** Project Email Hold**Subject** FW: Colvin Blvd Sewer Repair - Update 2/7/11 ~COR-009954~

Jane Pietraszek-Polovich
(716) 297-6150 x 314

-----Original Message-----

From: Polovich, Jane

Sent: Tuesday, February 08, 2011 10:46 AM

To: basile.michael@epa.gov; duda.damian@epa.gov; robert.buzzelli@niagarafallsny.gov; dwilliamson@nfwb.org; howard.skivington@niagarafallsny.gov; gpsutton@gw.dec.state.ny.us; bpsadows@gw.dec.state.ny.us; pdrof@nfwb.org; rroll@nfwb.org; azapfael@nfwb.org; mjf13@health.state.ny.us

Cc: clint_babcock@oxy.com; joseph_branch@oxy.com; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun

Subject: Colvin Blvd Sewer Repair - Update 2/7/11

The weather Monday, February 7, 2011 was overcast with light snow, winds from the SW, and temperatures from 30 to 35 degrees F.

Observers onsite included H. Skivington (CNF), and B. Sadowski (DEC) for 1.5 hours.

Bypassing from the 97th Street manhole to the 96th Street manhole continues. PID readings taken throughout the day in the breathing zone at the 96th Street manhole and within the manhole did not go above 0.0 ppm.

There was no odor present at the excavation site prior to work activities in the morning. Op-Tech continued to place the trench box they started on Saturday at approximately 43' east of the west end of the excavation. As they started to work, a slight odor was noted at the excavation.

A NFWB employee came by the excavation at 0900 inquiring about the safety of entry into the lift station manhole at 91st Street and Colvin Blvd. J. Polovich responded that though the air monitoring at the excavation site so far that morning had been non-detect, she could not speak for any area other than the excavation site. She stated that GSH/CRA did not have any authority to monitor or access any other manhole in the area. Therefore she could not speak to the safety of any other location.

B. Sadowski noted that though there were odors present at the excavation site, PID and 4-Gas monitoring had shown that none of the monitored compounds were present. He suggested that the odor could possibly be coming from the roll-off staged to the SW of the excavation, which had been uncovered when work commenced. J. Polovich and B. Sadowski walked to the SW corner of the roll-off, upwind of the excavation and roll-off, and no odor was noted. J. Polovich put the PID over the lip of the roll-off and it registered a 0.5 ppm. So it is possible that some of the odor noted at the excavation site may not be a product of the excavation but of the already excavated material in the roll-off. Attempts will be made to keep the roll-off covered when not in use.

Op-Tech had to reposition the trench box installed at approximately 43' east of the west end of the excavation due to the presence of a water main 5' to the south which made proper shoring measures impossible. Originally a 5' high trench box had been set upon a 10' trench box, and the excavator was to step down to the boxes to excavate to depth with the sidewalls above the trench boxes dug back and shored a safe distance. The presence of the main to the south made this impossible and required the removal of the 5' trench box with replacement of a 10' trench box. This caused some delays in progress for the day.

Once the trench boxes were set to the proper depth Op-Tech continued to excavate soil from the eastern end of the 1st box placed at approximately 33' to 43' east of the west end of the excavation. The concrete sewer pipe was still in place at 38' to 43'. The crew removed the overlying clay and pea gravel bedding. As this bedding was removed an odor was noted from the excavation and excavator bucket. A PID reading taken on the material in the bucket indicated 10.9 ppm. The air in the

breathing zone registered 0.2 to 0.4 ppm. J. Polovich told everyone to stop and wait a few minutes for the air to clear. Within 2 to 3 min the odor had dissipated and the breathing zone PID readings had gone back to 0.0 ppm. Work continued. The crew removed the concrete pipe from 38' to 43'. The pea gravel beneath the pipe was removed and the teeth of the excavator were scraping the bedrock. The clay was excavated nearly down to the bedrock layer, with approximately 4-6" of clay remaining on top of the bedrock layer that the excavator could not remove (due to the close proximity of trench boxes and the teeth of the bucket). J. Polovich collected a sample of clay from beneath the pipe on top of the bedrock. Odor was noted in the sample. A headspace reading taken after the sample sat for 15 min in a heated vehicle showed 9.8 ppm. The sample (Sample 003) will be sent to an ELAP certified lab for analysis of VOCs, SVOCs, and Pesticides.

Today the plan is to continue to remove and replace pipe.

PID readings at the perimeter: 0.0 ppm

PID readings in the breathing zone: ranged from 0.0 ppm to 0.5 ppm

O2 readings: 20.9 %

LEL readings: 0%

CO readings: 0 to 1

H2 readings: 0

Materials onsite include one roll-off partially full. One roll-off has already been taken to be stored at Love Canal.

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From Polovich, Jane **Date** Wednesday, February 09, 2011 8:55:53 AM
To gpsutton@gw.dec.state.ny.us; bpsadows@gw.dec.state.ny.us; basile.michael@epa.gov; duda.damian@epa.gov; mjf13@health.state.ny.us; pdrof@nfwb.org; rroll@nfwb.org; Al Zaepfel; robert.buzzelli@niagarafallsny.gov; howard.skivington@niagarafallsny.gov; dwilliamson@nfwb.org
Cc Clint_Babcock ext; joseph_branch@oxy.com; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun; Project Email Hold
Subject Colvin Blvd. Sewer Repair - Update 2/8/11 ~COR-009954~

The weather yesterday, Tuesday February 8, 2011, was cloudy with periods of snow. Temperatures ranged from 10 to 15 degrees F.

Observers onsite included B. Sadowski (DEC) for 1.5 hrs, M. Forcucci (DOH) for 1 hr, and H. Skivington (CNF).

The bypass pump was not working when the crew arrived onsite because it was frozen. Another pump was brought to the site, and was connected to the 96th Street manhole using lay-flat hose. By-passing activities resumed mid-morning. Prior to the arrival of the new pump, a vacuum truck was used to vacuum water from the 97th Street manhole. Water from the 97th Street manhole was discharged to the Love Canal water treatment system. Bypassing will continue overnight. The vacuum truck was also used to remove water from the floor of the excavation.

Op-Tech continued excavating the underlying bedding and clay from underneath the former concrete sanitary pipe, heading east along the trench. A 2' section of pipe and the underlying material were removed today. The former concrete pipe had been removed to a point approximately 44' east of the west side of the excavation. The underlying granular fill and clay had a noticeable odor as it was excavated. The granular fill was discolored, with a dark brown/black staining on a portion of the granular fill. CRA observed a quantity of possible light non-aqueous phase liquid (LNAPL) present on the water in the excavation. Based on the visual observation, the amount of possible LNAPL was 4 ounces or less. The material was removed prior to the installation of clean granular fill. PID readings of the underlying material in the bucket of a loader had a maximum reading of 111 ppm. Material in the excavator bucket had a maximum PID reading of 98.7 ppm. All piping and underlying material were placed in a roll-off for disposal. An odor was present around the excavation for the duration of the work day. The maximum PID reading in the breathing zone in the excavation was 3.2 ppm. The odor was also noticeable at times at the perimeter of the work area, however none of the perimeter PID readings exceeded 0.7 ppm. Op-Tech used CRA's PID to test the air inside the excavation, and the reading was 3.0 ppm.

Most of the underlying material under the former concrete pipe was removed down to the bedrock layer, however a 4-6" layer of material remains above the bedrock, due to the close confines and the constraints of the excavator bucket. The remaining clay still has a noticeable odor.

Op-Tech installed a new 15' section of 15" PVC pipe on the floor of the excavation. Clean granular fill was placed as bedding material above the bedrock layer and whatever clay material remained on the floor. The new 15" PVC pipe now extends for a distance of approximately 36' east of the west side of the excavation. The new pipe was backfilled over with granular fill, and then clean native material was used as backfill over the bedding material. The west trench box was removed from the excavation, and additional backfilling was conducted.

Collected the following samples:

Sample 004 - sample of underlying clay on the floor of the excavation, approximately 43' east of the west side of the excavation. Headspace readings: 66.9 ppm at 65 minutes after sample collection.

Sample 005 - blind duplicate of Sample 004 Sample 006 - sample of clay from the north sidewall of the trench, approximately 20' down, underneath the bottom of the trench box, approximately 30' east of the west side of the excavation. Headspace readings: 31.4 ppm at 115 minutes after sample collection.

Sample 007 - sample of clay from the south sidewall of the trench, approximately 20' down, underneath the bottom of the trench box, approximately 30' east of the west side of the excavation. Headspace readings: 4.1 ppm at 100 minutes after sample collection.

PID readings: 0.0 - 0.7 ppm at the perimeter of the work area, a max of 3.2 ppm in the breathing zone of the excavation.

O2 readings: ranged from 20.9 - 21.3%

LEL readings: ranged from 0-1%

No H2S or CO detections.

An odor was detected from the excavation, and the odor was noticeable at the perimeter of the work area. Visqueen was placed over the excavation at the end of the work day.

Containers onsite: Two 20-yd roll-offs at the work area, one empty, one partially full. Two full roll-offs are staged at Love Canal.

Work today will include excavating to the remaining 5' of sewer pipe to be removed.

thanks,

Jane

Jane Polovich
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Pentilchuk, John

From: Polovich, Jane
Sent: Wednesday, February 09, 2011 10:05 PM
To: gpsutton@gw.dec.state.ny.us; gpsutton@gw.dec.state.ny.us; bpsadows@gw.dec.state.ny.us; basile.michael@epa.gov; duda.damian@epa.gov; mjf13@health.state.ny.us; pdrof@nfwb.org; rroll@nfwb.org; AZaepfe@nfwb.org; robert.buzzelli@niagarafallsny.gov; howard.skivington@niagarafallsny.gov; dwilliamson@nfwb.org
Cc: clint_babcock@craworld.com; joseph@craworld.com; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun
Subject: Colvin Blvd Sewer Repair - Update 2/9/11

Good Evening,

The weather today was cloudy and windy with temperatures ranging from 13 to 19 degrees F. Observers onsite included B. Sadowski (DEC) for 2 hrs and H. Skivington (CNF).

Bypassing activities continued from the 97th Street manhole to the 96th Street manhole. Bypassing will continue overnight.

Op-Tech extended the excavation approximately 15' to the east in order to access the remainder of the existing concrete pipe that was to be removed. A trench box was placed on the east side, and metal plates were installed around the east trench box. The crew removed native material from above the concrete pipe, and stockpiled it for future backfilling. PID readings were taken from the native material, and no detections were observed. The crew removed another 4' section of the existing concrete pipe. The pipe has now been removed to a point approximately 48' east of the west side of the excavation (61' east of the 96th Street manhole), and H. Skivington stated that this distance was sufficient for the pipe removal. The removed section of pipe was filled with material, however it had only a faint odor. PID readings of the material in the removed section of pipe had a maximum result of 8.7 ppm. The underlying clay beneath the former pipe on the east side did not appear to have an odor. PID readings at the breathing zone in the bottom of the east trench box were 0.0 ppm. Water was observed exiting the remaining pipe at 48' east, and the water did not appear to have any sheen or evidence of LNAPL. The remaining underlying clay underneath the former pipe on the east side could not be removed today, since Op-Tech's front-end loader was malfunctioning.

The crew continued backfilling the center of the excavation, over the second 15' stretch of newly installed PVC pipe.

Collected the following samples:

Sample 008 - sample of underlying clay on the floor of the excavation, approximately 48' east of the west side of the excavation. Headspace readings: 25.9 ppm at 95 minutes after sample collection.

Sample 009 - sample of clay from the east endwall of the trench, approximately 18' down, 59' east of the west side of the excavation. Headspace readings: 1.3 ppm at 90 minutes after sample collection.

PID readings: No PID detections were observed at the perimeter of the work area. A max reading of 0.4 ppm was observed in the breathing zone of the excavation.

O2 readings: ranged from 20.9 - 21.3%

LEL readings: ranged from 0-1%

No H2S or CO detections.

Could detect a faint odor from the excavation, however no odor was noticeable at the perimeter of the work area. The odor was less noticeable than during previous days. Visqueen was placed over the excavation at the end of the work day.

Containers onsite: Two 20-yd roll-offs at the work area, one empty, one partially full. Two full roll-offs are staged at Love Canal.

Have a good day,
Jane

Jane Pietraszek-Polovich
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Pentilchuk, John

From: Polovich, Jane
Sent: Friday, February 11, 2011 6:59 AM
To: gpsutton@gw.dec.state.ny.us; bpsadows@gw.dec.state.ny.us; basile.michael@epa.gov; duda.damian@epa.gov; mjf13@health.state.ny.us; pdrof@nfwb.org; rroll@nfwb.org; AZaepfel@nfwb.org; robert.buzzelli@niagarafallsny.gov; howard.skivington@niagarafallsny.gov; dwilliamson@nfwb.org
Cc: Clint Babcock ext; joseph_branch@oxy.com; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun
Subject: Colvin Blvd Sewer Repair - Update 2/10/11

The weather yesterday, February 10, 2011 was sunny and windy, with temperatures from 5 to 15 degrees F. Observers onsite included B. Sadowski (DEC) for 1 hr and H. Skivington (CNF).

Bypassing activities continued from the 97th Street manhole to the 96th Street manhole. Bypassing will continue overnight.

Op-Tech excavated underlying pea gravel and clay from the floor of the trench, under the former concrete sanitary pipe from 36' to 48' east of the west side of the excavation. Underlying material on top of the bedrock had a noticeable odor, with visual evidence of NAPL present in the pea gravel. The majority of the odor appeared to be in the pea gravel, however the clay also had an odor. PID readings taken from the excavated material while still in the excavator bucket had a maximum detection of 138 ppm. The maximum PID reading taken from material in the front end loader was 111 ppm. These readings were taken from within an inch of the material itself, not from the breathing zone. PID readings from the breathing zone at the excavation ranged from 0.0 to 3.2 ppm. The excavation of bedding material created an odor around the excavation, and could be noticed at the perimeter of the work area. An Op-Tech worker who entered the excavation to direct the pipe installation wore a half-face respirator with organic vapor cartridges. Most of the bedding material was removed from the 36' to 48' section of the trench, however a 4" to 6" layer of clay remained above the bedrock, due to the close confines and the constraints of the excavator bucket.

A vac truck was used to remove water from the floor of the excavation. Traces of NAPL could be seen on the surface of the water on the floor. As the water was removed, additional NAPL could be seen entering the floor of the trench from the west side (possibly from the north as well), just above the bedrock layer at about 37' to 38' from the west end of the excavation (about 50' to 51' east of the 96th Street manhole). Approximately 12 oz of NAPL appeared to enter the excavation as water was removed.

The crew placed down a layer of granular fill on the floor of the excavation, from 36' to 48'. Two sections of 15" diameter PVC sewer pipe (5' and 7' sections) were inserted on the floor of the excavation, connecting with existing concrete sanitary pipe at approximately 48' east of the west end of the excavation (61' east of the 96th Street manhole). The new PVC pipe is now completely installed, from a point 6' east of the west side of the excavation to 48' east of the west side. The first 6' had remained in place, and the new pipe started at 6' (19' east of the 96th Street manhole) and continued east. H. Skivington observed the installation of the pipe, and stated that he was pleased. Granular fill was backfilled around the newly installed pipe.

PID readings: No PID detections were observed at the perimeter of the work area. A max reading of 3.2 ppm was observed in the breathing zone of the excavation.

O2 readings: ranged from 20.9 - 21.4%

LEL readings - ranged from 0-1%

No H2S or CO detections.

Visqueen was placed over the excavation at the end of the work day.

Containers onsite: Two 20-yd roll-offs at the work area, one full, one partially full. Two full roll-offs are staged at Love Canal.

Have a good day,
Jane

Jane Pietraszek-Polovich
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From Polovich, Jane **Date** Tuesday, February 15, 2011 1:38:22 PM
To Gregory Sutton; bpsadows@gw.dec.state.ny.us; mjf13@health.state.ny.us; basile.michael@epa.gov; duda.damian@epa.gov; pdrof@nfwb.org; rroll@nfwb.org; robert.buzzelli@niagarafallsny.gov; howard.skivington@niagarafallsny.gov; Al Zaepfel; dwilliamson@nfwb.org
Cc Clint_Babcock ext; Joseph_Branch@oxy.com; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun; Project Email Hold
Subject Colvin Blvd Sewer - Update 2/11/11 ~COR-009954~

My apologies - it appears I overlooked sending out this update from February 11, 2011.

The weather on Friday February 11, 2011 was sunny and windy, with temperatures ranging from 9 to 22 degrees F. Observers onsite included H. Skivington (CNF).

Bypassing equipment was removed from the 96th and 97th Street manholes. Sewer plugs were removed from the east inlet pipe from the 96th Street manhole and from the west outlet at the 97th Street manhole. No more by-passing activities are required at the work site.

Op-Tech continued backfilling the middle and east sections of the trench, above the completed 15" PVC sewer pipe. Native excavated material was placed back in the excavation. The stockpiled native material was inspected to make sure there were no odors or evidence of impacts before it was used as backfill. No odors or PID readings were detected from the native soils. The center and east trench boxes were removed from the trench.

One front-end loader was deconned at the Love Canal storage area. The loader was removed from the site. One excavator and one loader remain onsite.

PID readings: No PID detections were observed at the perimeter of the work area or at the excavation.
O2 readings: ranged from 20.9 - 21.1 %
LEL reading: ranged from 0-1%
No H2S or CO detections.

Visqueen was placed over the excavation at the end of the work day.

Containers onsite: One 20-yd roll-offs at the work area, partially full. Three full roll-offs are staged at Love Canal.

Have a good day,
Jane

Jane Polovich
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Pentilchuk, John

From: Polovich, Jane
Sent: Sunday, February 13, 2011 2:53 PM
To: gpsutton@gw.dec.state.ny.us; bpsadows@gw.dec.state.ny.us; basile.michael@epa.gov; duda.damian@epa.gov; mjf13@health.state.ny.us; pdrof@nfwb.org; rroll@nfwb.org; AZaepfel@nfwb.org; robert.buzzelli@niagarafallsny.gov; howard.skivington@niagarafallsny.gov; dwilliamson@nfwb.org
Cc: Clint Babcock ext; joseph_branch@oxy.com; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun
Subject: Colvin Blvd Sewer Repair - 2/12/11

Good Afternoon,

The weather yesterday, February 12, 2011, was sunny and windy with temperatures ranging from 30 to 35 degrees F. A kick-off meeting was held at Love Canal at 0800. In attendance with personnel from CRA, Op-Tech, Roy's Plumbing, and Comet Flashers. The topic of the kickoff meeting was the commencement of the sewer cleaning from 97th Street to 91st Street.

The bypass at the 97th Street manhole was modified to accommodate the jetting (hydraulic cleaning) of the sewer line from 97th Street to 96th Street. Op-Tech and Roy's Plumbing jetted the sewer line from 97th Street to 96th Street without incident. The rinse waters from the jetting were collected using the Vac truck at the 96th Street manhole and not allowed to travel past the 96th Street manhole towards 93rd Street. Once the jetting from 97th Street to 96th Street was complete, the bypass was moved to set up for jetting from 96th Street to 95th Street. One run of jetting from 96th Street to 95th Street was completed by 1600. However, during the jetting of this section of pipe it was noted that a large amount of solids were present and being removed from the pipe. Op-Tech stated that 1 to 2 more runs of the section of pipe were recommended to ensure that the pipe was clean. The remaining 2 runs will be completed Sunday. After this section of cleaning is complete, the next section is a 700 ft run from 95th Street to 93rd Street. This 700 ft section will be started Sunday. Sewer cleaning down to 91st Street will continue into next week until completed.

Video inspection of the cleaned portions of the sewer will begin on Monday.

The collected rinse waters were taken to the Love Canal facility and discharged to the vault at the drum barn for transfer the holding tank for treatment. The solids that settled out of the rinse water in the vac truck were allowed to settle overnight and were removed and drummed. The solids drums are stored in the drum storage area in the Love Canal drum barn.

Assistance was requested from the NFWB in locating the sanitary sewer manholes on Colvin Blvd from 95th Street to 91st Street. A NFWB employee arrived at 1530 and assisted in locating the remaining manholes from 93rd Street to the 91st Street lift station.

PID readings in the work area breathing zone and at the opening of the 97th Street, 96th Street, and 95th Street manholes all registered nothing higher than 0.0 ppm.

O2 readings: 20.9%

LEL readings - 0%

No H2S or CO detections.

At 1700, a plumbing contractor and J. Polovich (CRA) went to the residence on Colvin Blvd. that previously reported odor complaints to the NYSDEC, to conduct an inspection of their sewer piping and to determine if there was any potential in the home for sewer odors to enter the residence. The contractor video-inspected the sewer pipe from the house to the street. No cracks or deficiencies were noted in the line between the street and the home. Connections at the home were also video inspected in the piping from the second floor bathroom. The contractor noted that a non-code defective sewer backflow prevention valve was in use and there may be a problem with the 90 degree elbow of the soil stack in that area (southwest corner of the basement). The defective valve was in such a

condition as to be useless to prevent sewer odors from entering the basement. The floor drain trap also appeared dry so water was added to the floor drain trap to ensure the trap was functioning as designed. The plumbing contractor investigated the basement piping further and noted what appeared to be a hole or area of restricted flow in the 90 degree elbow of the soil stack pipe where the vertical stack pipe turns and goes underneath the floor. The contractor could not be certain that a problem exists without cutting the pipe back and investigating further with different sewer inspection instrumentation.

The homeowner was provided a write-up of the inspection results and discussed those results with CRA and the plumbing contractor. GSH authorized the plumbing contractor to replace the non-code defective valve with a new NYS-approved valve, and to schedule further inspection / investigation at the residence to ensure that all potential issues are identified and corrected.

Have a good evening,
Jane Polovich

Jane Pietraszek-Polovich
Conestoga-Rovers and Associates
2055 Niagara Falls Blvd.
Suite 3
Niagara Falls, New York 14304
Phone (office) 716-297-6150 x 314
Fax: 716-297-2265
web: <http://www.CRAworld.com>

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Pentilchuk, John

From: Polovich, Jane
Sent: Monday, February 14, 2011 6:06 PM
To: Gregory Sutton; bpsadows@gw.dec.state.ny.us; basile.michael@epa.gov; duda.damian@epa.gov; mjf13@health.state.ny.us; rroll@nfwb.org; Al Zaepfel; howard.skivington@niagarafallsny.gov; robert.buzzelli@niagarafallsny.gov; dwilliamson@nfwb.org; pdrof@nfwb.org
Cc: Clint_Babcock ext; joseph_branch@oxy.com; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun
Subject: Colvin Blvd Sewer Cleaning - Update 2/13/11

The weather Sunday, February 13, 2011 was overcast with temperatures between 35 and 40 degrees F.

Work continued on the sewer line from 96th Street to 95th Street. It was expected that that portion of the line would have the greatest amount of heavy solids. Fine solids were removed as well as large rocks and brick. The line was run 5 times (jetted 5 times) before moving onto the 700+ foot run. Kristen Nyborg (CRA) will be covering the remainder of the project and Shaun McEvoy (CRA) will be finishing up the sewer repair area.

Work began on the 700 ft sewer length from the 95th Street manhole to the 93rd Street manhole. Due to the length of this run and restrictions on the length of the jetter tubing, it will be done in two segments. It will be started accessing the 95th Street manhole, and jetting back towards the 95th Street manhole where the rinse waters are being collected. Once the eastern half of this run is completely cleaned, the crew will relocate to the 93rd Street manhole and clean the western half of the run accessing that manhole, and collecting the rinse waters at that location. Approximately 200 ft of the eastern portion of the run, starting from the 95th Street manhole, was cleaned yesterday.

J. Polovich (CRA) attempted to contact the homeowner at the residence at 940 93rd Street at 10AM to discuss further sewer inspection and repair in their basement. The homeowner was not home. She called them later in the day and spoke with the homeowner concerning the additional inspection of her basement sewer piping and any subsequent repairs. The additional sewer inspection and repair work is scheduled for Tuesday morning.

Towards the end of the work day yesterday evening, a small group of people stopped at the job site and asked what the crew were doing. K. Nyborg (CRA) stated that they were cleaning the sewers, and directed them to speak with Greg Sutton of the DEC and offered his phone number. The citizens refused to take that information. They took pictures of the crew, the sewer cleaning work area, and the sewer repair site. They stayed behind the fence at the sewer repair site, and remained on the north side of Colvin Blvd at the sewer cleaning location (95th Street manhole, located in the median of Colvin Blvd). They yelled questions to the contractors. The contractors did not respond to any questions or comments. K. Nyborg again attempted to give them Greg Sutton's contact information, which she noted none of them wrote down or recorded. Comments of "You'll be seeing this tonight on YouTube" were yelled to the crew. As of this morning, no videos were found on YouTube showing the sewer cleaning work. Today the sewer cleaning work area was been surrounded by orange traffic cones to clearly demarcate the work zone, in the event that more citizens return or the media visit the work site.

In the event that any citizen or media attempt to approach the work zone through the demarcated barrier and refuse to leave, or if their activities compromise the safety of the crew or passing traffic, a procedure has been put in place for notification to a representative to the City of Niagara Falls who will then come to the Site to manage the situation, address the crowd and contact the police if necessary.

PID readings: PID reading in the breathing zone of the work area ranged from 0.0 to 0.2 ppm.

O2 readings: 20.9 %

2/18/2011

LEL readings - 0%

No H2S or CO detections.

Have a good day,

Jane Polovich

Jane Polovich
Conestoga-Rovers & Associates (CRA)

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Niagara Falls, New York 14304

Phone: 716.297.6150

Fax: 716.297.2265

Email: jpolovich@CRAworld.com

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Think before you print 

Perform every task the safe way, the right way, every time!

From Polovich, Jane **Date** Tuesday, February 15, 2011 11:23:40 AM

To Gregory Sutton; bpsadows@gw.dec.state.ny.us; basile.michael@epa.gov; duda.damian@epa.gov; mjf13@health.state.ny.us; pdrof@nfwb.org; rroll@nfwb.org; robert.buzzelli@niagarafallsny.gov; Al Zaepfel; dwilliamson@nfwb.org

Cc Clint_Babcock ext; Joseph_Branch@oxy.com; Pentilchuk, John; Hoyt, Dennis; McEvoy, Shaun; Nyborg, Kristin; Project Email Hold

Subject Colvin Blvd Sewer Repair and Cleaning - Update 2/14/11 ~COR-009954~

The weather yesterday, Monday February 14, 2011 was cloudy and windy, with temperatures ranging from 27 to 40 degrees F. Sewer repair and cleaning activities were conducted between the hours of 7AM and 6 to 7PM, consistent of each day that this work has been conducted since January 31, 2011.

Sewer Repair

Observers onsite included H. Skivington (CNF) and B. Sadowski (NYSDEC) for 1 hour.

Op-Tech set up the bypass pump at the 96th Street manhole. A sewer plug was installed into the west outlet of the 96th Street manhole. Sanitary sewer water was bypassed from the 96th Street manhole downstream to the 95th Street manhole to allow the crew to flush the sewer along Colvin Blvd. between 95th and 96th Street. The bypass system was removed from the 96th Street manhole at the end of the day.

The crew continued backfilling the excavation with native material and granular fill. Granular fill was placed around the natural gas line. The center and east sides of the excavation were backfilled nearly to the street level. The west side was backfilled to about 5-6' below street level. A two-foot layer of granular fill is being placed above the native excavated material.

The area around the former catch basin on the north side of the excavation was cleared, to allow space for the new catch basin which will be installed. Crew unearthed an 8-inch line heading north from the former catch basin. The pipe was intact and empty.

While clearing soil around a former concrete pipe that ran from a catch basin south of the trench to a manhole located at the intersection of Colvin and 96th Street, the crew hit an 8-inch ductile water main that ran north along 96th Street. The water main was located directly under the storm sewer pipe. The 8-inch water main was not marked by the NFWB during the utility clearance conducted on 1/31/11. The NFWB had only marked the 8-inch water heading heading east-west along the south side of Colvin Blvd. Water from the broken main began entering the excavation at 1600. Water exited the excavation through the 8-inch pipe heading north from the former catch basin. No water from the water main exited the excavation except through the 8-inch pipe. The NFWB was called by the City of Niagara Falls, and they arrived at 1615. The NFWB and Op-Tech located four valves along the 8-inch line running east-west along Colvin Blvd and along the 8-inch line heading north along 96th Street. The four valves were used to isolate the intersection, so that no side streets or houses were impacted. The NFWB stated that all houses in the neighborhood still had water, while the intersection was shut off. Water stopped entering the excavation at 1745. Spoke with H. Skivington and Op-Tech supervisor regarding repairing the water main. The NFWB did not want to do any digging along Colvin Blvd, due to its proximity to Love Canal. The NFWB will provide repair materials to Op-Tech tomorrow morning. An NFWB representative will be onsite tomorrow. Op-Tech will uncover a section of the broken pipe and make repairs at the direction of the NFWB representative. The plan was offered by the city, and GSH and Op-Tech agreed.

PID readings: Ranged from 0.0 to 0.4 ppm at the perimeter of the work area. No PID readings were observed at the excavation.

O2 readings: ranged from 20.9 - 21.1 %

LEL readings: ranged from 0-1%

No H2S or CO detections.

Containers onsite: One 20-yd roll-offs at the work area, partially full. Three full roll-offs are staged at Love Canal.

Sewer Cleaning

Due to the presence of the group of people who gathered the evening of February 13, 2011, it was decided that pylons would be set up along the north side of Colvin Blvd to distinguish the work zone.

Jetting began between the community center at 96th Street towards 95th Street. The work proceeded without incident,

removing large solids from the line along with sands and silts.

NBC News / Channel 2 stopped at the eastern end of the sewer repair area at the corner of 97th Street and Colvin Blvd and filmed some video footage. They did not speak to or approach anyone on the job site.

Video inspection of the sewer began at 1500. If cleaning progresses without incident, video is expected to be complete by Wednesday or Thursday.

The crew mobilized to the intersection of 93rd Street and Colvin Blvd later in the afternoon to continue work on the 700 ft run between 95th Street and 93rd Street, but a water main break north on 93rd Street impaired the ability to bypass to the 93rd Street sanitary sewer manhole. The NFWB was repairing the break to their line on 93rd Street (not associated with GSH work activities) and was using the 93rd Street manhole as a bypass for their water. The combined amount of water that would have resulted from the NFWB bypass activities and GSH bypass activities would have been too much for the sanitary system. GSH work activities were halted for the day.

PID readings: Ranged from 0.0 to 0.3 ppm

O2 readings: 20.9%

LEL readings: ranged from 0-1%

No H2S or CO detections.

Have a good day,

Jane

Jane Polovich

Conestoga-Rovers & Associates (CRA)

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Perform every task the safe way, the right way, every time!

APPENDIX D

PHOTOGRAPHIC LOG

Colvin Boulevard Sanitary Sewer Repair Photographic Log
February 1, 2011 through February 18, 2011



Photo 1: Feb. 01, 2011: Excavation at start of work activities



Photo 2: Feb. 01, 2011: Temporary pipe placed by City contractor with sanitary flow.



Photo 3: Feb. 02, 2011: Placing safety trench box. Note 4-inch gas line transecting excavation.



Photo 4: Feb. 02, 2011: Gas line was discovered to be leaking. National Fuel Gas repaired with a sleeve.



Photo 5: Feb. 02, 2011: Clay soil excavated from above sanitary sewer pipe.



Photo 6: Feb. 03, 2011: Continuing to excavate and secure trench box.

Colvin Boulevard Sanitary Sewer Repair Photographic Log
February 1, 2011 through February 18, 2011



Photo 7: Feb. 03, 2011: Excavation conditions above sanitary sewer pipe; note clay materials.



Photo 8: Feb. 03, 2011: Bypass activities from manhole at 97th Street and Colvin Blvd going west to manhole at 96th Street and Colvin Blvd.



Photo 9: Feb. 03, 2011: Clay and stone bedding above sanitary sewer pipe approx. 15 feet east of manhole at 96th Street.



Photo 10: Feb. 03, 2011: Broken PVC sanitary sewer pipe; was supposed to be concrete pipe.



Photo 11: Feb. 03, 2011: Broken PVC pipe and open hole where next section of concrete pipe was removed.



Photo 12: Feb. 04, 2011: Vacuuming water from excavation; water coming from the sanitary sewer pipe.

Colvin Boulevard Sanitary Sewer Repair Photographic Log
February 1, 2011 through February 18, 2011



Photo 13: Feb. 04, 2011: Excavation nearly dewatered. Note black dots near pipe end that appears to be a NAPL-like material. Approx. 10 ft west of manhole at 96th Street.



Photo 14: Feb. 04, 2011: Vacuuming excavation water with sheen.



Photo 15: Feb. 04, 2011: Under pipe bedding and clay removed to the extent possible.



Photo 16: Feb. 04, 2011: Under pipe bedding and clay removed to the extent possible. Approx. 2 ft of material removed below pipe.



Photo 17: Feb. 04, 2011: Two feet of new bedding installed.



Photo 18: Feb 04, 2011: First 14-ft section of new pipe installed.

Colvin Boulevard Sanitary Sewer Repair Photographic Log
February 1, 2011 through February 18, 2011



Photo 19: Feb. 05, 2011: Backfilling of 1st 14-foot section of new pipe continues.



Photo 20: Feb. 05, 2011: Excavating to place trench boxes for next section of pipe.



Photo 21: Feb. 07, 2011: Continuing to excavate; clay soil above pipe.



Photo 22: Feb. 07, 2011: Removing next 5-foot section of concrete sanitary sewer piping.



Photo 23: Feb. 08, 2011: Removing another 5-foot section of pipe.



Photo 24: Feb. 08, 2011: Under-bedding and clay removed to extent possible. Note NAPL-like material.

Colvin Boulevard Sanitary Sewer Repair Photographic Log
February 1, 2011 through February 18, 2011



Photo 25: Feb 08, 2011: Vacuuming water and NAPL-like material from excavation.



Photo 26: Feb. 08, 2011: Installing 2nd 14-foot section of new PVC pipe.



Photo 27: Feb. 08, 2011: Backfilling 2nd 14-foot section.



Photo 28: Feb. 09, 2011: Excavating to place trench box for next section of piping.



Photo 29: Feb. 09, 2011: Preparing to remove next 5-foot section of concrete pipe.



Photo 30: Feb. 09, 2011: Removing next 5-foot section with in-pipe sediments still in pipe.

Colvin Boulevard Sanitary Sewer Repair Photographic Log
February 1, 2011 through February 18, 2011



Photo 31: Feb. 09, 2011: Sediments inside of concrete sanitary sewer pipe.



Photo 32: Feb. 09, 2011: Bedding location of 5-foot section removed in Photo's 29, 30 and 31.



Photo 33: Feb. 10, 2011: Clay and gravel bedding beneath pipe prior to excavation for new bedding material.



Photo 34: Feb. 10, 2011: Stained gravel and NAPL-like material prior to removal to extent possible. Distance from manhole at 96th Street is approximately 38 ft to the east.



Photo 35: Feb. 10, 2011: Placing last section of new PVC pipe.



Photo 36: Feb. 10, 2011: Last section of new pipe connected to existing concrete pipe.

Colvin Boulevard Sanitary Sewer Repair Photographic Log
February 1, 2011 through February 18, 2011



Photo 37; Feb. 11, 2011: Backfilling activities continue.



Photo 38: Feb. 14, 2011: Hand backfilling around gas line.



Photo 39: Feb. 14, 2011: Area for repair of street catch basin; note storm sewer pipe in excavation sidewall.



Photo 40: Feb. 15, 2011: Repaired 8-inch water line.



Photo 41: Feb. 15, 2011: New storm catch basin installed.



Photo 42: Feb 16, 2011: Repaired storm sewer line.

Colvin Boulevard Sanitary Sewer Repair Photographic Log
February 1, 2011 through February 18, 2011



Photo 43: Feb. 16, 2011: Roadway sub-bas being installed and compacted.



Photo 44: Feb. 16, 2011: Storm catch basin raised to grade and roadway french drain installed.



Photo 45: Feb. 17, 2011: Catch basin installed, roadway curbing installed, sub-base installed.



Photo 46: Feb. 18, 2011: Area compacted and ready to receive temporary asphalt patch.



Photo 47: Feb. 18, 2011: Installing temporary asphalt patch.



Photo 48: Feb. 18, 2011: Asphalt patch installed; road being opened to traffic.

APPENDIX E

ANALYTICAL REPORTS AND DATA VALIDATION FOR CONFIRMATORY SOIL SAMPLES

ANALYTICAL REPORT

PROJECT NO. 9954

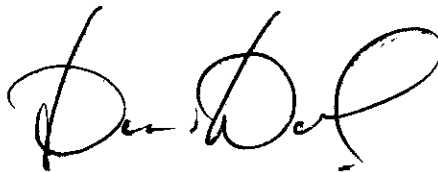
GSH, Love Canal Annual

Lot #: C1B080483

Susan Scrocchi

Conestoga-Rovers & Associates,

TESTAMERICA LABORATORIES, INC.



Dave Dunlap
Project Manager

February 18, 2011



NELAC REPORTING:

At the time of analysis the laboratory was in compliance with the current NELAC standards and held accreditation for all analyses performed unless noted by a qualifier. The labs accreditation numbers are listed below. The format and contents of the report meets all applicable NELAC standards except as noted in the narrative and shall not be reproduced except in full, without the written approval of the laboratory. The table below presents a summary of the certifications held by TestAmerica Pittsburgh. Our primary accreditation authority for the Non-potable water and Solid & Hazardous waste programs is Pennsylvania DEP. A more detailed parameter list is available upon request. Please ask your project manager for this information when required.

Certifying State/Program	Certificate #	Program Types	TestAmerica
DoD ELAP	ADE-1442	WW	X
US Dept of Agriculture	(#P330-10-00139)	HW	X
Arkansas	(#88-0690)	Foreign Soil Import Permit	X
California – NELAC	04224CA	WW	X
Connecticut	(#PH-0688)	HW	X
Florida – NELAC	(#E871008)	WW	X
Illinois – NELAC	(#002319)	HW	X
Kansas – NELAC	(#E-10350)	WW	X
Louisiana – NELAC	(#04041)	HW	X
New Hampshire – NELAC	(#203010)	WW	X
New Jersey – NELAC	(PA-005)	--	--
New York – NELAC	(#11182)	WW	X
North Carolina	(#434)	HW	X
Pennsylvania - NELAC	(#02-00416)	WW	X
South Carolina	(#89014002)	HW	X
Utah – NELAC	(STLP)	WW	X
West Virginia	(#142)	HW	X
Wisconsin	998027800	WW	X
		HW	X

The codes utilized for program types are described below:

HW Hazardous Waste certification
 WW Non-potable Water and/or Wastewater certification
 X Laboratory has some form of certification under the specific program. Many states certify laboratories for specific parameters or tests within a category. The information in the table indicates the lab is certified in a general category of testing. Please contact the laboratory if parameter specific certification information is required.

Updated: 05/19/10 N:\Reporting\NELAC NARRATIVE Pittsburgh_Updated 051910.doc

CASE NARRATIVE
CRA
GSH, Love Canal
LOT # C1B080483

Sample Receiving:

TestAmerica Pittsburgh received samples on February 8, 2011. The cooler was received within the proper temperature range.

If project specific QC was not required for samples contained in this report and batch QC was completed on these samples, anomalous results will be discussed below.

GC/MS Volatiles:

The method blank had compounds detected at concentrations between the MDL and the reporting limit. The results were flagged with a "J" qualifier. Any sample associated with a method blank that had the same compound detected had the result flagged with a "B" qualifier.

GC/MS Semivolatiles:

Due to the concentration of target compounds detected, sample except SO-009954-020711-JP-003 was analyzed at a dilution.

Pesticides:

Due to the concentration of target compounds detected, all samples were analyzed at a dilution. These samples had the surrogates diluted out.

General Chemistry:

There were no problems associated with the analysis.

C1B080483

SHIPPED TO (Laboratory Name):				REFERENCE NUMBER:			
 CONESTOGA-ROVERS & ASSOCIATES 2055 Niagara Falls Blvd Niagara Falls NY 14304				TA Pittsburgh 009954			
SAMPLER'S SIGNATURE:		PRINTED NAME:		PARAMETERS		REMARKS	
SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. of Containers		
1	2/4/11	15:25	30-009954-020411-3H-001	soil	4	Please send results c/o Sue Secor	
2	2/5/11	7:55	30-009954-020511-3H-002	soil	4		
3	2/7/11	15:30	30-009954-020711-3P-003	soil	3		
TOTAL NUMBER OF CONTAINERS: 11							
RELINQUISHED BY: 				RECEIVED BY: 			
DATE: 2/7/11 TIME: 5pm				DATE: 2/8/11 TIME: 1000			
RELINQUISHED BY:				RECEIVED BY:			
DATE:				DATE:			
TIME:				TIME:			
RELINQUISHED BY:				RECEIVED BY:			
DATE:				DATE:			
TIME:				TIME:			
METHOD OF SHIPMENT:							
WAY BILL No.							
SAMPLE TEAM:				RECEIVED FOR LABORATORY BY:			
J. Polovich				N° CRA 17190			
S. McElroy				DATE:			
DATE:				TIME:			

METHODS SUMMARY

C1B080483

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Organochlorine Pesticides	SW846 8081A	SW846 3541
Semivolatile Organic Compounds by GC/MS	SW846 8270C	SW846 3541
Total Residue as Percent Solids	SM20 2540G	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

- SM20 "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", 20TH EDITION."
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

C1B080483

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MD6E1	001	SO-009954-020411-SM-001	02/04/11	15:25
MD6E4	002	SO-009954-020511-SM-002	02/05/11	07:55
MD6E6	003	SO-009954-020711-JP-003	02/07/11	15:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020411-SM-001

GC/MS Volatiles

Lot-Sample #....: C1B080483-001 Work Order #....: MD6E11AA Matrix.....: SO
 Date Sampled....: 02/04/11 Date Received...: 02/08/11 MS Run #.....:
 Prep Date.....: 02/10/11 Analysis Date...: 02/10/11
 Prep Batch #....: 1041145 Analysis Time...: 10:03
 Dilution Factor: 1
 % Moisture.....: 9.5 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	14 J,B	22	ug/kg	5.5
Benzene	ND	5.5	ug/kg	0.75
Bromodichloromethane	ND	5.5	ug/kg	0.62
Bromoform	ND	5.5	ug/kg	0.49
Bromomethane	ND	5.5	ug/kg	0.82
2-Butanone	ND	5.5	ug/kg	0.97
Carbon disulfide	ND	5.5	ug/kg	0.57
Carbon tetrachloride	ND	5.5	ug/kg	0.49
Chlorobenzene	15	5.5	ug/kg	0.84
Dibromochloromethane	ND	5.5	ug/kg	0.78
Chloroethane	ND	5.5	ug/kg	1.7
Chloroform	ND	5.5	ug/kg	0.65
Chloromethane	ND	5.5	ug/kg	0.94
1,1-Dichloroethane	ND	5.5	ug/kg	0.64
1,2-Dichloroethane	ND	5.5	ug/kg	0.68
1,1-Dichloroethene	ND	5.5	ug/kg	0.94
1,2-Dichloropropane	ND	5.5	ug/kg	0.60
cis-1,3-Dichloropropene	ND	5.5	ug/kg	0.75
trans-1,3-Dichloropropene	ND	5.5	ug/kg	0.66
Ethylbenzene	ND	5.5	ug/kg	0.71
2-Hexanone	ND	5.5	ug/kg	0.76
Methylene chloride	1.3 J,B	5.5	ug/kg	0.74
4-Methyl-2-pentanone	ND	5.5	ug/kg	0.72
Styrene	ND	5.5	ug/kg	0.78
1,1,2,2-Tetrachloroethane	ND	5.5	ug/kg	0.79
Tetrachloroethene	ND	5.5	ug/kg	0.75
Toluene	2.1 J	5.5	ug/kg	0.81
1,1,1-Trichloroethane	ND	5.5	ug/kg	0.54
1,1,2-Trichloroethane	ND	5.5	ug/kg	0.92
Trichloroethene	ND	5.5	ug/kg	0.73
Vinyl chloride	ND	5.5	ug/kg	0.52
Xylenes (total)	ND	17	ug/kg	2.5
cis-1,2-Dichloroethene	ND	5.5	ug/kg	0.78
trans-1,2-Dichloroethene	ND	5.5	ug/kg	0.66
Vinyl acetate	ND	5.5	ug/kg	0.39

(Continued on next page)

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020411-SM-001

GC/MS Volatiles

Lot-Sample #...: C1B080483-001 Work Order #...: MD6E11AA Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	87	(52 - 124)
Toluene-d8	99	(72 - 127)
4-Bromofluorobenzene	98	(63 - 120)
Dibromofluoromethane	93	(68 - 121)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

SO-009954-020411-SM-001

GC/MS Volatiles

Lot-Sample #: C1B080483-001

Work Order #: MD6E11AA

Matrix: SO

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Subtituted Benzene		14 J	M 9.9394	ug/kg
Benzene, 1-chloro-2-methyl-	95-49-8	20 NJ	M 12.001	ug/kg
Benzene, 1-chloro-3-methyl-	108-41-8	14 NJ	M 12.105	ug/kg
Benzene, 1,2-dichloro-	95-50-1	19 NJ	M 13.212	ug/kg
Benzene, 1,2-dichloro-4-methyl	95-75-0	18 NJ	M 14.13	ug/kg
Benzene, 1,2,4-trichloro-	120-82-1	280 NJ	M 14.824	ug/kg
Benzene, 1,2,3-trichloro-	87-61-6	25 NJ	M 15.329	ug/kg
Unknown Subtituted Benzene		21 J	M 16.661	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020511-SM-002

GC/MS Volatiles

Lot-Sample #....: C1B080483-002	Work Order #....: MD6E41AA	Matrix.....: SO
Date Sampled....: 02/05/11	Date Received...: 02/08/11	MS Run #.....:
Prep Date.....: 02/10/11	Analysis Date...: 02/10/11	
Prep Batch #....: 1041145	Analysis Time...: 10:26	
Dilution Factor: 1		
% Moisture.....: 23	Method.....: SW846 8260B	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acetone	14 J,B	26	ug/kg	6.5
Benzene	ND	6.5	ug/kg	0.88
Bromodichloromethane	ND	6.5	ug/kg	0.73
Bromoform	ND	6.5	ug/kg	0.58
Bromomethane	ND	6.5	ug/kg	0.96
2-Butanone	ND	6.5	ug/kg	1.1
Carbon disulfide	ND	6.5	ug/kg	0.67
Carbon tetrachloride	ND	6.5	ug/kg	0.58
Chlorobenzene	ND	6.5	ug/kg	0.98
Dibromochloromethane	ND	6.5	ug/kg	0.92
Chloroethane	ND	6.5	ug/kg	2.0
Chloroform	ND	6.5	ug/kg	0.76
Chloromethane	ND	6.5	ug/kg	1.1
1,1-Dichloroethane	ND	6.5	ug/kg	0.75
1,2-Dichloroethane	ND	6.5	ug/kg	0.80
1,1-Dichloroethene	ND	6.5	ug/kg	1.1
1,2-Dichloropropane	ND	6.5	ug/kg	0.71
cis-1,3-Dichloropropene	ND	6.5	ug/kg	0.88
trans-1,3-Dichloropropene	ND	6.5	ug/kg	0.78
Ethylbenzene	ND	6.5	ug/kg	0.84
2-Hexanone	ND	6.5	ug/kg	0.90
Methylene chloride	2.1 J,B	6.5	ug/kg	0.87
4-Methyl-2-pentanone	ND	6.5	ug/kg	0.85
Styrene	ND	6.5	ug/kg	0.92
1,1,2,2-Tetrachloroethane	ND	6.5	ug/kg	0.93
Tetrachloroethene	ND	6.5	ug/kg	0.88
Toluene	ND	6.5	ug/kg	0.95
1,1,1-Trichloroethane	ND	6.5	ug/kg	0.63
1,1,2-Trichloroethane	ND	6.5	ug/kg	1.1
Trichloroethene	ND	6.5	ug/kg	0.86
Vinyl chloride	ND	6.5	ug/kg	0.61
Xylenes (total)	ND	19	ug/kg	2.9
cis-1,2-Dichloroethene	ND	6.5	ug/kg	0.91
trans-1,2-Dichloroethene	ND	6.5	ug/kg	0.77
Vinyl acetate	ND	6.5	ug/kg	0.46

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020511-SM-002

GC/MS Volatiles

Lot-Sample #...: C1B080483-002 Work Order #...: MD6E41AA Matrix.....: SO

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	78	(52 - 124)
Toluene-d8	99	(72 - 127)
4-Bromofluorobenzene	86	(63 - 120)
Dibromofluoromethane	86	(68 - 121)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

S0-009954-020511-SM-002

GC/MS Volatiles

Lot-Sample #: C1B080483-002

Work Order #: MD6E41AA

Matrix: S0

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Substituted Benzene		160 J	M 9.9337	ug/kg
Benzene, 1,2,4-trichloro-	120-82-1	70 NJ	M 14.824	ug/kg
Benzene, 1,2,3-trichloro-	87-61-6	8.3 NJ	M 15.329	ug/kg
Unknown Substituted Benzene		17 J	M 16.662	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020711-JP-003

GC/MS Volatiles

Lot-Sample #....: C1B080483-003 Work Order #....: MD6E61AA Matrix.....: SO
 Date Sampled...: 02/07/11 Date Received...: 02/08/11 MS Run #.....:
 Prep Date.....: 02/10/11 Analysis Date...: 02/10/11
 Prep Batch #....: 1041145 Analysis Time...: 10:50
 Dilution Factor: 1
 % Moisture.....: 22 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acetone	14 J,B	26	ug/kg	6.4
Benzene	16	6.4	ug/kg	0.87
Bromodichloromethane	ND	6.4	ug/kg	0.72
Bromoform	ND	6.4	ug/kg	0.57
Bromomethane	ND	6.4	ug/kg	0.95
2-Butanone	ND	6.4	ug/kg	1.1
Carbon disulfide	ND	6.4	ug/kg	0.66
Carbon tetrachloride	ND	6.4	ug/kg	0.57
Chlorobenzene	72	6.4	ug/kg	0.97
Dibromochloromethane	ND	6.4	ug/kg	0.91
Chloroethane	ND	6.4	ug/kg	2.0
Chloroform	ND	6.4	ug/kg	0.75
Chloromethane	ND	6.4	ug/kg	1.1
1,1-Dichloroethane	ND	6.4	ug/kg	0.74
1,2-Dichloroethane	ND	6.4	ug/kg	0.79
1,1-Dichloroethene	ND	6.4	ug/kg	1.1
1,2-Dichloropropane	ND	6.4	ug/kg	0.70
cis-1,3-Dichloropropene	ND	6.4	ug/kg	0.87
trans-1,3-Dichloropropene	ND	6.4	ug/kg	0.77
Ethylbenzene	ND	6.4	ug/kg	0.82
2-Hexanone	ND	6.4	ug/kg	0.89
Methylene chloride	1.2 J,B	6.4	ug/kg	0.86
4-Methyl-2-pentanone	ND	6.4	ug/kg	0.84
Styrene	ND	6.4	ug/kg	0.90
1,1,2,2-Tetrachloroethane	ND	6.4	ug/kg	0.92
Tetrachloroethene	ND	6.4	ug/kg	0.87
Toluene	24	6.4	ug/kg	0.94
1,1,1-Trichloroethane	ND	6.4	ug/kg	0.62
1,1,2-Trichloroethane	ND	6.4	ug/kg	1.1
Trichloroethene	ND	6.4	ug/kg	0.84
Vinyl chloride	2.3 J	6.4	ug/kg	0.60
Xylenes (total)	ND	19	ug/kg	2.9
cis-1,2-Dichloroethene	3.6 J	6.4	ug/kg	0.90
trans-1,2-Dichloroethene	ND	6.4	ug/kg	0.76
Vinyl acetate	ND	6.4	ug/kg	0.45

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020711-JP-003

GC/MS Volatiles

Lot-Sample #...: C1B080483-003 Work Order #...: MD6E61AA Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	84	(52 - 124)
Toluene-d8	100	(72 - 127)
4-Bromofluorobenzene	99	(63 - 120)
Dibromofluoromethane	91	(68 - 121)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

SO-009954-020711-JP-003

GC/MS Volatiles

Lot-Sample #: C1B080483-003

Work Order #: MD6E61AA

Matrix: SO

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Substituted Benzene		78 J	M 9.9092	ug/kg
Benzene, 1-chloro-2-methyl-	95-49-8	69 NJ	M 12.001	ug/kg
Benzene, 1-chloro-4-methyl-	106-43-4	35 NJ	M 12.105	ug/kg
Benzene, 1,2-dichloro-	95-50-1	45 NJ	M 13.212	ug/kg
Benzene, 1,3-dichloro-2-methyl	118-69-4	41 NJ	M 14.131	ug/kg
Benzene, 1,3-dichloro-5-methyl	25186-47-4	7.7 NJ	M 14.556	ug/kg
Benzene, 1,2,4-trichloro-	120-82-1	390 NJ	M 14.836	ug/kg
1,3-Butadiene, 1,1,2,3,4,4-hex	87-68-3	7.3 NJ	M 14.988	ug/kg
Benzene, 1,2,3-trichloro-	87-61-6	57 NJ	M 15.329	ug/kg
Unknown Substituted Benzene		43 J	M 16.661	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: C1B080483
MB Lot-Sample #: C1B100000-145

Work Order #...: MD8761AA

Matrix.....: SOLID

Analysis Date...: 02/10/11

Prep Date.....: 02/10/11

Analysis Time...: 07:07

Dilution Factor: 1

Prep Batch #...: 1041145

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	8.5 J	20	ug/kg	SW846 8260B
Benzene	ND	5.0	ug/kg	SW846 8260B
Bromodichloromethane	ND	5.0	ug/kg	SW846 8260B
Bromoform	ND	5.0	ug/kg	SW846 8260B
Bromomethane	ND	5.0	ug/kg	SW846 8260B
2-Butanone	ND	5.0	ug/kg	SW846 8260B
Carbon disulfide	ND	5.0	ug/kg	SW846 8260B
Carbon tetrachloride	ND	5.0	ug/kg	SW846 8260B
Chlorobenzene	ND	5.0	ug/kg	SW846 8260B
Dibromochloromethane	ND	5.0	ug/kg	SW846 8260B
Chloroethane	ND	5.0	ug/kg	SW846 8260B
Chloroform	ND	5.0	ug/kg	SW846 8260B
Chloromethane	ND	5.0	ug/kg	SW846 8260B
1,1-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
1,2-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
1,1-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
1,2-Dichloropropane	ND	5.0	ug/kg	SW846 8260B
cis-1,3-Dichloropropene	ND	5.0	ug/kg	SW846 8260B
trans-1,3-Dichloropropene	ND	5.0	ug/kg	SW846 8260B
Ethylbenzene	ND	5.0	ug/kg	SW846 8260B
2-Hexanone	ND	5.0	ug/kg	SW846 8260B
Methylene chloride	0.84 J	5.0	ug/kg	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/kg	SW846 8260B
Styrene	ND	5.0	ug/kg	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	5.0	ug/kg	SW846 8260B
Tetrachloroethene	ND	5.0	ug/kg	SW846 8260B
Toluene	ND	5.0	ug/kg	SW846 8260B
1,1,1-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
1,1,2-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
Trichloroethene	ND	5.0	ug/kg	SW846 8260B
Vinyl chloride	ND	5.0	ug/kg	SW846 8260B
Xylenes (total)	ND	15	ug/kg	SW846 8260B
cis-1,2-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
trans-1,2-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
Vinyl acetate	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	91	(52 - 124)
Toluene-d8	102	(72 - 127)
4-Bromofluorobenzene	90	(63 - 120)

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: C1B080483

Work Order #...: MD8761AA

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Dibromofluoromethane	94	(68 - 121)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Method Blank Report

GC/MS Volatiles

Lot-Sample #: C1B100000-145 B **Work Order #:** MD8761AA **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/kg

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: C1B080483 Work Order #...: MD8761AC-LCS Matrix.....: SOLID
 LCS Lot-Sample#: C1B100000-145 MD8761AD-LCSD
 Prep Date.....: 02/10/11 Analysis Date...: 02/10/11
 Prep Batch #...: 1041145 Analysis Time...: 11:15
 Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	98	(77 - 120)			SW846 8260B
	106	(77 - 120)	7.1	(0-20)	SW846 8260B
Chlorobenzene	107	(79 - 120)			SW846 8260B
	112	(79 - 120)	4.4	(0-20)	SW846 8260B
1,1-Dichloroethene	93	(59 - 129)			SW846 8260B
	105	(59 - 129)	12	(0-25)	SW846 8260B
Toluene	104	(78 - 124)			SW846 8260B
	109	(78 - 124)	5.0	(0-21)	SW846 8260B
Trichloroethene	98	(76 - 119)			SW846 8260B
	99	(76 - 119)	0.91	(0-21)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	91	(52 - 124)
	99	(52 - 124)
Toluene-d8	102	(72 - 127)
	106	(72 - 127)
4-Bromofluorobenzene	101	(63 - 120)
	106	(63 - 120)
Dibromofluoromethane	97	(68 - 121)
	104	(68 - 121)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020411-SM-001

GC/MS Semivolatiles

Lot-Sample #....: C1B080483-001 Work Order #....: MD6E11AC Matrix.....: SO
 Date Sampled....: 02/04/11 Date Received...: 02/08/11 MS Run #.....: 1041014
 Prep Date.....: 02/10/11 Analysis Date...: 02/14/11
 Prep Batch #....: 1041026 Analysis Time...: 17:25
 Dilution Factor: 1
 % Moisture.....: 9.5 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzoic acid	ND	1900	ug/kg	150
Benzyl alcohol	ND	360	ug/kg	45
Acenaphthene	ND	74	ug/kg	7.1
Acenaphthylene	ND	74	ug/kg	8.4
Anthracene	ND	74	ug/kg	7.2
Benzo(a)anthracene	ND	74	ug/kg	9.2
Benzo(a)pyrene	ND	74	ug/kg	7.4
Benzo(b)fluoranthene	ND	74	ug/kg	12
Benzo(k)fluoranthene	ND	74	ug/kg	15
Benzo(ghi)perylene	ND	74	ug/kg	7.3
bis(2-Chloroethoxy) methane	ND	360	ug/kg	24
bis(2-Chloroethyl)- ether	ND	74	ug/kg	9.9
bis(2-Ethylhexyl) phthalate	ND	740	ug/kg	60
4-Bromophenyl phenyl ether	ND	360	ug/kg	32
Butyl benzyl phthalate	ND	360	ug/kg	50
4-Chloroaniline	ND	360	ug/kg	30
4-Chloro-3-methylphenol	ND	360	ug/kg	34
2-Chloronaphthalene	ND	74	ug/kg	7.7
2-Chlorophenol	ND	360	ug/kg	30
4-Chlorophenyl phenyl ether	ND	360	ug/kg	41
Chrysene	ND	74	ug/kg	8.8
Dibenz(a,h)anthracene	ND	74	ug/kg	8.2
Dibenzofuran	ND	360	ug/kg	36
1,2-Dichlorobenzene	170 J	360	ug/kg	39
1,3-Dichlorobenzene	45 J	360	ug/kg	29
1,4-Dichlorobenzene	290 J	360	ug/kg	26
3,3'-Dichlorobenzidine	ND	360	ug/kg	39
2,4-Dichlorophenol	ND	74	ug/kg	7.4
Diethyl phthalate	ND	360	ug/kg	40
2,4-Dimethylphenol	ND	360	ug/kg	58
Dimethyl phthalate	ND	360	ug/kg	40
Di-n-butyl phthalate	ND	360	ug/kg	46
Di-n-octyl phthalate	ND	360	ug/kg	39

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020411-SM-001

GC/MS Semivolatiles

Lot-Sample #....: C1B080483-001 Work Order #....: MD6E11AC Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-Dinitrophenol	ND	1900	ug/kg	440
4,6-Dinitro- 2-methylphenol	ND	1900	ug/kg	150
2,4-Dinitrotoluene	ND	360	ug/kg	30
2,6-Dinitrotoluene	ND	360	ug/kg	38
Fluoranthene	ND	74	ug/kg	7.9
Fluorene	ND	74	ug/kg	9.7
Hexachlorobenzene	280	74	ug/kg	7.9
Hexachlorobutadiene	220	74	ug/kg	8.3
Hexachlorocyclopenta- diene	ND	360	ug/kg	40
Hexachloroethane	ND	360	ug/kg	27
Indeno(1,2,3-cd)pyrene	ND	74	ug/kg	7.6
Isophorone	ND	360	ug/kg	28
2-Methylnaphthalene	19 J	74	ug/kg	6.6
2-Methylphenol	ND	360	ug/kg	26
4-Methylphenol	ND	360	ug/kg	36
Naphthalene	ND	74	ug/kg	6.4
2-Nitroaniline	ND	1900	ug/kg	170
3-Nitroaniline	ND	1900	ug/kg	150
4-Nitroaniline	ND	1900	ug/kg	150
Nitrobenzene	ND	740	ug/kg	31
2-Nitrophenol	ND	360	ug/kg	41
4-Nitrophenol	ND	1900	ug/kg	130
N-Nitrosodi-n-propyl- amine	ND	74	ug/kg	8.6
N-Nitrosodiphenylamine	ND	360	ug/kg	34
2,2'-oxybis (1-Chloropropane)	ND	74	ug/kg	8.0
Pentachlorophenol	ND	360	ug/kg	33
Phenanthrene	28 J	74	ug/kg	12
Phenol	ND	74	ug/kg	8.7
Pyrene	ND	74	ug/kg	7.5
1,2,4-Trichloro- benzene	9300	360	ug/kg	20
2,4,5-Trichloro- phenol	ND	360	ug/kg	39
2,4,6-Trichloro- phenol	ND	360	ug/kg	55

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020411-SM-001

GC/MS Semivolatiles

Lot-Sample #...: C1B080483-001 Work Order #...: MD6E11AC Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	51	(35 - 124)
2-Fluorobiphenyl	59	(35 - 105)
2-Fluorophenol	61	(39 - 103)
Nitrobenzene-d5	59	(25 - 104)
Phenol-d5	60	(25 - 105)
Terphenyl-d14	51	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

SO-009954-020411-SM-001

GC/MS Semivolatiles

Lot-Sample #: C1B080483-001

Work Order #: MD6E11AC

Matrix: SO

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Benzene, 1,2,4,5-tetrachloro-	95-94-3	2400 NJ	M 5.9425	ug/kg
Benzene, pentachloro-	608-93-5	6700 NJ	M 6.7438	ug/kg
Unknown		1600 J	M 7.7215	ug/kg
Lindane	58-89-9	1300 NJ	M 7.8283	ug/kg
Unknown		950 J	M 8.074	ug/kg
Unknown		4500 J	M 8.1488	ug/kg
Unknown Organic Acid		1900 J	M 8.1916	ug/kg
Unknown		3600 J	M 10.462	ug/kg
Unknown		5600 J	M 10.542	ug/kg
Unknown		3400 J	M 10.873	ug/kg
Unknown		3800 J	M 10.9	ug/kg
Unknown		5500 J	M 10.948	ug/kg
Unknown		17000 J	M 11.055	ug/kg
Unknown		7800 J	M 11.439	ug/kg
Unknown		13000 J	M 13.507	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020511-SM-002

GC/MS Semivolatiles

Lot-Sample #... : C1B080483-002	Work Order #... : MD6E41AC	Matrix..... : SO
Date Sampled... : 02/05/11	Date Received... : 02/08/11	MS Run #..... : 1041014
Prep Date..... : 02/10/11	Analysis Date... : 02/14/11	
Prep Batch #... : 1041026	Analysis Time... : 17:46	
Dilution Factor : 0.99		
% Moisture..... : 23	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzoic acid	ND	2200	ug/kg	180
Benzyl alcohol	ND	420	ug/kg	52
Acenaphthene	ND	86	ug/kg	8.2
Acenaphthylene	ND	86	ug/kg	9.8
Anthracene	ND	86	ug/kg	8.4
Benzo(a)anthracene	ND	86	ug/kg	11
Benzo(a)pyrene	ND	86	ug/kg	8.6
Benzo(b)fluoranthene	ND	86	ug/kg	13
Benzo(k)fluoranthene	ND	86	ug/kg	17
Benzo(ghi)perylene	ND	86	ug/kg	8.5
bis(2-Chloroethoxy) methane	ND	420	ug/kg	28
bis(2-Chloroethyl)- ether	ND	86	ug/kg	12
bis(2-Ethylhexyl) phthalate	ND	860	ug/kg	69
4-Bromophenyl phenyl ether	ND	420	ug/kg	37
Butyl benzyl phthalate	ND	420	ug/kg	59
4-Chloroaniline	ND	420	ug/kg	34
4-Chloro-3-methylphenol	ND	420	ug/kg	40
2-Chloronaphthalene	ND	86	ug/kg	9.0
2-Chlorophenol	ND	420	ug/kg	35
4-Chlorophenyl phenyl ether	ND	420	ug/kg	48
Chrysene	ND	86	ug/kg	10
Dibenz(a,h)anthracene	ND	86	ug/kg	9.5
Dibenzofuran	ND	420	ug/kg	42
1,2-Dichlorobenzene	ND	420	ug/kg	45
1,3-Dichlorobenzene	ND	420	ug/kg	33
1,4-Dichlorobenzene	ND	420	ug/kg	31
3,3'-Dichlorobenzidine	ND	420	ug/kg	45
2,4-Dichlorophenol	ND	86	ug/kg	8.6
Diethyl phthalate	ND	420	ug/kg	47
2,4-Dimethylphenol	ND	420	ug/kg	67
Dimethyl phthalate	ND	420	ug/kg	47
Di-n-butyl phthalate	ND	420	ug/kg	54
Di-n-octyl phthalate	ND	420	ug/kg	45

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020511-SM-002

GC/MS Semivolatiles

Lot-Sample #....: C1B080483-002 Work Order #....: MD6E41AC Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-Dinitrophenol	ND	2200	ug/kg	510
4,6-Dinitro- 2-methylphenol	ND	2200	ug/kg	170
2,4-Dinitrotoluene	ND	420	ug/kg	35
2,6-Dinitrotoluene	ND	420	ug/kg	44
Fluoranthene	ND	86	ug/kg	9.2
Fluorene	ND	86	ug/kg	11
Hexachlorobenzene	ND	86	ug/kg	9.1
Hexachlorobutadiene	ND	86	ug/kg	9.6
Hexachlorocyclopenta- diene	ND	420	ug/kg	46
Hexachloroethane	ND	420	ug/kg	31
Indeno(1,2,3-cd)pyrene	ND	86	ug/kg	8.8
Isophorone	ND	420	ug/kg	32
2-Methylnaphthalene	ND	86	ug/kg	7.7
2-Methylphenol	ND	420	ug/kg	30
4-Methylphenol	ND	420	ug/kg	42
Naphthalene	ND	86	ug/kg	7.4
2-Nitroaniline	ND	2200	ug/kg	190
3-Nitroaniline	ND	2200	ug/kg	180
4-Nitroaniline	ND	2200	ug/kg	170
Nitrobenzene	ND	860	ug/kg	36
2-Nitrophenol	ND	420	ug/kg	47
4-Nitrophenol	ND	2200	ug/kg	150
N-Nitrosodi-n-propyl- amine	ND	86	ug/kg	10
N-Nitrosodiphenylamine	ND	420	ug/kg	40
2,2'-oxybis (1-Chloropropane)	ND	86	ug/kg	9.3
Pentachlorophenol	ND	420	ug/kg	38
Phenanthrene	ND	86	ug/kg	14
Phenol	ND	86	ug/kg	10
Pyrene	ND	86	ug/kg	8.7
1,2,4-Trichloro- benzene	710	420	ug/kg	24
2,4,5-Trichloro- phenol	ND	420	ug/kg	46
2,4,6-Trichloro- phenol	ND	420	ug/kg	64

(Continued on next page)

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020511-SM-002

GC/MS Semivolatiles

Lot-Sample #...: C1B080483-002 Work Order #...: MD6E41AC Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	76	(35 - 124)
2-Fluorobiphenyl	69	(35 - 105)
2-Fluorophenol	67	(39 - 103)
Nitrobenzene-d5	63	(25 - 104)
Phenol-d5	64	(25 - 105)
Terphenyl-d14	54	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

SO-009954-020511-SM-002

GC/MS Semivolatiles

Lot-Sample #: C1B080483-002

Work Order #: MD6E41AC

Matrix: SO

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Aldol Condensate		10000 JA M	2.8401	ug/kg
Unknown Aldol Condensate		1500 JA M	3.5186	ug/kg
Benzene, 1,2,4,5-tetrachloro-	95-94-3	230 NJ M	5.9439	ug/kg
Benzene, pentachloro-	608-93-5	560 NJ M	6.7399	ug/kg
Unknown		190 J M	8.9889	ug/kg
Unknown		990 J M	9.3415	ug/kg
Unknown		2400 J M	9.8811	ug/kg
Unknown		1000 J M	10.169	ug/kg
Unknown Alkane		2300 J M	10.479	ug/kg
Unknown		1000 J M	10.837	ug/kg
Unknown Alkane		180 J M	12.06	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020711-JP-003

GC/MS Semivolatiles

Lot-Sample #....: C1B080483-003 Work Order #....: MD6E61AC Matrix.....: SO
 Date Sampled....: 02/07/11 Date Received...: 02/08/11 MS Run #.....: 1041014
 Prep Date.....: 02/10/11 Analysis Date...: 02/14/11
 Prep Batch #....: 1041026 Analysis Time...: 18:07
 Dilution Factor: 1
 % Moisture.....: 22 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzoic acid	ND	2200	ug/kg	180
Benzyl alcohol	ND	420	ug/kg	52
Acenaphthene	ND	86	ug/kg	8.2
Acenaphthylene	ND	86	ug/kg	9.8
Anthracene	ND	86	ug/kg	8.4
Benzo(a)anthracene	ND	86	ug/kg	11
Benzo(a)pyrene	ND	86	ug/kg	8.6
Benzo(b)fluoranthene	ND	86	ug/kg	13
Benzo(k)fluoranthene	ND	86	ug/kg	17
Benzo(ghi)perylene	ND	86	ug/kg	8.5
bis(2-Chloroethoxy) methane	ND	420	ug/kg	28
bis(2-Chloroethyl)- ether	ND	86	ug/kg	11
bis(2-Ethylhexyl) phthalate	ND	860	ug/kg	69
4-Bromophenyl phenyl ether	ND	420	ug/kg	37
Butyl benzyl phthalate	ND	420	ug/kg	58
4-Chloroaniline	ND	420	ug/kg	34
4-Chloro-3-methylphenol	ND	420	ug/kg	39
2-Chloronaphthalene	ND	86	ug/kg	8.9
2-Chlorophenol	ND	420	ug/kg	35
4-Chlorophenyl phenyl ether	ND	420	ug/kg	48
Chrysene	ND	86	ug/kg	10
Dibenz(a,h)anthracene	ND	86	ug/kg	9.5
Dibenzofuran	ND	420	ug/kg	42
1,2-Dichlorobenzene	640	420	ug/kg	45
1,3-Dichlorobenzene	ND	420	ug/kg	33
1,4-Dichlorobenzene	820	420	ug/kg	31
3,3'-Dichlorobenzidine	ND	420	ug/kg	45
2,4-Dichlorophenol	ND	86	ug/kg	8.6
Diethyl phthalate	ND	420	ug/kg	47
2,4-Dimethylphenol	ND	420	ug/kg	67
Dimethyl phthalate	ND	420	ug/kg	47
Di-n-butyl phthalate	ND	420	ug/kg	54
Di-n-octyl phthalate	ND	420	ug/kg	45

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020711-JP-003

GC/MS Semivolatiles

Lot-Sample #....: C1B080483-003 Work Order #....: MD6E61AC Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-Dinitrophenol	ND	2200	ug/kg	510
4,6-Dinitro- 2-methylphenol	ND	2200	ug/kg	170
2,4-Dinitrotoluene	ND	420	ug/kg	35
2,6-Dinitrotoluene	ND	420	ug/kg	44
Fluoranthene	ND	86	ug/kg	9.2
Fluorene	ND	86	ug/kg	11
Hexachlorobenzene	570	86	ug/kg	9.1
Hexachlorobutadiene	550	86	ug/kg	9.6
Hexachlorocyclopenta- diene	ND	420	ug/kg	46
Hexachloroethane	ND	420	ug/kg	31
Indeno(1,2,3-cd)pyrene	ND	86	ug/kg	8.8
Isophorone	ND	420	ug/kg	32
2-Methylnaphthalene	ND	86	ug/kg	7.7
2-Methylphenol	ND	420	ug/kg	30
4-Methylphenol	ND	420	ug/kg	42
Naphthalene	ND	86	ug/kg	7.4
2-Nitroaniline	ND	2200	ug/kg	190
3-Nitroaniline	ND	2200	ug/kg	180
4-Nitroaniline	ND	2200	ug/kg	170
Nitrobenzene	ND	860	ug/kg	36
2-Nitrophenol	ND	420	ug/kg	47
4-Nitrophenol	ND	2200	ug/kg	150
N-Nitrosodi-n-propyl- amine	ND	86	ug/kg	10
N-Nitrosodiphenylamine	ND	420	ug/kg	40
2,2'-oxybis (1-Chloropropane)	ND	86	ug/kg	9.2
Pentachlorophenol	ND	420	ug/kg	38
Phenanthrene	ND	86	ug/kg	14
Phenol	ND	86	ug/kg	10
Pyrene	ND	86	ug/kg	8.7
1,2,4-Trichloro- benzene	21000 E	420	ug/kg	24
2,4,5-Trichloro- phenol	ND	420	ug/kg	46
2,4,6-Trichloro- phenol	ND	420	ug/kg	64

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020711-JP-003

GC/MS Semivolatiles

Lot-Sample #...: C1B080483-003 Work Order #...: MD6E61AC Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	81	(35 - 124)
2-Fluorobiphenyl	78	(35 - 105)
2-Fluorophenol	77	(39 - 103)
Nitrobenzene-d5	76	(25 - 104)
Phenol-d5	75	(25 - 105)
Terphenyl-d14	58	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

E Estimated result. Result concentration exceeds the calibration range.

Conestoga-Rovers & Associates, Inc.

SO-009954-020711-JP-003

GC/MS Semivolatiles

Lot-Sample #: C1B080483-003

Work Order #: MD6E61AC

Matrix: SO

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Aldol Condensate		7100 JA	M 2.844	ug/kg
Unknown Aldol Condensate		950 JA	M 3.5278	ug/kg
Benzene, 1-chloro-2-methyl-	95-49-8	420 NJ	M 3.8484	ug/kg
Benzene, 1,2,3-trichloro-4-met	7359-72-0	500 NJ	M 5.7876	ug/kg
Benzene, 1,2,4,5-tetrachloro-	95-94-3	4700 NJ	M 5.9478	ug/kg
.alpha Lindane	319-84-6	790 NJ	M 7.4276	ug/kg
.delta Lindane	319-86-8	1200 NJ	M 7.6573	ug/kg
Unknown		410 J	M 7.7161	ug/kg
Lindane	58-89-9	980 NJ	M 7.8283	ug/kg
Unknown		540 J	M 9.3508	ug/kg
Unknown		210 J	M 11.049	ug/kg
Unknown		380 J	M 11.396	ug/kg
Unknown		310 J	M 12.139	ug/kg
Unknown		1200 J	M 12.251	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020711-JP-003

GC/MS Semivolatiles

Lot-Sample #....: C1B080483-003 Work Order #....: MD6E62AC Matrix.....: SO
 Date Sampled....: 02/07/11 Date Received...: 02/08/11 MS Run #.....: 1041014
 Prep Date.....: 02/10/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1041026 Analysis Time...: 12:24
 Dilution Factor: 2
 % Moisture.....: 22 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzoic acid	ND	4400	ug/kg	360
Benzyl alcohol	ND	850	ug/kg	100
Acenaphthene	ND	170	ug/kg	16
Acenaphthylene	ND	170	ug/kg	20
Anthracene	ND	170	ug/kg	17
Benzo(a)anthracene	ND	170	ug/kg	21
Benzo(a)pyrene	ND	170	ug/kg	17
Benzo(b)fluoranthene	ND	170	ug/kg	27
Benzo(k)fluoranthene	ND	170	ug/kg	35
Benzo(ghi)perylene	ND	170	ug/kg	17
bis(2-Chloroethoxy) methane	ND	850	ug/kg	56
bis(2-Chloroethyl)- ether	110 J	170	ug/kg	23
bis(2-Ethylhexyl) phthalate	ND	1700	ug/kg	140
4-Bromophenyl phenyl ether	ND	850	ug/kg	74
Butyl benzyl phthalate	ND	850	ug/kg	120
4-Chloroaniline	ND	850	ug/kg	68
4-Chloro-3-methylphenol	ND	850	ug/kg	79
2-Chloronaphthalene	ND	170	ug/kg	18
2-Chlorophenol	ND	850	ug/kg	70
4-Chlorophenyl phenyl ether	ND	850	ug/kg	95
Chrysene	ND	170	ug/kg	20
Dibenz(a,h)anthracene	ND	170	ug/kg	19
Dibenzofuran	ND	850	ug/kg	84
1,2-Dichlorobenzene	610 J	850	ug/kg	90
1,3-Dichlorobenzene	ND	850	ug/kg	67
1,4-Dichlorobenzene	840 J	850	ug/kg	61
3,3'-Dichlorobenzidine	ND	850	ug/kg	90
2,4-Dichlorophenol	ND	170	ug/kg	17
Diethyl phthalate	ND	850	ug/kg	93
2,4-Dimethylphenol	ND	850	ug/kg	130
Dimethyl phthalate	ND	850	ug/kg	93
Di-n-butyl phthalate	ND	850	ug/kg	110
Di-n-octyl phthalate	ND	850	ug/kg	90

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020711-JP-003

GC/MS Semivolatiles

Lot-Sample #....: C1B080483-003 Work Order #....: MD6E62AC Matrix.....: S0

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-Dinitrophenol	ND	4400	ug/kg	1000
4,6-Dinitro- 2-methylphenol	ND	4400	ug/kg	340
2,4-Dinitrotoluene	ND	850	ug/kg	69
2,6-Dinitrotoluene	ND	850	ug/kg	88
Fluoranthene	ND	170	ug/kg	18
Fluorene	ND	170	ug/kg	23
Hexachlorobenzene	520	170	ug/kg	18
Hexachlorobutadiene	540	170	ug/kg	19
Hexachlorocyclopenta- diene	ND	850	ug/kg	92
Hexachloroethane	ND	850	ug/kg	62
Indeno(1,2,3-cd)pyrene	ND	170	ug/kg	18
Isophorone	ND	850	ug/kg	65
2-Methylnaphthalene	ND	170	ug/kg	15
2-Methylphenol	ND	850	ug/kg	60
4-Methylphenol	ND	850	ug/kg	84
Naphthalene	ND	170	ug/kg	15
2-Nitroaniline	ND	4400	ug/kg	380
3-Nitroaniline	ND	4400	ug/kg	350
4-Nitroaniline	ND	4400	ug/kg	350
Nitrobenzene	ND	1700	ug/kg	71
2-Nitrophenol	ND	850	ug/kg	94
4-Nitrophenol	ND	4400	ug/kg	290
N-Nitrosodi-n-propyl- amine	ND	170	ug/kg	20
N-Nitrosodiphenylamine	ND	850	ug/kg	79
2,2'-oxybis (1-Chloropropane)	ND	170	ug/kg	18
Pentachlorophenol	ND	850	ug/kg	77
Phenanthrene	ND	170	ug/kg	27
Phenol	ND	170	ug/kg	20
Pyrene	ND	170	ug/kg	17
1,2,4-Trichloro- benzene	20000	850	ug/kg	47
2,4,5-Trichloro- phenol	ND	850	ug/kg	91
2,4,6-Trichloro- phenol	ND	850	ug/kg	130

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020711-JP-003

GC/MS Semivolatiles

Lot-Sample #...: C1B080483-003 Work Order #...: MD6E62AC Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	63	(35 - 124)
2-Fluorobiphenyl	73	(35 - 105)
2-Fluorophenol	78	(39 - 103)
Nitrobenzene-d5	71	(25 - 104)
Phenol-d5	79	(25 - 105)
Terphenyl-d14	66	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

S0-009954-020711-JP-003

GC/MS Semivolatiles

Lot-Sample #: C1B080483-003

Work Order #: MD6E62AC

Matrix: S0

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Aldol Condensate		8700 JA M	2.8298	ug/kg
Unknown Aldol Condensate		1100 JA M	3.5136	ug/kg
Benzene, 1-chloro-2-methyl-	95-49-8	450 NJ M	3.8395	ug/kg
Benzene, 1,3-dichloro-2-methyl	118-69-4	570 NJ M	4.9186	ug/kg
Unknown		490 J M	5.1109	ug/kg
Benzene, 1,2,4-trichloro-3-met	2077-46-5	450 NJ M	5.7894	ug/kg
Benzene, 1,2,4,5-tetrachloro-	95-94-3	4400 NJ M	5.9496	ug/kg
Benzene, 1,2,3,5-tetrachloro-	634-90-2	41000 NJ M	6.1687	ug/kg
Benzene, pentachloro-	608-93-5	11000 NJ M	6.751	ug/kg
.alpha.-Lindane	319-84-6	720 NJ M	7.4294	ug/kg
.delta Lindane	319-86-8	1100 NJ M	7.6538	ug/kg
Unknown	102105-74-8	390 J M	7.7179	ug/kg
Lindane	58-89-9	1100 NJ M	7.8301	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: C1B080483
MB Lot-Sample #: C1B100000-026

Work Order #...: MD8TL1AA

Matrix.....: SOLID

Analysis Date...: 02/18/11

Prep Date.....: 02/10/11

Analysis Time...: 11:30

Dilution Factor: 1

Prep Batch #...: 1041026

PARAMETER	RESULT	REPORTING			METHOD
		LIMIT	UNITS		
Benzyl alcohol	ND	330	ug/kg	SW846	8270C
Benzoic acid	ND	1700	ug/kg	SW846	8270C
Acenaphthene	ND	67	ug/kg	SW846	8270C
Acenaphthylene	ND	67	ug/kg	SW846	8270C
Anthracene	ND	67	ug/kg	SW846	8270C
Benzo(a)anthracene	ND	67	ug/kg	SW846	8270C
Benzo(a)pyrene	ND	67	ug/kg	SW846	8270C
Benzo(b)fluoranthene	ND	67	ug/kg	SW846	8270C
Benzo(k)fluoranthene	ND	67	ug/kg	SW846	8270C
Benzo(ghi)perylene	ND	67	ug/kg	SW846	8270C
bis(2-Chloroethoxy) methane	ND	330	ug/kg	SW846	8270C
bis(2-Chloroethyl)- ether	ND	67	ug/kg	SW846	8270C
bis(2-Ethylhexyl) phthalate	ND	670	ug/kg	SW846	8270C
4-Bromophenyl phenyl ether	ND	330	ug/kg	SW846	8270C
Butyl benzyl phthalate	ND	330	ug/kg	SW846	8270C
4-Chloroaniline	ND	330	ug/kg	SW846	8270C
4-Chloro-3-methylphenol	ND	330	ug/kg	SW846	8270C
2-Chloronaphthalene	ND	67	ug/kg	SW846	8270C
2-Chlorophenol	ND	330	ug/kg	SW846	8270C
4-Chlorophenyl phenyl ether	ND	330	ug/kg	SW846	8270C
Chrysene	ND	67	ug/kg	SW846	8270C
Dibenz(a,h)anthracene	ND	67	ug/kg	SW846	8270C
Dibenzofuran	ND	330	ug/kg	SW846	8270C
1,2-Dichlorobenzene	ND	330	ug/kg	SW846	8270C
1,3-Dichlorobenzene	ND	330	ug/kg	SW846	8270C
1,4-Dichlorobenzene	ND	330	ug/kg	SW846	8270C
3,3'-Dichlorobenzidine	ND	330	ug/kg	SW846	8270C
2,4-Dichlorophenol	ND	67	ug/kg	SW846	8270C
Diethyl phthalate	ND	330	ug/kg	SW846	8270C
2,4-Dimethylphenol	ND	330	ug/kg	SW846	8270C
Dimethyl phthalate	ND	330	ug/kg	SW846	8270C
Di-n-butyl phthalate	ND	330	ug/kg	SW846	8270C
Di-n-octyl phthalate	ND	330	ug/kg	SW846	8270C
2,4-Dinitrophenol	ND	1700	ug/kg	SW846	8270C
4,6-Dinitro- 2-methylphenol	ND	1700	ug/kg	SW846	8270C

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: C1B080483

Work Order #...: MD8TL1AA

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING			METHOD
		LIMIT	UNITS		
2,4-Dinitrotoluene	ND	330	ug/kg	SW846	8270C
2,6-Dinitrotoluene	ND	330	ug/kg	SW846	8270C
Fluoranthene	ND	67	ug/kg	SW846	8270C
Fluorene	ND	67	ug/kg	SW846	8270C
Hexachlorobenzene	ND	67	ug/kg	SW846	8270C
Hexachlorobutadiene	ND	67	ug/kg	SW846	8270C
Hexachlorocyclopenta- diene	ND	330	ug/kg	SW846	8270C
Hexachloroethane	ND	330	ug/kg	SW846	8270C
Indeno(1,2,3-cd)pyrene	ND	67	ug/kg	SW846	8270C
Isophorone	ND	330	ug/kg	SW846	8270C
2-Methylnaphthalene	ND	67	ug/kg	SW846	8270C
2-Methylphenol	ND	330	ug/kg	SW846	8270C
4-Methylphenol	ND	330	ug/kg	SW846	8270C
Naphthalene	ND	67	ug/kg	SW846	8270C
2-Nitroaniline	ND	1700	ug/kg	SW846	8270C
3-Nitroaniline	ND	1700	ug/kg	SW846	8270C
4-Nitroaniline	ND	1700	ug/kg	SW846	8270C
Nitrobenzene	ND	670	ug/kg	SW846	8270C
2-Nitrophenol	ND	330	ug/kg	SW846	8270C
4-Nitrophenol	ND	1700	ug/kg	SW846	8270C
N-Nitrosodi-n-propyl- amine	ND	67	ug/kg	SW846	8270C
N-Nitrosodiphenylamine	ND	330	ug/kg	SW846	8270C
2,2'-oxybis (1-Chloropropane)	ND	67	ug/kg	SW846	8270C
Pentachlorophenol	ND	330	ug/kg	SW846	8270C
Phenanthrene	ND	67	ug/kg	SW846	8270C
Phenol	ND	67	ug/kg	SW846	8270C
Pyrene	ND	67	ug/kg	SW846	8270C
1,2,4-Trichloro- benzene	ND	330	ug/kg	SW846	8270C
2,4,5-Trichloro- phenol	ND	330	ug/kg	SW846	8270C
2,4,6-Trichloro- phenol	ND	330	ug/kg	SW846	8270C
SURROGATE	PERCENT		RECOVERY		
	RECOVERY		LIMITS		
2,4,6-Tribromophenol	86		(35 - 124)		
2-Fluorobiphenyl	82		(35 - 105)		
2-Fluorophenol	76		(39 - 103)		
Nitrobenzene-d5	79		(25 - 104)		
Phenol-d5	83		(25 - 105)		
Terphenyl-d14	114		(25 - 127)		

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: C1B080483

Work Order #...: MD8TL1AA

Matrix.....: SOLID

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Conestoga-Rovers & Associates, Inc.

Method Blank Report

GC/MS Semivolatiles

Lot-Sample #: C1B100000-026 B Work Order #: MD8TL1AA Matrix: SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Hexachlorophene		ND	M	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: C1B080483 Work Order #...: MD8TL1AC Matrix.....: SOLID
 LCS Lot-Sample#: C1B100000-026
 Prep Date.....: 02/10/11 Analysis Date...: 02/18/11
 Prep Batch #...: 1041026 Analysis Time...: 11:50
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
Acenaphthene	86	(47 - 104)	SW846 8270C
4-Bromophenyl phenyl ether	86	(47 - 110)	SW846 8270C
Butyl benzyl phthalate	83	(41 - 118)	SW846 8270C
4-Chloro-3-methylphenol	94	(47 - 109)	SW846 8270C
2-Chlorophenol	84	(40 - 101)	SW846 8270C
1,4-Dichlorobenzene	80	(35 - 99)	SW846 8270C
2,4-Dinitrotoluene	99	(45 - 124)	SW846 8270C
Hexachloroethane	81	(37 - 97)	SW846 8270C
4-Methylphenol	95	(42 - 105)	SW846 8270C
Naphthalene	82	(43 - 100)	SW846 8270C
4-Nitrophenol	101	(36 - 127)	SW846 8270C
N-Nitrosodi-n-propyl- amine	85	(42 - 107)	SW846 8270C
Pentachlorophenol	90	(17 - 122)	SW846 8270C
Phenol	82	(41 - 102)	SW846 8270C
Pyrene	80	(41 - 115)	SW846 8270C
1,2,4-Trichloro- benzene	81	(43 - 100)	SW846 8270C
1-Methylnaphthalene	90	(10 - 140)	SW846 8270C
<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	
2,4,6-Tribromophenol	84	(35 - 124)	
2-Fluorobiphenyl	81	(35 - 105)	
2-Fluorophenol	85	(39 - 103)	
Nitrobenzene-d5	80	(25 - 104)	
Phenol-d5	88	(25 - 105)	
Terphenyl-d14	86	(25 - 127)	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: C1B080483 Work Order #...: MD4KD1AJ-MS Matrix.....: SOLID
 MS Lot-Sample #: C1B050440-001 MD4KD1AK-MSD
 Date Sampled...: 02/03/11 Date Received...: 02/05/11 MS Run #.....: 1041014
 Prep Date.....: 02/10/11 Analysis Date...: 02/18/11
 Prep Batch #...: 1041026 Analysis Time...: 12:30
 Dilution Factor: 1 % Moisture.....: 38

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	20 a	(47 - 104)			SW846 8270C
	19 a	(47 - 104)	5.1	(0-40)	SW846 8270C
4-Bromophenyl phenyl ether	37 a	(47 - 110)			SW846 8270C
	38 a	(47 - 110)	2.2	(0-46)	SW846 8270C
Butyl benzyl phthalate	48	(41 - 118)			SW846 8270C
	49	(41 - 118)	1.0	(0-41)	SW846 8270C
4-Chloro-3-methylphenol	29 a	(47 - 109)			SW846 8270C
	28 a	(47 - 109)	6.2	(0-36)	SW846 8270C
2-Chlorophenol	28 a	(40 - 101)			SW846 8270C
	25 a	(40 - 101)	12	(0-42)	SW846 8270C
1,4-Dichlorobenzene	35	(35 - 99)			SW846 8270C
	30 a	(35 - 99)	17	(0-49)	SW846 8270C
2,4-Dinitrotoluene	20 a	(45 - 124)			SW846 8270C
	19 a	(45 - 124)	1.9	(0-41)	SW846 8270C
Hexachloroethane	52	(37 - 97)			SW846 8270C
	43	(37 - 97)	20	(0-48)	SW846 8270C
4-Methylphenol	41 a	(42 - 105)			SW846 8270C
	39 a	(42 - 105)	6.3	(0-43)	SW846 8270C
Naphthalene	24 a	(43 - 100)			SW846 8270C
	18 a	(43 - 100)	8.2	(0-32)	SW846 8270C
4-Nitrophenol	6.7 a	(36 - 127)			SW846 8270C
	7.2 a	(36 - 127)	6.0	(0-43)	SW846 8270C
N-Nitrosodi-n-propyl- amine	57	(42 - 107)			SW846 8270C
	51	(42 - 107)	14	(0-43)	SW846 8270C
Pentachlorophenol	4.5 a	(17 - 122)			SW846 8270C
	5.3 a	(17 - 122)	16	(0-52)	SW846 8270C
Phenol	48	(41 - 102)			SW846 8270C
	41	(41 - 102)	9.6	(0-39)	SW846 8270C
Pyrene	2.3 a	(41 - 115)			SW846 8270C
	7.3 a	(41 - 115)	27	(0-43)	SW846 8270C
1,2,4-Trichloro- benzene	29 a	(43 - 100)			SW846 8270C
	26 a	(43 - 100)	10	(0-36)	SW846 8270C

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: C1B080483 Work Order #...: MD4KD1AJ-MS Matrix.....: SOLID
MS Lot-Sample #: C1B050440-001 MD4KD1AK-MSD

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	18 *	(35 - 124)
	14 *	(35 - 124)
2-Fluorobiphenyl	25 *	(35 - 105)
	19 *	(35 - 105)
2-Fluorophenol	34 *	(39 - 103)
	26 *	(39 - 103)
Nitrobenzene-d5	31	(25 - 104)
	23 *	(25 - 104)
Phenol-d5	40	(25 - 105)
	33	(25 - 105)
Terphenyl-d14	5.6 *	(25 - 127)
	4.4 *	(25 - 127)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

* Surrogate recovery is outside stated control limits.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020411-SM-001

GC Semivolatiles

Lot-Sample #... : C1B080483-001	Work Order #... : MD6E11AD	Matrix..... : S0
Date Sampled... : 02/04/11	Date Received... : 02/08/11	MS Run #..... : 1041016
Prep Date..... : 02/10/11	Analysis Date... : 02/12/11	
Prep Batch #... : 1041029	Analysis Time... : 04:59	
Dilution Factor : 9.87		
% Moisture..... : 9.5	Method..... : SW846 8081A	

		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
alpha-BHC	410	19	ug/kg	3.0
beta-BHC	6.9 J, PG	19	ug/kg	4.7
delta-BHC	590	19	ug/kg	2.8
gamma-BHC (Lindane)	740	19	ug/kg	3.2
Heptachlor	ND	19	ug/kg	4.0
Aldrin	ND	19	ug/kg	3.3
Heptachlor epoxide	ND	19	ug/kg	3.5
Endosulfan I	ND	19	ug/kg	3.4
Dieldrin	ND	19	ug/kg	3.0
4,4'-DDE	ND	19	ug/kg	2.7
Endrin	ND	19	ug/kg	3.5
Endrin ketone	ND	19	ug/kg	2.8
Endosulfan II	ND	19	ug/kg	3.2
4,4'-DDD	ND	19	ug/kg	2.4
Endosulfan sulfate	ND	19	ug/kg	1.9
4,4'-DDT	8.0 J	19	ug/kg	2.7
Methoxychlor	ND	36	ug/kg	3.8
alpha-Chlordane	ND	19	ug/kg	3.6
gamma-Chlordane	ND	19	ug/kg	3.6
Toxaphene	ND	730	ug/kg	120
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Tetrachloro-m-xylene	NC, DIL	(45 - 130)		
Decachlorobiphenyl	NC, DIL	(45 - 130)		

NOTE(S):

NC The recovery and/or RPD were not calculated.
DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.
J Estimated result. Result is less than RL.
PG The percent difference between the original and confirmation analyses is greater than 40%.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020511-SM-002

GC Semivolatiles

Lot-Sample #... : C1B080483-002	Work Order #... : MD6E41AD	Matrix..... : S0
Date Sampled... : 02/05/11	Date Received... : 02/08/11	MS Run #..... : 1041016
Prep Date..... : 02/10/11	Analysis Date... : 02/12/11	
Prep Batch #... : 1041029	Analysis Time... : 05:18	
Dilution Factor : 9.93		
% Moisture..... : 23	Method..... : SW846 8081A	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
alpha-BHC	130	22	ug/kg	3.5
beta-BHC	ND	22	ug/kg	5.6
delta-BHC	200	22	ug/kg	3.3
gamma-BHC (Lindane)	270	22	ug/kg	3.8
Heptachlor	ND	22	ug/kg	4.8
Aldrin	ND	22	ug/kg	3.8
Heptachlor epoxide	ND	22	ug/kg	4.2
Endosulfan I	ND	22	ug/kg	4.0
Dieldrin	ND	22	ug/kg	3.6
4,4'-DDE	ND	22	ug/kg	3.3
Endrin	ND	22	ug/kg	4.2
Endrin ketone	ND	22	ug/kg	3.3
Endosulfan II	ND	22	ug/kg	3.8
4,4'-DDD	ND	22	ug/kg	2.8
Endosulfan sulfate	ND	22	ug/kg	2.2
4,4'-DDT	ND	22	ug/kg	3.2
Methoxychlor	ND	43	ug/kg	4.5
alpha-Chlordane	ND	22	ug/kg	4.3
gamma-Chlordane	ND	22	ug/kg	4.2
Toxaphene	ND	860	ug/kg	140
		RECOVERY		
<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>LIMITS</u>		
Tetrachloro-m-xylene	NC, DIL	(45 - 130)		
Decachlorobiphenyl	NC, DIL	(45 - 130)		

NOTE(S):

NC The recovery and/or RPD were not calculated.
DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020711-JP-003

GC Semivolatiles

Lot-Sample #... : C1B080483-003	Work Order #... : MD6E61AD	Matrix..... : S0
Date Sampled... : 02/07/11	Date Received... : 02/08/11	MS Run #..... : 1041016
Prep Date..... : 02/10/11	Analysis Date... : 02/14/11	
Prep Batch #... : 1041029	Analysis Time... : 10:03	
Dilution Factor : 100		
% Moisture..... : 22	Method..... : SW846 8081A	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
alpha-BHC	5500	220	ug/kg	35
beta-BHC	180 J	220	ug/kg	55
delta-BHC	8800	220	ug/kg	33
gamma-BHC (Lindane)	11000	220	ug/kg	38
Heptachlor	ND	220	ug/kg	48
Aldrin	ND	220	ug/kg	38
Heptachlor epoxide	ND	220	ug/kg	42
Endosulfan I	ND	220	ug/kg	40
Dieldrin	ND	220	ug/kg	36
4,4'-DDE	ND	220	ug/kg	32
Endrin	ND	220	ug/kg	41
Endrin ketone	ND	220	ug/kg	33
Endosulfan II	ND	220	ug/kg	38
4,4'-DDD	71 J	220	ug/kg	28
Endosulfan sulfate	ND	220	ug/kg	22
4,4'-DDT	110 J	220	ug/kg	32
Methoxychlor	ND	420	ug/kg	45
alpha-Chlordane	ND	220	ug/kg	42
gamma-Chlordane	ND	220	ug/kg	42
Toxaphene	ND	8600	ug/kg	1400
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	NC, DIL	(45 - 130)		
Decachlorobiphenyl	NC, DIL	(45 - 130)		

NOTE(S):

NC The recovery and/or RPD were not calculated.
DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.
J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: C1B080483
MB Lot-Sample #: C1B100000-029

Work Order #...: MD8TP1AA

Matrix.....: SOLID

Analysis Date...: 02/12/11

Prep Date.....: 02/10/11

Analysis Time...: 07:13

Dilution Factor: 1

Prep Batch #...: 1041029

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
alpha-BHC	ND	1.7	ug/kg	SW846 8081A
beta-BHC	ND	1.7	ug/kg	SW846 8081A
delta-BHC	ND	1.7	ug/kg	SW846 8081A
gamma-BHC (Lindane)	ND	1.7	ug/kg	SW846 8081A
Heptachlor	ND	1.7	ug/kg	SW846 8081A
Aldrin	ND	1.7	ug/kg	SW846 8081A
Heptachlor epoxide	ND	1.7	ug/kg	SW846 8081A
Endosulfan I	ND	1.7	ug/kg	SW846 8081A
Dieldrin	ND	1.7	ug/kg	SW846 8081A
4,4'-DDE	ND	1.7	ug/kg	SW846 8081A
Endrin	ND	1.7	ug/kg	SW846 8081A
Endrin ketone	ND	1.7	ug/kg	SW846 8081A
Endosulfan II	ND	1.7	ug/kg	SW846 8081A
4,4'-DDD	ND	1.7	ug/kg	SW846 8081A
Endosulfan sulfate	ND	1.7	ug/kg	SW846 8081A
4,4'-DDT	ND	1.7	ug/kg	SW846 8081A
Methoxychlor	ND	3.3	ug/kg	SW846 8081A
alpha-Chlordane	ND	1.7	ug/kg	SW846 8081A
gamma-Chlordane	ND	1.7	ug/kg	SW846 8081A
Toxaphene	ND	67	ug/kg	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	100	(45 - 130)
Decachlorobiphenyl	94	(45 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: C1B080483 Work Order #...: MD8TP1AC Matrix.....: SOLID
 LCS Lot-Sample#: C1B100000-029
 Prep Date.....: 02/10/11 Analysis Date...: 02/12/11
 Prep Batch #...: 1041029 Analysis Time...: 07:32
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
gamma-BHC (Lindane)	98	(66 - 124)	SW846 8081A
Heptachlor	101	(70 - 128)	SW846 8081A
Aldrin	102	(70 - 123)	SW846 8081A
Dieldrin	101	(70 - 123)	SW846 8081A
Endrin	107	(70 - 127)	SW846 8081A
4,4'-DDT	96	(61 - 126)	SW846 8081A

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Tetrachloro-m-xylene	103	(45 - 130)
Decachlorobiphenyl	95	(45 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: C1B080483 **Work Order #...**: MD58E1AE-MS **Matrix.....**: SOLID
MS Lot-Sample #: C1B080444-021 MD58E1AF-MSD
Date Sampled...: 02/01/11 **Date Received...**: 02/08/11 **MS Run #.....**: 1041016
Prep Date.....: 02/10/11 **Analysis Date...**: 02/12/11
Prep Batch #...: 1041029 **Analysis Time...**: 04:01
Dilution Factor: 1 **% Moisture.....**: 23

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
gamma-BHC (Lindane)	51 a	(66 - 124)			SW846 8081A
	16 a, p	(66 - 124)	107	(0-20)	SW846 8081A
Heptachlor	80	(70 - 128)			SW846 8081A
	88	(70 - 128)	10	(0-20)	SW846 8081A
Aldrin	80	(70 - 123)			SW846 8081A
	88	(70 - 123)	9.4	(0-20)	SW846 8081A
Dieldrin	NC, I	(70 - 123)			SW846 8081A
	NC, I	(70 - 123)		(0-20)	SW846 8081A
Endrin	570 a	(70 - 127)			SW846 8081A
	187 a, p	(70 - 127)	101	(0-20)	SW846 8081A
4,4'-DDT	NC, I	(61 - 126)			SW846 8081A
	NC, I	(61 - 126)		(0-37)	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	83	(45 - 130)
	87	(45 - 130)
Decachlorobiphenyl	84	(45 - 130)
	82	(45 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

NC The recovery and/or RPD were not calculated.

I Matrix interference.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020411-SM-001

General Chemistry

Lot-Sample #...: C1B080483-001 Work Order #...: MD6E1 Matrix.....: S0
Date Sampled...: 02/04/11 Date Received...: 02/08/11
% Moisture.....: 9.5

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	90.5	1.0	%	SM20 2540G	02/11-02/12/11	1042087
				Dilution Factor: 1	Analysis Time..: 08:49	MS Run #.....: 1042046
				MDL.....: 0.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020511-SM-002

General Chemistry

Lot-Sample #...: C1B080483-002 Work Order #...: MD6E4 Matrix.....: S0
Date Sampled...: 02/05/11 Date Received...: 02/08/11
% Moisture.....: 23

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	76.9	1.0	%	SM20 2540G	02/11-02/12/11	1042087
				Dilution Factor: 1	Analysis Time..: 08:49	MS Run #.....: 1042046
				MDL.....: 0.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020711-JP-003

General Chemistry

Lot-Sample #...: C1B080483-003 Work Order #...: MD6E6 Matrix.....: S0
Date Sampled...: 02/07/11 Date Received...: 02/08/11
% Moisture.....: 22

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	78.0	1.0	%	SM20 2540G	02/11-02/12/11	1042087
				Dilution Factor: 1	Analysis Time..: 08:49	MS Run #.....: 1042046
				MDL.....: 0.0		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: C1B080483

Work Order #...: MD459-SMP
MD459-DUP

Matrix.....: SOLID

Date Sampled...: 02/04/11

Date Received...: 02/07/11

% Moisture.....: 39

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	61.1	61.3	%	0.33	(0-20)	SD Lot-Sample #: C1B070420-001 SM20 2540G	02/11-02/12/11	1042087
				Dilution Factor: 1	Analysis Time...: 08:49		MS Run Number...: 1042046	

ANALYTICAL REPORT

PROJECT NO. 9954

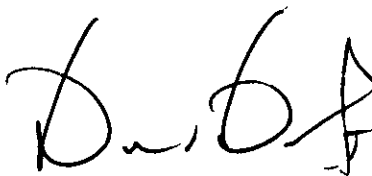
GSH, Love Canal Annual

Lot #: C1B110571

Susan Scrocchi

Conestoga-Rovers & Associates,

TESTAMERICA LABORATORIES, INC.



Dave Dunlap
Project Manager

February 17, 2011



NELAC REPORTING:

At the time of analysis the laboratory was in compliance with the current NELAC standards and held accreditation for all analyses performed unless noted by a qualifier. The labs accreditation numbers are listed below. The format and contents of the report meets all applicable NELAC standards except as noted in the narrative and shall not be reproduced except in full, without the written approval of the laboratory. The table below presents a summary of the certifications held by TestAmerica Pittsburgh. Our primary accreditation authority for the Non-potable water and Solid & Hazardous waste programs is Pennsylvania DEP. A more detailed parameter list is available upon request. Please ask your project manager for this information when required.

Certifying State/Program	Certificate #	Program Types	TestAmerica
DoD ELAP	ADE-1442	WW	X
US Dept of Agriculture	(#P330-10-00139)	HW	X
Arkansas	(#88-0690)	Foreign Soil Import Permit	X
		WW	X
		HW	X
California – NELAC	04224CA	WW	X
		HW	X
Connecticut	(#PH-0688)	WW	X
		HW	X
Florida – NELAC	(#E871008)	WW	X
		HW	X
Illinois – NELAC	(#002319)	WW	X
		HW	X
Kansas – NELAC	(#E-10350)	WW	X
		HW	X
Louisiana – NELAC	(#04041)	WW	X
		HW	X
New Hampshire – NELAC	(#203010)	WW	X
		--	--
New Jersey – NELAC	(PA-005)	WW	X
		HW	X
New York – NELAC	(#11182)	WW	X
		HW	X
North Carolina	(#434)	WW	X
		HW	X
Pennsylvania - NELAC	(#02-00416)	WW	X
		HW	X
South Carolina	(#89014002)	WW	X
		HW	X
Utah – NELAC	(STLP)	WW	X
		HW	X
West Virginia	(#142)	WW	X
		HW	X
Wisconsin	998027800	WW	X
		HW	X

The codes utilized for program types are described below:

HW Hazardous Waste certification

WW Non-potable Water and/or Wastewater certification

X Laboratory has some form of certification under the specific program. Many states certify laboratories for specific parameters or tests within a category. The information in the table indicates the lab is certified in a general category of testing. Please contact the laboratory if parameter specific certification information is required.

Updated: 05/19/10 N:\Reporting\NELAC NARRATIVE Ptsburgh_Updated 051910.doc

CASE NARRATIVE
CRA
GSH, Love Canal

LOT # C1B110571

Sample Receiving:

TestAmerica Pittsburgh received samples on February 11, 2011. The cooler was received within the proper temperature range.

If project specific QC was not required for samples contained in this report and batch QC was completed on these samples, anomalous results will be discussed below.

GC/MS Volatiles:

Due to the concentration of target compounds detected and/or the sample matrix, all samples except SO-009954-020811-SM-009 were analyzed at a dilution.

The matrix spike of sample SO-009954-020811-SM-009 recovered above the control limits for chlorobenzene and trichloroethene.

GC/MS Semivolatiles:

Due to the concentration of target compounds detected and/or the sample matrix, all samples were analyzed at dilutions.

The matrix spike duplicate of sample SO-009954-020811-SM-006 recovered above the control limits for 4-nitrophenol. The matrix spikes and matrix spike duplicate recovered above the control limits for 1,2,4-trichlorobenzene.

Pesticides:

Due to the concentration of target compounds detected, all samples except SO-009954-020811-SM-009 were analyzed at a dilution. These samples had the surrogates diluted out.

The matrix spikes of sample SO-009954-020811-SM-006 were diluted out.

General Chemistry:

There were no problems associated with the analysis.

CONESTOGA-ROVERS & ASSOCIATES

SHIPPED TO (Laboratory Name):

REFERENCE NUMBER:

TA Pittsburgh

SAMPLER'S SIGNATURE: [Signature] PRINTED NAME: Shawn McEvoy

PRINTED NAME:

Shawn McEvoy

SEQ. No.	DATE	TIME	SAMPLE No.

SAMPLE NO.

SAMPLE

No. of Containers	Weight (kg)	Volume (m ³)	Weight (kg)	Volume (m ³)
1	100	0.1	100	0.1
2	200	0.2	200	0.2
3	300	0.3	300	0.3
4	400	0.4	400	0.4
5	500	0.5	500	0.5
6	600	0.6	600	0.6
7	700	0.7	700	0.7
8	800	0.8	800	0.8
9	900	0.9	900	0.9
10	1000	1.0	1000	1.0

PARAMETERS	VOC	SVOC	Pesticides

REMARKS

TOTAL NUMBER OF CONTAINERS

HEALTH/CHEMICAL HAZARDS

RELINQUISHED BY:

DATE: 2/9/11
TIME: 13:00

RECEIVED BY: ①

DATE: 11/11
TIME: 11045

RELINQUISHED BY:

DATE: _____
TIME: _____

RECEIVED BY: 2

DATE: _____
TIME: _____

RELINQUISHED BY:

DATE: _____
TIME: _____

RECEIVED BY: ③

DATE: _____
TIME: _____

METHOD OF SHIPMENT:

WAY BILL No.

White	—Fully Executed Copy
Yellow	—Receiving Laboratory Copy
Pink	—Shipper Copy
Goldenrod	—Sampler Copy

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY:

Nº CRA 17221

Goldenrod

DATE: _____ TIME: _____

METHODS SUMMARY

C1B110571

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Organochlorine Pesticides	SW846 8081A	SW846 3541
Semivolatile Organic Compounds by GC/MS	SW846 8270C	SW846 3541
Total Residue as Percent Solids	SM20 2540G	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

- SM20 "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", 20TH EDITION."
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

C1B110571

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MEC68	001	SO-009954-020811-SM-004	02/08/11	12:10
MEC7G	002	SO-009954-020811-SM-005	02/08/11	12:15
MEC7M	003	SO-009954-020811-SM-006	02/08/11	14:25
MEC7Q	004	SO-009954-020811-SM-007	02/08/11	14:40
MEC7X	005	SO-009954-020911-SM-008	02/09/11	14:35
MEC71	006	SO-009954-020911-SM-009	02/09/11	14:40

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-004

GC/MS Volatiles

Lot-Sample #....: C1B110571-001 Work Order #....: MEC681AA Matrix.....: SO
 Date Sampled....: 02/08/11 Date Received...: 02/11/11 MS Run #.....: 1046150
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1046272 Analysis Time...: 17:03
 Dilution Factor: 5
 % Moisture.....: 25 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	69 J	130	ug/kg	33
Benzene	7.6 J	33	ug/kg	4.5
Bromodichloromethane	ND	33	ug/kg	3.7
Bromoform	ND	33	ug/kg	2.9
Bromomethane	ND	33	ug/kg	4.9
2-Butanone	ND	33	ug/kg	5.9
Carbon disulfide	ND	33	ug/kg	3.4
Carbon tetrachloride	ND	33	ug/kg	3.0
Chlorobenzene	310	33	ug/kg	5.0
Dibromochloromethane	ND	33	ug/kg	4.7
Chloroethane	ND	33	ug/kg	10
Chloroform	ND	33	ug/kg	3.9
Chloromethane	ND	33	ug/kg	5.7
1,1-Dichloroethane	ND	33	ug/kg	3.8
1,2-Dichloroethane	ND	33	ug/kg	4.1
1,1-Dichloroethene	ND	33	ug/kg	5.6
1,2-Dichloropropane	ND	33	ug/kg	3.6
cis-1,3-Dichloropropene	ND	33	ug/kg	4.5
trans-1,3-Dichloropropene	ND	33	ug/kg	4.0
Ethylbenzene	ND	33	ug/kg	4.3
2-Hexanone	ND	33	ug/kg	4.6
Methylene chloride	ND	33	ug/kg	4.5
4-Methyl-2-pentanone	ND	33	ug/kg	4.3
Styrene	ND	33	ug/kg	4.7
1,1,2,2-Tetrachloroethane	ND	33	ug/kg	4.8
Tetrachloroethene	ND	33	ug/kg	4.5
Toluene	22 J	33	ug/kg	4.8
1,1,1-Trichloroethane	ND	33	ug/kg	3.2
1,1,2-Trichloroethane	ND	33	ug/kg	5.5
Trichloroethene	ND	33	ug/kg	4.4
Vinyl chloride	ND	33	ug/kg	3.1
Xylenes (total)	ND	100	ug/kg	15
cis-1,2-Dichloroethene	18 J	33	ug/kg	4.7
trans-1,2-Dichloroethene	ND	33	ug/kg	4.0
Vinyl acetate	ND	33	ug/kg	2.3

(Continued on next page)

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020811-SM-004

GC/MS Volatiles

Lot-Sample #...: C1B110571-001 Work Order #...: MEC681AA Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	74	(52 - 124)
Toluene-d8	96	(72 - 127)
4-Bromofluorobenzene	92	(63 - 120)
Dibromofluoromethane	87	(68 - 121)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

S0-009954-020811-SM-004

GC/MS Volatiles

Lot-Sample #: C1B110571-001

Work Order #: MEC681AA

Matrix: S0

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Chlorotoluene		130 J	M 12.002	ug/kg
Unknown chlorotoluene		76 J	M 12.105	ug/kg
Benzene, 1,3-dichloro-	541-73-1	110 NJ	M 12.744	ug/kg
Benzene, 1,4-dichloro-	106-46-7	120 NJ	M 13.212	ug/kg
Unknown Substituted Benzene		95 J	M 14.131	ug/kg
Benzene, 1,2,4-trichloro-	120-82-1	910 NJ	M 14.831	ug/kg
Benzene, 1,2,3-trichloro-	87-61-6	140 NJ	M 15.329	ug/kg
Benzene, 1,2,4,5-tetrachloro-	95-94-3	120 NJ	M 16.668	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020811-SM-005

GC/MS Volatiles

Lot-Sample #....: C1B110571-002 Work Order #....: MEC7G1AA Matrix.....: S0
 Date Sampled....: 02/08/11 Date Received...: 02/11/11 MS Run #.....: 1046150
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1046272 Analysis Time...: 17:28
 Dilution Factor: 5
 % Moisture.....: 25 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acetone	ND	130	ug/kg	33
Benzene	20 J	33	ug/kg	4.5
Bromodichloromethane	ND	33	ug/kg	3.8
Bromoform	ND	33	ug/kg	3.0
Bromomethane	ND	33	ug/kg	4.9
2-Butanone	ND	33	ug/kg	5.9
Carbon disulfide	ND	33	ug/kg	3.4
Carbon tetrachloride	ND	33	ug/kg	3.0
Chlorobenzene	1200	33	ug/kg	5.1
Dibromochloromethane	ND	33	ug/kg	4.8
Chloroethane	ND	33	ug/kg	10
Chloroform	ND	33	ug/kg	3.9
Chloromethane	ND	33	ug/kg	5.7
1,1-Dichloroethane	ND	33	ug/kg	3.9
1,2-Dichloroethane	ND	33	ug/kg	4.1
1,1-Dichloroethene	ND	33	ug/kg	5.7
1,2-Dichloropropane	ND	33	ug/kg	3.6
cis-1,3-Dichloropropene	ND	33	ug/kg	4.5
trans-1,3-Dichloropropene	ND	33	ug/kg	4.0
Ethylbenzene	ND	33	ug/kg	4.3
2-Hexanone	ND	33	ug/kg	4.6
Methylene chloride	ND	33	ug/kg	4.5
4-Methyl-2-pentanone	ND	33	ug/kg	4.4
Styrene	ND	33	ug/kg	4.7
1,1,2,2-Tetrachloroethane	ND	33	ug/kg	4.8
Tetrachloroethene	12 J	33	ug/kg	4.6
Toluene	49	33	ug/kg	4.9
1,1,1-Trichloroethane	ND	33	ug/kg	3.3
1,1,2-Trichloroethane	ND	33	ug/kg	5.6
Trichloroethene	ND	33	ug/kg	4.4
Vinyl chloride	ND	33	ug/kg	3.1
Xylenes (total)	17 J	100	ug/kg	15
cis-1,2-Dichloroethene	15 J	33	ug/kg	4.7
trans-1,2-Dichloroethene	ND	33	ug/kg	4.0
Vinyl acetate	ND	33	ug/kg	2.4

(Continued on next page)

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020811-SM-005

GC/MS Volatiles

Lot-Sample #...: C1B110571-002 Work Order #...: MEC7G1AA Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	74	(52 - 124)
Toluene-d8	100	(72 - 127)
4-Bromofluorobenzene	98	(63 - 120)
Dibromofluoromethane	90	(68 - 121)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

SO-009954-020811-SM-005

GC/MS Volatiles

Lot-Sample #: C1B110571-002

Work Order #: MEC7G1AA

Matrix: SO

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown		120 J	M 1.9824	ug/kg
Unknown		750 J	M 9.9639	ug/kg
Unknown Chlorotoluene		130 J	M 12.001	ug/kg
Unknown Chlorotoluene		86 J	M 12.105	ug/kg
Benzene, 1,4-dichloro-	106-46-7	58 NJ	M 12.744	ug/kg
Benzene, 1,2-dichloro-	95-50-1	150 J	M 13.212	ug/kg
Unknown Substituted Benzene		90 J	M 14.131	ug/kg
Benzene, 1,2,4-trichloro-	120-82-1	640 NJ	M 14.842	ug/kg
Benzene, 1,2,3-trichloro-	87-61-6	170 NJ	M 15.329	ug/kg
Unknown Substituted Benzene		110 J	M 16.667	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-006

GC/MS Volatiles

Lot-Sample #....: C1B110571-003 Work Order #....: MEC7M1AA Matrix.....: S0
 Date Sampled....: 02/08/11 Date Received...: 02/11/11 MS Run #.....: 1046150
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1046272 Analysis Time...: 17:53
 Dilution Factor: 5
 % Moisture.....: 12 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acetone	ND	110	ug/kg	28
Benzene	ND	28	ug/kg	3.8
Bromodichloromethane	ND	28	ug/kg	3.2
Bromoform	ND	28	ug/kg	2.5
Bromomethane	ND	28	ug/kg	4.2
2-Butanone	ND	28	ug/kg	5.0
Carbon disulfide	ND	28	ug/kg	2.9
Carbon tetrachloride	ND	28	ug/kg	2.5
Chlorobenzene	19 J	28	ug/kg	4.3
Dibromochloromethane	ND	28	ug/kg	4.0
Chloroethane	ND	28	ug/kg	8.8
Chloroform	ND	28	ug/kg	3.3
Chloromethane	ND	28	ug/kg	4.8
1,1-Dichloroethane	ND	28	ug/kg	3.3
1,2-Dichloroethane	ND	28	ug/kg	3.5
1,1-Dichloroethene	ND	28	ug/kg	4.8
1,2-Dichloropropane	ND	28	ug/kg	3.1
cis-1,3-Dichloropropene	ND	28	ug/kg	3.8
trans-1,3-Dichloropropene	ND	28	ug/kg	3.4
Ethylbenzene	ND	28	ug/kg	3.6
2-Hexanone	ND	28	ug/kg	3.9
Methylene chloride	4.2 J	28	ug/kg	3.8
4-Methyl-2-pentanone	ND	28	ug/kg	3.7
Styrene	ND	28	ug/kg	4.0
1,1,2,2-Tetrachloroethane	ND	28	ug/kg	4.1
Tetrachloroethene	ND	28	ug/kg	3.9
Toluene	ND	28	ug/kg	4.1
1,1,1-Trichloroethane	ND	28	ug/kg	2.8
1,1,2-Trichloroethane	ND	28	ug/kg	4.7
Trichloroethene	ND	28	ug/kg	3.7
Vinyl chloride	ND	28	ug/kg	2.7
Xylenes (total)	ND	85	ug/kg	13
cis-1,2-Dichloroethene	ND	28	ug/kg	4.0
trans-1,2-Dichloroethene	ND	28	ug/kg	3.4
Vinyl acetate	ND	28	ug/kg	2.0

(Continued on next page)

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020811-SM-006

GC/MS Volatiles

Lot-Sample #...: C1B110571-003 Work Order #...: MEC7M1AA Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	79	(52 - 124)
Toluene-d8	95	(72 - 127)
4-Bromofluorobenzene	95	(63 - 120)
Dibromofluoromethane	92	(68 - 121)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

S0-009954-020811-SM-006

GC/MS Volatiles

Lot-Sample #: C1B110571-003

Work Order #: MEC7M1AA

Matrix: S0

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown		7600 J	M 10.03	ug/kg
Unknown Chlorotoluene		38 J	M 12.001	ug/kg
Unknown Chlorotoluene		31 J	M 12.105	ug/kg
Benzene, 1,2-dichloro-	95-50-1	53 NJ	M 13.212	ug/kg
Unknown Substituted Benzene		64 J	M 14.131	ug/kg
Benzene, 1,2,4-trichloro-	120-82-1	1200 NJ	M 14.824	ug/kg
Benzene, 1,2,3-trichloro-	87-61-6	180 NJ	M 15.329	ug/kg
Unknown Substituted Benzene		300 J	M 16.661	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-007

GC/MS Volatiles

Lot-Sample #....: C1B110571-004 Work Order #....: MEC7Q1AA Matrix.....: SO
 Date Sampled....: 02/08/11 Date Received...: 02/11/11 MS Run #.....: 1046150
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1046272 Analysis Time...: 18:19
 Dilution Factor: 5
 % Moisture.....: 20 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	58 J	130	ug/kg	31
Benzene	ND	31	ug/kg	4.2
Bromodichloromethane	ND	31	ug/kg	3.5
Bromoform	ND	31	ug/kg	2.8
Bromomethane	ND	31	ug/kg	4.6
2-Butanone	ND	31	ug/kg	5.5
Carbon disulfide	ND	31	ug/kg	3.2
Carbon tetrachloride	ND	31	ug/kg	2.8
Chlorobenzene	15 J	31	ug/kg	4.8
Dibromochloromethane	ND	31	ug/kg	4.5
Chloroethane	ND	31	ug/kg	9.7
Chloroform	ND	31	ug/kg	3.7
Chloromethane	ND	31	ug/kg	5.4
1,1-Dichloroethane	ND	31	ug/kg	3.6
1,2-Dichloroethane	ND	31	ug/kg	3.9
1,1-Dichloroethene	ND	31	ug/kg	5.3
1,2-Dichloropropane	ND	31	ug/kg	3.4
cis-1,3-Dichloropropene	ND	31	ug/kg	4.3
trans-1,3-Dichloropropene	ND	31	ug/kg	3.8
Ethylbenzene	ND	31	ug/kg	4.0
2-Hexanone	ND	31	ug/kg	4.3
Methylene chloride	ND	31	ug/kg	4.2
4-Methyl-2-pentanone	ND	31	ug/kg	4.1
Styrene	ND	31	ug/kg	4.4
1,1,2,2-Tetrachloroethane	ND	31	ug/kg	4.5
Tetrachloroethene	ND	31	ug/kg	4.3
Toluene	ND	31	ug/kg	4.6
1,1,1-Trichloroethane	ND	31	ug/kg	3.1
1,1,2-Trichloroethane	ND	31	ug/kg	5.2
Trichloroethene	ND	31	ug/kg	4.1
Vinyl chloride	ND	31	ug/kg	2.9
Xylenes (total)	ND	94	ug/kg	14
cis-1,2-Dichloroethene	ND	31	ug/kg	4.4
trans-1,2-Dichloroethene	ND	31	ug/kg	3.7
Vinyl acetate	ND	31	ug/kg	2.2

(Continued on next page)

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020811-SM-007

GC/MS Volatiles

Lot-Sample #...: C1B110571-004 Work Order #...: MEC7Q1AA Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	73	(52 - 124)
Toluene-d8	101	(72 - 127)
4-Bromofluorobenzene	88	(63 - 120)
Dibromofluoromethane	87	(68 - 121)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

S0-009954-020811-SM-007

GC/MS Volatiles

Lot-Sample #: C1B110571-004

Work Order #: MEC7Q1AA

Matrix: S0

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown		4300 J	M 9.9424	ug/kg
Benzene, 1,2-dichloro-	95-50-1	34 NJ	M 13.209	ug/kg
Unknown Substituted Benzene		38 J	M 14.133	ug/kg
Benzene, 1,2,4-trichloro-	120-82-1	640 NJ	M 14.827	ug/kg
Benzene, 1,2,3-trichloro-	87-61-6	79 NJ	M 15.326	ug/kg
Unknown		170 J	M 15.642	ug/kg
Unknown Substituted Benzene		130 J	M 16.664	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020911-SM-008

GC/MS Volatiles

Lot-Sample #....: C1B110571-005 Work Order #....: MEC7X1AA Matrix.....: S0
 Date Sampled....: 02/09/11 Date Received...: 02/11/11 MS Run #.....: 1046150
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1046272 Analysis Time...: 18:44
 Dilution Factor: 5
 % Moisture.....: 24 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	69 J	130	ug/kg	33
Benzene	ND	33	ug/kg	4.4
Bromodichloromethane	ND	33	ug/kg	3.7
Bromoform	ND	33	ug/kg	2.9
Bromomethane	ND	33	ug/kg	4.8
2-Butanone	ND	33	ug/kg	5.8
Carbon disulfide	ND	33	ug/kg	3.4
Carbon tetrachloride	ND	33	ug/kg	2.9
Chlorobenzene	75	33	ug/kg	5.0
Dibromochloromethane	ND	33	ug/kg	4.6
Chloroethane	ND	33	ug/kg	10
Chloroform	ND	33	ug/kg	3.8
Chloromethane	ND	33	ug/kg	5.6
1,1-Dichloroethane	ND	33	ug/kg	3.8
1,2-Dichloroethane	ND	33	ug/kg	4.0
1,1-Dichloroethene	ND	33	ug/kg	5.6
1,2-Dichloropropane	ND	33	ug/kg	3.6
cis-1,3-Dichloropropene	ND	33	ug/kg	4.4
trans-1,3-Dichloropropene	ND	33	ug/kg	3.9
Ethylbenzene	ND	33	ug/kg	4.2
2-Hexanone	ND	33	ug/kg	4.5
Methylene chloride	4.7 J	33	ug/kg	4.4
4-Methyl-2-pentanone	ND	33	ug/kg	4.3
Styrene	ND	33	ug/kg	4.6
1,1,2,2-Tetrachloroethane	ND	33	ug/kg	4.7
Tetrachloroethene	ND	33	ug/kg	4.5
Toluene	8.9 J	33	ug/kg	4.8
1,1,1-Trichloroethane	ND	33	ug/kg	3.2
1,1,2-Trichloroethane	ND	33	ug/kg	5.4
Trichloroethene	ND	33	ug/kg	4.3
Vinyl chloride	ND	33	ug/kg	3.1
Xylenes (total)	ND	98	ug/kg	15
cis-1,2-Dichloroethene	ND	33	ug/kg	4.6
trans-1,2-Dichloroethene	ND	33	ug/kg	3.9
Vinyl acetate	ND	33	ug/kg	2.3

(Continued on next page)

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020911-SM-008

GC/MS Volatiles

Lot-Sample #...: C1B110571-005 Work Order #...: MEC7X1AA Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	71	(52 - 124)
Toluene-d8	98	(72 - 127)
4-Bromofluorobenzene	92	(63 - 120)
Dibromofluoromethane	87	(68 - 121)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

S0-009954-020911-SM-008

GC/MS Volatiles

Lot-Sample #: C1B110571-005

Work Order #: MEC7X1AA

Matrix: S0

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown		1200 J	M 9.9512	ug/kg
Unknown Chlorotoluene		39 J	M 12.001	ug/kg
Benzene, 1,3-dichloro-	541-73-1	180 NJ	M 12.749	ug/kg
Benzene, 1,2-dichloro-	95-50-1	70 NJ	M 13.212	ug/kg
Unknown Substituted Benzene		70 J	M 14.13	ug/kg
Unknown Substituted Benzene		47 J	M 14.203	ug/kg
Benzene, 1,2,4-trichloro-	120-82-1	630 NJ	M 14.83	ug/kg
Benzene, 1,2,3-trichloro-	87-61-6	100 NJ	M 15.329	ug/kg
Unknown Substituted Benzene		67 J	M 16.661	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020911-SM-009

GC/MS Volatiles

Lot-Sample #....: C1B110571-006 Work Order #....: MEC711AA Matrix.....: SO
 Date Sampled....: 02/09/11 Date Received...: 02/11/11 MS Run #.....: 1046150
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1046272 Analysis Time...: 15:21
 Dilution Factor: 1
 % Moisture.....: 19 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acetone	13 J	25	ug/kg	6.2
Benzene	ND	6.2	ug/kg	0.84
Bromodichloromethane	ND	6.2	ug/kg	0.70
Bromoform	ND	6.2	ug/kg	0.55
Bromomethane	ND	6.2	ug/kg	0.91
2-Butanone	ND	6.2	ug/kg	1.1
Carbon disulfide	ND	6.2	ug/kg	0.63
Carbon tetrachloride	ND	6.2	ug/kg	0.55
Chlorobenzene	ND	6.2	ug/kg	0.94
Dibromochloromethane	ND	6.2	ug/kg	0.88
Chloroethane	ND	6.2	ug/kg	1.9
Chloroform	ND	6.2	ug/kg	0.72
Chloromethane	ND	6.2	ug/kg	1.1
1,1-Dichloroethane	ND	6.2	ug/kg	0.71
1,2-Dichloroethane	ND	6.2	ug/kg	0.76
1,1-Dichloroethene	ND	6.2	ug/kg	1.1
1,2-Dichloropropane	ND	6.2	ug/kg	0.67
cis-1,3-Dichloropropene	ND	6.2	ug/kg	0.84
trans-1,3-Dichloropropene	ND	6.2	ug/kg	0.74
Ethylbenzene	ND	6.2	ug/kg	0.80
2-Hexanone	ND	6.2	ug/kg	0.85
Methylene chloride	1.1 J	6.2	ug/kg	0.83
4-Methyl-2-pentanone	ND	6.2	ug/kg	0.81
Styrene	ND	6.2	ug/kg	0.87
1,1,2,2-Tetrachloroethane	ND	6.2	ug/kg	0.89
Tetrachloroethene	ND	6.2	ug/kg	0.84
Toluene	ND	6.2	ug/kg	0.90
1,1,1-Trichloroethane	ND	6.2	ug/kg	0.60
1,1,2-Trichloroethane	ND	6.2	ug/kg	1.0
Trichloroethene	ND	6.2	ug/kg	0.81
Vinyl chloride	ND	6.2	ug/kg	0.58
Xylenes (total)	ND	19	ug/kg	2.8
cis-1,2-Dichloroethene	ND	6.2	ug/kg	0.87
trans-1,2-Dichloroethene	ND	6.2	ug/kg	0.74
Vinyl acetate	ND	6.2	ug/kg	0.44

(Continued on next page)

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020911-SM-009

GC/MS Volatiles

Lot-Sample #...: C1B110571-006 Work Order #...: MEC711AA Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	69	(52 - 124)
Toluene-d8	110	(72 - 127)
4-Bromofluorobenzene	87	(63 - 120)
Dibromofluoromethane	84	(68 - 121)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

S0-009954-020911-SM-009

GC/MS Volatiles

Lot-Sample #: C1B110571-006

Work Order #: MEC711AA

Matrix: S0

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/kg

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: C1B110571
MB Lot-Sample #: C1B150000-272

Work Order #...: MEF4M1AA

Matrix.....: SOLID

Analysis Date...: 02/15/11

Prep Date.....: 02/15/11

Analysis Time...: 14:24

Dilution Factor: 1

Prep Batch #...: 1046272

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	20	ug/kg	SW846 8260B
Benzene	ND	5.0	ug/kg	SW846 8260B
Bromodichloromethane	ND	5.0	ug/kg	SW846 8260B
Bromoform	ND	5.0	ug/kg	SW846 8260B
Bromomethane	ND	5.0	ug/kg	SW846 8260B
2-Butanone	ND	5.0	ug/kg	SW846 8260B
Carbon disulfide	ND	5.0	ug/kg	SW846 8260B
Carbon tetrachloride	ND	5.0	ug/kg	SW846 8260B
Chlorobenzene	ND	5.0	ug/kg	SW846 8260B
Dibromochloromethane	ND	5.0	ug/kg	SW846 8260B
Chloroethane	ND	5.0	ug/kg	SW846 8260B
Chloroform	ND	5.0	ug/kg	SW846 8260B
Chloromethane	ND	5.0	ug/kg	SW846 8260B
1,1-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
1,2-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
1,1-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
1,2-Dichloropropane	ND	5.0	ug/kg	SW846 8260B
cis-1,3-Dichloropropene	ND	5.0	ug/kg	SW846 8260B
trans-1,3-Dichloropropene	ND	5.0	ug/kg	SW846 8260B
Ethylbenzene	ND	5.0	ug/kg	SW846 8260B
2-Hexanone	ND	5.0	ug/kg	SW846 8260B
Methylene chloride	ND	5.0	ug/kg	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/kg	SW846 8260B
Styrene	ND	5.0	ug/kg	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	5.0	ug/kg	SW846 8260B
Tetrachloroethene	ND	5.0	ug/kg	SW846 8260B
Toluene	ND	5.0	ug/kg	SW846 8260B
1,1,1-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
1,1,2-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
Trichloroethene	ND	5.0	ug/kg	SW846 8260B
Vinyl chloride	ND	5.0	ug/kg	SW846 8260B
Xylenes (total)	ND	15	ug/kg	SW846 8260B
cis-1,2-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
trans-1,2-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
Vinyl acetate	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	90	(52 - 124)
Toluene-d8	106	(72 - 127)
4-Bromofluorobenzene	94	(63 - 120)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: C1B110571

Work Order #...: MEF4M1AA

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Dibromofluoromethane	102	(68 - 121)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Conestoga-Rovers & Associates, Inc.

Method Blank Report

GC/MS Volatiles

Lot-Sample #: C1B150000-272 B **Work Order #:** MEF4M1AA **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/kg

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: C1B110571 Work Order #...: MEF4M1AC Matrix.....: SOLID
 LCS Lot-Sample#: C1B150000-272
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #...: 1046272 Analysis Time...: 15:46
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
Benzene	108	(77 - 120)	SW846 8260B
Chlorobenzene	107	(79 - 120)	SW846 8260B
1,1-Dichloroethene	116	(59 - 129)	SW846 8260B
Toluene	102	(78 - 124)	SW846 8260B
Trichloroethene	106	(76 - 119)	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	88	(52 - 124)
Toluene-d8	101	(72 - 127)
4-Bromofluorobenzene	99	(63 - 120)
Dibromofluoromethane	103	(68 - 121)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: C1B110571 **Work Order #...**: MEC711AF-MS **Matrix.....**: S0
MS Lot-Sample #: C1B110571-006 MEC711AG-MSD
Date Sampled...: 02/09/11 **Date Received...**: 02/11/11 **MS Run #.....**: 1046150
Prep Date.....: 02/15/11 **Analysis Date...**: 02/15/11
Prep Batch #...: 1046272 **Analysis Time...**: 16:12
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	120	(77 - 120)			SW846 8260B
	107	(77 - 120)	11	(0-20)	SW846 8260B
Chlorobenzene	123 a	(79 - 120)			SW846 8260B
	113	(79 - 120)	9.1	(0-20)	SW846 8260B
1,1-Dichloroethene	126	(59 - 129)			SW846 8260B
	115	(59 - 129)	9.7	(0-25)	SW846 8260B
Toluene	121	(78 - 124)			SW846 8260B
	112	(78 - 124)	8.2	(0-21)	SW846 8260B
Trichloroethene	120 a	(76 - 119)			SW846 8260B
	108	(76 - 119)	11	(0-21)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	91	(52 - 124)
	80	(52 - 124)
Toluene-d8	108	(72 - 127)
	102	(72 - 127)
4-Bromofluorobenzene	103	(63 - 120)
	94	(63 - 120)
Dibromofluoromethane	106	(68 - 121)
	98	(68 - 121)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

a. Spiked analyte recovery is outside stated control limits.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-004

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-001 Work Order #....: MEC681AC Matrix.....: SO
 Date Sampled....: 02/08/11 Date Received...: 02/11/11 MS Run #.....: 1046011
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1046019 Analysis Time...: 18:05
 Dilution Factor: 1.98
 % Moisture.....: 25 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzoic acid	ND	4500	ug/kg	360
Benzyl alcohol	ND	870	ug/kg	110
Acenaphthene	ND	180	ug/kg	17
Acenaphthylene	ND	180	ug/kg	20
Anthracene	ND	180	ug/kg	17
Benzo(a)anthracene	ND	180	ug/kg	22
Benzo(a)pyrene	ND	180	ug/kg	18
Benzo(b)fluoranthene	ND	180	ug/kg	28
Benzo(k)fluoranthene	ND	180	ug/kg	35
Benzo(ghi)perylene	ND	180	ug/kg	17
bis(2-Chloroethoxy) methane	ND	870	ug/kg	58
bis(2-Chloroethyl)- ether	ND	180	ug/kg	24
bis(2-Ethylhexyl) phthalate	ND	1800	ug/kg	140
4-Bromophenyl phenyl ether	ND	870	ug/kg	76
Butyl benzyl phthalate	ND	870	ug/kg	120
4-Chloroaniline	ND	870	ug/kg	70
4-Chloro-3-methylphenol	ND	870	ug/kg	81
2-Chloronaphthalene	ND	180	ug/kg	18
2-Chlorophenol	ND	870	ug/kg	72
4-Chlorophenyl phenyl ether	ND	870	ug/kg	98
Chrysene	ND	180	ug/kg	21
Dibenz(a,h)anthracene	ND	180	ug/kg	20
Dibenzofuran	ND	870	ug/kg	86
1,2-Dichlorobenzene	2700	870	ug/kg	92
1,3-Dichlorobenzene	2300	870	ug/kg	68
1,4-Dichlorobenzene	6400	870	ug/kg	63
3,3'-Dichlorobenzidine	ND	870	ug/kg	93
2,4-Dichlorophenol	140 J	180	ug/kg	18
Diethyl phthalate	ND	870	ug/kg	96
2,4-Dimethylphenol	ND	870	ug/kg	140
Dimethyl phthalate	ND	870	ug/kg	96
Di-n-butyl phthalate	ND	870	ug/kg	110
Di-n-octyl phthalate	ND	870	ug/kg	92

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-004

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-001 Work Order #....: MEC681AC Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-Dinitrophenol	ND	4500	ug/kg	1000
4,6-Dinitro- 2-methylphenol	ND	4500	ug/kg	350
2,4-Dinitrotoluene	ND	870	ug/kg	71
2,6-Dinitrotoluene	ND	870	ug/kg	91
Fluoranthene	ND	180	ug/kg	19
Fluorene	ND	180	ug/kg	23
Hexachlorobenzene	1500	180	ug/kg	19
Hexachlorobutadiene	1500	180	ug/kg	20
Hexachlorocyclopenta- diene	ND	870	ug/kg	95
Hexachloroethane	ND	870	ug/kg	63
Indeno(1,2,3-cd)pyrene	ND	180	ug/kg	18
Isophorone	ND	870	ug/kg	66
2-Methylnaphthalene	ND	180	ug/kg	16
2-Methylphenol	ND	870	ug/kg	61
4-Methylphenol	ND	870	ug/kg	86
Naphthalene	ND	180	ug/kg	15
2-Nitroaniline	ND	4500	ug/kg	390
3-Nitroaniline	ND	4500	ug/kg	360
4-Nitroaniline	ND	4500	ug/kg	360
Nitrobenzene	ND	1800	ug/kg	73
2-Nitrophenol	ND	870	ug/kg	97
4-Nitrophenol	ND	4500	ug/kg	300
N-Nitrosodi-n-propyl- amine	ND	180	ug/kg	21
N-Nitrosodiphenylamine	ND	870	ug/kg	81
2,2'-oxybis (1-Chloropropane)	ND	180	ug/kg	19
Pentachlorophenol	ND	870	ug/kg	78
Phenanthrene	ND	180	ug/kg	28
Phenol	ND	180	ug/kg	21
Pyrene	ND	180	ug/kg	18
1,2,4-Trichloro- benzene	63000 E	870	ug/kg	49
2,4,5-Trichloro- phenol	ND	870	ug/kg	94
2,4,6-Trichloro- phenol	ND	870	ug/kg	130

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-004

GC/MS Semivolatiles

Lot-Sample #...: C1B110571-001 Work Order #...: MEC681AC Matrix.....: SO

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	90	(35 - 124)
2-Fluorobiphenyl	93	(35 - 105)
2-Fluorophenol	91	(39 - 103)
Nitrobenzene-d5	83	(25 - 104)
Phenol-d5	89	(25 - 105)
Terphenyl-d14	102	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

E Estimated result. Result concentration exceeds the calibration range.

Conestoga-Rovers & Associates, Inc.

SO-009954-020811-SM-004

GC/MS Semivolatiles

Lot-Sample #: C1B110571-001

Work Order #: MEC681AC

Matrix: SO

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Aldol Condensate		3500 JA	M 2.8307	ug/kg
Unknown Aldol Condensate		410 JA	M 3.5198	ug/kg
Benzene, 1-chloro-2-methyl-	95-49-8	710 J	M 3.8403	ug/kg
Benzene, 1-chloro-4-methyl-	106-43-4	440 J	M 3.8991	ug/kg
Benzene, 1,3-dichloro-2-methyl	118-69-4	1300 J	M 4.9088	ug/kg
Unknown		2100 J	M 4.9248	ug/kg
Benzene, 1,2,4-trichloro-3-met	2077-46-5	1400 NJ	M 5.7795	ug/kg
Benzene, 1,2,3,5-tetrachloro-	634-90-2	1000 NJ	M 5.8436	ug/kg
Benzene, 1,2,4,5-tetrachloro-	95-94-3	14000 NJ	M 5.9398	ug/kg
Benzene, pentachloro-	608-93-5	35000 NJ	M 6.7411	ug/kg
.alpha.-Lindane	319-84-6	1800 J	M 7.4195	ug/kg
Unknown		720 J	M 7.708	ug/kg
Lindane	58-89-9	2300 J	M 7.8149	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-004

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-001 Work Order #....: MEC682AC Matrix.....: S0
 Date Sampled....: 02/08/11 Date Received...: 02/11/11 MS Run #.....: 1046011
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1046019 Analysis Time...: 13:49
 Dilution Factor: 9.9
 % Moisture.....: 25 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzoic acid	ND	22000	ug/kg	1800
Benzyl alcohol	ND	4300	ug/kg	530
Acenaphthene	ND	880	ug/kg	84
Acenaphthylene	ND	880	ug/kg	100
Anthracene	ND	880	ug/kg	86
Benzo(a)anthracene	ND	880	ug/kg	110
Benzo(a)pyrene	ND	880	ug/kg	88
Benzo(b)fluoranthene	ND	880	ug/kg	140
Benzo(k)fluoranthene	ND	880	ug/kg	180
Benzo(ghi)perylene	ND	880	ug/kg	87
bis(2-Chloroethoxy) methane	ND	4300	ug/kg	290
bis(2-Chloroethyl)- ether	ND	880	ug/kg	120
bis(2-Ethylhexyl) phthalate	ND	8800	ug/kg	710
4-Bromophenyl phenyl ether	ND	4300	ug/kg	380
Butyl benzyl phthalate	ND	4300	ug/kg	600
4-Chloroaniline	ND	4300	ug/kg	350
4-Chloro-3-methylphenol	ND	4300	ug/kg	400
2-Chloronaphthalene	ND	880	ug/kg	92
2-Chlorophenol	ND	4300	ug/kg	360
4-Chlorophenyl phenyl ether	ND	4300	ug/kg	490
Chrysene	ND	880	ug/kg	100
Dibenz(a,h)anthracene	ND	880	ug/kg	98
Dibenzofuran	ND	4300	ug/kg	430
1,2-Dichlorobenzene	3000 J	4300	ug/kg	460
1,3-Dichlorobenzene	2700 J	4300	ug/kg	340
1,4-Dichlorobenzene	7100	4300	ug/kg	310
3,3'-Dichlorobenzidine	ND	4300	ug/kg	460
2,4-Dichlorophenol	ND	880	ug/kg	88
Diethyl phthalate	580 J	4300	ug/kg	480
2,4-Dimethylphenol	ND	4300	ug/kg	690
Dimethyl phthalate	ND	4300	ug/kg	480
Di-n-butyl phthalate	ND	4300	ug/kg	550
Di-n-octyl phthalate	ND	4300	ug/kg	460

(Continued on next page)

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-004

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-001 Work Order #....: MEC682AC Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-Dinitrophenol	ND	22000	ug/kg	5200
4,6-Dinitro- 2-methylphenol	ND	22000	ug/kg	1800
2,4-Dinitrotoluene	ND	4300	ug/kg	350
2,6-Dinitrotoluene	ND	4300	ug/kg	450
Fluoranthene	ND	880	ug/kg	94
Fluorene	ND	880	ug/kg	120
Hexachlorobenzene	1700	880	ug/kg	93
Hexachlorobutadiene	1600	880	ug/kg	98
Hexachlorocyclopenta- diene	ND	4300	ug/kg	470
Hexachloroethane	ND	4300	ug/kg	320
Indeno(1,2,3-cd)pyrene	ND	880	ug/kg	90
Isophorone	ND	4300	ug/kg	330
2-Methylnaphthalene	ND	880	ug/kg	79
2-Methylphenol	ND	4300	ug/kg	310
4-Methylphenol	ND	4300	ug/kg	430
Naphthalene	ND	880	ug/kg	76
2-Nitroaniline	ND	22000	ug/kg	2000
3-Nitroaniline	ND	22000	ug/kg	1800
4-Nitroaniline	ND	22000	ug/kg	1800
Nitrobenzene	ND	8800	ug/kg	370
2-Nitrophenol	ND	4300	ug/kg	480
4-Nitrophenol	ND	22000	ug/kg	1500
N-Nitrosodi-n-propyl- amine	ND	880	ug/kg	100
N-Nitrosodiphenylamine	ND	4300	ug/kg	410
2,2'-oxybis (1-Chloropropane)	ND	880	ug/kg	95
Pentachlorophenol	ND	4300	ug/kg	390
Phenanthrene	ND	880	ug/kg	140
Phenol	ND	880	ug/kg	100
Pyrene	ND	880	ug/kg	89
1,2,4-Trichloro- benzene	72000	4300	ug/kg	240
2,4,5-Trichloro- phenol	ND	4300	ug/kg	470
2,4,6-Trichloro- phenol	ND	4300	ug/kg	660

(Continued on next page)

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-004

GC/MS Semivolatiles

Lot-Sample #...: C1B110571-001 Work Order #...: MEC682AC Matrix.....: SO

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	82	(35 - 124)
2-Fluorobiphenyl	101	(35 - 105)
2-Fluorophenol	103	(39 - 103)
Nitrobenzene-d5	96	(25 - 104)
Phenol-d5	104	(25 - 105)
Terphenyl-d14	122	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

S0-009954-020811-SM-004

GC/MS Semivolatiles

Lot-Sample #: C1B110571-001

Work Order #: MEC682AC

Matrix: S0

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Aldol Condensate		8300 JA M	2.8287	ug/kg
Benzene, 1,2,4,5-tetrachloro-	95-94-3	15000 NJ M	5.9485	ug/kg
Benzene, 1,2,3,5-tetrachloro-	634-90-2	140000 NJ M	6.1676	ug/kg
Benzene, pentachloro-	608-93-5	37000 NJ M	6.7499	ug/kg
.alpha.-Lindane	319-84-6	1800 NJ M	7.4283	ug/kg
.delta.-Lindane	319-86-8	2400 NJ M	7.6527	ug/kg
Lindane	58-89-9	2400 NJ M	7.829	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-005

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-002 Work Order #....: MEC7G1AC Matrix.....: SO
 Date Sampled....: 02/08/11 Date Received...: 02/11/11 MS Run #.....: 1046011
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1046019 Analysis Time...: 14:11
 Dilution Factor: 1.98
 % Moisture.....: 25 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzoic acid	1300 J	4500	ug/kg	370
Benzyl alcohol	ND	880	ug/kg	110
Acenaphthene	ND	180	ug/kg	17
Acenaphthylene	ND	180	ug/kg	20
Anthracene	ND	180	ug/kg	17
Benzo(a)anthracene	ND	180	ug/kg	22
Benzo(a)pyrene	ND	180	ug/kg	18
Benzo(b)fluoranthene	ND	180	ug/kg	28
Benzo(k)fluoranthene	ND	180	ug/kg	36
Benzo(ghi)perylene	ND	180	ug/kg	18
bis(2-Chloroethoxy) methane	ND	880	ug/kg	58
bis(2-Chloroethyl)- ether	ND	180	ug/kg	24
bis(2-Ethylhexyl) phthalate	ND	1800	ug/kg	140
4-Bromophenyl phenyl ether	ND	880	ug/kg	77
Butyl benzyl phthalate	ND	880	ug/kg	120
4-Chloroaniline	ND	880	ug/kg	71
4-Chloro-3-methylphenol	ND	880	ug/kg	81
2-Chloronaphthalene	ND	180	ug/kg	18
2-Chlorophenol	ND	880	ug/kg	72
4-Chlorophenyl phenyl ether	ND	880	ug/kg	98
Chrysene	ND	180	ug/kg	21
Dibenz(a,h)anthracene	ND	180	ug/kg	20
Dibenzofuran	ND	880	ug/kg	87
1,2-Dichlorobenzene	2300	880	ug/kg	93
1,3-Dichlorobenzene	2600	880	ug/kg	69
1,4-Dichlorobenzene	5500	880	ug/kg	63
3,3'-Dichlorobenzidine	ND	880	ug/kg	94
2,4-Dichlorophenol	ND	180	ug/kg	18
Diethyl phthalate	ND	880	ug/kg	97
2,4-Dimethylphenol	ND	880	ug/kg	140
Dimethyl phthalate	ND	880	ug/kg	96
Di-n-butyl phthalate	ND	880	ug/kg	110
Di-n-octyl phthalate	ND	880	ug/kg	93

(Continued on next page)

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-005

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-002 Work Order #....: MEC7G1AC Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-Dinitrophenol	ND	4500	ug/kg	1100
4,6-Dinitro- 2-methylphenol	ND	4500	ug/kg	360
2,4-Dinitrotoluene	ND	880	ug/kg	71
2,6-Dinitrotoluene	ND	880	ug/kg	91
Fluoranthene	ND	180	ug/kg	19
Fluorene	ND	180	ug/kg	23
Hexachlorobenzene	2100	180	ug/kg	19
Hexachlorobutadiene	1800	180	ug/kg	20
Hexachlorocyclopenta- diene	ND	880	ug/kg	95
Hexachloroethane	ND	880	ug/kg	64
Indeno(1,2,3-cd)pyrene	ND	180	ug/kg	18
Isophorone	ND	880	ug/kg	67
2-Methylnaphthalene	ND	180	ug/kg	16
2-Methylphenol	ND	880	ug/kg	62
4-Methylphenol	ND	880	ug/kg	87
Naphthalene	ND	180	ug/kg	15
2-Nitroaniline	ND	4500	ug/kg	400
3-Nitroaniline	ND	4500	ug/kg	360
4-Nitroaniline	ND	4500	ug/kg	360
Nitrobenzene	ND	1800	ug/kg	74
2-Nitrophenol	ND	880	ug/kg	98
4-Nitrophenol	ND	4500	ug/kg	300
N-Nitrosodi-n-propyl- amine	ND	180	ug/kg	21
N-Nitrosodiphenylamine	ND	880	ug/kg	82
2,2'-oxybis (1-Chloropropane)	ND	180	ug/kg	19
Pentachlorophenol	ND	880	ug/kg	79
Phenanthrene	ND	180	ug/kg	28
Phenol	ND	180	ug/kg	21
Pyrene	ND	180	ug/kg	18
1,2,4-Trichloro- benzene	75000 E	880	ug/kg	49
2,4,5-Trichloro- phenol	ND	880	ug/kg	94
2,4,6-Trichloro- phenol	ND	880	ug/kg	130

(Continued on next page)

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-005

GC/MS Semivolatiles

Lot-Sample #...: C1B110571-002 Work Order #...: MEC7G1AC Matrix.....: SO

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	91	(35 - 124)
2-Fluorobiphenyl	86	(35 - 105)
2-Fluorophenol	90	(39 - 103)
Nitrobenzene-d5	87	(25 - 104)
Phenol-d5	91	(25 - 105)
Terphenyl-d14	89	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

E Estimated result. Result concentration exceeds the calibration range.

Conestoga-Rovers & Associates, Inc.

SO-009954-020811-SM-005

GC/MS Semivolatiles

Lot-Sample #: C1B110571-002

Work Order #: MEC7G1AC

Matrix: SO

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Aldol Condensate		3800 JA M	2.8308	ug/kg
Unknown Aldol Condensate		490 JA M	3.5199	ug/kg
Benzene, 1-chloro-2-methyl-	95-49-8	780 NJ M	3.8458	ug/kg
Benzene, 1-chloro-4-methyl-	106-43-4	550 NJ M	3.8992	ug/kg
Benzene, 1,3-dichloro-2-methyl	118-69-4	2000 NJ M	4.9142	ug/kg
Benzene, 1,2,4-trichloro-3-met	2077-46-5	1900 NJ M	5.7903	ug/kg
Benzene, 1,2,3-trichloro-4-met	7359-72-0	1400 NJ M	5.8491	ug/kg
Benzene, 1,2,4,5-tetrachloro-	95-94-3	17000 NJ M	5.9452	ug/kg
Benzene, 2,4-dichloro-1-(chlor	94-99-5	580 NJ M	5.9719	ug/kg
Benzene, 1,2,3,5-tetrachloro-	634-90-2	150000 NJ M	6.1696	ug/kg
.alpha.-Lindane	319-84-6	2300 NJ M	7.425	ug/kg
.delta.-Lindane	319-86-8	3100 NJ M	7.6494	ug/kg
Unknown		1200 J M	7.7135	ug/kg
Lindane	58-89-9	3200 NJ M	7.8257	ug/kg
n-Hexadecanoic acid	57-10-3	580 NJ M	8.1889	ug/kg
Cyclic octaatomic sulfur	10544-50-0	700 NJ M	8.7392	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-005

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-002 Work Order #....: MEC7G2AC Matrix.....: S0
 Date Sampled....: 02/08/11 Date Received...: 02/11/11 MS Run #.....: 1046011
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1046019 Analysis Time...: 14:32
 Dilution Factor: 9.9
 % Moisture.....: 25 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzoic acid	ND	23000	ug/kg	1800
Benzyl alcohol	ND	4400	ug/kg	540
Acenaphthene	ND	890	ug/kg	85
Acenaphthylene	ND	890	ug/kg	100
Anthracene	ND	890	ug/kg	87
Benzo(a)anthracene	ND	890	ug/kg	110
Benzo(a)pyrene	ND	890	ug/kg	89
Benzo(b)fluoranthene	ND	890	ug/kg	140
Benzo(k)fluoranthene	ND	890	ug/kg	180
Benzo(ghi)perylene	ND	890	ug/kg	88
bis(2-Chloroethoxy) methane	ND	4400	ug/kg	290
bis(2-Chloroethyl)- ether	ND	890	ug/kg	120
bis(2-Ethylhexyl) phthalate	ND	8900	ug/kg	720
4-Bromophenyl phenyl ether	ND	4400	ug/kg	390
Butyl benzyl phthalate	ND	4400	ug/kg	600
4-Chloroaniline	ND	4400	ug/kg	350
4-Chloro-3-methylphenol	ND	4400	ug/kg	410
2-Chloronaphthalene	ND	890	ug/kg	92
2-Chlorophenol	ND	4400	ug/kg	360
4-Chlorophenyl phenyl ether	ND	4400	ug/kg	490
Chrysene	ND	890	ug/kg	110
Dibenz(a,h)anthracene	ND	890	ug/kg	98
Dibenzofuran	ND	4400	ug/kg	440
1,2-Dichlorobenzene	2400 J	4400	ug/kg	460
1,3-Dichlorobenzene	2800 J	4400	ug/kg	340
1,4-Dichlorobenzene	5800	4400	ug/kg	320
3,3'-Dichlorobenzidine	ND	4400	ug/kg	470
2,4-Dichlorophenol	ND	890	ug/kg	89
Diethyl phthalate	600 J	4400	ug/kg	480
2,4-Dimethylphenol	ND	4400	ug/kg	690
Dimethyl phthalate	ND	4400	ug/kg	480
Di-n-butyl phthalate	ND	4400	ug/kg	550
Di-n-octyl phthalate	ND	4400	ug/kg	470

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-005

GC/MS Semivolatiles

Lot-Sample #...: C1B110571-002 Work Order #...: MEC7G2AC Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-Dinitrophenol	ND	23000	ug/kg	5300
4,6-Dinitro- 2-methylphenol	ND	23000	ug/kg	1800
2,4-Dinitrotoluene	ND	4400	ug/kg	360
2,6-Dinitrotoluene	ND	4400	ug/kg	460
Fluoranthene	ND	890	ug/kg	95
Fluorene	ND	890	ug/kg	120
Hexachlorobenzene	2100	890	ug/kg	94
Hexachlorobutadiene	2100	890	ug/kg	99
Hexachlorocyclopenta- diene	ND	4400	ug/kg	480
Hexachloroethane	ND	4400	ug/kg	320
Indeno(1,2,3-cd)pyrene	ND	890	ug/kg	91
Isophorone	ND	4400	ug/kg	330
2-Methylnaphthalene	ND	890	ug/kg	80
2-Methylphenol	ND	4400	ug/kg	310
4-Methylphenol	ND	4400	ug/kg	430
Naphthalene	ND	890	ug/kg	76
2-Nitroaniline	ND	23000	ug/kg	2000
3-Nitroaniline	ND	23000	ug/kg	1800
4-Nitroaniline	ND	23000	ug/kg	1800
Nitrobenzene	ND	8900	ug/kg	370
2-Nitrophenol	ND	4400	ug/kg	490
4-Nitrophenol	ND	23000	ug/kg	1500
N-Nitrosodi-n-propyl- amine	ND	890	ug/kg	100
N-Nitrosodiphenylamine	ND	4400	ug/kg	410
2,2'-oxybis (1-Chloropropane)	ND	890	ug/kg	96
Pentachlorophenol	ND	4400	ug/kg	400
Phenanthrene	ND	890	ug/kg	140
Phenol	ND	890	ug/kg	100
Pyrene	ND	890	ug/kg	89
1,2,4-Trichloro- benzene	79000	4400	ug/kg	240
2,4,5-Trichloro- phenol	ND	4400	ug/kg	470
2,4,6-Trichloro- phenol	ND	4400	ug/kg	660

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-005

GC/MS Semivolatiles

Lot-Sample #...: C1B110571-002 Work Order #...: MEC7G2AC Matrix.....: SO

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	76	(35 - 124)
2-Fluorobiphenyl	94	(35 - 105)
2-Fluorophenol	94	(39 - 103)
Nitrobenzene-d5	88	(25 - 104)
Phenol-d5	94	(25 - 105)
Terphenyl-d14	107	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

SO-009954-020811-SM-005

GC/MS Semivolatiles

Lot-Sample #: C1B110571-002

Work Order #: MEC7G2AC

Matrix: SO

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Aldol Condensate		8200 JA M	2.8317	ug/kg
Benzene, 1,2,4-trichloro-3-met	2077-46-5	1800 NJ M	5.7859	ug/kg
Benzene, 1,2,4,5-tetrachloro-	95-94-3	18000 NJ M	5.9462	ug/kg
Benzene, 1,2,3,5-tetrachloro-	634-90-2	170000 NJ M	6.1652	ug/kg
Benzene, pentachloro-	608-93-5	46000 NJ M	6.7475	ug/kg
.alpha.-Lindane	319-84-6	2500 NJ M	7.4206	ug/kg
.delta.-Lindane	319-86-8	3300 NJ M	7.6503	ug/kg
Lindane	58-89-9	3300 NJ M	7.8213	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-006

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-003 Work Order #....: MEC7M1AC Matrix.....: SO
 Date Sampled....: 02/08/11 Date Received...: 02/11/11 MS Run #.....: 1046011
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1046019 Analysis Time...: 14:53
 Dilution Factor: 2
 % Moisture.....: 12 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzoic acid	ND	3900	ug/kg	310
Benzyl alcohol	ND	750	ug/kg	91
Acenaphthene	ND	150	ug/kg	15
Acenaphthylene	ND	150	ug/kg	17
Anthracene	ND	150	ug/kg	15
Benzo(a)anthracene	ND	150	ug/kg	19
Benzo(a)pyrene	ND	150	ug/kg	15
Benzo(b)fluoranthene	ND	150	ug/kg	24
Benzo(k)fluoranthene	ND	150	ug/kg	31
Benzo(ghi)perylene	ND	150	ug/kg	15
bis(2-Chloroethoxy) methane	ND	750	ug/kg	50
bis(2-Chloroethyl)- ether	ND	150	ug/kg	20
bis(2-Ethylhexyl) phthalate	ND	1500	ug/kg	120
4-Bromophenyl phenyl ether	ND	750	ug/kg	66
Butyl benzyl phthalate	ND	750	ug/kg	100
4-Chloroaniline	ND	750	ug/kg	61
4-Chloro-3-methylphenol	ND	750	ug/kg	70
2-Chloronaphthalene	ND	150	ug/kg	16
2-Chlorophenol	ND	750	ug/kg	62
4-Chlorophenyl phenyl ether	ND	750	ug/kg	84
Chrysene	ND	150	ug/kg	18
Dibenz(a,h)anthracene	ND	150	ug/kg	17
Dibenzofuran	ND	750	ug/kg	74
1,2-Dichlorobenzene	610 J	750	ug/kg	79
1,3-Dichlorobenzene	ND	750	ug/kg	59
1,4-Dichlorobenzene	720 J	750	ug/kg	54
3,3'-Dichlorobenzidine	ND	750	ug/kg	80
2,4-Dichlorophenol	ND	150	ug/kg	15
Diethyl phthalate	ND	750	ug/kg	83
2,4-Dimethylphenol	ND	750	ug/kg	120
Dimethyl phthalate	ND	750	ug/kg	82
Di-n-butyl phthalate	ND	750	ug/kg	95
Di-n-octyl phthalate	ND	750	ug/kg	80

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-006

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-003 Work Order #....: MEC7M1AC Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-Dinitrophenol	ND	3900	ug/kg	900
4,6-Dinitro- 2-methylphenol	ND	3900	ug/kg	300
2,4-Dinitrotoluene	ND	750	ug/kg	61
2,6-Dinitrotoluene	ND	750	ug/kg	78
Fluoranthene	ND	150	ug/kg	16
Fluorene	ND	150	ug/kg	20
Hexachlorobenzene	610	150	ug/kg	16
Hexachlorobutadiene	640	150	ug/kg	17
Hexachlorocyclopenta- diene	ND	750	ug/kg	82
Hexachloroethane	ND	750	ug/kg	54
Indeno(1,2,3-cd)pyrene	ND	150	ug/kg	16
Isophorone	ND	750	ug/kg	57
2-Methylnaphthalene	ND	150	ug/kg	14
2-Methylphenol	ND	750	ug/kg	53
4-Methylphenol	ND	750	ug/kg	74
Naphthalene	ND	150	ug/kg	13
2-Nitroaniline	ND	3900	ug/kg	340
3-Nitroaniline	ND	3900	ug/kg	310
4-Nitroaniline	ND	3900	ug/kg	310
Nitrobenzene	ND	1500	ug/kg	63
2-Nitrophenol	ND	750	ug/kg	83
4-Nitrophenol	ND	3900	ug/kg	260
N-Nitrosodi-n-propyl- amine	ND	150	ug/kg	18
N-Nitrosodiphenylamine	ND	750	ug/kg	70
2,2'-oxybis (1-Chloropropane)	ND	150	ug/kg	16
Pentachlorophenol	ND	750	ug/kg	68
Phenanthrene	ND	150	ug/kg	24
Phenol	ND	150	ug/kg	18
Pyrene	ND	150	ug/kg	15
1,2,4-Trichloro- benzene	26000	750	ug/kg	42
2,4,5-Trichloro- phenol	ND	750	ug/kg	81
2,4,6-Trichloro- phenol	ND	750	ug/kg	110

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020811-SM-006

GC/MS Semivolatiles

Lot-Sample #...: C1B110571-003 Work Order #...: MEC7M1AC Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	78	(35 - 124)
2-Fluorobiphenyl	76	(35 - 105)
2-Fluorophenol	82	(39 - 103)
Nitrobenzene-d5	76	(25 - 104)
Phenol-d5	82	(25 - 105)
Terphenyl-d14	80	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

S0-009954-020811-SM-006

GC/MS Semivolatiles

Lot-Sample #: C1B110571-003

Work Order #: MEC7M1AC

Matrix: S0

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Aldol Condensate		5500 JA	M 2.828	ug/kg
Unknown Aldol Condensate		760 JA	M 3.5171	ug/kg
Benzene, 1-chloro-2-methyl-	95-49-8	360 NJ	M 3.843	ug/kg
Benzene, 1,2-dichloro-4-methyl	95-75-0	500 NJ	M 4.9167	ug/kg
Benzene, 1,2,4-trichloro-3-met	2077-46-5	520 NJ	M 5.7875	ug/kg
Benzene, 1,2,3-trichloro-4-met	7359-72-0	390 NJ	M 5.8463	ug/kg
Benzene, 1,2,4,5-tetrachloro-	95-94-3	5700 NJ	M 5.9478	ug/kg
Benzene, 1,2,3,5-tetrachloro-	634-90-2	53000 NJ	M 6.1668	ug/kg
Benzene, pentachloro-	608-93-5	14000 NJ	M 6.7491	ug/kg
.alpha.-Lindane	319-84-6	870 NJ	M 7.4222	ug/kg
Cyclohexane, 1,2,3,4,5,6-hexac	6108-10-7	1400 NJ	M 7.6519	ug/kg
Unknown		490 J	M 7.716	ug/kg
Lindane	58-89-9	1300 NJ	M 7.8229	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-007

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-004 Work Order #....: MEC7Q1AC Matrix.....: SO
 Date Sampled....: 02/08/11 Date Received...: 02/11/11 MS Run #.....: 1046011
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1046019 Analysis Time...: 16:19
 Dilution Factor: 0.99
 % Moisture.....: 20 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzoic acid	ND	2100	ug/kg	170
Benzyl alcohol	ND	410	ug/kg	50
Acenaphthene	28 J	83	ug/kg	8.0
Acenaphthylene	27 J	83	ug/kg	9.5
Anthracene	32 J	83	ug/kg	8.1
Benzo(a)anthracene	37 J	83	ug/kg	10
Benzo(a)pyrene	ND	83	ug/kg	8.3
Benzo(b)fluoranthene	28 J	83	ug/kg	13
Benzo(k)fluoranthene	38 J	83	ug/kg	17
Benzo(ghi)perylene	36 J	83	ug/kg	8.3
bis(2-Chloroethoxy) methane	ND	410	ug/kg	27
bis(2-Chloroethyl)- ether	ND	83	ug/kg	11
bis(2-Ethylhexyl) phthalate	ND	830	ug/kg	67
4-Bromophenyl phenyl ether	ND	410	ug/kg	36
Butyl benzyl phthalate	ND	410	ug/kg	57
4-Chloroaniline	ND	410	ug/kg	33
4-Chloro-3-methylphenol	ND	410	ug/kg	38
2-Chloronaphthalene	ND	83	ug/kg	8.7
2-Chlorophenol	ND	410	ug/kg	34
4-Chlorophenyl phenyl ether	ND	410	ug/kg	46
Chrysene	44 J	83	ug/kg	9.9
Dibenz(a,h)anthracene	24 J	83	ug/kg	9.2
Dibenzofuran	ND	410	ug/kg	41
1,2-Dichlorobenzene	68 J	410	ug/kg	44
1,3-Dichlorobenzene	110 J	410	ug/kg	32
1,4-Dichlorobenzene	99 J	410	ug/kg	30
3,3'-Dichlorobenzidine	ND	410	ug/kg	44
2,4-Dichlorophenol	ND	83	ug/kg	8.3
Diethyl phthalate	ND	410	ug/kg	45
2,4-Dimethylphenol	ND	410	ug/kg	65
Dimethyl phthalate	ND	410	ug/kg	45
Di-n-butyl phthalate	ND	410	ug/kg	52
Di-n-octyl phthalate	ND	410	ug/kg	44

(Continued on next page)

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-007

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-004 Work Order #....: MEC7Q1AC Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-Dinitrophenol	ND	2100	ug/kg	490
4,6-Dinitro- 2-methylphenol	ND	2100	ug/kg	170
2,4-Dinitrotoluene	ND	410	ug/kg	33
2,6-Dinitrotoluene	ND	410	ug/kg	43
Fluoranthene	40 J	83	ug/kg	8.9
Fluorene	ND	83	ug/kg	11
Hexachlorobenzene	ND	83	ug/kg	8.8
Hexachlorobutadiene	89	83	ug/kg	9.3
Hexachlorocyclopenta- diene	ND	410	ug/kg	45
Hexachloroethane	ND	410	ug/kg	30
Indeno(1,2,3-cd)pyrene	28 J	83	ug/kg	8.6
Isophorone	ND	410	ug/kg	31
2-Methylnaphthalene	36 J	83	ug/kg	7.5
2-Methylphenol	ND	410	ug/kg	29
4-Methylphenol	53 J	410	ug/kg	41
Naphthalene	26 J	83	ug/kg	7.2
2-Nitroaniline	ND	2100	ug/kg	190
3-Nitroaniline	ND	2100	ug/kg	170
4-Nitroaniline	ND	2100	ug/kg	170
Nitrobenzene	ND	830	ug/kg	35
2-Nitrophenol	ND	410	ug/kg	46
4-Nitrophenol	ND	2100	ug/kg	140
N-Nitrosodi-n-propyl- amine	ND	83	ug/kg	9.7
N-Nitrosodiphenylamine	ND	410	ug/kg	38
2,2'-oxybis (1-Chloropropane)	ND	83	ug/kg	9.0
Pentachlorophenol	ND	410	ug/kg	37
Phenanthrene	45 J	83	ug/kg	13
Phenol	ND	83	ug/kg	9.8
Pyrene	39 J	83	ug/kg	8.4
1,2,4-Trichloro- benzene	2400	410	ug/kg	23
2,4,5-Trichloro- phenol	ND	410	ug/kg	44
2,4,6-Trichloro- phenol	ND	410	ug/kg	62

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020811-SM-007

GC/MS Semivolatiles

Lot-Sample #...: C1B110571-004 Work Order #...: MEC7Q1AC Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	87	(35 - 124)
2-Fluorobiphenyl	82	(35 - 105)
2-Fluorophenol	87	(39 - 103)
Nitrobenzene-d5	80	(25 - 104)
Phenol-d5	86	(25 - 105)
Terphenyl-d14	96	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

SO-009954-020811-SM-007

GC/MS Semivolatiles

Lot-Sample #: C1B110571-004

Work Order #: MEC7Q1AC

Matrix: SO

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Aldol Condensate		8400 JA M	2.8306	ug/kg
Unknown Aldol Condensate		1100 JA M	3.5198	ug/kg
Unknown		33 J M	5.8863	ug/kg
Benzene, 1,2,4,5-tetrachloro-	95-94-3	720 NJ M	5.9398	ug/kg
Benzene, 1,2,3,5-tetrachloro-	634-90-2	6900 NJ M	6.1588	ug/kg
Benzene, pentachloro-	608-93-5	2000 NJ M	6.7411	ug/kg
Unknown Alkane		100 J M	7.3287	ug/kg
.delta.-Lindane	319-86-8	210 NJ M	7.6439	ug/kg
Unknown		66 J M	7.708	ug/kg
Carbazole	86-74-8	36 NJ M	7.9324	ug/kg
Undecane	1120-21-4	59 NJ M	8.0018	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020911-SM-008

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-005 Work Order #....: MEC7X1AC Matrix.....: SO
 Date Sampled....: 02/09/11 Date Received...: 02/11/11 MS Run #.....: 1046011
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #....: 1046019 Analysis Time...: 16:40
 Dilution Factor: 1.98
 % Moisture.....: 24 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzoic acid	ND	4400	ug/kg	360
Benzyl alcohol	ND	860	ug/kg	100
Acenaphthene	ND	170	ug/kg	17
Acenaphthylene	ND	170	ug/kg	20
Anthracene	ND	170	ug/kg	17
Benzo(a)anthracene	ND	170	ug/kg	22
Benzo(a)pyrene	ND	170	ug/kg	17
Benzo(b)fluoranthene	ND	170	ug/kg	27
Benzo(k)fluoranthene	ND	170	ug/kg	35
Benzo(ghi)perylene	ND	170	ug/kg	17
bis(2-Chloroethoxy) methane	ND	860	ug/kg	57
bis(2-Chloroethyl)- ether	ND	170	ug/kg	23
bis(2-Ethylhexyl) phthalate	ND	1700	ug/kg	140
4-Bromophenyl phenyl ether	ND	860	ug/kg	75
Butyl benzyl phthalate	ND	860	ug/kg	120
4-Chloroaniline	ND	860	ug/kg	69
4-Chloro-3-methylphenol	ND	860	ug/kg	80
2-Chloronaphthalene	ND	170	ug/kg	18
2-Chlorophenol	ND	860	ug/kg	71
4-Chlorophenyl phenyl ether	ND	860	ug/kg	96
Chrysene	ND	170	ug/kg	21
Dibenz(a,h)anthracene	ND	170	ug/kg	19
Dibenzofuran	ND	860	ug/kg	85
1,2-Dichlorobenzene	190 J	860	ug/kg	91
1,3-Dichlorobenzene	640 J	860	ug/kg	67
1,4-Dichlorobenzene	700 J	860	ug/kg	62
3,3'-Dichlorobenzidine	ND	860	ug/kg	91
2,4-Dichlorophenol	ND	170	ug/kg	17
Diethyl phthalate	ND	860	ug/kg	95
2,4-Dimethylphenol	ND	860	ug/kg	140
Dimethyl phthalate	ND	860	ug/kg	94
Di-n-butyl phthalate	ND	860	ug/kg	110
Di-n-octyl phthalate	ND	860	ug/kg	91

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020911-SM-008

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-005 Work Order #....: MEC7X1AC Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-Dinitrophenol	ND	4400	ug/kg	1000
4,6-Dinitro- 2-methylphenol	ND	4400	ug/kg	350
2,4-Dinitrotoluene	ND	860	ug/kg	70
2,6-Dinitrotoluene	ND	860	ug/kg	89
Fluoranthene	ND	170	ug/kg	19
Fluorene	ND	170	ug/kg	23
Hexachlorobenzene	ND	170	ug/kg	18
Hexachlorobutadiene	200	170	ug/kg	19
Hexachlorocyclopenta- diene	ND	860	ug/kg	93
Hexachloroethane	ND	860	ug/kg	62
Indeno(1,2,3-cd)pyrene	ND	170	ug/kg	18
Isophorone	ND	860	ug/kg	65
2-Methylnaphthalene	ND	170	ug/kg	16
2-Methylphenol	ND	860	ug/kg	60
4-Methylphenol	ND	860	ug/kg	85
Naphthalene	ND	170	ug/kg	15
2-Nitroaniline	ND	4400	ug/kg	390
3-Nitroaniline	ND	4400	ug/kg	360
4-Nitroaniline	ND	4400	ug/kg	350
Nitrobenzene	ND	1700	ug/kg	72
2-Nitrophenol	ND	860	ug/kg	95
4-Nitrophenol	ND	4400	ug/kg	300
N-Nitrosodi-n-propyl- amine	ND	170	ug/kg	20
N-Nitrosodiphenylamine	ND	860	ug/kg	80
2,2'-oxybis (1-Chloropropane)	ND	170	ug/kg	19
Pentachlorophenol	ND	860	ug/kg	77
Phenanthrene	ND	170	ug/kg	28
Phenol	ND	170	ug/kg	20
Pyrene	ND	170	ug/kg	18
1,2,4-Trichloro- benzene	3600	860	ug/kg	48
2,4,5-Trichloro- phenol	ND	860	ug/kg	92
2,4,6-Trichloro- phenol	ND	860	ug/kg	130

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020911-SM-008

GC/MS Semivolatiles

Lot-Sample #...: C1B110571-005 Work Order #...: MEC7X1AC Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	72	(35 - 124)
2-Fluorobiphenyl	75	(35 - 105)
2-Fluorophenol	82	(39 - 103)
Nitrobenzene-d5	74	(25 - 104)
Phenol-d5	81	(25 - 105)
Terphenyl-d14	90	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

SO-009954-020911-SM-008

GC/MS Semivolatiles

Lot-Sample #: C1B110571-005

Work Order #: MEC7X1AC

Matrix: SO

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Aldol Condensate		7100 JA	M 2.8359	ug/kg
Unknown Aldol Condensate		970 JA	M 3.5197	ug/kg
Benzene, 1,2,4,5-tetrachloro-	95-94-3	970 NJ	M 5.9451	ug/kg
Benzene, pentachloro-	608-93-5	4200 NJ	M 6.741	ug/kg
Lindane	58-89-9	130 J	M 7.8202	ug/kg
Unknown		110 J	M 8.7443	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020911-SM-009

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-006	Work Order #....: MEC711AC	Matrix.....: SO
Date Sampled....: 02/09/11	Date Received...: 02/11/11	MS Run #.....: 1046011
Prep Date.....: 02/15/11	Analysis Date...: 02/15/11	
Prep Batch #....: 1046019	Analysis Time...: 17:23	
Dilution Factor: 1.98		
% Moisture.....: 19	Method.....: SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzoic acid	ND	4200	ug/kg	340
Benzyl alcohol	ND	810	ug/kg	99
Acenaphthene	ND	160	ug/kg	16
Acenaphthylene	ND	160	ug/kg	19
Anthracene	ND	160	ug/kg	16
Benzo(a)anthracene	ND	160	ug/kg	20
Benzo(a)pyrene	ND	160	ug/kg	16
Benzo(b)fluoranthene	ND	160	ug/kg	26
Benzo(k)fluoranthene	ND	160	ug/kg	33
Benzo(ghi)perylene	ND	160	ug/kg	16
bis(2-Chloroethoxy) methane	ND	810	ug/kg	54
bis(2-Chloroethyl)- ether	ND	160	ug/kg	22
bis(2-Ethylhexyl) phthalate	ND	1600	ug/kg	130
4-Bromophenyl phenyl ether	ND	810	ug/kg	71
Butyl benzyl phthalate	ND	810	ug/kg	110
4-Chloroaniline	ND	810	ug/kg	65
4-Chloro-3-methylphenol	ND	810	ug/kg	75
2-Chloronaphthalene	ND	160	ug/kg	17
2-Chlorophenol	ND	810	ug/kg	67
4-Chlorophenyl phenyl ether	ND	810	ug/kg	91
Chrysene	ND	160	ug/kg	19
Dibenz(a,h)anthracene	ND	160	ug/kg	18
Dibenzofuran	ND	810	ug/kg	80
1,2-Dichlorobenzene	ND	810	ug/kg	86
1,3-Dichlorobenzene	ND	810	ug/kg	64
1,4-Dichlorobenzene	ND	810	ug/kg	59
3,3'-Dichlorobenzidine	ND	810	ug/kg	86
2,4-Dichlorophenol	ND	160	ug/kg	16
Diethyl phthalate	ND	810	ug/kg	89
2,4-Dimethylphenol	ND	810	ug/kg	130
Dimethyl phthalate	ND	810	ug/kg	89
Di-n-butyl phthalate	ND	810	ug/kg	100
Di-n-octyl phthalate	ND	810	ug/kg	86

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020911-SM-009

GC/MS Semivolatiles

Lot-Sample #....: C1B110571-006 Work Order #....: MEC711AC Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2,4-Dinitrophenol	ND	4200	ug/kg	970
4,6-Dinitro- 2-methylphenol	ND	4200	ug/kg	330
2,4-Dinitrotoluene	ND	810	ug/kg	66
2,6-Dinitrotoluene	ND	810	ug/kg	84
Fluoranthene	ND	160	ug/kg	17
Fluorene	ND	160	ug/kg	22
Hexachlorobenzene	ND	160	ug/kg	17
Hexachlorobutadiene	ND	160	ug/kg	18
Hexachlorocyclopenta- diene	ND	810	ug/kg	88
Hexachloroethane	ND	810	ug/kg	59
Indeno(1,2,3-cd)pyrene	ND	160	ug/kg	17
Isophorone	ND	810	ug/kg	62
2-Methylnaphthalene	ND	160	ug/kg	15
2-Methylphenol	ND	810	ug/kg	57
4-Methylphenol	ND	810	ug/kg	80
Naphthalene	ND	160	ug/kg	14
2-Nitroaniline	ND	4200	ug/kg	370
3-Nitroaniline	ND	4200	ug/kg	340
4-Nitroaniline	ND	4200	ug/kg	330
Nitrobenzene	ND	1600	ug/kg	68
2-Nitrophenol	ND	810	ug/kg	90
4-Nitrophenol	ND	4200	ug/kg	280
N-Nitrosodi-n-propyl- amine	ND	160	ug/kg	19
N-Nitrosodiphenylamine	ND	810	ug/kg	76
2,2'-oxybis (1-Chloropropane)	ND	160	ug/kg	18
Pentachlorophenol	ND	810	ug/kg	73
Phenanthrene	ND	160	ug/kg	26
Phenol	ND	160	ug/kg	19
Pyrene	ND	160	ug/kg	17
1,2,4-Trichloro- benzene	ND	810	ug/kg	45
2,4,5-Trichloro- phenol	ND	810	ug/kg	87
2,4,6-Trichloro- phenol	ND	810	ug/kg	120

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020911-SM-009

GC/MS Semivolatiles

Lot-Sample #...: C1B110571-006 Work Order #...: MEC711AC Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	75	(35 - 124)
2-Fluorobiphenyl	76	(35 - 105)
2-Fluorophenol	79	(39 - 103)
Nitrobenzene-d5	74	(25 - 104)
Phenol-d5	80	(25 - 105)
Terphenyl-d14	100	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

S0-009954-020911-SM-009

GC/MS Semivolatiles

Lot-Sample #: C1B110571-006

Work Order #: MEC711AC

Matrix: S0

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
Unknown Aldol Condensate		8200 JA M	2.834	ug/kg
Unknown Aldol Condensate		1100 JA M	3.5178	ug/kg
Unknown		49 J M	7.8129	ug/kg
Cyclic octaatomic sulfur	10544-50-0	100 J M	8.7424	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: C1B110571
MB Lot-Sample #: C1B150000-019

Work Order #...: MEE461AA

Matrix.....: SOLID

Analysis Date...: 02/15/11

Prep Date.....: 02/15/11

Analysis Time...: 12:45

Dilution Factor: 1

Prep Batch #...: 1046019

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzoic acid	ND	1700	ug/kg	SW846 8270C
Benzyl alcohol	ND	330	ug/kg	SW846 8270C
Acenaphthene	ND	67	ug/kg	SW846 8270C
Acenaphthylene	ND	67	ug/kg	SW846 8270C
Anthracene	ND	67	ug/kg	SW846 8270C
Benzo(a)anthracene	ND	67	ug/kg	SW846 8270C
Benzo(a)pyrene	ND	67	ug/kg	SW846 8270C
Benzo(b)fluoranthene	ND	67	ug/kg	SW846 8270C
Benzo(k)fluoranthene	ND	67	ug/kg	SW846 8270C
Benzo(ghi)perylene	ND	67	ug/kg	SW846 8270C
bis(2-Chloroethoxy) methane	ND	330	ug/kg	SW846 8270C
bis(2-Chloroethyl)- ether	ND	67	ug/kg	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	670	ug/kg	SW846 8270C
4-Bromophenyl phenyl ether	ND	330	ug/kg	SW846 8270C
Butyl benzyl phthalate	ND	330	ug/kg	SW846 8270C
4-Chloroaniline	ND	330	ug/kg	SW846 8270C
4-Chloro-3-methylphenol	ND	330	ug/kg	SW846 8270C
2-Chloronaphthalene	ND	67	ug/kg	SW846 8270C
2-Chlorophenol	ND	330	ug/kg	SW846 8270C
4-Chlorophenyl phenyl ether	ND	330	ug/kg	SW846 8270C
Chrysene	ND	67	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	ND	67	ug/kg	SW846 8270C
Dibenzofuran	ND	330	ug/kg	SW846 8270C
1,2-Dichlorobenzene	ND	330	ug/kg	SW846 8270C
1,3-Dichlorobenzene	ND	330	ug/kg	SW846 8270C
1,4-Dichlorobenzene	ND	330	ug/kg	SW846 8270C
3,3'-Dichlorobenzidine	ND	330	ug/kg	SW846 8270C
2,4-Dichlorophenol	ND	67	ug/kg	SW846 8270C
Diethyl phthalate	ND	330	ug/kg	SW846 8270C
2,4-Dimethylphenol	ND	330	ug/kg	SW846 8270C
Dimethyl phthalate	ND	330	ug/kg	SW846 8270C
Di-n-butyl phthalate	ND	330	ug/kg	SW846 8270C
Di-n-octyl phthalate	ND	330	ug/kg	SW846 8270C
2,4-Dinitrophenol	ND	1700	ug/kg	SW846 8270C
4,6-Dinitro- 2-methylphenol	ND	1700	ug/kg	SW846 8270C

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: C1B110571

Work Order #...: MEE461AA

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING			METHOD
		LIMIT	UNITS		
2,4-Dinitrotoluene	ND	330	ug/kg	SW846	8270C
2,6-Dinitrotoluene	ND	330	ug/kg	SW846	8270C
Fluoranthene	ND	67	ug/kg	SW846	8270C
Fluorene	ND	67	ug/kg	SW846	8270C
Hexachlorobenzene	ND	67	ug/kg	SW846	8270C
Hexachlorobutadiene	ND	67	ug/kg	SW846	8270C
Hexachlorocyclopenta- diene	ND	330	ug/kg	SW846	8270C
Hexachloroethane	ND	330	ug/kg	SW846	8270C
Indeno(1,2,3-cd)pyrene	ND	67	ug/kg	SW846	8270C
Isophorone	ND	330	ug/kg	SW846	8270C
2-Methylnaphthalene	ND	67	ug/kg	SW846	8270C
2-Methylphenol	ND	330	ug/kg	SW846	8270C
4-Methylphenol	ND	330	ug/kg	SW846	8270C
Naphthalene	ND	67	ug/kg	SW846	8270C
2-Nitroaniline	ND	1700	ug/kg	SW846	8270C
3-Nitroaniline	ND	1700	ug/kg	SW846	8270C
4-Nitroaniline	ND	1700	ug/kg	SW846	8270C
Nitrobenzene	ND	670	ug/kg	SW846	8270C
2-Nitrophenol	ND	330	ug/kg	SW846	8270C
4-Nitrophenol	ND	1700	ug/kg	SW846	8270C
N-Nitrosodi-n-propyl- amine	ND	67	ug/kg	SW846	8270C
N-Nitrosodiphenylamine	ND	330	ug/kg	SW846	8270C
2,2'-oxybis (1-Chloropropane)	ND	67	ug/kg	SW846	8270C
Pentachlorophenol	ND	330	ug/kg	SW846	8270C
Phenanthrene	ND	67	ug/kg	SW846	8270C
Phenol	ND	67	ug/kg	SW846	8270C
Pyrene	ND	67	ug/kg	SW846	8270C
1,2,4-Trichloro- benzene	ND	330	ug/kg	SW846	8270C
2,4,5-Trichloro- phenol	ND	330	ug/kg	SW846	8270C
2,4,6-Trichloro- phenol	ND	330	ug/kg	SW846	8270C
SURROGATE	PERCENT RECOVERY	RECOVERY			
		LIMITS			
2,4,6-Tribromophenol	92	(35 - 124)			
2-Fluorobiphenyl	83	(35 - 105)			
2-Fluorophenol	89	(39 - 103)			
Nitrobenzene-d5	83	(25 - 104)			
Phenol-d5	88	(25 - 105)			
Terphenyl-d14	89	(25 - 127)			

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: C1B110571

Work Order #...: MEE461AA

Matrix.....: SOLID

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Conestoga-Rovers & Associates, Inc.

Method Blank Report

GC/MS Semivolatiles

Lot-Sample #: C1B150000-019 B **Work Order #:** MEE461AA **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/kg

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: C1B110571 Work Order #...: MEE461AC Matrix.....: SOLID
 LCS Lot-Sample#: C1B150000-019
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #...: 1046019 Analysis Time...: 13:06
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
Acenaphthene	96	(47 - 104)	SW846 8270C
4-Bromophenyl phenyl ether	103	(47 - 110)	SW846 8270C
Butyl benzyl phthalate	89	(41 - 118)	SW846 8270C
4-Chloro-3-methylphenol	96	(47 - 109)	SW846 8270C
2-Chlorophenol	95	(40 - 101)	SW846 8270C
1,4-Dichlorobenzene	94	(35 - 99)	SW846 8270C
2,4-Dinitrotoluene	99	(45 - 124)	SW846 8270C
Hexachloroethane	91	(37 - 97)	SW846 8270C
4-Methylphenol	102	(42 - 105)	SW846 8270C
Naphthalene	92	(43 - 100)	SW846 8270C
4-Nitrophenol	97	(36 - 127)	SW846 8270C
N-Nitrosodi-n-propyl- amine	93	(42 - 107)	SW846 8270C
Pentachlorophenol	100	(17 - 122)	SW846 8270C
Phenol	89	(41 - 102)	SW846 8270C
Pyrene	90	(41 - 115)	SW846 8270C
1,2,4-Trichloro- benzene	95	(43 - 100)	SW846 8270C
1-Methylnaphthalene	100	(10 - 140)	SW846 8270C
<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	
2,4,6-Tribromophenol	119	(35 - 124)	
2-Fluorobiphenyl	98	(35 - 105)	
2-Fluorophenol	102	(39 - 103)	
Nitrobenzene-d5	91	(25 - 104)	
Phenol-d5	101	(25 - 105)	
Terphenyl-d14	98	(25 - 127)	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: C1B110571 Work Order #...: MEC7M1AF-MS Matrix.....: S0
 MS Lot-Sample #: C1B110571-003 MEC7M1AG-MSD
 Date Sampled...: 02/08/11 Date Received...: 02/11/11 MS Run #.....: 1046011
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #...: 1046019 Analysis Time...: 15:36
 Dilution Factor: 2

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	77	(47 - 104)			SW846 8270C
	93	(47 - 104)	19	(0-40)	SW846 8270C
4-Bromophenyl phenyl ether	78	(47 - 110)			SW846 8270C
	92	(47 - 110)	17	(0-46)	SW846 8270C
Butyl benzyl phthalate	71	(41 - 118)			SW846 8270C
	89	(41 - 118)	22	(0-41)	SW846 8270C
4-Chloro-3-methylphenol	80	(47 - 109)			SW846 8270C
	94	(47 - 109)	17	(0-36)	SW846 8270C
2-Chlorophenol	76	(40 - 101)			SW846 8270C
	87	(40 - 101)	13	(0-42)	SW846 8270C
1,4-Dichlorobenzene	73	(35 - 99)			SW846 8270C
	90	(35 - 99)	19	(0-49)	SW846 8270C
2,4-Dinitrotoluene	82	(45 - 124)			SW846 8270C
	103	(45 - 124)	22	(0-41)	SW846 8270C
Hexachloroethane	69	(37 - 97)			SW846 8270C
	83	(37 - 97)	19	(0-48)	SW846 8270C
4-Methylphenol	80	(42 - 105)			SW846 8270C
	95	(42 - 105)	17	(0-43)	SW846 8270C
Naphthalene	75	(43 - 100)			SW846 8270C
	90	(43 - 100)	18	(0-32)	SW846 8270C
4-Nitrophenol	104	(36 - 127)			SW846 8270C
	128 a	(36 - 127)	20	(0-43)	SW846 8270C
N-Nitrosodi-n-propyl- amine	75	(42 - 107)			SW846 8270C
	86	(42 - 107)	13	(0-43)	SW846 8270C
Pentachlorophenol	65	(17 - 122)			SW846 8270C
	80	(17 - 122)	21	(0-52)	SW846 8270C
Phenol	69	(41 - 102)			SW846 8270C
	83	(41 - 102)	19	(0-39)	SW846 8270C
Pyrene	75	(41 - 115)			SW846 8270C
	93	(41 - 115)	22	(0-43)	SW846 8270C
1,2,4-Trichloro- benzene	103 a	(43 - 100)			SW846 8270C
	200 a	(43 - 100)	20	(0-36)	SW846 8270C
1-Methylnaphthalene	81	(10 - 140)			SW846 8270C
	95	(10 - 140)	16	(0-30)	SW846 8270C

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: C1B110571
MS Lot-Sample #: C1B110571-003

Work Order #...: MEC7M1AF-MS
MEC7M1AG-MSD

Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	86	(35 - 124)
	102	(35 - 124)
2-Fluorobiphenyl	77	(35 - 105)
	90	(35 - 105)
2-Fluorophenol	79	(39 - 103)
	90	(39 - 103)
Nitrobenzene-d5	73	(25 - 104)
	86	(25 - 104)
Phenol-d5	78	(25 - 105)
	91	(25 - 105)
Terphenyl-d14	78	(25 - 127)
	98	(25 - 127)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

a. Spiked analyte recovery is outside stated control limits.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020811-SM-004

GC Semivolatiles

Lot-Sample #... : C1B110571-001	Work Order #... : MEC681AD	Matrix..... : S0
Date Sampled... : 02/08/11	Date Received... : 02/11/11	MS Run #..... : 1046012
Prep Date..... : 02/15/11	Analysis Date... : 02/15/11	
Prep Batch #... : 1046020	Analysis Time... : 10:03	
Dilution Factor : 98.68		
% Moisture..... : 25	Method..... : SW846 8081A	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
alpha-BHC	2400	220	ug/kg	36
beta-BHC	ND	220	ug/kg	57
delta-BHC	3900	220	ug/kg	33
gamma-BHC (Lindane)	5200	220	ug/kg	38
Heptachlor	ND	220	ug/kg	49
Aldrin	ND	220	ug/kg	39
Heptachlor epoxide	ND	220	ug/kg	43
Endosulfan I	ND	220	ug/kg	41
Dieldrin	ND	220	ug/kg	36
4,4'-DDE	ND	220	ug/kg	33
Endrin	ND	220	ug/kg	42
Endrin ketone	ND	220	ug/kg	34
Endosulfan II	ND	220	ug/kg	39
4,4'-DDD	ND	220	ug/kg	29
Endosulfan sulfate	ND	220	ug/kg	23
4,4'-DDT	ND	220	ug/kg	33
Methoxychlor	ND	430	ug/kg	46
alpha-Chlordane	ND	220	ug/kg	43
gamma-Chlordane	ND	220	ug/kg	43
Toxaphene	ND	8800	ug/kg	1500
		RECOVERY		
SURROGATE	PERCENT RECOVERY	LIMITS		
Tetrachloro-m-xylene	NC, DIL	(45 - 130)		
Decachlorobiphenyl	NC, DIL	(45 - 130)		

NOTE(S):

NC The recovery and/or RPD were not calculated.
DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020811-SM-005

GC Semivolatiles

Lot-Sample #... : C1B110571-002	Work Order #... : MEC7G1AD	Matrix..... : S0
Date Sampled... : 02/08/11	Date Received... : 02/11/11	MS Run #..... : 1046012
Prep Date..... : 02/15/11	Analysis Date... : 02/15/11	
Prep Batch #... : 1046020	Analysis Time... : 10:22	
Dilution Factor : 99.34		
% Moisture..... : 25	Method..... : SW846 8081A	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
alpha-BHC	2200	230	ug/kg	36
beta-BHC	76 J	230	ug/kg	58
delta-BHC	3300	230	ug/kg	34
gamma-BHC (Lindane)	3800	230	ug/kg	39
Heptachlor	ND	230	ug/kg	49
Aldrin	ND	230	ug/kg	40
Heptachlor epoxide	ND	230	ug/kg	43
Endosulfan I	ND	230	ug/kg	42
Dieldrin	ND	230	ug/kg	37
4,4'-DDE	ND	230	ug/kg	34
Endrin	ND	230	ug/kg	43
Endrin ketone	ND	230	ug/kg	35
Endosulfan II	ND	230	ug/kg	39
4,4'-DDD	59 J	230	ug/kg	29
Endosulfan sulfate	ND	230	ug/kg	23
4,4'-DDT	ND	230	ug/kg	33
Methoxychlor	ND	440	ug/kg	46
alpha-Chlordane	ND	230	ug/kg	44
gamma-Chlordane	ND	230	ug/kg	44
Toxaphene	ND	8900	ug/kg	1500
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	NC, DIL	(45 - 130)		
Decachlorobiphenyl	NC, DIL	(45 - 130)		

NOTE(S):

NC The recovery and/or RPD were not calculated.
DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.
J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020811-SM-006

GC Semivolatiles

Lot-Sample #... : C1B110571-003	Work Order #... : MEC7M1AD	Matrix..... : S0
Date Sampled... : 02/08/11	Date Received... : 02/11/11	MS Run #..... : 1046012
Prep Date..... : 02/15/11	Analysis Date... : 02/15/11	
Prep Batch #... : 1046020	Analysis Time... : 10:41	
Dilution Factor : 99.34		
% Moisture..... : 12	Method..... : SW846 8081A	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
alpha-BHC	540	190	ug/kg	31
beta-BHC	ND	190	ug/kg	49
delta-BHC	960	190	ug/kg	29
gamma-BHC (Lindane)	1400	190	ug/kg	33
Heptachlor	ND	190	ug/kg	42
Aldrin	ND	190	ug/kg	34
Heptachlor epoxide	ND	190	ug/kg	37
Endosulfan I	ND	190	ug/kg	35
Dieldrin	ND	190	ug/kg	31
4,4'-DDE	ND	190	ug/kg	28
Endrin	ND	190	ug/kg	36
Endrin ketone	ND	190	ug/kg	29
Endosulfan II	ND	190	ug/kg	33
4,4'-DDD	ND	190	ug/kg	25
Endosulfan sulfate	ND	190	ug/kg	20
4,4'-DDT	ND	190	ug/kg	28
Methoxychlor	ND	370	ug/kg	39
alpha-Chlordane	ND	190	ug/kg	37
gamma-Chlordane	ND	190	ug/kg	37
Toxaphene	ND	7500	ug/kg	1300
		RECOVERY		
SURROGATE	PERCENT RECOVERY	LIMITS		
Tetrachloro-m-xylene	NC, DIL	(45 - 130)		
Decachlorobiphenyl	NC, DIL	(45 - 130)		

NOTE(S):

NC The recovery and/or RPD were not calculated.
DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020811-SM-007

GC Semivolatiles

Lot-Sample #... : C1B110571-004	Work Order #... : MEC7Q1AD	Matrix..... : S0
Date Sampled... : 02/08/11	Date Received... : 02/11/11	MS Run #..... : 1046012
Prep Date..... : 02/15/11	Analysis Date... : 02/15/11	
Prep Batch #... : 1046020	Analysis Time... : 11:39	
Dilution Factor : 100		
% Moisture..... : 20	Method..... : SW846 8081A	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
alpha-BHC	170 J	210	ug/kg	34
beta-BHC	ND	210	ug/kg	54
delta-BHC	390	210	ug/kg	32
gamma-BHC (Lindane)	500	210	ug/kg	37
Heptachlor	ND	210	ug/kg	47
Aldrin	ND	210	ug/kg	37
Heptachlor epoxide	ND	210	ug/kg	41
Endosulfan I	ND	210	ug/kg	39
Dieldrin	ND	210	ug/kg	35
4,4'-DDE	ND	210	ug/kg	32
Endrin	ND	210	ug/kg	41
Endrin ketone	ND	210	ug/kg	33
Endosulfan II	ND	210	ug/kg	37
4,4'-DDD	ND	210	ug/kg	27
Endosulfan sulfate	ND	210	ug/kg	22
4,4'-DDT	ND	210	ug/kg	31
Methoxychlor	ND	410	ug/kg	44
alpha-Chlordane	ND	210	ug/kg	42
gamma-Chlordane	ND	210	ug/kg	41
Toxaphene	ND	8400	ug/kg	1400
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	NC, DIL	(45 - 130)		
Decachlorobiphenyl	NC, DIL	(45 - 130)		

NOTE(S):

NC The recovery and/or RPD were not calculated.
DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.
J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020911-SM-008

GC Semivolatiles

Lot-Sample #... : C1B110571-005	Work Order #... : MEC7X1AD	Matrix..... : S0
Date Sampled... : 02/09/11	Date Received... : 02/11/11	MS Run #..... : 1046012
Prep Date..... : 02/15/11	Analysis Date... : 02/15/11	
Prep Batch #... : 1046020	Analysis Time... : 11:58	
Dilution Factor : 98.68		
% Moisture..... : 24	Method..... : SW846 8081A	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
alpha-BHC	190 J	220	ug/kg	35
beta-BHC	ND	220	ug/kg	56
delta-BHC	550	220	ug/kg	33
gamma-BHC (Lindane)	250	220	ug/kg	38
Heptachlor	ND	220	ug/kg	48
Aldrin	ND	220	ug/kg	39
Heptachlor epoxide	ND	220	ug/kg	42
Endosulfan I	ND	220	ug/kg	41
Dieldrin	ND	220	ug/kg	36
4,4'-DDE	ND	220	ug/kg	33
Endrin	ND	220	ug/kg	42
Endrin ketone	ND	220	ug/kg	34
Endosulfan II	ND	220	ug/kg	38
4,4'-DDD	ND	220	ug/kg	28
Endosulfan sulfate	ND	220	ug/kg	22
4,4'-DDT	ND	220	ug/kg	32
Methoxychlor	ND	430	ug/kg	45
alpha-Chlordane	ND	220	ug/kg	43
gamma-Chlordane	ND	220	ug/kg	43
Toxaphene	ND	8700	ug/kg	1400
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	NC, DIL	(45 - 130)		
Decachlorobiphenyl	NC, DIL	(45 - 130)		

NOTE(S):

NC The recovery and/or RPD were not calculated.
DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.
J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020911-SM-009

GC Semivolatiles

Lot-Sample #... : C1B110571-006	Work Order #... : MEC711AD	Matrix..... : S0
Date Sampled... : 02/09/11	Date Received... : 02/11/11	MS Run #..... : 1046012
Prep Date..... : 02/15/11	Analysis Date... : 02/15/11	
Prep Batch #... : 1046020	Analysis Time... : 13:53	
Dilution Factor : 0.99		
% Moisture..... : 19	Method..... : SW846 8081A	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
alpha-BHC	1.7 J	2.1	ug/kg	0.33
beta-BHC	4.4	2.1	ug/kg	0.53
delta-BHC	0.81 J, PG	2.1	ug/kg	0.31
gamma-BHC (Lindane)	0.62 J, PG	2.1	ug/kg	0.36
Heptachlor	ND	2.1	ug/kg	0.45
Aldrin	ND	2.1	ug/kg	0.37
Heptachlor epoxide	ND	2.1	ug/kg	0.40
Endosulfan I	ND	2.1	ug/kg	0.38
Dieldrin	ND	2.1	ug/kg	0.34
4,4'-DDE	ND	2.1	ug/kg	0.31
Endrin	ND	2.1	ug/kg	0.40
Endrin ketone	ND	2.1	ug/kg	0.32
Endosulfan II	ND	2.1	ug/kg	0.36
4,4'-DDD	ND	2.1	ug/kg	0.27
Endosulfan sulfate	ND	2.1	ug/kg	0.21
4,4'-DDT	ND	2.1	ug/kg	0.31
Methoxychlor	ND	4.0	ug/kg	0.43
alpha-Chlordane	ND	2.1	ug/kg	0.41
gamma-Chlordane	ND	2.1	ug/kg	0.40
Toxaphene	ND	82	ug/kg	14
		RECOVERY		
SURROGATE	PERCENT RECOVERY	LIMITS		
Tetrachloro-m-xylene	80	(45 - 130)		
Decachlorobiphenyl	83	(45 - 130)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

PG The percent difference between the original and confirmation analyses is greater than 40%.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: C1B110571
MB Lot-Sample #: C1B150000-020

Work Order #...: MEE471AA

Matrix.....: SOLID

Analysis Date...: 02/15/11

Prep Date.....: 02/15/11

Analysis Time...: 12:36

Dilution Factor: 1

Prep Batch #...: 1046020

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
alpha-BHC	ND	1.7	ug/kg	SW846 8081A
beta-BHC	ND	1.7	ug/kg	SW846 8081A
delta-BHC	ND	1.7	ug/kg	SW846 8081A
gamma-BHC (Lindane)	ND	1.7	ug/kg	SW846 8081A
Heptachlor	ND	1.7	ug/kg	SW846 8081A
Aldrin	ND	1.7	ug/kg	SW846 8081A
Heptachlor epoxide	ND	1.7	ug/kg	SW846 8081A
Endosulfan I	ND	1.7	ug/kg	SW846 8081A
Dieldrin	ND	1.7	ug/kg	SW846 8081A
4,4'-DDE	ND	1.7	ug/kg	SW846 8081A
Endrin	ND	1.7	ug/kg	SW846 8081A
Endrin ketone	ND	1.7	ug/kg	SW846 8081A
Endosulfan II	ND	1.7	ug/kg	SW846 8081A
4,4'-DDD	ND	1.7	ug/kg	SW846 8081A
Endosulfan sulfate	ND	1.7	ug/kg	SW846 8081A
4,4'-DDT	ND	1.7	ug/kg	SW846 8081A
Methoxychlor	ND	3.3	ug/kg	SW846 8081A
alpha-Chlordane	ND	1.7	ug/kg	SW846 8081A
gamma-Chlordane	ND	1.7	ug/kg	SW846 8081A
Toxaphene	ND	67	ug/kg	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	105	(45 - 130)
Decachlorobiphenyl	99	(45 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: C1B110571 Work Order #...: MEE471AC Matrix.....: SOLID
 LCS Lot-Sample#: C1B150000-020
 Prep Date.....: 02/15/11 Analysis Date...: 02/15/11
 Prep Batch #...: 1046020 Analysis Time...: 12:55
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
gamma-BHC (Lindane)	97	(66 - 124)	SW846 8081A
Heptachlor	99	(70 - 128)	SW846 8081A
Aldrin	102	(70 - 123)	SW846 8081A
Dieldrin	102	(70 - 123)	SW846 8081A
Endrin	106	(70 - 127)	SW846 8081A
4,4'-DDT	95	(61 - 126)	SW846 8081A

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Tetrachloro-m-xylene	107	(45 - 130)
Decachlorobiphenyl	103	(45 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: C1B110571 **Work Order #...**: MEC7M1AH-MS **Matrix.....**: S0
MS Lot-Sample #: C1B110571-003 MEC7M1AJ-MSD
Date Sampled...: 02/08/11 **Date Received...**: 02/11/11 **MS Run #.....**: 1046012
Prep Date.....: 02/15/11 **Analysis Date...**: 02/15/11
Prep Batch #...: 1046020 **Analysis Time...**: 11:01
Dilution Factor: 100

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
gamma-BHC (Lindane)	NC, DIL	(66 - 124)			SW846 8081A
	NC, DIL	(66 - 124)		(0-20)	SW846 8081A
Heptachlor	NC, DIL	(70 - 128)			SW846 8081A
	NC, DIL	(70 - 128)		(0-20)	SW846 8081A
Aldrin	NC, DIL	(70 - 123)			SW846 8081A
	NC, DIL	(70 - 123)		(0-20)	SW846 8081A
Dieldrin	NC, DIL	(70 - 123)			SW846 8081A
	NC, DIL	(70 - 123)		(0-20)	SW846 8081A
Endrin	NC, DIL	(70 - 127)			SW846 8081A
	NC, DIL	(70 - 127)		(0-20)	SW846 8081A
4,4'-DDT	NC, DIL	(61 - 126)			SW846 8081A
	NC, DIL	(61 - 126)		(0-37)	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	NC, DIL	(45 - 130)
	NC, DIL	(45 - 130)
Decachlorobiphenyl	NC, DIL	(45 - 130)
	NC, DIL	(45 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-004

General Chemistry

Lot-Sample #...: C1B110571-001 Work Order #...: MEC68 Matrix.....: SO
Date Sampled...: 02/08/11 Date Received...: 02/11/11
% Moisture.....: 25

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	75.3	1.0	%	SM20 2540G	02/13-02/14/11	1044010
				Dilution Factor: 1	Analysis Time..: 10:00	MS Run #.....: 1044002
				MDL.....: 0.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020811-SM-005

General Chemistry

Lot-Sample #...: C1B110571-002 Work Order #...: MEC7G Matrix.....: S0
Date Sampled...: 02/08/11 Date Received...: 02/11/11
% Moisture.....: 25

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	74.6	1.0	%	SM20 2540G	02/13-02/14/11	1044010
			Dilution Factor: 1	Analysis Time..: 10:00	MS Run #.....: 1044002	
			MDL.....: 0.0			

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020811-SM-006

General Chemistry

Lot-Sample #...: C1B110571-003 Work Order #...: MEC7M Matrix.....: S0
Date Sampled...: 02/08/11 Date Received...: 02/11/11
% Moisture.....: 12

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	88.3	1.0	%	SM20 2540G	02/13-02/14/11	1044010
				Dilution Factor: 1	Analysis Time..: 10:00	MS Run #.....: 1044002
				MDL.....: 0.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-009954-020811-SM-007

General Chemistry

Lot-Sample #...: C1B110571-004 Work Order #...: MEC7Q Matrix.....: SO
Date Sampled...: 02/08/11 Date Received...: 02/11/11
% Moisture.....: 20

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	79.6	1.0	%	SM20 2540G	02/13-02/14/11	1044010
				Dilution Factor: 1	Analysis Time..: 10:00	MS Run #.....: 1044002
				MDL.....: 0.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020911-SM-008

General Chemistry

Lot-Sample #...: C1B110571-005 Work Order #...: MEC7X Matrix.....: S0
Date Sampled...: 02/09/11 Date Received...: 02/11/11
% Moisture.....: 24

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	76.3	1.0	%	SM20 2540G	02/13-02/14/11	1044010
			Dilution Factor: 1	Analysis Time..: 10:00	MS Run #.....: 1044002	
			MDL.....: 0.0			

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-009954-020911-SM-009

General Chemistry

Lot-Sample #...: C1B110571-006 Work Order #...: MEC71 Matrix.....: S0
Date Sampled...: 02/09/11 Date Received...: 02/11/11
% Moisture.....: 19

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	80.8	1.0	%	SM20 2540G	02/13-02/14/11	1044010
				Dilution Factor: 1	Analysis Time..: 10:00	MS Run #.....: 1044002
				MDL.....: 0.0		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: C1B110571

Work Order #...: MEA8W-SMP
MEA8W-DUP

Matrix.....: SOLID

Date Sampled...: 02/03/11

Date Received...: 02/10/11

% Moisture.....: 57

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	42.8	42.1	%	1.6	(0-20)	SD Lot-Sample #: C1B110480-001 SM20 2540G	02/13-02/14/11	1044010
			Dilution Factor: 1		Analysis Time...: 10:00		MS Run Number...: 1044002	



**CONESTOGA-ROVERS
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MEMORANDUM

TO: Clint Babcock
FROM: Susan Scrocchi/bjw/11 ^{SES}
c.c.: Jane Polovich; Dennis Hoyt; Joe Branch; John Pentilchuk
REF. NO.: 009954
DATE: February 21, 2011
E-Mail and Hard Copy if Requested
RE: **Analytical Results and QA/QC Review
Colvin Boulevard Sanitary Sewer Repair
Niagara Falls, NY
February 2011**

INTRODUCTION

Soil samples were collected from a trench during the Colvin Boulevard Sanitary Sewer Repair in Niagara Falls, NY. Samples were collected February 4-9, 2011 and were submitted to TestAmerica Laboratories, Inc. (TA) located in Pittsburgh, Pennsylvania. Samples were analyzed for volatiles, semi-volatiles, and pesticides. In addition to the standard list of compounds, the samples were also scanned for Tentatively Identified Compounds (TICs). A sample key is presented in Table 1 and the analytical parameter list, methodologies, and holding time criteria are presented in Table 2. The analytical results are summarized in Table 3.

The final results and supporting quality assurance/quality control (QA/QC) data were reviewed. Evaluation of the data was based on information obtained from the Chain of Custody forms, finished report forms, blank data, and recovery data for matrix and surrogate spikes. The QA/QC criteria by which the data have been assessed are outlined in the respective methods and the documents: "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," October 1999, United States Environmental Protection Agency (USEPA) 540/R-99/008.

QA/QC REVIEW

Sample holding times were assessed against the criteria outlined in Table 2.

All holding time criteria were met. Samples were properly preserved after collection and maintained at 4°C (±2°C).

All samples and blanks for organic analyses were spiked with surrogate compounds prior to sample extraction and/or analysis. All surrogate recoveries met the method criteria indicating acceptable laboratory accuracy with the exception of the pesticide analyses. All pesticide surrogates were diluted out. Analytical efficiency was assessed based on control sample recoveries.

Method blanks were extracted and/or analyzed with the investigative samples for all parameters. All method blank results were non-detect indicating that no compounds of interest were introduced into the samples during preparation and/or analysis with the exception of low concentrations of acetone and methylene chloride. All associated samples with similar concentrations were qualified as non-detect (see Table 4).

A blank spike (BS) was analyzed for all parameters. All BS samples contained the representative analytes of interest, and the recoveries were evaluated against laboratory control limits. Some blank spikes were analyzed in duplicate to assess laboratory precision. All recoveries were within the laboratory control limits indicating good analytical accuracy and precision (where applicable).

Matrix spike/matrix spike duplicates (MS/MSD) were performed as the required frequency for all parameters. All spike results demonstrated acceptable accuracy and precision with the exception of some high recoveries. All associated sample results were non-detect and would not have been impacted by the implied high bias. The pesticide MS/MSD required dilution and no recoveries could be assessed. Accuracy and precision was considered acceptable based on BS recoveries.

A field duplicate sample was submitted "blind" to the laboratory for analyses as specified in Table 1. All the results showed good precision outside of the estimated regions of detection indicating acceptable analytical and sampling precision with the exception of some variability between the chlorobenzene results. A summary of qualified results is presented in Table 5.

Pesticide analyses were performed using dual column analyses. All pesticide results showed good correlation between the two columns with a few exceptions. All pesticide results with a difference of greater than 40 percent between the two columns were qualified as estimated (see Table 6).

TICs were reported for the volatile and semi-volatile analyses. All TIC results are estimated values and are presented in Table 7. TICs which were present in the blanks or which were identified as aldol condensation products and/or siloxanes have been eliminated.

CONCLUSION

Based on this QA/QC review, these data are acceptable with the qualifications noted.

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

<i>Sample I.D.</i>	<i>Location I.D.</i>	<i>Collection Date (mm/dd/yy)</i>	<i>Collection Time (hr:min)</i>	<u><i>Analysis/Parameters</i></u>			<i>Comments</i>
				<i>VOCs plus TICs</i>	<i>SVOCs plus TICs</i>	<i>Pesticides</i>	
SO-009954-020411-SM-001	Floor, 24'	02/04/11	12:00	X	X	X	
SO-009954-020511-SM-002	West endwall	02/05/11	13:50	X	X	X	
SO-009954-020711-JP-003	Floor, 33'	02/07/11	10:50	X	X	X	
SO-009954-020811-SM-004	Floor, 43'	02/08/11	0:00	X	X	X	
SO-009954-020811-SM-005	Floor, 43'	02/08/11	10:00	X	X	X	Field duplicate of SO-009954-020811-SM-004
SO-009954-020811-SM-006	North sidewall, 30'	02/08/11	11:00	X	X	X	
SO-009954-020811-SM-007	South sidewall, 30'	02/08/11	11:30	X	X	X	
SO-009954-020911-SM-008	Floor, 48'	02/09/11	14:45	X	X	X	
SO-009954-020911-SM-009	East endwall	02/09/11	14:55	X	X	X	

Notes:

VOCs Volatile Organic Compounds

SVOCs Semi-Volatile Organic Compounds

TICs Tentatively Identified Compounds

TABLE 2

**ANALYTE PARAMETER LIST
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011**

<i>Parameters</i>	<i>Methodology</i>	<i>Holding Time Criteria</i>
Volatiles	USEPA 8260 ⁽¹⁾	14 days from collection to analysis
Semi-Volatiles	USEPA 8270 ⁽¹⁾	14 days from collection to extraction 40 days from extraction to analysis
Pesticides	USEPA 8081 ⁽¹⁾	14 days from collection to extraction 40 days from extraction to analysis

Notes:

- ⁽¹⁾ USEPA 8000 Series: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," September 1986 (with updates).
USEPA United States Environmental Protection Agency.

TABLE 3

ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

	<i>Sample Location:</i> <i>East endwall</i> <i>Floor, 24'</i> <i>Floor, 33'</i> <i>Sample ID:</i> <i>SO-009954-020911-SM-009</i> <i>SO-009954-020411-SM-001</i> <i>SO-009954-020711-JP-003</i> <i>Sample Date:</i> <i>2/9/2011</i> <i>2/4/2011</i> <i>2/7/2011</i>			
<i>Parameters</i>	<i>Units</i>			
<i>Volatile Organic Compounds</i>				
1,1,1-Trichloroethane	µg/kg	6.2 U	5.5 U	6.4 U
1,1,2,2-Tetrachloroethane	µg/kg	6.2 U	5.5 U	6.4 U
1,1,2-Trichloroethane	µg/kg	6.2 U	5.5 U	6.4 U
1,1-Dichloroethane	µg/kg	6.2 U	5.5 U	6.4 U
1,1-Dichloroethene	µg/kg	6.2 U	5.5 U	6.4 U
1,2-Dichloroethane	µg/kg	6.2 U	5.5 U	6.4 U
1,2-Dichloropropane	µg/kg	6.2 U	5.5 U	6.4 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	6.2 U	5.5 U	6.4 U
2-Hexanone	µg/kg	6.2 U	5.5 U	6.4 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	6.2 U	5.5 U	6.4 U
Acetone	µg/kg	13 J	22 U	26 U
Benzene	µg/kg	6.2 U	5.5 U	16
Bromodichloromethane	µg/kg	6.2 U	5.5 U	6.4 U
Bromoform	µg/kg	6.2 U	5.5 U	6.4 U
Bromomethane (Methyl bromide)	µg/kg	6.2 U	5.5 U	6.4 U
Carbon disulfide	µg/kg	6.2 U	5.5 U	6.4 U
Carbon tetrachloride	µg/kg	6.2 U	5.5 U	6.4 U
Chlorobenzene	µg/kg	6.2 U	15	72
Chloroethane	µg/kg	6.2 U	5.5 U	6.4 U
Chloroform (Trichloromethane)	µg/kg	6.2 U	5.5 U	6.4 U
Chloromethane (Methyl chloride)	µg/kg	6.2 U	5.5 U	6.4 U
cis-1,2-Dichloroethene	µg/kg	6.2 U	5.5 U	3.6 J
cis-1,3-Dichloropropene	µg/kg	6.2 U	5.5 U	6.4 U
Dibromochloromethane	µg/kg	6.2 U	5.5 U	6.4 U
Ethylbenzene	µg/kg	6.2 U	5.5 U	6.4 U
Methylene chloride	µg/kg	1.1 J	5.5 U	6.4 U

TABLE 3
ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

	<i>Sample Location:</i>	<i>East endwall</i>	<i>Floor, 24'</i>	<i>Floor, 33'</i>
	<i>Sample ID:</i>	<i>SO-009954-020911-SM-009</i>	<i>SO-009954-020411-SM-001</i>	<i>SO-009954-020711-JP-003</i>
	<i>Sample Date:</i>	<i>2/9/2011</i>	<i>2/4/2011</i>	<i>2/7/2011</i>
<i>Parameters</i>	<i>Units</i>			
<i>Volatile Organic Compounds (Cont'd.)</i>				
Styrene	µg/kg	6.2 U	5.5 U	6.4 U
Tetrachloroethene	µg/kg	6.2 U	5.5 U	6.4 U
Toluene	µg/kg	6.2 U	2.1 J	24
trans-1,2-Dichloroethene	µg/kg	6.2 U	5.5 U	6.4 U
trans-1,3-Dichloropropene	µg/kg	6.2 U	5.5 U	6.4 U
Trichloroethene	µg/kg	6.2 U	5.5 U	6.4 U
Vinyl acetate	µg/kg	6.2 U	5.5 U	6.4 U
Vinyl chloride	µg/kg	6.2 U	5.5 U	2.3 J
Xylenes (total)	µg/kg	19 U	17 U	19 U
<i>Semi-volatile Organic Compounds</i>				
1,2,4-Trichlorobenzene	µg/kg	810 U	9300	20000
1,2-Dichlorobenzene	µg/kg	810 U	170 J	640
1,3-Dichlorobenzene	µg/kg	810 U	45 J	420 U
1,4-Dichlorobenzene	µg/kg	810 U	290 J	820
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	160 U	74 U	86 U
2,4,5-Trichlorophenol	µg/kg	810 U	360 U	420 U
2,4,6-Trichlorophenol	µg/kg	810 U	360 U	420 U
2,4-Dichlorophenol	µg/kg	160 U	74 U	86 U
2,4-Dimethylphenol	µg/kg	810 U	360 U	420 U
2,4-Dinitrophenol	µg/kg	4200 U	1900 U	2200 U
2,4-Dinitrotoluene	µg/kg	810 U	360 U	420 U
2,6-Dinitrotoluene	µg/kg	810 U	360 U	420 U
2-Chloronaphthalene	µg/kg	160 U	74 U	86 U
2-Chlorophenol	µg/kg	810 U	360 U	420 U
2-Methylnaphthalene	µg/kg	160 U	19 J	86 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

	Sample Location:	East endwall	Floor, 24'	Floor, 33'
	Sample ID:	SO-009954-020911-SM-009	SO-009954-020411-SM-001	SO-009954-020711-JP-003
	Sample Date:	2/9/2011	2/4/2011	2/7/2011
Parameters	Units			
Semi-volatile Organic Compounds (Cont'd.)				
2-Methylphenol	µg/kg	810 U	360 U	420 U
2-Nitroaniline	µg/kg	4200 U	1900 U	2200 U
2-Nitrophenol	µg/kg	810 U	360 U	420 U
3,3'-Dichlorobenzidine	µg/kg	810 U	360 U	420 U
3-Nitroaniline	µg/kg	4200 U	1900 U	2200 U
4,6-Dinitro-2-methylphenol	µg/kg	4200 U	1900 U	2200 U
4-Bromophenyl phenyl ether	µg/kg	810 U	360 U	420 U
4-Chloro-3-methylphenol	µg/kg	810 U	360 U	420 U
4-Chloroaniline	µg/kg	810 U	360 U	420 U
4-Chlorophenyl phenyl ether	µg/kg	810 U	360 U	420 U
4-Methylphenol	µg/kg	810 U	360 U	420 U
4-Nitroaniline	µg/kg	4200 U	1900 U	2200 U
4-Nitrophenol	µg/kg	4200 U	1900 U	2200 U
Acenaphthene	µg/kg	160 U	74 U	86 U
Acenaphthylene	µg/kg	160 U	74 U	86 U
Anthracene	µg/kg	160 U	74 U	86 U
Benzo(a)anthracene	µg/kg	160 U	74 U	86 U
Benzo(a)pyrene	µg/kg	160 U	74 U	86 U
Benzo(b)fluoranthene	µg/kg	160 U	74 U	86 U
Benzo(g,h,i)perylene	µg/kg	160 U	74 U	86 U
Benzo(k)fluoranthene	µg/kg	160 U	74 U	86 U
Benzoic acid	µg/kg	4200 U	1900 U	2200 U
Benzyl alcohol	µg/kg	810 U	360 U	420 U
bis(2-Chloroethoxy)methane	µg/kg	810 U	360 U	420 U
bis(2-Chloroethyl)ether	µg/kg	160 U	74 U	86 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	1600 U	740 U	860 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

	<i>Sample Location:</i>	<i>East endwall</i>	<i>Floor, 24'</i>	<i>Floor, 33'</i>
	<i>Sample ID:</i>	<i>SO-009954-020911-SM-009</i>	<i>SO-009954-020411-SM-001</i>	<i>SO-009954-020711-JP-003</i>
	<i>Sample Date:</i>	<i>2/9/2011</i>	<i>2/4/2011</i>	<i>2/7/2011</i>
<i>Parameters</i>	<i>Units</i>			
<i>Semi-volatile Organic Compounds (Cont'd.)</i>				
Butyl benzylphthalate (BBP)	µg/kg	810 U	360 U	420 U
Chrysene	µg/kg	160 U	74 U	86 U
Dibenz(a,h)anthracene	µg/kg	160 U	74 U	86 U
Dibenzofuran	µg/kg	810 U	360 U	420 U
Diethyl phthalate	µg/kg	810 U	360 U	420 U
Dimethyl phthalate	µg/kg	810 U	360 U	420 U
Di-n-butylphthalate (DBP)	µg/kg	810 U	360 U	420 U
Di-n-octyl phthalate (DnOP)	µg/kg	810 U	360 U	420 U
Fluoranthene	µg/kg	160 U	74 U	86 U
Fluorene	µg/kg	160 U	74 U	86 U
Hexachlorobenzene	µg/kg	160 U	280	570
Hexachlorobutadiene	µg/kg	160 U	220	550
Hexachlorocyclopentadiene	µg/kg	810 U	360 U	420 U
Hexachloroethane	µg/kg	810 U	360 U	420 U
Indeno(1,2,3-cd)pyrene	µg/kg	160 U	74 U	86 U
Isophorone	µg/kg	810 U	360 U	420 U
Naphthalene	µg/kg	160 U	74 U	86 U
Nitrobenzene	µg/kg	1600 U	740 U	860 U
N-Nitrosodi-n-propylamine	µg/kg	160 U	74 U	86 U
N-Nitrosodiphenylamine	µg/kg	810 U	360 U	420 U
Pentachlorophenol	µg/kg	810 U	360 U	420 U
Phenanthrene	µg/kg	160 U	28 J	86 U
Phenol	µg/kg	160 U	74 U	86 U
Pyrene	µg/kg	160 U	74 U	86 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

	<i>Sample Location:</i> <i>East endwall</i> <i>Floor, 24'</i> <i>Floor, 33'</i> <i>Sample ID:</i> <i>SO-009954-020911-SM-009</i> <i>SO-009954-020411-SM-001</i> <i>SO-009954-020711-JP-003</i> <i>Sample Date:</i> <i>2/9/2011</i> <i>2/4/2011</i> <i>2/7/2011</i>			
<i>Parameters</i>	<i>Units</i>			
<i>Pesticides</i>				
4,4'-DDD	µg/kg	2.1 U	19 U	71 J
4,4'-DDE	µg/kg	2.1 U	19 U	220 U
4,4'-DDT	µg/kg	2.1 U	8.0 J	110 J
Aldrin	µg/kg	2.1 U	19 U	220 U
alpha-BHC	µg/kg	1.7 J	410	5500
alpha-Chlordane	µg/kg	2.1 U	19 U	220 U
beta-BHC	µg/kg	4.4	6.9 J	180 J
delta-BHC	µg/kg	0.81 J	590	8800
Dieldrin	µg/kg	2.1 U	19 U	220 U
Endosulfan I	µg/kg	2.1 U	19 U	220 U
Endosulfan II	µg/kg	2.1 U	19 U	220 U
Endosulfan sulfate	µg/kg	2.1 U	19 U	220 U
Endrin	µg/kg	2.1 U	19 U	220 U
Endrin ketone	µg/kg	2.1 U	19 U	220 U
gamma-BHC (lindane)	µg/kg	0.62 J	740	11000
gamma-Chlordane	µg/kg	2.1 U	19 U	220 U
Heptachlor	µg/kg	2.1 U	19 U	220 U
Heptachlor epoxide	µg/kg	2.1 U	19 U	220 U
Methoxychlor	µg/kg	4.0 U	36 U	420 U
Toxaphene	µg/kg	82 U	730 U	8600 U
<i>General Chemistry</i>				
Total solids	%	80.8	90.5	78.0

TABLE 3

ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

<i>Parameters</i>	<i>Units</i>	<i>Sample Location:</i>	<i>Floor, 43'</i>	<i>Floor, 43'</i>	<i>Floor, 48'</i>
		<i>Sample ID:</i>	<i>SO-009954-020811-SM-004</i>	<i>SO-009954-020811-SM-005</i>	<i>SO-009954-020911-SM-008</i>
		<i>Sample Date:</i>	<i>2/8/2011</i>	<i>2/8/2011</i> <i>(Duplicate)</i>	<i>2/9/2011</i>
<i>Volatile Organic Compounds</i>					
1,1,1-Trichloroethane	µg/kg		33 U	33 U	33 U
1,1,2,2-Tetrachloroethane	µg/kg		33 U	33 U	33 U
1,1,2-Trichloroethane	µg/kg		33 U	33 U	33 U
1,1-Dichloroethane	µg/kg		33 U	33 U	33 U
1,1-Dichloroethene	µg/kg		33 U	33 U	33 U
1,2-Dichloroethane	µg/kg		33 U	33 U	33 U
1,2-Dichloropropane	µg/kg		33 U	33 U	33 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg		33 U	33 U	33 U
2-Hexanone	µg/kg		33 U	33 U	33 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg		33 U	33 U	33 U
Acetone	µg/kg		69 J	130 U	69 J
Benzene	µg/kg		7.6 J	20 J	33 U
Bromodichloromethane	µg/kg		33 U	33 U	33 U
Bromoform	µg/kg		33 U	33 U	33 U
Bromomethane (Methyl bromide)	µg/kg		33 U	33 U	33 U
Carbon disulfide	µg/kg		33 U	33 U	33 U
Carbon tetrachloride	µg/kg		33 U	33 U	33 U
Chlorobenzene	µg/kg		310 J	1200 J	75
Chloroethane	µg/kg		33 U	33 U	33 U
Chloroform (Trichloromethane)	µg/kg		33 U	33 U	33 U
Chloromethane (Methyl chloride)	µg/kg		33 U	33 U	33 U
cis-1,2-Dichloroethene	µg/kg		18 J	15 J	33 U
cis-1,3-Dichloropropene	µg/kg		33 U	33 U	33 U
Dibromochloromethane	µg/kg		33 U	33 U	33 U
Ethylbenzene	µg/kg		33 U	33 U	33 U
Methylene chloride	µg/kg		33 U	33 U	4.7 J

TABLE 3
ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

<i>Parameters</i>	<i>Units</i>	<i>Sample Location:</i>	<i>Floor, 43'</i>	<i>Floor, 43'</i>	<i>Floor, 48'</i>
		<i>Sample ID:</i>	<i>SO-009954-020811-SM-004</i>	<i>SO-009954-020811-SM-005</i>	<i>SO-009954-020911-SM-008</i>
		<i>Sample Date:</i>	<i>2/8/2011</i>	<i>2/8/2011</i> <i>(Duplicate)</i>	<i>2/9/2011</i>
<i>Volatile Organic Compounds (Cont'd.)</i>					
Styrene	µg/kg		33 U	33 U	33 U
Tetrachloroethene	µg/kg		33 U	12 J	33 U
Toluene	µg/kg		22 J	49	8.9 J
trans-1,2-Dichloroethene	µg/kg		33 U	33 U	33 U
trans-1,3-Dichloropropene	µg/kg		33 U	33 U	33 U
Trichloroethene	µg/kg		33 U	33 U	33 U
Vinyl acetate	µg/kg		33 U	33 U	33 U
Vinyl chloride	µg/kg		33 U	33 U	33 U
Xylenes (total)	µg/kg		100 U	17 J	98 U
<i>Semi-volatile Organic Compounds</i>					
1,2,4-Trichlorobenzene	µg/kg		72000	79000	3600
1,2-Dichlorobenzene	µg/kg		2700	2300	190 J
1,3-Dichlorobenzene	µg/kg		2300	2600	640 J
1,4-Dichlorobenzene	µg/kg		6400	5500	700 J
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg		180 U	180 U	170 U
2,4,5-Trichlorophenol	µg/kg		870 U	880 U	860 U
2,4,6-Trichlorophenol	µg/kg		870 U	880 U	860 U
2,4-Dichlorophenol	µg/kg		140 J	180 U	170 U
2,4-Dimethylphenol	µg/kg		870 U	880 U	860 U
2,4-Dinitrophenol	µg/kg		4500 U	4500 U	4400 U
2,4-Dinitrotoluene	µg/kg		870 U	880 U	860 U
2,6-Dinitrotoluene	µg/kg		870 U	880 U	860 U
2-Chloronaphthalene	µg/kg		180 U	180 U	170 U
2-Chlorophenol	µg/kg		870 U	880 U	860 U
2-Methylnaphthalene	µg/kg		180 U	180 U	170 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

<i>Parameters</i>	<i>Units</i>	<i>Sample Location:</i>	<i>Floor, 43'</i>	<i>Floor, 43'</i>	<i>Floor, 48'</i>
		<i>Sample ID:</i>	<i>SO-009954-020811-SM-004</i>	<i>SO-009954-020811-SM-005</i>	<i>SO-009954-020911-SM-008</i>
		<i>Sample Date:</i>	<i>2/8/2011</i>	<i>2/8/2011</i> <i>(Duplicate)</i>	<i>2/9/2011</i>
<i>Semi-volatile Organic Compounds (Cont'd.)</i>					
2-Methylphenol	µg/kg		870 U	880 U	860 U
2-Nitroaniline	µg/kg		4500 U	4500 U	4400 U
2-Nitrophenol	µg/kg		870 U	880 U	860 U
3,3'-Dichlorobenzidine	µg/kg		870 U	880 U	860 U
3-Nitroaniline	µg/kg		4500 U	4500 U	4400 U
4,6-Dinitro-2-methylphenol	µg/kg		4500 U	4500 U	4400 U
4-Bromophenyl phenyl ether	µg/kg		870 U	880 U	860 U
4-Chloro-3-methylphenol	µg/kg		870 U	880 U	860 U
4-Chloroaniline	µg/kg		870 U	880 U	860 U
4-Chlorophenyl phenyl ether	µg/kg		870 U	880 U	860 U
4-Methylphenol	µg/kg		870 U	880 U	860 U
4-Nitroaniline	µg/kg		4500 U	4500 U	4400 U
4-Nitrophenol	µg/kg		4500 U	4500 U	4400 U
Acenaphthene	µg/kg		180 U	180 U	170 U
Acenaphthylene	µg/kg		180 U	180 U	170 U
Anthracene	µg/kg		180 U	180 U	170 U
Benzo(a)anthracene	µg/kg		180 U	180 U	170 U
Benzo(a)pyrene	µg/kg		180 U	180 U	170 U
Benzo(b)fluoranthene	µg/kg		180 U	180 U	170 U
Benzo(g,h,i)perylene	µg/kg		180 U	180 U	170 U
Benzo(k)fluoranthene	µg/kg		180 U	180 U	170 U
Benzoic acid	µg/kg		4500 U	1300 J	4400 U
Benzyl alcohol	µg/kg		870 U	880 U	860 U
bis(2-Chloroethoxy)methane	µg/kg		870 U	880 U	860 U
bis(2-Chloroethyl)ether	µg/kg		180 U	180 U	170 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg		1800 U	1800 U	1700 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

<i>Parameters</i>	<i>Units</i>	<i>Sample Location:</i>	<i>Floor, 43'</i>	<i>Floor, 43'</i>	<i>Floor, 48'</i>
		<i>Sample ID:</i>	<i>SO-009954-020811-SM-004</i>	<i>SO-009954-020811-SM-005</i>	<i>SO-009954-020911-SM-008</i>
		<i>Sample Date:</i>	<i>2/8/2011</i>	<i>2/8/2011</i> <i>(Duplicate)</i>	<i>2/9/2011</i>
<i>Semi-volatile Organic Compounds (Cont'd.)</i>					
Butyl benzylphthalate (BBP)	µg/kg		870 U	880 U	860 U
Chrysene	µg/kg		180 U	180 U	170 U
Dibenz(a,h)anthracene	µg/kg		180 U	180 U	170 U
Dibenzofuran	µg/kg		870 U	880 U	860 U
Diethyl phthalate	µg/kg		870 U	880 U	860 U
Dimethyl phthalate	µg/kg		870 U	880 U	860 U
Di-n-butylphthalate (DBP)	µg/kg		870 U	880 U	860 U
Di-n-octyl phthalate (DnOP)	µg/kg		870 U	880 U	860 U
Fluoranthene	µg/kg		180 U	180 U	170 U
Fluorene	µg/kg		180 U	180 U	170 U
Hexachlorobenzene	µg/kg		1500	2100	170 U
Hexachlorobutadiene	µg/kg		1500	1800	200
Hexachlorocyclopentadiene	µg/kg		870 U	880 U	860 U
Hexachloroethane	µg/kg		870 U	880 U	860 U
Indeno(1,2,3-cd)pyrene	µg/kg		180 U	180 U	170 U
Isophorone	µg/kg		870 U	880 U	860 U
Naphthalene	µg/kg		180 U	180 U	170 U
Nitrobenzene	µg/kg		1800 U	1800 U	1700 U
N-Nitrosodi-n-propylamine	µg/kg		180 U	180 U	170 U
N-Nitrosodiphenylamine	µg/kg		870 U	880 U	860 U
Pentachlorophenol	µg/kg		870 U	880 U	860 U
Phenanthrene	µg/kg		180 U	180 U	170 U
Phenol	µg/kg		180 U	180 U	170 U
Pyrene	µg/kg		180 U	180 U	170 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

<i>Parameters</i>	<i>Units</i>	<i>Sample Location:</i>	<i>Floor, 43'</i>	<i>Floor, 43'</i>	<i>Floor, 48'</i>
		<i>Sample ID:</i>	<i>SO-009954-020811-SM-004</i>	<i>SO-009954-020811-SM-005</i>	<i>SO-009954-020911-SM-008</i>
		<i>Sample Date:</i>	<i>2/8/2011</i>	<i>2/8/2011</i> <i>(Duplicate)</i>	<i>2/9/2011</i>
<i>Pesticides</i>					
4,4'-DDD	µg/kg		220 U	59 J	220 U
4,4'-DDE	µg/kg		220 U	230 U	220 U
4,4'-DDT	µg/kg		220 U	230 U	220 U
Aldrin	µg/kg		220 U	230 U	220 U
alpha-BHC	µg/kg		2400	2200	190 J
alpha-Chlordane	µg/kg		220 U	230 U	220 U
beta-BHC	µg/kg		220 U	76 J	220 U
delta-BHC	µg/kg		3900	3300	550
Dieldrin	µg/kg		220 U	230 U	220 U
Endosulfan I	µg/kg		220 U	230 U	220 U
Endosulfan II	µg/kg		220 U	230 U	220 U
Endosulfan sulfate	µg/kg		220 U	230 U	220 U
Endrin	µg/kg		220 U	230 U	220 U
Endrin ketone	µg/kg		220 U	230 U	220 U
gamma-BHC (lindane)	µg/kg		5200	3800	250
gamma-Chlordane	µg/kg		220 U	230 U	220 U
Heptachlor	µg/kg		220 U	230 U	220 U
Heptachlor epoxide	µg/kg		220 U	230 U	220 U
Methoxychlor	µg/kg		430 U	440 U	430 U
Toxaphene	µg/kg		8800 U	8900 U	8700 U
<i>General Chemistry</i>					
Total solids	%		75.3	74.6	76.3

TABLE 3

ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

<i>Parameters</i>	<i>Units</i>	<i>Sample Location:</i> <i>North sidewall, 30'</i> <i>South sidewall, 30'</i> <i>West endwall</i> <i>Sample ID:</i> <i>SO-009954-020811-SM-006</i> <i>SO-009954-020811-SM-007</i> <i>SO-009954-020511-SM-002</i> <i>Sample Date:</i> <i>2/8/2011</i> <i>2/8/2011</i> <i>2/5/2011</i>		
<i>Volatile Organic Compounds</i>				
1,1,1-Trichloroethane	µg/kg	28 U	31 U	6.5 U
1,1,2,2-Tetrachloroethane	µg/kg	28 U	31 U	6.5 U
1,1,2-Trichloroethane	µg/kg	28 U	31 U	6.5 U
1,1-Dichloroethane	µg/kg	28 U	31 U	6.5 U
1,1-Dichloroethene	µg/kg	28 U	31 U	6.5 U
1,2-Dichloroethane	µg/kg	28 U	31 U	6.5 U
1,2-Dichloropropane	µg/kg	28 U	31 U	6.5 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	28 U	31 U	6.5 U
2-Hexanone	µg/kg	28 U	31 U	6.5 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	28 U	31 U	6.5 U
Acetone	µg/kg	110 U	58 J	26 U
Benzene	µg/kg	28 U	31 U	6.5 U
Bromodichloromethane	µg/kg	28 U	31 U	6.5 U
Bromoform	µg/kg	28 U	31 U	6.5 U
Bromomethane (Methyl bromide)	µg/kg	28 U	31 U	6.5 U
Carbon disulfide	µg/kg	28 U	31 U	6.5 U
Carbon tetrachloride	µg/kg	28 U	31 U	6.5 U
Chlorobenzene	µg/kg	19 J	15 J	6.5 U
Chloroethane	µg/kg	28 U	31 U	6.5 U
Chloroform (Trichloromethane)	µg/kg	28 U	31 U	6.5 U
Chloromethane (Methyl chloride)	µg/kg	28 U	31 U	6.5 U
cis-1,2-Dichloroethene	µg/kg	28 U	31 U	6.5 U
cis-1,3-Dichloropropene	µg/kg	28 U	31 U	6.5 U
Dibromochloromethane	µg/kg	28 U	31 U	6.5 U
Ethylbenzene	µg/kg	28 U	31 U	6.5 U
Methylene chloride	µg/kg	4.2 J	31 U	6.5 U

TABLE 3
ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

	Sample Location:	North sidewall, 30'	South sidewall, 30'	West endwall
	Sample ID:	SO-009954-020811-SM-006	SO-009954-020811-SM-007	SO-009954-020511-SM-002
	Sample Date:	2/8/2011	2/8/2011	2/5/2011
Parameters	Units			
Volatile Organic Compounds (Cont'd.)				
Styrene	µg/kg	28 U	31 U	6.5 U
Tetrachloroethene	µg/kg	28 U	31 U	6.5 U
Toluene	µg/kg	28 U	31 U	6.5 U
trans-1,2-Dichloroethene	µg/kg	28 U	31 U	6.5 U
trans-1,3-Dichloropropene	µg/kg	28 U	31 U	6.5 U
Trichloroethene	µg/kg	28 U	31 U	6.5 U
Vinyl acetate	µg/kg	28 U	31 U	6.5 U
Vinyl chloride	µg/kg	28 U	31 U	6.5 U
Xylenes (total)	µg/kg	85 U	94 U	19 U
Semi-volatile Organic Compounds				
1,2,4-Trichlorobenzene	µg/kg	26000	2400	710
1,2-Dichlorobenzene	µg/kg	610 J	68 J	420 U
1,3-Dichlorobenzene	µg/kg	750 U	110 J	420 U
1,4-Dichlorobenzene	µg/kg	720 J	99 J	420 U
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	150 U	83 U	86 U
2,4,5-Trichlorophenol	µg/kg	750 U	410 U	420 U
2,4,6-Trichlorophenol	µg/kg	750 U	410 U	420 U
2,4-Dichlorophenol	µg/kg	150 U	83 U	86 U
2,4-Dimethylphenol	µg/kg	750 U	410 U	420 U
2,4-Dinitrophenol	µg/kg	3900 U	2100 U	2200 U
2,4-Dinitrotoluene	µg/kg	750 U	410 U	420 U
2,6-Dinitrotoluene	µg/kg	750 U	410 U	420 U
2-Chloronaphthalene	µg/kg	150 U	83 U	86 U
2-Chlorophenol	µg/kg	750 U	410 U	420 U
2-Methylnaphthalene	µg/kg	150 U	36 J	86 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

	Sample Location:	North sidewall, 30'	South sidewall, 30'	West endwall
	Sample ID:	SO-009954-020811-SM-006	SO-009954-020811-SM-007	SO-009954-020511-SM-002
	Sample Date:	2/8/2011	2/8/2011	2/5/2011
Parameters	Units			
Semi-volatile Organic Compounds (Cont'd.)				
2-Methylphenol	µg/kg	750 U	410 U	420 U
2-Nitroaniline	µg/kg	3900 U	2100 U	2200 U
2-Nitrophenol	µg/kg	750 U	410 U	420 U
3,3'-Dichlorobenzidine	µg/kg	750 U	410 U	420 U
3-Nitroaniline	µg/kg	3900 U	2100 U	2200 U
4,6-Dinitro-2-methylphenol	µg/kg	3900 U	2100 U	2200 U
4-Bromophenyl phenyl ether	µg/kg	750 U	410 U	420 U
4-Chloro-3-methylphenol	µg/kg	750 U	410 U	420 U
4-Chloroaniline	µg/kg	750 U	410 U	420 U
4-Chlorophenyl phenyl ether	µg/kg	750 U	410 U	420 U
4-Methylphenol	µg/kg	750 U	53 J	420 U
4-Nitroaniline	µg/kg	3900 U	2100 U	2200 U
4-Nitrophenol	µg/kg	3900 U	2100 U	2200 U
Acenaphthene	µg/kg	150 U	28 J	86 U
Acenaphthylene	µg/kg	150 U	27 J	86 U
Anthracene	µg/kg	150 U	32 J	86 U
Benzo(a)anthracene	µg/kg	150 U	37 J	86 U
Benzo(a)pyrene	µg/kg	150 U	83 U	86 U
Benzo(b)fluoranthene	µg/kg	150 U	28 J	86 U
Benzo(g,h,i)perylene	µg/kg	150 U	36 J	86 U
Benzo(k)fluoranthene	µg/kg	150 U	38 J	86 U
Benzoic acid	µg/kg	3900 U	2100 U	2200 U
Benzyl alcohol	µg/kg	750 U	410 U	420 U
bis(2-Chloroethoxy)methane	µg/kg	750 U	410 U	420 U
bis(2-Chloroethyl)ether	µg/kg	150 U	83 U	86 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	1500 U	830 U	860 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

	Sample Location:	North sidewall, 30'	South sidewall, 30'	West endwall
	Sample ID:	SO-009954-020811-SM-006	SO-009954-020811-SM-007	SO-009954-020511-SM-002
	Sample Date:	2/8/2011	2/8/2011	2/5/2011
Parameters	Units			
Semi-volatile Organic Compounds (Cont'd.)				
Butyl benzylphthalate (BBP)	µg/kg	750 U	410 U	420 U
Chrysene	µg/kg	150 U	44 J	86 U
Dibenz(a,h)anthracene	µg/kg	150 U	24 J	86 U
Dibenzofuran	µg/kg	750 U	410 U	420 U
Diethyl phthalate	µg/kg	750 U	410 U	420 U
Dimethyl phthalate	µg/kg	750 U	410 U	420 U
Di-n-butylphthalate (DBP)	µg/kg	750 U	410 U	420 U
Di-n-octyl phthalate (DnOP)	µg/kg	750 U	410 U	420 U
Fluoranthene	µg/kg	150 U	40 J	86 U
Fluorene	µg/kg	150 U	83 U	86 U
Hexachlorobenzene	µg/kg	610	83 U	86 U
Hexachlorobutadiene	µg/kg	640	89	86 U
Hexachlorocyclopentadiene	µg/kg	750 U	410 U	420 U
Hexachloroethane	µg/kg	750 U	410 U	420 U
Indeno(1,2,3-cd)pyrene	µg/kg	150 U	28 J	86 U
Isophorone	µg/kg	750 U	410 U	420 U
Naphthalene	µg/kg	150 U	26 J	86 U
Nitrobenzene	µg/kg	1500 U	830 U	860 U
N-Nitrosodi-n-propylamine	µg/kg	150 U	83 U	86 U
N-Nitrosodiphenylamine	µg/kg	750 U	410 U	420 U
Pentachlorophenol	µg/kg	750 U	410 U	420 U
Phenanthrene	µg/kg	150 U	45 J	86 U
Phenol	µg/kg	150 U	83 U	86 U
Pyrene	µg/kg	150 U	39 J	86 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

	Sample Location:	North sidewall, 30'	South sidewall, 30'	West endwall
	Sample ID:	SO-009954-020811-SM-006	SO-009954-020811-SM-007	SO-009954-020511-SM-002
	Sample Date:	2/8/2011	2/8/2011	2/5/2011
Parameters	Units			
Pesticides				
4,4'-DDD	µg/kg	190 U	210 U	22 U
4,4'-DDE	µg/kg	190 U	210 U	22 U
4,4'-DDT	µg/kg	190 U	210 U	22 U
Aldrin	µg/kg	190 U	210 U	22 U
alpha-BHC	µg/kg	540	170 J	130
alpha-Chlordane	µg/kg	190 U	210 U	22 U
beta-BHC	µg/kg	190 U	210 U	22 U
delta-BHC	µg/kg	960	390	200
Dieldrin	µg/kg	190 U	210 U	22 U
Endosulfan I	µg/kg	190 U	210 U	22 U
Endosulfan II	µg/kg	190 U	210 U	22 U
Endosulfan sulfate	µg/kg	190 U	210 U	22 U
Endrin	µg/kg	190 U	210 U	22 U
Endrin ketone	µg/kg	190 U	210 U	22 U
gamma-BHC (lindane)	µg/kg	1400	500	270
gamma-Chlordane	µg/kg	190 U	210 U	22 U
Heptachlor	µg/kg	190 U	210 U	22 U
Heptachlor epoxide	µg/kg	190 U	210 U	22 U
Methoxychlor	µg/kg	370 U	410 U	43 U
Toxaphene	µg/kg	7500 U	8400 U	860 U
General Chemistry				
Total solids	%	88.3	79.6	76.9

Notes:

J - Estimated concentration.

U - Not present at or above the associated value.

TABLE 4

QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE METHOD BLANKS
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011

<i>Parameter</i>	<i>Analysis Date</i>	<i>Analyte</i>	<i>Blank Result</i>	<i>Sample ID</i>	<i>Qualified Sample Result</i>
VOCs	2/10/2011	Acetone	8.5	SO-009954-020411-SM-001	22 U
				SO-009954-020511-SM-002	26 U
				SO-009954-020711-JP-003	26 U
VOCs	2/10/2011	Methylene chloride	0.84	SO-009954-020411-SM-001	5.5 U
				SO-009954-020511-SM-002	6.5 U
				SO-009954-020711-JP-003	6.4 U

Notes:

U Not detected.

VOCs Volatile Organic Compounds.

TABLE 5

**QUALIFIED SAMPLE RESULTS DUE TO VARIABILITY IN FIELD DUPLICATE RESULTS
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011**

<i>Parameter</i>	<i>Analyte</i>	<i>Original Sample ID</i>	<i>Original Result</i>	<i>Duplicate Sample ID</i>	<i>Duplicate Result</i>	<i>RPD</i>	<i>Units</i>	<i>Qualifier (1)</i>
VOCs	Chlorobenzene	SO-009954-020811-SM-004	310	SO-009954-020811-SM-005	1200	118	µg/Kg	J

Notes:

J Qualifier is associated with both original and duplicate result.
 RPD Relative Percent Difference.
 VOCs Volatile Organic Compounds.

TABLE 6

**QUALIFIED SAMPLE RESULTS DUE TO DIFFERENCES IN DUAL COLUMN RESULTS
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011**

<i>Parameter</i>	<i>Compound</i>	<i>Associated Sample ID</i>	<i>%D</i>	<i>Reported Results</i>	<i>Units</i>
Pesticides	beta-BHC	SO-009954-020411-SM-001	>40%	6.9 J	µg/Kg
Pesticides	delta-BHC	SO-009954-020911-SM-009	>40%	0.81 J	µg/Kg
	gamma-BHC (lindane)	SO-009954-020911-SM-009		0.62 J	µg/Kg

Notes:

%D Percent Difference.

J Estimated.

TABLE 7

**SAMPLE COLLECTION AND ANALYSIS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011**

<i>Sample Location</i>	<i>Volatile Organics</i>	<i>Estimated Concentration (µg/Kg)</i>	<i>Semi-Volatile Organics</i>	<i>Estimated Concentration (µg/Kg)</i>
SO-009954-020411-SM-001	Benzene, 1,2,3-trichloro-	25 J	Benzene, 1,2,4,5-tetrachloro-	2400 J
	Benzene, 3,4-dichlorotoluene	18 J	Benzene, pentachloro-	6700 J
	Benzene, 2-chlorotoluene	20 J	Unknowns	67000 J
	Benzene, 3-chlorotoluene	14 J	Unknown Organic Acid	1900 J
	Unknown Substituted Benzenes	35 J		
SO-009954-020511-SM-002	Benzene, 1,2,3-trichloro-	8.3 J	Benzene, 1,2,4,5-tetrachloro-	230 J
	Unknown Substituted Benzenes	180 J	Benzene, pentachloro-	560 J
			Unknowns	5600 J
			Unknown Alkanes	2500 J
SO-009954-020711-JP-003	Benzene, 1,2,3-trichloro-	57 J	Benzene, 1,2,3,5-tetrachloro-	41000 J
	Benzene, 3,5-dichlorotoluene	7.7 J	Benzene, 2,3,4-trichlorotoluene	500 J
	Benzene, 4-chlorotoluene	35 J	Benzene, 1,2,4,5-tetrachloro-	4700 J
	Unknown Substituted Benzenes	120 J	Benzene, 1,2,4,5-tetrachloro-	4400 J
			Benzene, 2,3,6-trichlorotoluene	450 J
			Benzene, 2,6-dichlorotoluene	570 J
			Benzene, 2-chlorotoluene	870 J
			Benzene, pentachloro-	11000 J
			Unknowns	3900 J
SO-009954-020811-SM-004	Benzene, 1,2,3-trichloro-	140 J	Benzene, 1,2,3,5-tetrachloro-	1000 J
	Benzene, 1,2,4,5-tetrachloro-	120 J	Benzene, 1,2,4,5-tetrachloro-	14000 J
	Unknown chlorotoluenes	210 J	Benzene, 2,3,6-trichlorotoluene	1400 J
	Unknown Substituted Benzenes	95 J	Benzene, 2,6-dichlorotoluene	1300 J
			Benzene, 2-chlorotoluene	710 J
			Benzene, 4-chlorotoluene	440 J
			Benzene, pentachloro-	35000 J
			Unknowns	2800 J

TABLE 7

**SAMPLE COLLECTION AND ANALYSIS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011**

<i>Sample Location</i>	<i>Volatile Organics</i>	<i>Estimated Concentration (µg/Kg)</i>	<i>Semi-Volatile Organics</i>	<i>Estimated Concentration (µg/Kg)</i>
SO-009954-020811-SM-005	Benzene, 1,2,3-trichloro-	170 J	Benzene, 1,2,3,5-tetrachloro-	150000 J
	Unknowns	870 J	Benzene, 2,3,4-trichlorotoluene	1400 J
	Unknown Chlorotoluenes	220 J	Benzene, 1,2,4,5-tetrachloro-	17000 J
	Unknown Substituted Benzenes	200 J	Benzene, 2,3,6-trichlorotoluene	1900 J
			Benzene, 2,6-dichlorotoluene	2000 J
			Benzene, 2-chlorotoluene	780 J
			Benzene, 4-chlorotoluene	550 J
			Benzene, 2,4-dichloro-1-(chloromethyl)-	580 J
			Cyclic octaatomic sulfur	700 J
			n-Hexadecanoic acid	580 J
			Unknown	1200 J
SO-009954-020811-SM-006	Benzene, 1,2,3-trichloro-	180 J	Benzene, 1,2,3,5-tetrachloro-	53000 J
	Unknowns	7600 J	Benzene, 2,3,4-trichlorotoluene	390 J
	Unknown Chlorotoluenes	69 J	Benzene, 1,2,4,5-tetrachloro-	5700 J
	Unknown Substituted Benzenes	360 J	Benzene, 2,3,6-trichlorotoluene	520 J
			Benzene, 4-chlorotoluene	500 J
			Benzene, 2-chlorotoluene	360 J
			Benzene, pentachloro-	14000 J
			Unknown	490 J

TABLE 7

**SAMPLE COLLECTION AND ANALYSIS SUMMARY
COLVIN BOULEVARD SANITARY SEWER REPAIR
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
FEBRUARY 2011**

<i>Sample Location</i>	<i>Volatile Organics</i>	<i>Estimated Concentration (µg/Kg)</i>	<i>Semi-Volatile Organics</i>	<i>Estimated Concentration (µg/Kg)</i>
SO-009954-020811-SM-007	Benzene, 1,2,3-trichloro- Unknowns Unknown Substituted Benzenes	79 J 4500 J 170 J	Benzene, 1,2,3,5-tetrachloro- Benzene, 1,2,4,5-tetrachloro- Benzene, pentachloro- Carbazole Undecane Unknowns Unknown Alkane	6900 J 720 J 2000 36 J 59 J 100 J 100 J
SO-009954-020911-SM-008	Benzene, 1,2,3-trichloro- Unknown Unknown Chlorotoluene Unknown Substituted Benzenes	100 J 1200 J 39 J 180 J	Benzene, 1,2,4,5-tetrachloro- Benzene, pentachloro- Unknown	970 J 4200 J 110 J
SO-009954-020911-SM-009	None		Cyclic octaatomic sulfur Unknown	100 J 49 J

Notes:

J Estimated.

APPENDIX F

SEWER VIDEO INSPECTION RESULTS

Inspection Summary / Inspection: 1

Date:
2/17/2011

Responsible:
Linda Scott

Sewer Reference:
Section Number: 1
Start node: 96th st. MH
End node: Senior Center Facility MH

Section length: 349.50 ft
Pipe length:
Material: Clay Tile
Shape: Circular


 Senior Center Facility MH 103.10 AMH Downstream Manhole, Survey Begins / 15" Clay Tile
 96th st. MH 349.50 AMH Upstream Manhole, Survey Begins / Upstream MH (96th) Plug

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E-mail: JKondefer@kandeycompany.com

Inspection Report / Inspection: 1

Date 2/16/2011	P/O. No.	Weather	Surveyor's Name Joe	Pipe Segment Reference	Section No. 1
Certificate No. X	Survey Customer	System Owner	Date Cleaned	Pre-Cleaning Jetting	Sewer Category

Street 123	Colvin	Use of Sewer	Upstream MH	96th st. MH
City	Niagara Falls	Drainage Area	Downstream MH	Senior Center Facility MH
Loc. details		Flow Control	Dir. of Survey	Upstream
Location Code		Length surveyed	Section Length	349.50 ft

Purpose of Survey	Joint Length	
Year Laid	Dia./Height	15 inch
Year Rehabilitated	Material	Clay Tile / <i>CONCRETE</i>
Tape / Media No. X	Lining Method	

Add. Information :

1:885 Position Code Observation Photo Grade

Senior Center
Facility MH

103.10

AMH Downstream Manhole, Survey Begins / 15" Clay Tile

349.50

AMH Upstream Manhole, Survey Begins / Upstream MH (96th)
Plug

1_1_2_17022011_09
1413_A.JPG

96th st. MH

OSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0	0	0	0	0	0

Inspection photos / Inspection: 1City :
Niagara FallsStreet :
ColvinDate :
2/16/11

Pipe Segment Reference :

Section No :
1

Photo: 1_1_2_17022011_091413_A.JPG, VCR No.: X
349.5FT, Upstream Manhole, Survey Begins / Upstream MH (96th)
Plug

Inspection Summary / Inspection: 1

Date:
2/17/2011

Responsible:
Linda Scott

Sewer Reference:

Section Number: 2
Start node: Senior Center Facility MH
End node: 93rd & Lucky MH

Section length: 500.20 ft
Pipe length:
Material: Clay Tile
Shape: Circular

	0.05 AMH Upstream Manhole, Survey Begins / 15" Clay Tile 353.35 MGO General Observation / Connecting MH not Located. Proceed through as requested for 500' 359.15 MMC Material Change, Concrete pipe (non-reinforced) / 15" 500.20 MGO Reversal Inspection / Requested 500' & Reversal @ 93rd & Luick ave.

Kandey Company

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Fax:

E-mail: JKandey@kandeycompany.com

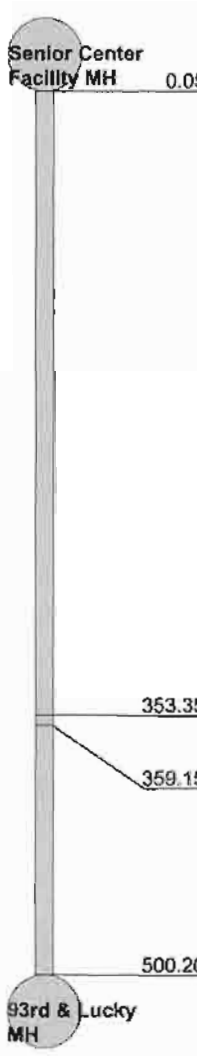
Inspection Report / Inspection: 1

Date 2/16/2011	P/O. No.	Weather	Surveyor's Name Joe	Pipe Segment Reference	Section No. 2
Certificate No. X	Survey Customer	System Owner	Date Cleaned	Pre-Cleaning Jetting	Sewer Category

Street 123	Colvin Rd	Use of Sewer	Upstream MH	Senior Center Facility MH
City	Niagara Falls	Drainage Area	Downtown MH	93rd & Lucky MH
Loc. details		Flow Control	Dir. of Survey	Downstream
Location Code		Length surveyed 500.15 ft	Section Length	500.20 ft

Purpose of Survey	Joint Length	
Year Laid	Dia./Height	15 Inch
Year Rehabilitated	Material	Clay Tile
Tape / Media No. X	Lining Method	

Add. Information :

1:1260	Position	Code	Observation	Photo	Grade
		AMH	Upstream Manhole, Survey Begins / 15" Clay Tile		
	353.35	MGO	General Observation / Connecting MH not Located. Proceed through as requested for 500'	2_1_2_17022011_09 5931_A.JPG	
	359.15	MMC	Material Change, Concrete pipe (non-reinforced) / 15"		
	500.20	MGO	Reversal Inspection / Requested 500' & Reversal @ 93rd & Luck ave.		

Inspection photos / Inspection: 1

City : Niagara Falls	Street : Colvin Rd	Date :	Pipe Segment Reference :	Section No : 2

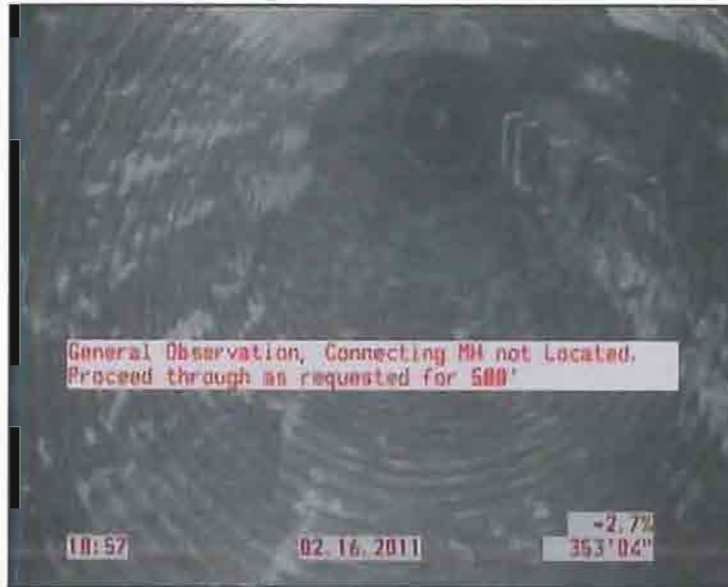


Photo: 2_1_2_17022011_095931_A.JPG, VCR No.: X
353.35FT, General Observation / Connecting MH not Located.
Proceed through as requested for 500'

Inspection Summary / Inspection: 1

Date:
2/17/2011

Responsible:
Linda Scott

Sewer Reference:

Section Number: 3

Start node: Senior Facility MH

End node: 93rd & Luick

Section length: 322.45 ft

Pipe length:

Material: Concrete Pipe (non-reinforced)

Shape: Circular


 93rd & Luick 0.00 MGO Reversal Inspection / Inspection towards Senior Facility MH from 93rd & Luick ave.
 Senior Facility MH 322.45 AMH Upstream Manhole, Survey Ends / MH between Senior Ctr. & 93rd/Luick

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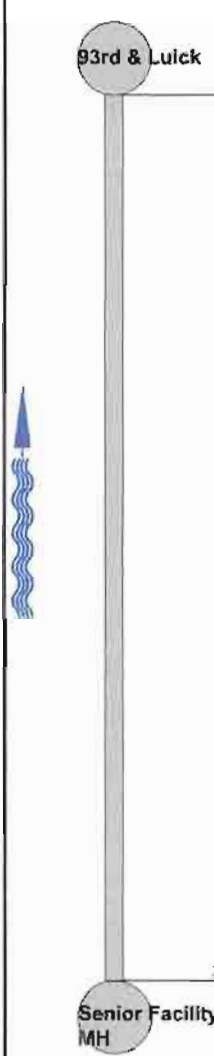
Inspection Report / Inspection: 1

Date 2/17/2011	P/O. No.	Weather	Surveyor's Name Joe	Pipe Segment Reference	Section No. 3
Certificate No. X	Survey Customer	System Owner	Date Cleaned	Pre-Cleaning Jetting	Sewer Category

Street 123 City Loc. details Location Code	93rd & Luick Niagara Falls	Use of Sewer Drainage Area Flow Control Length surveyed 322.45 ft	Upstream MH Downstream MH Dir. of Survey Section Length	Senior Facility MH 93rd & Luick Upstream 322.45 ft

Purpose of Survey Year Laid Year Rehabilitated Tape / Media No. X	Joint Length Dia./Height Material Lining Method	15 Inch Concrete Pipe (non-reinforced)

Add. Information :

1:810	Position	Code	Observation	Photo	Grade		
							
		MGO	Reversal Inspection / Inspection towards Senior Facility MH from 93rd & Luick ave.	3_1_1_17022011_11 3243_A.JPG			
		AMH	Upstream Manhole, Survey Ends / MH between Senior Ctr. & 93rd/Luick	3_1_2_17022011_11 4607_A.JPG			
QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0	0	0	0	0	0

Inspection photos / Inspection: 1City :
Niagara FallsStreet :
93rd & Luick

Date :

Pipe Segment Reference :

Section No :
3

Photo: 3_1_1_17022011_113243_A.JPG, VCR No.: X
0FT, Reversal Inspection / Inspection towards Senior Facility MH from
93rd & Luick ave.

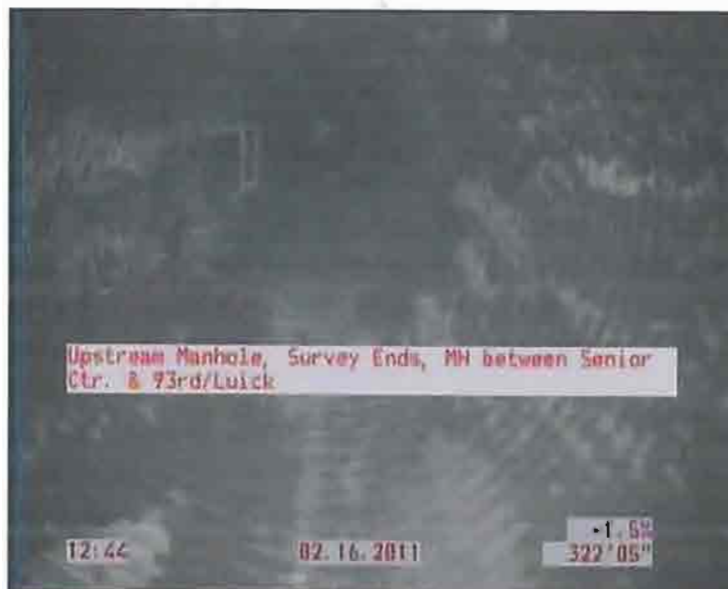


Photo: 3_1_2_17022011_114607_A.JPG, VCR No.: X
322.45FT, Upstream Manhole, Survey Ends / MH between Senior Ctr.
& 93rd/Luick

Inspection Summary / Inspection: 1

Date:
2/17/2011

Responsible:
Linda Scott

Sewer Reference:
Section Number: 4
Start node: 97th. st & Colvin
End node: 96th st. & Colvin

Section length: 315.30 ft
Pipe length:
Material Concrete Pipe (non-reinforced)
Shape: Circular

96th. st. & Colvin -22.20 AMH Downstream Manhole, Survey Begins / 97th & Colvin Blvd.

56.75 MMC Material Change, Concrete pipe (non-reinforced) / PVC (SDR35) to Concrete

179.50 ID Infiltration Dipper, at 12 o'clock, within 8 inches of joint: YES / Infiltration M.S.

97th. st & Colvin 293.10 AMH Upstream Manhole, Survey Ends / Plug

Inspection Summary / Inspection: 1

Date:
2/17/2011

Responsible:
Linda Scott

Sewer Reference:

Section Number: 4

Start node: 97th. st & Colvin

End node: 96th. st. & Colvin

Section length: 315.30 ft

Pipe length:

Material: Concrete Pipe (non-reinforced)

Shape: Circular

96th. st. & Colvin.....-22.20

AMH

Downstream Manhole, Survey Begins / 97th & Colvin Blvd

.....56.75

MMC

Material Change, Concrete pipe (non-reinforced) / PVC (SDR35) to Concrete

.....179.50

ID

Infiltration Gripper, at 12 o'clock, within 8 inches of joint: YES / Infiltration

M 3

97th. st & Colvin.....293.10

AMH

Upstream Manhole, Survey Ends / Plug

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Inspection Report / Inspection: 1

Date 2/17/2011	P/O. No.	Weather	Surveyor's Name Joe	Pipe Segment Reference	Section No. 4
Certificate No. X	Survey Customer	System Owner	Date Cleaned	Pre-Cleaning Jetting	Sewer Category

Street 123	Colvin	Use of Sewer	Upstream MH	97th. st & Colvin
City	Niagara Falls	Drainage Area	Dowstream MH	96th. st. & Colvin
Loc. details		Flow Control	Dir. of Survey	Upstream
Location Code		Length surveyed	Section Length	315.30 ft

Purpose of Survey	Joint Length
Year Laid	Dia./Height
Year Rehabilitated	Material
Tape / Media No. X	Lining Method
	15 inch
	Concrete Pipe (non-reinforced)

Add. Information :

1:735 Position Code Observation Grade

96th. st. &
Colvin

56.75

MMC

Material Change, Concrete pipe (non-reinforced) / PVC (SDR35) to Concrete

56.75 FT

179.5 FT

179.50

ID

Infiltration Dropper, at 12 o'clock, within 8 inches of joint: M 3
YES / Infiltration

293.1 FT

293.10

AMH

Upstream Manhole, Survey Ends / Plug

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Inspection Report / Inspection: 1

Date :	Job number :	Weather :	Operator : Joe	Counter : 4	Section name :
Present :	Vehicle :	Camera :	Preset :	Cleaned : Jetting	Rate :

1:735 Position

Code

Observation

Rate



97th. st
& Colvin

OSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	3100	0	3	3	0	3	3

Inspection photos / Inspection: 1City :
Niagara FallsStreet :
Colvin

Date :

Pipe Segment Reference :

Section No :
4

Photo: 4_1_2_17022011_140929_A.JPG, VCR No.: X
56.75FT, Material Change, Concrete pipe (non-reinforced) / PVC (SDR35) to Concrete



Photo: 4_1_3_17022011_141402_A.JPG, VCR No.: X
179.5FT, Infiltration Dropper, at 12 o'clock, within 8 inches of joint: YES
/ Infiltration

Inspection photos / Inspection: 1

City : Niagara Falls	Street : Colvin	Date : 	Pipe Segment Reference : 	Section No : 4



Photo: 4_1_4_17022011_141815_A.JPG, VCR No.: X
293.1FT, Upstream Manhole, Survey Ends / Plug

Inspection Summary / Inspection: 1

Date:
2/17/2011

Responsible:
Linda Scott

Sewer Reference:

Section Number: 5

Start node: 93rd/Luick

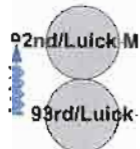
End node: 92nd/Luick MH

Section length: 323.20 ft

Pipe length:

Material: Concrete Pipe (non-reinforced)

Shape: Circular


 92nd/Luick MH 1.20 AMH Downstream Manhole, Survey Begins / 15" Concrete
 93rd/Luick 323.20 AMH Upstream Manhole, Survey Ends / Plug

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Inspection Report / Inspection: 1

Date 2/18/2011	P/O. No.	Weather	Surveyor's Name Joe	Pipe Segment Reference	Section No. 5
Certificate No. X	Survey Customer	System Owner	Date Cleaned	Pre-Cleaning Jetting	Sewer Category

Street 123	92nd st & Luick	Use of Sewer	Upstream MH	93rd/Luick
City	Niagara Falls	Drainage Area	Dowstream MH	92nd/Luick MH
Loc. details		Flow Control	Dir. of Survey	Upstream
Location Code		Length surveyed	Section Length	323.20 ft

Purpose of Survey	Joint Length	
Year Laid	Dia./Height	15 inch
Year Rehabilitated	Material	Concrete Pipe (non-reinforced)
Tape / Media No. X	Lining Method	

Add. Information :

1:810 Position Code Observation Grade

92nd/Luick MH

1.20

AMH Downstream Manhole, Survey Begins / 15" Concrete



323.2 FT

323.20

AMH Upstream Manhole, Survey Ends / Plug

93rd/Luick

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0	0	0	0	0	0

Inspection photos / Inspection: 1

City : Niagara Falls	Street : 92nd st & Luick	Date :	Pipe Segment Reference :	Section No : 5



Photo: 5_1_2_18022011_105909_A.JPG, VCR No.: X
323.2FT, Upstream Manhole, Survey Ends / Plug



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Inspection Report / Inspection: 1

Date 2/22/2011	P/O. No.	Weather	Surveyor's Name Joe	Pipe Segment Reference	Section No. 6
Certificate No. X	Survey Customer	System Owner: City of N. Falls	Date Cleaned: 2/16/11	Pre-Cleaning No Pre-Cleaning	Sewer Category

Street 123 City Loc. details Location Code	Luick Ave Niagara Falls	Use of Sewer Drainage Area Flow Control Length surveyed 111.35 ft	Upstream MH 91st/Luick Downstream MH Luick/outside of L.S. Dir. of Survey Upstream Section Length 111.35 ft

Purpose of Survey: To camera inspect & ID if any hazardous material has infiltrated the Sanitary Lines

Year Rehabilitated

Tape / Media No. X

Joint Length

Dia./Height

Material

Lining Method

15 inch

Concrete Pipe (non-reinforced)

Add. Information :

1:285	Position	Code	Observation	Photo	Grade

Luick/outside
of L.S.

0.00

AMH

Downstream Manhole, Survey Begins / 15" Concrete

M 3

111.35

AMH

Upstream Manhole, Survey Ends / Plug

6_1_2_23022011_09
2256_A.JPG

91st/Luick

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0	0	0	0	0	0



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Inspection photos / Inspection: 1

City : Niagara Falls	Street : Luick Ave	Date :	Pipe Segment Reference :	Section No . 6



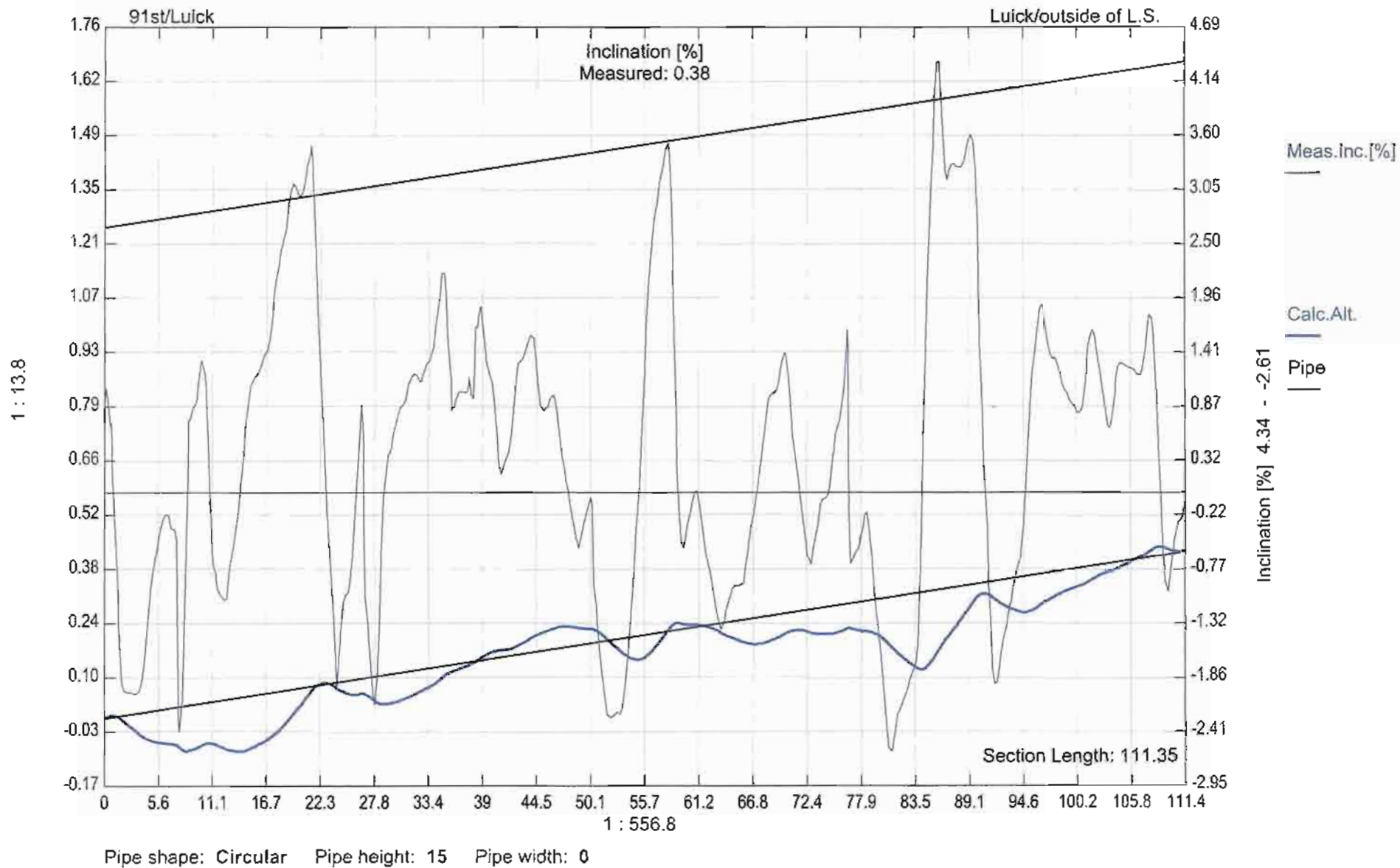
Photo: 6_1_2_23022011_092256_A.JPG, VCR No.: X
111.35FT, Upstream Manhole, Survey Ends / Plug

Location:

Street: Luick Ave

Date: 2/22/2011

Visa: Joe



E-mail: JKandefer@kandaycompany.com

Date 2/22/2011	P/O. No.	Weather	Surveyor's Name Joe	Pipe Segment Reference	Section No. 7
Certificate No. X	Survey Customer	System Owner: City of N. Falls	Date Cleaned: 2/16/11	Pre-Cleaning No Pre-Cleaning	Sewer Category

Street123	Luick Ave.	Use of Sewer	Upstream MH	91st/Luick
City	Niagara Falls	Drainage Area	Dowstream MH	Lift Station
Loc. details		Flow Control	Dir. of Survey	Downstream
Location Code		Length surveyed	Section Length	56.00 ft

Purpose of Survey: To camera inspect & ID if any hazardous material has infiltrated the Sanitary Lines	Joint Length	
Year Rehabilitated	Dia./Height	18 Inch
Tape / Media No. X	Material	Concrete Pipe (non-reinforced)
	Lining Method	

Add. Information :

1:150	Position	Code	Observation	Photo	Grade
	0.00	AMH	Upstream Manhole, Survey Begins / Lift Station		
	56.00	AMH	Downstream Manhole, Survey Ends / Lift Station Vault	7_1_2_23022011_11 3049_A.JPG	

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0	0	0	0	0	0



Kandey Company

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Inspection photos / Inspection: 1City :
Niagara FallsStreet :
Luick Ave.

Date :

Pipe Segment Reference :

Section No :
7

Photo: 7_1_2_23022011_113049_A.JPG, VCR No.: X
56FT, Downstream Manhole, Survey Ends / Lift Station Vault

Location:

Street: Luick Ave.

Date: 2/22/2011

Visa: Joe

