CONESTOGA-ROVERS & ASSOCIATES

2012 ANNUAL OPERATIONS AND MAINTENANCE REPORT

STAUFFER MANAGEMENT COMPANY, LLC
LEWISTON, NEW YORK

Prepared by:
CRA Infrastructure & Engineering, Inc.

285 Delaware Avenue
Suite 500
Buffalo, New York 14202

Office: (716) 856-2142
Fax: (716) 856-2160

web: http:\\www.CRAworld.com

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1.0 INTRODUCTION

This report summarizes the operation and maintenance (O&M) activities performed at the Stauffer Management Company LLC (SMC) Site (Site) in Lewiston, New York for the reporting period of January 1, 2012 through December 31, 2012. This report also summarizes significant modifications to remedial operations during the reporting period. Finally, this report presents data that can be used to evaluate the effectiveness of the remedial systems, provides conclusions about the data, and offers recommendations for 2013 operations.

The O&M services were provided by Conestoga-Rovers & Associates, Inc. (CRA) under contract to SMC. The O&M activities were performed in accordance with the "Operations and Maintenance Manual, Stauffer Management Company, Town of Lewiston, New York" (O&M Manual), dated April 1998.

1.1 SITE BACKGROUND

The SMC Site is located in the Town of Lewiston, New York, immediately north of the Forebay of the Robert Moses Power Plant. Figure 1.1 presents the location of the Site, and Figure 1.2 presents the layout of the Site.

The Site is a former chemical manufacturing facility owned and operated by Stauffer Chemical Company. All structures associated with the former plant were demolished in the early 1980s. Stauffer Chemical Company was divested in 1987, and Atkemix Thirty Seven, a subsidiary of Stauffer Management Company, became the Site owner. In 2000, Stauffer Management Company and Atkemix Thirty Seven restructured into a limited liability company that is now known as Stauffer Management Company LLC.

In 1995, in accordance with Consent Order #B9-0137-86-04, SMC initiated remedial construction for soil and groundwater. At that time, the Treatment Building was erected to house the Site groundwater treatment system and the soil vapor extraction (SVE) treatment system for Area A. A second SVE treatment system, Area C, was mounted in a trailer located off Site, beyond the southeast corner of the Site property. SVE operations at Area C were discontinued in May 2004, and the Area C treatment system was decommissioned in July 2004. A third SVE system at Area T-4 was also installed in 1995, operated until 2000, and decommissioned in September 2001. Dual phase well T-4 (also known as DPT-261) remains operable as a groundwater extraction well.

The major chemicals of concern in the groundwater at the Site have been identified in the Site-Specific Parameter List (SSPL) as follows:

i) carbon disulfide
ii) carbon tetrachloride
iii) chloroform
iv) methylene chloride
v) tetrachloroethene
vi) benzene
vii) chlorobenzene
viii) toluene
ix) trichloroethene

These chemicals have historically been detected at varying concentrations in the groundwater, subsurface soils, seeps, and surface water run-off in the immediate vicinity of the Site.

1.2 REMEDIAL SYSTEMS DESCRIPTIONS

The remedial systems currently being operated at the Site include:

i) the Area A SVE system
ii) the bedrock groundwater extraction and treatment system, consisting of deep bedrock and shallow bedrock extraction wells

The SVE system located in Area T-4 was decommissioned in 2001, and the SVE system located in Area C was decommissioned in 2004.

The remedial systems are briefly described in the following sections.

1.2.1 AREA A

Area A occupies approximately 136,500 square feet near the center of the property as shown on Figures 1.2 and 1.3. The remedial system at Area A is a combination of soil vapor and groundwater extraction and includes 39 SVE wells, 3 dual-phase

groundwater/SVE wells, and a cover comprised of a polyvinyl chloride (PVC) geomembrane liner, a geotextile cushion, and stone.

Each SVE well is connected to one of four header pipes that each enter the Treatment Building and are connected to the vacuum blower housed in the north side of the building. The SVE piping is mounted on a uni-strut/pipe strap support system. The Area A SVE treatment system is comprised of a skid with a moisture separator tank, an in-line filter, a vacuum blower, a discharge silencer, and a condensate removal pump, all located in the Treatment Building. The heat exchanger and granular activated carbon (GAC) adsorption units are mounted separately on the concrete floor in the building.

1.2.2 AREA C

Area C occupies approximately 19,350 square feet beyond the southeast corner of the Site property, as shown on Figures 1.2 and 1.4. Area C is the location of one of the landfills previously used by Stauffer Chemical Company.

Due to the success of the system and with the approval of New York State Department of Environmental Conservation (NYSDEC), operations at Area C were discontinued in May 2004, and the SVE system was decommissioned in July 2004. The SVE wells were plugged and abandoned in accordance with NYSDEC regulations in December 2004.

1.2.3 AREA T-4

Area T-4 occupies approximately 11,500 square feet and is located southwest of the Treatment Building, as shown on Figure 1.2. The Area T-4 SVE system was decommissioned in September 2001 based on the success of the system and with the approval of NYSDEC. Shallow groundwater extraction well T-4 remains operable.

1.2.4 GROUNDWATER EXTRACTION AND TREATMENT SYSTEM

The groundwater extraction network consists of two deep bedrock groundwater extraction wells (LR-66 and OW-3), three intermediate/deep bedrock extraction wells (EW-1, EW-2, EW-3), three shallow bedrock extraction wells (EW-4, EW-5, and EW-6), one shallow extraction well in Area T-4, and three shallow dual-phase wells in Area A (DPA-201, DPA-202, and DPA-203). The locations of the extraction wells are shown on Figure 1.5.

Underground force mains with secondary containment convey recovered groundwater from the extraction wells to the Treatment Building. The groundwater treatment system is currently housed in the south side of the original Treatment Building and in the northwest addition to the building.

All groundwater from each of the extraction wells is pumped into the on-Site treatment system. The major components of the treatment system are listed below:

i) Solids Settling Tank: a 1,500-gallon cone bottom tank installed in 2009 to provide solids settling prior to the influent water entering the carbon treatment system. This tank replaced a Non-Aqueous Phase Liquid (NAPL) Separator tank that had deteriorated. Phase separation is not required at the Site, as no NAPL has been observed since beginning system operation.

ii) Carbon Feed Tank: process tank used to accumulate water from the solids settling tank.

iii) Carbon Feed Pump: pumps water from the carbon feed tank through the rest of the treatment system.

iv) Bag Filters: groundwater is pumped through thirteen 10-micron bag filters (consisting of an eight-bag round filter vessel and a separate five-bag unit) operated in parallel to prevent solids from plugging the GAC.

v) GAC Beds: after the bag filters, the groundwater passes through two 20,000-pound GAC adsorption vessels operated in series.

The treated water from the GAC units is discharged through the outfall to the New York Power Authority (NYPA) Forebay, located south of the Site. Treated water is discharged in accordance with limits set by NYSDEC.

2.0 AREA A REMEDIAL SYSTEM O&M ACTIVITIES

2.1 SUMMARY OF AREA A OPERATIONS FOR 2012

The Area A SVE system was operated in automatic mode throughout this reporting period with several Site visits per week to perform system monitoring, inspections, and other routine O&M activities. In addition, the system status is monitored remotely though a computer interface.

The Area A SVE system operated 6,593 hours during 2012 for an operating efficiency of approximately 75 percent. The 2012 operating efficiency is slightly below that of 2011 (84 percent). Following a rebuild of the bearings, gaskets and seals on the gear (driven) end of the blower in November 2011, the blower developed a significant leak in its free (non-driven) end in early 2012. The bearings, gaskets and seals were replaced on the free end in late March 2012; however, the blower only ran normally for a short while before becoming inoperable. After significant troubleshooting by CRA and the manufacturer (Tuthill/MD Pneumatics), no significant mechanical problems could be identified, and the blower was restarted in May 2012. Although it leaked significant quantities of oil, the blower ran fairly reliably throughout the remainder of 2012.

As noted in the Third and Fourth Quarter 2012 reports, the Area A blower was shut down on December 31, 2012 for the winter months

2.2 MASS REMOVAL – 2012

The mass of organic compounds removed by the Area A SVE system is presented in Table 2.1.

The mass removal calculation is based upon an average air flow rate of 800 cubic feet per minute (cfm) and an operation time of 6,593 hours. Three operational vapor samples were collected during 2012 from the Area A SVE system and analyzed to calculate mass removal. The samples were collected on a quarterly basis in May, August and December 2012, utilizing the sample ports in the influent header pipe system just inside the Treatment Building and before the blower. A First Quarter 2012 sample was planned for collection following the late March rebuild of the blower, but the blower became inoperable shortly afterwards and a sample was not possible. Results from the three Area A influent samples were used to develop the 2012 quarterly mass loading calculations. An average of the Fourth Quarter 2011 and Second Quarter 2012

concentration results was used for the First Quarter 2012 removal calculation. Influent vapor data from the three quarterly sampling events are presented in Appendix A.

As shown in Table 2.1, the total mass removed in the soil vapor from Area A in 2012 was approximately 250 pounds. Of this mass, 86 percent was carbon tetrachloride. Chloroform, tetrachloroethene, and trichloroethene accounted for the remaining total mass removed.

The 250 pounds of organic compounds removed from Area A in 2012 represents a 39-pound decrease (13 percent) compared with that removed in 2011 (289 pounds). The removal efficiency of Area A in 2012 (pound of VOCs recovered/operating hour) was 0.037, compared with 0.039 in 2011.

2.3 ROUTINE INSPECTION AND MAINTENANCE

The Area A SVE system is inspected at least weekly to verify proper operation. The inspected components include the blower, compressor, and heat exchanger. In addition, all aboveground piping associated with the system is inspected for integrity. The operating status and conditions of the Area A SVE system are recorded on the respective operating log and system monitoring sheets in the O&M logbook. Monitoring of the Area A SVE air influent is also performed periodically and is recorded in the Site analytical database.

2.4 OPERATIONS/MONITORING FOR 2013

Following a review of cold weather Area A operations, and as noted in the Third and Fourth Quarter 2012 reports, the Area A blower was shut down on December 31, 2012 for the winter months. Many of the aboveground recovery lines from Area A extraction wells freeze during winter, rendering them ineffective. In addition, the system vacuum rises significantly and make-up air is used to bring it to safe operating levels. The 2013 plan is to restart the system in pulsed mode beginning in April 2013, and to operate one to two weeks per month to allow for potential rebound and to maximize vapor recovery.

System progress will continue to be evaluated by sampling the Area A influent on a quarterly basis beginning with the Second Quarter 2013.

3.0 AREA C REMEDIAL SYSTEM

Due to the success of the system, the former Area C SVE system was decommissioned in July 2004 with the approval of NYSDEC. The SVE wells were plugged and abandoned in accordance with NYSDEC regulations in December 2004.

4.0 AREA T-4 REMEDIAL SYSTEM

Due to the success of the system, the former Area T-4 SVE system was decommissioned in September 2001 with the approval of NYSDEC.

Dual phase well T-4 (also known as DPT-261) was taken out of service as a SVE well in 2001, but remains usable as a groundwater extraction well should groundwater concentrations increase in the T-4 area.

5.0 GROUNDWATER EXTRACTION SYSTEM O&M ACTIVITIES

5.1 2012 EXTRACTION SYSTEM MODIFICATIONS

There were no extraction system modifications of note in 2012. Maintenance issues associated with each of the extraction wells are discussed in the sections that follow.

5.2 SUMMARY OF OPERATIONS – 2012

The bedrock groundwater extraction system operated in automatic mode throughout the reporting period, with visits to the Site approximately two times per week to confirm pump operation, perform piping inspections, and complete other routine O&M activities. The operational status of the groundwater extraction system is also monitored remotely by computer.

With the exception of, EW-5 and EW-6, the eight bedrock groundwater extraction wells and three dual phase extraction wells generally operated reliably throughout 2012. Both EW-5 and EW-6 experienced electrical operational problems in the first quarter of the year. The problem with EW-5 was traced to faulty wiring between the control room and the extraction well. EW-6 had a faulty wiring harness that was replaced. Both operated normally following the maintenance activities.

In April and May 2012, a well rehabilitation program was performed at the Site. The purpose of the program was to increase extraction well yields and enhance well performance. The program consisted of pulling six of the eight bedrock extraction wells (EW-2, EW-2, EW-3, EW-5, EW-6, and OW-3) and utilizing a drilling rig to bail and/or flush out any accumulated solids, followed by surging the well. Surging and bailing were repeated as needed to clear out the boreholes to as close to original installation depth as possible. The wells were then pumped until the discharge was clear, with all recovered water being collected and treated in the groundwater treatment system. The wells were also treated with a descaler to address the presence of biofouling and iron scale.

In addition to the above, routine pump cleaning was performed on several other extraction wells throughout the course of the year.

5.3 MASS REMOVAL – 2012

5.3.1 EXTRACTION WELLS EW-1 THROUGH EW-6

Mass removal calculations for extraction wells EW-1 through EW-6 are summarized in Tables 5.1 through 5.6, respectively.

The mass removal of VOCs from groundwater for each extraction well was calculated on a quarterly basis using flow volumes and analytical data for the quarter. The volume of groundwater pumped from the six extraction wells is summarized below.

	Gallons of Groundwater Removed - 2012				
Extraction Well	***First Quarter***	***Second Quarter***	***Third Quarter***	***Fourth Quarter***	***2012 Total***
EW-1	216,840	378,812	371,412	427,976	1,395,040
EW-2	1,029,203	1,640,824	1,656,289	1,736,367	6,062,683
EW-3	90,348	414,160	556,194	580,397	1,641,099
EW-4	79,451	88,930	91,451	85,201	345,033
EW-5	383,403	1,363,751	1,293,048	1,491,551	4,531,753
EW-6	115,841	203,106	97,028	134,639	550,614
Total gallons pumped	1,915,086	4,089,583	4,065,422	4,456,131	14,526,222

The total mass, in pounds, removed by the six extraction wells in 2012 is summarized below.

	Total Pounds of VOCs Removed – 2012				
Extraction Well	***First Quarter***	***Second Quarter***	***Third Quarter***	***Fourth Quarter***	***2011 Total***
EW-1	82	131	76	175	464
EW-2	264	187	173	20	643
EW-3	5	40	39	34	119
EW-4	0.8	2.4	2.4	0.6	6
EW-5	4.7	5.1	16.3	20.7	47
EW-6	20.7	25.4	6.4	16.8	69
Total Pounds of VOCs Removed					1,348

The 1,348 pounds of VOCs removed from groundwater by EW-1 through EW-6 in 2012 is a decrease of 117 pounds compared with 2011 (1,465 pounds of VOCs removed). The volume of groundwater extracted by EW-1 through EW-6 in 2012 (14.5 million gallons) was 23 percent higher than in 2011 (11.8 million gallons), largely due to the well rehabilitation program described above. The removal efficiency (pound of VOC recovered/1,000 gallons of groundwater extracted) of the six extraction wells as a group decreased slightly from 0.12 to 0.09 between 2011 and 2012. See Section 9.2 for a summary of mass removal by groundwater extraction on a year-to-year basis.

The two extraction wells responsible for the majority of the VOCs removed by the group are EW-1 and EW-2. The mass of VOCs extracted by EW-1 in 2012 increased from 338 pounds in 2011 to 464 pounds in 2012, an increase of 37 percent. Much of this mass increase can be explained by the fact that 2012 groundwater extraction from EW-1 increased by 277,000 gallons compared with 2011, an increase of 25 percent. This increase in extraction volume is likely due to the well rehabilitation program that was performed in 2012. The removal efficiency of EW-1 increased from 0.30 pound VOC/1,000 gallons extracted in 2011 to 0.33 pound VOC/1,000 gallons extracted in 2012.

The mass of VOCs extracted by EW-2 decreased from 772 pounds in 2011 to 643 pounds in 2012, a decrease of 17 percent. The removal efficiency of EW-2 decreased between 2011 and 2012, from 0.17 pound VOC/1,000 gallons extracted in 2011 to 0.11 in 2012. At EW-3, the removal efficiency increased slightly between 2011 and 2012 (from 0.05 to 0.07 pound VOC/1,000 gallons extracted).

At EW-4, the removal efficiency decreased between 2011 and 2012 (from 0.06 to 0.02 pound VOC/1,000 gallons extracted).

The removal efficiency decreased between 2011 and 2012 at EW-5, from 0.02 to 0.01 pound VOC/1,000 gallons extracted.

The removal efficiency of EW-6 decreased from 0.31 pound VOC/1,000 gallons extracted in 2011 to 0.12 in 2012. This extraction well, which exhibited a large drop off in the amount of groundwater extracted beginning in 2009 (approximately 75 percent less water recovered than in 2007 and 2008), exhibited another drop off in extracted groundwater flow in 2012, down by an additional 21 percent. Beginning in 2009 and continuing into 2012, EW-6 has operated and cycled much less frequently while maintaining its predetermined set points, indicating that there is less groundwater available for recovery by the well.

Compounds removed by EW-1 through EW-6 in 2012 consisted of carbon disulfide (775 pounds, 57 percent of the total), carbon tetrachloride (402 pounds, 30 percent of the total removed), chloroform (148 pounds, 11 percent of the total), tetrachloroethene (9 pounds), methylene chloride (8 pounds), trichloroethene (3 pounds), and chlorobenzene (2 pounds). The last four SSPLs make up approximately 2 percent of the total compounds removed by EW-1 through EW-6. Section 9.2 provides historical breakdowns of the compounds removed by groundwater extraction since 1999.

For the group of six extraction wells, the mass of carbon disulfide removed in 2012 increased by 25 pounds compared with 2011, the mass of carbon tetrachloride removed in 2012 decreased by 125 pounds compared with 2011, and the mass of chloroform removed decreased by 19 pounds. The cumulative mass of chlorobenzene, tetrachloroethene, trichloroethene, and methylene chloride removed in 2012 remained about the same as in 2011.

5.3.2 AREA A DUAL PHASE WELLS DPA-201, DPA-202, AND DPA-203

Mass removal calculations for VOCs removed from shallow groundwater by DPA-201, DPA-202, and DPA-203 are summarized in Tables 5.7 through 5.9, respectively.

The mass removal estimate for the dual wells is based on quarterly flow data and quarterly analytical results. The volume of groundwater pumped from the three Area A dual wells is summarized below.

Total Volume of Groundwater (Gallons) Pumped – 2012					
Well No.	***1st Quarter***	***2nd Quarter***	***3rd Quarter***	***4th Quarter***	***System Total-2011***
DPA-201	17,658	21,599	18,420	17,800	75,477
DPA-202	32,700	36,729	35,281	32,804	137,514
DPA-203	5,401	2,227	4,077	2,794	14,499
				Total Gallons Pumped	227,490

The above represents a 13 percent decrease in recovered groundwater by the dual phase wells between 2011 (240,778 gallons extracted) and 2012. DPA-202 was mainly responsible for the decrease, as the volume extracted by the well in 2012 was 5 percent lower than that removed in 2011 (145,085 gallons extracted). The amount of groundwater recovered in 2012 by DPA-201 decreased by 3 percent, and the amount recovered by DPA-203 decreased by 19 percent, compared to 2011 levels. All three of

the DPA wells appear to be operating normally and removing the groundwater available to them; however, they are generally cycling much less frequently than in the past.

The total mass removed by the three dual wells is summarized below.

Total VOCs Removed (Pounds) – 2012					
Well No.	***1st Quarter***	***2nd Quarter***	***3rd Quarter***	***4th Quarter***	***Total***
DPA-201	0	0.6	0	0	0.6
DPA-202	24.6	24.8	38.5	32.9	121
DPA-203	14.6	6.9	0	7.9	29
Total VOCs Removed in 2012 (Pounds)					151

The 151 pounds of total VOCs recovered by DPA-201, DPA-202, and DPA-203 in 2012 represent a 19 percent decrease from 2011 (187 pounds recovered), and a 28 percent decrease compared with 2010 (208.6 pounds recovered). The removal efficiency of the three dual phase extraction wells as a group also decreased, from 0.78 pounds VOC/1,000 gallons extracted in 2011 to 0.66 pounds VOC/1,000 gallons extracted in 2012. This decrease is mainly due to reduced influent concentrations of SSPLs.

From 2011 to 2012, removal efficiency at DPA-201 decreased from 0.013 to 0.008 pounds VOC/1,000 gallons extracted, DPA-202 decreased from 1.06 to 0.88 pounds VOC/1,000 gallons extracted, and DPA-203 increased from 1.78 to 2.00 pounds VOC/1,000 gallons extracted.

The major compounds removed from groundwater by the three dual wells were carbon tetrachloride (123 pounds, 82 percent of the total recovered) and chloroform (24 pounds, 16 percent of total). Approximately 2 pounds of carbon disulfide (1 percent of total) and 2 pounds of trichloroethene (1 percent of total) were also removed.

5.3.3 AREA T-4 EXTRACTION WELL DPT-261 (T-4)

Extraction well DPT-261 (T-4) operated very infrequently during 2012 due to a lack of recoverable water. Although there was sufficient water to sample T-4 during all of the quarterly groundwater sampling events, the automatic air-driven pump did not recover measurable amounts of water for the majority of the year. Well T-4 recovers less than 0.1 gallons per minute (GPM) when it operates. Consistent with previous years, the

mass of organic compounds recovered from T-4 in 2012 was negligible, less than 1 pound for the year.

5.3.4 EXTRACTION WELL OW-3

The mass of SSPL compounds removed from groundwater by OW-3 is summarized in Table 5.10. The volume of groundwater pumped from OW-3 in 2012 was 122,727 gallons, an increase of 20 percent from 2011. Most of this increase is attributed to the 2012 well rehabilitation program. A total of 1,011 pounds of VOCs were removed from groundwater by OW-3 in 2012, an increase of 164 pounds compared with 2011 (847 pounds).

The 2012 removal efficiency of OW-3 was 8.23 pounds VOC/1,000 gallons extracted, compared with a removal efficiency of 8.93 pounds VOC/1,000 gallons extracted in 2011. The compounds removed were carbon disulfide (889 pounds, 88 percent of the total recovered), carbon tetrachloride (97 pounds, 10 percent of total), and chloroform (23 pounds, 2 percent of total).

5.3.5 EXTRACTION WELL LR-66

Former Lockport-Rochester monitoring well LR-66 was converted into a permanent groundwater extraction well in June 2005 and became operable on July 1, 2005.

The mass removal calculations for organic compounds removed from groundwater by LR-66 are summarized in Table 5.11. The volume of groundwater pumped from LR-66 in 2012 was 63,681 gallons, down 17 percent from 2011 (76,545 gallons). A total of 3 pounds of VOCs was removed from groundwater by LR-66 in 2012, the same amount removed in 2011. The removal efficiency of LR-66 was 0.05 pound VOC/1,000 gallons extracted, up slightly from 2011 (0.03 pound VOC/1,000 gallons recovered). The compounds removed in 2012 were carbon tetrachloride (3 pounds, 100 percent of total recovered).

5.3.6 AREA A KNOCKOUT POT AND SUMP

Although not specifically part of the groundwater extraction system, the Area A SVE system air/water separator (i.e., knockout pot) and the 10-foot long PVC "sump" collects groundwater that is present in the SVE air stream (as entrained moisture in the soil gas)

and groundwater that is removed by the drop tube assemblies and the blower. The sump is a 12-inch diameter, 10-foot long PVC pipe located at one end of the Area A header assembly, just inside the Treatment Building.

The mass of organic compounds removed from groundwater by the knockout pot and sump is summarized in Table 5.12. The sump is sampled on a quarterly basis, at the time of the groundwater sampling events.

The volume of groundwater recovered by the Area A knockout pot and the pipe sump is also summarized in Table 5.12. The volume recovered in 2011 was 371,020 gallons, a 66 percent decrease from 2011 levels. This is likely related to much less water coming into the knockout pot from Area A, due to generally drier weather. The 2012 precipitation levels for the area dropped from approximately 50 inches in 2011 to about 33 inches in 2012. The knockout pot and sump removed less than one pound of VOCs in 2012, very similar to the amount removed in 2011.

5.4 ROUTINE MAINTENANCE

The operational status of the extraction and dual phase wells is monitored during the weekly visits to the Site. The flows from each of the wells are recorded weekly in the O&M logbook. If the submersible pumps are not maintaining the desired drawdown, or if the dual pumps are not cycling properly, pump maintenance is performed.

All of the extraction wells have been tied into one of two leak detection systems. A leak in the force main of any well on either system will shut off all of the pumping associated with the system. In 2012, no leaks were detected in any force mains.

6.0 GROUNDWATER TREATMENT SYSTEM

6.1 SUMMARY OF OPERATIONS – 2012

The groundwater treatment system operated in the automatic mode in 2012 with at least weekly visits to the Site to perform system monitoring, inspections, and other routine O&M activities. In addition, the operating status of the groundwater treatment system can be monitored remotely by computer.

The groundwater treatment system operated continuously and generally reliably throughout 2012 with no major repairs.

The treatment system was shut down only briefly to perform routine maintenance and carbon changes.

6.2 MAINTENANCE, INSPECTION, AND MONITORING ACTIVITIES

6.2.1 ROUTINE TREATMENT SYSTEM MAINTENANCE

Routine inspection and maintenance of the groundwater treatment system is performed weekly during visits to the Site. Routine weekly inspections and maintenance include:

i) general visual inspection of the treatment equipment for leaks, overflows, or malfunctions
ii) inspection of process-indicating instruments
iii) inspection of aboveground SVE piping
iv) recording operating conditions in logbook
v) correction of operational problems
vi) replacement of bag filters, as indicated by differential pressure across the filters
vii) repair or replacement of damaged parts

All inspections are recorded in the O&M logbook.

The treatment system is shut down periodically to perform routine maintenance on the system components. The periodic maintenance shutdowns involved cleaning and inspection of the following:

i) cone bottom tank

ii) carbon feed tank

iii) carbon feed pump

iv) bag filter housings

The carbon vessels are cleaned and inspected during routine carbon changeouts.

6.2.2 TREATMENT SYSTEM MODIFICATIONS

There were no modifications to the groundwater treatment system in 2012.

6.2.3 GROUNDWATER TREATMENT SYSTEM PROCESS MONITORING

Samples for chemical analysis are collected routinely from the groundwater treatment system. Samples are collected weekly from the carbon interstage. The groundwater influent and system effluent are sampled monthly, at a minimum. Process monitoring sample analytical results are presented in Appendix B. Influent, carbon interstage, and effluent data are summarized in Tables B-1 to B-3, respectively.

The 2012 analytical data for the monthly influent groundwater samples are presented in Table B-1. The data indicate that typically only carbon tetrachloride, carbon disulfide, and chloroform are detected in high concentrations in the influent.

The 2012 analytical data for the weekly carbon interstage groundwater samples are presented in Table B-2. The data indicate that the results are generally non-detect or indicate low (< 100 ppb) total SSPLs except when breakthrough occurred.
Two instances of breakthrough occurred in 2012, in April and in October.
Therefore, two carbon exchanges were performed in 2012:

- June 6, 2012
- October 16, 2012

In each case, the lead carbon bed was exchanged and the former lag bed became the lead bed.

The 2012 analytical data for effluent samples collected from the groundwater treatment system are presented in Table B-3. Effluent samples are collected and analyzed monthly, at a minimum.

6.2.4 GROUNDWATER TREATMENT SYSTEM PERFORMANCE MONITORING – 2012

All extraction wells are sampled on a quarterly basis. Beginning in 2012, sampling of the Site-wide monitoring well network is performed on an annual basis. The purpose of the groundwater monitoring is to evaluate progress of the groundwater extraction system in removing the SSPL compounds from the groundwater. The groundwater sampling data are used to develop concentration trends over time.

Groundwater samples are collected in accordance with established procedures and protocols in the Site Operations and Maintenance Manual. The samples are shipped to Columbia Analytical Services for analysis following Chain of Custody procedures. The laboratory sends the analytical results to CRA. The results are reviewed, collated, put into tabular form, sent to SMC for review, and included in the quarterly status reports to NYSDEC.

Groundwater sampling events were performed at the Site in 2012 as follows:

i) February 2012 (extraction wells only)

ii) May 2012 (monitoring well network and extraction wells)

iii) August 2012 (extraction wells only)

iv) December 2012 (extraction wells only)

The analytical results for the groundwater samples are presented in Appendix C, Tables C-1 through C-4.

6.2.5 GROUNDWATER TREATMENT SYSTEM PERFORMANCE MONITORING – 2013

The currently scheduled quarterly and annual sampling programs for 2013 are as follows:

i) Quarterly Sampling: Quarterly sampling rounds are scheduled to be performed in March, May, August, and November 2013. A total of 12 extraction wells will be sampled including:

a) Bedrock extraction wells – EW-1 through EW-6, LR-66, and OW-3

b) Dual wells – DPA-201, DPA-202, and DPA-203

c) T-4 (as long as sufficient water is present)

ii) Annual Sampling: During 2013, an annual sampling is scheduled to be performed in May. Wells to be sampled include the 12 extraction wells plus the following 47 monitoring wells:

Upper Lockport Wells	*Lower Lockport Wells*	*Lockport/ Rochester Wells*	*Rochester Wells*
OW-11	W-18L	W-19B	B-02
W-11	W-19A	LR-2	R-16
W-16	W-23B	LR-16	R-19
W-16L	W-48E	LR-67	R-68
W-17	W-50L	LR-20	R-48
W-18R	W-60L	LR-48	R-50
W-19D	W-65	LR-49	R-51
W-20	W-66L	LR-50	R-60
W-22	W-67L	LR-51	R-61
W-23C	W-70L	LR-61	R-62
W-66		LR-62	R-66
W-67		LR-69	R-67
		OW-5	

6.2.6 FACILITIES, STRUCTURES, AND GROUNDS MAINTENANCE

The facilities, structures, and grounds are inspected and maintained regularly as specified in the O&M Manual. These inspections are carried out during routine Site visits. These routine inspection tasks include checking the appearance of the grass, driveways, walkways, fencing, and lighting and containment areas. Inspections and

maintenance tasks inside the Treatment Building include checking the appearance of walls, floors, ceiling, doors, walkways, emergency equipment, lights, sumps, and equipment support structures. Any problems or deficiencies are noted in the O&M logbook.

6.2.7 UNSCHEDULED MAINTENANCE

Unscheduled maintenance was performed at the Site as required in 2012. Examples of unscheduled maintenance activities performed are:

i) pump maintenance or replacement

ii) extraction well riser pipe replacement

iii) equipment repair or replacement

Section 5.2 provides an overview of the 2012 unscheduled maintenance related to the extraction wells.

6.2.8 MONITORING WELL INVENTORY

An inventory/inspection of the Site monitoring wells was performed in conjunction with the November 2012 groundwater sampling event. A copy of the well inventory is included as Appendix D. The well inventory indicates that the wells are in generally good condition, with no repairs needed.

7.0 GROUNDWATER LEVEL MONITORING AND CHEMISTRY – 2012

Depth-to-groundwater measurements were recorded for all wells in conjunction with the February, May, August, and December 2012 quarterly sampling events. Table 7.1 presents the measured groundwater levels for the four events. The May 2012 data were used to prepare potentiometric surface contour maps for each of the four water bearing zones (WBZs). The WBZs include the Upper Lockport, the Lower Lockport, the Lockport/Rochester, and the Rochester. In addition to the potentiometric surface contours, chemical isocontour figures were prepared for each WBZ using groundwater data obtained during the May 2012 event.

The potentiometric surface contour maps and chemical isocontour figures are discussed in the following sections.

7.1 GENERAL

7.1.1 GROUNDWATER POTENTIOMETRIC CONTOURS

Potentiometric surface contours were prepared for each WBZ based on the measured depths to groundwater in the May 2012 sampling event. Hydraulic containment was determined by evaluating the potentiometric contours, as well as considering the results of a detailed hydraulic monitoring program performed in 2000. The 2000 hydraulic monitoring program assessed the relationship between groundwater elevations in individual wells and their responses to pumping activity in the various Site WBZs using transducers installed in individual wells. The results of that program, including individual well hydrographs, were presented in the 2000 Annual Operations and Maintenance Report, March 2001.

Table 7.2 presents a summary of the monitoring wells and extraction wells classified by WBZ. The wells are classified under a specific WBZ if they are screened across or have open intervals in the specific WBZ. This classification was used to prepare the potentiometric surface contour maps for the May 2012 event.

During the preparation of potentiometric surface contours for the various WBZs, CRA noted that several monitoring wells did not appear to be hydraulically connected to the monitored WBZ. For example, well W-17 in the Upper Lockport formation, well W-23B in the Lower Lockport formation, well LR-69 in the Lockport/Rochester formation, and well R-66 in the Rochester formation exhibited anomalous water levels and, therefore,

were not used to create groundwater contours. Well W-23B showed hydraulic response to Lower Lockport pumping in the 2000 hydraulic monitoring program, while W-17, LR-69, and R-66 did not show response to pumping in their respective WBZs. A review of the stratigraphic logs for the latter two wells indicates that the Rochester WBZ at R-66 and the Lockport-Rochester WBZ at LR-69 are generally less fractured than in other areas of the Site; hence, hydraulic interconnection is lower at these two deep monitoring wells. The wells that are not used for contouring are noted on the various potentiometric contour figures.

In addition, water levels for the deep bedrock extraction wells (EW-1, EW-2, and EW-3, whose open intervals span the Lower Lockport, Lockport/Rochester, and Rochester WBZs) were adjusted to levels representative of the specific WBZ. This was done when the measured water level for the deep extraction well was significantly below the base of the designated WBZ (for the Lower Lockport and Lockport/Rochester WBZs) or significantly below the water level elevations of the surrounding wells in a particular WBZ (for the Rochester WBZ). The groundwater elevations in the immediate vicinity of the deep extraction wells are assumed to be at or near the base of the respective WBZ, since the WBZs at the extraction wells are essentially dewatered. However, for generating groundwater contours, these water levels were conservatively assumed to be 5 to 10 feet lower than the lowest measured water level from the respective WBZs (but not lower than the base of the WBZ). This allows meaningful water level contours to be created for each WBZ in the regions around the deep extraction wells, while accounting for potential influences from extraction well operations and well and fracture efficiencies. These assigned values for EW-1, EW-2, and EW-3 are as follows:

Lower Lockport	545 feet mean sea level (MSL)
Lockport/Rochester	545 feet MSL
Rochester	490 feet MSL

Note that the assigned EW-1, EW-2, and EW-3 water level value for both the Lower Lockport and the Lockport/Rochester WBZs for purposes of plotting potentiometric contours is 545 feet MSL. This value reflects the fact that the lowest measured water level in both Lower Lockport and Lockport/Rochester WBZ hydraulically-connected monitoring wells was approximately 550 feet MSL.

For the Upper Lockport potentiometric contour maps, extraction wells EW-1, EW-2, and EW-3 were not used to generate contours, as these wells are not open in the Upper Lockport. Groundwater elevations for combined Upper and Lower Lockport extraction

wells EW-4, EW-5, and EW-6 were adjusted to 570 feet MSL for contouring the Upper Lockport WBZ. The 570 feet MSL is a level very near the lowest measured water level in the Upper Lockport WBZ on Site. Actual water level elevations for EW-4, EW-5, and EW-6 were used for contouring the Lower Lockport WBZ.

7.1.2 CHEMICAL ISOCONTOURS

Chemical isocontours for each WBZ were prepared using analytical data from the May 2012 semiannual groundwater monitoring event. Two figures were prepared for the May data: one for carbon disulfide concentrations, and a second for the sum of carbon tetrachloride and chloroform concentrations[1]. A logarithmic scale was utilized for the isocontour plots.

Note that the May 2012 groundwater analytical results for carbon disulfide and for the sum of carbon tetrachloride and chloroform are also shown on the Groundwater Potentiometric Surface Contour figures for the four WBZs. The analytical results are listed below each well that is monitored in the specific WBZ.

7.2 UPPER LOCKPORT WATER BEARING ZONE

The Upper Lockport WBZ is the shallowest water bearing fracture zone at the Site. The Upper Lockport WBZ consists of the base of the overburden and approximately the top 25 feet of the Lockport bedrock. This zone is generally highly fractured. Existing Site information indicates that the Upper Lockport WBZ pinches out and is not present on the western portion of the Site. DPA-201, DPA-202, DPA-203, EW-4, EW-5, and EW-6 extract groundwater from the Upper Lockport WBZ.

7.2.1 GROUNDWATER POTENTIOMETRIC CONTOURS

Figure 7.1 presents the Groundwater Potentiometric Surface Contours for the Upper Lockport WBZ for the May 2012 event. Based upon the groundwater potentiometric surface contours, Upper Lockport groundwater flow is generally east to west through the middle of the Site. There is a slight response to pumping in Area A from the dual phase wells. There is also localized response to pumping from extraction wells EW-4, EW-5, and EW-6, which are completed in both the Upper and Lower Lockport WBZ.

[1] Chemical concentrations of carbon tetrachloride and chloroform are combined (summed) for preparation of isocontour figures because chloroform is a breakdown (daughter) product of carbon tetrachloride.

The 2012 potentiometric surface contours for the Upper Lockport WBZ are consistent with historical conditions.

7.2.2 CHEMICAL ISOCONTOURS

The chemical isocontour plots for the Upper Lockport WBZ for May 2012 are presented on Figures 7.2 and 7.3. A review of these contours indicates that the only elevated carbon disulfide concentrations exist in the groundwater around DPA-203, DPA-202, and W-67 (Figure 7.2) located within and to the east of Area A. Elevated levels of carbon tetrachloride and chloroform are present at both DPA-203 and DPA-202, and at W-18R, W-67 and W-17 (Figure 7.3). The mass loading calculations indicate that DPA-202 and DPA-203 were responsible for removing approximately 150 pounds of VOCs in 2012, primarily carbon tetrachloride and chloroform.

Note that there were no detectable levels of carbon disulfide in Upper Lockport wells west of Area A. Three Upper Lockport monitoring wells had detectable levels of carbon tetrachloride and chloroform west of Area A. The highest (W-66) had a concentration of 283 ppb (sum of carbon tetrachloride and chloroform), and the others were all well below 100 ppb.

The chemical isocontour plots for the Upper Lockport WBZ illustrate that DPA-202 and DPA-203 are well-placed to address the areas of elevated concentrations of the two main Site contaminants. The mass loading data indicate that these pumping wells are effective in recovering VOCs from the Upper Lockport WBZ.

A comparison of the 2012 Upper Lockport carbon disulfide isocontours (Figure 7.2) with those of 2011 indicates that the area of carbon disulfide-impacted groundwater decreased slightly, however the concentrations in the center of the impacted area showed some slight increases. A comparison of the 2012 Upper Lockport carbon tetrachloride plus chloroform (CTET+CHL) isocontours (Figure 7.3) with those of 2011 also indicates that the size of the impacted groundwater decreased slightly, however concentrations in DPA-203 in the center of the impacted area increased in 2012.

7.3 LOWER LOCKPORT WATER BEARING ZONE

The Lower Lockport WBZ is the second bedrock WBZ identified at the Site. The Lower Lockport WBZ generally includes groundwater in the fractured bedrock from about 50 to 75 feet below top of rock.

EW-1 through EW-6 extract groundwater from the Lower Lockport WBZ.

7.3.1 POTENTIOMETRIC SURFACE CONTOURS

Potentiometric surface contours for the Lower Lockport WBZ for May 2012 are presented as Figure 7.4.

The groundwater potentiometric contours indicate that the VOCs in the Lower Lockport WBZ are being contained, captured on Site, and recovered by the groundwater extraction system. There is a very strong cone of depression around EW-4, EW-2 and EW-6, with a secondary cone near EW-1.

7.3.2 CHEMICAL ISOCONTOURS

Chemical isocontours were prepared for the Lower Lockport WBZ for carbon disulfide (Figure 7.5) and carbon tetrachloride and chloroform combined (Figure 7.6). The chemical isocontour maps for carbon disulfide indicate areas of elevated concentrations in the Lower Lockport WBZ around monitoring well W-16L and extraction wells EW-6 and EW-5. Hydraulic monitoring data indicate that W-16L is within the capture zone of combined Upper and Lower Lockport extraction well EW-5 and deep extraction well EW-3. EW-6 is near the center of the capture zone at the Site.

The chemical isocontour map for carbon tetrachloride and chloroform combined indicates an area of elevated concentrations around EW-6, and to a lesser extent around EW-4 and EW-5. Other nearby wells with elevated concentrations include W-18L, W-23B, W-67L, and W-70L. Mass loading concentrations for EW-4, EW-5, and EW-6 indicate that approximately 100 pounds of carbon tetrachloride and chloroform were recovered from these wells in 2012.

The 2000 hydraulic monitoring data indicate that Lower Lockport monitoring wells W-18L, W-23B, W-67L and W-70L respond to pumping activity at the Site. The May 2012 surface contours and chemical isocontours illustrate that the existing groundwater extraction system is effective in containing and recovering SSPLs from the Lower Lockport WBZ.

A comparison of the 2012 Lower Lockport carbon disulfide isocontours (Figure 7.5) with that of 2011 indicates that the area of impacted groundwater decreased in 2012, and that

the concentrations in the center and edges of the area also decreased. A comparison of the 2012 Lower Lockport CTET+CHL isocontours (Figure 7.6) with that of 2011 indicates that 2012 CTET and CHL concentrations decreased significantly in several of the extraction wells; however, there was no significant change in the size and shape of the impacted area.

7.4 LOCKPORT/ROCHESTER WATER BEARING ZONE

The Lockport/Rochester WBZ is the third WBZ encountered in the bedrock at the Site. The Lockport/Rochester WBZ is a slightly fractured WBZ at the base of the Lockport bedrock, and is at or near the contact with the Rochester shale. EW-1 through EW-3 and LR-66 extract groundwater from the Lockport/Rochester WBZ.

7.4.1 POTENTIOMETRIC SURFACE CONTOURS

Potentiometric surface contours were prepared for the Lockport/Rochester WBZ for May 2012 (Figure 7.7). A review of the contours under pumping conditions indicates that EW-1, EW-2, and EW-3 have a dramatic effect on the groundwater in this WBZ. In addition, the effect of LR-66 on groundwater recovery is evident. The direction of flow is from the Site perimeter inward toward the extraction wells. The pumping contours indicate hydraulic capture across the entire Site.

7.4.2 CHEMICAL ISOCONTOURS

Chemical isocontour maps of the Lockport/Rochester WBZ were prepared from the May 2012 groundwater sampling data. Chemical isocontours for carbon disulfide are presented on Figure 7.8. Chemical isocontours for carbon tetrachloride and chloroform combined are presented on Figure 7.9.

The chemical isocontour plot for carbon disulfide indicates an area of high concentration in groundwater around OW-5 and adjacent well LR-67. Hydraulic monitoring has shown that there is a strong inward gradient from these wells toward the middle of the Site. Previous hydraulic monitoring activities indicate that both wells respond to pumping activity.

The chemical isocontour plot for carbon tetrachloride and chloroform indicates that an area of high concentrations exists around monitoring wells LR-61, W-19B, and LR-2.

Extraction well LR-66 also exhibits elevated CTET+CHL concentrations. Previous hydraulic monitoring has shown that LR-2, LR-61, and W-19B all respond to pumping activity, and are situated within the cone of depression of extraction wells EW-2 and EW-3.

The chemical isocontour maps confirm that the existing groundwater treatment system is effective at containing and recovering VOCs from the Lockport/Rochester WBZ.

A comparison of the 2012 Lockport/Rochester carbon disulfide isocontours (Figure 7.8) with that of 2011 indicates that carbon disulfide concentrations generally decreased through Area a on the Site, and at LR-67. A comparison of the 2012 Lockport/Rochester CTET+CHL isocontours (Figure 7.9) with that of 2011 indicates that the concentrations of these two SSPLs decreased near the center of the impacted area, but increased at W-19B.

7.5 ROCHESTER WATER BEARING ZONE

The Rochester WBZ is the fourth and deepest bedrock WBZ being remediated at the Site. EW-1 through EW-3 and OW-3 extract groundwater from the Rochester WBZ.

7.5.1 POTENTIOMETRIC SURFACE CONTOURS

The potentiometric surface contour for the Rochester WBZ is presented on Figure 7.10.

The potentiometric contours show a dramatic response to pumping with a strong inward gradient toward EW-1, EW-2, and EW-3. The pumping contours indicate that there is hydraulic containment within the Rochester WBZ across the Site.

7.5.2 CHEMICAL ISOCONTOURS

Chemical isocontour maps of the Rochester WBZ were prepared from the May 2012 groundwater sampling data.

The carbon disulfide chemical isocontour map (Figure 7.11) shows two distinct areas of significantly elevated carbon disulfide in the Rochester WBZ Zone. The first area is around extraction well OW-3, which removed nearly 900 pounds of carbon disulfide in 2012. Monitoring wells nearby OW-3 with elevated carbon disulfide concentrations are

R-68, R-66, and B-02. All of these wells showed a response to pumping during the 2000 hydraulic monitoring program. The second area of elevated carbon disulfide is centered around monitoring wells R-67 and R-62 at the eastern side of the Site, and, to a lesser extent, R-61. These wells are all located relatively close to extraction well EW-3 and show a strong response to Rochester WBZ pumping.

As shown on Figure 7.12, carbon tetrachloride and chloroform are also found in very high concentrations around OW-3. OW-3 removed approximately 100 pounds of these two constituents during 2012. Other wells with high concentrations are R-68, R-66, B-02, and R-19. Each of these wells is in the capture zone, and the existing groundwater extraction has been demonstrated to be effective in removing VOCs from groundwater in the Rochester WBZ.

A comparison of the 2012 Rochester carbon disulfide isocontours (Figure 7.11) with that of 2011 indicates no significant changes in the size and shape of the impacted groundwater area, however the concentration at OW-3 did decrease slightly ,and the concentration at R-19 increased significantly. A comparison of the 2012 Rochester CTET+CHL isocontours (Figure 7.12) with those of 2011 indicates no significant changes in the concentrations of these two SSPLs at Rochester WBZ extraction and monitoring wells. The general size and shape of the impacted groundwater was also unchanged.

8.0 NORTH SIDE WELL GAS AND GROUNDWATER SAMPLING

As approved by NYSDEC, the North Side well sampling program was discontinued in June 2004. However, in order to confirm that there are no groundwater impacts in this area, Upper Lockport bedrock monitoring well OW-11 continues to be sampled annually as part of the routine groundwater monitoring program. Figure 8.1 presents the locations of the North Side wells.

9.0 SUMMARY OF MASS REMOVAL

Mass removals from groundwater and soil gas have been reported for individual wells and SVE systems in previous sections of this report. This section presents combined mass removal estimates for the groundwater and SVE systems at the Site. It also compares the total estimated mass removed for soil vapor and groundwater extraction in previous years with that of 2011.

9.1 SUMMARY OF MASS REMOVAL BY SOIL VAPOR EXTRACTION

The mass removal of organic compounds from soil vapor for SVE system Area A was discussed in Section 2.2. The total mass removed by the SVE system is summarized in Table 2.1.

As shown in Table 2.1 and discussed in Section 2.2, the total mass removed in the soil vapor from Area A in 2012 was approximately 250 pounds. The 250 pounds of organic compounds removed from Area A in 2012 represents a 14 percent decrease compared with the mass removed in 2011 (289 pounds). It is also approximately the same as the amount removed in 2010, but more than double the amount removed in 2009. The decrease in removal between 2011 and 2012 is attributed mainly to decreased operating hours rather than lower VOC concentrations in Area A influent. Note that the 2012 Area A operating time decreased by approximately 779 hours (10.6 percent) compared with 2011.

The removal efficiency (mass recovered/time) of the Area A SVE system (expressed as pound of VOCs recovered per operating hour) over the past fourteen years is shown in the following table.

Yearly Performance of Area A SVE System

Year	*Pounds of VOC Removed*	*Operating Hours*	*Removal Efficiency (pound VOC per operating hour)*
1999	1,130	3,240	0.35
2000	153	3,360	0.05
2001	154	6,264	0.02
2002	1,207	6,307	0.19
2003	937	3,573	0.26
2004	228	4,582	0.05
2005	1,954	6,425	0.30
2006	1,712	6,113	0.28

(continued from previous page)

Year	*Pounds of VOC Removed*	*Operating Hours*	*Removal Efficiency (pound VOC per operating hour)*
2007	2,349	7,406	0.32
2008	507	7,599	0.07
2009	108	7,811	0.01
2010	251	7,057	0.04
2011	289	7,372	0.04
2012	250	6,593	0.04
Total	**11,229**	**83,702**	**-**
Annual Average	**802**	**5,979**	**0.14**

The operating time for Area A is related to the condition of the blower and of the header system that conveys extracted vapor to the blower for subsequent removal in the carbon beds. The replacement of Headers No. 2 and No. 3 with HDPE in 2003 greatly improved the effectiveness of those two headers, which had experienced significant corrosion between 2000 and 2002. In 2004, the integrity of the steel header collection system just inside the Treatment Building significantly worsened due to corrosion, and the entire section was replaced with PVC pipe late in the year. The pipe installed as a "sump" during the header upgrade contributed to increased Area A blower run times beginning in 2005, and the improved vacuum provided by the new PVC header contributed to increased VOC removal. In 2005, the original steel header pipe on Header #4 had seriously deteriorated, and was replaced with HDPE. Improvements in 2006 included the replacement of the heat exchanger core and the blower motor, and in 2007, the blower seals and gaskets were replaced. In 2008 through 2010, the diaphragm pumps that route groundwater collected from Area A to the main treatment area were rebuilt and improved. In 2011, the drive end of the blower was again rebuilt, as the bearings, gaskets and seals on the gear end were replaced. In 2012, the non-driven end was rebuilt, but the blower became inoperable shortly afterwards. Since troubleshooting indicated no serious problems, the blower was restarted and ran fairly reliably throughout 2012, albeit with sporadic oil leaks.

Table 9.1 compares the compound-specific removal of SSPLs by the Area A SVE system for the past twelve years. Except for 2001, carbon tetrachloride and chloroform combined have comprised between 92 and 100 percent of the total vapor mass removed from Area A. Tetrachloroethene has typically comprised the remainder of the mass removed.

9.2 SUMMARY OF MASS REMOVAL BY GROUNDWATER EXTRACTION

The mass removal of VOCs from groundwater by the eight bedrock groundwater extraction wells (EW-1 through EW-6, LR-66, and OW-3), dual wells (DPA-201, DPA-202, and DPA-203), and the Area A air/water separator (knockout pot) was discussed in Section 5.0 of this report. The total volume of groundwater pumped from the Site in 2012 is summarized in Table 9.2. The total mass of VOCs removed from groundwater at the Site in 2012 is summarized in Table 9.3.

As Table 9.2 indicates, approximately 15.3 million gallons of groundwater were pumped from the Site and treated through the on-Site treatment system. This volume represents a 15 percent increase compared to 2011 (13.3 million gallons).

Of the 15.3 million gallons extracted by the groundwater system in 2012, the bedrock extraction wells accounted for nearly 95 percent of the total, and the overburden dual phase extraction wells (along with the Area A knockout pot/sump) accounted for 5 percent of the total. EW-2 accounted for 40 percent of the recovered groundwater, and EW-5 accounted for about 30 percent. Other significant extraction wells included EW-3 (11 percent of the total recovered), EW-1 (9 percent), EW-6 (3 percent), and EW-4 (2 percent).

As Table 9.3 indicates, the total number of pounds of VOCs recovered through groundwater extraction in 2012 was approximately 2,500 pounds. Of this mass removed, 66 percent was carbon disulfide, 25 percent was carbon tetrachloride, and 8 percent was chloroform. Tetrachloroethene, methylene chloride, trichloroethene, and chlorobenzene combined were approximately 1 percent of the total mass removed from groundwater in 2012.

Extraction well OW-3 accounted for 40 percent of the total VOC mass removed from groundwater in 2013, EW-2 accounted for 26 percent, EW-1 accounted for 18 percent, EW-3 accounted for 5 percent, DPA-202 accounted for 5 percent, EW-6 accounted for 3 percent, and EW-5 accounted for 2 percent. The other four extraction wells accounted for the remaining 1 percent of the total mass recovered from groundwater on Site.

The 2,513 pounds of total mass removed by groundwater extraction in 2012, compared to 2,502 pounds removed in 2011, represents a less than 1 percent increase in the total mass removed. An increase in the mass removed by OW-3, EW-1 and EW-3 was offset

by decreases in the total mass removed by EW-2, EW-5, EW-6, and DPA-202. The 2012 mass removed by other extraction wells remained about the same as in 2011.

The removal efficiency (pound VOCs recovered/1,000 gallons of groundwater extracted) of the groundwater extraction system at the Site over the past fourteen years is shown below:

Yearly Performance of Groundwater Extraction System

Year	*Pounds of VOC Recovered*	*Groundwater Extracted (1,000 gallons)*	*Removal Efficiency (pound of VOC recovered per 1000 gallons extracted)*
1999	4,250	10,310	0.41
2000	6,197	14,906	0.42
2001	10,270	17,327	0.59
2002	6,374	17,515	0.36
2003	6,710	19,276	0.35
2004	4,953	15,951	0.31
2005	4,898	15,496	0.32
2006	3,517	15,370	0.23
2007	3,672	16,545	0.22
2008	4,790	17,289	0.28
2009	2,754	14,416	0.19
2010	2,575	14,360	0.18
2011	2,502	13,310	0.19
2012	2,511	15,311	0.16
Total	**65,973**	**217,382**	**-**
Annual Average	**4,712**	**15,527**	**0.30**

The above table illustrates that the removal efficiency of the groundwater extraction system has decreased from a high of 0.59 pound VOC recovered/1,000 gallons extracted in 2001 to its current removal efficiency of 0.16. The overall decrease is due to a general decline in groundwater concentrations over time, which indicates that the extraction system is remediating Site groundwater.

Table 9.4 compares the compound-specific removal of SSPLs by groundwater extraction for the past twelve years. Between 2001 and 2003, carbon tetrachloride and chloroform combined comprised between 63 and 76 percent of the total mass removed in

groundwater. Over the same time period, carbon disulfide comprised between 23 and 36 percent of the total.

However, between 2004 and 2012, the percentage of carbon tetrachloride and chloroform combined has dropped to between 38 and 56 percent of the total mass removed by groundwater extraction, and the percentage of carbon disulfide has risen to between 43 and 66 percent. The amount of tetrachloroethene extracted in groundwater has remained constant at about 1 percent or less of the total mass recovered.

9.3 SUMMARY OF MASS REMOVAL FOR THE SITE

The total mass removed by operation of the remedial systems at the Site in 2012 is summarized below:

Mass Removal by Remedial System - 2012

Compound	*SVE*	*Groundwater Extraction*	*Site Total (pounds/year)*
Benzene	0	0	0
Carbon Disulfide	0	1,665	1,665
Carbon Tetrachloride	215	626	841
Chlorobenzene	0	2	2
Chloroform	20	195	215
Methylene chloride	0	9	9
Tetrachloroethene	13	11	24
Toluene	0	0	0
Trichloroethene	2	4	6
Total VOC Removal:	**250**	**2,511**	**2,761**

The 2,761 pounds of VOCs removed from soil and groundwater at the Site is a 1.1 percent decrease from 2011. For the year, there was a 39-pound decrease in mass of VOCs removed by the SVE system and a 9-pound increase in mass removed by the groundwater extraction system.

Of the 2,761 pounds of VOCs removed from soil and groundwater at the Site, 60 percent was carbon disulfide, 30 percent was carbon tetrachloride, and 8 percent was chloroform. These three compounds account for 98 percent of the total mass of VOCs removed from the Site in 2012.

The total mass of VOCs removed by the operation of the remedial systems at the Site over the past fourteen years is summarized below:

Yearly Mass Removed by Remedial System

Year	*Pounds of VOC Removed by SVE*	*Pounds of VOC Removed in Groundwater*	*Total Pounds of VOC Removed per Year*
1999	1,221	4,294	5,515
2000	165	6,197	6,362
2001	154	10,269	10,423
2002	1,207	6,374	7,581
2003	937	6,710	7,647
2004	228	4,954	5,182
2005	1,954	4,899	6,853
2006	1,712	3,517	5,229
2007	2,348	3,672	6,020
2008	507	4,790	5,297
2009	108	2,754	2,862
2010	251	2,575	2,826
2011	289	2,502	2,791
2012	250	2,511	2,761
Totals	**11,331**	**66,018**	**77,349**

Table 9.5 presents a breakdown of the compound-specific SSPL removal (in pounds per year) for the combined Site remedial systems (SVE and groundwater extraction). The table indicates that carbon tetrachloride and chloroform combined have accounted for 61 percent of the Site-wide recovered mass between 2002 and 2012, with carbon disulfide comprising another 37 percent.

10.0 CONCLUSIONS AND RECOMMENDATIONS

This section presents conclusions regarding the 2012 O&M of the Site and presents recommendations for O&M in 2013. The conclusions and recommendations are presented for both of the active remediation systems at the Site.

10.1 AREA A SVE REMEDIAL SYSTEM

The Area A SVE system operated over 6,593 hours (75 percent of the time) in 2012. The 2012 running time of the blower was lower than that of the previous five years because of the operational issues associated with the blower. The number of pounds of SSPL organic compounds recovered by the SVE system in 2012, calculated based upon the operating hours, average system flow rate, and the influent vapor concentrations, decreased by 49 pounds compared with 2011 (a 17 percent decrease). This mass removal level (250 pounds in 2012) is very similar to that of 2010. The decrease in mass removal is attributable mainly to the lower 2012 running time, rather than a decrease in the average influent concentrations. As an example, for carbon tetrachloride, the main SSPL in the Area A influent, 2012 concentrations were nearly identical to those of 2011. The mass removed by the SVE system in 2012 was about half of that removed in 2008, and less than 15 percent of the amount removed annually in 2005 through 2007.

In late 2012, SMC shut down the Area a blower for the winter months due to its history of freezing recovery lines that led to excessive and unsafe vacuum levels. SMC also determined that operation of the Area A blower in pulsed mode (one to two weeks per month) may result in better overall recovery due to rebound effects and more efficient recovery.

In 2013, SMC will evaluate if the remaining source material within Area A is due to impacted soil or groundwater that is partitioning into the vapor phase. Based on recent analytical results, SMC considers unsaturated soils within Area A to be remediated to the fullest extent possible, and remaining VOCs being captured by the Area A SVE system are reflective of groundwater chemistry remaining in saturated soils. To support this position, CRA will be preparing a work plan proposing additional steps to demonstrate that Area A impacts are related to groundwater only. CRA expects to submit the work plan later in 2013.

10.2 BEDROCK GROUNDWATER EXTRACTION AND TREATMENT SYSTEM

10.2.1 GROUNDWATER EXTRACTION SYSTEM

As noted in Section 5.2, the groundwater extraction system operated fairly reliably in 2012. SMC performed a well rehabilitation program in May-June 2012 that significantly increased well recovery rates to levels greater than the previous four years.

As discussed in Section 9.2, approximately 15.3 million gallons of groundwater were pumped from the Site for subsequent treatment and discharge. This volume was approximately 15 percent higher than the amount extracted in 2011. Recovery rates increased significantly in EW-3, EW-2 and EW-1 and in OW-3, and decreased in almost all other extraction wells and in the knockout pot.

The total mass removed by the groundwater extraction system in 2012 was 2,511 pounds, which is nearly identical to that of 2011 (2,502 pounds). An increase in the mass removed by EW-3, EW-1 and OW-3 was offset by decreases in the total mass removed by EW-2, EW-5, and EW-6. The 2012 mass removed by other extraction wells remained about the same as in 2011.

For 2013, the groundwater extraction system will continue to operate as it has in past years, with no substantive changes planned.

10.2.2 GROUNDWATER TREATMENT SYSTEM

As discussed in Section 6.1, the groundwater treatment system operated continuously and generally reliably throughout 2012 with no major repairs.

As discussed in Section 6.2.3, two instances of breakthrough of SSPLs from the lead carbon bed to the lag carbon bed were noted in 2012. Therefore, two carbon exchanges were performed in 2012. The first was on June 6, and the second was on October 16. Concentrations of SSPLs in the interstage samples returned to non-detect following both carbon exchanges.

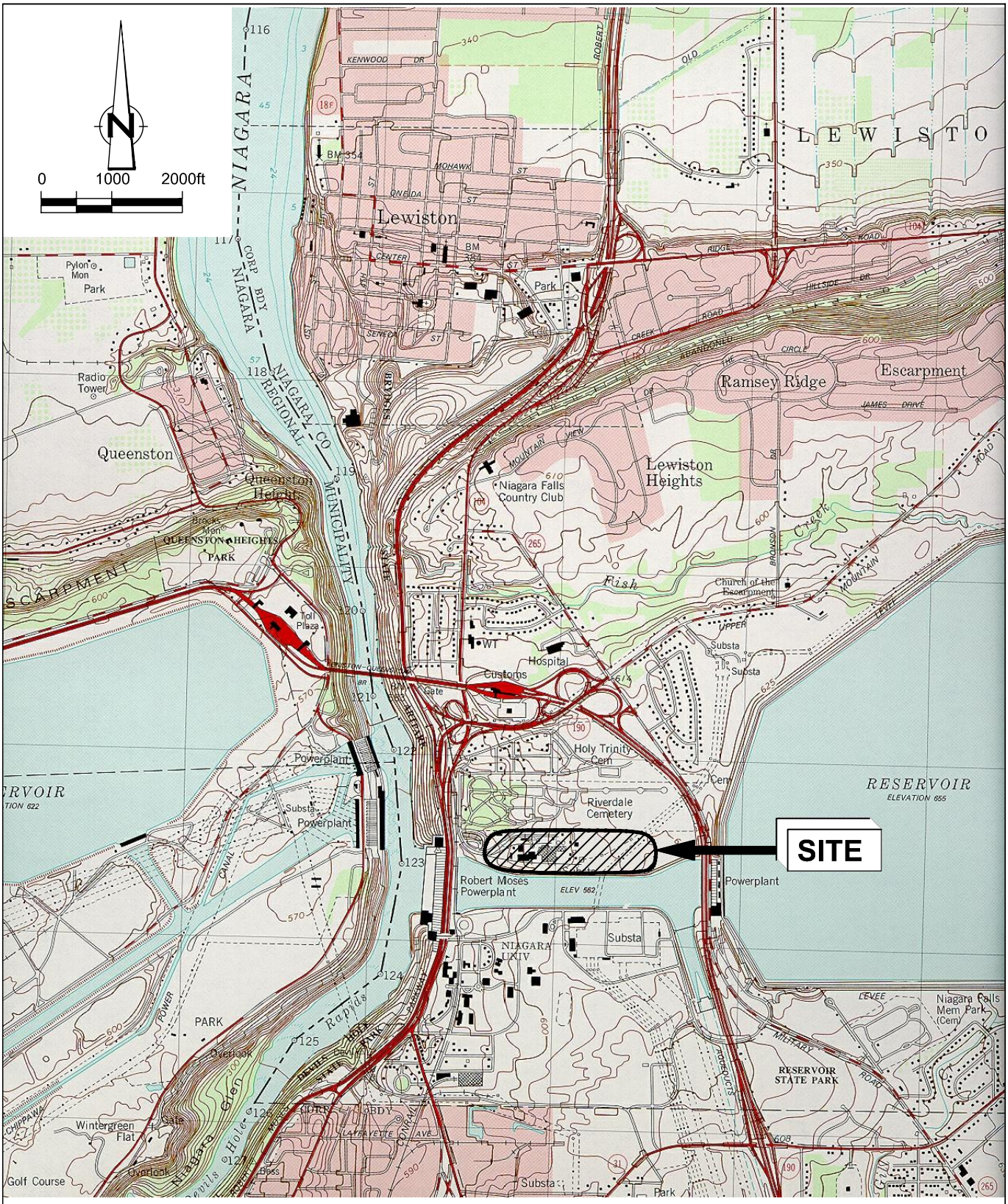
10.2.3 GROUNDWATER TREATMENT SYSTEM PERFORMANCE MONITORING

System performance monitoring includes routine sampling of Site extraction and monitoring wells. As discussed in Section 6.2.4, all extraction wells are sampled on a quarterly basis, and, beginning with 2012, a Site-wide monitoring well sampling event is performed on an annual basis. The purpose of the groundwater monitoring is to evaluate progress of the groundwater extraction system in removing SSPL compounds from the groundwater.

Figures presenting groundwater potentiometric contours and chemical isocontours are presented in Section 7.0 for each WBZ present at the Site, and are discussed in some detail in Sections 7.2 through 7.5. The figures indicate that the Site extraction wells are properly placed to contain, capture and recover SSPLs present in the groundwater at the Site. The current configuration provides hydraulic capture across the Site.

A comparison of 2012 isocontours for carbon disulfide and carbon tetrachloride/chloroform for each of the four water bearing zones is discussed in Sections 7.2 through 7.5, and indicates that the size of the areas of SSPL-impacted groundwater generally decreased for each of the four WBZs. This is a strong indication that the extraction system continues to be effective.

FIGURES



SOURCE: USGS

figure 1.1

SITE LOCATION
STAUFFER MANAGEMENT COMPANY LLC
Lewiston, New York

OW-10

TO OW-8
(350')

GROUNDWATER EXTRACTION WELL EW-1

GROUNDWATER EXTRACTON WELL OW-3

GROUNDWATER EXTRACTION WELL LR-66

TREATMENT BUILDING

GROUNDWATER
EXTRACTION WELL
EW-5

AREA A SVE SYSTEM

FORMER LANDFILL
AREA B

N

0 100 200ft

OW-9

OW-11

OLD LEWISTON ROAD (66' R.O.W.)

GRAVEL DRIVE

HEADER

HEADER

HEADER

EW1

EW2

EW3

8" P.V.C. DISCHARGE PIPE

APPROX. LOCATION OF 6" DIA. HYDROGEN LINE PERMANENT EASEMENT TO HOOKER CHEMICAL CORP., NEW YORK POWER AUTHORITY 204C, SEC. 1 FILED IN N.C.C.O. L.4468, P.25.

PERMANENT EASEMENT TO
NIAGARA MOHAWK
POWER CORPORATION

PERMANENT EASEMENT TO
NIAGARA MOHAWK
POWER CORPORATION

FOREBAY

APPROXIMATE ALIGNMENT OF
EXISTING GROUT CURTAIN

GROUNDWATER
EXTRACTION WELL
EW-2

OUTFALL

GROUNDWATER
EXTRACTION WELL
EW-3

GROUNDWATER
EXTRACTION WELL
EW-4

GROUNDWATER
EXTRACTION WELL
EW-6

AREA T-4
(DECOMMISSIONED)

FORMER LANDFILL
AREA C
(DECOMMISSIONED)

figure 1.2

SITE LAYOUT
STAUFFER MANAGEMENT COMPANY LLC
Lewiston, New York

CRA

PMA-1
EWA-133
PMA-11
6"ø HDPE SVE HEADER
EWA-104
EWA-103R2
EWA-101
ANCHOR TRENCH
EWA-134
PMA-2
SVE WELL HEAD AND CONTROL VALVE (TYP.)
45' (TYP.)
DPA-201
EWA-105
EWA-114
EWA-113
EWA-111R3
EWA-109R2
PMA-3
EWA-102R2
EW-5
PMA-12
595
PMA-4
EWA-106
EWA-107R2
EWA-115R2
DPA-202
EWA-112R3
PMA-13
EWA-110R2
EWA-108R2
EWA-135
SVE/GW WELL HEAD AND CONTROL VALVE
PMA-5
6"ø HDPE SVE HEADER
PMA-6
SVE HEADER NO. 4
EWA-123R1
EWA-121R1
EWA-119R2
EWA-117R1
EWA-132R2
EWA-130R2
594
SVE HEADER NO. 3
SVE HEADER NO. 2
TREATMENT BUILDING
EWA-131
PMA-7
EWA-122R1
EWA-120R2
EWA-118R2
EWA-116R2
PMA-8
PMA-14
PMA-9
593
SVE HEADER NO. 1
DPA-203
EWA-129R3
EWA-139
EWA-138
EWA-126R3
EWA-124R2
EWA-136
4" MIN. CRUSHED STONE x 6' WIDE (TYP.)
603
PMA-15
45° REDUCING LATERAL (TYPE 1)
W17
EW-6
EWA-128R3
EWA-127
EWA-125R3
6"ø SCH. 40 CARBON STEEL SVE HEADER
PMA-10
EWA-137
599
598
EW3
601
N
0 20 40ft

LEGEND

EWA-113 AREA A SOIL VAPOR EXTRACTION WELL

DPA-202 AREA A DUAL PHASE EXTRACTION WELL

NOTES:

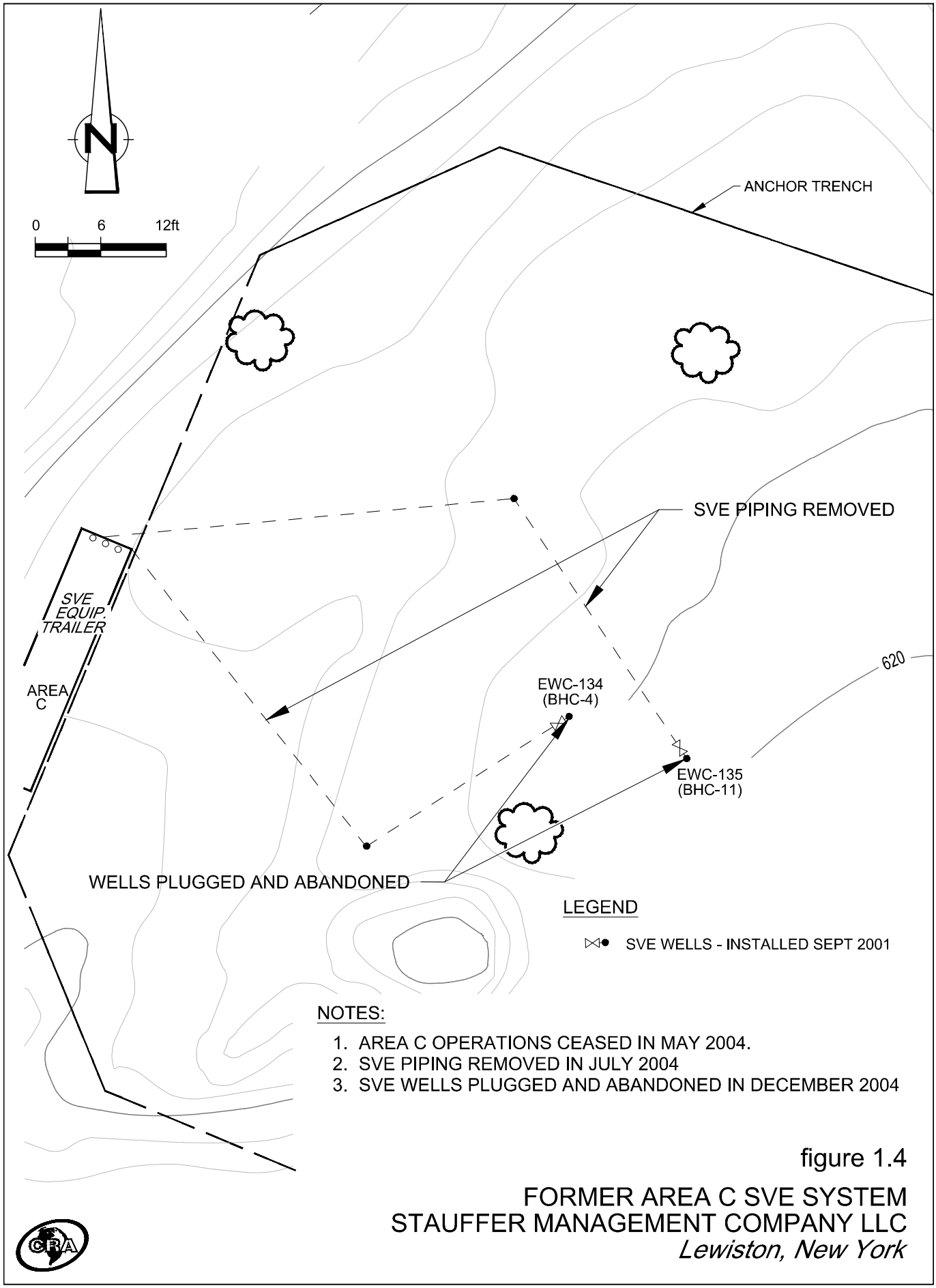
1. SVE WELLS DESIGNATED BY "R1" WERE REPLACED IN MAY 2000.
2. SVE WELLS DESIGNATED BY "R2" WERE REPLACED IN FEBRUARY 2003.
3. SVE WELLS EWA-133 THROUGH EWA-139 WERE INSTALLED IN JUNE 2006.
4. SVE WELLS DESIGNATED BY "R3" WERE REPLACED IN NOVEMBER 2010.

CRA

figure 1.3

AREA A SVE SYSTEM
STAUFFER MANAGEMENT COMPANY LLC
Lewiston, New York

06488-20(023)GN-BU003 MAR 07/2013



NOTES:

1. AREA C OPERATIONS CEASED IN MAY 2004.
2. SVE PIPING REMOVED IN JULY 2004
3. SVE WELLS PLUGGED AND ABANDONED IN DECEMBER 2004

figure 1.4

FORMER AREA C SVE SYSTEM
STAUFFER MANAGEMENT COMPANY LLC
Lewiston, New York

06488-20(023)GN-BU004 MAR 07/2013

ASPHALT DRIVE
GUIDE RAIL
ASPHALT DRIVE
NYPA CONSTRUCTION TRAILER
CONSTRUCTION TRAILERS
GATE
DITCH
GRAVEL DRIVE
GRAVEL DRIVE
6' CHAIN LINK FENCE
ROADWAY
HEADER
HEADER
HEADER
HEADER
METAL BLDG.
STONE AREA
STONE AREA
SVE SHELTER
6" P.V.C. EFFLUENT PIPE
VAULT
24" C.M.P.
DISCHARGE TO FOREBAY
FOREBAY
TO W-11

R-68
LR-50
W-50
R50-95
W-20
OW-3
LR-20
B-02
EW-1
R-51
LR-51
W-60L
R60-95
LR-49
LR-69
W65-95
R48-95
W-48E
LR-48
W-66L
LR-66
W-66
R-66
EW-2
W-23B
W-23C
LR-2
EW-4
T-4
W-70L
W-22A
W-16
LR-16
R-16
W-16L
DPA-201
EW-5
DPA-202
DPA-203
EW-6
W-17
EW-3
LR61-95
R61-95
W-18R
W-18L
R62-95
LR62-95
OW5-89
W-19D
W-19B
R19-95
W-19A
W-67L
W-67
R-67
LR-67

N
0 50 100ft

LEGEND

W-66 ● MONITORING WELL
EW-2 ◪ GROUNDWATER EXTRACTION WELL
DPA-201 ◭ DUAL PHASE EXTRACTION WELLS

figure 1.5

EXTRACTION AND MONITORING WELLS
STAUFFER MANAGEMENT COMPANY LLC
Lewiston, New York

06488-20(023)GN-BU005 MAR 07/2013

VING NEW ACCESS ROAD

W-20
(575.56)
CS2-ND1
CTET-ND1

ROADWAY

EW-1

W-66
(570.22)
CS2-ND1
CTET-283

CONSTRUCTION TRAILERS

GATE

578

582

586

590

W-16
(577.37)
CS2-ND1
CTET-35

DPA-201
(579.07)
CS2-ND10
CTET-1,830

EW-5
<551.70>

574

DPA-202
(580.26)
CS2-630
CTET-79,000

STONE AREA

W-67
(594.01)
CS2-84
CTET-1,510

METAL BLDG.

DPA-203
(582.27)
CS2-12,000
CTET-362,000

EW-2

W-23C
(578.76)
CS2-ND1
CTET-ND1

W-17
(584.97)
CS2-ND200
CTET-7,900

EW-6
<539.9>

EW-3

6" P.V.C. EFFLUENT PIPE

GRAVEL DRIVE

EW-4
<525.05>

STONE AREA

T-4
(573.03)
CS2-ND2.5
CTET-12

W-22A
(577.85)
CS2-ND1
CTET-31

W-18R
(573.65)
CS2-ND50
CTET-26,400

VAULT

W-19D
(579.59)
CS2-ND20
CTET-9

24 " C.M.P.

0 50 100ft

LEGEND

W-22A ●	WELL LOCATION
(577.85)	(WATER LEVEL, FT-MSL)
CS2-ND1	CARBON DISULFIDE CONCENTRATION (ug/L), MAY 2012
CTET-31	CARBON TET + CHLOROFORM CONCENTRATION (ug/L), MAY 2012
EW-6 ●	WATER LEVEL MODIFIED TO 570 FT-MSL
<539.9>	FOR GROUNDWATER CONTOURS
W-17 ● (584.97)	WATER LEVEL NOT USED FOR GROUNDWATER CONTOURS

NOTE: EW-1, EW-2 AND EW-3 NOT USED FOR CONTOURING. THESE EXTRACTION WELLS ARE NOT OPEN IN THE UPPER LOCKPORT FORMATION

figure 7.1

GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS
MAY 2012
UPPER LOCKPORT WATER BEARING ZONE

Stauffer Management Company LLC

NEW ACCESS ROAD

W-20
(ND1)

ROADWAY

W-16
(ND1)

EW-1

W-66
(ND1)

DPA-201
(ND10)

EW-5

10

DPA-202
(630)

STONE AREA

W-67
(84)

METAL BLDG.

DPA-203
(12,000)

1,000

100

10

EW-6

W-17
(ND1)

EW-3

EW-2

W-23C
(ND1)

6" P.V.C. EFFLUENT PIPE

EW-4

T-4
(ND2.5)

STONE AREA

W-18R
(ND50)

W-22A
(ND1)

VAULT

GRAVEL DRIVE

GRAVEL DRIVE

6' CHAIN LINK FENCE

24" C.M.P.

W-19D
(ND20)

DISCHARGE TO FOREBAY

0 50 100ft

LEGEND

W-67
(84)
WELL LOCATION
(CONCENTRATION - µg/L)

figure 7.2

CHEMICAL ISOCONTOURS
MAY 2012 CARBON DISULFIDE
UPPER LOCKPORT WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(023)GN-BU007 MAR 11/2013

NEW ACCESS ROAD

W-20
(ND1)

ROADWAY

W-16
(35)

10

100

1,000

EW-1

S

GATE

W-66
(283)

DPA-201
(1,830)

EW-5
(312)

DPA-202
(79,000)

STONE
AREA

W-67
(1,510)

METAL
BLDG.

DPA-203
(362,000)

W-17
(7,900)

EW-6
(14,600)

100,000

10,000

EW-3

EW-2

W-23C
(ND1)

EW-4
(2,750)

T-4
(12)

10

STONE AREA

6" P.V.C. EFFLUENT PIPE

W-18R
(26,400

GRAVEL DRIVE

GRAVEL DRIVE

W-22A
(31)

VAULT

10,000

1,000

100

6' CHAIN LINK FENCE

24 " C.M.P.

W-19D
(9)

DISCHARGE TO
FOREBAY

0 50 100ft

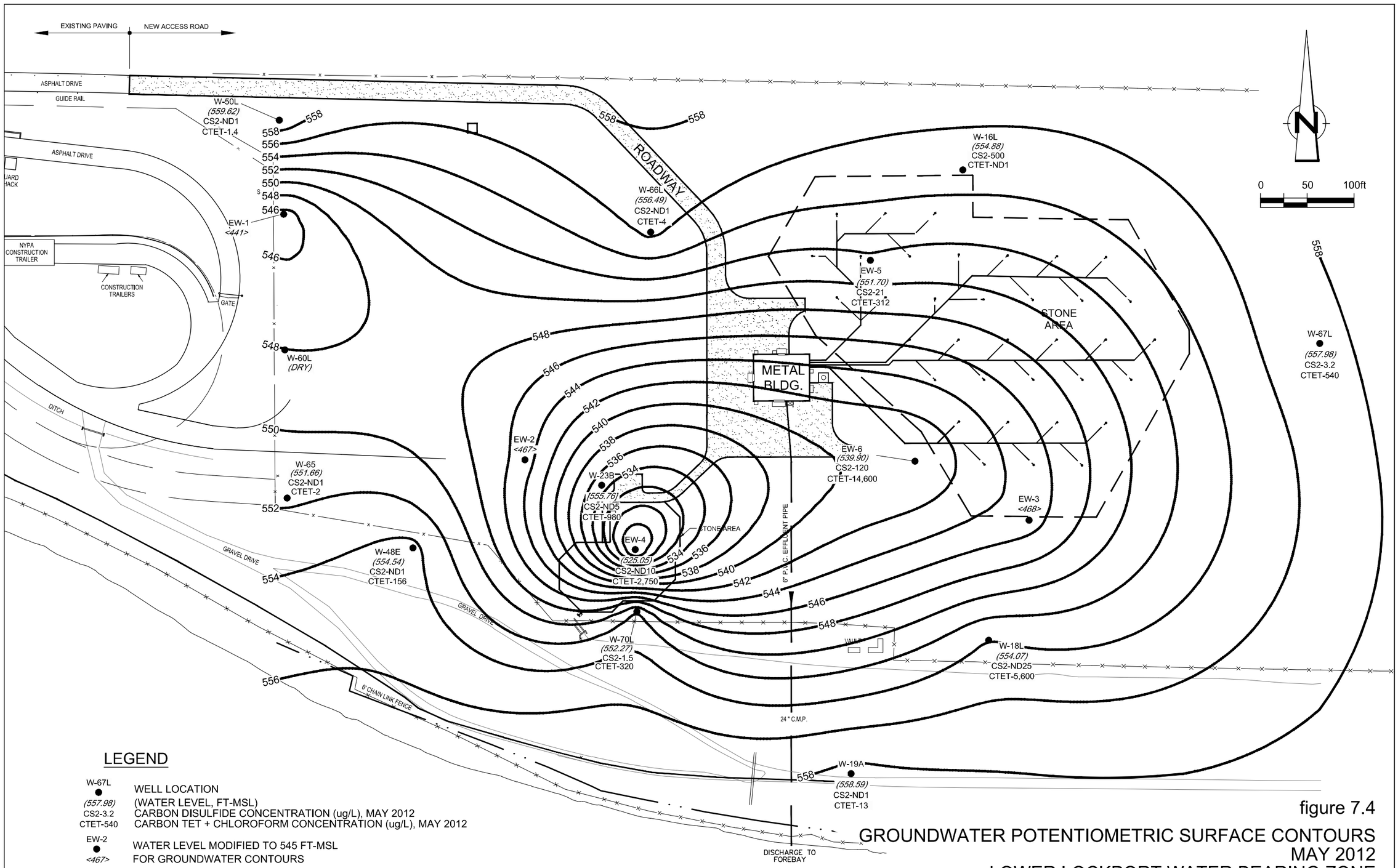
LEGEND

W-67 WELL LOCATION
(1,510) (CONCENTRATION - µg/L)

figure 7.3

CHEMICAL ISOCONTOURS
MAY 2012 CARBON TETRACHLORIDE AND CHLOROFORM
UPPER LOCKPORT WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(023)GN-BU008 MAR 11/2013



LEGEND

W-67L ●	WELL LOCATION
(557.98)	(WATER LEVEL, FT-MSL)
CS2-3.2	CARBON DISULFIDE CONCENTRATION (ug/L), MAY 2012
CTET-540	CARBON TET + CHLOROFORM CONCENTRATION (ug/L), MAY 2012
EW-2 ●	WATER LEVEL MODIFIED TO 545 FT-MSL
<467>	FOR GROUNDWATER CONTOURS
W-23B ●	WATER LEVEL NOT USED
[555.76]	FOR GROUNDWATER CONTOURS

figure 7.4

GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS
MAY 2012
LOWER LOCKPORT WATER BEARING ZONE
Stauffer Management Company LLC

EXISTING PAVING
NEW ACCESS ROAD
ASPHALT DRIVE
GUIDE RAIL
ASPHALT DRIVE
CONSTRUCTION TRAILERS
GATE
DITCH
GRAVEL DRIVE
GRAVEL DRIVE
6' CHAIN LINK FENCE
ROADWAY
W-50L
(ND1)
EW-1
W-66L
(ND1)
W-65
(ND1)
W-48E
(ND1)
EW-2
W-23B
(ND5)
SVE SHELTER
EW-4
(ND1)
W-70L
(3.5)
STONE AREA
6" P.V.C. EFFLUENT PIPE
W-16L
(500)
EW-5
(21)
STONE AREA
METAL BLDG.
EW-6
(120)
EW-3
W-67L
(3.2)
VAULT
W-18L
(ND25)
24" C.M.P.
W-19A
(ND1)
10
100
100
10
100
N
0 50 100ft

LEGEND

W-16L
(500)
WELL LOCATION
(CONCENTRATION - µg/L)

figure 7.5

CHEMICAL ISOCONTOURS
MAY 2012 CARBON DISULFIDE
LOWER LOCKPORT WATER BEARING ZONE
Stauffer Management Company LLC

CRA

06488-20(023)GN-BU010 MAR 11/2013

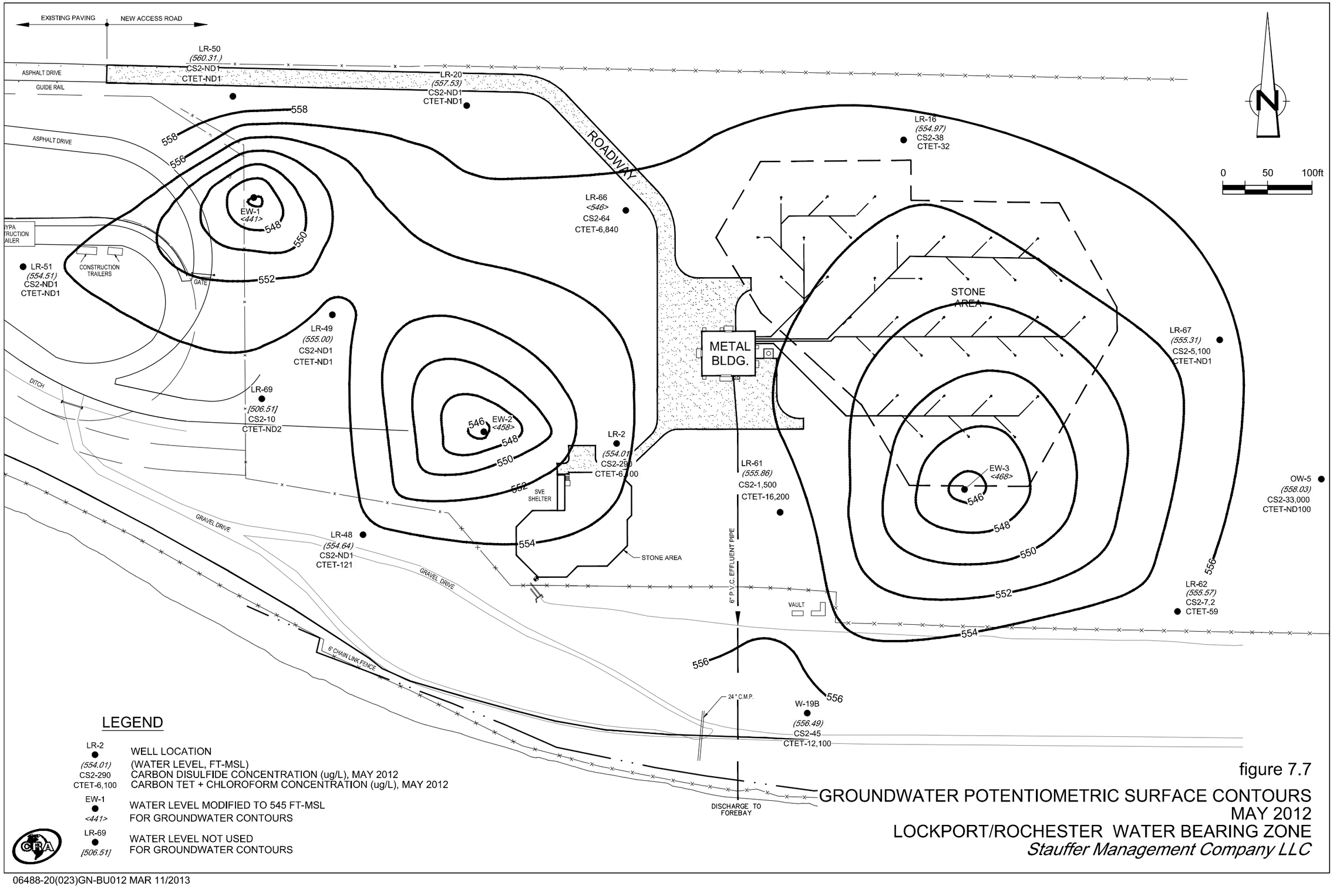
EXISTING PAVING
NEW ACCESS ROAD
ASPHALT DRIVE
GUIDE RAIL
ASPHALT DRIVE
GUARD SHACK
NYPA CONSTRUCTION TRAILER
CONSTRUCTION TRAILERS
GATE
DITCH
GRAVEL DRIVE
FOREBAY
GRAVEL DRIVE
6' CHAIN LINK FENCE
ROADWAY
STONE AREA
METAL BLDG.
SVE SHELTER
6" P.V.C. EFFLUENT PIPE
VAULT
24 " C.M.P.
DISCHARGE TO FOREBAY
W-50L (1)
EW-1
W-65 (2)
W-48E (156)
W-66L (4)
EW-2
W-23B (980)
EW-4 (2,750)
W-70L (370)
W-16L (ND1)
EW-5 (312)
EW-6 (14,600)
EW-3
W-18L (5,600)
W-19A (13)
W-67L (540)
10
100
1,000
10,000
N
0 50 100ft

LEGEND

W-67L (540) WELL LOCATION (CONCENTRATION - µg/L)

figure 7.6

CHEMICAL ISOCONTOURS
MAY 2012 CARBON TETRACHLORIDE AND CHLOROFORM
LOWER LOCKPORT WATER BEARING ZONE
Stauffer Management Company LLC



LEGEND

LR-2 ●	WELL LOCATION
(554.01)	(WATER LEVEL, FT-MSL)
CS2-290	CARBON DISULFIDE CONCENTRATION (ug/L), MAY 2012
CTET-6,100	CARBON TET + CHLOROFORM CONCENTRATION (ug/L), MAY 2012
EW-1 ●	WATER LEVEL MODIFIED TO 545 FT-MSL
<441>	FOR GROUNDWATER CONTOURS
LR-69 ●	WATER LEVEL NOT USED
[506.51]	FOR GROUNDWATER CONTOURS

figure 7.7

GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS MAY 2012 LOCKPORT/ROCHESTER WATER BEARING ZONE

Stauffer Management Company LLC

EXISTING PAVING
NEW ACCESS ROAD
ASPHALT DRIVE
GUIDE RAIL
ASPHALT DRIVE
ROADWAY
LR-50
(ND1)
LR-20
(ND1)
LR-16
(38)
10
100
1,000
10,000
EW-1
LR-66
(64)
LR-51
(ND1)
CONSTRUCTION TRAILERS
GATE
LR-49
(ND1)
STONE AREA
METAL BLDG.
LR-67
(5,100)
DITCH
LR-69
(10)
EW-2
LR-2
(290)
SVE SHELTER
6" P.V.C. EFFLUENT PIPE
1,000
LR-61
(1,500)
EW-3
OW-5
(33,000)
GRAVEL DRIVE
LR-48
(ND1)
FOREBAY
GRAVEL DRIVE
STONE AREA
VAULT
LR-62
(7.2)
6' CHAIN LINK FENCE
24" C.M.P.
W-19B
(45)
DISCHARGE TO FOREBAY
0 50 100ft

LEGEND

LR-67 (5,100) WELL LOCATION (CONCENTRATION - µg/L)

figure 7.8

CHEMICAL ISOCONTOURS
MAY 2012 CARBON DISULFIDE
LOCKPORT/ROCHESTER WATER BEARING ZONE
Stauffer Management Company LLC

CRA

06488-20(023)GN-BU013 MAR 11/2013

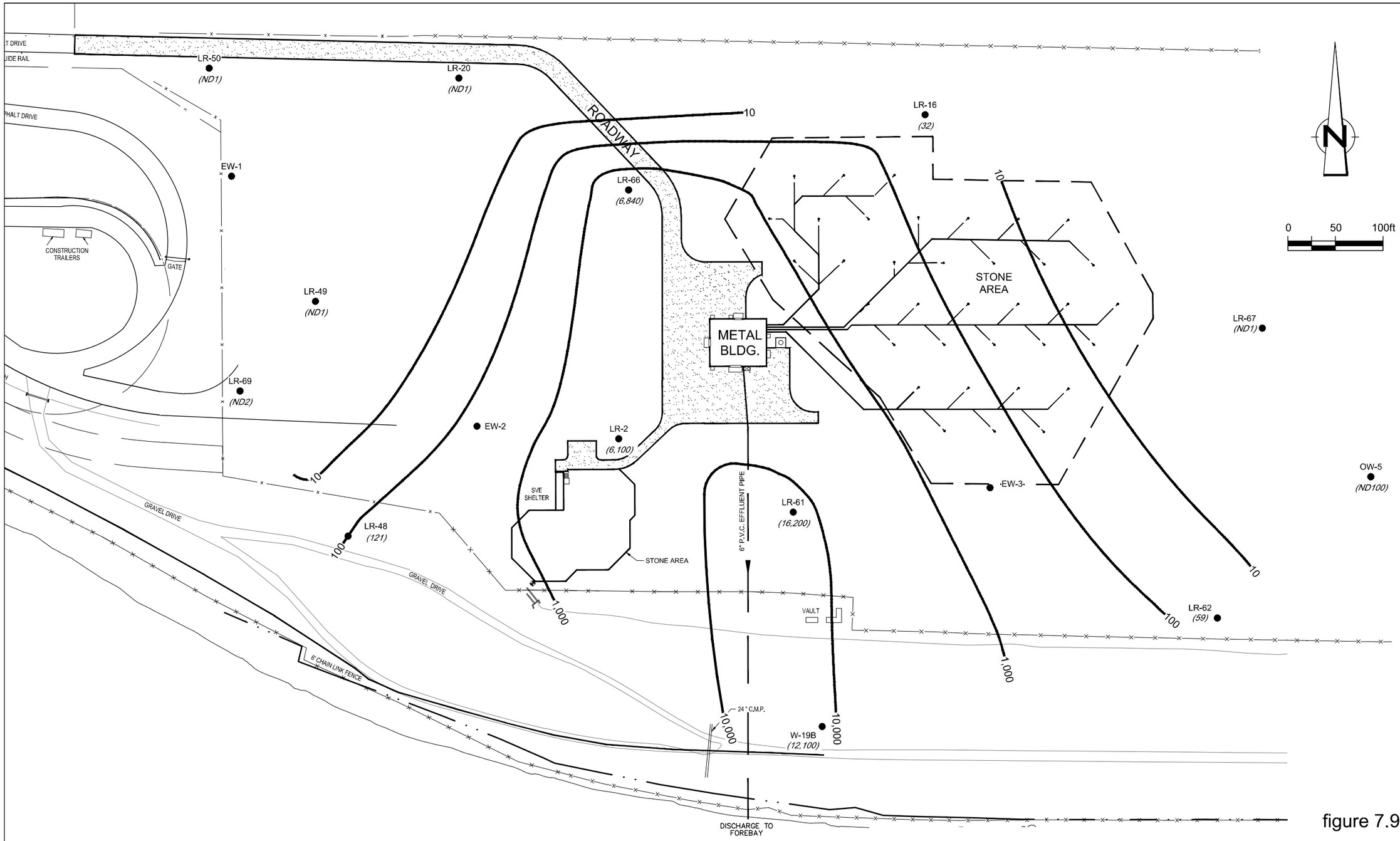


figure 7.9

CHEMICAL ISOCONTOURS
MAY 2012 CARBON TETRACHLORIDE AND CHLOROFORM
LOCKPORT/ROCHESTER WATER BEARING ZONE
Stauffer Management Company LLC

LEGEND

LR-61
(16,200)
WELL LOCATION
(CONCENTRATION - µg/L)

CRA

06488-20(023)GN-BU014 MAR 11/2013

R-68
(514.20)
CS2-130,000
CTET-79,000

R-50
(509.32)
CS2-200
CTET-870

OW-3
(481.13)
CS2-830,000
CTET-110,000

EW-1
<441>
CS2-33,000
CTET-8,100

R-66
[452.29]
CS2-19,000
CTET-28,300

R-16
(523.43)
CS2-ND1
CTET-ND1

R-67
(539.89)
CS2-120,000
CTET-ND1,000

R-60
(522.74)
CS2-21
CTET-26

EW-2
<467>
CS2-7,500
CTET-5,900

EW-3
<468>
CS2-2,900
CTET-8,000

R-48
(529.37)
CS2-8.5
CTET-186

R-61
(539.92)
CS2-45,000
CTET-560

R-62
(542.11)
CS2-62,000
CTET-ND500

R-19
(543.62)
CS2-15,000
CTET-5,900

ROADWAY
STONE AREA
METAL BLDG.
SVL SHELTER
CONSTRUCTION TRAILERS
GATE
VAULT
6" P.V.C. EFFLUENT PIPE
24" C.M.P.
DISCHARGE TO FOREBAY
GRAVEL DRIVE
6' CHAIN LINK FENCE
DRIVE
DE RAIL
HALT DRIVE

0 50 100ft

LEGEND

R-60 ● (522.74) CS2-21 CTET-26 — WELL LOCATION (WATER LEVEL, FT-MSL) CARBON DISULFIDE CONCENTRATION (ug/L), MAY 2012 CARBON TET + CHLOROFORM CONCENTRATION (ug/L), MAY 2012

EW-1 ● <441> — WATER LEVEL MODIFIED TO 490 FT-MSL FOR GROUNDWATER CONTOURS

R-66 ● [452.29] — WATER LEVEL NOT USED FOR GROUNDWATER CONTOURS

figure 7.10

GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS MAY 2012 ROCHESTER WATER BEARING ZONE

Stauffer Management Company LLC

EXISTING PAVING
NEW ACCESS ROAD
R-68
(130,000)
10,000
10,000
100,000
PHALT DRIVE
GUIDE RAIL
R-50
(260)
1,000
OW-3
(830,000)
ROADWAY
ASPHALT DRIVE
10,000
UARD
HACK
B-02
(2,500)
S
EW-1
(33,000)
NYPA
CONSTRUCTION
TRAILER
1,000
CONSTRUCTION
TRAILERS
GATE
R-66
(19,000)
R-16
(ND1)
STONE
AREA
100
R-60
(21)
METAL
BLDG.
R-67
(120,000)
100,000
DITCH
EW-2
(7,500)
SVE
SHELTER
R-48
(8.5)
GRAVEL DRIVE
10
6" P.V.C. EFFLUENT PIPE
R-61
(45,000)
EW-3
(2,900)
STONE AREA
GRAVEL DRIVE
10,000
VAULT
R-62
(62,000)
10
6' CHAIN LINK FENCE
24" C.M.P.
R-19
(15,000)
100
1,000
10,000
DISCHARGE TO
FOREBAY
0
50
100ft

LEGEND

R-48
(8.5)
WELL LOCATION
(CONCENTRATION - µg/L)

figure 7.11

CHEMICAL ISOCONTOURS
MAY 2012 CARBON DISULFIDE
ROCHESTER WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(023)GN-BU016 MAR 12/2013

EXISTING PAVING
NEW ACCESS ROAD
R-68
(79,000)
ASPHALT DRIVE
GUIDE RAIL
ROADWAY
OW-3
(110,000)
R-50
(870)
CONC. WALL
CONC. WALK
CURB
ASPHALT DRIVE
GUARD SHACK
B-02
(5,600)
EW-1
(8,100)
10,000
1,000
100
10
R-16
(ND1)
0 50 100ft
NYPA CONSTRUCTION TRAILER
CONSTRUCTION TRAILERS
GATE
R-66
(28,300)
STONE AREA
R-60
(26)
METAL BLDG.
R-67
(ND1,000)
DITCH
EW-2
(5,900)
SVE SHELTER
EW-3
(8,000)
R-61
(560)
6" P.V.C. EFFLUENT PIPE
FOREBAY
GRAVEL DRIVE
R-48
(186)
STONE AREA
VAULT
R-62
(ND500)
6' CHAIN LINK FENCE
24 " C.M.P.
R-19
(5,900)

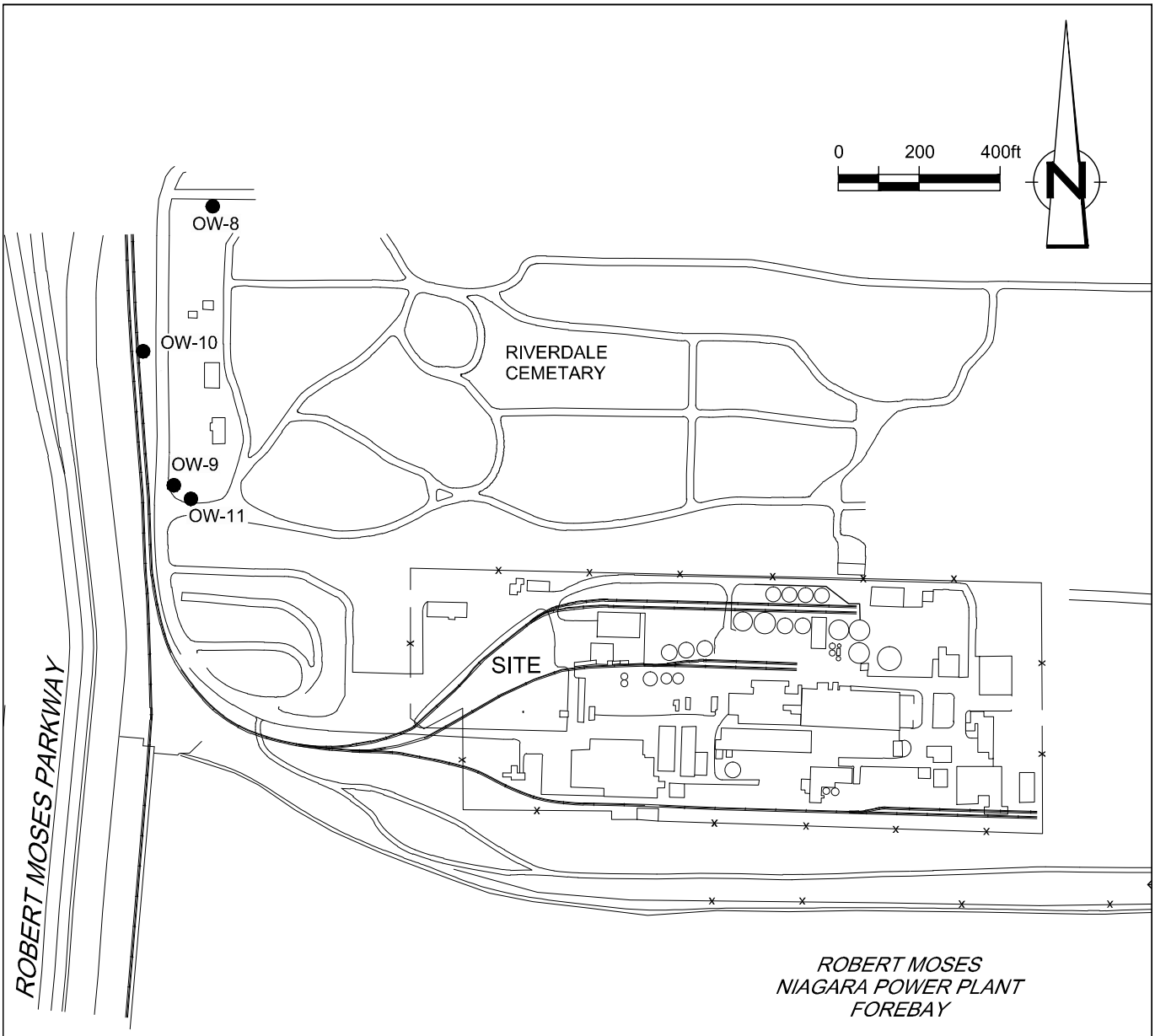
LEGEND

R-66 (28,300) WELL LOCATION (CONCENTRATION - µg/L)

figure 7.12

CHEMICAL ISOCONTOURS
MAY 2012 CARBON TETRACHLORIDE AND CHLOROFORM
ROCHESTER WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(023)GN-BU017 MAR 11/2013



LEGEND

OW-11 ● NORTH SIDE GROUNDWATER MONITORING WELL LOCATIONS

NOTE:
SAMPLING OF OVERBURDEN WELLS OW-8, OW-9 AND OW-10 WAS DISCONTINUED IN MAY 2004. BEDROCK WELL OW-11 CONTINUES TO BE SAMPLED SEMIANNUALLY.

figure 8.1

NORTH SIDE WELL LOCATIONS
STAUFFER MANAGEMENT COMPANY LLC
Lewiston, New York

TABLES

TABLE 2.1

AREA A SVE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Average Air Flow Rate:	800	cfm	
Est. Operating Time:	1st Quarter	1,686	hours
	2nd Quarter	1,285	hours
	3rd Quarter	1,619	hours
	4th Quarter	2,003	hours
	Total	6,593	hours/year

		1st Quarter [1]		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass*
Compound	*MW*	*Conc. (ppmv)*	*Mass (lbs)*	*Conc. (ppmv)*	*Mass (lbs)*	*Conc. (ppmv)*	*Mass (lbs)*	*Conc. (ppmv)*	*Mass (lbs)*	*Removal (lbs/yr)*
Benzene	78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Carbon disulfide	76	0.0	0.0	0.0	0.0	0.0	0.1	0.00	0.0	0
Carbon tetrachloride	154	0.54	16.9	0.85	20.5	4.10	124.7	1.40	52.7	215
Chlorobenzene	112	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Chloroform	119	0.08	2.1	0.13	2.4	0.41	9.7	0.19	5.5	20
Methylene chloride	85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Tetrachloroethene	166	0.04	1.4	0.08	2.0	0.20	6.6	0.08	3.3	13
Toluene	92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Trichloroethene	131	0.01	0.2	0.01	0.2	0.04	1.1	0.01	0.2	2
Total VOC Removal			**21**		**25**		**142**		**62**	**250**

Notes:

cfm Cubic Feet per Minute

MW Molecular Weight

ppmv Part per Million by Volume.

VOC Volatile Organic Compound.

1 An Area A sample could not be collected during the 1st Quarter 2012. Concentrations are an average of the 4th Quarter 2011 and 2nd Quarter 2012.

TABLE 5.1

EXTRACTION WELL EW-1
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Flow Rates:

1st Quarter	216,840	gallons
2nd Quarter	378,812	gallons
3rd Quarter	371,412	gallons
4th Quarter	427,976	gallons
Total	**1,395,040**	**gallons**

	1st Quarter		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass*
Compound	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Removal (lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	34,000	61.5	33,000	104.3	16,000	49.6	39,000	139.2	355
Carbon tetrachloride	8,200	14.8	5,600	17.7	6,200	19.2	7,200	25.7	77
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	3,100	5.6	2,500	7.9	2,200	6.8	2,500	8.9	29
Methylene chloride	230	0.4	230	0.7	180	0.6	190	0.7	2
Tetrachloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Total VOC Removal		**82**		**131**		**76**		**175**	**464**

Notes:
VOC Volatile Organic Compound.

TABLE 5.2

EXTRACTION WELL EW-2
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Flow Rates:

1st Quarter	1,029,203	gallons
2nd Quarter	1,640,824	gallons
3rd Quarter	1,656,289	gallons
4th Quarter	1,736,367	gallons
Total	**6,062,683**	**gallons**

Compound	*1st Quarter*		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass Removal*
	Conc. (ug/L)	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	20,000	171.7	7,500	102.6	7,500	103.6	0	0.0	378
Carbon tetrachloride	8,900	76.4	4,700	64.3	4,300	59.4	1,000	14.5	215
Chlorobenzene	0	0.0	110	1.5	0	0.0	0	0.0	2
Chloroform	1,700	14.6	1,200	16.4	660	9.1	350	5.1	45
Methylene chloride	95	0.8	55	0.8	39	0.5	0	0.0	2
Tetrachloroethene	86	0.7	66	0.9	29	0.4	0	0.0	2
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Total VOC Removal		**264**		**187**		**173**		**20**	**643**

Notes:
VOC Volatile Organic Compound.

TABLE 5.3

EXTRACTION WELL EW-3
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Flow Rates:

1st Quarter	90,348	gallons
2nd Quarter	414,160	gallons
3rd Quarter	556,194	gallons
4th Quarter	580,397	gallons
Total	**1,641,099**	**gallons**

Compound	*1st Quarter*		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass Removal*
	Conc. (ug/L)	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	1,000	0.8	2,900	10.0	2,200	10.2	1,700	8.2	29
Carbon tetrachloride	3,000	2.3	4,200	14.5	2,800	13.0	2,100	10.2	40
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	2,700	2.0	3,800	13.1	2,900	13.5	2,800	13.6	42
Methylene chloride	52	0.0	280	1.0	210	1.0	220	1.1	3
Tetrachloroethene	60	0.0	320	1.1	180	0.8	130	0.6	3
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	94	0.1	220	0.8	180	0.8	150	0.7	2
Total VOC Removal		**5**		**40**		**39**		**34**	**119**

Notes:
VOC Volatile Organic Compound.

TABLE 5.4

EXTRACTION WELL EW-4
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Flow Rates:

1st Quarter	79,451	gallons
2nd Quarter	88,930	gallons
3rd Quarter	91,451	gallons
4th Quarter	85,201	gallons
Total	**345,033**	**gallons**

Compound	*1st Quarter*		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass Removal*
	Conc. (ug/L)	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon tetrachloride	25	0.0	350	0.3	73	0.1	48	0.0	0
Chlorobenzene	430	0.3	16	0.0	44	0.0	15	0.0	0
Chloroform	640	0.4	2,400	1.8	2,700	2.1	620	0.4	5
Methylene chloride	21	0.0	49	0.0	110	0.1	12	0.0	0
Tetrachloroethene	0	0.0	170	0.1	53	0.0	81	0.1	0
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	100	0.1	210	0.2	150	0.1	41	0.0	0
Total VOC Removal		**0.8**		**2.4**		**2.4**		**0.6**	**6**

Notes:
VOC Volatile Organic Compound.

TABLE 5.5

EXTRACTION WELL EW-5
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Flow Rates:

1st Quarter	383,403	gallons
2nd Quarter	1,363,751	gallons
3rd Quarter	1,293,048	gallons
4th Quarter	1,491,551	gallons
Total	**4,531,753**	**gallons**

Compound	*1st Quarter*		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass Removal*
	Conc. (ug/L)	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	11	0.0	21	0.2	430	4.6	580	7.2	12
Carbon tetrachloride	920	2.9	220	2.5	640	6.9	610	7.6	20
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	240	0.8	92	1.0	390	4.2	340	4.2	10
Methylene chloride	0	0.0	0	0.0	20	0.2	12	0.1	0
Tetrachloroethene	260	0.8	89	1.0	17	0.2	88	1.1	3
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	47	0.2	23	0.3	14	0.2	33	0.4	1
Total VOC Removal		**4.7**		**5.1**		**16.3**		**20.7**	**47**

Notes:
VOC Volatile Organic Compound.

TABLE 5.6

EXTRACTION WELL EW-6
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Flow Rates:

1st Quarter	115,841	gallons
2nd Quarter	203,106	gallons
3rd Quarter	97,028	gallons
4th Quarter	134,639	gallons
Total	**550,614**	**gallons**

Compound	*1st Quarter*		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass Removal*
	Conc. (ug/L)	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	210	0.2	120	0.2	260	0.2	230	0.3	1
Carbon tetrachloride	16,000	15.5	11,000	18.6	4,700	3.8	11,000	12.4	50
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	4,800	4.6	3,600	6.1	2,700	2.2	3,400	3.8	17
Methylene chloride	140	0.1	84	0.1	120	0.1	120	0.1	1
Tetrachloroethene	190	0.2	110	0.2	85	0.1	120	0.1	1
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	64	0.1	67	0.1	76	0.1	74	0.1	0
Total VOC Removal		**20.7**		**25.4**		**6.4**		**16.8**	**69**

Notes:
VOC Volatile Organic Compound.

TABLE 5.7

DUAL-PHASE AREA A WELL DPA-201
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Flow Rates:

1st Quarter	17,658	gallons
2nd Quarter	21,599	gallons
3rd Quarter	18,420	gallons
4th Quarter	17,800	gallons
Total	**75,477**	**gallons**

Compound	*1st Quarter*		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass Removal*
	Conc. (ug/L)	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	12	0.0	0.0
Carbon disulfide	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Carbon tetrachloride	2,000	0.0	1,200	0.2	400	0.0	1,400	0.0	0.2
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Chloroform	900	0.0	630	0.1	720	0.0	1,100	0.0	0.1
Methylene chloride	37	0.0	20	0.0	0	0.0	46	0.0	0.0
Tetrachloroethene	620	0.0	670	0.1	310	0.0	980	0.0	0.1
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Trichloroethene	740	0.0	800	0.1	1,400	0.0	1,100	0.0	0.1
Total VOC Removal		**0.0**		**0.6**		**0.0**		**0.0**	**0.6**

Notes:

VOC Volatile Organic Compound.

TABLE 5.8

DUAL-PHASE AREA A WELL DPA-202
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Flow Rates:

1st Quarter	32,700	gallons
2nd Quarter	36,729	gallons
3rd Quarter	35,281	gallons
4th Quarter	32,804	gallons
Total	**137,514**	**gallons**

Compound	*1st Quarter*		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass Removal*
	Conc. (ug/L)	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	880	0.2	630	0.2	1,000	0.3	1,300	0.4	1
Carbon tetrachloride	78,000	21.3	69,000	21.1	100,000	29.4	100,000	27.4	99
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	9,900	2.7	10,000	3.1	28,000	8.2	17,000	4.7	19
Methylene chloride	0	0.0	0	0.0	0	0.0	0	0.0	0
Tetrachloroethene	1,300	0.4	1,400	0.4	2,000	0.6	1,900	0.5	2
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Total VOC Removal		**24.6**		**24.8**		**38.5**		**32.9**	**121**

Notes:
VOC Volatile Organic Compound.

TABLE 5.9

DUAL-PHASE AREA A WELL DPA-203
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Flow Rates:

1st Quarter	5,401	gallons
2nd Quarter	2,227	gallons
3rd Quarter	4,077	gallons
4th Quarter	2,794	gallons
Total	**14,499**	**gallons**

Compound	*1st Quarter*		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass Removal*
	Conc. (ug/L)	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	5,100	0.2	12,000	0.2	0	0.0	7,600	0.2	1
Carbon tetrachloride	270,000	12.2	300,000	5.6	240,000	0.0	280,000	6.5	24
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	49,000	2.2	62,000	1.2	59,000	0.0	53,000	1.2	5
Methylene chloride	0	0.0	0	0.0	0	0.0	0	0.0	0
Tetrachloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Total VOC Removal		**14.6**		**6.9**		**0.0**		**7.9**	**29**

Notes:
VOC Volatile Organic Compound.
Dry Well dry, no sample collected

TABLE 5.10

EXTRACTION WELL OW-3
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Flow Rates:

1st Quarter	29,456	gallons
2nd Quarter	35,629	gallons
3rd Quarter	23,056	gallons
4th Quarter	34,586	gallons
Total	**122,727**	**gallons**

Compound	*1st Quarter*		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass Removal*
	Conc. (ug/L)	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	570,000	140.0	830,000	246.6	1,200,000	230.7	940,000	271.1	889
Carbon tetrachloride	79,000	19.4	89,000	26.4	120,000	23.1	97,000	28.0	97
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	28,000	6.9	21,000	6.2	28,000	5.4	16,000	4.6	23
Methylene chloride	0	0.0	0	0.0	0	0.0	0	0.0	0
Tetrachloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Toluene	0	0.0	0	0.0	11,000	2.1	0	0.0	2
Trichloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Total VOC Removal		**166.3**		**279.3**		**261.3**		**303.7**	**1,011**

Notes:
VOC Volatile Organic Compound.

TABLE 5.11

EXTRACTION WELL LR-66
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Flow Rates:

1st Quarter	22,507	gallons
2nd Quarter	1,226	gallons
3rd Quarter	27,212	gallons
4th Quarter	12,736	gallons
Total	**63,681**	**gallons**

Compound	*1st Quarter*		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass Removal*
	Conc. (ug/L)	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	0	0.0	64	0.0	0	0.0	70	0.0	0
Carbon tetrachloride	5,200	1.0	6,400	0.1	5,500	1.2	5,700	0.6	3
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	340	0.1	440	0.0	340	0.1	420	0.0	0
Methylene chloride	140	0.0	0	0.0	0	0.0	0	0.0	0
Tetrachloroethene	0	0.0	67	0.0	51	0.0	69	0.0	0
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Total VOC Removal		**1.1**		**0.1**		**1.3**		**0.7**	**3**

Notes:
VOC Volatile Organic Compound.

TABLE 5.12

AREA A KNOCKOUT POT AND SUMP
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Flow Rates:

1st Quarter	210,103	gallons
2nd Quarter	25,051	gallons
3rd Quarter	14,400	gallons
4th Quarter	121,466	gallons
Total	**371,020**	**gallons**

Compound	*1st Quarter*		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass Removal*
	Conc. (ug/L)	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*(lbs/yr)*
Benzene	0	0.00	0	0.00	0	0.00	0	0.00	0.0
Carbon disulfide	0	0.00	0	0.00	0	0.00	0	0.00	0.0
Carbon tetrachloride	79	0.14	7	0.00	37	0.00	11	0.01	0.2
Chlorobenzene	0	0.00	0	0.00	0	0.00	0	0.00	0.0
Chloroform	15	0.03	5	0.00	22.0	0.00	8	0.01	0.0
Methylene chloride	0	0.00	0	0.00	0	0.00	0	0.00	0.0
Tetrachloroethene	2.0	0.00	1.6	0.00	3.2	0.00	2.7	0.00	0.0
Toluene	0	0.00	0	0.00	0	0.00	0	0.00	0.0
Trichloroethene	0	0.00	0	0.00	1.8	0.00	0.0	0.00	0.0
Total VOC Removal		**0.2**		**0.0**		**0.0**		**0.0**	**0.2**

Notes:

VOC Volatile Organic Compound.

TABLE 7.1

2011 MEASURED GROUNDWATER ELEVATIONS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Well I.D.	*March 2012*	*May 2012*	*August 2012*	*November 2012*
Extraction Wells				
DPA-201	580.19	579.07	578.38	582.55
DPA-202	580.26	580.26	579.08	579.03
DPA-203	577.19	582.27	577.05	584.89
T-4	572.48	573.03	569.63	572.92
EW-1	441	441	441	441
EW-2	460	467	460	458
EW-3	468	468	468	465
EW-4	524.82	525.05	524.98	524.96
EW-5	532.77	551.7	537	567.89
EW-6	542.68	539.9	543.03	541.26
OW-3	Dry	Dry	Dry	535.96
LR-66	NM	NM	NM	NM
Upper Lockport Wells				
W-16	578.23	577.97	577.38	579.25
W-17	585.48	584.97	583.44	584.85
W-18R	573.69	573.65	573.54	573.64
W-19D	581.25	579.59	572.93	573.06
W-20	576.67	575.56	571.15	575.23
W-22A	577.88	577.85	Dry	Dry
W-23C	579.28	578.76	577.38	578.87
W-66	570.84	570.22	569.28	569.74
W-67	596.35	594.01	588.28	594.43
OW-11	559.31	559.35	558.23	558.82

TABLE 7.1

2011 MEASURED GROUNDWATER ELEVATIONS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Well I.D.	*March 2012*	*May 2012*	*August 2012*	*November 2012*
Lower Lockport Wells				
W-16L	551.93	554.88	549.55	547.97
W-18L	548.95	554.07	553.03	549.07
W-19A	558.58	558.59	558.59	558.58
W-23B	555.75	555.76	555.74	555.75
W-48E	547.62	554.54	554.56	549.44
W-50	559.55	559.62	556.43	558.42
W-60L	Dry	Dry	Dry	558.15
W-65	547.68	551.66	551.22	553.64
W-66L	553.49	556.49	552.6	550.65
W-67L	556.04	557.98	552.65	554.53
W-70L	549.94	552.27	549.83	552.54
Lockport/Rochester Wells				
W-19B	547.84	556.49	557.16	550.75
LR-2	549.25	554.01	552.69	548.9
LR-16	552.05	554.97	549.6	548.08
LR-20	555.64	557.53	553.79	553.65
LR-48	547.46	554.64	554.64	549.47
LR-49	549.92	555	554.18	550.22
LR-50	559.84	560.31	557.33	558.59
LR-51	548.59	554.51	554.39	550.5
LR-61	551.23	555.86	554.31	550.62
LR-62	550.46	555.57	555.2	551.85
LR-67	552.86	555.31	551.24	549.33
LR-69	504.96	506.51	503.34	505.26
OW-5	555.96	558.03	555.61	554.36

TABLE 7.1

2011 MEASURED GROUNDWATER ELEVATIONS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Well I.D.	*March 2012*	*May 2012*	*August 2012*	*November 2012*
Rochester Wells				
R-16	515.39	523.43	513.87	527.24
R-19	537.08	543.62	548.59	543.95
R-48	512.93	529.37	520.37	517.45
R-50	503.19	509.32	508.64	512.03
R-60	502.16	522.74	508.19	506.13
R-61	528.19	539.92	538.05	531
R-62	537.37	542.11	543.57	545.91
R-66	451.05	452.29	449.81	451.49
R-67	532.95	539.89	541.38	539.49
R-68	494.85	514.2	499.36	497.69

Notes:
Ft. msl Feet, Mean Sea Level
NM Not measured

TABLE 7.2

MONITORING AND EXTRACTION WELLS BY WATER BEARING ZONE
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK

Upper Lockport	*Lower Lockport*	*Lockport/Rochester*	*Rochester*
Well ID	*Well ID*	*Well ID*	*Well ID*
OW-11	W-16L	LR-2	B-02
T-4	W-18L	LR-16	R-16
W-16	W-19A	LR-20	R-19
W-17	W-23B	LR-48	R-48
W-18R	W-48E	LR-49	R-50
W-19D	W-50	LR-50	R-51
W-20	W-60L	LR-51	R-60
W-22A	W-65	LR-61	R-61
W-23C	W-66L	LR-62	R-62
W-66	W-67L	LR-67	R-66
W-67	W-70L	LR-69	R-67
DPA-201	EW-1	OW-5	R-68
DPA-202	EW-2	W-19B	EW-1
DPA-203	EW-3	LR-66	EW-2
EW-4	EW-4	EW-1	EW-3
EW-5	EW-5	EW-2	OW-3
EW-6	EW-6	EW-3	

TABLE 9.1
COMPOUND-SPECIFIC SSPL REMOVAL
AREA A SVE SYSTEM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2001-2012

SSPL Compound	*2001*		*2002*		*2003*		*2004*		*2005*		*2006*	
	Lbs. Removed	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*
Benzene	0	0	0	0	0	0	0	0	0	0	0	0
Carbon disulfide	0	0	0	0	0	0	1	0	1	0	3	0
Carbon tetrachloride	33	21	1,154	96	801	85	198	87	1,782	91	1,536	90
Chlorobenzene	0	0	0	0	0	0	0	0	0	0	0	0
Chloroform	16	10	43	4	68	7	18	8	95	5	98	6
Methylene chloride	0	0	0	0	0	0	0	0	0	0	2	0
Tetrachloroethene	105	68	10	1	68	7	8	4	75	4	62	4
Toluene	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	0	0	0	0	0	0	3	1	1	0	11	0
Total:	**154**		**1,207**		**937**		**228**		**1,954**		**1,712**	

SSPL Compound	*2007*		*2008*		*2009*		*2010*		*2011*		*2012*	
	Lbs. Removed	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*
Benzene	0	0	0	0	0	0	0	0	0	0	0	0
Carbon disulfide	0	0	0	0	1	1	2	1	0	0	0	0
Carbon tetrachloride	2,132	91	442	87	94	87	227	90	240	83	215	86
Chlorobenzene	0	0	0	0	0	0	0	0	0	0	0	0
Chloroform	93	4	32	6	7	7	14	6	33	11	20	8
Methylene chloride	0	0	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	110	5	28	6	5	5	7	3	10	4	13	5
Toluene	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	13	1	4	1	1	1	1	0	6	2	2	1
Total:	**2,349**		**507**		**108**		**251**		**289**		**250**	

TABLE 9.2

EXTRACTION WELL SUMMARY
TOTAL VOLUME OF GROUNDWATER EXTRACTED
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

	Volume Pumped by Extraction Wells (Gallons/Year)												
Period	***EW-1***	***EW-2***	***EW-3***	***EW-4***	***EW-5***	***EW-6***	***DPA-201***	***DPA-202***	***DPA-203***	***OW-3***	***LR-66***	***KO Pot***	***Site Total***
First Quarter	216,840	1,029,203	90,348	79,451	383,403	115,841	17,658	32,700	5,401	29,456	22,507	210,103	2,232,911
Second Quarter	378,812	1,640,824	414,160	88,930	1,363,751	203,106	21,599	36,729	2,227	35,629	1,226	25,051	4,212,044
Third Quarter	371,412	1,656,289	556,194	91,451	1,293,048	97,028	18,420	35,281	4,077	23,056	27,212	14,400	4,187,868
Fourth Quarter	427,976	1,736,367	580,397	85,201	1,491,551	134,639	17,800	32,804	2,794	34,586	12,736	121,466	4,678,317
Total Gallons:	**1,395,040**	**6,062,683**	**1,641,099**	**345,033**	**4,531,753**	**550,614**	**75,477**	**137,514**	**14,499**	**122,727**	**63,681**	**371,020**	**15,311,140**

TABLE 9.3

EXTRACTION WELL SUMMARY
TOTAL MASS REMOVAL BY GROUNDWATER EXTRACTION
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

	Total Mass Removal (Lbs/Year)												
Compound	***EW-1***	***EW-2***	***EW-3***	***EW-4***	***EW-5***	***EW-6***	***DPA-201***	***DPA-202***	***DPA-203***	***OW-3***	***LR-66***	***KO Pot***	***Site Total***
Benzene	0	0	0	0	0	0	0	0	0	0	0	0	0
Carbon disulfide	355	378	29	0	12	1	0	1	1	889	0	0	1,665
Carbon tetrachloride	77	215	40	0	20	50	0	99	24	97	3	0	626
Chlorobenzene	0	2	0	0	0	0	0	0	0	0	0	0	2
Chloroform	29	45	42	5	10	17	0	19	5	23	0	0	195
Methylene chloride	2	2	3	0	0	1	0	0	0	0	0	0	9
Tetrachloroethene	0	2	3	0	3	1	0	2	0	0	0	0	11
Toluene	0	0	0	0	0	0	0	0	0	2	0	0	0
Trichloroethene	0	0	2	0	1	0	0	0	0	0	0	0	4
Total VOC Removal	**464**	**643**	**119**	**6**	**47**	**69**	**1**	**121**	**29**	**1011**	**3**	**0**	**2,513**

Notes:
VOC Volatile Organic Compound.

TABLE 9.4

COMPOUND-SPECIFIC SSPL REMOVAL
GROUNDWATER EXTRACTION SYSTEM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2001-2012

SSPL Compound	*2001*		*2002*		*2003*		*2004*		*2005*		*2006*	
	Lbs. Removed	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*
Benzene	0	0	0	0	0	0	0	0	0	0	0	0
Carbon disulfide	3,741	36	1,481	23	2,185	33	2,311	47	2,611	53	1,664	47
Carbon tetrachloride	4,769	46	3,981	62	3,615	54	2,113	43	1,771	36	1,420	40
Chlorobenzene	3	0	1	0	3	0	1	0	2	0	1	0
Chloroform	1,707	17	874	14	835	12	482	10	461	9	401	11
Methylene chloride	0	0	0	0	8	0	6	0	14	0	11	0
Tetrachloroethene	47	0	36	1	57	1	36	1	33	1	17	1
Toluene	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	2	0	1	0	7	0	5	0	7	0	3	0
Total:	**6,374**		**6,710**		**4,954**		**4,899**		**3,517**		**3,672**	

SSPL Compound	*2007*		*2008*		*2009*		*2010*		*2011*		*2012*	
	Lbs. Removed	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*
Benzene	0	0	0	0	0	0	0	0	0	0	0	0
Carbon disulfide	1,954	53	2,109	44	1,182	43	1,554	60	1,510	60	1,665	66
Carbon tetrachloride	1,278	35	1,998	42	1,147	42	731	28	753	30	626	25
Chlorobenzene	1	0	2	0	7	0	2	0	2	0	2	0
Chloroform	400	11	605	13	387	14	257	10	216	9	195	8
Methylene chloride	14	0	15	0	10	0	9	0	7	0	9	0
Tetrachloroethene	20	1	42	1	18	1	20	1	12	0	11	0
Toluene	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	5	0	19	0	3	0	3	0	2	0	4	0
Total:	**3,672**		**4,790**		**2,754**		**2,575**		**2,501**		**2,511**	

TABLE 9.5
COMPOUND-SPECIFIC SSPL REMOVAL
SITE REMEDIAL SYSTEMS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2002-2012

Pounds Removed Per Year

SSPL Compound	*2002*		*2003*		*2004*		*2005*		*2006*		*2007*	
	SVE Systems	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*
Benzene	0	0	0	0	0	0	0	0	0	0	0	0
Carbon disulfide	0	1,481	0	2,185	1	2,311	1	2,611	3	1,664	0	1,954
Carbon tetrachloride	1,154	3,981	801	3,615	198	2,113	1,782	1,771	1,536	1,420	2,132	1,278
Chlorobenzene	0	1	0	3	0	1	0	2	0	1	0	1
Chloroform	43	874	68	835	18	482	95	461	98	401	93	400
Methylene chloride	0	0	0	8	0	6	0	14	2	11	0	14
Tetrachloroethene	10	36	68	57	8	36	75	33	62	17	110	20
Toluene	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	0	1	0	7	3	5	1	7	11	3	13	5
Total:	**1,207**	**6,374**	**937**	**6,710**	**228**	**4,954**	**1,954**	**4,899**	**1,712**	**3,517**	**2,349**	**3,672**

SSPL Compound	*2008*		*2009*		*2010*		*2011*		*2012*		*Cumulative Compound Total*	*% of Total*
	SVE Systems	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*		
Benzene	0	0	0	0	0	0	0	0	0	0	**0**	0
Carbon disulfide	0	2109	1	1182	2	1554	0	1510	0	1665	**20,235**	37
Carbon tetrachloride	442	1998	94	1147	227	731	240	753	215	626	**28,254**	51
Chlorobenzene	0	2	0	7	0	2	0	2	0	2	**24**	0
Chloroform	32	605	7	387	14	257	33	216	20	195	**5,634**	10
Methylene chloride	0	15	0	10	0	9	0	7	0	9	**103**	0
Tetrachloroethene	28	42	5	18	7	20	10	12	13	11	**698**	1
Toluene	0	0	0	0	0	0	0	0	0	0	**0**	0
Trichloroethene	4	19	1	3	1	3	6	2	2	4	**100**	0
Total:	**507**	**4,790**	**108**	**2,754**	**251**	**2,575**	**289**	**2,501**	**250**	**2,511**	**55,048**	100

Notes:
GW Groundwater extraction system.

APPENDIX A

SOIL VAPOR EXTRACTION SYSTEM
2012 PROCESS MONITORING DATA

APPENDIX A-1
ANALYTICAL RESULTS SUMMARY
SECOND QUARTER 2012 - AREA A INFLUENT VAPOR SAMPLING
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK

Sample Location:		*HEADER 1*	*HEADER 2*	*HEADER 3*	*HEADER 4*	*MAIN SYSTEM*
Sample ID:		*H1-052512-PDO*	*H2-052512-PDO*	*H3-052512-PDO*	*H4-052512-PDO*	*TOT-052512-PDO*
Sample Date:		*5/25/2012*	*5/25/2012*	*5/25/2012*	*5/25/2012*	*5/25/2012*
Volatile Organic Compounds	***Units***					
1,1,1-Trichloroethane	ppbv	ND 9.2	ND 4.8	ND 0.17	ND 13	ND 8.9
1,1,2,2-Tetrachloroethane	ppbv	ND 1.8	ND 0.95	ND 0.035	ND 2.5	ND 1.8
1,1,2-Trichloroethane	ppbv	ND 9.2	ND 4.8	ND 0.17	ND 13	ND 8.9
1,1-Dichloroethane	ppbv	ND 9.3	ND 4.8	ND 0.18	ND 13	ND 9
1,1-Dichloroethene	ppbv	ND 9.3	ND 4.8	ND 0.18	ND 13	ND 8.9
1,2-Dibromoethane (Ethylene dibromide)	ppbv	ND 1.8	ND 0.96	ND 0.035	ND 2.6	ND 1.8
1,2-Dichlorobenzene	ppbv	ND 18	ND 9.6	ND 0.35	ND 25	ND 18
1,2-Dichloroethane	ppbv	ND 9.3	ND 4.8	ND 0.18	ND 13	ND 9
1,2-Dichloropropane	ppbv	ND 9.2	ND 4.8	ND 0.18	ND 13	ND 8.9
1,3-Dichlorobenzene	ppbv	ND 18	ND 9.6	ND 0.35	ND 25	ND 18
1,4-Dichlorobenzene	ppbv	ND 18	ND 9.6	ND 0.35	ND 25	ND 18
2-Butanone (Methyl ethyl ketone) (MEK)	ppbv	ND 18	ND 9.6	1.2	ND 26	ND 18
2-Hexanone	ppbv	ND 9.2	ND 4.8	ND 0.17	ND 13	ND 8.8
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK	ppbv	ND 18	ND 9.6	ND 0.35	ND 25	ND 18
Acetone	ppbv	ND 180	ND 92	10	ND 240	ND 170
Benzene	ppbv	ND 9.1	ND 4.8	ND 0.17	ND 13	ND 8.8
Bromodichloromethane	ppbv	ND 1.9	ND 0.97	ND 0.036	ND 2.6	ND 1.8
Bromoform	ppbv	ND 9.2	ND 4.8	ND 0.18	ND 13	ND 8.9
Bromomethane (Methyl bromide)	ppbv	ND 9.2	ND 4.8	ND 0.18	ND 13	ND 8.9
Carbon disulfide	ppbv	ND 9.1	ND 4.8	0.64	ND 13	ND 8.8
Carbon tetrachloride	ppbv	760	460	8.8	910	850
Chlorobenzene	ppbv	ND 9.2	ND 4.8	ND 0.18	ND 13	ND 8.9
Chloroethane	ppbv	ND 18	ND 9.6	ND 0.35	ND 25	ND 18
Chloroform (Trichloromethane)	ppbv	140	42	1.5	170	130
Chloromethane (Methyl chloride)	ppbv	ND 18	ND 9.5	0.6	ND 25	ND 18
cis-1,2-Dichloroethene	ppbv	ND 9.3	ND 4.8	ND 0.18	ND 13	ND 8.9
cis-1,3-Dichloropropene	ppbv	ND 18	ND 9.6	ND 0.35	ND 25	ND 18
Dibromochloromethane	ppbv	ND 1.9	ND 0.97	ND 0.035	ND 2.6	ND 1.8
Ethylbenzene	ppbv	ND 18	ND 9.5	ND 0.35	ND 25	ND 18
m&p-Xylenes	ppbv	ND 37	ND 19	ND 0.7	ND 51	ND 35
Methyl tert butyl ether (MTBE)	ppbv	ND 18	ND 9.5	ND 0.35	ND 25	ND 18
Methylene chloride	ppbv	ND 9.1	ND 4.8	ND 0.17	ND 13	ND 8.8
o-Xylene	ppbv	ND 18	ND 9.5	ND 0.35	ND 25	ND 18
Styrene	ppbv	ND 18	ND 9.6	ND 0.35	ND 26	ND 18
Tetrachloroethene	ppbv	28	14	1.9	27	76
Toluene	ppbv	ND 9.1	ND 4.7	ND 0.17	ND 13	ND 8.8
trans-1,2-Dichloroethene	ppbv	ND 9.3	ND 4.8	ND 0.18	ND 13	ND 8.9
trans-1,3-Dichloropropene	ppbv	ND 9.2	ND 4.8	ND 0.18	ND 13	ND 8.9
Trichloroethene	ppbv	1.3	ND 0.49	0.42	4.8	13
Trichlorofluoromethane (CFC-11)	ppbv	ND 9.2	ND 4.8	0.23	ND 13	ND 8.9
Trifluorotrichloroethane (Freon 113)	ppbv	ND 1.8	ND 0.97	0.073	ND 2.6	ND 1.8
Vinyl acetate	ppbv	ND 120	ND 62	ND 2.3	ND 160	ND 110
Vinyl chloride	ppbv	ND 2	ND 1	ND 0.037	ND 2.7	ND 1.9
Total VOCs		**929**	**516**	**25**	**1112**	**1069**

Notes:
ND - Not present at or above the associated value.

APPENDIX A-2
ANALYTICAL RESULTS SUMMARY
THIRD QUARTER 2012 - AREA A INFLUENT VAPOR SAMPLING
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK

Sample Location:		*HEADER 1*	*HEADER 2*	*HEADER 3*	*HEADER 4*	*MAIN SYSTEM*
Sample ID:		*H1-080712-DO*	*H2-080712-DO*	*H3-080712-DO*	*H4-080712-DO*	*TOT-080712-DO*
Sample Date:		*8/7/2012*	*8/7/2012*	*8/7/2012*	*8/7/2012*	*8/7/2012*
Volatile Organic Compounds	***Units***					
1,1,1-Trichloroethane	ppbv	ND 5.9	ND 120	ND 77	ND 84	ND 60
1,1,2,2-Tetrachloroethane	ppbv	ND 1.2	ND 24	ND 15	ND 17	ND 12
1,1,2-Trichloroethane	ppbv	ND 5.9	ND 120	ND 77	ND 84	ND 60
1,1-Dichloroethane	ppbv	ND 6	ND 120	ND 78	ND 85	ND 60
1,1-Dichloroethene	ppbv	ND 6	ND 120	ND 78	ND 85	ND 60
1,2-Dibromoethane (Ethylene dibromide)	ppbv	ND 1.2	ND 24	ND 15	ND 17	ND 12
1,2-Dichlorobenzene	ppbv	ND 12	ND 240	ND 150	ND 170	ND 120
1,2-Dichloroethane	ppbv	ND 6	ND 120	ND 78	ND 85	ND 60
1,2-Dichloropropane	ppbv	ND 6	ND 120	ND 77	ND 84	ND 60
1,3-Dichlorobenzene	ppbv	ND 12	ND 240	ND 150	ND 170	ND 120
1,4-Dichlorobenzene	ppbv	ND 12	ND 240	ND 150	ND 170	ND 120
2-Butanone (Methyl ethyl ketone) (MEK)	ppbv	ND 12	ND 240	ND 150	ND 170	ND 120
2-Hexanone	ppbv	ND 5.9	ND 120	ND 77	ND 84	ND 59
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK	ppbv	ND 12	ND 240	ND 150	ND 170	ND 120
Acetone	ppbv	ND 110	ND 2300	ND 1500	ND 1600	ND 1100
Benzene	ppbv	ND 5.9	ND 120	ND 77	ND 84	ND 59
Bromodichloromethane	ppbv	ND 1.2	ND 24	ND 16	ND 17	ND 12
Bromoform	ppbv	ND 6	ND 120	ND 77	ND 84	ND 60
Bromomethane (Methyl bromide)	ppbv	ND 6	ND 120	ND 78	ND 85	ND 60
Carbon disulfide	ppbv	ND 5.9	ND 120	ND 76	ND 84	ND 59
Carbon tetrachloride	ppbv	630	6300	5400	4500	4100
Chlorobenzene	ppbv	ND 6	ND 120	ND 78	ND 85	ND 60
Chloroethane	ppbv	ND 12	ND 240	ND 150	ND 170	ND 120
Chloroform (Trichloromethane)	ppbv	74	340	580	890	410
Chloromethane (Methyl chloride)	ppbv	ND 12	ND 240	ND 150	ND 170	ND 120
cis-1,2-Dichloroethene	ppbv	ND 6	ND 120	ND 78	96	ND 60
cis-1,3-Dichloropropene	ppbv	ND 12	ND 240	ND 150	ND 170	ND 120
Dibromochloromethane	ppbv	ND 1.2	ND 24	ND 16	ND 17	ND 12
Ethylbenzene	ppbv	ND 12	ND 240	ND 150	ND 170	ND 120
m&p-Xylenes	ppbv	ND 24	ND 480	ND 310	ND 340	ND 240
Methyl tert butyl ether (MTBE)	ppbv	ND 12	ND 240	ND 150	ND 170	ND 120
Methylene chloride	ppbv	ND 5.9	ND 120	ND 77	ND 84	ND 59
o-Xylene	ppbv	ND 12	ND 240	ND 150	ND 170	ND 120
Styrene	ppbv	ND 12	ND 240	ND 150	ND 170	ND 120
Tetrachloroethene	ppbv	13	110	550	600	200
Toluene	ppbv	ND 5.9	ND 120	ND 76	ND 83	ND 59
trans-1,2-Dichloroethene	ppbv	ND 6	ND 120	ND 78	ND 85	ND 60
trans-1,3-Dichloropropene	ppbv	ND 5.9	ND 120	ND 77	ND 84	ND 60
Trichloroethene	ppbv	1.1	ND 12	110	450	43
Trichlorofluoromethane (CFC-11)	ppbv	ND 6	ND 120	ND 77	ND 84	ND 60
Trifluorotrichloroethane (Freon 113)	ppbv	ND 1.2	ND 24	ND 16	ND 17	ND 12
Vinyl acetate	ppbv	ND 77	ND 1500	ND 990	ND 1100	ND 770
Vinyl chloride	ppbv	ND 1.3	ND 25	ND 16	ND 18	ND 13
Total VOCs		**718**	**6750**	**6640**	**6536**	**4753**

Notes:
ND - Not present at or above the associated value.

APPENDIX A-3
ANALYTICAL RESULTS SUMMARY
FOURTH QUARTER 2012 - AREA A INFLUENT VAPOR SAMPLING
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK

Sample Location:		*HEADER 1*	*HEADER 2*	*HEADER 3*	*HEADER 4*	*MAIN SYSTEM*
Sample ID:		*H1-120912-DJT*	*H2-120912-DJT*	*H3-120912-DJT*	*H4-120912-DJT*	*TOT-120912-DJT*
Sample Date:		*12/9/2012*	*12/9/2012*	*12/9/2012*	*12/9/2012*	*12/9/2012*
Volatile Organic Compounds	***Units***					
1,1,1-Trichloroethane	ppbv	ND 2.6	ND 24	ND 5.3	ND 1	ND 16
1,1,2,2-Tetrachloroethane	ppbv	ND 0.51	ND 4.8	ND 1	ND 0.2	ND 3.1
1,1,2-Trichloroethane	ppbv	ND 2.6	ND 24	ND 5.3	ND 1	ND 16
1,1-Dichloroethane	ppbv	ND 2.6	ND 24	ND 5.3	ND 1	ND 16
1,1-Dichloroethene	ppbv	ND 2.6	ND 24	ND 5.3	ND 1	ND 16
1,2-Dibromoethane (Ethylene dibromide)	ppbv	ND 0.51	ND 4.8	ND 1.1	ND 0.2	ND 3.2
1,2-Dichlorobenzene	ppbv	ND 5.1	ND 48	ND 11	ND 2	ND 31
1,2-Dichloroethane	ppbv	ND 2.6	ND 24	ND 5.3	ND 1	ND 16
1,2-Dichloropropane	ppbv	ND 2.6	ND 24	ND 5.3	ND 1	ND 16
1,3-Dichlorobenzene	ppbv	ND 5.1	ND 48	ND 11	ND 2	ND 31
1,4-Dichlorobenzene	ppbv	ND 5.1	ND 48	ND 11	ND 2	ND 31
2-Butanone (Methyl ethyl ketone) (MEK)	ppbv	ND 5.1	ND 48	ND 11	ND 2	ND 32
2-Hexanone	ppbv	ND 2.5	ND 24	ND 5.3	ND 1	ND 16
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ppbv	ND 5.1	ND 48	ND 11	ND 2	ND 31
Acetone	ppbv	ND 49	ND 460	ND 100	ND 19	ND 300
Benzene	ppbv	ND 2.5	ND 24	ND 5.3	ND 1	ND 16
Bromodichloromethane	ppbv	ND 0.52	ND 4.9	ND 1.1	ND 0.21	ND 3.2
Bromoform	ppbv	ND 2.6	ND 24	ND 5.3	ND 1	ND 16
Bromomethane (Methyl bromide)	ppbv	ND 2.6	ND 24	ND 5.3	ND 1	ND 16
Carbon disulfide	ppbv	ND 2.5	ND 24	ND 5.2	ND 1	ND 16
Carbon tetrachloride	ppbv	290	1700	400	140	1400
Chlorobenzene	ppbv	ND 2.6	ND 24	ND 5.3	ND 1	ND 16
Chloroethane	ppbv	ND 5.1	ND 48	ND 11	ND 2	ND 32
Chloroform (Trichloromethane)	ppbv	48	150	60	24	190
Chloromethane (Methyl chloride)	ppbv	ND 5.1	ND 48	ND 10	ND 2	ND 31
cis-1,2-Dichloroethene	ppbv	ND 2.6	ND 24	ND 5.3	ND 1	ND 16
cis-1,3-Dichloropropene	ppbv	ND 5.1	ND 48	ND 11	ND 2	ND 32
Dibromochloromethane	ppbv	ND 0.52	ND 4.9	ND 1.1	ND 0.21	ND 3.2
Ethylbenzene	ppbv	ND 5.1	ND 48	ND 11	ND 2	ND 31
m&p-Xylenes	ppbv	ND 10	ND 96	ND 21	ND 4.1	ND 63
Methyl tert butyl ether (MTBE)	ppbv	ND 5.1	ND 48	ND 11	ND 2	ND 31
Methylene chloride	ppbv	ND 2.5	ND 24	ND 5.3	ND 1	ND 16
o-Xylene	ppbv	ND 5.1	ND 48	ND 11	ND 2	ND 31
Styrene	ppbv	ND 5.1	ND 48	ND 11	ND 2	ND 32
Tetrachloroethene	ppbv	6	65	74	3.3	81
Toluene	ppbv	ND 2.5	ND 24	ND 5.2	ND 1	ND 16
trans-1,2-Dichloroethene	ppbv	ND 2.6	ND 24	ND 5.3	ND 1	ND 16
trans-1,3-Dichloropropene	ppbv	ND 2.6	ND 24	ND 5.3	ND 1	ND 16
Trichloroethene	ppbv	0.4	ND 2.4	8.8	0.58	7.2
Trichlorofluoromethane (CFC-11)	ppbv	ND 2.6	ND 24	ND 5.3	ND 1	ND 16
Trifluorotrichloroethane (Freon 113)	ppbv	ND 0.51	ND 4.8	ND 1.1	ND 0.21	ND 3.2
Vinyl acetate	ppbv	ND 33	ND 310	ND 68	ND 13	ND 200
Vinyl chloride	ppbv	ND 0.54	ND 5.1	ND 1.1	ND 0.22	ND 3.4
Total VOCs		**344**	**1915**	**543**	**168**	**1678**

Notes:
ND - Not present at or above the associated value.

APPENDIX B

GROUNDWATER TREATMENT SYSTEM
2012 PROCESS MONITORING DATA

APPENDIX B-1
GROUNDWATER INFLUENT
ANALYTICAL RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

Sample ID:	*INF-010112-DJT*	*INF-020612-DJT*	*INF-030512-SG*	*INF-040212-SG*	*INF-050612-DJT*	*INF-060312-DJT*
Collection Date:	*01/01/12*	*02/06/12*	*03/05/12*	*04/02/12*	*05/06/12*	*06/03/12*
Parameters ***Units***						
Volatiles						
Benzene µg/L	ND 100	ND 100	ND 100	ND 50	ND 50	ND 50
Carbon disulfide µg/L	12000	17000	1100	7400	2800	8500
Carbon tetrachloride µg/L	11000	14000	9800	7200	5100	5800
Chlorobenzene µg/L	ND 100	ND 100	ND 100	ND 50	ND 50	ND 50
Methylene chloride µg/L	ND 100	110	ND 100	70	84	1700
Tetrachloroethene µg/L	480	140	130	140	110	84
Toluene µg/L	ND 100	ND 100	ND 100	ND 50	ND 50	95
Trichloroethene µg/L	ND 100	ND 100	ND 100	ND 50	ND 50	ND 50
						ND 50

Sample ID:	*INF-070212-DJT*	*INF-080612-SG*	*INF-090212-DJT*	*INF-100112-DJT*	*INF-110512-DJT*	*INF-120212-DJT*
Collection Date:	*07/02/12*	*08/06/12*	*09/02/12*	*10/01/12*	*11/05/12*	*12/02/12*
Parameters ***Units***						
Volatiles						
Benzene µg/L	ND 50	ND 50	ND 50	ND 25	ND 50	ND 50
Carbon disulfide µg/L	5900	8600	7500	3900	4600	7900
Carbon tetrachloride µg/L	3400	5700	5200	2700	6700	5700
Chlorobenzene µg/L	ND 50	ND 50	ND 50	ND 25	ND 50	ND 50
Methylene chloride µg/L	1300	1700	1700	1200	93	80
Tetrachloroethene µg/L	74	90	92	65	140	100
Toluene µg/L	74	86	87	75	ND 50	ND 50
Trichloroethene µg/L	ND 50	ND 50	ND 50	ND 25	ND 50	52
	ND 50	56	ND 50	44		

Notes:
ND Non-detect at the associated value.

APPENDIX B-2
CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

	Sample ID:	*CBT-010112-DJT*	*CBT-010912-DJT*	*CBT-011512-DJT*	*CBT-012312-DJT*	*CBT-013012-DJT*
	Collection Date:	*01/01/12*	*01/09/12*	*01/15/12*	*01/23/12*	*01/30/12*
Parameters	***Units***					
Volatiles						
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND Non-detect at the associated value.

APPENDIX B-2
CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

	Sample ID:	*CBT-020612-DJT*	*CBT-021312-DJT*	*CBT-022012-SG*	*CBT-022712-SG*	*CBT-030512-DJT*
	Collection Date:	*02/06/12*	*02/13/12*	*02/20/12*	*02/27/12*	*03/05/12*
Parameters	*Units*					
Volatiles						
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND Non-detect at the associated value.

APPENDIX B-2
CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

	Sample ID:	*CBT-031212-DJT*	*CBT-031912-DJT*	*CBT-032612-DJT*	*CBT-040212-DJT*	*CBT-040912-DJT*
	Collection Date:	*03/12/12*	*03/19/12*	*03/26/12*	*04/02/12*	*04/09/12*
Parameters	***Units***					
Volatiles						
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND Non-detect at the associated value.

APPENDIX B-2
CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

	Sample ID:	*CBT-041512-DJT*	*CBT-042212-DJT*	*CBT-042912-DJT*	*CBT-050612-DJT*	*CBT-051312-DJT*
	Collection Date:	*04/15/12*	*04/22/12*	*04/29/12*	*05/06/12*	*05/13/12*
Parameters	***Units***					
Volatiles						
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	4.2	4.3	ND 1.0	4.6	20
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	1.3	1.7
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	1.1	6.1	57	110
Methylene chloride	µg/L	ND 1.0	ND 1.0	1.8	5.8	6.4
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND Non-detect at the associated value.

APPENDIX B-2
CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

	Sample ID:	*CBT-052012-DJT*	*CBT-052912-SG*	*CBT-060312-DJT*	*CBT-061012-DJT*	*CBT-061812-DJT*
	Collection Date:	*05/20/12*	*05/29/12*	*06/03/12*	*06/10/12*	*06/18/12*
Parameters	*Units*					
Volatiles						
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	36	52	70	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	1.1	2.0	1.9	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	120	120	160	ND 1.0	ND 1.0
Methylene chloride	µg/L	3.9	2.7	2.7	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND Non-detect at the associated value.

APPENDIX B-2
CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

	Sample ID:	*CBT-062512-DJT*	*CBT-070212-DJT*	*CBT-070912-SG*	*CBT-071712-SG*	*CBT-072312-LP*
	Collection Date:	*06/25/12*	*07/02/12*	*07/09/12*	*07/17/12*	*07/23/12*
Parameters	*Units*					
Volatiles						
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	ND 1.0	ND 1.0	1.3	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND Non-detect at the associated value.

APPENDIX B-2
CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

	Sample ID:	*CBT-073012-SG*	*CBT-080612-SG*	*CBT-081312-DJT*	*CBT-082012-SG*	*CBT-082712-SG*
	Collection Date:	*07/30/12*	*08/06/12*	*08/13/12*	*08/20/12*	*08/27/12*
Parameters	***Units***					
Volatiles						
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	1.0
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND Non-detect at the associated value.

APPENDIX B-2
CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

	Sample ID:	*CBT-090212-DJT*	*CBT-091012-DJT*	*CBT-091712-SG*	*CBT-092412-SG*	*CBT-100112-SG*
	Collection Date:	*09/02/12*	*09/10/12*	*09/17/12*	*09/24/12*	*10/01/12*
Parameters	***Units***					
Volatiles						
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	ND 1.0	3.6	1.1	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND Non-detect at the associated value.

APPENDIX B-2
CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

	Sample ID:	*CBT-100812-SG*	*CBT-101512-DJT*	*CBT-102212-SG*	*CBT-102912-SG*	*CBT-110512-SG*
	Collection Date:	*10/08/12*	*10/15/12*	*10/22/12*	*10/29/12*	*11/05/12*
Parameters	***Units***					
Volatiles						
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	52	22	ND 1.0	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	87	39	ND 1.0	ND 1.0	ND 1.0
Methylene chloride	µg/L	5.2	2.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND Non-detect at the associated value.

APPENDIX B-2
CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

	Sample ID:	*CBT-111112-DJT*	*CBT-111812-DJT*	*CBT-112512-DJT*	*CBT-120212-DJT*	*CBT-120912-DJT*
	Collection Date:	*11/11/12*	*11/18/12*	*11/25/12*	*12/02/12*	*12/09/12*
Parameters	***Units***					
Volatiles						
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND Non-detect at the associated value.

APPENDIX B-2
CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

	Sample ID:	***CBT-121612-DJT***	***CBT-121912-DJT***	***CBT-122412-DJT***
	Collection Date:	***12/16/12***	***12/19/12***	***12/24/12***
Parameters	***Units***			
Volatiles				
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	10	6.9	6.0
Carbon tetrachloride	µg/L	2.9	1.5	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	16	16	14
Methylene chloride	µg/L	3.6	3.7	2.6
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0

Notes:
ND Non-detect at the associated value.

APPENDIX B-3
GROUNDWATER EFFLUENT
ANALYTICAL RESULTS
STAUFFER MANAGEMENT COMPANNY LLC
LEWISTON, NEW YORK
2012

	Sample ID:	*EFF-010112-DJT*	*EFF-020612-DJT*	*EFF-030512-DJT*	*EFF-040212-DJT*	*EFF-050612-DJT*	*EFF-060312-DJT*
	Collection Date:	*01/01/12*	*02/06/12*	*03/05/12*	*04/02/12*	*05/06/12*	*06/03/12*
Parameters	***Units***						
Volatiles							
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND Non-detect at the associated value.

APPENDIX B-3
GROUNDWATER EFFLUENT
ANALYTICAL RESULTS
STAUFFER MANAGEMENT COMPANNY LLC
LEWISTON, NEW YORK
2012

	Sample ID:	*EFF-070212-DJT*	*EFF-080612-SG*	*EFF-090212-DJT*	*EFF-100112-SG*	*EFF-110512-SG*	*EFF-120212-SG*
	Collection Date:	*07/02/12*	*08/06/12*	*09/02/12*	*10/12/12*	*11/05/12*	*12/02/12*
Parameters	***Units***						
Volatiles							
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND Non-detect at the associated value.

APPENDIX C

GROUNDWATER TREATMENT SYSTEM
2012 PERFORMANCE MONITORING DATA

APPENDIX C-1
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
MARCH 2012

Parameter:			*Benzene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chlorobenzene*	*Chloroform*	*Methylene chloride*	*Tetrachloroethene*	*Toluene*	*Trichloroethene*
Units:			*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Sample Location		*Collection Date*									
Extraction Wells											
DPA-201		3/12/2012	ND 10	ND 10	2000	ND 10	900	37	620	ND 10	740
DPA-202		3/12/2012	ND 500	880	78000	ND 500	9900	ND 500	1300	ND 500	ND 500
DPA-203		3/12/2012	ND 2000	5100	270000	ND 2000	49000	ND 2000	ND 2000	ND 2000	ND 2000
EW-1		3/12/2012	ND 50	34000	8200	ND 50	3100	230	ND 50	ND 50	ND 50
EW-1	(Dup.)	3/12/2012	ND 50	34000	9000	ND 50	3300	270	ND 50	ND 50	ND 50
EW-2		3/12/2012	ND 25	20000	8900	ND 25	1700	95	86	ND 25	ND 25
EW-3		3/12/2012	ND 10	1000	3000	ND 10	2700	52	60	ND 10	94
EW-4		3/12/2012	ND 10	ND 10	25	430	640	21	ND 10	ND 10	100
EW-5		3/12/2012	ND 5.0	11	920	ND 5.0	240	ND 5.0	260	ND 5.0	47
EW-6		3/12/2012	ND 50	210	16000	ND 50	4800	140	190	ND 50	64
LR-66		3/12/2012	ND 100	ND 100	5200	ND 100	340	140	ND 100	ND 100	ND 100
OW-3		3/12/2012	ND 5000	570000	79000	ND 5000	28000	ND 5000	ND 5000	ND 5000	ND 5000
T-4		3/12/2012	ND 2.5	ND 2.5	15	72	41	5.9	170	ND 2.5	22
QA/QC											
Trip Blank		3/12/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND - Not present at or above the associated value.

APPENDIX C-2
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
MAY 2012

Parameter:		*Benzene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chlorobenzene*	*Chloroform*	*Methylene chloride*	*Tetrachloroethene*	*Toluene*	*Trichloroethene*
Units:		*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Sample Location	*Collection Date*									
Extraction Wells										
DPA201	5/25/2012	ND 10	ND 10	1200	ND 10	630	20	670	ND 10	800
DPA202	5/22/2012	ND 500	630	69000	ND 500	10000	ND 500	1400	ND 500	ND 500
DPA203	5/22/2012	ND 2000	12000	300000	ND 2000	62000	ND 2000	ND 2000	ND 2000	ND 2000
EW1	5/18/2012	ND 50	33000	5600	ND 50	2500	230	ND 50	ND 50	ND 50
EW2	5/18/2012	ND 25	7500	4700	110	1200	55	66	ND 25	ND 25
EW3	5/18/2012	ND 10	2900	4200	ND 10	3800	280	320	ND 10	220
EW4	5/18/2012	ND 10	ND 10	350	16	2400	49	170	ND 10	210
EW5	5/21/2012	ND 5.0	21	220	ND 5.0	92	ND 5.0	89	ND 5.0	23
EW6	5/18/2012	ND 50	120	11000	ND 50	3600	84	110	ND 50	67
LR66	5/18/2012	ND 50	64	6400	ND 50	440	ND 50	67	ND 50	ND 50
OW3	5/18/2012	ND 5000	830000	89000	ND 5000	21000	ND 5000	ND 5000	ND 5000	ND 5000
T4	5/18/2012	ND 2.5	ND 2.5	3.5	81	8.1	ND 2.5	79	ND 2.5	13
Upper Lockport Wells										
OW11	5/22/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
OW11 (Dup.)	5/22/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W11	5/22/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	11	ND 1.0	7.7
W16	5/22/2012	ND 1.0	ND 1.0	21	ND 1.0	14	ND 1.0	16	ND 1.0	130
W17	5/21/2012	ND 200	ND 200	4300	ND 200	3600	ND 200	260	ND 200	380
W18R	5/22/2012	ND 50	ND 50	18000	ND 50	8400	360	140	ND 50	ND 50
W19D	5/21/2012	ND 1.0	ND 1.0	2.4	ND 1.0	6.5	ND 1.0	9.5	ND 1.0	ND 1.0
W20	5/22/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W22A	5/22/2012	ND 1.0	ND 1.0	16	ND 1.0	15	ND 1.0	9.0	ND 1.0	3.7
W23C	5/22/2012	ND 1.0	ND 1.0	ND 1.0	1.4	ND 1.0	ND 1.0	1.5	ND 1.0	ND 1.0
W66	5/24/2012	ND 1.0	ND 1.0	220	ND 1.0	63	ND 1.0	30	ND 1.0	19
W67	5/29/2012	ND 50	84	970	ND 50	540	ND 50	110	ND 50	70

Notes:
ND - Not present at or above the associated value.

APPENDIX C-2
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
MAY 2012

Parameter:			*Benzene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chlorobenzene*	*Chloroform*	*Methylene chloride*	*Tetrachloroethene*	*Toluene*	*Trichloroethene*
Units:			*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Sample Location		*Collection Date*									
Lower Lockport Well											
W16L		5/25/2012	ND 1.0	500	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	2.6
W18L		5/24/2012	ND 25	ND 25	1600	ND 25	4000	52	160	ND 25	42
W19A		5/22/2012	ND 1.0	ND 1.0	3.7	ND 1.0	9.4	ND 1.0	7.1	ND 1.0	1.8
W23B		5/21/2012	ND 5.0	ND 5.0	470	ND 5.0	510	ND 5.0	1000	ND 5.0	310
W48E		5/21/2012	ND 1.0	ND 1.0	87	ND 1.0	69	ND 1.0	28	ND 1.0	6.9
W50L		5/24/2012	ND 1.0	ND 1.0	1.4	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W65		5/23/2012	ND 1.0	ND 1.0	1.4	ND 1.0	1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W65	(Dup.)	5/23/2012	ND 1.0	ND 1.0	1.2	ND 1.0	1.1	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W66L		5/24/2012	ND 1.0	ND 1.0	2.3	ND 1.0	1.4	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W67L		5/24/2012	ND 2.0	3.2	190	ND 2.0	350	2.3	25	ND 2.0	33
W70L		5/23/2012	2.2	3.5	ND 1.0	86	370	1.2	2.8	1.4	11
Lockport/Rochester Wells											
LR2		5/29/2012	ND 25	290	3400	ND 25	2700	220	89	ND 25	51
LR2	(Dup.)	5/29/2012	ND 25	290	3400	ND 25	2700	220	85	ND 25	48
LR16		5/29/2012	ND 2.0	38	5.9	ND 2.0	26	9.5	8.3	ND 2.0	3.3
LR20		5/25/2012	ND 1.0	ND 1.0	ND 1.0	1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
LR48		5/25/2012	ND 1.0	ND 1.0	68	17	53	1.4	13	ND 1.0	7.0
LR49		5/25/2012	ND 1.0	ND 1.0	ND 1.0	2.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
LR50		5/23/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
LR51		5/25/2012	ND 1.0	ND 1.0	ND 1.0	5.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
LR61		5/24/2012	ND 100	1500	10000	ND 100	6200	330	250	ND 100	ND 100
LR62		5/23/2012	12	7.2	6.5	ND 1.0	52	1.6	5.6	ND 1.0	13
LR67		5/24/2012	ND 50	5100	ND 50	ND 50	ND 50	ND 50	ND 50	ND 50	78
LR69		5/22/2012	310	10	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	40	ND 1.0
OW5		5/24/2012	ND 100	33000	ND 100	ND 100	ND 100	ND 100	ND 100	ND 100	ND 100
W19B		5/29/2012	ND 20	45	3900	290	8200	420	280	ND 20	330

Notes:
ND - Not present at or above the associated value.

APPENDIX C-2
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
MAY 2012

Parameter:		*Benzene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chlorobenzene*	*Chloroform*	*Methylene chloride*	*Tetrachloroethene*	*Toluene*	*Trichloroethene*
Units:		*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Sample Location	*Collection Date*									
Rochester Wells										
B02	5/29/2012	ND 50	2500	2400	ND 50	3200	290	ND 50	ND 50	ND 50
R16	5/23/2012	80	ND 1.0	ND 1.0	ND 1.0	ND 1.0	1.5	ND 1.0	33	ND 1.0
R19	5/25/2012	110	15000	3600	ND 50	2300	270	ND 50	97	ND 50
R48	5/23/2012	2.3	8.5	140	1.1	46	3.1	2.4	ND 1.0	ND 1.0
R50	5/24/2012	140	260	180	ND 2.5	690	86	11	74	ND 2.5
R51	5/29/2012	7.0	1.7	ND 1.0	ND 1.0	1.6	3.8	ND 1.0	2.3	ND 1.0
R60	5/24/2012	43	21	19	ND 1.0	6.5	1.3	1.9	1.2	1.7
R61	5/25/2012	ND 500	45000	ND 500	ND 500	ND 500	ND 500	ND 500	ND 500	ND 500
R61 (Dup.)	5/25/2012	ND 500	44000	ND 500	ND 500	560	ND 500	ND 500	ND 500	ND 500
R62	5/25/2012	ND 500	62000	ND 500	ND 500	ND 500	ND 500	ND 500	ND 500	ND 500
R66	5/25/2012	ND 100	19000	9300	ND 100	19000	4100	ND 100	ND 100	ND 100
R67	5/24/2012	ND 1000	120000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000
R68	5/25/2012	230	130000	38000	ND 50	41000	2300	560	180	ND 50
QA/QC										
Rinse Blank	5/22/2012	ND 1.0	2.5	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Rinse Blank	5/23/2012	ND 1.0	1.7	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Rinse Blank	5/24/2012	ND 1.0	2.6	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Rinse Blank	5/25/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	1.7	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Rinse Blank	5/29/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trip Blank	5/18/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trip Blank	5/21/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trip Blank	5/22/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trip Blank	5/23/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trip Blank	5/24/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trip Blank	5/25/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trip Blank	5/29/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND - Not present at or above the associated value.

APPENDIX C-3
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
AUGUST 2012

Parameter:			*Benzene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chlorobenzene*	*Chloroform*	*Methylene chloride*	*Tetrachloroethene*	*Toluene*	*Trichloroethene*
		Units:	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Sample Location		*Collection Date*									
Extraction Wells											
DPA-201		8/7/2012	ND 10	ND 10	400	ND 10	720	ND 10	310	ND 10	1400
DPA-202		8/7/2012	ND 500	1000	100000	ND 500	28000	ND 500	2000	ND 500	ND 500
DPA-203		8/7/2012	ND 2000	ND 2000	240000	ND 2000	59000	ND 2000	ND 2000	ND 2000	ND 2000
EW-1		8/7/2012	ND 50	16000	6200	ND 50	2200	180	ND 50	ND 50	ND 50
EW-2		8/7/2012	ND 25	7500	4300	ND 25	660	39	29	ND 25	ND 25
EW-3		8/7/2012	ND 10	2200	2800	ND 10	2900	210	180	ND 10	180
EW-4		8/7/2012	ND 10	ND 10	73	44	2700	110	53	ND 10	150
EW-5		8/7/2012	ND 5.0	430	640	ND 5.0	390	20	17	ND 5.0	14
EW-5	(Dup.)	8/7/2012	ND 5.0	540	740	ND 5.0	450	22	19	ND 5.0	16
EW-6		8/7/2012	ND 50	260	4700	ND 50	2700	120	85	ND 50	76
LR-66		8/7/2012	ND 50	ND 50	5500	ND 50	340	ND 50	51	ND 50	ND 50
OW-3		8/7/2012	ND 5000	1200000	120000	ND 5000	28000	ND 5000	ND 5000	11000	ND 5000
QA/QC											
Trip Blank		8/7/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND - Not present at or above the associated value.

APPENDIX C-4
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
DECEMBER 2012

Parameter:			*Benzene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chlorobenzene*	*Chloroform*	*Methylene chloride*	*Tetrachloroethene*	*Toluene*	*Trichloroethene*
Units:			*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Sample Location		*Collection Date*									
Extraction Wells											
DPA-201		12/8/2012	12	ND 10	1400	ND 10	1100	46	980	ND 10	1100
DPA-202		12/8/2012	ND 500	1300	100000	ND 500	17000	ND 500	1900	ND 500	ND 500
DPA-203		12/8/2012	ND 2000	7600	280000	ND 2000	53000	ND 2000	ND 2000	ND 2000	ND 2000
EW-1		12/8/2012	ND 50	39000	7200	ND 50	2500	190	ND 50	ND 50	ND 50
EW-2		12/8/2012	ND 25	ND 25	1000	ND 25	350	ND 25	ND 25	ND 25	ND 25
EW-3		12/8/2012	ND 10	1700	2100	ND 10	2800	220	130	ND 10	150
EW-4		12/8/2012	ND 10	ND 10	48	15	620	12	81	ND 10	41
EW-5		12/8/2012	ND 5.0	580	610	ND 5.0	340	12	88	ND 5.0	33
EW-6		12/8/2012	ND 50	230	11000	ND 50	3400	120	120	ND 50	74
EW-6	(Dup.)	12/8/2012	ND 50	220	9300	ND 50	3800	140	130	ND 50	81
LR-66		12/8/2012	ND 50	70	5700	ND 50	420	ND 50	69	ND 50	ND 50
OW-3		12/8/2012	ND 5000	940000	97000	ND 5000	16000	ND 5000	ND 5000	ND 5000	ND 5000
T-4		12/8/2012	ND 2.5	ND 2.5	2.6	34	14	ND 2.5	44	ND 2.5	6.5
QA/QC											
Trip Blank		12/8/2012	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND - Not present at or above the associated value.

APPENDIX D

MONITORING WELL INVENTORY

APPENDIX D

MONITORING WELL INVENTORY
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

12/16/2016

Well No.	*Sounded Depth (Ft. BTOC)*	*Pro-Casing*	*Lock*	*Concrete Collar*
B02	N/A Barcad	Good	Yes	Good
OW-3	129.70	N/A	N/A	N/A
OW-5	103.05	Good	Yes	Good
OW-8	9.66	Good	N/A	Good
OW-9	13.85	Good	N/A	Good
OW-10	13.11	Good	N/A	Good
OW-11	28.73	Good	N/A	Good
W-11	32.52	Good	Yes	Good
W-16	31.64	Good	Yes	Good
W-16L	67.21	Good	Yes	Good
W-17	29.32	Good	Yes	Poor
W-18R	31.77	Good	Yes	Good
W-18L	74.23	Good	Yes	Good
W-19A	40.80	Good	Yes	Good
W-19B	82.71	Good	Yes	Good
W-19D	24.41	Good	Yes	Good
W-20	28.78	Good	Yes	Good
W-22A	22.52	Good	Yes	Good
W-23B	43.73	Good	Yes	Good
W-23C	23.09	Good	Yes	Good
W-48E	40.17	Good	Yes	Good
W-50	37.78	Good	Yes	Good
W-60L	33.79	Good	Yes	Good
W-65	57.41	Good	Yes	Good
W-66	48.11	Good	Yes	Good
W-66L	66.42	Good	Yes	Good
W-67	42.60	Good	Yes	Good
W-67L	71.90	Good	Yes	Good
W-70L	73.97	Good	Yes	Good
LR-2	90.22	Good	Yes	Good
LR-16	92.93	Good	Yes	Good
LR-20	86.90	Good	Yes	Good
LR-48	68.49	Good	Yes	Good
LR-49	75.70	Good	Yes	Good
LR-50	76.20	Good	Yes	Good
LR-51	65.72	Good	Yes	Good
LR-61	98.05	Good	Yes	Good
LR-62	103.89	Good	Yes	Good
LR-66	87.41	N/A	N/A	N/A
LR-67	102.50	Good	Yes	Good
LR-69	87.29	Good	Yes	Good

APPENDIX D

MONITORING WELL INVENTORY
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2012

12/16/2016

Well No.	*Sounded Depth (Ft. BTOC)*	*Pro-Casing*	*Lock*	*Concrete Collar*
R-16	132.76	Good	Yes	Good
R-19	147.03	Good	Yes	Good
R-48	139.74	Good	Yes	Good
R-50	141.02	Good	Yes	Good
R-51	N/A Barcad	Good	Yes	Good
R-60	138.68	Good	Yes	Good
R-61	154.23	Good	Yes	Good
R-62	158.33	Good	Yes	Good
R-66	152.12	Good	Yes	Good
R-67	142.01	Good	Yes	Good
R-68	121.91	Good	Yes	Good
EW-4	N/A	Good	N/A	Good
EW-5	N/A	Good	N/A	Good
EW-6	N/A	Good	N/A	Good
DPA-201	23.90	N/A	N/A	N/A
DPA-202	25.81	N/A	N/A	N/A
DPA-203	30.28	N/A	N/A	N/A
EW-1	N/A	Good	N/A	Good
EW-2	N/A	Good	N/A	Good
EW-3	N/A	Good	N/A	Good
T4	28.32	N/A	N/A	N/A