Stantec

Groundwater Management Zone
2010 Annual Report

STANTEC CONSULTING,
REMEDIAL ACTION SUPERVISING CONTRACTOR

FOR:
HAMILTON SUNDSTRAND CORPORATION PLANTS 1/2

AREA 9/10 REMEDIAL ACTION - SOUTHEAST ROCKFORD
GROUNDWATER CONTAMINATION SUPERFUND SITE
CERCLIS ID NO. ILD981000417
STANTEC PROJECT NO: 182602078

ROCKFORD, ILLINOIS

JANUARY 31, 2011

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GROUNDWATER MANAGEMENT ZONE 2010 ANNUAL REPORT

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1.0 INTRODUCTION

On behalf of Hamilton Sundstrand Corporation (HSC), Stantec Consulting (Stantec) prepared this Annual Groundwater Monitoring Report to document groundwater quality within the HSC Groundwater Management Zone (GMZ), which is part of Area 9/10 in the Southeast Rockford Groundwater Contamination Superfund Site (SER) (CERCLIS No. ILD981000417) located in the City of Rockford, Winnebago County, Illinois.

Area 9/10 is an industrial area bound by 11th Street to the east, 23rd Avenue to the north, Harrison Avenue to the south and 6th Street to the west. The HSC Facility (Facility) is located within Area 9/10 and is shown on Figure 1 - Facility Location Map.

HSC entered into a Consent Decree (CD) with the United States Environmental Protection Agency (USEPA) and Illinois Environmental Protection Agency (IEPA) [collectively referred to as the Agencies] for the completion of a Remedial Action (RA) for source control at the HSC property within Area 9/10 on September 2, 2008. The establishment of a GMZ for the Facility was a requirement of the CD and detailed in the Statement of Work (SOW). The GMZ was approved for the Facility in a letter from IEPA dated May 16, 2008. The GMZ well network and boundaries are shown on Figure 2 - GMZ Well Network.

This report presents the 2010 GMZ monitoring well network quarterly sampling results and meets reporting requirements set forth in the approved Groundwater Monitoring Plan, which is included as Appendix I of the Remedial Action Work Plan (RAWP). The GMZ monitoring well network consisted of twelve (12) existing wells and four (4) ASDM wells serving as GMZ wells until the proposed well, GMZ01, was installed. The four (4) ASDM wells were abandoned and GMZ01 was installed in the fourth quarter of 2010, resulting in the current network of thirteen (13) GMZ wells.

Currently operating along the southeast boundary of the GMZ is the Phase 1 air sparge (AS)/soil vapor extraction (SVE) system. The Phase 1 AS/SVE system commenced full-scale operation on December 7, 2009. The Phase 2 AS/SVE system will be fully operational in January 2011.

This submittal has been prepared to meet the following requirements of the Groundwater Monitoring Plan:

- Provide static water level potentiometric surface maps for the Facility;
- Include Facility maps showing the analytical results that exceed Preliminary Remediation Goals (PRGs) for each groundwater sampling event at the GMZ monitoring wells;
- Supply Summary tables of groundwater elevations and groundwater sample analytical data; and
- Include copies of the groundwater analytical reports; and an evaluation of the attenuation capacity of the aquifer and the estimated mass flux from the source areas.

In addition to the GMZ reporting requirements listed above, this report summarizes the methods and procedures used during the 2010 quarterly GMZ monitoring events and a summary of analytical results of baseline MNA parameters from samples collected in the first quarter.

2.0 FIELD ACTIVITIES

The 2010 quarterly GMZ sampling events conducted during the first, second, and third quarters included twelve (12) GMZ wells (MW07FGA, MW203, SMW01, SMW02, SMW04, SMW08, SMW19, SMW20, SMW21, GMZ02, GMZ03 and GMZ04) and four (4) ASDM wells (ASDM01, ASDM02, ASDM03, and ASDM04). The ASDM wells were serving as alternate GMZ wells until the proposed well, GMZ01, was installed. The four (4) ASDM wells were abandoned on November 8, 2010 and GMZ01 was installed on December 9, 2010. The boring log for GMZ01 is included as Appendix A. Fourth quarter sampling included the newly installed GMZ01 and the existing twelve (12) GMZ wells. The quarterly groundwater sampling events, dates sampled, and monitoring well groups sampled (followed by the number of wells) are as follows:

Quarter	Date Range	Monitoring Well Groups
First	2/1/10 to 2/5/10, 2/8/10 to 2/10/10	GMZ (12), ASDM (4)
Second	4/12/10 to 4/16/10	GMZ (12), ASDM (4)
Third	7/26/10 to 7/28/10	GMZ (12), ASDM (4)
Fourth	12/28/10 to 12/30/10	GMZ (13)

Per the Revised Groundwater Management Zone Application, dated March 7, 2008, the GMZ compliance wells are the downgradient wells, which include: SMW04, SMW08, SMW20, SMW21 and GMZ01 through GMZ04 wells. Groundwater sampling activities and procedures are described in detail in the Groundwater Monitoring Plan, which was submitted as Appendix I of the Remedial Action Work Plan (RAWP) (October 2, 2008) and supplemented by correspondence between Stantec and USEPA dated November 21, 2008 with respect to Agency comments.

Groundwater sampling field activities included the following:

- Recording observations regarding the condition of each well;
- Measuring depth to water and depth to the well terminus;
- Purging each well with a submersible pump via low flow method and recording of groundwater quality parameters to confirm groundwater chemistry stabilization; and
- Collecting groundwater samples for analysis of the constituents of concern.

The groundwater sampling data sheets documenting the quarterly activities are included in Appendix B. Groundwater elevations were measured at the beginning of each quarterly sampling event on the following dates: February 1 and 2, April 12, July 10, and December 22. Groundwater depths, measured from the top of casing, and elevations in feet (ft) above mean sea level (msl) for each quarter are presented in Table 1 - Quarterly Groundwater Elevations. The location and top of casing elevation for the newly installed monitoring well GMZ01 was surveyed on December 22, 2010 by Arnold Lundgren Associates.

2.1 GROUNDWATER ELEVATIONS

Potentiometric surface maps were prepared from the groundwater elevation data collected during the quarterly GMZ sampling events. The first, second, third and fourth quarter potentiometric surface maps are presented as Figures 3, 4, 5, and 6, respectively. Stantec notes that groundwater elevation data collected from monitoring wells located from within the radius of influence of the AS wells associated with the Phase 1 AS/SVE system are representative of groundwater conditions within the immediate vicinity of the AS wells, but are not useful for assessing the area-wide potentiometric groundwater surface for the Facility. Specifically, when compared to groundwater elevation data from monitoring events conducted prior to start-up of the Phase 1 AS/SVE system, measurements in these monitoring wells from 2010 exhibit considerably more variability than was typically observed. Stantec believes variability among these monitoring wells is due to pulsed operation of the treatment cells (i.e., higher measurements are recorded in active treatment cells and lower elevations recorded in cells that are not operating). As a result, groundwater elevation data from wells located within the influence of the Phase 1 AS/SVE system have not been used to create the potentiometric surface maps. Rather, contours have been developed based on current measurements outside the influence of the Phase 1 AS/SVE system and inferred in the vicinity of the Phase 1 AS/SVE system based on historic data from these areas. Based on this analysis, groundwater flow direction was primarily to the southwest for each of the quarterly events. The distribution of the GMZ wells compared to the direction of groundwater flow indicates that five (5) wells (SMW01, SMW02, SMW19, MW07FGA, and MW203) are upgradient of the Facility, and eight (8) wells (SMW04, SMW08, SMW20, SMW21, GMZ01, GMZ02, GMZ03, and GMZ04) are located at the downgradient boundary of the GMZ.

The groundwater gradient was approximately 0.00113 ft/ft in the first quarter, 0.00109 ft/ft in the second quarter, 0.00112 ft/ft in third quarter and 0.00109 ft/ft in fourth quarter 2010. The groundwater direction and gradient are consistent with previously reported values.

The calculated groundwater velocity using the hydraulic conductivity of 2.89×10^{-3} cm/sec (as reported in the August 2009 Remedial Action Investigation Report and Supplemental Remedial Design [RAIR]) multiplied by an average 2010 groundwater gradient of 0.00120 ft/ft and divided by an average porosity of 40.4% (also reported in the RAIR) is approximately 8.9 ft/year.

The average groundwater elevation (calculated from the contoured wells only) increased approximately 0.04 ft between first quarter (700.66 ft msl) and second quarter (700.70 ft msl). The groundwater elevation increased approximately 0.61 ft from second quarter to third quarter (701.31 ft msl); the fourth quarter (700.27 ft msl) average groundwater elevation decreased 1.04 ft from third quarter. The average groundwater elevations increased slightly between 2009 and 2010; from 700.28 ft msl to 700.74 ft msl, which continues the trend of historically high elevations. Groundwater elevation in this area has increased by approximately 5 feet since the April 22, 2004 GMZ sampling event reported in the Pre-Design Investigation (PDI). Groundwater elevation data indicated the well screens were fully submerged for the following GMZ wells for at least one quarter in 2010: SMW21, GMZ02, GMZ03, GMZ04.

2.2 ANALYTICAL METHODS

Groundwater samples were submitted for laboratory analysis of select volatile organic compounds (VOCs), which are listed in Table 5 of the June 11, 2002 Record of Decision. Additionally, groundwater samples were submitted for laboratory analysis of monitored natural attenuation (MNA) parameters during the first quarter 2010 sampling event. Field parameters were also recorded quarterly during sample collection. The sampled and recorded parameters include the following:

The VOC analytes include:

- 1,1,1-Trichloroethane (1,1,1-TCA)
- 1,1,2-Trichloroethane (1,1,2-TCA)
- 1,1-Dichloroethene (1,1-DCE)
- 1,2-Dichloroethane (1,2-DCA)
- cis-1,2-Dichloroethene (cis-1,2-DCE)
- Ethylbenzene
- Tetrachloroethene (PCE)
- Methylene chloride (MC)
- trans-1,2-Dichloroethene (trans-1,2-DCE)
- Trichloroethene (TCE)
- Vinyl Chloride (VC)

The MNA parameters include:

- Ethane
- Ethene
- Methane
- Nitrate-Nitrite
- Sulfate
- Total Alkalinity
- Total Organic Carbon
- Total Sulfide
- Field parameters below (with the exception of turbidity)

The field measured parameters include:

- Temperature
- pH
- Conductivity
- Oxygen Reduction Potential (ORP)
- Dissolved Oxygen (DO)
- Ferrous Iron
- Turbidity

Groundwater samples were collected in laboratory provided containers and analyzed by the following methods: VOCs by Method SW846 8260B; Ethane, Ethene and Methane by Method RSK SOP-175; Nitrate-Nitrite by Method MCAWW 353.2; Sulfate by Method MCAWW 300.0A; Total Alkalinity by Method MCAWW 310.1; Total Organic Carbon by Method SW846 9060; and Total Sulfide by Method MCAWW 376.1.

Analytical reports for the first and second quarter GMZ sampling events were originally submitted with the GMZ 2010 Semi-Annual Report. Copies of these reports are provided on compact disk in Appendix C. The analytical reports for third and fourth quarter GMZ sampling events and ASDM sampling are also provided on compact disc in Appendix C.

Details of laboratory internal quality control checks, which included surrogate spikes, method blanks, laboratory control samples, and laboratory control duplicate samples, are presented in the Analytical Quality Control Summary report provided in the back portion of the laboratory reports in Appendix C. A summary of laboratory procedures, dilutions, interferences, and quality assurance/quality control (QA/QC) performance are also provided in the level IV laboratory reports on the compact disc. Analytical Validation Checklists for each quarter are attached as Appendix D.

2.3 SAMPLE METHODS

Field readings of temperature, pH, conductivity, ORP, DO, and turbidity were documented at each well every five minutes during purging. Ferrous iron was measured immediately prior to groundwater sample collection. Per an agreement with USEPA, purging of the wells would continue until groundwater stability was achieved over five-minute intervals for a minimum of three intervals. Therefore, each of the wells were purged a minimum of 15 minutes. Stabilization was determined by ORP readings within +/- 10% and DO within +/- 10% or +/- 0.1 if less than 1. Groundwater characteristics, specifically low DO and ORP values, may prevent ORP and DO stabilization (as defined above) from being reached. In these circumstances field staff contacted the project manger to discuss the collected groundwater data, anomalies, trends, historic data, external factors (e.g.,-remediation system in operation) and weather conditions to determine the appropriate course of action. Final groundwater quality parameters are shown in Table 2, 2010 Quarterly Groundwater Quality Parameters.

GMZ samples were collected during 2010 from the monitoring wells via low flow sampling techniques using a bladder pump or centrifugal pump (Geotech bladder pump/ QED Sample Pro bladder pump and QED MP10 Controller or Proactive Hurricane Pump and Controller) and dedicated polyethylene tubing at each well. As part of the low flow process, groundwater quality parameters (temperature, pH, conductivity, ORP and DO) were measured prior to sampling using a YSI 556 MPS multiprobe system. Turbidity was measured using a La Motte 2020e turbidity meter and ferrous iron was measured using a Hach DR890. A Mini Rae 3000 Photoionization Detector (PID) with an 11.7 eV lamp was used to detect vapors in the wells. The field instruments were calibrated daily to the appropriate standards.

Flow rates were set between 300 and 500 milliliters per minute. Low flow purging of groundwater resulted in minimal drawdown of water levels in the wells. Drawdown ranged from 0.00 to 0.24 feet below the originally measured groundwater elevation. Purge water was collected in 55-gallon drums and temporarily stored on-site until proper disposal was arranged.

3.0 LABORATORY ANALYTICAL RESULTS

Laboratory analytical results of the 2010 quarterly groundwater samples were compared with the Title 35 Illinois Administrative Code (IAC) Part 742, Tiered Approach to Corrective Action Objectives (TACO) Tier 1 Groundwater Remediation Objectives for Class I groundwater, collectively referred to as the preliminary remediation goals (PRGs). A summary of VOC analytical results compared to the VOC PRGs is provided in Table 3 - 2010 Quarterly VOC Analytical Results GMZ and ASDM Wells.

VOC compounds recorded above the corresponding PRG during the 2010 quarterly sampling events were limited to 1,1-DCE, PCE, TCE, and VC. These compounds, along with the associated concentration, well location, and sampling date, are tabulated in Figure 7 - Quarterly GMZ VOC Analytical Results Exceeding the PRG. The PRG exceedances were noted in downgradient wells (SMW04, SMW08, GMZ01, ASDM01, ASDM02, ASDM03, ASDM04, SMW21, and GMZ04). Two (2) upgradient wells (MW203 and SMW19) also exceed the PRG for PCE and TCE, respectively.

PCE and TCE were the most prevalent constituents detected above PRGs during the 2010 quarterly sampling events. A comparison of TCE and PCE concentrations vs. time for all GMZ wells are depicted in Figure 8 - Quarterly GMZ VOC Analytical Results Trends.

In addition to groundwater samples, appropriate QA/QC samples were collected during the sampling events. The samples were collected in accordance with the Field Sampling Plan (FSP) dated November 2008 and the Quality Assurance Project Plan (QAPP) dated November 2008. The QA/QC samples include: trip blanks (TBs), equipment blanks (EBs), field blanks (FBs), matrix spike (MS) and matrix spike duplicate (MSD or MD), and duplicates. The results of the duplicate samples confirm the concentrations detected in the original samples and are presented in Tables 3 and 4. The analytical results of the MNA parameters and the associated EB are provided in Table 4. The VOC analytical results of the TBs, EBs, and FBs, are provided in Table 5. MC was detected in the EBs, FBs, and TBs during the 2010 quarterly sampling. The presence of MC at trace concentrations and did not affect the quality of the data and did not require data qualification.

3.1 FIRST QUARTER VOC ANALYTICAL RESULTS EXCEEDING PRGS

The GMZ well, the location of the well (upgradient or downgradient), and analyte(s) that exceeded the groundwater PRGs in the first quarter 2010 are summarized below:

GMZ Well	Analyte(s) exceeding PRGs
ASDM01	TCE, PCE
ASDM02	TCE, PCE
ASDM03	PCE
ASDM04	PCE
SMW04 (downgradient)	PCE, TCE
SMW08 (downgradient)	PCE
SMW19 (upgradient)	TCE
MW203 (upgradient)	PCE

3.2 SECOND QUARTER VOC ANALYTICAL RESULTS EXCEEDING PRGS

The GMZ wells, the location of the well (upgradient or downgradient), and analyte(s) that exceeded the groundwater PRGs in the second quarter 2010 are summarized below:

GMZ Well	Analyte(s) exceeding PRGs
ASDM01	TCE, PCE
ASDM02	TCE, PCE
ASDM03	TCE, PCE
ASDM04	TCE, PCE
SMW04 (downgradient)	TCE, PCE, VC
SMW08 (downgradient)	TCE, PCE
SMW19 (upgradient)	TCE
MW203 (upgradient)	PCE
GMZ04 (downgradient)	VC

3.3 THIRD QUARTER VOC ANALYTICAL RESULTS EXCEEDING PRGS

The GMZ well, the location of the well (upgradient or downgradient), and analyte(s) that exceeded the groundwater PRGs in the third quarter 2010 are summarized below:

GMZ Well	Analyte(s) exceeding PRGs
ASDM01	PCE
ASDM02	PCE
ASDM03	TCE, PCE
ASDM04	TCE, PCE
SMW04 (downgradient)	TCE, PCE, VC
SMW08 (downgradient)	TCE, PCE
SMW19 (upgradient)	TCE
MW203 (upgradient)	PCE

3.4 FOURTH QUARTER VOC ANALYTICAL RESULTS EXCEEDING PRGS

The GMZ well, the location of the well (upgradient or downgradient), and analyte(s) that exceeded the groundwater PRGs in the fourth quarter 2010 are summarized below:

GMZ Well	Analyte(s) exceeding PRGs
GMZ01 (downgradient)	TCE, PCE
SMW04 (downgradient)	PCE
SMW08 (downgradient)	TCE, PCE
SMW19 (upgradient)	TCE
SMW21 (downgradient)	1,1-DCE
MW203 (upgradient)	PCE

3.5 FIRST QUARTER MNA RESULTS

MNA samples were collected during the first quarter sampling event and are summarized in Table 4 - 2010 First Quarter MNA Parameters. The associated field parameters are listed in Table 2 - Quarterly Groundwater Quality Parameters.

Although monitored natural attenuation is currently not a component of the approved remedy, MNA samples have been collected during the initial Phase 1 AS/SVE start up to provide baseline data and to measure and document biologic activity that may indicate favorable conditions for reductions in concentrations of contaminants of concern. The collection of MNA samples will be discontinued while the AS/SVE extraction system remedy is being implemented. The evaluation of the aquifer attenuation capacity, as referenced in the response to EPA Comments dated May 6, 2010[1], is provide below in a summary of the initial MNA conditions and fulfills the requirements of the Groundwater Monitoring Plan. It is noted that the effectiveness of the Corrective Action will continue to be presented in the four Quarterly System Status Reports for the combined Phase 1/Phase 2 AS/SVE system in 2011

Wells that exhibited VOC concentrations in excess of the PRGs during the first quarter sampling event generally exhibited conditions conducive to reduction when compared to the wells without VOCs above the PRGs. The wells with VOC concentrations above the PRGs generally showed reduced ORP values, elevated ferrous iron concentrations, elevated alkalinity, and increased sulfide concentrations, which may indicate biotic degradation of the COCs. Further analysis (if necessary) of the groundwater attenuation and reduction capacity will not be conducted until the remedy is complete.

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[1] Response to EPA Comments Dated May 6, 2010; IEPA Comment #2 and Stantec Response #2, Stantec, June 4, 2010- IEPA Comment #2 - In future GMZ Reports and in the annual Report submitted in January, HS shall report as required pursuant to Ill. Adm. Code 620.250(a) on the effectiveness of the Corrective Action. Illinois EPA and U.S.EPA may provide comments to make Corrective action more effective.

Response #2 – HSC acknowledges this comment and will report on the mass flux from the source area and the attenuation capacity of the aquifer, as agreed to in the Groundwater Monitoring Plan (GMP), in future GMZ Reports. As stated in Section 1.0 - Introduction of the current report, "As the South Alley system was not activated prior to the completion of the fourth quarter 2009 GMZ sampling event, mass flux from the source area and the attenuation capacity of the aquifer will not be discussed in this annual report." In addition, Section 4.0 - Conclusion confirmed that, "Future annual reports will include an evaluation of the attenuation capacity of the aquifer and the estimated mass flux from the source area(s)". Please note, according to 620.250(a) the corrective action has been approved by the Agency and further reporting is not required per the regulation. However, as part of the reporting requirements in the approved OM&M Plan, quarterly AS/SVE System Performance reports will be submitted for the first four quarters of operation for each phase of the system.

4.0 CONCLUSION

This submittal has been prepared to meet the requirements of the approved Groundwater Monitoring Plan, included as Appendix I of the RAWP, using the information obtained from the GMZ quarterly groundwater monitoring activities that occurred in 2010. In addition, this annual report summarizes the methods and procedures used during the GMZ monitoring events completed in 2010.

The 2010 quarterly groundwater elevation data indicate the groundwater flow remains similar to previous years with a southwesterly flow in areas not influenced by the Phase 1 AS/SVE system and a localized west-southwest flow in portions of the Facility where groundwater elevations are influenced by the operation of the Phase 1 AS/SVE system. Stantec believes that the influences on groundwater flow direction of the Phase 1 AS/SVE are limited to areas within the vicinity of the system and that the predominant flow of groundwater is to the southwest. The average groundwater gradient for 2010 was 0.0012 ft/ft. The approximate groundwater flow based on the 2010 conditions indicates that the velocity of the groundwater is 8.9 ft/year.

The distribution of the GMZ wells compared to the direction of groundwater flow indicates that five (5) wells (SMW01, SMW02, SMW19, MW07FGA, and MW203) are upgradient of the Facility. Both SMW19 and MW203 exceeded the PRG for TCE and PCE, respectively, during all four quarterly sampling events.

Based on current conditions and compared to the general direction of groundwater flow, eight (8) wells (SMW04, SMW08, SMW20, SMW21, GMZ01, GMZ02, GMZ03, and GMZ04) are located at the downgradient boundary of the GMZ. These eight (8) well are defined as the compliance wells per the Revised Groundwater Management Zone Application dated March 7, 2008. The VOC analytical results indicate the following compounds were detected above the PRGs in the downgradient GMZ boundary wells for at least one quarter:

- 1,1-DCE (SMW21)
- PCE (SMW04, SMW08, GMZ01, ASDM01*, ASDM02*, ASDM03*, ASDM04*)
- TCE (SMW04, SMW08, GMZ01, ASDM01*, ASDM02*, ASDM03*, ASDM04*)
- VC (GMZ04, SMW04)

* ASDM01, ASDM02, ASDM03, ASDM04 were used as compliance wells during the first three quarterly sampling events until GMZ01 was installed in the fourth quarter.

Analytical results from downgradient wells SMW20, GMZ02, or GMZ03 did not exceeded PRGs during any of the quarterly sampling events. In addition, the analytes 1,1,1-TCA, 1,1,2-TCA, 1,2-DCA, 1,2-DCE, ethylbenzene, and MC did not exceed PRGs at any of the GMZ wells.

The results from the 2010 GMZ sampling indicate a continuation of decreasing concentration trends along the south property boundary downgradient wells (GMZ02, GMZ03, GMZ04, SMW20, and SMW21), see figure 8. These wells are all located downgradient of the downgradient AS/SVE system (Phase 1 AS/SVE system). The four ASDM wells (ASDM01, ASDM02, ASDM03, and ASDM04) also exhibited decreasing trends in concentrations over the last four quarters of monitoring. Two (2) of the five (5) upgradient wells continue to show concentrations of TCE (SMW19) and PCE (MW203) above PRGs. The remaining upgradient

wells (MW07FGA, SMW01, and SMW02) and downgradient wells (SMW08, SMW04) continue to show stable concentrations (See Figure 8).

The next groundwater monitoring event is planned for the first quarter of 2011.

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TABLES

Table 1
2010 Quarterly Groundwater Elevations

Hamilton Sundstrand Corporation
Plants 1/2 Facility
Rockford, Illinois
Stantec Project Number: 182602078

Well ID	Top of Casing Elevation (ft) Date	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft AMSL)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft AMSL)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft AMSL)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft AMSL)
		2/1/2010 - 2/2/2010		4/12/2010		7/10/2010		12/22/2010	
MW07FGA	727.50	26.62	700.88	26.67	700.83	26.02	701.48	26.93	700.57
MW203	728.64	27.35	701.29	27.42	701.22	26.81	701.83	27.82	700.82
SMW01	729.69	29.45	700.24	29.55	700.14	28.98	700.71	29.87	699.82
SMW02	726.68	25.92	700.76	26.05	700.63	25.45	701.23	26.31	700.37
SMW04	728.52	28.69	699.83	28.71	699.81	28.13	700.39	29.10	699.42
SMW08	728.79	28.88	699.91	28.94	699.85	28.28	700.51	29.41	699.38
SMW19	728.47	27.58	700.89	27.69	700.78	27.02	701.45	27.90	700.57
SMW20	727.68	27.59	700.09	27.86	699.82	27.12	700.56	28.10	699.58
SMW21	727.31	27.17	700.14	27.50	699.81	26.45	700.86	27.57	699.74
GMZ01	731.36	-	-	-	-	-	-	31.86	699.50
GMZ02	728.79	29.33	699.46	29.07	699.72	28.38	700.41	29.90	698.89
GMZ03	728.29	28.59	699.70	28.48	699.81	27.79	700.50	28.79	699.50
GMZ04	726.91	26.66	700.25	26.72	700.19	25.07	701.84	27.00	701.91
ASDM01	730.90	30.90	700.00	30.95	699.95	30.36	700.54	DC	-
ASDM02	730.90	30.91	699.99	30.99	699.91	30.36	700.54	DC	-
ASDM03	730.53	30.52	700.01	30.59	699.94	29.95	700.58	DC	-
ASDM04	730.80	30.85	699.95	30.90	699.90	30.34	700.46	DC	-

Notes:
DC = Discontinuted
NI = Not yet installed
ft = feet
ft BTOC = feet below top of casing
ft AMSL = feet above mean sea level

Table 2
2010 Quarterly Groundwater Quality Parameters

Hamilton Sundstrand Corporation
Plants 1/2 Facility
Rockford, Illinois
Stantec Project Number: 182602078

Parameter / Units		Temperature °C	pH S.U.	Conductivity µg/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
Stabilization Criteria		Not used for Stability	Not used for Stability	Not used for Stability	+/- 10%	+/- 10% or 0.1 if <1.0	Not used for Stability	Not used for Stability
Location	Sample Date							
MW07FGA	2/3/2010	12.39	6.83	2401	86.4	0.74	15.4	0.10
MW07FGA	4/13/2010	14.08	9.78	2215	54.5	0.24	14.7	0.03
MW07FGA	7/26/2010	20.32	6.90	2347	174.2	0.31	44.6	0.00
MW07FGA	12/28/2010	13.07	7.00	2283	108.1	0.33	23	0.13
MW203	2/3/2010	12.58	7.81	830	132.0	0.69	6.07	0.01
MW203	4/13/2010	14.65	9.57	809	33.6	0.49	3.14	0.04
MW203	7/27/2010	19.47	6.94	681	141.1	1.77	23.9	0.00
MW203	12/29/2010	13.95	6.94	598	249.1	3.60	23	0.03
SMW01	2/2/2010	12.30	7.40	1093	57.8	9.46	38.4	0.05
SMW01	4/13/2010	13.10	8.45	798	95.2	4.50	49.6	0.14
SMW01	7/26/2010	16.48	7.16	1740	104.3	7.16	42.7	0.16
SMW01	12/29/2010	12.62	7.13	1038	181.9	6.74	60	0.05
SMW02	2/2/2010	12.61	7.17	1681	77.0	7.39	279	0.41
SMW02	4/13/2010	13.70	8.65	1129	86.4	3.22	103.9	0.17
SMW02	7/26/2010	18.59	7.13	1240	147.8	5.60	185	0.09
SMW02	12/29/2010	12.30	7.04	1179	172.9	5.60	250	0.09
SMW04	2/4/2010	12.47	6.93	1130	23.3	1.48	40.8	0.13
SMW04	4/12/2010	13.99	6.53	1334	13.5	0.54	11.3	0.00
SMW04	7/27/2010	19.59	6.94	1408	98.9	0.45	18.2	0.00
SMW04	12/29/2010	13.36	6.91	1692	98.3	1.22	31	0.17
SMW08	2/4/2010	11.68	6.88	1445	20.2	1.39	37.9	0.07
SMW08	4/13/2010	14.56	9.79	1616	38.2	2.52	18.7	0.27
SMW08	7/27/2010	18.85	6.93	1345	97.0	0.98	136	0.24
SMW08	12/29/2010	12.89	6.96	1245	113.2	1.03	39	0.29
SMW19	2/4/2010	12.96	6.72	994	27.2	4.97	23.2	0.08
SMW19	4/13/2010	14.82	9.10	1063	86.1	3.40	42.2	0.05
SMW19	7/26/2010	18.50	6.99	1121	134.0	4.41	36.6	0.04
SMW19	12/29/2010	13.82	7.08	982	140.5	5.45	33	0.08
SMW20	2/8/2010	12.66	7.18	791	41.9	7.92	1.82	0.00
SMW20	4/14/2010	14.25	9.10	908	97.1	4.67	4.08	0.01
SMW20	7/27/2010	19.68	7.60	754	159.2	7.65	9.43	0.00
SMW20	12/29/2010	13.56	7.67	773	190.5	8.70	28	0.00
SMW21	2/8/2010	13.49	7.24	1058	22.8	6.36	107.6	0.09
SMW21	4/14/2010	14.63	9.03	977	44.8	5.77	11.5	0.01
SMW21	7/28/2010	19.17	7.52	1031	169.7	5.91	63.9	0.00
SMW21	12/30/2010	13.63	7.43	952	283.2	8.19	70	0.66
GMZ01	12/30/2010	12.88	7.02	1673	180.6	2.52	31	0.08
GMZ02	2/5/2010	12.12	7.31	1062	48.0	9.88	0.93	0.00
GMZ02	4/14/2010	17.54	9.11	1403	81.4	7.70	3.03	0.01
GMZ02	7/28/2010	18.65	7.56	1182	144.4	8.67	25.7	0.00
GMZ02	12/30/2010	13.42	7.81	945	256.7	9.63	8.1	0.00
GMZ03	2/9/2010	11.55	7.33	1095	29.3	8.97	2.68	0.00
GMZ03	4/14/2010	16.51	9.13	928	85.5	7.92	2.44	0.00
GMZ03	7/28/2010	19.24	7.62	895	173.5	8.80	33.5	0.00
GMZ03	12/30/2010	13.80	7.76	951	246.0	9.21	29	0.00
GMZ04	2/8/2010	12.21	7.55	780	30.7	8.01	20.8	0.00
GMZ04	4/14/2010	14.02	7.66	1134	-44.7	6.23	3.71	0.01
GMZ04	7/28/2010	20.82	7.84	825	143.5	7.74	51.9	0.00
GMZ04	12/30/2010	14.82	7.82	766	273.9	9.60	250	0.00
ASDM01	2/5/2010	11.82	6.85	1907	5.7	3.42	3.37	0.52
ASDM01	4/14/2010	16.56	9.88	2005	-47.0	4.03	21.5	1.28
ASDM01	7/28/2010	17.32	6.89	1663	27.2	1.14	9.16	0.25
ASDM02	2/5/2010	11.50	6.91	1265	-68.4	1.26	1.29	0.52
ASDM02	4/14/2010	16.34	10.10	1270	56.4	0.36	7.34	0.98
ASDM02	7/28/2010	19.02	6.97	1585	3.6	0.48	33.1	0.27
ASDM03	2/5/2010	11.41	6.79	1613	-20.0	2.70	6.24	0.60
ASDM03	4/15/2010	15.49	10.17	1595	15.1	3.42	6.18	0.84
ASDM03	7/28/2010	17.00	6.87	1839	117.7	2.13	10.34	0.03
ASDM04	2/5/2010	10.81	6.93	13.85	-119.9	0.94	4.45	>3.30
ASDM04	4/15/2010	16.02	11.58	14.18	-8.4	0.29	5.08	>3.30
ASDM04	7/28/2010	18.82	6.98	1741	-28.1	0.19	18.5	1.73

Notes:
°C = degrees celsius
S.U. = standard unit
µg/cm = micrograms per centimeter
mV = millivolts
mg/L = milligrams per liter
NTUs = Nephelometric Turbidity Units

Table 3
2010 Quarterly VOC Analytical Results - GMZ and ASDM Wells

Hamilton Sundstrand Corporation
Plants 1/2 Facility
Rockford, Illinois
Stantec Project No. 182602078

Well	Sample ID	Sample Date	Sample Type	Trichloroethene (TCE)	Methylene Chloride (Dichloromethane)	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene (Total)	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Ethylbenzene	Tetrachloroethene (PCE)	Vinyl chloride
			Preliminary Remediation Goals (PRG)[A]	0.005[c,A]	0.005[c,A]	0.007[b,c,A]	0.005[c,A]	n/v	0.2[b,c,A]	0.005[c,A]	0.7[c,A]	0.005[c,A]	0.002[c,A]
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ASDM01	HSSER-ASDM01-020510	5-Feb-10		0.018[A]	0.004 U	0.0015 NJ	0.004 U J	0.03	0.069	0.004 U J	0.004 U	0.1[A]	0.004 U J
	HSSER-ASDM01-041410-N	14-Apr-10		0.019[A]	0.0033 U	0.0022 J	0.0033 U J	0.02370	0.079	0.0033 U J	0.0033 U	0.098[A]	0.0033 U J
	HSSER-ASDM01-072810-N	28-Jul-10		0.0021	0.0010 U	0.0010 U	0.0010 U	0.00289	0.0049	0.0010 U	0.0010 U	0.016[A]	0.0010 U
ASDM02	HSSER-ASDM02-020510	5-Feb-10		0.0058[A]	0.0017 U	0.0009 NJ	0.0017 U J	0.02261	0.03	0.0017 U	0.0017 U	0.042[A]	0.0017 U
	HSSER-ASDM02-041410-N	14-Apr-10		0.0054[A]	0.0010 U	0.00094 J	0.0010 U	0.02457	0.017	0.0010 U	0.0010 U	0.024[A]	0.0010 U
	HSSER-ASDM02-072810-N	28-Jul-10		0.0024	0.0010 U	0.0010 U	0.0010 U J	0.00779	0.0059	0.0010 U	0.0010 U	0.021[A]	0.0010 U
ASDM03	HSSER-ASDM03-020510	5-Feb-10		0.0036	0.001 U	0.00029 NJ	0.001 U	0.0046	0.012	0.001 U	0.001 U	0.035[A]	0.001 U
	HSSER-ASDM03-041510-N	15-Apr-10		0.011[A]	0.0014 U	0.0012 J	0.0014 U J	0.01739	0.038	0.0014 U	0.0014 U	0.046[A]	0.0014 U
	HSSER-ASDM03-072810-N	28-Jul-10		0.0093[A]	0.0014 U	0.00067 NJ	0.0014 U	0.01007	0.030	0.0014 U	0.0014 U	0.056[A]	0.0014 U
ASDM04	HSSER-ASDM04-020510	5-Feb-10		0.0036	0.0017 U	0.00073 NJ	0.0017 U J	0.04651	0.025	0.0017 U	0.0017 U	0.014[A]	0.0017 U
	HSSER-ASDM04-041510-N	15-Apr-10		0.0062[A]	0.0010 U	0.0014	0.0010 U	0.03958	0.039	0.00031 NJ	0.0010 U	0.025[A]	0.0010 U
	HSSER-ASDM04-072810-N	28-Jul-10		0.0075[A]	0.0014 U	0.00041 NJ	0.0014 U J	0.0484	0.022	0.0014 U	0.0014 U	0.019[A]	0.0014 U
GMZ01	HS SER-GMZ01-123010-N	30-Dec-10		0.013[A]	0.0025 U J	0.0035	0.0025 U J	0.029	0.055	0.0025 U	0.0025 U	0.088[A]	0.0025 U J
GMZ02	HSSER-GMZ02-020510	5-Feb-10		0.0004 NJ	0.001 U	0.00019 NJ	0.001 U	0.0098	0.0044	0.001 U	0.001 U	0.00041 NJ	0.00038 NJ
	HSSER-GMZ02-041410-N	14-Apr-10		0.0057 U	0.0057 U J	0.0057 U	0.0057 U J	0.073	0.0049 J	0.0057 U J	0.0057 U	0.0057 U J	0.0057 U J
	HSSER-DUP03-041410-FD	14-Apr-10	Duplicate	0.0057 U	0.0057 U J	0.0057 U	0.0057 U J	0.073	0.0057	0.0057 U J	0.0057 U	0.0057 U J	0.0057 U J
	HS SER-GMZ02-072810-N	28-Jul-10		0.00073 NJ	0.0010 U	0.00032 NJ	0.0010 U	0.0044	0.0073	0.0010 U	0.0010 U	0.00083 NJ	0.0010 U
	HS SER-GMZ02-123010-N	30-Dec-10		0.00031 N	0.0010 U J	0.00031 N	0.0010 U	0.00092	0.0037	0.0010 U	0.0010 U	0.00075 NJ	0.0010 U J
GMZ03	HSSER-GMZ03-020910	9-Feb-10		0.001 U	0.001 U	0.001 U	0.001 U	0.0059	0.0036	0.001 U	0.001 U	0.00047 NJ	0.001 U
	HSSER-GMZ03-041410-N	14-Apr-10		0.0091 U	0.0091 U J	0.0091 U	0.0091 U J	0.20	0.011	0.0091 U J	0.0091 U	0.0091 U J	0.0091 U J
	HS SER-GMZ03-072810-N	28-Jul-10		0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0048	0.0024	0.0010 U	0.0010 U	0.00042 NJ	0.0010 U
	HS SER-GMZ03-123010-N	30-Dec-10		0.0010 U	0.0010 U J	0.00019 N	0.0010 U	0.0063	0.0025	0.00027 N	0.0010 U	0.00041 N	0.0010 U J
GMZ04	HSSER-GMZ04-020810	8-Feb-10		0.00028 NJ	0.001 U	0.001 U	0.001 U	0.0028	0.0046	0.001 U	0.001 U	0.00071 NJ	0.001 U
	HSSER-GMZ04-041410-N	14-Apr-10		0.0022	0.0014 U	0.0018	0.0014 U J	0.050	0.045	0.0045	0.00057 J	0.0050	0.0037[A]
	HS SER-GMZ04-072810-N	28-Jul-10		0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0014	0.0031	0.0010 U	0.0010 U	0.00041 NJ	0.0010 U
	HS SER-GMZ04-123010-N	30-Dec-10		0.0010 U	0.0010 U J	0.0010 U	0.0010 U	0.00046	0.0015	0.0010 U	0.0010 U	0.0010 U	0.0010 U J
MW07FGA	HSSER-MW7FGA-020310	3-Feb-10		0.00041 NJ	0.001 U	0.001 U	0.001 U	0.00065	0.0028	0.001 U	0.001 U	0.0015	0.001 U
	HSSER-MW07FGA-041310-N	13-Apr-10		0.00040 NJ	0.0010 U	0.0010 U	0.0010 U	0.00047	0.0018	0.0010 U	0.0010 U	0.0013	0.0010 U
	HS SER-MW07FGA-072610-N	26-Jul-10		0.00053 NJ	0.0010 U	0.0010 U	0.0010 U	0.00056	0.0017	0.0010 U	0.0010 U	0.0011	0.0010 U

Table 3
2010 Quarterly VOC Analytical Results - GMZ and ASDM Wells

Hamilton Sundstrand Corporation
Plants 1/2 Facility
Rockford, Illinois
Stantec Project No. 182602078

Well	Sample ID	Sample Date	Sample Type	Trichloroethene (TCE)	Methylene Chloride (Dichloromethane)	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene (Total)	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Ethylbenzene	Tetrachloroethene (PCE)	Vinyl chloride
			Preliminary Remediation Goals (PRG)[A]	0.005[c,A]	0.005[c,A]	0.007[b,c,A]	0.005[c,A]	n/v	0.2[b,c,A]	0.005[c,A]	0.7[c,A]	0.005[c,A]	0.002[c,A]
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	HS SER-MW07FGA-122810-N	28-Dec-10		**0.00068 NJ**	0.0010 U J	**0.00034 N**	0.0010 U	**0.00049**	**0.0041**	0.0010 U	0.0010 U	**0.0017**	0.0010 U J
MW203	HSSER-MW203-020310	3-Feb-10		**0.00031 NJ**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.01[A]	0.001 U
	HSSER-MW203-041310-N	13-Apr-10		0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.013[A]	0.0010 U
	HS SER-MW203-072710-N	27-Jul-10		0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0076[A]	0.0010 U
	HS SER-MW203-122910-N	29-Dec-10		0.0010 U	0.0010 U J	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0073[A]	0.0010 U J
SMW01	HSSER-SMW01-020210	2-Feb-10		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.00067 NJ**	0.001 U	0.001 U	**0.0013**	0.001 U
	HSSER-SMW01-041310-N	13-Apr-10		0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	**0.00046 NJ**	0.0010 U
	HS SER-SMW01-072610-N	26-Jul-10		0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	**0.0019**	0.0010 U	0.0010 U	**0.0024**	0.0010 U
	HS SER-SMW01-122910-N	29-Dec-10		0.0010 U	0.0010 U J	0.0010 U	0.0010 U	0.0010 U	**0.00090 NJ**	0.0010 U	0.0010 U	**0.0017**	0.0010 U J
SMW02	HSSER-SMW02-020210	2-Feb-10		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.00062 NJ**	0.001 U
	HSSER-SMW02-041310-N	13-Apr-10		0.0010 U	0.0010 U	0.0010 U	0.0010 U	**0.0011**	0.0010 U	0.0010 U	0.0010 U	**0.00074 J**	0.0010 U
	HS SER-SMW02-072610-N	26-Jul-10		0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	**0.00062 NJ**	0.0010 U
	HS SER-SMW02-122910-N	29-Dec-10		0.0010 U	0.0010 U J	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	**0.0011**	0.0010 U J
SMW04	HSSER-SMW04-020410	4-Feb-10		0.0081[A]	0.001 U	**0.00092 NJ**	0.001 U	**0.017**	**0.0081**	0.001 U	0.001 U	0.033[A]	**0.0015**
	HSSER-SMW04-041210-N	12-Apr-10		0.0077[A]	0.0010 U	**0.0010**	0.0010 U	**0.014**	**0.0030**	0.0010 U	0.0010 U	0.024[A]	0.0029[A]
	HS SER-SMW04-072710-N	27-Jul-10		0.0082[A]	0.0010 U	**0.00062 NJ**	0.0010 U	**0.0078**	**0.0035**	0.0010 U	0.0010 U	0.020[A]	0.0043[A]
	HS SER-SMW04-122910-N	29-Dec-10		**0.0035**	0.0014 U J	**0.00062 NJ**	0.0014 U	**0.007**	**0.0050**	0.0014 U	0.0014 U	0.037[A]	0.0014 U J
SMW08	HSSER-SMW08-020410	4-Feb-10		**0.005**	0.0017 U	**0.00056 NJ**	0.0017 U J	**0.04756**	**0.018 J**	0.0017 U	0.0017 U	0.045 J[A]	0.0017 U
	HSSER-SMW08-041310-N	13-Apr-10		0.0057[A]	0.0014 U	**0.00080 J**	0.0014 U J	**0.0432**	**0.020**	0.0014 U	0.0014 U	0.042[A]	0.0014 U
	HS SER-SMW08-072710-N	27-Jul-10		0.0059[A]	0.0025 U	**0.00069 NJ**	0.0025 U	**0.04059**	**0.029**	0.0025 U	0.0025 U	0.070[A]	*0.0025 U*
	HS SER-SMW08-122910-N	29-Dec-10		0.0058[A]	0.0020 U J	**0.00081 NJ**	0.0020 U J	**0.06256**	**0.0075**	0.0020 U	0.0020 U	0.042[A]	0.0020 U J
SMW19	HSSER-SMW19-020410	4-Feb-10		0.014[A]	0.001 U	0.001 U	0.001 U	**0.00149**	**0.00044 NJ**	0.001 U	0.001 U	**0.0018**	0.001 U
	HSSER-SMW19-041310-N	13-Apr-10		0.015[A]	0.0010 U	0.0010 U	0.0010 U	**0.0011**	**0.00058 J**	0.0010 U	0.0010 U	**0.0016**	0.0010 U
	HS SER-SMW19-072610-N	26-Jul-10		0.010[A]	0.0010 U	0.0010 U	0.0010 U	**0.00079**	**0.00030 NJ**	0.0010 U	0.0010 U	**0.0014**	0.0010 U
	HS SER-SMW19-122910-N	29-Dec-10		0.028[A]	0.0010 U J	0.0010 U	0.0010 U	**0.00311**	**0.00063 NJ**	0.0010 U	0.0010 U	**0.0017**	0.0010 U J
SMW20	HSSER-SMW20-020810	8-Feb-10		**0.0004 NJ**	0.001 U	**0.00039 NJ**	0.001 U	**0.0046**	**0.0068**	0.001 U	0.001 U	**0.00081 NJ**	0.001 U
	HSSER-DUP01-020810	8-Feb-10	Duplicate	**0.00042 NJ**	0.001 U	**0.00038 NJ**	0.001 U	**0.0049**	**0.0068**	0.001 U	0.001 U	**0.00081 NJ**	0.001 U
	HSSER-SMW20-041410-N	14-Apr-10		0.0010 U	0.0010 U	**0.00041 NJ**	0.0010 U	**0.0096**	**0.0059**	0.0010 U	0.0010 U	**0.00050 J**	0.0010 U
	HS SER-SMW20-072710-N	27-Jul-10		0.0010 U	0.0010 U	0.0010 U	0.0010 U	**0.0023**	**0.0021**	0.0010 U	0.0010 U	**0.00052 NJ**	0.0010 U

Table 3
2010 Quarterly VOC Analytical Results - GMZ and ASDM Wells

Hamilton Sundstrand Corporation
Plants 1/2 Facility
Rockford, Illinois
Stantec Project No. 182602078

Well	Sample ID	Sample Date	Sample Type	Trichloroethene (TCE)	Methylene Chloride (Dichloromethane)	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene (Total)	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Ethylbenzene	Tetrachloroethene (PCE)	Vinyl chloride
			Preliminary Remediation Goals (PRG)[A]	0.005[c,A]	0.005[c,A]	0.007[b,c,A]	0.005[c,A]	n/v	0.2[b,c,A]	0.005[c,A]	0.7[c,A]	0.005[c,A]	0.002[c,A]
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	HS SER-SMW20-122910-N	29-Dec-10		**0.00032 N**	0.0010 U J	**0.00031 N**	0.0010 U	**0.0042**	**0.0048**	0.0010 U	0.0010 U	**0.00053 NJ**	0.0010 U J
SMW21	HSSER-SMW21-020910	9-Feb-10		**0.0013 NJ**	0.0017 U	**0.0014 NJ**	0.0017 U	**0.011**	**0.053**	0.0017 U	0.0017 U	**0.0028**	0.0017 U
	HSSER-SMW21-041410-N	14-Apr-10		**0.0012 J**	0.0033 U	**0.0054**	0.0033 U J	**0.023**	**0.11**	0.0033 U J	0.0033 U	**0.0010 J**	*0.0033 U J*
	HS SER-SMW21-072810-N	28-Jul-10		*0.0057 U*	*0.0057 U J*	**0.0047 NJ**	*0.0057 U J*	**0.070**	**0.20**	*0.0057 U J*	0.0057 U	*0.0057 U J*	*0.0057 U J*
	HS SER-DUP05-072810-FD	28-Jul-10	Duplicate	*0.0067 U*	*0.0067 U J*	**0.0050 NJ**	*0.0067 U J*	**0.066**	**0.19**	*0.0067 U J*	0.0067 U	*0.0067 U J*	*0.0067 U J*
	HS SER-SMW21-123010-N	30-Dec-10		*0.0057 U*	*0.0057 U J*	0.017[A]	*0.0057 U J*	**0.044**	**0.20**	*0.0057 U J*	0.0057 U	*0.0057 U*	*0.0057 U J*
	HS SER-DUP06-123010-FD	30-Dec-10	Duplicate	*0.0057 U*	*0.0057 U J*	0.015[A]	*0.0057 U J*	**0.042**	**0.19**	*0.0057 U J*	0.0057 U	*0.0057 U*	*0.0057 U J*

Notes:

PRG	Preliminary Remediation Goals (PRGs) from ROD
A	Class 1 - Groundwater Remediation Objectives
6.5[A]	Concentration exceeds the indicated standard.
15.2	Concentration was detected but did not exceed applicable standards.
0.50 U	Laboratory estimated quantitation limit exceeded standard.
0.03 U	The analyte was not detected above the laboratory estimated quantitation limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
b,c	Oral Reference Dose and/or Reference Concentration under review by USEPA. Listed values subject to change. Value listed is also the Groundwater Quality Standard for this chemical pursuant to 35 Ill.Adm.Code 620.410 for Class I Groundwater or 35 Ill.Adm.Code 620.420 for Class II Groundwater.
c	Value listed is also the Groundwater Quality Standard for this chemical pursuant to 35 Ill.Adm.Code 620.410 for Class I Groundwater or 35 Ill.Adm.Code 620.420 for Class II Groundwater.
J	Indicates estimated value.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	Presence of an analyte is indicated. There is presumptive evidence to make a tentative identification and the associated value is an estimated quantity.

Table 4
2010 First Quarter Monitored Natural Attenuation Analytical Results

Hamilton Sundstrand Corporation
Plants 1/2 Facility
Rockford, Illinois
Stantec Project No. 182602078

Well	Sample ID	Sample Date	Sample Type	Alkalinity, Total (As CaCO3)	Ethane	Ethylene (Ethene)	Methane	Nitrite/Nitrate	Sulfate	Sulfide	Total Organic Carbon
	Preliminary Remediation Goals (PRG)[A]			n/v	n/v	n/v	n/v	n/v	400[a]	n/v	n/v
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ASDM01	HSSER-ASDM01-020510	5-Feb-10		410 J B	0.0005 U	0.0005 U	0.0005 U	3	41.0	1.4	4
ASDM02	HSSER-ASDM02-020510	5-Feb-10		450 J	0.0005 U	0.0005 U	0.00082	1.4	39.5	1.4	5
ASDM03	HSSER-ASDM03-020510	5-Feb-10		390 J B	0.0005 U	0.0005 U	0.0005 U	3.1	40.0	2.2	5
ASDM04	HSSER-ASDM04-020510	5-Feb-10		410 J B	0.0005 U	0.0005 U	0.0005 U	0.2	35.5	1.4	7
GMZ02	HSSER-GMZ02-020510	5-Feb-10		220 J B	0.0005 U	0.0005 U	0.0005 U	0.2	77.7	1.0 U	1
GMZ03	HSSER-GMZ03-020910	9-Feb-10		190 J B	0.0005 U	0.0005 U	0.0005 U	0.2	171	1.0 U	6
GMZ04	HSSER-GMZ04-020810	8-Feb-10		180 J B	0.0005 U	0.0005 U	0.0005 U	0.6	40.7	1.0 U	3
MW07FGA	HSSER-MW7FGA-020310	3-Feb-10		350 J B	0.0005 U	0.0005 U	0.0005 U	7.4	59.3	1.0 U	2
MW203	HSSER-MW203-020310	3-Feb-10		350 J B	0.0005 U	0.0005 U	0.0005 U	4.7	43.6	1.7	4
SMW01	HSSER-SMW01-020210	2-Feb-10		320 J B	0.0005 U	0.0005 U	0.0005 U	2.4	24.5	1.0	1
SMW02	HSSER-SMW02-020210	2-Feb-10		370 J B	0.0005 U	0.0005 U	0.0005 U	6.7	45.4	0.37 NJ	2
SMW04	HSSER-SMW04-020410	4-Feb-10		410 J B	0.0005 U	0.0005 U	0.2	0.9	43.8	1.0 U	2
SMW08	HSSER-SMW08-020410	4-Feb-10		430 J	0.0005 U J	0.0005 U J	0.00019 NJ	1.9	48.9	1.0 U	4
SMW19	HSSER-SMW19-020410	4-Feb-10		380 J B	0.0005 U	0.0005 U	0.0005 U	3	45.7	0.93 NJ	2
SMW20	HSSER-SMW20-020810	8-Feb-10		210 J B	0.0005 U	0.0005 U	0.0005 U	1.4	96.0	1.0 U	1 J
	HSSER-DUP01-020810	8-Feb-10	Duplicate	200 J B	0.0005 U	0.0005 U	0.0005 U	1.4	94.9	1.0 U	2 J
SMW21	HSSER-SMW21-020910	9-Feb-10		230 J B	0.0005 U	0.0005 U	0.0005 U	0.8	24.6	1.0 U	3
Equip Blank	HSSER-EBLK01-020810	8-Feb-10	Equipment Blank	< 3.3 J B	< 0.0005	< 0.0005	< 0.0005	< 0.1	< 1.00	< 1.00	0.3 NJ

Notes:

PRG	*Preliminary Remediation Goals (PRGs) from ROD*
A	Class 1 - Groundwater Remediation Objectives
6.5	Concentration exceeds the indicated standard.
15.2	Concentration was detected but did not exceed applicable standards.
0.50 U	*Laboratory estimated quantitation limit exceeded standard.*
0.03 U	The analyte was not detected above the laboratory estimated quantitation limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
a	Value listed is also the Groundwater Quality Standard for this chemical pursuant to 35 Ill.Adm.Code 620.410 for Class I Groundwater or 35 Ill.Adm.Code 620.420 for Class II Groundwater.
B	Indicates analyte was found in associated blank, as well as in the sample.
J	Indicates estimated value.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Table 5
2010 Trip, Field and Equipment Blank VOC Analytical Results

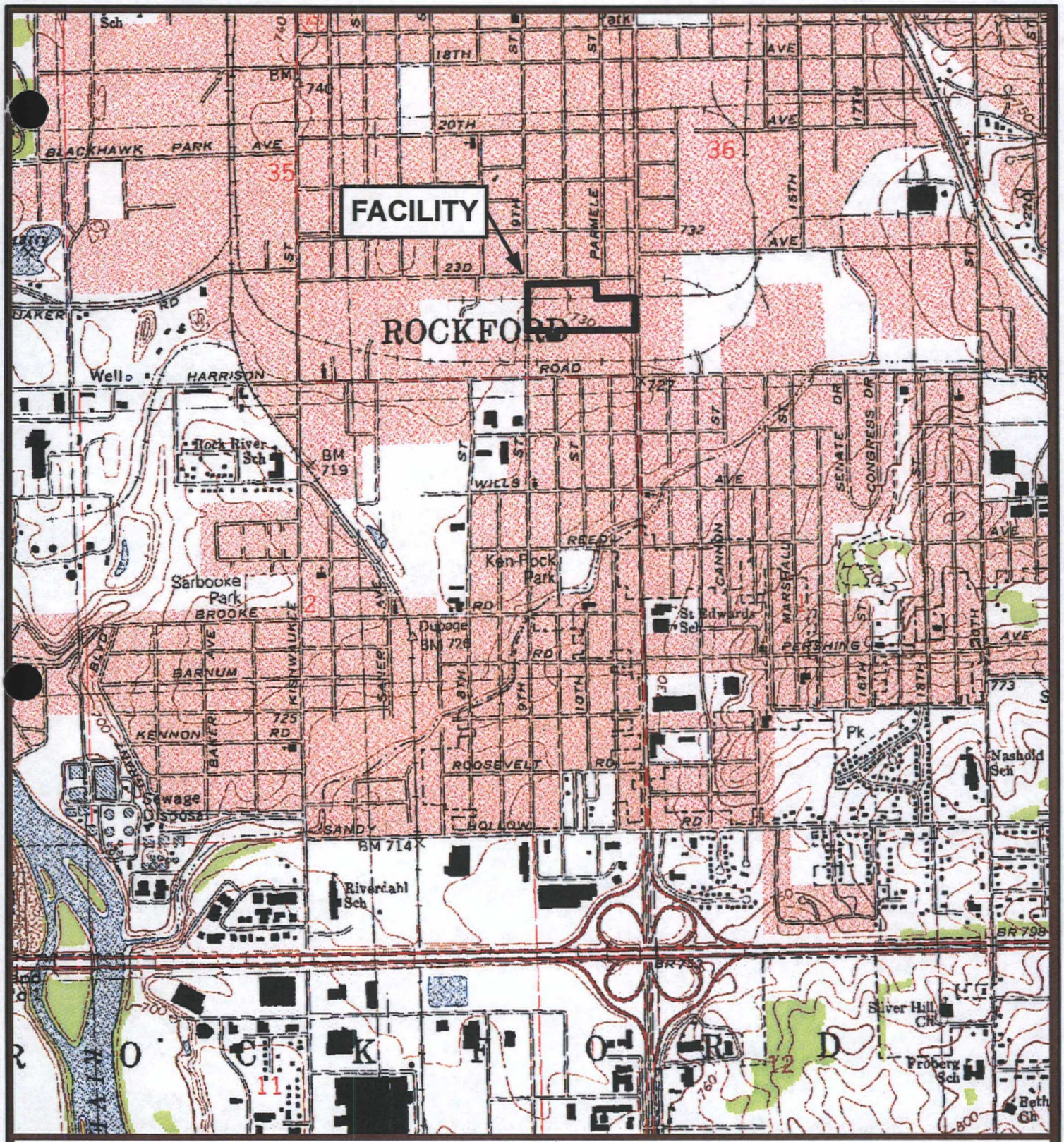
Hamilton Sundstrand Corporation
Plants 1/2 Facility
Rockford, Illinois
Stantec Project No. 182602078

Well	Sample ID	Sample Date	Sample Type	Trichloroethene (TCE)	Methylene Chloride (Dichloromethane)	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene (Total)	1,1,1-Trichloroethane,	1,1,2-Trichloroethane	Ethylbenzene	Tetrachloroethene (PCE)	Vinyl chloride
			Preliminary Remediation Goals (PRG)[A]	0.005[a][A]	0.005[a][A]	0.007[b,c][A]	0.005[c][A]	n/v	0.2[b,c][A]	0.005[c][A]	0.7[c][A]	0.005[c][A]	0.002[c][A]
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Equip Blank	HSSER-EBLK01-020810	8-Feb-10	Equipment Blank	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
	HSSER-EBLK02-041510-EB	15-Apr-10	Equipment Blank	0.0010 U	**0.0016 NJ**	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	HS SER-EBLK03-072710-EB	27-Jul-10	Equipment Blank	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	HS SER-EBLK04-123010-EB	30-Dec-10	Equipment Blank	0.0010 U	**0.00059 NJ**	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U J
Field Blank	HSSER-FBLK01-020810	8-Feb-10	Field Blank	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
	HSSER-FBLK02-041510-FB	15-Apr-10	Field Blank	0.0010 U	**0.0020 NJ**	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	HS SER-FBLK03-072710-FB	27-Jul-10	Field Blank	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	HS SER-FBLK04-123010-FB	30-Dec-10	Field Blank	0.0010 U	**0.00087 NJ**	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U J
Trip Blank	HSSER-TRIP01-020310	3-Feb-10	Trip Blank	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
	HSSER-TRIP01-020510	5-Feb-10	Trip Blank	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
	HSSER-TRIP02-020510	5-Feb-10	Trip Blank	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
	TRIP BLANK	10-Feb-10	Trip Blank	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
	HSSER-TRIP01-041410-TB	14-Apr-10	Trip Blank	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	HSSER-TRIP02-041610-TB	16-Apr-10	Trip Blank	0.0010 U	**0.00035 NJ**	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	HSSER-TRIP03-041610-TB	16-Apr-10	Trip Blank	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	HS SER-TRIP01-072710-TB	27-Jul-10	Trip Blank	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	HS SER-TRIP02-072810-TB	28-Jul-10	Trip Blank	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	HS SER-TRIP01-122910-TB	29-Dec-10	Trip Blank	0.0010 U	0.0010 U J	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U J
	HS SER-TRIP02-123010-TB	30-Dec-10	Trip Blank	0.0010 U	0.0010 U J	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U J

Notes:

PRG	Preliminary Remediation Goals (PRGs) from ROD
A	Class 1 - Groundwater Remediation Objectives
0.03 U	The analyte was not detected above the laboratory estimated quantitation limit.
15.2	Concentration was detected but did not exceed applicable standards.
n/v	No standard/guideline value.
b,c	Oral Reference Dose and/or Reference Concentration under review by USEPA. Listed values subject to change. Value listed is also the Groundwater Quality Standard for this chemical pursuant to 35 Ill.Adm.Code 620.410 for Class I Groundwater or 35 Ill.Adm.Code 620.420 for Class II Groundwater.
a	Value listed is also the Groundwater Quality Standard for this chemical pursuant to 35 Ill.Adm.Code 620.410 for Class I Groundwater or 35 Ill.Adm.Code 620.420 for Class II Groundwater.
J	Indicates estimated value.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

FIGURES



0 750 1,500 3,000 4,500 Feet

Geographic Information Systems

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AREA 9/10 REMEDIAL ACTION
SOUTHEAST ROCKFORD GROUNDWATER
CONTAMINATION SUPERFUND SITE
HAMILTON SUNDSTRAND
CORPORATION PLANT 1/2
ROCKFORD, ILLINOIS

FACILITY LOCATION MAP

FIGURE: 1

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602078	TF	SP	AG	01/05/11

LEGEND:

- GMZ Monitoring Well
- Site and GMZ Boundary

NOTES:

1) * ASDM01-04 Sampled during Q1-Q3 and abandoned on 11/8/10
2) GMZ01 Installed 12/9/10 & sampled during Q4

0 60 120 240 Feet

1 inch = 120 feet

Geographic Information Systems

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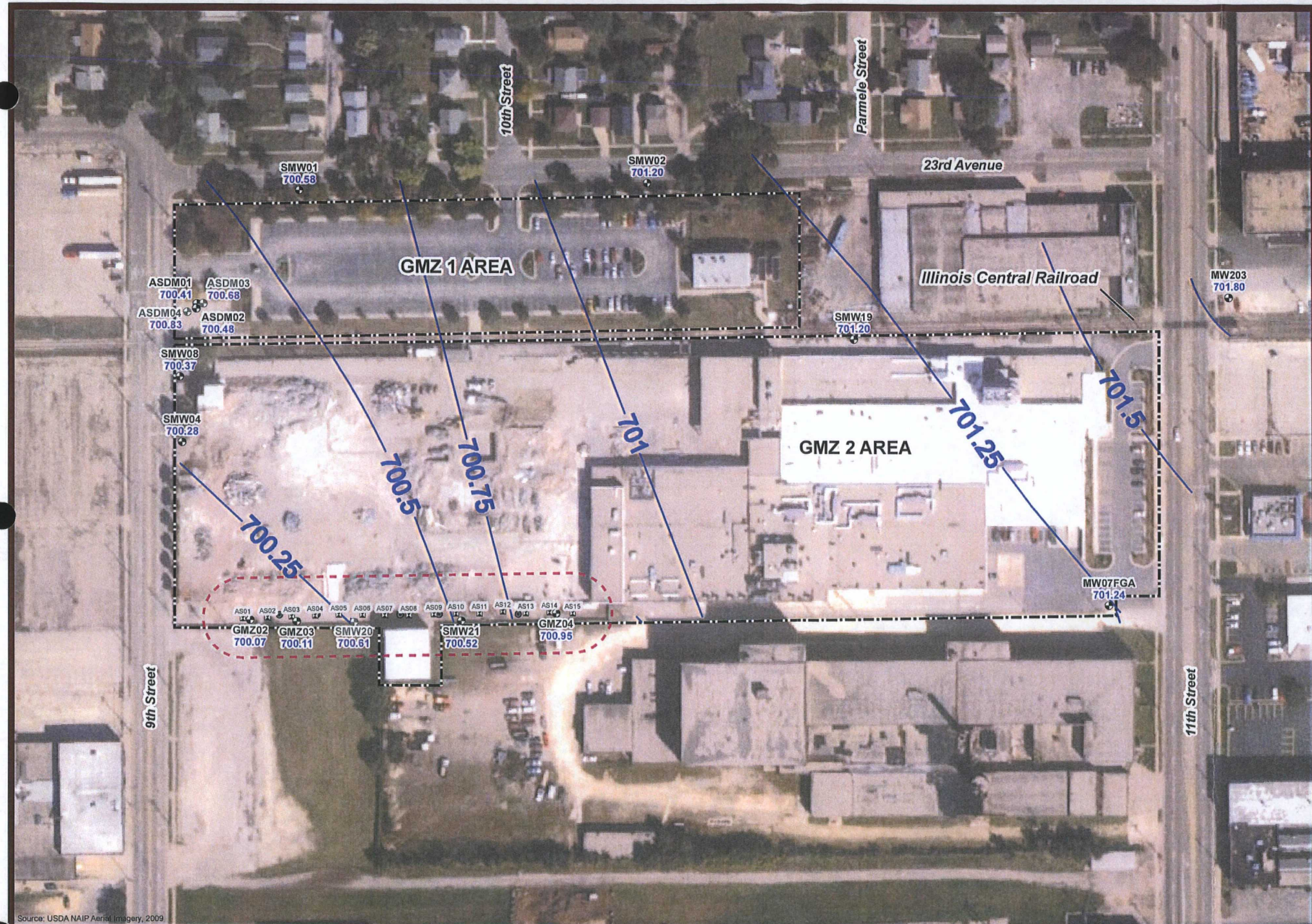
PREPARED FOR: AREA 9/10 REMEDIAL ACTION SOUTHEAST ROCKFORD GROUNDWATER CONTAMINATION SUPERFUND SITE HAMILTON SUNDSTRAND CORPORATION PLANT 1/2 ROCKFORD, ILLINOIS

GMZ WELL NETWORK

FIGURE: 2

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602078	TF	SP	AG	01/05/11



Source: USDA NAIP Aerial Imagery, 2009

LEGEND:

- GMZ Monitoring Well
- GMZ Monitoring Well (Not Contoured)
- South Alley Air Sparge
- South Alley SVE
- Site and GMZ Boundary
- Potentiometric Surface Contour
- 701.24 Groundwater Elevation (Feet)
- Approximate Extent of Phase 1 AS/SVE System Influence

NOTES:

1) Monitoring Well Screens 30-45 ft bgs

0 60 120 240 Feet

1 inch = 120 feet

Geographic Information Systems

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PREPARED FOR: AREA 9/10 REMEDIAL ACTION SOUTHEAST ROCKFORD GROUNDWATER CONTAMINATION SUPERFUND SITE HAMILTON SUNDSTRAND CORPORATION PLANT 1/2 ROCKFORD, ILLINOIS

FIRST QUARTER 2010 POTENTIOMETRIC SURFACE MAP

FIGURE: 3

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602078	TF	SP	AG	01/05/11

LEGEND:

- GMZ Monitoring Well
- GMZ Monitoring Well (Not Contoured)
- South Alley Air Sparge
- South Alley SVE
- Site and GMZ Boundary
- Potentiometric Surface Contour
- 701.24 Groundwater Elevation (Feet)
- Approximate Extent of Phase 1 AS/SVE System Influence

NOTES:

1) Monitoring Well Screens 30-45 ft bgs

N

0 60 120 240 Feet

1 inch = 120 feet

Geographic Information Systems

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SOUTHEAST ROCKFORD GROUNDWATER
CONTAMINATION SUPERFUND SITE
HAMILTON SUNDSTRAND
CORPORATION PLANT 1/2
ROCKFORD, ILLINOIS

SECOND QUARTER 2010
POTENTIOMETRIC SURFACE MAP

FIGURE: 4

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602078	TF	SP	AG	01/05/11

LEGEND:

- GMZ Monitoring Well
- GMZ Monitoring Well (Not Contoured)
- South Alley Air Sparge
- South Alley SVE
- Site and GMZ Boundary
- Potentiometric Surface Contour
- 701.24 Groundwater Elevation (Feet)
- Approximate Extent of Phase 1 AS/SVE System Influence

NOTES:

1) Monitoring Well Screens 30-45 ft bgs

0 60 120 240 Feet

1 inch = 120 feet

Geographic Information Systems

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AREA 9/10 REMEDIAL ACTION
SOUTHEAST ROCKFORD GROUNDWATER
CONTAMINATION SUPERFUND SITE
HAMILTON SUNDSTRAND
CORPORATION PLANT 1/2
ROCKFORD, ILLINOIS

THIRD QUARTER 2010
POTENTIOMETRIC SURFACE MAP

FIGURE: 5

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602078	TF	SP	AG	01/05/11

LEGEND:

- GMZ Monitoring Well
- South Alley Air Sparge
- South Alley SVE
- Site and GMZ Boundary
- Potentiometric Surface Contour
- 701.24 Groundwater Elevation (Feet)
- Approximate Extent of Phase 1 AS/SVE System Influence

NOTES:

1) Monitoring Well Screens 30-45 ft bgs

0 60 120 240 Feet

1 inch = 120 feet

Geographic Information Systems

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SOUTHEAST ROCKFORD GROUNDWATER CONTAMINATION SUPERFUND SITE
HAMILTON SUNDSTRAND CORPORATION PLANT 1/2
ROCKFORD, ILLINOIS

FOURTH QUARTER 2010
POTENTIOMETRIC SURFACE MAP

FIGURE: 6

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602078	TF	SP	AG	01/05/11

ASDM03		
Date	TCE	PCE
2/5/2010	<PRG	0.035
4/15/2010	0.011	0.046
7/28/2010	0.0093	0.056

ASDM02		
Date	TCE	PCE
2/5/2010	0.0058	0.042
4/14/2010	0.0054	0.024
7/28/2010	<PRG	0.021

SMW19	
Date	TCE
2/4/2010	0.014
4/13/2010	0.015
7/26/2010	0.01
12/29/2010	0.028

ASDM01		
Date	TCE	PCE
2/5/2010	0.018	0.1
4/14/2010	0.019	0.098
7/28/2010	<PRG	0.016

ASDM04		
Date	TCE	PCE
2/5/2010	<PRG	0.014
4/15/2010	0.0062	0.025
7/28/2010	0.0075	0.019

GMZ01		
Date	TCE	PCE
12/30/2010	0.013	0.088

SMW08		
Date	TCE	PCE
2/4/2010	<PRG	0.045 J
4/13/2010	0.0057	0.042
7/27/2010	0.0059	0.07
12/29/2010	0.0058	0.042

SMW04			
Date	TCE	PCE	Vinyl Chloride
2/4/2010	0.0081	0.033	<PRG
4/12/2010	0.0077	0.024	0.0029
7/27/2010	0.0082	0.02	0.0043
12/29/2010	<PRG	0.037	<PRG

MW203	
Date	PCE
2/3/2010	0.01
4/13/2010	0.013
7/27/2010	0.0076
12/29/2010	0.0073

SMW21	
Date	1,1-DCE
2/9/2010	<PRG
4/14/2010	<PRG
7/28/2010	<PRG
12/30/2010	0.017

GMZ04	
Date	Vinyl Chloride
2/8/2010	<PRG
4/14/2010	0.0037
7/28/2010	<PRG
12/30/2010	<PRG

Source: USDA NAIP Aerial Imagery, 2009

Geographic Information Systems

LEGEND:

- GMZ Monitoring Well
- Site and GMZ Boundary

NOTES:

1) * ASDM01-04 Sampled during Q1-Q3 and abandoned on 11/8/10
2) GMZ01 Installed 12/9/10 & sampled during Q4
3) Values are listed only for those wells in which a VOC was identified above the PRG for any sampling event

Preliminary Remediation Goal (PRG)	
TCE	0.005 (mg/L)
PCE	0.005 (mg/L)
Vinyl Chloride	0.002 (mg/L)
1,1 Dichloroethene	0.007 (mg/L)

N

0 75 150 300 Feet

1 inch = 150 feet

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PREPARED FOR
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SOUTHEAST ROCKFORD GROUNDWATER
CONTAMINATION SUPERFUND SITE
HAMILTON SUNDSTRAND
CORPORATION PLANT 1/2
ROCKFORD, ILLINOIS

QUARTERLY GMZ VOC
ANALYTICAL RESULTS
EXCEEDING THE PRG

FIGURE: 7

JOB NUMBER	DRAWN BY	CHECKED BY	APPROVED BY	DATE
182602078	TF	SP	AG	01/05/11

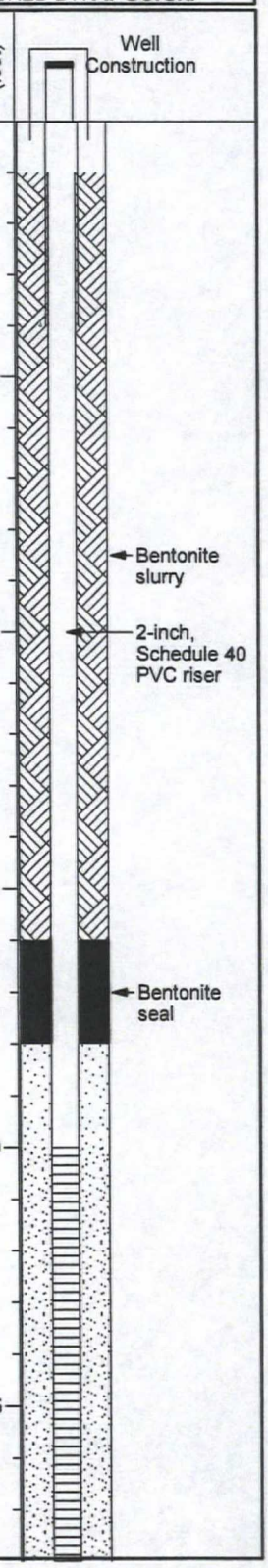
Stantec

APPENDIX A

Boring and Well Construction Log
GMZ01

PROJECT: **Hamilton Sundstrand - Plant #1** LOCATION: **2421 11th Street, Rockford, Illinois** PROJECT NUMBER: **182602078.202.21422**	WELL / PROBEHOLE / BOREHOLE NO: **GMZ01** PAGE 1 OF 2
DRILLING / INSTALLATION: STARTED **12/9/10** COMPLETED: **12/9/10** DRILLING COMPANY: **CS Drilling** DRILLING EQUIPMENT: **Geoprobe 6620DT** DRILLING METHOD: **hollow stem auger** SAMPLING EQUIPMENT: **2-inch by 60-inch sampler**	NORTHING (ft): EASTING (ft): LAT: LONG: GROUND ELEV (ft): TOC ELEV (ft): INITIAL DTW (ft): **30** WELL DEPTH (ft): **45.0** STATIC DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **45.0** WELL CASING DIA. (in): **2** BOREHOLE DIA. (in): **6.25** LOGGED BY: **A. Riemer** CHECKED BY: **A. Gorski**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
09:10		CL	**CLAY** ; CL; **CLAY FILL**			5				
			GRAVEL FILL; approximately 6 inches							
09:40 5		CL-ML	**SILTY CLAY** ; CL-ML; 10 YR 3/1 very dark gray; low plasticity; medium stiff; moist; no odor		09:10 GMZ01 (5')			0.2	5	
		SP	**SAND** ; SP; 7.5 YR 4/4 brown; coarse-grained; loose; moist; no odor; poorly graded			2.5				Bentonite slurry
09:45 10			...same as above, 10 YR 5/4 yellowish brown		09:40 GMZ01 (10')			1.5	10	2-inch, Schedule 40 PVC riser
						2				
10:10 15		SW	**SAND** ; SW; 10 YR 5.4 yellowish brown; fine to coarse-grained; loose; moist; no odor; well graded		09:45 GMZ01 (15')			1.1	15	
						2				Bentonite seal
			...same as above		10:10 GMZ01 (20')			1.2		
10:25 20		ML	**SILT** ; ML; 10 YR 5/4 yellowish brown; non plastic; dense; moist; no odor						20	
						2				
10:40 25		SW	**SAND** ; SW; 10 YR 5/4 yellowish brown; fine to coarse-grained; loose; moist; no odor; well graded		10:25 GMZ01 (25')			1.5	25	
						3				



PROJECT: **Hamilton Sundstrand - Plant #1** LOCATION: **2421 11th Street, Rockford, Illinois** PROJECT NUMBER: **182602078.202.21422**	WELL / PROBEHOLE / BOREHOLE NO: **GMZ01** PAGE 2 OF 2
DRILLING / INSTALLATION: STARTED **12/9/10** COMPLETED: **12/9/10** DRILLING COMPANY: **CS Drilling** DRILLING EQUIPMENT: **Geoprobe 6620DT** DRILLING METHOD: **hollow stem auger** SAMPLING EQUIPMENT: **2-inch by 60-inch sampler**	NORTHING (ft): EASTING (ft): LAT: LONG: GROUND ELEV (ft): TOC ELEV (ft): INITIAL DTW (ft): **30** WELL DEPTH (ft): **45.0** STATIC DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **45.0** WELL CASING DIA. (in): **2** BOREHOLE DIA. (in): **6.25** LOGGED BY: **A. Riemer** CHECKED BY: **A. Gorski**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
11:00 30		SP	**SAND SOME FINE GRAVEL** ; SP; 10 YR 5/4 yellowish brown; coarse-grained; loose; saturated to wet; no odor; poorly graded; trace cobbles		10:40 GMZ01 (30')	3		2.5	30	Coarse sand filter pack; 2-inch, Schedule 40 PVC 0.010-inch slotted screen
11:15 35			...same as above		11:00 GMZ01 (35')	2.5		0.3	35	
11:30 40		SW	**SAND** ; SW; 10 YR 5/4 yellowish brown; fine to medium-grained; dense; wet; no odor; well graded		11:15 GMZ01 (40')	1.5		0.0	40	
45			...same as above; 2.5 Y 5/3 light olive brown; loose to medium dense; fine to coarse-grained Borehole terminated at 45 feet.		11:30 GMZ01 (45')			0.0	45	
50									50	
55									55	

APPENDIX B

Stantec

APPENDIX B

Quarterly Groundwater Sampling Data Sheets
Quarter 1 - 2/1/10 to 2/5/10, 2/8/10 to 2/10/10
Quarter 2 - 4/12/10 to 4/16/10
Quarter 3 - 7/26/10 to 7/28/10
Quarter 4 - 12/28/10 to 12/30/10

QUARTER 1

GROUNDWATER ELEVATION LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Sampler Name(s): Coulter Wood, Brian Campbell

Water Meter (WM) Make and Model: Solinst WLM 101

Date: 2/1/10

Length of water meter tip to sensor: 0.28 feet

Weather: Overcast, 27°F

Time	Well ID	Approx. Well Depth (from TOC)	Date Measured	PID	Depth to Groundwater (from TOC)	Depth to Bottom (DTB) (from TOC)	True (DTB + WM tip to sensor)	Well Condition Notes
1415	MW07FGA	46.93	2/1/10	0.5	26.62	46.71	46.99	2 of 3 bolts present, both stripped
1557	MW203	49.55	2/2/10	0.2	27.35	49.35	49.63	good – downwell apparatus present
1355	SMW01	39.80	2/1/10	1.0	29.45	39.57	39.85	3 bolts present but all stripped
1405	SMW02	40.40	2/1/10	0.4	25.92	40.21	40.49	3 bolts present but all stripped
1552	SMW04	42.70	2/1/10	1.2	28.69	42.39	42.67	all 3 bolts missing
1527	SMW08	42.10	2/1/10	5.3	28.88	41.79	42.07	2 bolts present (of 3) both stripped
1456	SMW19	41.04	2/1/10	1.5	27.58	41.00	41.28	3-bolt lid on 2-bolt rim; no bolts.
1624	SMW20	40.30	2/1/10	0.7	27.59	40.07	40.35	1 eyelet broken, the other stripped (2 total)
1631	SMW21	41.50	2/1/10	0.8	27.17	41.24	41.52	~~good~~ BSC both bolts missing
	GMZ01	not yet installed						
1548	GMZ02	44.51	2/1/10	2.9	29.33	44.65	44.93	good
1619	GMZ03	44.51	2/1/10	6.2	28.59	44.55	44.83	good
1642	GMZ04	45.08	2/1/10	1.3	26.66	45.14	45.42	good
1512	ASDM01	43.00	2/1/10	41.9	30.90	42.89	43.17	good
1514	ASDM02	43.24	2/1/10	170.2	30.91	43.26	43.54	good
1517	ASDM03	42.71	2/1/10	79.3	30.52	42.27	42.55	PVC cover broke during removal
1519	ASDM04	43.23	2/1/10	36.8	30.85	43.31	43.59	good
1445	RAMW01	45.82	2/1/10	1.0	28.92	~~47.84~~ 45.84 BSC	46.12	
1435	RAMW02	44.65	2/1/10	0.8	28.88	44.69	44.97	3 bolts present, all good
1608	RAMW03	45.12	2/1/10	18.2	28.51	45.10	45.38	good
1609	RAMW04	43.74*	2/1/10	57.8	31.96	48.43	~~48.81~~ 48.71 BSC	BSC lock bent – won't close
1656	RAMW05	43.86	2/1/10	57.9	27.42	43.72	44.00	good
1646	RAMW06	44.33	2/1/10	194.3	27.43	44.11	44.39	good
1651	RAMW07	43.92*	2/1/10	94.2	31.88	48.40	48.68	good
1703	RAMW08	43.68*	2/1/10	107.2	28.02	44.12	44.40	good

* Additional casing was added.

All measurements must be to nearest 0.01 feet.

Quarterly Sampling Pump Depth Calculation Sheet DRAFT

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois
Stantec Project Number: 182602078

Well ID	Elevation of Top of Casing (ft amsl)	Depth to Bottom of screen (ft)	Screen length (ft)	Depth to Top of screen (ft)	Depth to GW from TOC (ft)	Calculated Pump Depth
MW07FGA	727.60	47.15	NI	NI	26.67	36.91
MW203	728.70	49.64	NI	NI	27.41	38.53
SMW01	729.76	39.85	15	24.85	29.41 ~~29.45~~	36.43
SMW02	726.76	40.40	15	25.40	25.89	33.15
SMW04	728.59	42.80	15	27.80	28.71	35.76
SMW08	728.84	42.10	15	27.10	28.92	~~35.51~~
SMW19	728.78	41.04	15	26.04	27.65	34.35
SMW20	728.20	40.41	15	25.41	27.66	34.04
SMW21	727.69	41.54	15	26.54	27.30	34.42
GMZ01	NYI					
GMZ02	NS	44.51	15	29.51	28.78	37.01
GMZ03	NS	44.51	15	29.51	28.66	37.01
GMZ04	NS	45.08	15	30.08	26.88	37.58
ASDM01	730.96	43.63	15	28.63	30.86	~~36.73~~ 37.25
ASDM02	730.96	44.05	15	29.05	30.90	37.48
ASDM03	730.58	42.71	15	27.71	30.51	36.61
ASDM04	730.72	43.7	15	28.70	30.81	37.26
RAMW01	729.26	46.10	15	31.10	28.93	37.43 37.43
RAMW02	729.25	44.93	15	29.93	28.92	~~37.43~~ ~~36.42~~
RAMW03	729.25	45.40	15	30.40	28.77	37.90
RAMW04	728.08	43.74	15	28.74	32.03	~~41.71~~ 37.89
RAMW05	728.12	43.99	15	28.99	27.47	36.49
RAMW06	728.10	44.39	15	29.39	27.52	36.89
RAMW07	728.09	~~43.90~~ 48.10	15	~~28.90~~ 33.40	31.98	40.90
RAMW08	728.23	43.74	15	28.74	28.07	36.24

NYI = Not yet installed
NI = No information
NS = not surveyed
ft amsl = feet above mean sea level

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	2/3/10	Well ID:	MW07FGA
Weather:	Sunny, 19°F	Site Name:	HSC UTC - SER
Personnel:	Campbell	Site Location:	Rockford, Illinois
	Wood	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	26.67	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	46.71	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	20.04	(ft)	Start time	1056
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	460
2" dl. well, V(gal) = 0.5 x LWC,	10.0	(gal)	Pump Depth (ft) :	37.0
4" dl., V(gal) = 2 x LWC; 1" dl., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	6	(gal)	Final Depth to Groundwater:	26.67

Sample ID: HS SER - MW07FGA - 020310 Sample Time: 1131

Duplicate Sample if any: —

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ~~ppm~~ mg/L
1131	12.39	6.83	2401	86.4	0.74	15.4	0.10

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	clear	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
500 ml plastic	1	Zinc	Sulfide 376.1	✓	
40 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: MW07FGA DATE: 2/3/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1056	9.76	6.96	1929	122.2	7.90	49.8
2	1057	-	-	-	117.9	2.92	-
3	1058	-	-	-	117.0	2.58	-
4	1059	-	-	-	116.4	2.46	-
5	1100	-	-	-	116.8	2.21	-
6	1101	12.06	6.93	2271	117.6	1.88	37.4
7	1102	-	-	-	119.5	1.72	-
8	1103	-	-	-	120.5	1.61	-
9	1104	-	-	-	113.7	1.45	-
10	1105	-	-	-	116.8	1.34	-
11	1106	12.25	6.95	2287	118.5	1.17	33.8
12	1107	-	-	-	117.9	1.20	-
13	1108	-	-	-	117.5	1.39	-
14	1109	-	-	-	114.5	1.46	-
15	1110	-	-	-	111.0	1.54	-
16	1111	12.33	6.91	2302	105.7	1.82	30.0
17	1112	-	-	-	100.9	1.71	-
18	1113	-	-	-	97.3	1.62	-
19	1114	-	-	-	95.5	1.48	-
20	1115	-	-	-	93.8	1.37	-
21	1116	12.33	6.85	2317	92.3	1.28	24.9
22	1117	-	-	-	89.8	1.12	-
23	1118	-	-	-	90.5	1.09	-
24	1119	-	-	-	91.5	1.00	-
25	1120	-	-	-	91.7	1.00	-
26	1121	12.24	6.71	2335	92.1	0.92	23.7
27	1122	-	-	-	90.9	0.88	-
28	1123	-	-	-	91.1	0.84	-
29	1124	-	-	-	91.8	0.83	-
30*	1125	-	-	-	91.5	0.80	-
31	1126	12.56	6.78	2397	86.6	0.81	23.1
32	1127	-	-	-	83.1	0.77	-
33	1128	-	-	-	83.0	0.76	-
34	1129	-	-	-	83.3	0.75	-
35	1130	-	-	-	84.2	0.72	-
36	1131	12.39	6.83	2401	86.4	0.74	15.4
37							
38							
39							
40							
41							
42							
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- Called PM - instructed to sample,

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled: 2/3/10

Weather: Partly cloudy, 19°F

Personnel: Campbell, Wood

Well ID: MW203

Site Name: HSC UTC - SER

Site Location: Rockford, Illinois

Project Number: 182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC: 27.41 (ft)

Depth of Well from TOC: 49.35 (ft)

Length of Water Column (LWC): 21.94 (ft)

Purge Volume (V)= 3x Well Volume for:

2" di. well, V(gal) = 0.5 x LWC, 10.97 (gal)

4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC

Total Volume Purged 5 (gal)

Water Purging Method: low flow

Pump Brand and ID: QED Sample Pro

Start time 0925

Pump Rate (ml/min): 480

Pump Depth (ft) : 38.5

Did well go dry? yes ____ no ✓

Final Depth to Groundwater: 27.41

Sample ID: HSSER - MW203 - 020310

Sample Time: 0955

Duplicate Sample if any:

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ~~ppm~~ mg/L
0955	12.58	7.81	830	132.0	0.69	6.07	0.01

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging: / **At Sampling:**

	Start of Purging	At Sampling
Color	clear	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
500 ml plastic	1	Zinc	Sulfide 376.1	✓	
40 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: MW203 DATE: 2/3/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	0925	8.48	5.58	646	158.2	7.33	42.0
2	0926	–	–	–	140.2	3.93	–
3	0927	–	–	–	136.1	2.94	–
4	0928	–	–	–	132.4	2.10	–
5	0929	–	–	–	123.9	1.68	–
6	0930	12.51	6.81	779	127.8	1.51	15.0
7	0931	–	–	–	133.6	1.39	–
8	0932	–	–	–	133.4	1.46	–
9	0933	–	–	–	133.6	1.40	–
10	0934	–	–	–	134.0	1.30	–
11	0935	12.54	7.27	817	136.3	0.88	7.50
12	0936	–	–	–	135.6	0.76	–
13	0937	–	–	–	135.5	0.82	–
14	0938	–	–	–	135.7	0.86	–
15	0939	–	–	–	137.2	1.36	–
16	0940	12.54	7.19	820	135.4	1.86	4.85
17	0941	–	–	–	134.6	0.73	–
18	0942	–	–	–	139.3	0.81	–
19	0943	–	–	–	139.2	0.77	–
20	0944	–	–	–	138.9	0.78	–
21	0945	12.62	7.62	823	137.7	0.75	4.84
22	0946	–	–	–	136.9	0.67	–
23	0947	–	–	–	MISSED		–
24	0948	–	–	–	READINGS		–
25	0949	–	–	–			–
26	0950	12.03	7.75	776	135.1	0.89	7.60
27	0951	–	–	–	134.8	0.81	–
28	0952	–	–	–	134.0	0.84	–
29	0953	–	–	–	133.7	0.76	–
30*	0954	–	–	–	132.6	0.70	–
31	0955	12.58	7.81	830	132.0	0.69	6.07
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Called PM – instructed to sample.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled: 2/2/10

Weather: light snow, 28°F

Personnel: Campbell & Wood

Well ID: SMW01

Site Name: HSC UTC - SER

Site Location: Rockford, Illinois

Project Number: 182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC: 29.41 (ft)

Depth of Well from TOC: 39.57 (ft)

Length of Water Column (LWC): 10.16 (ft)

Purge Volume (V)= 3x Well Volume for:

2" di. well, V(gal) = 0.5 x LWC, 5.1 (gal)

4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC

Total Volume Purged ~~[illegible]~~ 5 (gal)

Water Purging Method: low flow

Pump Brand and ID: QED Sample Pro

Start time 1315

Pump Rate (ml/min): 455

Pump Depth (ft): 34.5

Did well go dry? yes no ✓

Final Depth to Groundwater: 29.42

Sample ID: HS SER-SMW01-020210

Sample Time: 1337

Duplicate Sample if any: —

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ~~ppm~~ mg/L
1337	12.30	7.40	1093	57.8	9.46	~~[illegible]~~ 38.4	0.05

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging: **At Sampling:**

	Start of Purging	At Sampling
Color	orange	clear
Odor	none	none
Turbidity	high	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
5[illegible] plastic	1	Zinc	Sulfide 376.1	✓	
40 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW01 DATE: 2/2/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1317	10.20	7.65	1021	71.2	9.73	318
2	1318	—	—	—	—	—	—
3	1319	11.86	7.47	1057	65.5	10.39	—
4	1320	11.99	7.45	1059	63.3	~~63.8~~ 9.98	—
5	1321	—	—	—	61.3	9.72	—
6	1322	12.16	7.45	1071	57.3	9.59	222
7	1323	—	—	—	57.0	9.79	—
8	1324	—	—	—	56.8	9.81	—
9	1325	—	—	—	56.8	9.59	—
10	1326	—	—	—	56.8	9.58	—
11	1327	12.30	7.40	1088	56.7	9.64	131
12	1328	—	—	—	57.1	9.96	—
13	1329	—	—	—	57.8	10.07	—
14	1330	—	—	—	58.3	9.85	—
15	1331	—	—	—	58.7	9.76	—
16	1332	12.29	7.38	1094	58.8	9.71	69.4
17	1333	—	—	—	57.6	9.73	—
18	1334	—	—	—	58.5	9.68	—
19	1335	—	—	—	58.9	9.60	—
20	1336	—	—	—	58.8	9.55	—
21	1337	12.30	7.40	1095	57.8	9.46	38.4
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	2/2/10	Well ID:	SMW02
Weather:	Light snow, 31°F	Site Name:	HSC UTC - SER
Personnel:	Campbell	Site Location:	Rockford, Illinois
	Wood	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	25.89	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	40.21	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	14.32	(ft)	Start time	1502
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	340
2" di. well, V(gal) = 0.5 x LWC,	7.2	(gal)	Pump Depth (ft) :	33.3
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	4	(gal)	Final Depth to Groundwater:	25.89

Sample ID: HS SER-SMW02-020210 Sample Time: 1522

Q/C Sample if any: —

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ~~ppm~~ mg/L
1522	12.61	7.17	1681	77.0	7.39	279	0.41

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	orange	orange
Odor	none	none
Turbidity	high	moderate
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
50 plastic	1	Zinc	Sulfide 376.1	✓	
40 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW02 DATE: 2/2/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1502	9.35	7.17	1530	84.6	10.02	1373
2	1503	–	–	–	82.1	8.71	–
3	1504	–	–	–	81.0	8.63	–
4	1505	–	–	–	79.0	8.22	–
5	1506	–	–	–	80.2	8.02	–
6	1507	12.58	7.15	1713	80.5	7.75	2030
7	1508	–	–	–	82.4	7.62	–
8	1509	–	–	–	81.7	7.50	–
9	1510	–	–	–	82.0	7.45	–
10	1511	–	–	–	83.7	7.43	–
11	1512	12.78	7.09	1706	82.0	7.35	1187
12	1513	–	–	–	81.9	7.29	–
13	1514	–	–	–	80.9	7.24	–
14	1515	–	–	–	81.4	7.38	–
15	1516	–	–	–	80.1	7.35	–
16	1517	12.82	7.13	1699	79.3	7.34	381
17	1518	–	–	–	79.7	7.37	–
18	1519	–	–	–	78.4	7.27	–
19	1520	–	–	–	79.0	7.38	–
20	1521	–	–	–	77.9	7.40	–
21	1522	12.61	7.17	1681	77.0	7.39	279
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	2/4/10	Well ID:	SMW04
Weather:	Overcast 28°F	Site Name:	HSC UTC - SER
Personnel:	Campbell	Site Location:	Rockford, Illinois
	Wood	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	28.71	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	42.67	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	13.96	(ft)	Start time	1542
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	390
2" di. well, V(gal) = 0.5 x LWC,	7.0	(gal)	Pump Depth (ft) :	35.8
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes no ✓
Total Volume Purged	3	(gal)	Final Depth to Groundwater:	28.72

Sample ID: HSSER-SMW04-020410 Sample Time: 1607

Sample if any: —

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ~~ppm~~ mg/L
1607	12.47	6.93	1130	23.3	1.48	40.8	0.13

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging: **At Sampling:**

Color	tan	clear
Odor	None	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
50[illegible] plastic	1	Zinc	Sulfide 376.1	✓	
[illegible]0 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ~~SMW08BC~~ SMW04 DATE: 2/4/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1542	10.37	7.20	1021	37.2	3.52	184
2	1543	–	–	–	35.0	3.12	–
3	1544	–	–	–	28.5	2.04	–
4	1545	–	–	–	25.5	1.68	–
5	1546	–	–	–	23.1	1.55	–
6	1547	12.69	7.00	1088	21.2	1.51	96.0
7	1548	–	–	–	21.1	1.48	–
8	1549	–	–	–	21.1	1.50	–
9	1550	–	–	–	21.0	1.55	–
10	1551	–	–	–	21.0	1.59	–
11	1552	12.55	6.98	1087	21.5	1.59	93.9
12	1553	–	–	–	22.0	1.59	–
13	1554	–	–	–	22.7	1.50	–
14	1555	–	–	–	23.1	1.49	–
15	1556	–	–	–	MISSED	READING	–
16	1557	12.55	6.95	1112	23.1	1.53	72.2
17	1558	–	–	–	23.0	1.49	–
18	1559	–	–	–	23.2	1.49	–
19	1600	–	–	–	23.5	1.54	–
20	1601	–	–	–	23.6	1.54	–
21	1602	12.50	6.94	1124	23.5	1.52	66.5
22	1603	–	–	–	23.4	1.55	–
23	1604	–	–	–	23.6	1.55	–
24	1605	–	–	–	23.3	1.54	–
25	1606	–	–	–	23.4	1.50	–
26	1607	12.47	6.93	1130	23.3	1.48	40.8
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	2/4/10	Well ID:	SMW08
Weather:	Overcast, 20°F	Site Name:	HSC UTC - SER
Personnel:	Campbell	Site Location:	Rockford, Illinois
	Wood	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	28.92	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	42.07	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	13.15	(ft)	Start time	1406
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	440
2" dl. well, V(gal) = 0.5 x LWC,	6.6	(gal)	Pump Depth (ft) :	35.5
4" dl., V(gal) = 2 x LWC; 1" dl., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	5	(gal)	Final Depth to Groundwater:	28.90

Sample ID: HSSER-SMW08-020410 Sample Time: 1441

Sample if any: HSSER-MS02-020410, HSSER-MSD02-020410

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ~~ppm~~ mg/L
1441	11.68	6.88	1445	20.2	1.39	37.9	0.07

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging: **At Sampling:**

Color	orange	clear
Odor	none	none
Turbidity	high	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	collected MS/MSD
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
50 plastic	1	Zinc	Sulfide 376.1	✓	
40 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW08 DATE: 2/4/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)	
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA	
1	1406	9.14	6.91	1330	49.0	6.24	296	
2	1407	–	–	–	41.2	5.15	–	
3	1408	–	–	–	31.6	2.80	–	
4	1409	–	–	–	28.8	2.39	–	
5	1410	–	–	–	26.8	2.21	–	
6	1411	11.65	6.84	1434	23.7	2.14	317	
7	1412	–	–	–	22.5	2.19	–	
8	1413	–	–	–	21.6	2.17	–	
9	1414	–	–	–	21.3	2.18	–	
10	1415	–	–	–	21.1	2.17	–	
11	1416	11.54	6.85	1416	20.2	2.22	294	
12	1417	–	–	–	19.7	2.17	–	
13	1418	–	–	–	19.2	2.23	–	
14	1419	–	–	–	20.0	2.37	–	
15	1420	–	–	–	20.3	2.44	–	
16	1421	11.71	6.86	1427	20.4	2.23	219	Tightened seal between tubing and flow cell; some air bubbles were entering line.
17	1422	–	–	–	20.0	1.86	–	
18	1423	–	–	–	20.0	1.75	–	
19	1424	–	–	–	19.8	1.73	–	
20	1425	–	–	–	19.4	1.69	124	
21	1426	11.94	6.88	1443	19.4	1.66	150	
22	1427	–	–	–	19.5	1.68	–	
23	1428	–	–	–	19.6	1.67	–	
24	1429	–	–	–	19.6	1.59	–	
25	1430	–	–	–	19.8	1.59	–	
26	1431	11.65	6.88	1440	19.6	1.52	94.7	
27	1432	–	–	–	20.0	1.45	–	
28	1433	–	–	–	20.5	1.45	–	
29	1434	–	–	–	20.0	1.43	–	
30*	1435	–	–	–	20.2	1.39	–	
31	1436	11.81	6.88	1450	20.3	1.36	57.2	
32	1437	–	–	–	20.6	1.43	–	
33	1438	–	–	–	20.5	1.39	–	
34	1439	–	–	–	20.3	1.42	–	
35	1440	–	–	–	20.3	1.41		PM instructed to sample.
36	1441	11.68	6.88	1445	20.2	1.39	37.9	
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	2/4/10	Well ID:	SMW19
Weather:	Overcast, 29°F	Site Name:	HSC UTC - SER
Personnel:	Campbell	Site Location:	Rockford, Illinois
	Wood	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	27.65	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	41.28	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	13.63	(ft)	Start time	1232
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	440
2" di. well, V(gal) = 0.5 x LWC,	6.8	(gal)	Pump Depth (ft) :	34.3
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	4	(gal)	Final Depth to Groundwater:	27.62

Sample ID: HSSER-SMW19-020410 Sample Time: 1302

Sample if any: —

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ~~ppm~~ BJC mg/L
1302	12.96	6.72	994	27.2	4.97	23.2	0.08

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	~~tan~~ BJC orange	clear
Odor	none	none
Turbidity	~~Moderate~~ BJC high	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
500 ml plastic	1	Zinc	Sulfide 376.1	✓	
40 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW19 DATE: 2/4/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1232	10.49	5.80	921	24.5	7.78	364
2	1233	-	-	-	24.8	7.61	-
3	1234	-	-	-	22.7	7.18	-
4	1235	-	-	-	24.3	7.14	-
5	1236	-	-	-	22.3	7.00	-
6	1237	12.52	6.29	992	22.7	6.83	232
7	1238	-	-	-	23.4	6.72	-
8	1239	-	-	-	23.6	6.72	-
9	1240	-	-	-	23.3	6.72	-
10	1241	-	-	-	23.6	6.57	-
11	1242	12.76	6.49	998	24.2	6.14	113
12	1243	-	-	-	24.1	5.89	-
13	1244	-	-	-	24.1	5.63	-
14	1245	-	-	-	24.7	5.60	-
15	1246	-	-	-	24.7	5.51	-
16	1247	12.77	6.60	999	25.0	5.52	58.4
17	1248	-	-	-	26.1	5.37	-
18	1249	-	-	-	26.4	5.42	-
19	1250	-	-	-	26.0	5.39	-
20	1251	-	-	-	26.7	5.36	-
21	1252	12.87	6.65	1004	26.8	5.26	44.8
22	1253	-	-	-	26.9	5.26	-
23	1254	-	-	-	26.8	5.22	-
24	1255	-	-	-	26.8	5.25	-
25	1256	-	-	-	26.6	5.19	-
26	1257	12.43	6.70	990	27.0	5.06	30.2
27	1258	-	-	-	27.1	5.04	-
28	1259	-	-	-	27.2	5.13	-
29	1300	-	-	-	27.0	5.04	-
30*	1301	-	-	-	26.8	4.97	-
31	1302	12.96	6.72	994	27.2	4.97	23.2
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled: 2/8/10

Weather: Light snow, 25°F

Personnel: Campbell
Wood

Well ID: SMW20

Site Name: HSC UTC - SER

Site Location: Rockford, Illinois

Project Number: 182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC: 27.66 (ft)

Depth of Well from TOC: 40.35 (ft)

Length of Water Column (LWC): 12.69 (ft)

Purge Volume (V)= 3x Well Volume for:

2" di. well, V(gal) = 0.5 x LWC, 6.3 (gal)

4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC

Total Volume Purged 2.5 (gal)

Water Purging Method: low flow

Pump Brand and ID: QED Sample Pro

Start time 1600

Pump Rate (ml/min): 375

Pump Depth (ft) : 34.0

Did well go dry? yes ____ no ✓

Final Depth to Groundwater: 28.10

Sample ID: HSSER-SMW20-020810

Sample Time: 1616

[illegible] Sample if any: ~~BJL/JA~~ HSSER-DUP01-020810

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ~~ppm~~ BJC mg/L
1616	12.66	7.18	791	41.9	7.92	1.62	0.00

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging: / **At Sampling:**

	Start of Purging	At Sampling
Color	clear w/ orange floc	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	DUP collected
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
50[illegible] plastic	1	Zinc	Sulfide 376.1	✓	
[illegible]0 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW20 DATE: 2/8/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1600	11.71	7.24	773	43.1	8.58	12.8
2	1602	–	–	–	40.7	8.46	–
3	1603	–	–	–	39.7	8.40	–
4	1604	–	–	–	38.9	8.35	–
5	1605	–	–	–	39.1	8.27	–
6	1606	12.51	7.26	789	39.3	8.22	6.15
7	1607	–	–	–	40.1	8.19	–
8	1608	–	–	–	39.6	8.23	–
9	1609	–	–	–	40.8	8.17	–
10	1610	–	–	–	41.4	8.12	–
11	1611	12.65	7.18	791	40.9	8.03	4.35
12	1612	–	–	–	41.0	8.05	–
13	1613	–	–	–	41.7	7.98	–
14	~~1621~~ ~~1614~~ 1614	–	–	–	41.6	8.03	–
15	1615	–	–	–	42.1	8.08	–
16	1616	12.66	7.18	791	41.9	7.92	1.62
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	~~SMW21~~ 2/9/10	Well ID:	SMW21
Weather:	Snow, ~25°F	Site Name:	HSC UTC - SER
Personnel:	Campbell	Site Location:	Rockford, Illinois
	Wood	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	27.30	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	41.52	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	14.22	(ft)	Start time	1051
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	335
2" dl. well, V(gal) = 0.5 x LWC,	7.1	(gal)	Pump Depth (ft) :	34.4
4" dl., V(gal) = 2 x LWC; 1" dl., V(gal) = 0.12 x LWC			Did well go dry?	yes no ✓
Total Volume Purged	2.5	(gal)	Final Depth to Groundwater:	27.23

Sample ID: HSSER - SMW21 - 020910 Sample Time: 1111

Duplicate Sample if any: —

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ppm
1111	13.49	7.24	1088	22.8	6.36	107.6	0.09

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	orange	orange
Odor	none	none
Turbidity	high	moderate
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
50[illegible] plastic	1	Zinc	Sulfide 376.1	✓	
40 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW21 DATE: 2/9/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1051	10.20	7.45	1019	34.8	9.39	93.6
2	1052	-	-	-	27.2	7.23	-
3	1053	-	-	-	23.4	6.94	-
4	1054	-	-	-	23.0	6.91	-
5	1055	-	-	-	23.1	6.76	-
6	1056	13.23	7.32	1047	22.6	6.60	162
7	1057	-	-	-	22.6	6.61	-
8	1058	-	-	-	22.3	6.67	-
9	1059	-	-	-	22.1	6.65	-
10	~~1106~~ 1100	-	-	-	22.2	6.56	-
11	1101	13.31	7.28	1048	22.2	6.50	183
12	1102	-	-	-	22.2	6.56	-
13	1103	-	-	-	22.2	6.56	-
14	1104	-	-	-	22.3	6.58	-
15	1105	-	-	-	22.4	6.53	-
16	1106	13.43	7.25	1054	22.5	6.38	136
17	1107	-	-	-	22.6	6.42	-
18	1108	-	-	-	22.7	6.36	-
19	1109	-	-	-	22.7	6.34	-
20	1110	-	-	-	22.7	6.38	-
21	1111	13.49	7.24	1058	22.8	6.36	107.6
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled: 2/5/10

Weather: Overcast, 30°F

Personnel: Campbell
Wood

Well ID: GMZ02

Site Name: HSC UTC - SER

Site Location: Rockford, Illinois

Project Number: 182602078

Groundwater Calculations and Low Flow Readings: tape 29.33 ALR 2-17-10 (spoke with field personnel 2-6-10)

Depth To Groundwater from TOC: ~~20.78~~ (ft) Misread

Depth of Well from TOC: 44.93 (ft)

Length of Water Column (LWC): 16.15 (ft)

Purge Volume (V)= 3x Well Volume for:

2" dl. well, V(gal) = 0.5 x LWC, 8.1 (gal)

4" dl., V(gal) = 2 x LWC; 1" dl., V(gal) = 0.12 x LWC

Total Volume Purged 2.5 (gal)

Water Purging Method: low flow

Pump Brand and ID: QED Sample Pro

Start time 0855

Pump Rate (ml/min): 405

Pump Depth (ft) : 37.0

Did well go dry? yes no ✓

Final Depth to Groundwater: 29.34

Sample ID: HSSER-GMZ02-020510

Sample Time: 0910

Sample if any: —

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous iron ~~ppm~~ mg/L
0910	12.12	7.31	1062	48.0	9.88	0.93	0.00

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	tan	none
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260		i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
500 ml plastic	1	Zinc	Sulfide 376.1		
40 ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZ02 DATE: 2/5/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	0855	10.84	7.28	1046	46.8	10.57	7.21
2	0856	11.51	7.21	1070	46.0	10.53	–
3	0857	–	–	–	46.3	10.52	–
4	0858	–	–	–	46.7	10.46	–
5	0859	–	–	–	46.8	10.50	–
6	0900	11.67	7.22	1090	47.1	10.42	2.49
7	0901	–	–	–	47.6	10.49	–
8	0902	–	–	–	48.3	10.33	–
9	0903	–	–	–	48.2	10.24	–
10	0904	–	–	–	48.3	10.14	–
11	0905	12.02	7.29	1077	47.0	10.04	0.93
12	0906	–	–	–	47.4	10.04	–
13	0907	–	–	–	47.5	9.84	–
14	0908	–	–	–	47.7	10.01	–
15	0909	–	–	–	47.9	9.99	–
16	0910	12.12	7.31	1062	48.0	9.88	0.93
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	2/9/10	Well ID:	~~RAMW03~~ GMZ03
Weather:	Snow, ~25°F	Site Name:	HSC UTC - SER
Personnel:	Campbell	Site Location:	Rockford, Illinois
	Wood	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	28.66	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	44.83	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	16.17	(ft)	Start time	0924
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	366
2" di. well, V(gal) = 0.5 x LWC,	8.1	(gal)	Pump Depth (ft) :	37.0
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	2.5	(gal)	Final Depth to Groundwater:	28.50

Sample ID: HSSER-GMZ03-020910 Sample Time: 0944

Duplicate Sample if any: —

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ppm
0944	11.55	7.33	1095	29.3	8.97	2.68	0.00

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	clear	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
5[illegible] plastic	1	Zinc	Sulfide 376.1	✓	
40 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ~~RAMW03~~ GMZ03 DATE: 2/9/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	0924	10.51	7.46	1060	43.2	6.06	3.94
2	0925	-	-	-	40.4	5.78	-
3	0926	-	-	-	35.5	9.60	-
4	0927	-	-	-	34.4	9.54	-
5	0928	-	-	-	33.2	9.58	-
6	0929	11.18	7.40	1086	32.4	9.43	4.96
7	0930	-	-	-	31.6	9.30	-
8	0931	-	-	-	31.5	9.19	-
9	0932	-	-	-	31.2	9.16	-
10	0933	-	-	-	31.0	9.18	-
11	0934	11.59	7.35	1096	30.6	9.15	3.44
12	0935	-	-	-	30.2	9.06	-
13	0936	-	-	-	30.0	9.02	-
14	0937	-	-	-	29.9	8.98	-
15	0938	-	-	-	29.9	8.93	-
16	0939	11.50	7.33	1094	29.7	8.89	4.22
17	0940	-	-	-	29.6	8.95	-
18	0941	-	-	-	29.6	9.04	-
19	0942	-	-	-	29.4	8.95	-
20	0943	-	-	-	29.3	8.92	-
21	0944	11.55	7.33	1095	29.3	8.97	2.68
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	2/8/10	Well ID:	GMZ04
Weather:	Partly cloudy 25°F	Site Name:	HSC UTC - SER
Personnel:	Campbell	Site Location:	Rockford, Illinois
	Wood	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	26.88	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	45.42	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	18.54	(ft)	Start time	1320
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	355
2" di. well, V(gal) = 0.5 x LWC,	9.3	(gal)	Pump Depth (ft) :	37.6
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes no ✓
Total Volume Purged	3	(gal)	Final Depth to Groundwater:	26.77

Sample ID: HSSER-GMZ04-020810 Sample Time: 1350

Duplicate Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ~~ppm~~ mg/L
1350	12.21	7.55	780	30.7	8.01	20.8	0.00

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	clear	clear
Odor	none	slight
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	Collected equipment blank & field blank before starting at this location.
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
500 ml plastic	1	Zinc	Sulfide 376.1	✓	
40 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZ04 DATE: 2/8/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1320	4.68	8.19	490	172.6	11.59	33.9
2	1321	-	-	-	145.4	8.33	-
3	1322	-	-	-	137.0	8.18	-
4	1323	-	-	-	121.2	8.21	-
5	1324	-	-	-	103.4	8.06	-
6	1325	11.60	7.27	763	87.1	8.08	14.4
7	1326	-	-	-	74.8	8.11	-
8	1327	-	-	-	64.6	8.04	-
9	1328	-	-	-	60.3	8.02	-
10	1329	-	-	-	51.6	8.09	-
11	1330	12.06	7.44	773	47.5	8.15	29.3
12	1331	-	-	-	44.1	8.10	-
13	1332	-	-	-	42.2	8.01	-
14	1333	-	-	-	40.3	8.03	-
15	1334	-	-	-	40.0	8.04	-
16	1335	11.88	7.52	771	40.0	8.05	41.8
17	1336	-	-	-	38.1	7.99	-
18	1337	-	-	-	38.0	8.03	-
19	1338	-	-	-	36.8	8.05	-
20	1339	-	-	-	36.1	8.02	-
21	1340	12.24	7.53	779	35.0	7.91	31.9
22	1341	-	-	-	34.7	8.05	-
23	1342	-	-	-	34.0	8.06	-
24	1343	-	-	-	33.7	8.01	-
25	1344	-	-	-	33.1	7.89	-
26	1345	12.18	7.55	778	32.5	7.98	24.7
27	1346	-	-	-	32.3	7.96	-
28	1347	-	-	-	32.2	7.99	-
29	1348	-	-	-	31.9	8.00	-
30*	1349	-	-	-	31.5	7.95	-
31	1350	12.21	7.55	780	30.7	8.01	20.8
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- PM instructed to sample.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	2/5/10	Well ID:	ASDM01
Weather:	Overcast, 30°F	Site Name:	HSC UTC - SER
Personnel:	Campbell	Site Location:	Rockford, Illinois
	Wood	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	30.86	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	43.17	(ft)	Pump Brand and ID:	~~1002~~ SIE QED Sample Pro
Length of Water Column (LWC):	12.31	(ft)	Start time	1002
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	465
2" di. well, V(gal) = 0.5 x LWC,	6.2	(gal)	Pump Depth (ft) :	~~7~~ 37.3
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	5	(gal)	Final Depth to Groundwater:	30.85

Sample ID: HSSER-ASDM01-020510 Sample Time: 1037

Duplicate Sample if any: —

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ~~ppm~~ mg/L
1037	11.82	6.85	1907	5.7	3.42	3.37	0.52

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	Clear w/ orange floc	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
50[illegible] plastic	1	Zinc	Sulfide 376.1	✓	
[illegible]0 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ASDM01 DATE: 2/5/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1002	7.92	7.37	1760	56.9	7.37	ERROR
2	1003	–	–	–	50.0	3.86	–
3	1004	–	–	–	46.5	3.55	–
4	1005	–	–	–	43.2	3.10	–
5	1006	–	–	–	MISSED		–
6	1007	11.26	7.05	1820	37.5	2.77	8.30
7	1008	–	–	–	36.5	2.77	–
8	1009	–	–	–	33.7	2.72	–
9	1010	–	–	–	32.0	2.87	–
10	1011	–	–	–	31.7	2.89	–
11	1012	11.29	6.97	1852	31.2	2.92	8.00
12	1013	–	–	–	31.1	2.93	–
13	1014	–	–	–	29.8	3.03	–
14	1015	–	–	–	29.1	3.03	–
15	1016	–	–	–	30.1	3.03	–
16	1017	11.53	6.91	1879	29.0	3.13	6.88
17	1018	–	–	–	27.6	3.16	–
18	1019	–	–	–	24.8	3.15	–
19	1020	–	–	–	23.7	3.19	–
20	1021	–	–	–	23.2	3.19	–
21	1022	11.48	6.87	1888	21.8	3.21	3.77
22	1023	–	–	–	21.3	3.23	–
23	1024	–	–	–	18.8	3.21	–
24	1025	–	–	–	18.1	3.23	–
25	1026	–	–	–	17.1	3.24	–
26	1027	11.56	6.87	1896	15.6	3.27	3.84
27	1028	–	–	–	14.4	3.29	–
28	1029	–	–	–	13.0	3.30	–
29	1030	–	–	–	12.4	3.31	–
30*	1031	–	–	–	11.4	3.30	–
31	1032	11.75	6.86	1905	10.4	3.31	3.72
32	1033	–	–	–	9.0	3.30	–
33	1034	–	–	–	7.9	3.32	–
34	1035	–	–	–	7.2	3.33	–
35	1036	–	–	–	6.5	3.36	–
36	1037	11.82	6.85	1907	5.7	3.42	3.37
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- PM instructed to sample.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	2/5/10	Well ID:	ASDM02
Weather:	Overcast 30°F	Site Name:	HSC UTC - SER
Personnel:	Campbell	Site Location:	Rockford, Illinois
	Wood	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	30.90	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	43.54	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	12.64	(ft)	Start time	1109
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	325
2" dl. well, V(gal) = 0.5 x LWC,	6.3	(gal)	Pump Depth (ft) :	37.5
4" dl., V(gal) = 2 x LWC; 1" dl., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	5	(gal)	Final Depth to Groundwater:	

Sample ID: HSSER-ASDM02-020510 Sample Time: 1151

Duplicate Sample if any: —

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ~~ppm~~ mg/L
1151	11.50	6.91	1265	-68.4	1.26	1.29	0.52

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging: **At Sampling:**

Color	clear w/ orange floc	clear
Odor	none	moderate H_2S
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
500 ml plastic	1	Zinc	Sulfide 376.1	✓	
40 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ASDM02 DATE: 2/5/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1109	9.97	7.25	1236	0.0	7.24	26.9
2	1110	-	-	-	-10.7	3.47	-
3	1111	-	-	-	-12.7	3.27	-
4	1112	-	-	-	-12.3	2.96	-
5	1113	-	-	-	-10.1	2.73	-
6	1114	11.21	7.01	1277	-9.3	2.53	18.2
7	1115	-	-	-	-9.7	2.53	-
8	1116	-	-	-	-11.3	2.24	-
9	1117	-	-	-	-11.6	2.23	-
10	1118	-	-	-	-12.6	2.27	-
11	1119	11.56	6.95	1290	-14.9	2.01	11.1
12	1120	-	-	-	-17.8	1.97	-
13	1121	-	-	-	-19.0	2.01	-
14	1122	-	-	-	-19.5	1.90	-
15	1123	-	-	-	-20.9	1.93	-
16	1124	11.36	6.95	1285	-21.9	1.87	10.08
17	1125	-	-	-	-21.0	1.83	-
18	1126	-	-	-	-21.6	1.70	-
19	1127	-	-	-	-20.8	1.69	-
20	1128	-	-	-	-20.7	1.69	-
21	1129	11.26	6.89	1273	-24.0	1.62	4.73
22	1130	-	-	-	-25.3	1.60	-
23	1131	-	-	-	-30.9	1.57	-
24	1132	-	-	-	-32.5	1.56	-
25	1133	-	-	-	-35.4	1.50	-
26	1134	11.40	6.92	1282	-48.3	1.45	2.90
27	1135	-	-	-	-49.6	1.45	-
28	1136	-	-	-	-54.1	1.42	-
29	1137	-	-	-	-56.6	1.40	-
30*	1138	-	-	-	-57.1	1.38	-
31	1139	11.46	6.92	1272	-59.2	1.35	3.06
32	1140	-	-	-	-62.8	1.33	-
33	1141	-	-	-	-65.8	1.33	-
34	1142	-	-	-	-64.5	1.31	-
35	1143	-	-	-	-60.5	1.30	-
36	1144	11.31	6.91	1265	-67.4	1.29	1.96
37	1145	-	-	-	-69.5	1.25	-
38	1146	-	-	-	-71.4	1.27	-
39	1147	-	-	-	-69.0	1.28	-
40	1148	-	-	-	-65.4	1.26	-
41	1149	11.50	6.92	1266	-65.9	1.24	1.31
42	1150	-	-	-	-68.0	1.25	-
43	1151	11.50	6.91	1265	-68.4	1.26	1.29
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- PM instructed to sample.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	2/5/10	Well ID:	ASDM03
Weather:	Overcast, 30°F	Site Name:	HSC UTC - SER
Personnel:	Campbell	Site Location:	Rockford, Illinois
	Wood	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	30.51	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	43.54	(ft)	Pump Brand and ID:	QED SamplePro
Length of Water Column (LWC):	13.03	(ft)	Start time	1224
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	395
2" di. well, V(gal) = 0.5 x LWC,	6.5	(gal)	Pump Depth (ft) :	26.6
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	3.5	(gal)	Final Depth to Groundwater:	30.54

Sample ID: HSSER-ASDM03-020510 Sample Time: 1254

Sample if any: —

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ~~ppm~~ RJC mg/L
1254	11.41	6.79	1613	-20.0	2.70	6.24	0.60

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	tan	clear
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
50[illegible] plastic	1	Zinc	Sulfide 376.1	✓	
40 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ASDM03 DATE: 2/5/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1224	8.02	7.03	1629	40.2	6.66	84.4
2	1225	-	-	-	23.3	3.21	-
3	1226	-	-	-	19.3	2.76	-
4	1227	-	-	-	17.4	2.64	-
5	1228	-	-	-	15.0	2.47	-
6	1229	11.10	6.73	1844	13.4	2.24	104.4
7	1230	-	-	-	12.6	2.18	-
8	1231	-	-	-	12.3	2.17	-
9	1232	-	-	-	12.6	2.15	-
10	1233	-	-	-	12.8	2.18	-
11	1234	11.23	6.77	1708	13.3	2.26	56.8
12	1235	-	-	-	13.5	2.29	-
13	1236	-	-	-	13.3	2.34	-
14	1237	-	-	-	MISSED		-
15	1238	-	-	-	9.7	2.39	-
16	1239	11.28	6.77	1633	7.8	2.40	34.7
17	1240	-	-	-	4.5	2.42	-
18	1241	-	-	-	3.4	2.42	-
19	1242	-	-	-	0.9	2.47	-
20	1243	-	-	-	-2.6	2.45	-
21	1244	11.16	6.78	1604	-5.3	2.44	18.6
22	1245	-	-	-	-8.2	2.50	-
23	1246	-	-	-	-9.1	2.48	-
24	1247	-	-	-	-10.6	2.54	-
25	1248	-	-	-	-12.6	2.55	-
26	1249	11.46	6.79	1609	-14.7	2.60	9.70
27	1250	-	-	-	-15.1	2.64	-
28	1251	-	-	-	-16.6	2.64	-
29	1252	-	-	-	-17.8	2.69	-
30*	1253	-	-	-	-19.1	2.68	-
31	1254	11.41	6.79	1613	-20.0	2.70	6.24
32	1255						
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- PM instructed to sample.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	2/5/10	Well ID:	ASDM04
Weather:	Overcast, 32°F	Site Name:	HSC UTC - SER
Personnel:	Campbell	Site Location:	Rockford, Illinois
	Wood	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	30.81	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	43.59	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	12.78	(ft)	Start time	1330
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	370
2" di. well, V(gal) = 0.5 x LWC,	6.4	(gal)	Pump Depth (ft) :	37.3
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	3.5	(gal)	Final Depth to Groundwater:	30.80

Sample ID: HSSER-ASDM04-020510 Sample Time: 1400

Duplicate Sample if any: —

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron ~~ppm~~ mg/L
1400	10.81	6.93	13.86	-119.9	0.94	4.45	>3.30 (limit)

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	gray	clear
Odor	none	moderate H_2S
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1	✓	
		none	Sulfate 300.0A	✓	
40 ml Vial	2	HCl	gases (RSK-175)	✓	
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2	✓	
500 ml plastic	1	Zinc	Sulfide 376.1	✓	
40 ml Vial	2	H2SO4 or HCl	TOC 9060	✓	
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ASDM04 DATE: 2/5/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1330	8.07	7.04	1211	-52.2	10.45	12.1
2	1331	-	-	-	-74.5	3.43	-
3	1332	-	-	-	-79.0	2.91	-
4	1333	-	-	-	-90.8	2.22	-
5	1334	-	-	-	-94.1	2.05	-
6	1335	11.04	6.97	1458	-99.0	1.81	11.9
7	1336	-	-	-	-102.9	1.62	-
8	1337	-	-	-	-107.5	1.55	-
9	1338	-	-	-	-109.9	1.49	-
10	1339	-	-	-	-111.5	1.36	-
11	1340	11.18	6.96	1405	-111.5	1.30	10.48
12	1341	-	-	-	-112.4	1.17	-
13	1342	-	-	-	-116.8	1.20	-
14	1343	-	-	-	-117.2	1.16	-
15	1344	-	-	-	-117.0	1.15	-
16	1345	11.08	6.94	1387	-117.3	1.10	8.24
17	1346	-	-	-	-119.2	1.02	-
18	1347	-	-	-	-118.9	1.03	-
19	1348	-	-	-	-118.8	1.04	-
20	1349	-	-	-	-119.1	0.98	-
21	1350	10.98	6.92	1386	-120.0	0.98	7.04
22	1351	-	-	-	-119.7	1.00	-
23	1352	-	-	-	-119.5	1.01	-
24	1353	-	-	-	-119.9	0.99	-
25	1354	-	-	-	-117.9	0.96	-
26	1355	11.10	6.92	1393	-118.1	0.97	5.39
27	1356	-	-	-	-118.6	0.95	-
28	1357	-	-	-	-118.2	0.95	-
29	1358	-	-	-	-117.4	0.95	-
30*	1359	-	-	-	-118.5	0.95	-
31	1400	10.81	6.93	1385	-119.9	0.94	4.45
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

QUARTER 2

GROUNDWATER ELEVATION LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Sampler Name(s): Brian Campbell, Matt Pontier

Water Meter (WM) Make and Model: Solinst WLM Model 101 S/N 30818 Date: 4/12/10

Length of water meter tip to sensor: ~~0.28 ft~~ BJC ~~2.~~ 0.28 ft Weather: Partly cloudy, ~60°F

Well ID	Approx. Well Depth (from TOC)*	Date Measured	PID	Depth to Groundwater (from TOC)	Depth to Bottom (DTB) (from TOC)	True (DTB + WM tip to sensor)	Well Condition Notes
MW07FGA	46.99	4/12/10	0.0	26.67	46.70	46.98	1 bolt missing, 2 not threading
MW203	49.63	4/12/10	0.0	27.42	49.35	49.63	good
SMW01	39.85	4/12/10	0.0	29.55	39.55	39.83	3 bolts not threading
SMW02	40.49	4/12/10	0.0	26.05	40.10	40.38	1 bolt missing, 2 not threading
SMW04	42.67	4/12/10	0.0	28.71	42.50	42.78	all 3 bolts missing
SMW08	42.07	4/12/10	5.9	28.94	41.75	42.03	2 bolts missing, 1 not threading
SMW19	41.28	4/12/10	0.2	27.69	41.05	41.33	mismatched lid (3 bolt) & rim (2 bolt) + damage on rim
SMW20	40.35	4/12/10	0.0	27.86	40.10	40.38	one eyelet broken, both bolts stripped
SMW21	41.52	4/12/10	0.0	BJC ~~26.95~~ 27.50	41.20	40.48	both bolts missing (2-bolt style)
GMZ01	not yet installed						
GMZ02	44.93	4/12/10	0.5	29.07	44.65	44.93	good
GMZ03	44.83	4/12/10	2.6	28.48	44.55	~~44.75~~ BJC 44.83	good
GMZ04	45.42	4/12/10	0.0	BJC ~~26.44~~ 26.72	45.15	45.43	good
ASDM01	43.17	4/12/10	35.4	BJC ~~30.~~ 30.95	42.90	43.18	good
ASDM02	43.54	4/12/10	55.7	30.99	43.50	43.78	↓
ASDM03	42.55	4/12/10	28.4	30.59	42.25	42.53	↓
ASDM04	43.59	4/12/10	36.8	30.90	43.30	43.58	↓
RAMW01	46.12	4/12/10	0.0	29.06	45.80	46.08	good - standing water
RAMW02	44.97	4/12/10	0.0	28.93	44.65	44.93	good - standing water
RAMW03	45.38	4/12/10	3.1	28.72	45.10	45.38	good - standing water
RAMW04	48.71	4/12/10	7.9	32.02	45.45	45.73	good
RAMW05	44.00	4/12/10	1.5	27.48	43.70	43.98	good - standing water
RAMW06	44.39	4/12/10	37.5	BJC ~~27~~ 27.49	44.10	44.38	good
RAMW07	48.68	4/12/10	43.1	31.92	48.45	48.73	good
RAMW08	44.40	4/12/10	75.4	28.10	44.10	44.38	good

All measurements must be to nearest 0.01 feet.

* Measured 1st Q 2010

Quarterly Sampling Pump Depth Calculation Sheet

DRAFT

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois
Stantec Project Number: 182602078

Well ID	Elevation of Top of Casing (ft amsl)	Depth to Bottom of screen (ft)	Screen length (ft)	Depth to Top of screen (ft)	Depth to GW from TOC (ft)	Calculated Pump Depth
MW07FGA	727.50	46.99	NI	31.99	26.67	39.49
MW203	728.64	49.63	NI	34.63	27.42	42.13
SMW01	729.69	39.85	15	24.85	29.55	34.70
SMW02	726.68	40.49	15	25.49	26.05	33.27
SMW04	728.52	42.67	15	27.67	28.71	35.69
SMW08	728.79	42.07	15	27.07	28.94	35.51
SMW19	728.47	41.28	15	26.28	27.69	34.49
SMW20	727.68	40.35	15	25.35	27.86	34.11
SMW21	727.31	41.52	15	26.52	27.50	34.51
GMZ01	not yet installed	not yet installed				
GMZ02	728.79	44.93	15	29.93	29.07	37.43
GMZ03	728.29	44.83	15	29.83	28.48	37.33
GMZ04	726.91	45.42	15	30.42	26.72	37.92
ASDM01	730.90	43.17	15	28.17	30.95	37.06
ASDM02	730.90	43.54	15	28.54	30.99	37.27
ASDM03	730.53	42.55	15	27.55	30.59	36.57
ASDM04	730.80	43.59	15	28.59	30.90	37.25
RAMW01	728.94	46.12	15	31.12	29.06	38.62
RAMW02	728.95	44.97	15	29.97	28.93	37.47
RAMW03	728.8	45.38	15	30.38	28.72	37.88
RAMW04	732.29	48.71	15	33.71	32.02	41.21
RAMW05	727.73	44.00	15	29.00	27.48	36.50
RAMW06	727.68	44.39	15	29.39	27.49	36.89
RAMW07	732.24	48.68	15	33.68	31.92	41.18
RAMW08	728.49	44.40	15	29.40	28.10	~~37.98~~ BJC 36.90

NYI = Not yet installed
NI = No information (assume 15 ft)
NS = not surveyed
ft amsl = feet above mean sea level

Pump is set in the middle of the saturated screen.

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled: 4/13/10

Weather: Partly cloudy, ~50°F

Personnel: Brian Campbell
Matt Pontier

Well ID: MW07FGA

Site Name: HSC UTC - SER

Site Location: Rockford, Illinois

Project Number: 182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC: 26.68 (ft)

Depth of Well from TOC: 46.98 (ft)

Length of Water Column (LWC): 20.30 (ft)

Purge Volume (V)= 3x Well Volume for:

2" di. well, V(gal) = 0.5 x LWC, ~~1.02~~ ~~40.75~~ 40.60 (gal)

4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC

Total Volume Purged 2.5 (gal)

Water Purging Method: low flow

Pump Brand and ID: QED Sample Pro

Start time 0910

Pump Rate (ml/min): 340

Pump Depth (ft) : 39.5

Did well go dry? yes ____ no ✓

Final Depth to Groundwater: 26.67

Sample ID: HSSER - MW07FGA - 041310

Sample Time: 0950

QAQC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
0945	14.08	9.78	2215	54.5	0.24	14.7	0.03

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging: / **At Sampling:**

	Start of Purging	At Sampling
Color	pale yellow	clear
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	I.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
[illegible] ml plastic	1	Zinc	Sulfide 376.1		
40 ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: MW07FGA DATE: 4-13-10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	0910	13.65	7.79	1849	118.1	4.56	18.8
2	0915	13.83	8.71	2078	89.0	1.25	21.9
3	0920	14.01	9.05	2158	78.5	0.68	21.9
4	0925	14.04	9.28	2196	71.9	0.48	19.9
5	0930	14.03	9.48	2211	61.4	0.39	17.9
6	0935	14.00	9.59	2208	60.4	0.34	16.0
7	0940	14.04	9.55	2213	61.0	0.28	15.3
8	0945	14.08	9.78	2215	54.5	0.24	14.7
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PM instructed to sample.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled: 4/13/10

Weather: Mostly sunny, ~60°F

Personnel: B. Campbell
M. Pontier

Well ID: MW203

Site Name: HSC UTC - SER

Site Location: Rockford, Illinois

Project Number: 182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC: 27.42 (ft)

Depth of Well from TOC: 49.63 (ft)

Length of Water Column (LWC): 22.21 (ft)

Purge Volume (V)= 3x Well Volume for:

2" di. well, V(gal) = 0.5 x LWC, 11.1 (gal)

4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC

Total Volume Purged 3 (gal)

Water Purging Method: low flow

Pump Brand and ID: QED

Start time 1030

Pump Rate (ml/min): 335

Pump Depth (ft) : 42.1

Did well go dry? yes no ✓

Final Depth to Groundwater: 27.43

Sample ID: HSSER-MW203-041310

Sample Time: 1105

QAQC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1102	14.65	9.57	809	33.6	0.49	3.14	0.04

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	clear	clear
Odor	~~low~~ none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
[illegible] ml plastic	1	Zinc	Sulfide 376.1		
40 ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: MW203 DATE: 4/13/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1032	14.73	8.97	781	78.4	5.01	17.6
2	1037	14.63	9.46	793	51.1	1.18	14.1
3	1042	14.62	9.54	802	38.5	0.60	10.67
4	1047	14.60	9.50	803	36.6	0.49	6.51
5	1052	14.43	9.41	800	37.5	0.42	6.59
6	1057	14.57	9.51	805	35.6	0.43	4.69
7	1102	14.65	9.57	809	~~32.7~~ 33.6	0.49	3.14
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/13/10	Well ID:	SMW01
Weather:	Fair, ~65°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	29.52	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	39.83	(ft)	Pump Brand and ID:	QED SamplePro
Length of Water Column (LWC):	10.31	(ft)	Start time	1405
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	330
2" di. well, V(gal) = 0.5 x LWC,	5.16	(gal)	Pump Depth (ft) :	34.7
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	2	(gal)	Final Depth to Groundwater:	29.56

Sample ID: HSSER-SMW01-041310 Sample Time: 1430

QAQC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1426	13.10	8.45	798	95.2	4.50	49.6	0.14

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	light orange	light orange
Odor	none	none
Turbidity	moderate to high	moderate
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
[illegible] ml plastic	1	Zinc	Sulfide 376.1		
[illegible] ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW01 DATE: 4/13/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1406	15.16	9.82	800	80.7	5.52	86.9
2	1411	13.40	8.73	763	91.9	4.91	108.6
3	1416	13.23	8.53	772	92.9	4.69	90.2
4	1421	13.15	8.46	786	94.6	4.54	66.7
5	1426	13.10	8.45	798	95.2	4.50	49.6
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/13/10	Well ID:	SMW02
Weather:	Partly cloudy, ~60°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontrier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	26.05	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	40.38	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	14.33	(ft)	Start time	1140
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	320
2" dl. well, V(gal) = 0.5 x LWC,	7.17	(gal)	Pump Depth (ft) :	33.3
4" dl., V(gal) = 2 x LWC; 1" dl., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	4	(gal)	Final Depth to Groundwater:	26.05

Sample ID: HSSER - SMW02 - 041310 Sample Time: 1215

QC Sample if any: —

ample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1211	13.70	8.65	1129	86.4	3.22	103.9	0.17

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		**At Sampling:**
Color	orange	light orange
Odor	none	none
Turbidity	high	moderate to high
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
ml plastic	1	Zinc	Sulfide 376.1		
ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW02 DATE: 4/13/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1141	15.41	8.57	1193	96.3	6.09	571
2	1146	14.02	8.62	1154	93.3	5.55	253
3	1151	13.86	8.58	1156	89.8	5.09	243
4	1156	13.76	8.62	1151	87.8	4.46	198
5	1201	13.79	8.62	1144	86.7	3.98	165
6	1206	13.80	8.63	1138	86.4	3.62	134
7	1211	13.70	8.65	1129	86.4	3.22	103.9
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PM instructed to sample. ~~DO may be drifting in~~ DO may be affected by drift in YSI.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/12/10	Well ID:	SMW04
Weather:	Partly cloudy, ~65°F	Site Name:	HSC UTC - SER
Personnel:	Brian Campbell	Site Location:	Rockford, Illinois
	Matt Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	28.71	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	42.78	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	14.07	(ft)	Start time	1630
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	310
2" di. well, V(gal) = 0.5 x LWC,	7.0	(gal)	Pump Depth (ft) :	35.7'
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged		(gal)	Final Depth to Groundwater:	28.69

Sample ID: HSSER-SMW04-041210 Sample Time: 1704

QAQC Sample if any: —

Example: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1700	13.99	6.53	1334	13.5	0.54	11.3	0.00

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	Orange	light orange
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
ml plastic	1	Zinc	Sulfide 376.1		
40 ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW04 DATE: 4/12/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1630	14.70	6.73	1382	30.6	15.77	45.6
2	1635	14.35	6.49	1358	30.5	1.98	40.7
3	1640	14.11	6.48	1345	21.2	0.82	28.5
4	1645	14.08	6.50	1340	12.2	0.62	21.1
5	1650	14.06	6.53	1336	10.9	0.49	13.8
6	1655	13.95	6.53	1333	12.9	0.52	12.1
7	1700	13.99	6.53	1334	13.5	0.54	11.3
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← PM instructed to sample

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/13/10	Well ID:	SMW08
Weather:	Fair, ~65°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	28.94	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	42.03	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	13.09	(ft)	Start time	1529
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	360
2" di. well, V(gal) = 0.5 x LWC,	6.55	(gal)	Pump Depth (ft) :	35.5
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	4	(gal)	Final Depth to Groundwater:	28.93

Sample ID: HSSER - SMW08 - 041310 Sample Time: 1605

QAQC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1600	14.56	9.79	1616	38.2	2.52	18.7	0.27

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	Light orange	clear
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
[illegible] ml plastic	1	Zinc	Sulfide 376.1		
[illegible] ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW08 DATE: 4/13/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1530	17.30	7.49	1449	136.5	12.16	83.3
2	1535	14.96	9.52	1494	67.3	3.44	69.4
3	1540	14.61	9.71	1548	45.7	2.73	59.1
4	1545	14.74	9.71	1563	42.5	2.89	50.5
5	1550	14.63	9.68	1593	41.9	2.81	33.5
6	1555	14.56	9.79	1600	40.7	2.69	25.4
7	1600	14.56	9.79	1616	38.2	2.52	18.7
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PM instructed to sample.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/13/10	Well ID:	SMW19
Weather:	Fair ~65°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	27.67	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	41.33	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	13.66	(ft)	Start time	1657
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	320
2" di. well, V(gal) = 0.5 x LWC,	6.83	(gal)	Pump Depth (ft) :	34.5
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	4	(gal)	Final Depth to Groundwater:	27.69

Sample ID: HSSER-SMW19-041310 Sample Time: 1735

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1730	14.82	9.10	1063	86.1	3.40	42.2	0.05

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	light ~~brown~~ orange	clear
Odor	none	none
Turbidity	moderate	~~est~~ low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
ml plastic	1	Zinc	Sulfide 376.1		
40 ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW19 DATE: 4/13/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1700	15.70	9.67	1005	77.8	6.24	124
2	1705	15.11	9.18	1036	86.3	4.46	65.0
3	1710	15.09	9.10	1045	87.2	3.81	35.1
4	1715	15.00	9.12	1055	85.5	3.50	17.4
5	1720	14.98	9.11	1059	85.6	3.45	10.83
6	1725	14.87	9.10	1060	85.4	3.41	8.88
7	1730	14.82	9.10	1063	86.1	3.40	42.2
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/14/10	Well ID:	SMW20
Weather:	Fair, ~70°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	27.92	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	40.38	(ft)	Pump Brand and ID:	QED SamplePro
Length of Water Column (LWC):	12.46	(ft)	Start time	1048
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	320
2" di. well, V(gal) = 0.5 x LWC,	6.23	(gal)	Pump Depth (ft) :	34.1
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	4.5	(gal)	Final Depth to Groundwater:	27.87

Sample ID: HSSER-SMW20-041410 Sample Time: 1125

QC Sample if any: HSSER-MS03-041410 & HSSER-MSD03-041410

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1121	14.25	9.10	908	97.1	4.67	4.06	0.01

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging: **At Sampling:**

Color	orange	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	~~3~~ 9	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
ml plastic	1	Zinc	Sulfide 376.1		
40 ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW 20 DATE: 4/14/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1051	15.08	9.73	980	80.7	7.85	10.75
2	1056	14.35	9.35	965	87.4	6.54	8.76
3	1101	14.26	9.32	961	87.0	5.93	10.05
4	1106	14.28	9.27	959	89.8	5.59	4.67
5	1111	14.27	9.20	943	93.4	5.33	3.01
6	1116	14.23	9.15	925	95.4	5.01	3.16
7	1121	14.25	9.10	908	97.1	4.67	4.06
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PM instructed to sample AS/SVE cell 2 not currently operating.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/14/10	Well ID:	SMW21
Weather:	Fair ~65°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	27.51	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	40.48	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	12.97	(ft)	Start time	0944
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	340
2" dl. well, V(gal) = 0.5 x LWC,	6.49	(gal)	Pump Depth (ft) :	34.5
4" dl., V(gal) = 2 x LWC; 1" dl., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	3.5	(gal)	Final Depth to Groundwater:	27.37

Sample ID: HSSER-SMW21-041410 Sample Time: 1020

QC Sample if any: —

ample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1015	14.63	9.03	977	44.8	5.77	11.5	0.01

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	orange	clear
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
ml plastic	1	Zinc	Sulfide 376.1		
40 ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW21 DATE: 4/14/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	0945	16.63	2.85	1131	215.1	5.47	51.0
2	0950	14.41	8.84	1022	57.2	4.64	39.7
3	0955	14.43	8.91	1034	49.4	4.81	19.1
4	1000	14.44	8.96	1046	47.6	5.05	13.2
5	1005	14.56	8.97	1024	45.1	5.38	14.7
6	1010	14.59	9.00	1000	43.9	5.60	10.32
7	1015	14.63	9.03	977	44.8	5.77	11.5
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PM instructed to sample. ORP stable; DO climbing, possibly due to AS/SVE system operation.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/14/10	Well ID:	GMZ02
Weather:	Fair, gusty, ~75°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	29.34	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	44.93	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	15.59	(ft)	Start time	1359
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	300
2" di. well, V(gal) = 0.5 x LWC,	7.80	(gal)	Pump Depth (ft) :	37.4
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	2.5	(gal)	Final Depth to Groundwater:	29.25

Sample ID: HSSER - GMZ02 - 041410 Sample Time: 1425

QC Sample if any: HSSER - DUP03 - 041410

ample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1422	17.54	9.11	1403	81.4	7.70	3.03	0.01

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		**At Sampling:**
Color	clear	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	~~3~~ 6	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
1 ml plastic	1	Zinc	Sulfide 376.1		
40 ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZ02 DATE: 4/14/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1402	19.83	9.71	1466	178.8	7.73	3.27
2	1407	17.90	9.30	1403	292.5	7.37	1.88
3	1412	17.85	9.09	1434	229.7	7.14	1.73
4	1417	17.87	9.05	1441	-46.2	7.37	2.64
5	1422	17.54	9.11	1403	81.4	7.70	3.03
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Rapid, wide fluctuations in ORP reading - PM instructed to sample based on readings other than ORP, which appears to be affected by machine fault.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/14/10	Well ID:	GMZ03
Weather:	Fair ~70°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	28.49	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	44.83	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	16.34	(ft)	Start time	1202
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	320
2" di. well, V(gal) = 0.5 x LWC,	8.17	(gal)	Pump Depth (ft) :	37.3
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	2.5	(gal)	Final Depth to Groundwater:	28.65

Sample ID: HSSER-GMZ03-041410 Sample Time: 1230

QC Sample if any: —

ample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1226	16.51	9.13	928	85.5	7.92	2.44	0.00

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	clear	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
ml plastic	1	Zinc	Sulfide 376.1		
ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZD3 DATE: 4/14/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1206	16.67	9.71	929	82.5	9.62	2.85
2	1211	16.33	9.20	929	83.9	8.50	1.82
3	1216	16.48	9.12	939	87.2	8.32	4.53
4	1221	16.64	9.12	932	85.6	7.90	4.16
5	1226	16.51	9.13	928	85.5	7.92	2.44
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/14/10	Well ID:	GM204
Weather:	Fair, ~60°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	26.37	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	45.43	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	19.06	(ft)	Start time	0833
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	320
2" dl. well, V(gal) = 0.5 x LWC,	9.53	(gal)	Pump Depth (ft) :	37.9
4" dl., V(gal) = 2 x LWC; 1" dl., V(gal) = 0.12 x LWC			Did well go dry?	yes no ✓
Total Volume Purged	3	(gal)	Final Depth to Groundwater:	26.66 Note: AS/SVE system is running.

Sample ID: HSSER-GM204-041410 Sample Time: 0905

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
0902	14.02	7.66	1134	-44.7	6.23	3.71	0.01

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	clear	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
ml plastic	1	Zinc	Sulfide 376.1		
40 ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GM204 DATE: 4/14/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	0837	12.91	5.43	924	-23.0	8.69	32.8
2	0842	13.48	7.19	1097	-34.3	7.07	7.24
3	0847	13.80	7.57	1151	-51.6	6.66	5.45
4	0852	13.98	7.55	1159	25.3	6.41	3.94
5	0857	14.08	7.62	1139	-33.5	6.32	3.44
6	0902	14.02	7.66	1134	-44.7	6.23	3.71
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ORP fluctuating freely when YSI cable is moved.

- PM instructed to sample. Possible bad contact in YSI cable.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/14/10	Well ID:	ASDM01
Weather:	Fair, ~80°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	30.92	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	43.18	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	12.26	(ft)	Start time	1538
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	350
2" di. well, V(gal) = 0.5 x LWC,	6.13	(gal)	Pump Depth (ft) :	37.1
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	3	(gal)	Final Depth to Groundwater:	30.94

Sample ID: HSSER-ASDM01-041410 Sample Time: 1605

QC Sample if any: —

ample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C° 16.56	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1600	~~16.15~~	9.88	2005	-47.0	4.03	21.5	1.28

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	orange	light orange
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
ml plastic	1	Zinc	Sulfide 376.1		
ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: A5DM01 DATE: 4/14/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1540	20.09	10.64	2120	-25.3	7.08	96.9
2	1545	16.22	9.64	1970	-70.5	3.91	58.7
3	1550	16.53	9.71	1994	-75.6	3.76	41.7
4	1555	16.69	9.85	2015	-89.5	3.79	30.3
5	1600	16.56	9.88	2005	-47.0	4.03	21.5
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ORP reading fluctuates unstably - instrument fault - PM instructed to sample based on stability of other parameters.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/14/10	Well ID:	ASDM02
Weather:	Fair, 75°F ~ 80°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontrer	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	30.95	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	43.78	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	12.83	(ft)	Start time	1653
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	309
2" di. well, V(gal) = 0.5 x LWC,	6.42	(gal)	Pump Depth (ft) :	37.3
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	3.5	(gal)	Final Depth to Groundwater:	30.97

Sample ID: HSSER-ASDM02-041410 Sample Time: 1730

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1727	16.34	10.10	1270	56.4	0.36	7.34	0.98

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	~~clear~~ orange w/ orange floc	light orange w/ orange floc
Odor	none	slight
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
[illegible] ml plastic	1	Zinc	Sulfide 376.1		
[illegible] ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ASDM02 DATE: 04/14/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	10-39 NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1657	19.40	~~10.58~~	1329	54.0	4.64	34.6
2	1702	16.66	9.62	1237	68.3	1.30	32.2
3	1707	16.56	9.65	1237	62.8	0.65	19.7
4	1712	16.44	9.80	1248	57.8	0.44	13.8
5	1717	16.36	9.92	1258	55.3	0.36	12.0
6	1722	16.22	10.02	1258	55.7	0.34	7.36
7	1727	16.34	10.10	1270	56.4	0.36	7.34
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/15/10	Well ID:	ASDM03
Weather:	Fair, ~65°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Portier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	30.57	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	42.53	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	11.96	(ft)	Start time	0855
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	320
2" di. well, V(gal) = 0.5 x LWC,	~~2.0816~~ 5.98	(gal)	Pump Depth (ft) :	36.6
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ___ no ✓
Total Volume Purged	4	(gal)	Final Depth to Groundwater:	30.60

Sample ID: HSSER-ASDM03-041510 Sample Time: 0940

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
0938	15.49	10.17	1595	15.1	3.42	6.18	0.84

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	light orange	clear
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
ml plastic	1	Zinc	Sulfide 376.1		
40 ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ASDM03 DATE: 4/15/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	0858	16.28	9.02	1571	51.3	4.31	56.7
2	0903	15.35	9.78	1529	3.2	1.72	53.8
3	0908	15.18	9.79	1532	-6.7	1.55	30.5
4	0913	15.17	9.89	1547	-0.4	1.93	17.5
5	0918	15.30	9.94	1564	6.1	2.32	10.89
6	0923	15.49	10.01	1583	9.1	2.61	9.95
7	0928	15.45	10.05	1589	12.0	2.99	7.09
8	0933	15.45	10.13	1593	14.1	3.25	5.78
9	0938	15.49	10.17	1595	15.1	3.42	6.18
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	4/15/10	Well ID:	ASDM04
Weather:	Fair, ~65°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Poutrer	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	30.86	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	43.58	(ft)	Pump Brand and ID:	QED Sample Pro
Length of Water Column (LWC):	12.72	(ft)	Start time	1000
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	300
2" di. well, V(gal) = 0.5 x LWC,	6.36	(gal)	Pump Depth (ft) :	37.3
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	3.5	(gal)	Final Depth to Groundwater:	30.87

Sample ID: HSSER-ASDM04-041510 Sample Time: 1040

QC Sample if any:

ample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1038	16.02	11.58	14.18	-8.4	0.29	5.06	3.30 (LIMIT)

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	light orange	clear
Odor	none	~~none~~ BSC slight
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank
250 ml plastic	1	none	Alkalinity 310.1		
		none	Sulfate 300.0A		
40 ml Vial	2	HCl	gases (RSK-175)		
250 ml plastic	1	H2SO4	Nitrate/Nitrite 353.2		
ml plastic	1	Zinc	Sulfide 376.1		
40 ml Vial	2	H2SO4 or HCl	TOC 9060		
Other?					

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ASDM04 DATE: 4/15/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1003	17.67	11.03	1477	16.3	7.87	26.0
2	1008	16.14	10.80	1423	19.2	1.85	15.1
3	1013	15.80	11.09	1414	334 ~~11.10~~ 7.0	1.32	15.5
4	1018	15.97	11.34	1419	-1.1	0.96	8.59
5	1023	16.02	11.45	1424	-4.3	0.87	7.89
6	1028	15.98	11.48	1420	-5.5	0.47	6.98
7	1033	16.08	11.53	1422	-7.4	0.34	5.85
8	1038	16.02	11.58	1418	-8.4	0.29	5.06
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PM instructed to sample.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

QUARTER 3

GROUNDWATER ELEVATION LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Sampler Name(s): Brian Campbell, Matt Pontier

Water Meter (WM) Make and Model: Heron Dipper-T 200'

Date: 7/26/10

Length of water meter tip to sensor: 0.01'

Weather: partly cloudy, ~85°F

Well ID	Approx. Well Depth (from TOC)	Date Measured	PID (ppm)	Depth to Groundwater (from TOC)	Depth to Bottom (DTB) (from TOC)	True (DTB + WM tip to sensor)	Well Condition Notes
MW07FGA	46.98	7/26/10	~~0.0~~ 0.1	26.02	47.00	47.01	1 bolt missing, 2 stripped
MW203	49.63		0.0	26.81	49.55	49.56	good - contains downwell device
SMW01	39.83		0.0	28.98	39.75	39.76	1 of 3 bolts stripped
SMW02	40.38		0.0	25.45	40.35	40.36	1 of 3 bolts missing
SMW04	42.78		0.0	28.13	42.70	42.69	no bolts - covered by dirt from berm
SMW08	42.03		6.0	28.28	41.90	41.91	2 bolts missing, 1 stripped
SMW19	41.33		1.0	27.02	41.20	41.21	no bolts - mismatched cover
SMW20	40.38		0.0	27.12	40.25	40.26	1 rim eyelet broken
SMW21	41.48		0.0	26.45	41.40	41.41	no bolts, standing water in mount
GMZ01	not yet installed						
GMZ02	44.93		0.0	28.38	44.80	44.81	good
GMZ03	44.83		0.6	27.79	44.75	44.76	good
GMZ04	45.43		0.0	25.07	45.35	45.36	good
ASDM01	43.18		9.6	30.36	43.10	43.11	good
ASDM02	43.78		3.3	30.36	43.70	43.71	
ASDM03	42.53		22.4	29.95	42.40	42.41	
ASDM04	43.58		19.7	30.34	43.50	43.51	
PMW01	*45		0.0	28.50	44.90	44.91	1 bolt missing - standing water in mount
PMW02	*45		0.0	28.47	45.05	45.06	good - covered by dirt from berm

All measurements must be to nearest 0.01 feet.

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois
Stantec Project Number: 182602078

Well ID	Elevation of Top of Casing (ft amsl)	Depth to Bottom of screen (ft)	Screen length (ft)	Depth to Top of screen (ft)	Depth to GW from TOC (ft)	Calculated Pump Depth
MW07FGA	727.50	46.98	NI	NI	26.02	36.98
MW203	728.64	49.63	NI	NI	26.81	39.63
SMW01	729.69	39.83	15	24.83	28.98	34.41
SMW02	726.68	40.38	15	25.38	25.45	32.92
SMW04	728.52	42.78	15	27.78	28.13	35.46
SMW08	728.79	42.03	15	27.03	28.28	35.16
SMW19	728.47	41.33	15	26.33	27.02	34.18
SMW20	727.68	40.38	15	25.38	27.12	33.75
SMW21	727.31	41.48	15	26.48	26.45	33.98
GMZ01	not yet installed					
GMZ02	728.79	44.93	15	29.93	28.38	37.43
GMZ03	728.29	44.83	15	29.83	27.79	37.33
GMZ04	726.91	45.43	15	30.43	25.07	37.93
ASDM01	730.90	43.18	15	28.18	30.36	36.77
ASDM02	730.90	43.78	15	28.78	30.36	37.06
ASDM03	730.53	42.53	15	27.53	29.95	36.24
ASDM04	730.80	43.58	15	28.58	30.34	36.96
PMW01	729.19	45.00	25	~~30.00~~ 20.00 BSC	28.50	36.75
PMW02	729.20	45.00	25	~~30.00~~ 20.00 BSC	28.47	36.74

NYI = Not yet installed
NI = No information
NS = Not surveyed
ft amsl = feet above mean sea level

Pump is set in the middle of the saturated screen.

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/26/10	Well ID:	MW07FGA
Weather:	Mostly sunny, ~85°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	26.02	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	47.01	(ft)	Pump Brand and ID:	ProActive SS Hurricane
Length of Water Column (LWC):	20.99	(ft)	Start time	1324
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	255
2" di. well, V(gal) = 0.5 x LWC,	41.98	(gal)	Pump Depth (ft) :	37.0'
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	3	(gal)	Final Depth to Groundwater:	26.01

Sample ID: HSSER-~~0~~ MW07FGA-072610 Sample Time: 1355

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1354	20.32	6.90	2347	174.2	0.31	44.6	0.00

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	pale yellow	pale yellow
Odor	none	none
Turbidity	slight	slight
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: MW07FGA DATE: 7/26/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1324	22.75	6.91	2322	218.8	1.14	64.0
2	1325	–	–	–	218.1	0.90	–
3	1326	–	–	–	217.6	0.81	–
4	1327	–	–	–	216.2	0.66	–
5	1328	–	–	–	213.2	0.57	–
6	1329	21.82	6.87	2360	211.2	0.54	62.9
7	1330	–	–	–	208.4	0.50	–
8	1331	–	–	–	207.1	0.52	–
9	1332	–	–	–	206.4	0.49	–
10	1333	–	–	–	204.6	0.45	–
11	1334	20.72	6.85	2348	202.0	0.44	55.3
12	1335	–	–	–	200.4	0.42	–
13	1336	–	–	–	198.2	0.40	–
14	1337	–	–	–	196.8	0.40	–
15	1338	–	–	–	193.7	0.38	–
16	1339	20.56	6.87	2351	192.9	0.38	51.8
17	1340	–	–	–	191.9	0.36	–
18	1341	–	–	–	191.4	0.36	–
19	1342	–	–	–	190.1	0.36	–
20	1343	–	–	–	195.1	0.35	–
21	1344	20.38	6.88	2365	190.2	0.35	51.0
22	1345	–	–	–	187.8	0.34	–
23	1346	–	–	–	186.2	0.33	–
24	1347	–	–	–	184.6	0.34	–
25	1348	–	–	–	183.5	0.34	–
26	1349	20.31	6.89	2349	181.8	0.33	45.6
27	1350	–	–	–	180.4	0.33	–
28	1351	–	–	–	179.1	0.33	–
29	1352	–	–	–	177.3	0.31	–
30*	1353	–	–	–	175.8	0.31	–
31	1354	20.32	6.90	2347	174.2	0.31	44.6
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/27/10	Well ID:	MW203
Weather:	Partly cloudy ~75°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	26.79	(ft)	Water Purging Method:	low flow	
Depth of Well from TOC:	49.56	(ft)	Pump Brand and ID:	Proactive SS Hurricane	
Length of Water Column (LWC):	22.77	(ft)	Start time	0935	
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	206	
2" di. well, V(gal) = 0.5 x LWC,	~~11.4~~ 11.36	(gal)	Pump Depth (ft) :	39.6'	
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes	no ✓
Total Volume Purged	2	(gal)	Final Depth to Groundwater:	26.77	

Sample ID: HSSER-MW203-072710 Sample Time: 1005

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1005	19.47	6.94	681	141.1	1.77	23.9	0.00

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	pale orange	clear
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: MW203 DATE: 7/27/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	0935	19.45	6.63	602	224.6	1.08	47.9
2	0936	–	–	–	221.0	1.00	–
3	0937	–	–	–	213.0	0.98	–
4	0938	–	–	–	208.1	0.97	–
5	0939	–	–	–	204.0	0.95	–
6	0940	19.79	6.79	624	198.1	0.94	57.3
7	0941	–	–	–	194.0	0.99	–
8	0942	–	–	–	188.4	1.01	–
9	0943	–	–	–	185.7	1.02	–
10	0944	–	–	–	181.7	1.04	–
11	0945	19.75	6.89	642	179.4	1.08	45.3
12	0946	–	–	–	173.9	1.31	–
13	0947	–	–	–	167.1	1.38	–
14	0948	–	–	–	165.3	1.40	–
15	0949	–	–	–	163.0	1.41	–
16	0950	19.25	6.92	662	161.2	1.47	36.0
17	0951	–	–	–	160.6	1.51	–
18	0952	–	–	–	157.5	1.55	–
19	0953	–	–	–	156.4	1.56	–
20	0954	–	–	–	154.8	1.56	–
21	0955	19.36	6.91	672	152.6	1.58	32.4
22	0956	–	–	–	150.5	1.59	–
23	0957	–	–	–	149.4	1.63	–
24	0958	–	–	–	148.1	1.64	–
25	0959	–	–	–	146.9	1.66	–
26	1000	19.27	6.94	677	145.2	1.68	28.1
27	1001	–	–	–	144.4	1.73	–
28	1002	–	–	–	142.7	1.75	–
29	1003	–	–	–	142.1	1.76	–
30*	1004	–	–	–	141.5	1.76	–
31	1005	19.47	6.94	681	141.1	1.77	23.9
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← PM instructed to sample

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/26/10	Well ID:	SMW01
Weather:	Mostly sunny, ~85°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M - Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	28.96	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	39.76	(ft)	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	10.80	(ft)	Start time	~~1430~~ 1530
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	190
2" di. well, V(gal) = 0.5 x LWC,	5.40	(gal)	Pump Depth (ft) :	34.4'
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	1.5	(gal)	Final Depth to Groundwater:	28.96

Sample ID:	HSSER-SMW01-072610	Sample Time:	1550
QC Sample if any:	~~HSSER~~ HSSER-MS05-072610,	HSSER-MSD05-072610	

...ample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1550	16.48	7.16	1740	104.3	7.16	42.7	0.16

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	orange	pale orange
Odor	none	none
Turbidity	high	moderate
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	~~3~~ 9	HCl	VOCs 8260	✓	i.e.: collected equipment blank
					MS/MSD collected

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ~~SMW01~~ SMW01 DATE: 7/26/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	~~1470~~ 1530	17.65	7.28	1837	96.8	7.96	238
2	1531	–	–	–	95.9	7.60	–
3	1532	–	–	–	95.0	7.36	–
4	1533	–	–	–	93.8	7.15	–
5	1534	–	–	–	94.4	7.10	–
6	1535	16.24	7.15	1712	94.6	7.06	254
7	1536	–	–	–	95.9	6.99	–
8	1537	–	–	–	96.6	6.97	–
9	1538	–	–	–	95.9	6.88	–
10	1539	–	–	–	96.4	6.71	–
11	1540	16.54	7.14	1724	97.2	6.69	152
12	1541	–	–	–	98.0	6.54	–
13	1542	–	–	–	98.6	6.59	–
14	1543	–	–	–	99.3	6.74	–
15	1544	–	–	–	99.9	6.87	–
16	1545	16.60	7.16	1747	100.8	6.87	77.2
17	1546	–	–	–	102.1	6.79	–
18	1547	–	–	–	103.1	6.83	–
19	1548	–	–	–	103.7	6.93	–
20	1549	–	–	–	104.0	7.03	–
21	1550	16.48	7.16	1740	104.3	7.16	42.7
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/26/10	Well ID:	SMW02
Weather:	Mostly sunny, ~85°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182802078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	25.46	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	40.36	(ft)	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	14.90	(ft)	Start time	1437
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	260
2" di. well, V(gal) = 0.5 x LWC,	7.45	(gal)	Pump Depth (ft) :	33'
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	1.5	(gal)	Final Depth to Groundwater:	25.43

Sample ID: HSSER-SMW02-072610 Sample Time: 1500

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1457	18.59	7.13	1240	147.8	5.60	185	0.09

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	orange	orange
Odor	none	none
Turbidity	high	high
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW02 DATE: 7/26/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1437	16.85	7.31	1170	168.5	8.53	1246
2	1438	-	-	-	154.9	7.43	-
3	1439	-	-	-	144.9	6.39	-
4	1440	-	-	-	144.2	6.28	-
5	1441	-	-	-	144.7	6.10	-
6	1442	17.74	7.13	1200	144.8	5.89	330
7	1443	-	-	-	146.0	5.98	-
8	1444	-	-	-	146.9	6.03	-
9	1445	-	-	-	147.1	6.00	-
10	1446	-	-	-	147.1	5.92	-
11	1447	18.02	7.13	1223	147.2	5.84	309
12	1448	-	-	-	147.5	5.82	-
13	1449	-	-	-	148.2	5.72	-
14	1450	-	-	-	148.7	5.68	-
15	1451	-	-	-	149.0	5.77	-
16	1452	18.08	7.13	1227	148.8	5.85	232
17	1453	-	-	-	148.3	5.76	-
18	1454	-	-	-	148.2	5.66	-
19	1455	-	-	-	148.2	5.69	-
20	1456	-	-	-	148.0	5.58	-
21	1457	18.59	7.13	1240	147.8	5.60	185
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/27/10	Well ID:	SMW04
Weather:	Mostly Sunny ~90°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M- Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	28.10	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	42.69	(ft)	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	14.59	(ft)	Start time	1227
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	175
2" di. well, V(gal) = 0.5 x LWC,	7.30	(gal)	Pump Depth (ft) :	35.5
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes no ✓
Total Volume Purged	1.75	(gal)	Final Depth to Groundwater:	28.12

Sample ID: HSSER-SMW04-072710 Sample Time: 1300

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1257	19.59	6.94	1408	96.9	0.45	18.2	0.00

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	pale orange	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW04 DATE: 2/27/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1227	19.15	7.06	1417	192.0	0.85	24.8
2	1228	–	–	–	178.9	0.46	–
3	1229	–	–	–	174.6	0.43	–
4	1230	–	–	–	168.9	0.51	–
5	1231	–	–	–	162.2	0.44	–
6	1232	20.57	6.98	1464	159.9	0.44	37.3
7	1233	–	–	–	154.7	0.40	–
8	1234	–	–	–	146.2	0.38	–
9	1235	–	–	–	143.3	0.39	–
10	1236	–	–	–	138.6	0.39	–
11	1237	20.61	6.98	1455	133.1	0.40	38.3
12	1238	–	–	–	129.6	0.38	–
13	1239	–	–	–	127.5	0.38	–
14	1240	–	–	–	125.2	0.38	–
15	1241	–	–	–	121.9	0.38	–
16	1242	20.73	6.99	1455	117.9	0.38	35.7
17	1243	–	–	–	115.2	0.40	–
18	1244	–	–	–	112.0	0.40	–
19	1245	–	–	–	119.7	0.43	–
20	1246	–	–	–	112.7	0.44	–
21	1247	19.60	7.00	1422	108.0	0.45	30.8
22	1248	–	–	–	104.5	0.43	–
23	1249	–	–	–	104.4	0.43	–
24	1250	–	–	–	104.0	0.43	–
25	1251	–	–	–	102.3	0.43	–
26	1252	19.56	6.97	1412	100.7	0.45	25.9
27	1253	–	–	–	98.8	0.47	–
28	1254	–	–	–	98.1	0.47	–
29	1255	–	–	–	97.6	0.46	–
30*	1256	–	–	–	97.2	0.45	–
31	1257	19.59	6.94	1408	96.9	0.45	18.2
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← PM instructed to sample.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/27/10	Well ID:	SMW08
Weather:	Partly cloudy ~90°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	28.23	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	41.91	(ft)	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	13.68	(ft)	Start time	1531
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	260
2" di. well, V(gal) = 0.5 x LWC,	6.84	(gal)	Pump Depth (ft) :	35.2
4" dl., V(gal) = 2 x LWC; 1" dl., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	2.25	(gal)	Final Depth to Groundwater:	28.23

Sample ID: HSSER-SMW08-072710 Sample Time: 1600

MQC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1556	18.85	6.93	1345	97.0	0.98	136	0.24

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	orange	pale orange
Odor	none	none
Turbidity	high	moderate
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW08 DATE: 7/27/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1531	21.63	7.15	1444	134.6	1.42	202
2	1532	–	–	–	131.6	1.34	–
3	1533	–	–	–	124.7	1.03	–
4	1534	–	–	–	123.0	0.94	–
5	1535	–	–	–	115.8	0.82	–
6	1536	19.52	6.82	1360	113.3	0.77	280
7	1537	–	–	–	110.4	0.76	–
8	1538	–	–	–	109.2	0.76	–
9	1539	–	–	–	106.2	0.81	–
10	1540	–	–	–	103.5	0.85	–
11	1541	19.22	6.81	1341	101.2	0.89	298
12	1542	–	–	–	98.1	0.95	–
13	1543	–	–	–	97.6	0.95	–
14	1544	–	–	–	96.5	0.91	–
15	1545	–	–	–	96.0	0.88	–
16	1546	19.58	6.90	1354	95.5	0.88	260
17	1547	–	–	–	95.3	0.87	–
18	1548	–	–	–	95.4	0.87	–
19	1549	–	–	–	96.2	0.91	–
20	1550	–	–	–	96.4	0.91	–
21	1551	19.28	6.92	1355	97.1	0.93	195
22	1552	–	–	–	97.3	0.95	–
23	1553	–	–	–	97.4	0.98	–
24	1554	–	–	–	97.4	0.98	–
25	1555	–	–	–	97.2	0.99	–
26	1556	18.85	6.93	1345	97.0	0.98	136
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

STANTEC

LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/26/10	Well ID:	SMW19
Weather:	Mostly sunny, ~85°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	27.06	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	41.21	(ft)	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	14.15	(ft)	Start time	1633
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	240
2" di. well, V(gal) = 0.5 x LWC,	7.08	(gal)	Pump Depth (ft) :	34.2'
4" dl., V(gal) = 2 x LWC; 1" dl., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	2.25	(gal)	Final Depth to Groundwater:	27.01

Sample ID: HSSER-SMW19-072610 Sample Time: 1705

MS/MSD/QC Sample if any: ~

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1703	18.50	6.99	1121	134.0	4.41	36.6	0.04

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	orange	clear
Odor	none	none
Turbidity	high	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW19 DATE: 7/26/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	~~1633~~ 1633	18.65	7.26	1196	116.5	7.84	306
2	1634	–	–	–	108.0	5.52	–
3	1635	–	–	–	107.5	5.36	–
4	1636	–	–	–	108.5	5.08	–
5	1637	–	–	–	110.2	5.16	–
6	1638	18.38	7.04	1175	111.9	5.30	240
7	1639	–	–	–	113.3	5.13	–
8	1640	–	–	–	114.2	5.13	–
9	1641	–	–	–	115.7	5.21	–
10	1642	–	–	–	116.0	5.13	–
11	1643	18.51	7.01	1157	116.5	5.11	158
12	1644	–	–	–	117.1	5.06	–
13	1645	–	–	–	118.2	4.86	–
14	1646	–	–	–	119.6	4.88	–
15	1647	–	–	–	120.4	4.80	–
16	1648	18.30	7.00	1138	121.4	4.73	95.1
17	1649	–	–	–	123.0	4.52	–
18	1650	–	–	–	128.3	4.62	–
19	1651	–	–	–	127.3	4.82	–
20	1652	–	–	–	127.5	4.81	–
21	1653	18.18	7.00	1126	128.5	4.58	60.6
22	1654	–	–	–	129.6	4.69	–
23	1655	–	–	–	130.5	4.60	–
24	1656	–	–	–	131.0	4.53	–
25	1657	–	–	–	131.7	4.41	–
26	1658	18.24	6.99	1122	132.3	4.44	41.2
27	1659	–	–	–	132.9	4.40	–
28	1700	–	–	–	132.9	4.44	–
29	1701	–	–	–	133.1	4.51	–
30*	1702	–	–	–	133.6	4.41	–
31	1703	18.50	6.99	1121	134.0	4.41	36.6
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← Called PM, instructed to sample

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/27/10	Well ID:	SMW20
Weather:	Sunny, ~85°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Poutier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	27.10	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	40.26	(ft)	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	13.16	(ft)	Start time	1044
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	230
2" di. well, V(gal) = 0.5 x LWC,	6.58	(gal)	Pump Depth (ft) :	33.8
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	2	(gal)	Final Depth to Groundwater:	27.20

Sample ID: HSSER-SMW20-072710 Sample Time: 1110

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1109	19.68	7.60	754	159.2	7.65	9.43	0.00

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	orange	clear
Odor	none	none
Turbidity	moderate	slight
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW20 DATE: 7/27/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1044	20.08	7.62	737	206.1	10.04	57.7
2	1045	–	–	–	195.5	8.30	–
3	1046	–	–	–	191.8	8.07	–
4	1047	–	–	–	190.0	8.01	–
5	1048	–	–	–	188.2	7.94	–
6	1049	19.98	7.89	730	186.0	7.84	64.0
7	1050	–	–	–	180.2	7.81	–
8	1051	–	–	–	174.2	8.11	–
9	1052	–	–	–	173.0	8.03	–
10	2053	–	–	–	172.7	7.88	–
11	1054	19.63	7.57	724	171.9	7.89	32.6
12	1055	–	–	–	168.8	7.69	–
13	1056	–	–	–	167.4	7.75	–
14	1057	–	–	–	165.9	7.80	–
15	1058	–	–	–	163.7	7.76	–
16	1059	19.93	7.61	743	163.0	7.69	15.5
17	1100	–	–	–	162.2	7.59	–
18	1101	–	–	–	161.8	7.58	–
19	1102	–	–	–	161.4	7.69	–
20	1103	–	–	–	161.0	7.74	–
21	1104	20.00	7.60	750	160.6	7.71	11.1
22	1105	–	–	–	160.0	7.59	–
23	1106	–	–	–	159.8	7.58	–
24	1107	–	–	–	159.5	7.55	–
25	1108	–	–	–	159.3	7.63	–
26	1109	19.68	7.60	754	159.2	7.65	9.43
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1660

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/28/10	Well ID:	SMW21
Weather:	Partly cloudy, ~85°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	26.53	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	41.41	(ft)	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	14.88	(ft)	Start time	1436
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	280
2" di. well, V(gal) = 0.5 x LWC,	7.44	(gal)	Pump Depth (ft) :	34.0
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	1.25	(gal)	Final Depth to Groundwater:	26.59

Sample ID: HSSER-SMW21-072810 Sample Time: 1455

QC Sample if any: HSSER-DUP05-072810

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1451	19.17	7.52	1031	169.7	5.91	63.9	0.00

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	pale orange	clear
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	~~6~~ 6	HCl	VOCs 8260	✓	i.e.: collected equipment blank
					DUP05

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW21 DATE: 7/28/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1436	19.70	7.88	1041	179.4	6.12	58.8
2	1437	–	–	–	179.2	5.78	–
3	1438	–	–	–	181.2	5.22	–
4	1439	–	–	–	180.6	5.13	–
5	1440	–	–	–	179.7	5.14	–
6	1441	19.44	7.60	1033	177.8	5.38	134
7	1442	–	–	–	177.0	5.49	–
8	1443	–	–	–	175.7	5.61	–
9	1444	–	–	–	174.7	5.73	–
10	1445	–	–	–	173.7	5.78	–
11	1446	19.34	7.54	1034	172.8	5.80	97.3
12	1447	–	–	–	172.1	5.84	–
13	1448	–	–	–	171.0	5.85	–
14	1449	–	–	–	170.4	5.93	–
15	1450	–	–	–	170.1	5.95	–
16	1451	19.17	7.52	1031	169.7	5.91	63.9
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Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/28/10	Well ID:	GMZ02
Weather:	Partly cloudy ~85°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	28.35	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	44.81	(ft)	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	16.46	(ft)	Start time	1604
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	284
2" di. well, V(gal) = 0.5 x LWC,	8.23	(gal)	Pump Depth (ft) :	37.4
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	2.5	(gal)	Final Depth to Groundwater:	28.35

Sample ID: HSSER-GMZ02-072810 Sample Time: 1635

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1634	18.65	7.56	1182	144.4	8.67	25.7	0.00

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	pale orange	clear
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZ02 DATE: 7/28/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1604	18.90	7.74	1189	196.8	11.07	67.7
2	1605	–	–	–	194.4	10.38	–
3	1606	–	–	–	195.5	9.52	–
4	1607	–	–	–	199.6	9.11	–
5	1608	–	–	–	199.2	8.98	–
6	1609	18.90	7.40	1187	196.5	8.99	94.1
7	1610	–	–	–	191.6	9.02	–
8	1611	–	–	–	190.2	9.04	–
9	1612	–	–	–	188.6	9.20	–
10	1613	–	–	–	191.1	8.93	–
11	1614	18.88	7.45	1184	186.4	8.88	76.8
12	1615	–	–	–	182.7	8.68	–
13	1616	–	–	–	180.6	8.57	–
14	1617	–	–	–	176.9	8.51	–
15	1618	–	–	–	172.9	8.73	–
16	1619	19.06	7.54	1191	170.4	8.69	59.9
17	1620	–	–	–	166.4	9.07	–
18	1621	–	–	–	164.3	9.08	–
19	1622	–	–	–	161.9	8.91	–
20	1623	–	–	–	161.3	8.84	–
21	1624	18.53	7.56	1176	160.3	8.75	45.2
22	1625	–	–	–	158.3	8.66	–
23	1626	–	–	–	157.1	8.60	–
24	1627	–	–	–	155.8	8.70	–
25	1628	–	–	–	153.7	8.77	–
26	1629	18.64	7.57	1180	152.0	8.81	31.4
27	1630	–	–	–	151.0	8.75	–
28	1631	–	–	–	149.4	8.63	–
29	1632	–	–	–	148.0	8.62	–
30*	1633	–	–	–	145.6	8.59	–
31	1634	18.65	7.56	1182	144.4	8.67	25.7
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PM OK'd sample

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/28/10	Well ID:	GMZ03
Weather:	Overcast	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	27.76	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	44.76	(ft)	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	17.00	(ft)	Start time	1517
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	225
2" di. well, V(gal) = 0.5 x LWC,	8.50	(gal)	Pump Depth (ft) :	37.3
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	1.5	(gal)	Final Depth to Groundwater:	27.79

Sample ID: HSSER-GMZ03-072810 Sample Time: 1540

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1537	19.24	7.62	895	173.5	8.80	33.5	0.00

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	orange	clear
Odor	none	none
Turbidity	high	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GM203 DATE: 7/28/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1517	18.44	7.78	868	196.6	11.99	238
2	1518	–	–	–	196.1	10.54	–
3	1519	–	–	–	197.0	9.95	–
4	1520	–	–	–	195.6	9.86	–
5	1521	~~18.~~ –	–	–	194.4	9.75	–
6	1522	18.56	7.56	873	193.1	9.58	154
7	1523	–	–	–	190.6	9.50	–
8	1524	–	–	–	189.5	9.23	–
9	1525	–	–	–	188.5	8.96	–
10	1526	–	–	–	186.0	9.25	–
11	1527	19.06	7.59	885	184.7	9.11	86.6
12	1528	–	–	–	183.3	8.85	–
13	1529	–	–	–	181.0	8.48	–
14	1530	–	–	–	MISSED READING		–
15	1531	–	–	–	180.0	8.26	–
16	1532	19.48	7.60	894	179.4	8.18	47.0
17	1533	–	–	–	177.4	8.42	–
18	1534	–	–	–	176.3	8.51	–
19	1535	–	–	–	175.4	8.63	–
20	1536	–	–	–	174.6	8.74	–
21	1537	19.24	7.62	895	173.5	8.80	33.5
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PM instruct to sample

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/28/10	Well ID:	GMZ04
Weather:	Light rain, ~80°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	26.01	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	~~17.43~~	(ft) 45.36	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	19.35	(ft)	Start time	1339
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	284
2" di. well, V(gal) = 0.5 x LWC,	9.68	(gal)	Pump Depth (ft) :	37.9
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes no ✓
Total Volume Purged	2.25	(gal)	Final Depth to Groundwater:	26.00

Sample ID: HSSER-GMZ04-072810 Sample Time: 1415

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1414	20.82	7.84	825	143.5	7.74	51.9	0.00

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	orange	clear
Odor	none	none
Turbidity	high	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZ04 DATE: 7/28/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1339	18.89	7.97	668	179.0	9.80	245
2	1340	–	–	–	178.1	9.27	–
3	1341	–	–	–	177.7	9.19	–
4	1342	–	–	–	175.2	9.71	–
5	1343	–	–	–	173.7	9.70	–
6	1344	19.22	7.77	710	169.3	10.07	297
7	1345	–	–	–	166.1	10.08	–
8	1346	–	–	–	165.1	10.11	–
9	1347	–	–	–	162.3	10.11	–
10	1348	–	–	–	159.8	9.97	–
11	1349	19.16	7.75	744	158.6	9.91	272
12	1350	–	–	–	156.5	10.16	–
13	1351	–	–	–	154.0	9.41	–
14	1352	–	–	–	153.2	9.69	–
15	1353	–	–	–	152.4	9.82	–
16	1354	19.38	7.78	765	151.2	9.57	224
17	1355	–	–	–	150.0	9.34	–
18	1356	–	–	–	148.7	9.44	–
19	1357	–	–	–	147.7	9.38	–
20	1358	–	–	–	147.2	9.18	–
21	1359	19.85	7.80	790	146.9	8.98	196
22	1400	–	–	–	146.8	8.75	–
23	1401	–	–	–	145.5	8.63	–
24	1402	–	–	–	145.0	8.66	–
25	1403	–	–	–	144.3	8.43	–
26	1404	20.05	7.82	804	143.8	8.31	143
27	1405	–	–	–	143.5	8.18	–
28	1406	–	–	–	142.9	7.91	–
29	1407	–	–	–	142.5	7.76	–
30*	1408	–	–	–	142.2	7.71	–
31	1409	20.66	7.83	818	142.3	7.83	106.9
32	1410	–	–	–	142.4	7.94	–
33	1411	–	–	–	142.3	7.87	–
34	1412	–	–	–	142.5	7.82	–
35	1413	–	–	–	142.9	7.82	–
36	1414	20.82	7.84	825	143.5	7.74	51.9
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PM instructed to sample.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/28/10	Well ID:	ASDM01
Weather:	Partly cloudy, ~80°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Portier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	30.27	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	43.11	(ft)	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	12.84	(ft)	Start time	1143
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	260
2" dl. well, V(gal) = 0.5 x LWC,	6.42	(gal)	Pump Depth (ft) :	36.8
4" dl., V(gal) = 2 x LWC; 1" dl., V(gal) = 0.12 x LWC			Did well go dry?	yes no ✓
Total Volume Purged	3.5	(gal)	Final Depth to Groundwater:	30.29

Sample ID: HSSER-ASDM01-072810 Sample Time: 1220

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1218	17.32	6.89	1663	27.2	1.14	9.16	0.25

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	orange	clear
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ASDM01 DATE: 7/28/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	1143	19.86	7.01	1829	90.9	3.57	96.0
2	1144	–	–	–	86.8	1.12	–
3	1145	–	–	–	86.9	0.84	–
4	1146	–	–	–	87.5	0.81	–
5	1147	–	–	–	88.0	0.77	–
6	1148	17.68	6.88	1755	88.1	0.74	120
7	1149	–	–	–	87.4	0.71	–
8	1150	–	–	–	86.9	0.70	–
9	1151	–	–	–	85.5	0.76	–
10	1152	–	–	–	83.2	0.72	–
11	1153	17.96	6.89	1731	82.1	0.82	37.1
12	1154	–	–	–	80.7	0.84	–
13	1155	–	–	–	79.4	0.89	–
14	1156	–	–	–	79.1	0.96	–
15	1157	–	–	–	78.7	0.96	–
16	1158	17.78	6.89	1711	78.2	0.97	25.5
17	1159	–	–	–	77.3	1.00	–
18	1200	–	–	–	76.4	1.00	–
19	1201	–	–	–	75.9	1.01	–
20	1202	–	–	–	74.8	1.02	–
21	1203	17.41	6.88	1683	73.4	1.02	14.9
22	1204	–	–	–	69.6	1.01	–
23	1205	–	–	–	68.7	1.05	–
24	1206	–	–	–	64.0	1.06	–
25	1207	–	–	–	61.1	1.05	–
26	1208	17.56	6.88	1681	54.7	1.09	13.7
27	1209	–	–	–	53.1	1.11	–
28	1210	–	–	–	48.7	1.12	–
29	1211	–	–	–	43.6	1.12	–
30*	1212	–	–	–	38.3	1.13	–
31	1213	17.43	6.88	1672	36.4	1.15	11.8
32	1214	–	–	–	32.5	1.15	–
33	1215	–	–	–	31.5	1.15	–
34	1216	–	–	–	31.1	1.16	–
35	1217	–	–	–	28.9	1.15	–
36	1218	17.32	6.89	1663	27.2	1.14	9.16
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PM instructed to sample

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/28/10	Well ID:	ASDM02
Weather:	Overcast ~80°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Poutier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	30.32	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	43.71	(ft)	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	13.39	(ft)	Start time	0959
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	260
2" di. well, V(gal) = 0.5 x LWC,	6.70	(gal)	Pump Depth (ft) :	37.1
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	2.5	(gal)	Final Depth to Groundwater:	30.30

Sample ID: HSSER-ASDM02-072810 Sample Time: 1035

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
1034	19.02	6.97	1585	3.6	0.48	33.1	0.27

*Readings collected during purging are on the next page.

	Water Physical Appearance at Start of Purging:	At Sampling:
Color	orange	pale orange
Odor	none	~~none~~ BTC slight H_2S
Turbidity	moderate	~~moderate~~ BTC low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ASDM02 DATE: 7/28/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	0959	18.32	7.01	1575	66.9	1.16	93.0
2	1000	–	–	–	62.8	0.64	–
3	1001	–	–	–	62.3	0.54	–
4	1002	–	–	–	61.3	0.39	–
5	1003	–	–	–	59.7	0.33	–
6	1004	18.64	6.96	1586	58.1	0.29	148
7	1005	–	–	–	55.3	0.27	–
8	1006	–	–	–	55.4	0.26	–
9	1007	–	–	–	55.5	0.25	–
10	1008	–	–	–	56.0	0.25	–
11	1009	18.61	6.96	1580	54.9	0.28	96.7
12	~~1000~~ 1010	–	–	–	54.4	0.27	–
13	1011	–	–	–	52.8	0.31	–
14	1012	–	–	–	51.6	0.32	–
15	1013	–	–	–	48.2	0.29	–
16	1014	18.60	6.96	1576	45.6	0.31	51.9
17	1015	–	–	–	44.0	0.33	–
18	1016	–	–	–	41.0	0.34	–
19	1017	–	–	–	39.0	0.36	–
20	1018	–	–	–	37.8	0.36	–
21	1019	18.83	6.96	1581	35.3	0.38	36.1
22	1020	–	–	–	32.7	0.40	–
23	1021	–	–	–	32.3	0.37	–
24	1022	–	–	–	31.2	0.42	–
25	1023	–	–	–	30.0	0.41	–
26	1024	19.06	6.97	1590	28.7	0.39	27.2
27	1025	–	–	–	26.0	0.45	–
28	1026	–	–	–	24.8	0.44	–
29	1027	–	–	–	22.7	0.46	–
30*	1028	–	–	–	21.0	0.47	–
31	1029	18.98	6.97	1585	17.6	0.43	15.3
32	1030	–	–	–	12.2	0.50	–
33	1031	–	–	–	9.2	0.49	–
34	1032	–	–	–	6.0	0.49	–
35	1033	–	–	–	4.2	0.47	–
36	1034	19.02	6.97	1585	3.6	0.48	33.1
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PM instructed to sample.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/28/10	Well ID:	ASDM03
Weather:	Partly cloudy ~80°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	29.89	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	42.41	(ft)	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	12.51	(ft)	Start time	0856
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	280
2" di. well, V(gal) = 0.5 x LWC,	6.26	(gal)	Pump Depth (ft) :	36.2
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged	4.5	(gal)	Final Depth to Groundwater:	29.90

Sample ID: HSSER-ASDM03-072810 Sample Time: ~~1045~~ 0945

QC Sample if any: —

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
0941	17.00	6.87	1839	117.7	2.13	10.34	0.03

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	clear	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260	✓	i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ASDM03 DATE: 7/28/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if < 1.0	NA
1	0856	17.25	6.56	1785	122.4	0.50	54.1
2	0857	–	–	–	119.6	0.50	–
3	0858	–	–	–	116.6	0.45	–
4	0859	–	–	–	114.8	0.45	–
5	0900	–	–	–	113.3	0.46	–
6	0901	17.73	6.71	1824	110.2	0.52	32.6
7	0902	–	–	–	108.0	0.61	–
8	0903	–	–	–	108.1	0.64	–
9	0904	–	–	–	108.9	0.74	–
10	0905	–	–	–	109.2	0.82	–
11	0906	17.22	6.76	1819	109.7	0.85	17.1
12	0907	–	–	–	109.8	0.87	–
13	0908	–	–	–	109.6	0.92	–
14	0909	–	–	–	MISTED	READING	–
15	0910	–	–	–	109.7	1.00	–
16	0911	17.10	6.81	1830	110.1	1.03	12.6
17	0912	–	–	–	110.4	1.05	–
18	0913	–	–	–	111.3	1.10	–
19	0914	–	–	–	111.5	1.13	–
20	0915	–	–	–	112.6	1.21	–
21	0916	17.06	6.83	1842	113.1	1.25	11.5
22	0917	–	–	–	113.5	1.27	–
23	0918	–	–	–	114.4	1.33	–
24	0919	–	–	–	115.2	1.38	–
25	0920	–	–	–	116.3	1.41	–
26	0921	16.88	6.85	1836	116.2	1.47	19.5
27	0922	–	–	–	114.8	1.50	–
28	0923	–	–	–	114.1	1.53	–
29	0924	–	–	–	113.6	1.53	–
30*	0925	–	–	–	113.1	1.52	–
31	0926	17.02	6.86	1837	112.7	1.56	16.8
32	0927	–	–	–	112.6	1.64	–
33	0928	–	–	–	112.6	1.68	–
34	0929	–	–	–	112.5	1.70	–
35	0930	–	–	–	112.9	1.72	–
36	0931	16.92	6.87	1840	113.4	1.77	13.9
37	0932	–	–	–	114.4	1.89	–
38	0933	–	–	–	115.4	1.95	–
39	0934	–	–	–	115.7	1.98	–
40	0935	–	–	–	115.9	2.01	–
41	0936	16.82	6.87	1836	116.2	2.02	10.84
42	0937	–	–	–	116.8	2.05	–
43	0938	–	–	–	117.1	2.05	–
44	0939	–	–	–	117.3	2.08	–
45	0940	–	–	–	117.5	2.11	–
46	0941	17.00	6.87	1839	117.7	2.13	10.34
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PM instructed to sample

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

LOW FLOW GROUNDWATER SAMPLING LOG

STANTEC

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	7/28/10	Well ID:	ASDM04
Weather:	Overcast, ~80°F	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	M. Pontier	Project Number:	182602078

Groundwater Calculations and Low Flow Readings:

Depth To Groundwater from TOC:	30.19	(ft)	Water Purging Method:	low flow
Depth of Well from TOC:	43.51	(ft)	Pump Brand and ID:	Proactive SS Hurricane
Length of Water Column (LWC):	13.32	(ft)	Start time	1054
Purge Volume (V)= 3x Well Volume for:			Pump Rate (ml/min):	212
2" di. well, V(gal) = 0.5 x LWC,	6.66	(gal)	Pump Depth (ft) :	37.0
4" di., V(gal) = 2 x LWC; 1" di., V(gal) = 0.12 x LWC			Did well go dry?	yes ____ no ✓
Total Volume Purged		(gal)	Final Depth to Groundwater:	

Sample ID: _____ Sample Time: 1125

QC Sample if any: _____

Sample: HS SER-MW07FGA-012210, HS SER-MSD03-012210

Water Parameters Final Reading*

Time (last reading)	Temperature C°	pH (unitless)	Conductivity ug/cm	ORP mV	DO mg/L	Turbidity NTU	Ferrous Iron mg/L
							1.73

*Readings collected during purging are on the next page.

Water Physical Appearance at Start of Purging:		At Sampling:
Color	orange	clear
Odor	none	slight H_2S
Turbidity	high	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Analytical Parameters

Container size	# of Containers	Preservative	Analyte	Collected?	Notes
40 ml Vial	3	HCl	VOCs 8260		i.e.: collected equipment blank

LOW FLOW GROUNDWATER PARAMETER LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: ASDM04 DATE: 7/28/10 Page 1 of 1

Reading	Time	Temperature (C°)	pH	Conductivity (ug/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
Stabilization criteria	NA	NA	NA	NA	+/- 10% or +/- 0.1 if (1 to -1)	+/- 10% or +/- 0.1 if ≤ 1.0	NA
1	1054	17.57	7.00	1637	-15.4	1.16	158
2	1055	–	–	–	-15.3	0.59	–
3	1056	–	–	–	-11.5	0.43	–
4	1057	–	–	–	-9.7	0.36	–
5	1058	–	–	–	-10.0	0.32	–
6	1059	18.37	6.95	1701	-9.5	0.28	89.2
7	1100	–	–	–	-9.0	0.22	–
8	1101	–	–	–	-8.8	0.24	–
9	1102	–	–	–	-8.9	0.23	–
10	1103	–	–	–	-8.8	0.22	–
11	1104	18.26	6.97	1715	-9.6	0.21	48.2
12	1105	–	–	–	-13.2	0.19	–
13	1106	–	–	–	-15.4	0.19	–
14	1107	–	–	–	-18.5	0.19	–
15	1108	–	–	–	-21.4	0.21	–
16	1109	18.16	6.97	1731	-24.5	0.20	26.4
17	1110	–	–	–	-26.2	0.19	–
18	1111	–	–	–	-30.4	0.17	–
19	1112	–	–	–	-31.2	0.18	–
20	1113	–	–	–	-32.1	0.19	–
21	1114	18.43	6.97	1739	-30.2	0.19	14.9
22	1115	–	–	–	-28.5	0.18	–
23	1116	–	–	–	-26.9	0.18	–
24	1117	–	–	–	-27.5	0.17	–
25	1118	–	–	–	-29.5	0.17	–
26	1119	18.40	6.97	1738	-30.0	0.18	10.22
27	1120	–	–	–	-30.7	0.18	–
28	1121	–	–	–	-30.4	0.19	–
29	1122	–	–	–	-29.5	0.20	–
30*	1123	–	–	–	-28.2	0.20	–
31	1124	18.82	6.98	1741	-28.1	0.19	18.5
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PM instructed to sample.

Record DO and ORP every minute, Record other readings every 5 minutes.
Need 4 readings of ORP and DO reading at 5 minute intervals (15 minutes) within 10% before sampling).
*If not stable after 6 readings (30 minutes) call Amy 630-792-1680

QUARTER 4

GROUNDWATER ELEVATION LOG

STANTEC

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Sampler Name(s): David Vasquez

Water Meter (WM) Make and Model: Heron Digger-T

Date: 12/22/10

Length of water meter tip to sensor: 0.05

Weather:

Well ID	Approx. Well Depth (from TOC)	Date Measured	PID	Depth to Groundwater (from TOC)	Depth to Bottom (DTB) (from TOC)	True (DTB + WM tip to sensor)	Well Condition Notes
MW07FGA	48.98	12/22/10	NM	26.93	NM		
MW203	49.63	12/22/10		27.82			
SMW01	39.83	12/22/10		29.87			
SMW02	40.38	12/22/10		26.31			
SMW04	42.78	12/22/10		29.10			
SMW08	42.03			NM			
SMW19	41.33	12/22/10		27.90			
SMW20	40.38	12/22/10		28.10			
SMW21	41.48	12/22/10		27.57			
GMZ01		12/22/10		31.86			
GMZ02	44.93	12/22/10		29.90			
GMZ03	44.83	12/22/10		28.79			
GMZ04	45.43	12/22/10		27.00			
BGW01		12/22/10		31.35			
BGW02		12/22/10		28.20			
BGW03		12/22/10		28.29			
PMW01				NM			
PMW02				NM			

All measurements must be to nearest 0.01 feet.

NM = Not measured

(See field notes for PID measurements during sampling and field sampling logs for DTB.)

Quarterly Sampling Pump Depth Calculation Sheet DRAFT

Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois
Stantec Project Number: 182602078

Well ID	Elevation of Top of Casing (ft amsl)	Depth to Bottom of screen (ft)	Screen length (ft)	Depth to Top of screen (ft)	Depth to GW from TOC (ft)	Calculated Pump Depth
MW07FGA	727.50	46.98	NI	NI	26.93	39.48
MW203	728.64	49.63	NI	NI	27.82	42.13
SMW01	729.69	39.83	15	24.83	29.87	34.85
SMW02	726.68	40.38	15	25.38	~~29.90~~ 26.31	33.35
SMW04	728.52	42.78	15	27.78	29.10	35.94
SMW08	728.79	42.03	15	27.03	29.41 *	35.72
SMW19	728.47	41.33	15	26.33	27.90	34.62
SMW20	727.68	40.38	15	25.38	28.10	34.24
SMW21	727.31	41.48	15	26.48	27.57	34.53
GMZ01		47.85	25	22.85	31.86	39.86
GMZ02	728.79	44.93	15	29.93	29.90	37.43
GMZ03	728.29	44.83	15	29.83	28.79	37.33
GMZ04	726.91	45.43	15	30.43	27.00	37.93
BGW01	730.90	44.85	25	19.85	31.35	38.10
BGW02	730.90	44.80	25	19.80	28.20	36.50
BGW03	730.53	45.02	25	20.02	28.29	36.66
PMW01	729.19	45.00	25	30.00		
PMW02	729.20	45.00	25	30.00		

NYI = Not yet installed
NI = No information
NS = Not surveyed
ft amsl = feet above mean sea level

Pump is set in the middle of the saturated screen.

* SMW08 DTW value collected at time of purging (see sampling log); all other DTW collected 12/22/10 (see GW elevation log).

LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	12/28/10	Well ID:	MW07FGA
Weather:	Fair, 20° F, SW wind	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	C. Varland	Project Number:	182602078

Groundwater Calculations

Depth To Groundwater from TOC:	27.07	(ft)
Total Depth of Well from TOC:	47.10	(ft)
Length of Water Column (LWC):	20.03	(ft)
Total Volume Purged:	10	(gal)

Purging Data

Water Purging Method:	Low Flow
Pump Brand and ID:	Proactive SS Hurricane
Start time: Date/Time	12/28/10 1512
Pump Rate (ml/min):	500
Pump Depth (ft) :	39
Did well go dry?	yes ____ no ✓
Final Depth to Groundwater:	27.07

Water Physical Appearance at:

	Start of Sampling	*Time of Sampling*
Color	light brown	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Sample Collection

Sample ID:	HSSER-MW07FGA-122810
Sample Date:	12/28/10
Sample Time	1555
Additional Samples (i.e. QA/QC):	none

Ferrous Iron (mg/L) 0.13

Container size	# of Containers	Preservative	Analyte	Sample Collected	Notes
40 ml	3	HCl	VOCs 8260	X	

GROUNDWATER MONITORING
LOW FLOW SAMPLING STABILIZATION LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: MW07FGA DATE: 12/28/10

Reading	Time	ORP (mV)	DO (mg/L)	Comment
1	1515	182.3	0.54	
2	1520	176.3	0.48	
3	1525	168.7	0.38	
4	1530	155.6	0.34	
5	1535	140.5	0.35	
6	1540	127.0	0.34	
7	1545	116.3	0.34	
8	1550	108.1	0.33	PM instructed to sample.
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Well is stable when readings stabilize to +/-10% over three (3) consecutive readings collected at 5-minute intervals.

GROUNDWATER MONITORING
LOW FLOW SAMPLING FIELD PARAMETER LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: MW07FGA DATE: 12/28/10

Reading	Time	Temperature (C°)	pH	Conductivity (uS/cm)	Turbidity (NTUs)	Comment
1	1515	11.43	7.19	2252	45	
2	1520	10.95	7.10	2218	40	
3	1525	12.67	7.06	2304	38	
4	1530	12.98	7.05	2324	30	
5	1535	13.12	7.03	2317	23	
6	1540	13.06	7.02	2300	19	
7	1545	12.91	7.01	2291	17	
8	1550	13.07	7.00	2283	23	
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LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled: 12/29/10
Weather: Fair, 14°F, light breeze
Personnel: B. Campbell
C Varland

Well ID: MW203
Site Name: HSC UTC - SER
Site Location: Rockford, Illinois
Project Number: 182602078

Groundwater Calculations

Depth To Groundwater from TOC: 27.82 (ft)
Total Depth of Well from TOC: 49.60 (ft)
Length of Water Column (LWC): 21.78 (ft)
Total Volume Purged: 4.5 (gal)

Purging Data

Water Purging Method: Low Flow
Pump Brand and ID: Proactive SS Hurricane
Start time: Date/Time 12/29/10 / 0830
Pump Rate (ml/min): 500
Pump Depth (ft): 42
Did well go dry? yes ____ no ✓
Final Depth to Groundwater: 27.82

Water Physical Appearance at:

	Start of Sampling	*Time of Sampling*
Color	orange	light orange
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Sample Collection

Sample ID: ~~HSSER 1/2~~ HSSER - MW203 - 122910
Sample Date: 12/29/10
Sample Time 0850
Additional Samples (i.e. QA/QC): —

Ferrous Iron (mg/L) 0.03

Container size	# of Containers	Preservative	Analyte	Sample Collected	Notes
40 ml	3	HCl	VOCs 8260	X	

GROUNDWATER MONITORING
LOW FLOW SAMPLING STABILIZATION LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: MW203 DATE: 12/29/10

Reading	Time	ORP (mV)	DO (mg/L)	Comment
1	0834	255.8	3.85	
2	0839	252.4	3.66	
3	0844	250.0	3.58	
4	0849	249.1	3.60	
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Well is stable when readings stabilize to +/-10% over three (3) consecutive readings collected at 5-minute intervals.

GROUNDWATER MONITORING
LOW FLOW SAMPLING FIELD PARAMETER LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: MW203 DATE: 12/29/10

Reading	Time	Temperature (C°)	pH	Conductivity (uS/cm)	Turbidity (NTUs)	Comment
1	0834	13.23	6.78	588	130	
2	0839	13.74	6.86	595	45	
3	0844	13.90	6.92	598	31	
4	0849	13.95	6.94	598	23	
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LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	12/29/10	Well ID:	SMW01
Weather:	Fair, 15°F, light S wind	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	C. Varland	Project Number:	182602078

Groundwater Calculations

Depth To Groundwater from TOC:	29.97	(ft)
Total Depth of Well from TOC:	39.80	(ft)
Length of Water Column (LWC):	9.83	(ft)
Total Volume Purged:	4.5	(gal)

Purging Data

Water Purging Method:	Low Flow
Pump Brand and ID:	Proactive SS Hurricane
Start time: Date/Time	12/29/10 / 0933
Pump Rate (ml/min):	500
Pump Depth (ft) :	35
Did well go dry?	yes ____ no ✓
Final Depth to Groundwater:	29.97

Water Physical Appearance at:

	Start of Sampling	*Time of Sampling*
Color	orange - brown	light orange
Odor	none	none
Turbidity	high	moderate
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Sample Collection

Sample ID:	HSSER - SMW01 - 122910
Sample Date:	12/29/10
Sample Time	0955
Additional Samples (i.e. QA/QC):	HSSER - MS06 - 122910 HSSER - MSD06 - 122910

Ferrous Iron (mg/L) 0.05

Container size	# of Containers	Preservative	Analyte	Sample Collected	Notes
40 ml	~~23~~ 9	HCl	VOCs 8260	X	

GROUNDWATER MONITORING
LOW FLOW SAMPLING STABILIZATION LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW01 DATE: 12/29/10

Reading	Time	ORP (mV)	DO (mg/L)	Comment
1	0936	208.5	7.69	
2	0941	202.1	6.84	
3	0946	190.3	6.74	
4	0951	181.9	6.74	
5				
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Well is stable when readings stabilize to +/-10% over three (3) consecutive readings collected at 5-minute intervals.

GROUNDWATER MONITORING
~~LOW FLOW SAMPLING~~ FIELD PARAMETER LOG

OK
BSL

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW01 DATE: 12/29/10

Reading	Time	Temperature (C°)	pH	Conductivity (uS/cm)	Turbidity (NTUs)	Comment
1	0936	11.24	7.12	1065	ERROR	Turbidity higher than instrument range
2	0941	11.98	7.12	1051	650	
3	0946	12.60	7.13	1056	120	
4	0951	12.62	7.13	1038	60	
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LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled: 12/29/10
Weather: Fair, 20°F, light SW breeze
Personnel: B. Campbell
C. Varland

Well ID: SMW02
Site Name: HSC UTC - SER
Site Location: Rockford, Illinois
Project Number: 182602078

Groundwater Calculations

Depth To Groundwater from TOC: 26.41 (ft)
Total Depth of Well from TOC: 40.30 (ft)
Length of Water Column (LWC): 13.89 (ft)
Total Volume Purged: 4 (gal)

Purging Data

Water Purging Method: Low Flow
Pump Brand and ID: Proactive SS Hurricane
Start time: Date/Time 12/29/10 / 1025
Pump Rate (ml/min): 510
Pump Depth (ft) : 33
Did well go dry? yes ____ no ✓
Final Depth to Groundwater: 26.42

Water Physical Appearance at:

	Start of Sampling	*Time of Sampling*
Color	orange - brown	orange
Odor	none	none
Turbidity	high	high
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Sample Collection

Sample ID: HSSER-SMW02-122910
Sample Date: 12/29/10
Sample Time 1045
Additional Samples (i.e. QA/QC): ____

Ferrous Iron (mg/L) 0.09

Container size	# of Containers	Preservative	Analyte	Sample Collected	Notes
40 ml	3	HCl	VOCs 8260	X	

GROUNDWATER MONITORING
LOW FLOW SAMPLING STABILIZATION LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW02 DATE: 12/29/10

Reading	Time	ORP (mV)	DO (mg/L)	Comment
1	1027	186.2	6.85	
2	1032	180.5	6.08	
3	1037	173.4	5.78	
4	1042	172.9	5.60	
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Well is stable when readings stabilize to +/-10% over three (3) consecutive readings collected at 5-minute intervals.

GROUNDWATER MONITORING
LOW FLOW SAMPLING FIELD PARAMETER LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW02 DATE: 12/29/10

Reading	Time	Temperature (C°)	pH	Conductivity (uS/cm)	Turbidity (NTUs)	Comment
1	1027	~~1025~~	11.82	7.19	1184	600
2	1032	12.10	7.10	1189	600	
3	1037	12.51	7.06	1195	450	
4	1042	12.30	7.04	1179	250	
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LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	12/29/10	Well ID:	SMW04
Weather:	Fair, 25°F, SW wind	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	C. Varland	Project Number:	182602078

Groundwater Calculations

Depth To Groundwater from TOC:	29.23	(ft)
Total Depth of Well from TOC:	42.75	(ft)
Length of Water Column (LWC):	13.52	(ft)
Total Volume Purged:	5	(gal)

Purging Data

Water Purging Method:	Low Flow
Pump Brand and ID:	Proactive SS Hurricane
Start time: Date/Time	12/29/10 / 1256
Pump Rate (ml/min):	~~BF~~ 500
Pump Depth (ft) :	36
Did well go dry?	yes ____ no ✓
Final Depth to Groundwater:	29.22

Water Physical Appearance at:

	Start of Sampling	*Time of Sampling*
Color	orange	light orange
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Sample Collection

Sample ID:	HSSER-SMW04-122910
Sample Date:	12/29/10
Sample Time	1325
Additional Samples (i.e. QA/QC):	—

Ferrous Iron (mg/L) 0.17

Container size	# of Containers	Preservative	Analyte	Sample Collected	Notes
40 ml	3	HCl	VOCs 8260	X	

GROUNDWATER MONITORING
LOW FLOW SAMPLING STABILIZATION LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW04 DATE: 12/29/10

Reading	Time	ORP (mV)	DO (mg/L)	Comment
1	1257	167.6	2.93	
2	1302	140.9	1.81	
3	1307	116.4	1.39	
4	1312	109.2	1.27	
5	1317	103.1	1.23	
6	1322	98.3	1.22	
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Well is stable when readings stabilize to +/-10% over three (3) consecutive readings collected at 5-minute intervals.

GROUNDWATER MONITORING
LOW FLOW SAMPLING FIELD PARAMETER LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW04 DATE: 12/29/10

Reading	Time	Temperature (C°)	pH	Conductivity (uS/cm)	Turbidity (NTUs)	Comment
1	1257	12.65	7.07	1624	170	
2	1302	13.03	6.97	1621	160	
3	1307	13.50	6.94	1671	75	
4	1312	13.36	6.95	1688	55	
5	1317	13.27	6.93	1691	40	
6	1322	13.36	6.91	1692	31	
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LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	12/29/10	Well ID:	SMW08
Weather:	Overcast, 25°F, SW wind	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	C. Varland	Project Number:	182602078

Groundwater Calculations

Depth To Groundwater from TOC:	29.41	(ft)
Total Depth of Well from TOC:	41.90	(ft)
Length of Water Column (LWC):	12.49	(ft)
Total Volume Purged:	5	(gal)

Purging Data

Water Purging Method:	Low Flow
Pump Brand and ID:	Proactive SS Hurricane
Start time: Date/Time	12/29/10 / 1442
Pump Rate (ml/min):	500
Pump Depth (ft) :	36
Did well go dry?	yes ____ no ✓
Final Depth to Groundwater:	29.42

Water Physical Appearance at:

	Start of Sampling	*Time of Sampling*
Color	orange	light orange.
Odor	none	none
Turbidity	high	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Sample Collection

Sample ID:	HSSER-SMW08-122910
Sample Date:	12/29/10
Sample Time	1510
Additional Samples (i.e. QA/QC):	—

Ferrous Iron (mg/L) 0.29

Container size	# of Containers	Preservative	Analyte	Sample Collected	Notes
40 ml	3	HCl	VOCs 8260	X	

GROUNDWATER MONITORING
LOW FLOW SAMPLING STABILIZATION LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW08 DATE: 12/29/10

Reading	Time	ORP (mV)	DO (mg/L)	Comment
1	1444	161.6	1.59	
2	1449	136.5	0.90	
3	1454	128.1	0.86	
4	1459	118.0	1.07	
5	1504	115.6	1.06	
6	1509	113.2	1.03	
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Well is stable when readings stabilize to +/-10% over three (3) consecutive readings collected at 5-minute intervals.

GROUNDWATER MONITORING
LOW FLOW SAMPLING FIELD PARAMETER LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW08 DATE: 12/29/10

Reading	Time	Temperature (C°)	pH	Conductivity (uS/cm)	Turbidity (NTUs)	Comment
1	1444	11.72	7.10	1329	320	
2	1449	12.51	7.02	1281	240	
3	1454	12.92	6.98	1272	170	
4	1459	13.01	6.98	1267	95	
5	1504	13.01	6.96	1260	55	
6	1509	12.89	6.96	1245	39	
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LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled: 12/29/10
Weather: Fair, 25°F, light SW breeze
Personnel: B. Campbell
C. Varland

Well ID: SMW19
Site Name: HSC UTC - SER
Site Location: Rockford, Illinois
Project Number: 182602078

Groundwater Calculations

Depth To Groundwater from TOC: 28.05 (ft)
Total Depth of Well from TOC: 41.25 (ft)
Length of Water Column (LWC): 13.20 (ft)
Total Volume Purged: 5 (gal)

Purging Data

Water Purging Method: Low Flow
Pump Brand and ID: Proactive SS Hurricane
Start time: Date/Time 12/29/10 / 1257
Pump Rate (ml/min): 500
Pump Depth (ft): 35
Did well go dry? yes ____ no ✓
Final Depth to Groundwater: 28.05

Water Physical Appearance at:

	Start of Sampling	*Time of Sampling*
Color	orange-brown	light orange
Odor	none	none
Turbidity	high	moderate
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Sample Collection

Sample ID: HSSER-SMW19-122910
Sample Date: 12/29/10
Sample Time 1225
Additional Samples (i.e. QA/QC): —

Ferrous Iron (mg/L) 0.08

Container size	# of Containers	Preservative	Analyte	Sample Collected	Notes
40 ml	3	HCl	VOCs 8260	X	

GROUNDWATER MONITORING
LOW FLOW SAMPLING STABILIZATION LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW19 DATE: 12/29/10

Reading	Time	ORP (mV)	DO (mg/L)	Comment
1	1159	184.0	6.82	
2	1204	179.7	6.06	
3	1209	165.3	5.94	
4	1214	150.5	5.72	
5	1219	143.8	5.57	
6	1224	140.5	5.45	
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Well is stable when readings stabilize to +/-10% over three (3) consecutive readings collected at 5-minute intervals.

GROUNDWATER MONITORING
LOW FLOW SAMPLING FIELD PARAMETER LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW19 DATE: 12/29/10

Reading	Time	Temperature (C°)	pH	Conductivity (uS/cm)	Turbidity (NTUs)	Comment
1 1159	~~1259~~	12.66	7.31	1038	ERROR	Turbidity above instrument range.
2 1204	~~1304~~	13.49	7.19	1027	950	
3 1209	~~1309~~	13.54	7.14	1028	240	
4 1214	~~1314~~	13.79	7.11	1023	90	
5	1219	13.76	7.10	1002	55	
6	1224	13.82	7.08	982	33	
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LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	12/29/10	Well ID:	SMW20
Weather:	Fair, 25°F, SW wind	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	C. Varland	Project Number:	182602078

Groundwater Calculations

Depth To Groundwater from TOC:	28.22	(ft)
Total Depth of Well from TOC:	40.30	(ft)
Length of Water Column (LWC):	12.08	(ft)
Total Volume Purged:	4	(gal)

Purging Data

Water Purging Method:	Low Flow
Pump Brand and ID:	Proactive SS Hurricane
Start time: Date/Time	12/29/10 / 1350
Pump Rate (ml/min):	500
Pump Depth (ft):	34
Did well go dry?	yes ____ no ✓
Final Depth to Groundwater:	28.47

Water Physical Appearance at:

	Start of Sampling	*Time of Sampling*
Color	light orange	clear
Odor	~~rsy~~ none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Sample Collection

Sample ID:	HSSER-SMW20-122910
Sample Date:	12/29/10
Sample Time	1415
Additional Samples (i.e. QA/QC):	—

Note: East cell of south alley AS/SVE system is operating.

Ferrous Iron (mg/L) 0.00

Container size	# of Containers	Preservative	Analyte	Sample Collected	Notes
40 ml	3	HCl	VOCs 8260	X	

GROUNDWATER MONITORING
LOW FLOW SAMPLING STABILIZATION LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW20 DATE: 12/29/10

Reading	Time	ORP (mV)	DO (mg/L)	Comment
1	1356	165.2	10.33	
2	1401	178.0	9.45	
3	1406	185.6	8.68	
4	1411	190.5	8.70	
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Well is stable when readings stabilize to +/-10% over three (3) consecutive readings collected at 5-minute intervals.

GROUNDWATER MONITORING
LOW FLOW SAMPLING FIELD PARAMETER LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW20 DATE: 12/29/10

Reading	Time	Temperature (C°)	pH	Conductivity (uS/cm)	Turbidity (NTUs)	Comment
1	1356	12.72	7.72	746	29	
2	1401	12.52	7.69	743	39	
3	1406	13.47	7.67	768	37	
4	1411	13.56	7.67	773	28	
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LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	12/30/10	Well ID:	SMW21
Weather:	Overcast, 35°F, S wind, fog	Site Name:	HSC UTC - SER
Personnel:	Brian Campbell	Site Location:	Rockford, Illinois
	Craig Varland	Project Number:	182602078

Groundwater Calculations

Depth To Groundwater from TOC:	27.95	(ft)
Total Depth of Well from TOC:	41.40	(ft)
Length of Water Column (LWC):	13.45	(ft)
Total Volume Purged:	3.5	(gal)

Purging Data

Water Purging Method:	Low Flow
Pump Brand and ID:	Proactive SS Hurricane
Start time: Date/Time	12/30/10 / 0835
Pump Rate (ml/min):	520
Pump Depth (ft) :	35
Did well go dry?	yes ____ no ✓
Final Depth to Groundwater:	27.71

Water Physical Appearance at:

	Start of Sampling	*Time of Sampling*
Color	orange-brown	light orange
Odor	none	none
Turbidity	high	moderate
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Sample Collection

Sample ID:	HSSER-SMW21-123010
Sample Date:	12/30/10
Sample Time	0855
Additional Samples (i.e. QA/QC):	HSSER-DUP06-123010

Note: west cell of south alley AS/SVE system is operating.

Ferrous Iron (mg/L) 0.66

Container size	# of Containers	Preservative	Analyte	Sample Collected	Notes
40 ml	~~2~~ 6	HCl	VOCs 8260	X	

GROUNDWATER MONITORING
LOW FLOW SAMPLING STABILIZATION LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW21 DATE: 12/30/10

Reading	Time	ORP (mV)	DO (mg/L)	Comment
1	0837	276.1	8.29	
2	0842	280.2	8.02	
3	0847	283.2	8.16	
4	0852	283.2	8.19	
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Well is stable when readings stabilize to +/-10% over three (3) consecutive readings collected at 5-minute intervals.

GROUNDWATER MONITORING
LOW FLOW SAMPLING FIELD PARAMETER LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: SMW21 DATE: 12/30/10

Reading	Time	Temperature (C°)	pH	Conductivity (uS/cm)	Turbidity (NTUs)	Comment
1	0837	13.48	6.74	935	ERROR	Turbidity above instrument range.
2	0842	13.72	7.12	951	290	
3	0847	13.63	7.32	951	65	
4	0852	13.63	7.43	952	70	
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LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	12/30/10	Well ID:	GMZ01
Weather:	Cloudy w/ mist, 36°F, SE wind	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	C. Varland	Project Number:	182602078

Groundwater Calculations

Depth To Groundwater from TOC:	31.96	(ft)
Total Depth of Well from TOC:	47.85	(ft)
Length of Water Column (LWC):	15.89	(ft)
Total Volume Purged:	4	(gal)

Purging Data

Water Purging Method:	Low Flow
Pump Brand and ID:	Proactive SS Hurricane
Start time: Date/Time	12/30/10 1 1429
Pump Rate (ml/min):	500
Pump Depth (ft) :	40
Did well go dry?	yes ____ no ✓
Final Depth to Groundwater:	31.97

Water Physical Appearance at:

	Start of Sampling	*Time of Sampling*
Color	light brown	clear
Odor	none	none
Turbidity	moderate	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Sample Collection

Sample ID:	HSSER-GMZ01-123010
Sample Date:	12/30/10
Sample Time	1455
Additional Samples (i.e. QA/QC):	—

Ferrous Iron (mg/L) 0.08

Container size	# of Containers	Preservative	Analyte	Sample Collected	Notes
40 ml	3	HCl	VOCs 8260	X	

GROUNDWATER MONITORING
LOW FLOW SAMPLING STABILIZATION LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZ01 DATE: 12/30/10

Reading	Time	ORP (mV)	DO (mg/L)	Comment
1	1432	222.2	3.87	
2	1437	204.0	2.84	
3	1442	194.3	2.64	
4	1447	185.3	2.49	
5	1452	180.6	2.52	
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Well is stable when readings stabilize to +/-10% over three (3) consecutive readings collected at 5-minute intervals.

GROUNDWATER MONITORING
LOW FLOW SAMPLING FIELD PARAMETER LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZ01 DATE: 12/30/10

Reading	Time	Temperature (C°)	pH	Conductivity (uS/cm)	Turbidity (NTUs)	Comment
1	1432	11.44	7.13	1594	120	
2	1437	12.14	7.09	1686	95	
3	1442	12.76	7.06	1671	70	
4	1447	12.97	7.03	1672	40	
5	1452	12.88	7.02	1673	31	
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LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled: 12/30/10
Weather: Cloudy, 36°F, S wind
Personnel: B. Campbell
C. Varland

Well ID: GMZ02
Site Name: HSC UTC - SER
Site Location: Rockford, Illinois
Project Number: 182602078

Groundwater Calculations

Depth To Groundwater from TOC: 29.75 (ft)
Total Depth of Well from TOC: 44.85 (ft)
Length of Water Column (LWC): 15.10 (ft)
Total Volume Purged: 3 (gal)

Purging Data

Water Purging Method: Low Flow
Pump Brand and ID: Proactive SS Hurricane
Start time: Date/Time 12/30/10 / 1111
Pump Rate (ml/min): 480
Pump Depth (ft): 37
Did well go dry? yes ____ no ✓
Final Depth to Groundwater: 29.65

Water Physical Appearance at:

	Start of Sampling	*Time of Sampling*
Color	clear	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Sample Collection

Sample ID: HSSER-GMZ02-123010
Sample Date: 12/30/10
Sample Time 1130
Additional Samples (i.e. QA/QC): —

Ferrous Iron (mg/L) 0.00

Note: middle cell of South alley AS/SVE is off operating.

Container size	# of Containers	Preservative	Analyte	Sample Collected	Notes
40 ml	3	HCl	VOCs 8260	X	

GROUNDWATER MONITORING
LOW FLOW SAMPLING STABILIZATION LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZ02 DATE: 12/30/10

Reading	Time	ORP (mV)	DO (mg/L)	Comment
1	1114	253.7	9.41	
2	1119	254.9	9.10	
3	1124	255.0	9.38	
4	1129	256.7	9.63	
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Well is stable when readings stabilize to +/-10% over three (3) consecutive readings collected at 5-minute intervals.

GROUNDWATER MONITORING
LOW FLOW SAMPLING FIELD PARAMETER LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZ02 DATE: 12/30/10

Reading	Time	Temperature (C°)	pH	Conductivity (uS/cm)	Turbidity (NTUs)	Comment
1	1114	13.12	7.78	936	12	
2	1119	13.37	7.80	943	7.3	
3	1124	13.33	7.80	943	4.4	
4	1129	13.42	7.81	945	8.1	
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LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled:	12/30/10	Well ID:	GMZ03
Weather:	Cloudy w/mist, 36°F, S wind	Site Name:	HSC UTC - SER
Personnel:	B. Campbell	Site Location:	Rockford, Illinois
	C. Varland	Project Number:	182602078

Groundwater Calculations

Depth To Groundwater from TOC:	29.44	(ft)
Total Depth of Well from TOC:	44.80	(ft)
Length of Water Column (LWC):	15.36	(ft)
Total Volume Purged:	3.5	(gal)

Purging Data

Water Purging Method:	Low Flow
Pump Brand and ID:	Proactive SS Hurricane
Start time: Date/Time	12/30/10 1 1030
Pump Rate (ml/min):	490
Pump Depth (ft) :	37
Did well go dry?	yes ____ no ✓
Final Depth to Groundwater:	29.41

Water Physical Appearance at:

	Start of Sampling	*Time of Sampling*
Color	clear	clear
Odor	none	none
Turbidity	low	low
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Sample Collection

Sample ID:	HSSER-GMZ03-123010
Sample Date:	12/30/10
Sample Time	1050
Additional Samples (i.e. QA/QC):	—
Ferrous Iron (mg/L)	0.00

Note: South alley AS/SVE system operation shifted from west cell to middle cell approximately during purge time

Container size	# of Containers	Preservative	Analyte	Sample Collected	Notes
40 ml	3	HCl	VOCs 8260	X	

GROUNDWATER MONITORING
LOW FLOW SAMPLING STABILIZATION LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZ03 DATE: 12/30/10

Reading	Time	ORP (mV)	DO (mg/L)	Comment
1	1033	244.7	10.13	
2	1038	245.6	9.47	
3	1043	245.0	9.37	
4	1048	246.0	9.21	
5				
6				
7				
8				
9				
10				
11				
12				
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Well is stable when readings stabilize to +/-10% over three (3) consecutive readings collected at 5-minute intervals.

GROUNDWATER MONITORING
LOW FLOW SAMPLING FIELD PARAMETER LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZ03 DATE: 12/30/10

Reading	Time	Temperature (C°)	pH	Conductivity (uS/cm)	Turbidity (NTUs)	Comment
1	1033	13.06	7.81	928	40	
2	1038	13.66	7.79	950	1.6	
3	1043	13.79	7.78	952	20	
4	1048	13.80	7.76	951	29	
5						
6						
7						
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LOW FLOW GROUNDWATER SAMPLING LOG
Area 9/10 Southeast Rockford Groundwater Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

Date Sampled: 12/30/10
Weather: Overcast w/ drizzle, 36°F, S wind
Personnel: B. Campbell
C. Varland

Well ID: GMZ04
Site Name: HSC UTC - SER
Site Location: Rockford, Illinois
Project Number: 182602078

Groundwater Calculations

Depth To Groundwater from TOC: 27.10 (ft)
Total Depth of Well from TOC: 45.40 (ft)
Length of Water Column (LWC): 18.30 (ft)
Total Volume Purged: 3.5 (gal)

Purging Data

Water Purging Method: Low Flow
Pump Brand and ID: Proactive SS Hurricane
Start time: Date/Time 12/30/10 / 0936
Pump Rate (ml/min): 490
Pump Depth (ft) : 38
Did well go dry? yes ____ no ✓
Final Depth to Groundwater: 27.10

Water Physical Appearance at:

	Start of Sampling	Time of Sampling
Color	orange-brown	orange
Odor	none	none
Turbidity	high	high
Sheen/Free Product?	none	none
Emulsion/DNAPL?	none	none

Sample Collection

Sample ID: HSSER-GMZ04-123010
Sample Date: 12/30/10
Sample Time 0955
Additional Samples (i.e. QA/QC): —

Ferrous Iron (mg/L) 0.00

Note: west cell of South alley AS/SVE system is operating.

Container size	# of Containers	Preservative	Analyte	Sample Collected	Notes
40 ml	3	HCl	VOCs 8260	X	

GROUNDWATER MONITORING
LOW FLOW SAMPLING STABILIZATION LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZ04 DATE: 12/30/10

Reading	Time	ORP (mV)	DO (mg/L)	Comment
1	0938	262.9	9.67	
2	0943	272.5	9.04	
3	0948	274.9	9.61	
4	0953	273.9	9.60	
5				
6				
7				
8				
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Well is stable when readings stabilize to +/-10% over three (3) consecutive readings collected at 5-minute intervals.

GROUNDWATER MONITORING
LOW FLOW SAMPLING FIELD PARAMETER LOG

Area 9/10 Southeast Rockford Contamination Superfund Site
Hamilton Sundstrand Corporation Plant 1/2
Rockford, Illinois

WELL ID: GMZ04 DATE: 12/30/10

Reading	Time	Temperature (C°)	pH	Conductivity (uS/cm)	Turbidity (NTUs)	Comment
1	0938	13.60	7.73	747	ERROR	Turbidity above instrument range
2	0943	14.34	7.75	759	ERROR	"
3	0948	14.81	7.78	765	600	
4	0953	14.82	7.82	766	250	
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APPENDIX C

Stantec

APPENDIX C

2010 Analytical Laboratory Reports*

Test America Reports for:

Quarter 1

A0B040546
A0B060440
A0B110444

Quarter 2

A0D160531
A0D170438
A0D170440

Quarter 3

A0G280449
A0G280458
A0G300529
A0G300534

Quarter 4

A0L300514
A1A040434

*Laboratory reports also include data from wells outside of the GMZ network which was not in the scope of this annual report.

QUARTER 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 182602078

HSSER-IL

Lot #: A0B040546-A

John Dennison

Stantec Consulting Corporation
446 Eisenhower Lane North
Lombard, IL 60148

TESTAMERICA LABORATORIES, INC.

Alesia M. Danford

Approved for release.
Alesia M. Danford
Project Manager
2/26/2010 10:20 AM

Alesia M. Danford
Project Manager
alesia.danford@testamericainc.com

February 25, 2010

ACCREDITED IN ACCORDANCE WITH nelac

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Sample Summary 11
Shipping and Receiving Documents 13
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GC Volatile Data 27
General Chemistry Data 35

Total # of Pages in this Document 47

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A0B040546 A

The following report contains the analytical results for four water samples submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HSSER-IL Site, project number 182602078. The samples were received February 04, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to John Dennison on February 16, 2010. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 1.2°C.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for batch(es) 0042361 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

DISSOLVED GASES/RSK

The analytical results met the requirements of the laboratory's QA/QC program.

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analytes(s).

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 032609.doc

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0B040546

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-SMW01-020210 02/02/10 13:37 001				
Tetrachloroethylene	0.0013	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.00067 J	0.0010	mg/L	SW846 8260B
Nitrate-Nitrite	2.4	0.2	mg/L	MCAWW 353.2
Total Sulfide	1.0	1.0	mg/L	MCAWW 376.1
Sulfate	24.5	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	1	1	mg/L	SW846 9060
Total Alkalinity	320 J	5.0	mg/L	MCAWW 310.1
HSSER-SMW02-020210 02/02/10 15:22 002				
Tetrachloroethylene	0.00062 J	0.0010	mg/L	SW846 8260B
Nitrate-Nitrite	6.7	0.5	mg/L	MCAWW 353.2
Total Sulfide	0.37 B	1.0	mg/L	MCAWW 376.1
Sulfate	45.4	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	2	1	mg/L	SW846 9060
Total Alkalinity	370 J	5.0	mg/L	MCAWW 310.1
HSSER-MW203-020310 02/03/10 09:55 003				
Tetrachloroethylene	0.010	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.00031 J	0.0010	mg/L	SW846 8260B
Nitrate-Nitrite	4.7	0.5	mg/L	MCAWW 353.2
Total Sulfide	1.7	1.0	mg/L	MCAWW 376.1
Sulfate	43.6	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	4	1	mg/L	SW846 9060
Total Alkalinity	350 J	5.0	mg/L	MCAWW 310.1
HSSER-MW7FGA-020310 02/03/10 11:31 004				
cis-1,2-Dichloroethylene	0.00065 J	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.0015	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.00041 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0022	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0028	0.0010	mg/L	SW846 8260B
Nitrate-Nitrite	7.4	0.5	mg/L	MCAWW 353.2
Sulfate	59.3	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	2	1	mg/L	SW846 9060
Total Alkalinity	350 J	5.0	mg/L	MCAWW 310.1

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0B040546

PARAMETER	ANALYTICAL METHOD
Alkalinity	MCAWW 310.1
Dissolved Gases in Water	RSK SOP-175
Nitrate-Nitrite	MCAWW 353.2
Sulfate	MCAWW 300.0A
Sulfide	MCAWW 376.1
Total Organic Carbon	SW846 9060
Volatile Organics by GC/MS	SW846 8260B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

RSK Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SAMPLE SUMMARY

SAMPLE SUMMARY

A0B040546

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LT8A7	001	HSSER-SMW01-020210	02/02/10	13:37
LT8CK	002	HSSER-SMW02-020210	02/02/10	15:22
LT8CL	003	HSSER-MW203-020310	02/03/10	09:55
LT8CQ	004	HSSER-MW7FGA-020310	02/03/10	11:31

NOTE(S):

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

SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: Stantec	Project Manager: John Dennison	Date:	Chain of Custody Number: 145195
Address: 446 Eisenhower Ln N	Telephone Number (Area Code)/Fax Number: 630-792-1680	Lab Number:	Page 1 of 2
City: Lombard; State: IL; Zip Code: 60148	Site Contact:	Lab Contact:	
Project Name and Location (State): HSSER - IL	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: 1826002078			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil		Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		Alkalinity 310.1	Sulfate 300.0	Ass. Gases (RSK175)	Nitrate/Nitrite 353.2	Sulfide 376.1	TOC 9060	VOC 8260B *						Special Instructions/ Conditions of Receipt
HSSER-SMW01-020210	2/2/10	1337		X				1	3		5		1		X	X	X	X	X	X	X						
HSSER-SMW02-020210	2/2/10	1522		X				1	3		5		1		X	X	X	X	X	X	X						
HSSER-MW203-020310	2/3/10	0955		X				1	3		5		1		X	X	X	X	X	X	X						
HSSER-MW7FGA-020310	2/3/10	1131		X				1	3		5		1		X	X	X	X	X	X	X						

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____ Standard

QC Requirements (Specify): *List of 13 VOCs / Level 4 Data

1. Relinquished By		Date: 2/3/10	Time: 1530	1. Received By: Walt [illegible]		Date: 2/3	Time: 1535
2. Relinquished By: Walt [illegible]		Date: 2/3	Time: 16:10	2. Received By: [illegible]		Date: 2/4/10	Time: 9:15am
3. Relinquished By		Date	Time	3. Received By		Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** A8B040946
North Canton Facility

Client Stantec Project HSSEX By: [illegible] (Signature)
Cooler Received on 2/4/10 Opened on 2/4/10
FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____
TestAmerica Cooler # 241-899 Multiple Coolers ☐ Foam Box ☐ Client Cooler ☐ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☒ Intact? Yes ☐ No ☐ NA ☒
   If YES, Quantity _____ Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☒
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☒ None ☐ Other _____
6. Cooler temperature upon receipt 1.5 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☒ Other ☐ _____
   COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☒ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☒ No ☐ Were VOAs on the COC? Yes ☒ No ☐

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

_____

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot# 121709-HNO_3; Sulfuric Acid Lot# 082509-H_2SO_4; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-$(CH_3COO)_2ZN/NaOH$.* What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials
SMW01-	<2	2/4/10	[illegible]
SMW02-	<2		
SMW03	<2		
MW/FGA	<2		
RAMW01	<2		

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd:

TestAmerica
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GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW01-020210

GC/MS Volatiles

Lot-Sample #...: A0B040546-001 **Work Order #...:** LT8A71AA **Matrix.....:** WG
Date Sampled...: 02/02/10 13:37 **Date Received..:** 02/04/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.0013**	**0.0010**	**mg/L**
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.00067 J**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(73 - 122)
1,2-Dichloroethane-d4	89	(61 - 128)
Toluene-d8	87	(76 - 110)
4-Bromofluorobenzene	85	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW02-020210

GC/MS Volatiles

Lot-Sample #...: A0B040546-002 **Work Order #...:** LT8CK1AA **Matrix.....:** WG
Date Sampled...: 02/02/10 15:22 **Date Received..:** 02/04/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00062 J**	**0.0010**	**mg/L**
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
1,2-Dichloroethane-d4	87	(61 - 128)
Toluene-d8	90	(76 - 110)
4-Bromofluorobenzene	84	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-MW203-020310

GC/MS Volatiles

Lot-Sample #...: A0B040546-003 **Work Order #...:** LT8CL1AA **Matrix.....:** WG
Date Sampled...: 02/03/10 09:55 **Date Received..:** 02/04/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.010**	**0.0010**	**mg/L**
Trichloroethylene	**0.00031 J**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
1,2-Dichloroethane-d4	88	(61 - 128)
Toluene-d8	87	(76 - 110)
4-Bromofluorobenzene	83	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-MW7FGA-020310

GC/MS Volatiles

Lot-Sample #...: A0B040546-004 **Work Order #...:** LT8CQ1AA **Matrix.....:** WG
Date Sampled...: 02/03/10 11:31 **Date Received..:** 02/04/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.00065 J**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.0015**	**0.0010**	**mg/L**
Trichloroethylene	**0.00041 J**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0022**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0028**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
1,2-Dichloroethane-d4	89	(61 - 128)
Toluene-d8	88	(76 - 110)
4-Bromofluorobenzene	83	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVKGN1AA **Matrix.....:** WATER
MB Lot-Sample #: A0B110000-361

Prep Date.....: 02/09/10 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 02/09/10 **Prep Batch #...:** 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
Toluene-d8	88	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVKGN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B110000-361 LVKGN1AD-LCSD
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**109**	**(63 - 130)**			**SW846 8260B**
	109	**(63 - 130)**	**0.44**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**97**	**(75 - 122)**			**SW846 8260B**
	100	**(75 - 122)**	**3.2**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	99	(88 - 113)			SW846 8260B
	101	(88 - 113)	2.0	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	101	(85 - 113)			SW846 8260B
	101	(85 - 113)	0.35	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	103	(80 - 120)			SW846 8260B
	102	(80 - 120)	0.65	(0-30)	SW846 8260B
Vinyl chloride	88	(61 - 120)			SW846 8260B
	87	(61 - 120)	0.81	(0-30)	SW846 8260B
Methylene chloride	101	(78 - 118)			SW846 8260B
	98	(78 - 118)	2.7	(0-30)	SW846 8260B
1,1-Dichloroethane	101	(86 - 123)			SW846 8260B
	101	(86 - 123)	0.29	(0-30)	SW846 8260B
1,2-Dichloroethane	95	(79 - 136)			SW846 8260B
	93	(79 - 136)	2.0	(0-30)	SW846 8260B
1,1,1-Trichloroethane	100	(78 - 140)			SW846 8260B
	102	(78 - 140)	2.0	(0-30)	SW846 8260B
1,1,2-Trichloroethane	92	(83 - 122)			SW846 8260B
	94	(83 - 122)	1.7	(0-30)	SW846 8260B
Toluene	**96**	**(74 - 119)**			**SW846 8260B**
	99	**(74 - 119)**	**2.4**	**(0-20)**	**SW846 8260B**
Ethylbenzene	98	(86 - 116)			SW846 8260B
	100	(86 - 116)	2.6	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
	92	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	87	(61 - 128)
Toluene-d8	91	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	96	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVKGN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B110000-361 LVKGN1AD-LCSD
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.011**	**mg/L**	**109**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**109**	**0.44**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.0097**	**mg/L**	**97**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**100**	**3.2**	**SW846 8260B**
Tetrachloroethylene	0.010	0.0099	mg/L	99		SW846 8260B
	0.010	0.010	mg/L	101	2.0	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.010	mg/L	101	0.35	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.010	mg/L	102	0.65	SW846 8260B
Vinyl chloride	0.010	0.0088	mg/L	88		SW846 8260B
	0.010	0.0087	mg/L	87	0.81	SW846 8260B
Methylene chloride	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.0098	mg/L	98	2.7	SW846 8260B
1,1-Dichloroethane	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.010	mg/L	101	0.29	SW846 8260B
1,2-Dichloroethane	0.010	0.0095	mg/L	95		SW846 8260B
	0.010	0.0093	mg/L	93	2.0	SW846 8260B
1,1,1-Trichloroethane	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	102	2.0	SW846 8260B
1,1,2-Trichloroethane	0.010	0.0092	mg/L	92		SW846 8260B
	0.010	0.0094	mg/L	94	1.7	SW846 8260B
Toluene	**0.010**	**0.0096**	**mg/L**	**96**		**SW846 8260B**
	0.010	**0.0099**	**mg/L**	**99**	**2.4**	**SW846 8260B**
Ethylbenzene	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.010	mg/L	100	2.6	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
	92	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	87	(61 - 128)
Toluene-d8	91	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	96	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVCLD1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A0B060440-002 LVCLD1AD-MSD
Date Sampled...: 02/04/10 14:41 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**103**	**(62 - 130)**			**SW846 8260B**
	108	**(62 - 130)**	**4.7**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**95**	**(62 - 130)**			**SW846 8260B**
	90	**(62 - 130)**	**3.9**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	91	(85 - 121)			SW846 8260B
	20 a	(85 - 121)	22	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	118 a	(87 - 114)			SW846 8260B
	93	(87 - 114)	6.5	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	99	(85 - 116)			SW846 8260B
	104	(85 - 116)	4.3	(0-30)	SW846 8260B
Vinyl chloride	86 a	(88 - 126)			SW846 8260B
	89	(88 - 126)	2.8	(0-30)	SW846 8260B
Methylene chloride	96	(82 - 115)			SW846 8260B
	100	(82 - 115)	4.2	(0-30)	SW846 8260B
1,1-Dichloroethane	100	(88 - 127)			SW846 8260B
	87 a	(88 - 127)	8.9	(0-30)	SW846 8260B
1,2-Dichloroethane	90	(71 - 160)			SW846 8260B
	92	(71 - 160)	2.2	(0-30)	SW846 8260B
1,1,1-Trichloroethane	98	(71 - 162)			SW846 8260B
	60 a	(71 - 162)	21	(0-30)	SW846 8260B
1,1,2-Trichloroethane	91	(86 - 129)			SW846 8260B
	92	(86 - 129)	1.7	(0-30)	SW846 8260B
Toluene	**96**	**(70 - 119)**			**SW846 8260B**
	95	**(70 - 119)**	**0.63**	**(0-20)**	**SW846 8260B**
Ethylbenzene	99	(86 - 132)			SW846 8260B
	99	(86 - 132)	0.43	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
	90	(73 - 122)
1,2-Dichloroethane-d4	84	(61 - 128)
	85	(61 - 128)
Toluene-d8	92	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)
	95	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVCLD1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A0B060440-002 LVCLD1AD-MSD
Date Sampled...: 02/04/10 14:41 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethylene	**0.00056**	**0.017**	**0.018**	**mg/L**	**103**		**SW846 8260B**
	0.00056	**0.017**	**0.019**	**mg/L**	**108**	**4.7**	**SW846 8260B**
Trichloroethylene	**0.0050**	**0.017**	**0.021**	**mg/L**	**95**		**SW846 8260B**
	0.0050	**0.017**	**0.020**	**mg/L**	**90**	**3.9**	**SW846 8260B**
Tetrachloroethylene	0.045	0.017	0.060	mg/L	91		SW846 8260B
	0.045	0.017	0.048	mg/L	20 a	22	SW846 8260B
cis-1,2-Dichloroethylene	0.047	0.017	0.067	mg/L	118 a		SW846 8260B
	0.047	0.017	0.062	mg/L	93	6.5	SW846 8260B
trans-1,2-Dichloroethylen	0.00056	0.017	0.017	mg/L	99		SW846 8260B
	0.00056	0.017	0.018	mg/L	104	4.3	SW846 8260B
Vinyl chloride	ND	0.017	0.014	mg/L	86 a		SW846 8260B
	ND	0.017	0.015	mg/L	89	2.8	SW846 8260B
Methylene chloride	ND	0.017	0.016	mg/L	96		SW846 8260B
	ND	0.017	0.017	mg/L	100	4.2	SW846 8260B
1,1-Dichloroethane	0.0087	0.017	0.025	mg/L	100		SW846 8260B
	0.0087	0.017	0.023	mg/L	87 a	8.9	SW846 8260B
1,2-Dichloroethane	ND	0.017	0.015	mg/L	90		SW846 8260B
	ND	0.017	0.015	mg/L	92	2.2	SW846 8260B
1,1,1-Trichloroethane	0.018	0.017	0.035	mg/L	98		SW846 8260B
	0.018	0.017	0.028	mg/L	60 a	21	SW846 8260B
1,1,2-Trichloroethane	ND	0.017	0.015	mg/L	91		SW846 8260B
	ND	0.017	0.015	mg/L	92	1.7	SW846 8260B
Toluene	**ND**	**0.017**	**0.016**	**mg/L**	**96**		**SW846 8260B**
	ND	**0.017**	**0.016**	**mg/L**	**95**	**0.63**	**SW846 8260B**
Ethylbenzene	ND	0.017	0.016	mg/L	99		SW846 8260B
	ND	0.017	0.016	mg/L	99	0.43	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
	90	(73 - 122)
1,2-Dichloroethane-d4	84	(61 - 128)
	85	(61 - 128)
Toluene-d8	92	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)
	95	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GC VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW01-020210

GC Volatiles

Lot-Sample #...: A0B040546-001 **Work Order #...:** LT8A71AH **Matrix.....:** WG
Date Sampled...: 02/02/10 13:37 **Date Received..:** 02/04/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW02-020210

GC Volatiles

Lot-Sample #...: A0B040546-002 **Work Order #...:** LT8CK1AH **Matrix.....:** WG
Date Sampled...: 02/02/10 15:22 **Date Received..:** 02/04/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

Stantec Consulting Corporation

Client Sample ID: HSSER-MW203-020310

GC Volatiles

Lot-Sample #...: A0B040546-003 **Work Order #...:** LT8CL1AH **Matrix.....:** WG
Date Sampled...: 02/03/10 09:55 **Date Received..:** 02/04/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

Stantec Consulting Corporation

Client Sample ID: HSSER-MW7FGA-020310

GC Volatiles

Lot-Sample #...: A0B040546-004 **Work Order #...:** LT8CQ1AH **Matrix.....:** WG
Date Sampled...: 02/03/10 11:31 **Date Received..:** 02/04/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVP4L1AA **Matrix.....:** WATER
MB Lot-Sample #: A0B160000-073

Prep Date.....: 02/15/10 **Final Wgt/Vol..:** 0 mL
Analysis Date..: 02/15/10 **Prep Batch #...:** 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methane	ND	0.00050	mg/L	RSK SOP-175
Ethane	ND	0.00050	mg/L	RSK SOP-175
Ethene	ND	0.00050	mg/L	RSK SOP-175

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVP4L1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B160000-073 LVP4L1AD-LCSD
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	84	(75 - 127)			RSK SOP-175
	84	(75 - 127)	0.15	(0-30)	RSK SOP-175
Ethane	97	(74 - 138)			RSK SOP-175
	96	(74 - 138)	1.9	(0-30)	RSK SOP-175
Ethene	98	(73 - 140)			RSK SOP-175
	97	(73 - 140)	1.2	(0-30)	RSK SOP-175

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVP4L1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B160000-073 LVP4L1AD-LCSD
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Methane	**0.11**	**0.092**	**mg/L**	**84**		**RSK SOP-175**
	0.11	**0.092**	**mg/L**	**84**	**0.15**	**RSK SOP-175**
Ethane	**0.20**	**0.20**	**mg/L**	**97**		**RSK SOP-175**
	0.20	**0.20**	**mg/L**	**96**	**1.9**	**RSK SOP-175**
Ethene	**0.19**	**0.19**	**mg/L**	**98**		**RSK SOP-175**
	0.19	**0.18**	**mg/L**	**97**	**1.2**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

TestAmerica
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GENERAL CHEMISTRY DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW01-020210

General Chemistry

Lot-Sample #...: A0B040546-001 Work Order #...: LT8A7 Matrix.....: WG
Date Sampled...: 02/02/10 13:37 Date Received..: 02/04/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	2.4	0.2	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 2				
Sulfate	24.5	5.0	mg/L	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 5				
Total Alkalinity	320 J	5.0	mg/L	MCAWW 310.1	02/08/10	0040087
		Dilution Factor: 1				
Total Organic Carbon	1	1	mg/L	SW846 9060	02/08/10	0039268
		Dilution Factor: 1				
Total Sulfide	1.0	1.0	mg/L	MCAWW 376.1	02/08/10	0039327
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW02-020210

General Chemistry

Lot-Sample #...: A0B040546-002 Work Order #...: LT8CK Matrix.....: WG
Date Sampled...: 02/02/10 15:22 Date Received..: 02/04/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	6.7	0.5	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 5				
Sulfate	45.4	5.0	mg/L	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 5				
Total Alkalinity	370 J	5.0	mg/L	MCAWW 310.1	02/08/10	0040087
		Dilution Factor: 1				
Total Organic Carbon	2	1	mg/L	SW846 9060	02/08/10	0039268
		Dilution Factor: 1				
Total Sulfide	0.37 B	1.0	mg/L	MCAWW 376.1	02/08/10	0039327
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

B Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-MW203-020310

General Chemistry

Lot-Sample #...: A0B040546-003 **Work Order #...:** LT8CL **Matrix.....:** WG
Date Sampled...: 02/03/10 09:55 **Date Received..:** 02/04/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	4.7	0.5	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 5				
Sulfate	43.6	1.0	mg/L	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 1				
Total Alkalinity	350 J	5.0	mg/L	MCAWW 310.1	02/08/10	0040087
		Dilution Factor: 1				
Total Organic Carbon	4	1	mg/L	SW846 9060	02/08/10	0039268
		Dilution Factor: 1				
Total Sulfide	1.7	1.0	mg/L	MCAWW 376.1	02/08/10	0039327
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-MW7FGA-020310

General Chemistry

Lot-Sample #...: A0B040546-004 **Work Order #...:** LT8CQ **Matrix.....:** WG
Date Sampled...: 02/03/10 11:31 **Date Received..:** 02/04/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**7.4**	**0.5**	**mg/L**	**MCAWW 353.2**	**02/15/10**	**0046254**
		Dilution Factor: 5				
Sulfate	**59.3**	**5.0**	**mg/L**	**MCAWW 300.0A**	**02/15/10**	**0047081**
		Dilution Factor: 5				
Total Alkalinity	**350 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**02/09/10**	**0040087**
		Dilution Factor: 1				
Total Organic Carbon	**2**	**1**	**mg/L**	**SW846 9060**	**02/08/10**	**0039268**
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/08/10	0039327
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A0B040546 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: LVPEJ1AA		MB Lot-Sample #:	A0B150000-254	
	ND	0.1	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1				
Sulfate		Work Order #: LVP441AA		MB Lot-Sample #:	A0B160000-081	
	ND	1.0	mg/L	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 1				
Total Alkalinity		Work Order #: LVGHN1AA		MB Lot-Sample #:	A0B090000-087	
	4.3 B	**5.0**	**mg/L**	**MCAWW 310.1**	**02/08/10**	**0040087**
		Dilution Factor: 1				
Total Organic Carbon		Work Order #: LVD9K1AA		MB Lot-Sample #:	A0B080000-268	
	ND	1	mg/L	SW846 9060	02/08/10	0039268
		Dilution Factor: 1				
Total Sulfide		Work Order #: LVEGD1AA		MB Lot-Sample #:	A0B080000-327	
	ND	1.0	mg/L	MCAWW 376.1	02/08/10	0039327
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A0B040546 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#:LVP441AC-LCS/LVP441AD-LCSD				LCS Lot-Sample#: A0B160000-081	
	96	(90 - 110)			MCAWW 300.0A	02/15/10	0047081
	96	(90 - 110)	0.41	(0-20)	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 1					
Total Sulfide		WO#:LVEGD1AC-LCS/LVEGD1AD-LCSD				LCS Lot-Sample#: A0B080000-327	
	99	(79 - 104)			MCAWW 376.1	02/08/10	0039327
	101	(79 - 104)	2.0	(0-20)	MCAWW 376.1	02/08/10	0039327
		Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A0B040546 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#:LVP441AC-LCS/LVP441AD-LCSD				LCS Lot-Sample#: A0B160000-081		
	50.0	48.2	mg/L	96		MCAWW 300.0A	02/15/10	0047081
	50.0	48.0	mg/L	96	0.41	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 1						
Total Sulfide		WO#:LVEGD1AC-LCS/LVEGD1AD-LCSD				LCS Lot-Sample#: A0B080000-327		
	16	16	mg/L	99		MCAWW 376.1	02/08/10	0039327
	16	16	mg/L	101	2.0	MCAWW 376.1	02/08/10	0039327
		Dilution Factor: 1						

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B040546 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: LVPEJ1AC	LCS Lot-Sample#: A0B150000-254		
	103	(79 - 117)	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1			
Total Alkalinity		Work Order #: LVGHN1AC	LCS Lot-Sample#: A0B090000-087		
	107	(90 - 127)	MCAWW 310.1	02/08/10	0040087
		Dilution Factor: 1			
Total Organic Carbon		Work Order #: LVD9K1AC	LCS Lot-Sample#: A0B080000-268		
	98	(88 - 115)	SW846 9060	02/08/10	0039268
		Dilution Factor: 1			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B040546 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			Work Order #:	LVPEJ1AC	LCS Lot-Sample#:	A0B150000-254	
	10	10	mg/L	103	MCAWW 353.2	02/15/10	0046254
			Dilution Factor: 1				
Total Alkalinity			Work Order #:	LVGHN1AC	LCS Lot-Sample#:	A0B090000-087	
	35	37	mg/L	107	MCAWW 310.1	02/08/10	0040087
			Dilution Factor: 1				
Total Organic Carbon			Work Order #:	LVD9K1AC	LCS Lot-Sample#:	A0B080000-268	
	69	68	mg/L	98	SW846 9060	02/08/10	0039268
			Dilution Factor: 1				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B040546 **Matrix.....:** WATER
Date Sampled...: 02/04/10 14:41 **Date Received..:** 02/06/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		WO#: LVCLD1AQ-MS/LVCLD1AR-MSD				MS Lot-Sample #: A0B060440-002	
	99	(34 - 125)			MCAWW 353.2	02/15/10	0046254
	95	(34 - 125)	1.9	(0-20)	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1					
Sulfate		WO#: LVCLD1AF-MS/LVCLD1AG-MSD				MS Lot-Sample #: A0B060440-002	
	82	(80 - 120)			MCAWW 300.0A	02/15/10	0047081
	81	(80 - 120)	0.33	(0-20)	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 5					
Total Alkalinity		WO#: LVCLD1AJ-MS/LVCLD1AK-MSD				MS Lot-Sample #: A0B060440-002	
	44	(10 - 160)			MCAWW 310.1	02/09/10	0040087
	44	(10 - 160)	0.20	(0-24)	MCAWW 310.1	02/09/10	0040087
		Dilution Factor: 1					
Total Organic Carbon		WO#: LVCLD1AU-MS/LVCLD1AV-MSD				MS Lot-Sample #: A0B060440-002	
	97	(72 - 136)			SW846 9060	02/08/10	0039268
	97	(72 - 136)	0.21	(0-20)	SW846 9060	02/08/10	0039268
		Dilution Factor: 1					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B040546 **Matrix.....:** WATER
Date Sampled...: 02/04/10 14:41 **Date Received..:** 02/06/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			WO#: LVCLD1AQ-MS/LVCLD1AR-MSD				MS Lot-Sample #: A0B060440-002		
	1.9	2.5	4.4	mg/L	99		MCAWW 353.2	02/15/10	0046254
	1.9	2.5	4.3	mg/L	95	1.9	MCAWW 353.2	02/15/10	0046254
			Dilution Factor: 1						
Sulfate			WO#: LVCLD1AF-MS/LVCLD1AG-MSD				MS Lot-Sample #: A0B060440-002		
	48.9	50.0	89.8	mg/L	82		MCAWW 300.0A	02/15/10	0047081
	48.9	50.0	89.5	mg/L	81	0.33	MCAWW 300.0A	02/15/10	0047081
			Dilution Factor: 5						
Total Alkalinity			WO#: LVCLD1AJ-MS/LVCLD1AK-MSD				MS Lot-Sample #: A0B060440-002		
	430	500	650	mg/L	44		MCAWW 310.1	02/09/10	0040087
	430	500	650	mg/L	44	0.20	MCAWW 310.1	02/09/10	0040087
			Dilution Factor: 1						
Total Organic Carbon			WO#: LVCLD1AU-MS/LVCLD1AV-MSD				MS Lot-Sample #: A0B060440-002		
	4	25	28	mg/L	97		SW846 9060	02/08/10	0039268
	4	25	28	mg/L	97	0.21	SW846 9060	02/08/10	0039268
			Dilution Factor: 1						

NOTE(S):

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

END OF REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 182602078

HSSER-IL

Lot #: A0B040546-B

John Dennison

Stantec Consulting Corporation
446 Eisenhower Lane North
Lombard, IL 60148

TESTAMERICA LABORATORIES, INC.

Alesia M. Danford

Approved for release.
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2/26/2010 10:20 AM

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February 25, 2010

ACCREDITED IN ACCORDANCE WITH nelac

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A0B040546 B

The following report contains the analytical results for one water sample and one quality control sample submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HSSER-IL Site, project number 182602078. The samples were received February 04, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to John Dennison on February 16, 2010. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 1.2°C.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for batch(es) 0042361 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

DISSOLVED GASES/RSK

The analytical results met the requirements of the laboratory's QA/QC program.

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analytes(s).

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 032609.doc

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0B040546

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-RAMW01-020310 02/03/10 14:03 005				
Methane	0.0051	0.00050	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.0014 J	0.0050	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.018	0.0050	mg/L	SW846 8260B
Tetrachloroethylene	0.14	0.0050	mg/L	SW846 8260B
Trichloroethylene	0.011	0.0050	mg/L	SW846 8260B
1,1-Dichloroethane	0.038	0.0050	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.028	0.0050	mg/L	SW846 8260B
Nitrate-Nitrite	17	1.0	mg/L	MCAWW 353.2
Total Sulfide	0.86 B	1.0	mg/L	MCAWW 376.1
Sulfate	76.0	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	9	1	mg/L	SW846 9060
Total Alkalinity	460 J	5.0	mg/L	MCAWW 310.1

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METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0B040546

PARAMETER	ANALYTICAL METHOD
Alkalinity	MCAWW 310.1
Dissolved Gases in Water	RSK SOP-175
Nitrate-Nitrite	MCAWW 353.2
Sulfate	MCAWW 300.0A
Sulfide	MCAWW 376.1
Total Organic Carbon	SW846 9060
Volatile Organics by GC/MS	SW846 8260B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

RSK Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

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SAMPLE SUMMARY

SAMPLE SUMMARY

A0B040546

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LT8CW	005	HSSER-RAMW01-020310	02/03/10	14:03
LT8C5	006	HSSER-TRIP01-020310	02/03/10	

NOTE(S):

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

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SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☑

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THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Stantec	John Dennison	2/3/10	145196
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 2 of 2**
996 Eisenhower Ln N	630-792-1680		
City / State / Zip Code	**Site Contact**	**Lab Contact**	
Lombard / IL / 60148			
Project Name and Location (State)	**Carrier/Waybill Number**		
HSSER-IL			
Contract/Purchase Order/Quote No.			
182602078			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Alkalinity 310.1	Sulfate 300.0A	Dis. Gases RSK175 MEE	Nitrate/Nitrite 353.2	Sulfide 376.1	TOC 9060	VOCs 8260B *						Special Instructions/ Conditions of Receipt
HSSER-RAMW01-020310	2/3/10	1403		X			1	3		5		1	X	X	X	X	X	X	X						
~~HSSER-RAMW02-020310~~	~~2/3/10~~			X			1	3		5		1	X	X	X	X	X	X	X						
HSSER-TRP01-020310	2/3/10																		X						

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____ STANDARD

QC Requirements (Specify): *13 VOCs / Level 4 Data

	Date	Time		Date	Time
1. Relinquished By	2/3/10	15:30	1. Received By	2/3	15:35
2. Relinquished By	2/3	16:10	2. Received By	2/4/10	9:15 am
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** A8B040946
North Canton Facility

Client Stantec Project HSSER By: [illegible] (Signature)
Cooler Received on 2/4/10 Opened on 2/4/10
FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____
TestAmerica Cooler # 241-899 Multiple Coolers ☐ Foam Box ☐ Client Cooler ☐ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☒ Intact? Yes ☐ No ☐ NA ☒
   If YES, Quantity _____ Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☒
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☒ None ☐ Other _____
6. Cooler temperature upon receipt 1.2 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☒ Other ☐ _____
   COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☒ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☒ No ☐ Were VOAs on the COC? Yes ☒ No ☐

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

_____

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 121709-*HNO_3; Sulfuric Acid Lot#* 082509-*H_2SO_4; Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-*$(CH_3COO)_2ZN/NaOH$*. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials
SMW01-	<2	2/4/10	[illegible]
SMW02-	<2		
SMW03	<2		
MW7FGA	<2		
RAMW01	<2		

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW01-020310

GC/MS Volatiles

Lot-Sample #...: A0B040546-005 **Work Order #...:** LT8CW1AA **Matrix.....:** WG
Date Sampled...: 02/03/10 14:03 **Date Received..:** 02/04/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 5 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0014 J**	**0.0050**	**mg/L**
cis-1,2-Dichloroethylene	**0.018**	**0.0050**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0050	mg/L
Tetrachloroethylene	**0.14**	**0.0050**	**mg/L**
Trichloroethylene	**0.011**	**0.0050**	**mg/L**
Vinyl chloride	ND	0.0050	mg/L
Methylene chloride	ND	0.0050	mg/L
1,1-Dichloroethane	**0.038**	**0.0050**	**mg/L**
1,2-Dichloroethane	ND	0.0050	mg/L
1,1,1-Trichloroethane	**0.028**	**0.0050**	**mg/L**
1,1,2-Trichloroethane	ND	0.0050	mg/L
Toluene	ND	0.0050	mg/L
Ethylbenzene	ND	0.0050	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(73 - 122)
1,2-Dichloroethane-d4	88	(61 - 128)
Toluene-d8	87	(76 - 110)
4-Bromofluorobenzene	84	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-TRIP01-020310

GC/MS Volatiles

Lot-Sample #...: A0B040546-006 **Work Order #...:** LT8C51AA **Matrix.....:** WQ
Date Sampled...: 02/03/10 **Date Received..:** 02/04/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	88	(76 - 110)
4-Bromofluorobenzene	84	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVKGN1AA **Matrix.....:** WATER
MB Lot-Sample #: A0B110000-361

Prep Date.....: 02/09/10 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 02/09/10 **Prep Batch #...:** 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
Toluene-d8	88	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVKGN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B110000-361 LVKGN1AD-LCSD
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**109**	**(63 - 130)**			**SW846 8260B**
	109	**(63 - 130)**	**0.44**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**97**	**(75 - 122)**			**SW846 8260B**
	100	**(75 - 122)**	**3.2**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	99	(88 - 113)			SW846 8260B
	101	(88 - 113)	2.0	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	101	(85 - 113)			SW846 8260B
	101	(85 - 113)	0.35	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	103	(80 - 120)			SW846 8260B
	102	(80 - 120)	0.65	(0-30)	SW846 8260B
Vinyl chloride	88	(61 - 120)			SW846 8260B
	87	(61 - 120)	0.81	(0-30)	SW846 8260B
Methylene chloride	101	(78 - 118)			SW846 8260B
	98	(78 - 118)	2.7	(0-30)	SW846 8260B
1,1-Dichloroethane	101	(86 - 123)			SW846 8260B
	101	(86 - 123)	0.29	(0-30)	SW846 8260B
1,2-Dichloroethane	95	(79 - 136)			SW846 8260B
	93	(79 - 136)	2.0	(0-30)	SW846 8260B
1,1,1-Trichloroethane	100	(78 - 140)			SW846 8260B
	102	(78 - 140)	2.0	(0-30)	SW846 8260B
1,1,2-Trichloroethane	92	(83 - 122)			SW846 8260B
	94	(83 - 122)	1.7	(0-30)	SW846 8260B
Toluene	**96**	**(74 - 119)**			**SW846 8260B**
	99	**(74 - 119)**	**2.4**	**(0-20)**	**SW846 8260B**
Ethylbenzene	98	(86 - 116)			SW846 8260B
	100	(86 - 116)	2.6	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
	92	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	87	(61 - 128)
Toluene-d8	91	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	96	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVKGN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B110000-361 LVKGN1AD-LCSD
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.011**	**mg/L**	**109**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**109**	**0.44**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.0097**	**mg/L**	**97**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**100**	**3.2**	**SW846 8260B**
Tetrachloroethylene	0.010	0.0099	mg/L	99		SW846 8260B
	0.010	0.010	mg/L	101	2.0	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.010	mg/L	101	0.35	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.010	mg/L	102	0.65	SW846 8260B
Vinyl chloride	0.010	0.0088	mg/L	88		SW846 8260B
	0.010	0.0087	mg/L	87	0.81	SW846 8260B
Methylene chloride	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.0098	mg/L	98	2.7	SW846 8260B
1,1-Dichloroethane	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.010	mg/L	101	0.29	SW846 8260B
1,2-Dichloroethane	0.010	0.0095	mg/L	95		SW846 8260B
	0.010	0.0093	mg/L	93	2.0	SW846 8260B
1,1,1-Trichloroethane	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	102	2.0	SW846 8260B
1,1,2-Trichloroethane	0.010	0.0092	mg/L	92		SW846 8260B
	0.010	0.0094	mg/L	94	1.7	SW846 8260B
Toluene	**0.010**	**0.0096**	**mg/L**	**96**		**SW846 8260B**
	0.010	**0.0099**	**mg/L**	**99**	**2.4**	**SW846 8260B**
Ethylbenzene	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.010	mg/L	100	2.6	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
	92	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	87	(61 - 128)
Toluene-d8	91	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	96	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVCL41AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A0B060440-010 LVCL41AD-MSD
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 5 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**106**	**(62 - 130)**			**SW846 8260B**
	110	**(62 - 130)**	**4.0**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**94**	**(62 - 130)**			**SW846 8260B**
	98	**(62 - 130)**	**3.6**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	97	(85 - 121)			SW846 8260B
	99	(85 - 121)	0.60	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	82 a	(87 - 114)			SW846 8260B
	100	(87 - 114)	5.3	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	97	(85 - 116)			SW846 8260B
	104	(85 - 116)	6.8	(0-30)	SW846 8260B
Vinyl chloride	84 a	(88 - 126)			SW846 8260B
	88	(88 - 126)	3.4	(0-30)	SW846 8260B
Methylene chloride	98	(82 - 115)			SW846 8260B
	100	(82 - 115)	2.0	(0-30)	SW846 8260B
1,1-Dichloroethane	94	(88 - 127)			SW846 8260B
	101	(88 - 127)	5.0	(0-30)	SW846 8260B
1,2-Dichloroethane	91	(71 - 160)			SW846 8260B
	94	(71 - 160)	2.3	(0-30)	SW846 8260B
1,1,1-Trichloroethane	96	(71 - 162)			SW846 8260B
	103	(71 - 162)	5.4	(0-30)	SW846 8260B
1,1,2-Trichloroethane	93	(86 - 129)			SW846 8260B
	92	(86 - 129)	1.2	(0-30)	SW846 8260B
Toluene	**95**	**(70 - 119)**			**SW846 8260B**
	98	**(70 - 119)**	**3.0**	**(0-20)**	**SW846 8260B**
Ethylbenzene	97	(86 - 132)			SW846 8260B
	99	(86 - 132)	2.0	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
	91	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	84	(61 - 128)
Toluene-d8	93	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	97	(74 - 116)
	98	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVCL41AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A0B060440-010 LVCL41AD-MSD
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 5 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethylene	**0.0011**	**0.050**	**0.054**	**mg/L**	**106**		**SW846 8260B**
	0.0011	**0.050**	**0.056**	**mg/L**	**110**	**4.0**	**SW846 8260B**
Trichloroethylene	**0.0058**	**0.050**	**0.053**	**mg/L**	**94**		**SW846 8260B**
	0.0058	**0.050**	**0.055**	**mg/L**	**98**	**3.6**	**SW846 8260B**
Tetrachloroethylene	0.099	0.050	0.15	mg/L	97		SW846 8260B
	0.099	0.050	0.15	mg/L	99	0.60	SW846 8260B
cis-1,2-Dichloroethylene	0.12	0.050	0.17	mg/L	82 a		SW846 8260B
	0.12	0.050	0.17	mg/L	100	5.3	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.050	0.049	mg/L	97		SW846 8260B
	ND	0.050	0.053	mg/L	104	6.8	SW846 8260B
Vinyl chloride	0.015	0.050	0.056	mg/L	84 a		SW846 8260B
	0.015	0.050	0.058	mg/L	88	3.4	SW846 8260B
Methylene chloride	ND	0.050	0.049	mg/L	98		SW846 8260B
	ND	0.050	0.050	mg/L	100	2.0	SW846 8260B
1,1-Dichloroethane	0.025	0.050	0.072	mg/L	94		SW846 8260B
	0.025	0.050	0.076	mg/L	101	5.0	SW846 8260B
1,2-Dichloroethane	ND	0.050	0.046	mg/L	91		SW846 8260B
	ND	0.050	0.047	mg/L	94	2.3	SW846 8260B
1,1,1-Trichloroethane	0.017	0.050	0.065	mg/L	96		SW846 8260B
	0.017	0.050	0.068	mg/L	103	5.4	SW846 8260B
1,1,2-Trichloroethane	ND	0.050	0.046	mg/L	93		SW846 8260B
	ND	0.050	0.046	mg/L	92	1.2	SW846 8260B
Toluene	**ND**	**0.050**	**0.048**	**mg/L**	**95**		**SW846 8260B**
	ND	**0.050**	**0.049**	**mg/L**	**98**	**3.0**	**SW846 8260B**
Ethylbenzene	ND	0.050	0.049	mg/L	97		SW846 8260B
	ND	0.050	0.049	mg/L	99	2.0	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
	91	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	84	(61 - 128)
Toluene-d8	93	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	97	(74 - 116)
	98	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

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GC VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW01-020310

GC Volatiles

Lot-Sample #...: A0B040546-005 **Work Order #...:** LT8CW1AH **Matrix.....:** WG
Date Sampled...: 02/03/10 14:03 **Date Received..:** 02/04/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	**0.0051**	**0.00050**	**mg/L**

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVP4L1AA **Matrix.....:** WATER
MB Lot-Sample #: A0B160000-073

Prep Date.....: 02/15/10 **Final Wgt/Vol..:** 0 mL
Analysis Date..: 02/15/10 **Prep Batch #...:** 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methane	ND	0.00050	mg/L	RSK SOP-175
Ethane	ND	0.00050	mg/L	RSK SOP-175
Ethene	ND	0.00050	mg/L	RSK SOP-175

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVP4L1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B160000-073 LVP4L1AD-LCSD
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	84	(75 - 127)			RSK SOP-175
	84	(75 - 127)	0.15	(0-30)	RSK SOP-175
Ethane	97	(74 - 138)			RSK SOP-175
	96	(74 - 138)	1.9	(0-30)	RSK SOP-175
Ethene	98	(73 - 140)			RSK SOP-175
	97	(73 - 140)	1.2	(0-30)	RSK SOP-175

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVP4L1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B160000-073 LVP4L1AD-LCSD
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Methane	**0.11**	**0.092**	**mg/L**	**84**		**RSK SOP-175**
	0.11	**0.092**	**mg/L**	**84**	**0.15**	**RSK SOP-175**
Ethane	**0.20**	**0.20**	**mg/L**	**97**		**RSK SOP-175**
	0.20	**0.20**	**mg/L**	**96**	**1.9**	**RSK SOP-175**
Ethene	**0.19**	**0.19**	**mg/L**	**98**		**RSK SOP-175**
	0.19	**0.18**	**mg/L**	**97**	**1.2**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVCL41AX-MS **Matrix.....:** WATER
MS Lot-Sample #: A0B060440-010 LVCL41A0-MSD
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	**89**	**(75 - 127)**			**RSK SOP-175**
	98	**(75 - 127)**	**5.7**	**(0-30)**	**RSK SOP-175**
Ethane	**81**	**(74 - 138)**			**RSK SOP-175**
	77	**(74 - 138)**	**5.9**	**(0-30)**	**RSK SOP-175**
Ethene	**89**	**(73 - 140)**			**RSK SOP-175**
	82	**(73 - 140)**	**7.9**	**(0-30)**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A0B040546 **Work Order #...:** LVCL41AX-MS **Matrix.....:** WATER
MS Lot-Sample #: A0B060440-010 LVCL41A0-MSD
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Methane	**0.065**	**0.11**	**0.16**	**mg/L**	**89**		**RSK SOP-175**
	0.065	**0.11**	**0.17**	**mg/L**	**98**	**5.7**	**RSK SOP-175**
Ethane	**ND**	**0.20**	**0.17**	**mg/L**	**81**		**RSK SOP-175**
	ND	**0.20**	**0.16**	**mg/L**	**77**	**5.9**	**RSK SOP-175**
Ethene	**0.00096**	**0.19**	**0.17**	**mg/L**	**89**		**RSK SOP-175**
	0.00096	**0.19**	**0.16**	**mg/L**	**82**	**7.9**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

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GENERAL CHEMISTRY DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW01-020310

General Chemistry

Lot-Sample #...: A0B040546-005 **Work Order #...:** LT8CW **Matrix.....:** WG
Date Sampled...: 02/03/10 14:03 **Date Received..:** 02/04/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	17	1.0	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 10				
Sulfate	76.0	5.0	mg/L	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 5				
Total Alkalinity	460 J	5.0	mg/L	MCAWW 310.1	02/09/10	0040087
		Dilution Factor: 1				
Total Organic Carbon	9	1	mg/L	SW846 9060	02/08/10	0039268
		Dilution Factor: 1				
Total Sulfide	0.86 B	1.0	mg/L	MCAWW 376.1	02/08/10	0039327
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A0B040546 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: LVPEJ1AA		MB Lot-Sample #:	A0B150000-254	
	ND	0.1	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1				
Sulfate		Work Order #: LVP441AA		MB Lot-Sample #:	A0B160000-081	
	ND	1.0	mg/L	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 1				
Total Alkalinity		Work Order #: LVGHN1AA		MB Lot-Sample #:	A0B090000-087	
	4.3 B	**5.0**	**mg/L**	**MCAWW 310.1**	**02/08/10**	**0040087**
		Dilution Factor: 1				
Total Organic Carbon		Work Order #: LVD9K1AA		MB Lot-Sample #:	A0B080000-268	
	ND	1	mg/L	SW846 9060	02/08/10	0039268
		Dilution Factor: 1				
Total Sulfide		Work Order #: LVEGD1AA		MB Lot-Sample #:	A0B080000-327	
	ND	1.0	mg/L	MCAWW 376.1	02/08/10	0039327
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A0B040546 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#:LVP441AC-LCS/LVP441AD-LCSD				LCS Lot-Sample#: A0B160000-081	
	96	(90 - 110)			MCAWW 300.0A	02/15/10	0047081
	96	(90 - 110)	0.41	(0-20)	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 1					
Total Sulfide		WO#:LVEGD1AC-LCS/LVEGD1AD-LCSD				LCS Lot-Sample#: A0B080000-327	
	99	(79 - 104)			MCAWW 376.1	02/08/10	0039327
	101	(79 - 104)	2.0	(0-20)	MCAWW 376.1	02/08/10	0039327
		Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A0B040546 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#:LVP441AC-LCS/LVP441AD-LCSD				LCS Lot-Sample#: A0B160000-081		
	50.0	48.2	mg/L	96		MCAWW 300.0A	02/15/10	0047081
	50.0	48.0	mg/L	96	0.41	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 1						
Total Sulfide		WO#:LVEGD1AC-LCS/LVEGD1AD-LCSD				LCS Lot-Sample#: A0B080000-327		
	16	16	mg/L	99		MCAWW 376.1	02/08/10	0039327
	16	16	mg/L	101	2.0	MCAWW 376.1	02/08/10	0039327
		Dilution Factor: 1						

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B040546 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: LVPEJ1AC	LCS Lot-Sample#: A0B150000-254		
	103	(79 - 117)	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1			
Total Alkalinity		Work Order #: LVGHN1AC	LCS Lot-Sample#: A0B090000-087		
	107	(90 - 127)	MCAWW 310.1	02/08/10	0040087
		Dilution Factor: 1			
Total Organic Carbon		Work Order #: LVD9K1AC	LCS Lot-Sample#: A0B080000-268		
	98	(88 - 115)	SW846 9060	02/08/10	0039268
		Dilution Factor: 1			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B040546 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			Work Order #:	LVPEJ1AC	LCS Lot-Sample#:	A0B150000-254	
	10	10	mg/L	103	MCAWW 353.2	02/15/10	0046254
			Dilution Factor: 1				
Total Alkalinity			Work Order #:	LVGHN1AC	LCS Lot-Sample#:	A0B090000-087	
	35	37	mg/L	107	MCAWW 310.1	02/08/10	0040087
			Dilution Factor: 1				
Total Organic Carbon			Work Order #:	LVD9K1AC	LCS Lot-Sample#:	A0B080000-268	
	69	68	mg/L	98	SW846 9060	02/08/10	0039268
			Dilution Factor: 1				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B040546 **Matrix.....:** WATER
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		WO#: LVCL41AQ-MS/LVCL41AR-MSD				MS Lot-Sample #: A0B060440-010	
	82	(34 - 125)			MCAWW 353.2	02/15/10	0046254
	82	(34 - 125)	0.0	(0-20)	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1					
Sulfate		WO#: LVCL41AF-MS/LVCL41AG-MSD				MS Lot-Sample #: A0B060440-010	
	85	(80 - 120)			MCAWW 300.0A	02/16/10	0047081
	82	(80 - 120)	1.8	(0-20)	MCAWW 300.0A	02/16/10	0047081
		Dilution Factor: 5					
Total Alkalinity		WO#: LVCL41AJ-MS/LVCL41AK-MSD				MS Lot-Sample #: A0B060440-010	
	34	(10 - 160)			MCAWW 310.1	02/09/10	0040087
	37	(10 - 160)	2.5	(0-24)	MCAWW 310.1	02/09/10	0040087
		Dilution Factor: 1					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B040546 **Matrix.....:** WATER
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			WO#: LVCL41AQ-MS/LVCL41AR-MSD				MS Lot-Sample #: A0B060440-010		
	2.6	2.5	4.7	mg/L	82		MCAWW 353.2	02/15/10	0046254
	2.6	2.5	4.7	mg/L	82	0.0	MCAWW 353.2	02/15/10	0046254
			Dilution Factor: 1						
Sulfate			WO#: LVCL41AF-MS/LVCL41AG-MSD				MS Lot-Sample #: A0B060440-010		
	52.4	50.0	94.9	mg/L	85		MCAWW 300.0A	02/16/10	0047081
	52.4	50.0	93.2	mg/L	82	1.8	MCAWW 300.0A	02/16/10	0047081
			Dilution Factor: 5						
Total Alkalinity			WO#: LVCL41AJ-MS/LVCL41AK-MSD				MS Lot-Sample #: A0B060440-010		
	450	500	620	mg/L	34		MCAWW 310.1	02/09/10	0040087
	450	500	630	mg/L	37	2.5	MCAWW 310.1	02/09/10	0040087
			Dilution Factor: 1						

NOTE(S):

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

END OF REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 182602078

HSSER-IL

Lot #: A0B060440-A

John Dennison

Stantec Consulting Corporation
446 Eisenhower Lane North
Lombard, IL 60148

TESTAMERICA LABORATORIES, INC.

Alesia M. Danford

Approved for release.
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2/26/2010 6:51 AM

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February 25, 2010

ACCREDITED IN ACCORDANCE WITH nelac

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A0B060440 A

The following report contains the analytical results for eight water samples and one quality control sample submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HSSER-IL Site, project number 182602078. The samples were received February 06, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to John Dennison on February 16, 2010. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 2.0 and 2.1°C.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for HSSER-SMW08-020410 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

DISSOLVED GASES/RSK

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for HSSER-SMW08-020410 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analytes(s).

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 032609.doc

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0B060440

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-SMW19-020410 02/04/10 13:02 001				
cis-1,2-Dichloroethylene	0.0013	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00019 J	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.0018	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.014	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.00044 J	0.0010	mg/L	SW846 8260B
Nitrate-Nitrite	3.0	0.2	mg/L	MCAWW 353.2
Total Sulfide	0.93 B	1.0	mg/L	MCAWW 376.1
Sulfate	45.7	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	2	1	mg/L	SW846 9060
Total Alkalinity	380 J	5.0	mg/L	MCAWW 310.1
HSSER-SMW08-020410 02/04/10 14:41 002				
Methane	0.00019 J	0.00050	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.00056 J	0.0017	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.047	0.0017	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00056 J	0.0017	mg/L	SW846 8260B
Tetrachloroethylene	0.045	0.0017	mg/L	SW846 8260B
Trichloroethylene	0.0050	0.0017	mg/L	SW846 8260B
1,1-Dichloroethane	0.0087	0.0017	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.018	0.0017	mg/L	SW846 8260B
Nitrate-Nitrite	1.9	0.5	mg/L	MCAWW 353.2
Sulfate	48.9	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	4	1	mg/L	SW846 9060
Total Alkalinity	430 J	5.0	mg/L	MCAWW 310.1
HSSER-SMW04-020410 02/04/10 16:07 003				
Methane	0.20	0.00050	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.00092 J	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.017	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.033	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.0081	0.0010	mg/L	SW846 8260B
Vinyl chloride	0.0015	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0038	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0081	0.0010	mg/L	SW846 8260B
Nitrate-Nitrite	0.9	0.1	mg/L	MCAWW 353.2
Sulfate	43.8	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	2	1	mg/L	SW846 9060
Total Alkalinity	410 J	5.0	mg/L	MCAWW 310.1

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0B060440

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-GMZ02-020510 02/05/10 09:10 004				
1,1-Dichloroethylene	0.00019 J	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.0098	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.00041 J	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.00040 J	0.0010	mg/L	SW846 8260B
Vinyl chloride	0.00038 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.026	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0044	0.0010	mg/L	SW846 8260B
Nitrate-Nitrite	0.2	0.1	mg/L	MCAWW 353.2
Sulfate	77.7	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	1	1	mg/L	SW846 9060
Total Alkalinity	220 J	5.0	mg/L	MCAWW 310.1
HSSER-ASDM01-020510 02/05/10 10:37 005				
1,1-Dichloroethylene	0.0015 J	0.0040	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.030	0.0040	mg/L	SW846 8260B
Tetrachloroethylene	0.10	0.0040	mg/L	SW846 8260B
Trichloroethylene	0.018	0.0040	mg/L	SW846 8260B
1,1-Dichloroethane	0.038	0.0040	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.069	0.0040	mg/L	SW846 8260B
Nitrate-Nitrite	3.0	0.2	mg/L	MCAWW 353.2
Total Sulfide	1.4	1.0	mg/L	MCAWW 376.1
Sulfate	41.0	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	4	1	mg/L	SW846 9060
Total Alkalinity	410 J	5.0	mg/L	MCAWW 310.1
HSSER-ASDM02-020510 02/05/10 11:51 006				
Methane	0.00082	0.00050	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.00090 J	0.0017	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.022	0.0017	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00061 J	0.0017	mg/L	SW846 8260B
Tetrachloroethylene	0.042	0.0017	mg/L	SW846 8260B
Trichloroethylene	0.0058	0.0017	mg/L	SW846 8260B
1,1-Dichloroethane	0.025	0.0017	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.030	0.0017	mg/L	SW846 8260B
Nitrate-Nitrite	1.4	0.1	mg/L	MCAWW 353.2
Total Sulfide	1.4	1.0	mg/L	MCAWW 376.1
Sulfate	39.5	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	5	1	mg/L	SW846 9060

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0B060440

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-ASDM02-020510 02/05/10 11:51 006				
Total Alkalinity	450 J	5.0	mg/L	MCAWW 310.1
HSSER-ASDM03-020510 02/05/10 12:54 007				
1,1-Dichloroethylene	0.00029 J	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.0041	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00050 J	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.035	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.0036	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.011	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.012	0.0010	mg/L	SW846 8260B
Nitrate-Nitrite	3.1	0.2	mg/L	MCAWW 353.2
Total Sulfide	2.2	1.0	mg/L	MCAWW 376.1
Sulfate	40.0	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	5	1	mg/L	SW846 9060
Total Alkalinity	390 J	5.0	mg/L	MCAWW 310.1
HSSER-ASDM04-020510 02/05/10 14:00 008				
1,1-Dichloroethylene	0.00073 J	0.0017	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.046	0.0017	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00051 J	0.0017	mg/L	SW846 8260B
Tetrachloroethylene	0.014	0.0017	mg/L	SW846 8260B
Trichloroethylene	0.0036	0.0017	mg/L	SW846 8260B
1,1-Dichloroethane	0.024	0.0017	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.025	0.0017	mg/L	SW846 8260B
Nitrate-Nitrite	0.2	0.1	mg/L	MCAWW 353.2
Total Sulfide	1.4	1.0	mg/L	MCAWW 376.1
Sulfate	35.5	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	7	1	mg/L	SW846 9060
Total Alkalinity	410 J	5.0	mg/L	MCAWW 310.1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

METHOD SUMMARY

North Canton

ANALYTICAL METHODS SUMMARY

A0B060440

PARAMETER	ANALYTICAL METHOD
Alkalinity	MCAWW 310.1
Dissolved Gases in Water	RSK SOP-175
Nitrate-Nitrite	MCAWW 353.2
Sulfate	MCAWW 300.0A
Sulfide	MCAWW 376.1
Total Organic Carbon	SW846 9060
Volatile Organics by GC/MS	SW846 8260B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

RSK Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SAMPLE SUMMARY

SAMPLE SUMMARY

A0B060440

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LVCK5	001	HSSER-SMW19-020410	02/04/10	13:02
LVCLD	002	HSSER-SMW08-020410	02/04/10	14:41
LVCLN	003	HSSER-SMW04-020410	02/04/10	16:07
LVCLV	004	HSSER-GMZ02-020510	02/05/10	09:10
LVCLW	005	HSSER-ASDM01-020510	02/05/10	10:37
LVCLX	006	HSSER-ASDM02-020510	02/05/10	11:51
LVCL0	007	HSSER-ASDM03-020510	02/05/10	12:54
LVCL1	008	HSSER-ASDM04-020510	02/05/10	14:00
LVCL2	009	HSSER-TRIP01-020510	02/05/10	

NOTE(S):

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☑

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Stantec	John Dennison		145198
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 2**
4446 Eisenhower Ln N	630-792-1680		

City	State	Zip Code	Site Contact	Lab Contact
Lombard	IL	60148		

Project Name and Location (State)	Carrier/Waybill Number
HSSER - IL	

Contract/Purchase Order/Quote No.: 182602078

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil		Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Alkalinity 310.1	Sulfate 300.0	Diss. Gases RSK MEE	Nitrite/Nitrate 353.2	Sulfide 376.1	TOC 9060	VOCs 8260B *						Special Instructions/ Conditions of Receipt
HSSER-SMW19-020410	2/4/10	1302		X				1	3		5		1	X	X	X	X	X	X	X						
HSSER-SMW08-020410	2/4/10	1441		X				1	3		5		1	X	X	X	X	X	X	X						MS/MSD collected
HSSER-MS02-020410	2/4/10	1441		X				1	3		5		1	X	X	X	X	X	X	X						
HSSER-MSD02-020410	2/4/10	1441		X				1	3		5		1	X	X	X	X	X	X	X						
HSSER-SMW04-020410	2/4/10	1607		X				1	3		5		1	X	X	X	X	X	X	X						
HSSER-GM202-020510	2/5/10	0910		X				1	3		5		1	X	X	X	X	X	X	X						
HSSER-ASDM01-020510	2/5/10	1037		X				1	3		5		1	X	X	X	X	X	X	X						
HSSER-ASDM02-020510	2/5/10	1151		X				1	3		5		1	X	X	X	X	X	X	X						
HSSER-ASDM03-020510	2/5/10	1254		X				1	3		5		1	X	X	X	X	X	X	X						
HSSER-ASDM04-020510	2/5/10	1400		X				1	3		5		1	X	X	X	X	X	X	X						
HSSER-TRIP01-020510	2/5/10			X							1									X						

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify): * List of 13 VOCs / Level 4 Data

1. Relinquished By	Date	Time	1. Received By	Date	Time
[signature]	2/5/10	18:30	FedEx		
2. Relinquished By	**Date**	**Time**	**2. Received By**	**Date**	**Time**
			[signature]	2/6/10	10:50
3. Relinquished By	**Date**	**Time**	**3. Received By**	**Date**	**Time**

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

North Canton

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** A0B060440
North Canton Facility

Client Stantec Project HSSER-IL By [signature] (Signature)
Cooler Received on 2/6/10 Opened on 2/6/10
FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____
TestAmerica Cooler # _____ Multiple Coolers ☒ Foam Box ☐ Client Cooler ☐ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☒ Intact? Yes ☐ No ☐ NA ☒
   If YES, Quantity _____ Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☒
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☒ None ☐ Other _____
6. Cooler temperature upon receipt BACK °C See back of form for multiple coolers/temps ☒
   METHOD: IR ☒ Other ☐ _____
   COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☒ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☒ No ☐ Were VOAs on the COC? Yes ☒ No ☐

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 121709-*HNO_3; Sulfuric Acid Lot#* 082509-*H_2SO_4; Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-*$(CH_3COO)_2ZN/NaOH$*. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials
SMW19	<2	2/6/10	[initials]
SMW108	<2<2<2		
SMW04	<2		
GMZ02	<2		
ASDM01	<2		
ASDM02	<2		
ASDM03	<2		
ASDM04	<2		

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials
RAMW02	<2<2<2	2/6/10	[illegible]

Cooler #	Temp. °C	Method	Coolant
241-488	2.1°C	IR	Wetice
Client Cooler	2.0°C	[illegible]	[illegible]

Discrepancies Cont'd:

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GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW19-020410

GC/MS Volatiles

Lot-Sample #...: A0B060440-001 **Work Order #...:** LVCK51AA **Matrix.....:** WG
Date Sampled...: 02/04/10 13:02 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.0013**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	**0.00019 J**	**0.0010**	**mg/L**
Tetrachloroethylene	**0.0018**	**0.0010**	**mg/L**
Trichloroethylene	**0.014**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.00044 J**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	87	(61 - 128)
Toluene-d8	91	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW08-020410

GC/MS Volatiles

Lot-Sample #...: A0B060440-002 **Work Order #...:** LVCLD1AA **Matrix.....:** WG
Date Sampled...: 02/04/10 14:41 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00056 J**	**0.0017**	**mg/L**
cis-1,2-Dichloroethylene	**0.047**	**0.0017**	**mg/L**
trans-1,2-Dichloroethylene	**0.00056 J**	**0.0017**	**mg/L**
Tetrachloroethylene	**0.045**	**0.0017**	**mg/L**
Trichloroethylene	**0.0050**	**0.0017**	**mg/L**
Vinyl chloride	ND	0.0017	mg/L
Methylene chloride	ND	0.0017	mg/L
1,1-Dichloroethane	**0.0087**	**0.0017**	**mg/L**
1,2-Dichloroethane	ND	0.0017	mg/L
1,1,1-Trichloroethane	**0.018**	**0.0017**	**mg/L**
1,1,2-Trichloroethane	ND	0.0017	mg/L
Toluene	ND	0.0017	mg/L
Ethylbenzene	ND	0.0017	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
1,2-Dichloroethane-d4	87	(61 - 128)
Toluene-d8	87	(76 - 110)
4-Bromofluorobenzene	85	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW04-020410

GC/MS Volatiles

Lot-Sample #...: A0B060440-003 **Work Order #...:** LVCLN1AA **Matrix.....:** WG
Date Sampled...: 02/04/10 16:07 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00092 J**	**0.0010**	**mg/L**
cis-1,2-Dichloroethylene	**0.017**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.033**	**0.0010**	**mg/L**
Trichloroethylene	**0.0081**	**0.0010**	**mg/L**
Vinyl chloride	**0.0015**	**0.0010**	**mg/L**
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0038**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0081**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
Toluene-d8	90	(76 - 110)
4-Bromofluorobenzene	88	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-GMZ02-020510

GC/MS Volatiles

Lot-Sample #...: A0B060440-004 **Work Order #...:** LVCLV1AA **Matrix.....:** WG
Date Sampled...: 02/05/10 09:10 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00019 J**	**0.0010**	**mg/L**
cis-1,2-Dichloroethylene	**0.0098**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00041 J**	**0.0010**	**mg/L**
Trichloroethylene	**0.00040 J**	**0.0010**	**mg/L**
Vinyl chloride	**0.00038 J**	**0.0010**	**mg/L**
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.026**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0044**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	87	(61 - 128)
Toluene-d8	89	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM01-020510

GC/MS Volatiles

Lot-Sample #...: A0B060440-005 **Work Order #...:** LVCLW1AA **Matrix.....:** WG
Date Sampled...: 02/05/10 10:37 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 4 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0015 J**	**0.0040**	**mg/L**
cis-1,2-Dichloroethylene	**0.030**	**0.0040**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0040	mg/L
Tetrachloroethylene	**0.10**	**0.0040**	**mg/L**
Trichloroethylene	**0.018**	**0.0040**	**mg/L**
Vinyl chloride	ND	0.0040	mg/L
Methylene chloride	ND	0.0040	mg/L
1,1-Dichloroethane	**0.038**	**0.0040**	**mg/L**
1,2-Dichloroethane	ND	0.0040	mg/L
1,1,1-Trichloroethane	**0.069**	**0.0040**	**mg/L**
1,1,2-Trichloroethane	ND	0.0040	mg/L
Toluene	ND	0.0040	mg/L
Ethylbenzene	ND	0.0040	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	87	(76 - 110)
4-Bromofluorobenzene	85	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM02-020510

GC/MS Volatiles

Lot-Sample #...: A0B060440-006 **Work Order #...:** LVCLX1AA **Matrix.....:** WG
Date Sampled...: 02/05/10 11:51 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00090 J**	**0.0017**	**mg/L**
cis-1,2-Dichloroethylene	**0.022**	**0.0017**	**mg/L**
trans-1,2-Dichloroethylene	**0.00061 J**	**0.0017**	**mg/L**
Tetrachloroethylene	**0.042**	**0.0017**	**mg/L**
Trichloroethylene	**0.0058**	**0.0017**	**mg/L**
Vinyl chloride	ND	0.0017	mg/L
Methylene chloride	ND	0.0017	mg/L
1,1-Dichloroethane	**0.025**	**0.0017**	**mg/L**
1,2-Dichloroethane	ND	0.0017	mg/L
1,1,1-Trichloroethane	**0.030**	**0.0017**	**mg/L**
1,1,2-Trichloroethane	ND	0.0017	mg/L
Toluene	ND	0.0017	mg/L
Ethylbenzene	ND	0.0017	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
1,2-Dichloroethane-d4	89	(61 - 128)
Toluene-d8	88	(76 - 110)
4-Bromofluorobenzene	84	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM03-020510

GC/MS Volatiles

Lot-Sample #...: A0B060440-007 **Work Order #...:** LVCL01AA **Matrix.....:** WG
Date Sampled...: 02/05/10 12:54 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00029 J**	**0.0010**	**mg/L**
cis-1,2-Dichloroethylene	**0.0041**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	**0.00050 J**	**0.0010**	**mg/L**
Tetrachloroethylene	**0.035**	**0.0010**	**mg/L**
Trichloroethylene	**0.0036**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.011**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.012**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	95	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	84	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM04-020510

GC/MS Volatiles

Lot-Sample #...: A0B060440-008 **Work Order #...:** LVCL11AA **Matrix.....:** WG
Date Sampled...: 02/05/10 14:00 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00073 J**	**0.0017**	**mg/L**
cis-1,2-Dichloroethylene	**0.046**	**0.0017**	**mg/L**
trans-1,2-Dichloroethylene	**0.00051 J**	**0.0017**	**mg/L**
Tetrachloroethylene	**0.014**	**0.0017**	**mg/L**
Trichloroethylene	**0.0036**	**0.0017**	**mg/L**
Vinyl chloride	ND	0.0017	mg/L
Methylene chloride	ND	0.0017	mg/L
1,1-Dichloroethane	**0.024**	**0.0017**	**mg/L**
1,2-Dichloroethane	ND	0.0017	mg/L
1,1,1-Trichloroethane	**0.025**	**0.0017**	**mg/L**
1,1,2-Trichloroethane	ND	0.0017	mg/L
Toluene	ND	0.0017	mg/L
Ethylbenzene	ND	0.0017	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(73 - 122)
1,2-Dichloroethane-d4	89	(61 - 128)
Toluene-d8	87	(76 - 110)
4-Bromofluorobenzene	86	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-TRIP01-020510

GC/MS Volatiles

Lot-Sample #...: A0B060440-009 **Work Order #...:** LVCL21AA **Matrix.....:** WQ
Date Sampled...: 02/05/10 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
1,2-Dichloroethane-d4	88	(61 - 128)
Toluene-d8	88	(76 - 110)
4-Bromofluorobenzene	85	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVKGN1AA **Matrix.....:** WATER
MB Lot-Sample #: A0B110000-361

Prep Date.....: 02/09/10 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 02/09/10 **Prep Batch #...:** 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
Toluene-d8	88	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVKGN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B110000-361 LVKGN1AD-LCSD
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**109**	**(63 - 130)**			**SW846 8260B**
	109	**(63 - 130)**	**0.44**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**97**	**(75 - 122)**			**SW846 8260B**
	100	**(75 - 122)**	**3.2**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	99	(88 - 113)			SW846 8260B
	101	(88 - 113)	2.0	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	101	(85 - 113)			SW846 8260B
	101	(85 - 113)	0.35	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	103	(80 - 120)			SW846 8260B
	102	(80 - 120)	0.65	(0-30)	SW846 8260B
Vinyl chloride	88	(61 - 120)			SW846 8260B
	87	(61 - 120)	0.81	(0-30)	SW846 8260B
Methylene chloride	101	(78 - 118)			SW846 8260B
	98	(78 - 118)	2.7	(0-30)	SW846 8260B
1,1-Dichloroethane	101	(86 - 123)			SW846 8260B
	101	(86 - 123)	0.29	(0-30)	SW846 8260B
1,2-Dichloroethane	95	(79 - 136)			SW846 8260B
	93	(79 - 136)	2.0	(0-30)	SW846 8260B
1,1,1-Trichloroethane	100	(78 - 140)			SW846 8260B
	102	(78 - 140)	2.0	(0-30)	SW846 8260B
1,1,2-Trichloroethane	92	(83 - 122)			SW846 8260B
	94	(83 - 122)	1.7	(0-30)	SW846 8260B
Toluene	**96**	**(74 - 119)**			**SW846 8260B**
	99	**(74 - 119)**	**2.4**	**(0-20)**	**SW846 8260B**
Ethylbenzene	98	(86 - 116)			SW846 8260B
	100	(86 - 116)	2.6	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
	92	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	87	(61 - 128)
Toluene-d8	91	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	96	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVKGN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B110000-361 LVKGN1AD-LCSD
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.011**	**mg/L**	**109**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**109**	**0.44**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.0097**	**mg/L**	**97**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**100**	**3.2**	**SW846 8260B**
Tetrachloroethylene	0.010	0.0099	mg/L	99		SW846 8260B
	0.010	0.010	mg/L	101	2.0	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.010	mg/L	101	0.35	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.010	mg/L	102	0.65	SW846 8260B
Vinyl chloride	0.010	0.0088	mg/L	88		SW846 8260B
	0.010	0.0087	mg/L	87	0.81	SW846 8260B
Methylene chloride	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.0098	mg/L	98	2.7	SW846 8260B
1,1-Dichloroethane	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.010	mg/L	101	0.29	SW846 8260B
1,2-Dichloroethane	0.010	0.0095	mg/L	95		SW846 8260B
	0.010	0.0093	mg/L	93	2.0	SW846 8260B
1,1,1-Trichloroethane	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	102	2.0	SW846 8260B
1,1,2-Trichloroethane	0.010	0.0092	mg/L	92		SW846 8260B
	0.010	0.0094	mg/L	94	1.7	SW846 8260B
Toluene	**0.010**	**0.0096**	**mg/L**	**96**		**SW846 8260B**
	0.010	**0.0099**	**mg/L**	**99**	**2.4**	**SW846 8260B**
Ethylbenzene	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.010	mg/L	100	2.6	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
	92	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	87	(61 - 128)
Toluene-d8	91	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	96	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVCLD1AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0B060440-002 LVCLD1AD-MSD
Date Sampled...: 02/04/10 14:41 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**103**	**(62 - 130)**			**SW846 8260B**
	108	**(62 - 130)**	**4.7**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**95**	**(62 - 130)**			**SW846 8260B**
	90	**(62 - 130)**	**3.9**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	91	(85 - 121)			SW846 8260B
	20 a	(85 - 121)	22	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	118 a	(87 - 114)			SW846 8260B
	93	(87 - 114)	6.5	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	99	(85 - 116)			SW846 8260B
	104	(85 - 116)	4.3	(0-30)	SW846 8260B
Vinyl chloride	86 a	(88 - 126)			SW846 8260B
	89	(88 - 126)	2.8	(0-30)	SW846 8260B
Methylene chloride	96	(82 - 115)			SW846 8260B
	100	(82 - 115)	4.2	(0-30)	SW846 8260B
1,1-Dichloroethane	100	(88 - 127)			SW846 8260B
	87 a	(88 - 127)	8.9	(0-30)	SW846 8260B
1,2-Dichloroethane	90	(71 - 160)			SW846 8260B
	92	(71 - 160)	2.2	(0-30)	SW846 8260B
1,1,1-Trichloroethane	98	(71 - 162)			SW846 8260B
	60 a	(71 - 162)	21	(0-30)	SW846 8260B
1,1,2-Trichloroethane	91	(86 - 129)			SW846 8260B
	92	(86 - 129)	1.7	(0-30)	SW846 8260B
Toluene	**96**	**(70 - 119)**			**SW846 8260B**
	95	**(70 - 119)**	**0.63**	**(0-20)**	**SW846 8260B**
Ethylbenzene	99	(86 - 132)			SW846 8260B
	99	(86 - 132)	0.43	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
	90	(73 - 122)
1,2-Dichloroethane-d4	84	(61 - 128)
	85	(61 - 128)
Toluene-d8	92	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)
	95	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVCLD1AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0B060440-002 LVCLD1AD-MSD
Date Sampled...: 02/04/10 14:41 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethylene	**0.00056**	**0.017**	**0.018**	**mg/L**	**103**		**SW846 8260B**
	0.00056	**0.017**	**0.019**	**mg/L**	**108**	**4.7**	**SW846 8260B**
Trichloroethylene	**0.0050**	**0.017**	**0.021**	**mg/L**	**95**		**SW846 8260B**
	0.0050	**0.017**	**0.020**	**mg/L**	**90**	**3.9**	**SW846 8260B**
Tetrachloroethylene	0.045	0.017	0.060	mg/L	91		SW846 8260B
	0.045	0.017	0.048	mg/L	20 a	22	SW846 8260B
cis-1,2-Dichloroethylene	0.047	0.017	0.067	mg/L	118 a		SW846 8260B
	0.047	0.017	0.062	mg/L	93	6.5	SW846 8260B
trans-1,2-Dichloroethylen	0.00056	0.017	0.017	mg/L	99		SW846 8260B
	0.00056	0.017	0.018	mg/L	104	4.3	SW846 8260B
Vinyl chloride	ND	0.017	0.014	mg/L	86 a		SW846 8260B
	ND	0.017	0.015	mg/L	89	2.8	SW846 8260B
Methylene chloride	ND	0.017	0.016	mg/L	96		SW846 8260B
	ND	0.017	0.017	mg/L	100	4.2	SW846 8260B
1,1-Dichloroethane	0.0087	0.017	0.025	mg/L	100		SW846 8260B
	0.0087	0.017	0.023	mg/L	87 a	8.9	SW846 8260B
1,2-Dichloroethane	ND	0.017	0.015	mg/L	90		SW846 8260B
	ND	0.017	0.015	mg/L	92	2.2	SW846 8260B
1,1,1-Trichloroethane	0.018	0.017	0.035	mg/L	98		SW846 8260B
	0.018	0.017	0.028	mg/L	60 a	21	SW846 8260B
1,1,2-Trichloroethane	ND	0.017	0.015	mg/L	91		SW846 8260B
	ND	0.017	0.015	mg/L	92	1.7	SW846 8260B
Toluene	**ND**	**0.017**	**0.016**	**mg/L**	**96**		**SW846 8260B**
	ND	**0.017**	**0.016**	**mg/L**	**95**	**0.63**	**SW846 8260B**
Ethylbenzene	ND	0.017	0.016	mg/L	99		SW846 8260B
	ND	0.017	0.016	mg/L	99	0.43	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
	90	(73 - 122)
1,2-Dichloroethane-d4	84	(61 - 128)
	85	(61 - 128)
Toluene-d8	92	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)
	95	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

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GC VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW19-020410

GC Volatiles

Lot-Sample #...: A0B060440-001 **Work Order #...:** LVCK51AH **Matrix.....:** WG
Date Sampled...: 02/04/10 13:02 **Date Received..:** 02/06/10
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047085
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW08-020410

GC Volatiles

Lot-Sample #...:	A0B060440-002	**Work Order #...:**	LVCLD1AW	**Matrix.....:**	WG
Date Sampled...:	02/04/10 14:41	**Date Received..:**	02/06/10		
Prep Date.....:	02/16/10	**Analysis Date..:**	02/16/10		
Prep Batch #...:	0047085				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	**0.00019 J**	**0.00050**	**mg/L**

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW04-020410

GC Volatiles

Lot-Sample #...: A0B060440-003 **Work Order #...:** LVCLN1AH **Matrix.....:** WG
Date Sampled...: 02/04/10 16:07 **Date Received..:** 02/06/10
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047085
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	**0.20**	**0.00050**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-GMZ02-020510

GC Volatiles

Lot-Sample #...:	A0B060440-004	**Work Order #...:**	LVCLV1AH	**Matrix.....:**	WG
Date Sampled...:	02/05/10 09:10	**Date Received..:**	02/06/10		
Prep Date.....:	02/16/10	**Analysis Date..:**	02/16/10		
Prep Batch #...:	0047085				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM01-020510

GC Volatiles

Lot-Sample #...: A0B060440-005 **Work Order #...:** LVCLW1AH **Matrix.....:** WG
Date Sampled...: 02/05/10 10:37 **Date Received..:** 02/06/10
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047085
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM02-020510

GC Volatiles

Lot-Sample #...: A0B060440-006 **Work Order #...:** LVCLX1AH **Matrix.....:** WG
Date Sampled...: 02/05/10 11:51 **Date Received..:** 02/06/10
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047085
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	**0.00082**	**0.00050**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM03-020510

GC Volatiles

Lot-Sample #...: A0B060440-007 **Work Order #...:** LVCL01AH **Matrix.....:** WG
Date Sampled...: 02/05/10 12:54 **Date Received..:** 02/06/10
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047085
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM04-020510

GC Volatiles

Lot-Sample #...: A0B060440-008 **Work Order #...:** LVCL11AH **Matrix.....:** WG
Date Sampled...: 02/05/10 14:00 **Date Received..:** 02/06/10
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047085
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVP431AA **Matrix.....:** WATER
MB Lot-Sample #: A0B160000-085

Prep Date.....: 02/16/10 **Final Wgt/Vol..:** 1 mL
Analysis Date..: 02/16/10 **Prep Batch #...:** 0047085
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methane	ND	0.00050	mg/L	RSK SOP-175
Ethane	ND	0.00050	mg/L	RSK SOP-175
Ethene	ND	0.00050	mg/L	RSK SOP-175

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVP431AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B160000-085 LVP431AD-LCSD
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047085
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	79	(75 - 127)			RSK SOP-175
	80	(75 - 127)	2.1	(0-30)	RSK SOP-175
Ethane	81	(74 - 138)			RSK SOP-175
	83	(74 - 138)	2.1	(0-30)	RSK SOP-175
Ethene	82	(73 - 140)			RSK SOP-175
	84	(73 - 140)	2.6	(0-30)	RSK SOP-175

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVP431AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B160000-085 LVP431AD-LCSD
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047085
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Methane	**0.11**	**0.086**	**mg/L**	**79**		**RSK SOP-175**
	0.11	**0.088**	**mg/L**	**80**	**2.1**	**RSK SOP-175**
Ethane	**0.20**	**0.17**	**mg/L**	**81**		**RSK SOP-175**
	0.20	**0.17**	**mg/L**	**83**	**2.1**	**RSK SOP-175**
Ethene	**0.19**	**0.16**	**mg/L**	**82**		**RSK SOP-175**
	0.19	**0.16**	**mg/L**	**84**	**2.6**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVCLD1AX-MS **Matrix.....:** WG
MS Lot-Sample #: A0B060440-002 LVCLD1A0-MSD
Date Sampled...: 02/04/10 14:41 **Date Received..:** 02/06/10
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047085
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	**66 a**	**(75 - 127)**			**RSK SOP-175**
	64 a	**(75 - 127)**	**3.5**	**(0-30)**	**RSK SOP-175**
Ethane	**71 a**	**(74 - 138)**			**RSK SOP-175**
	67 a	**(74 - 138)**	**4.8**	**(0-30)**	**RSK SOP-175**
Ethene	**70 a**	**(73 - 140)**			**RSK SOP-175**
	67 a	**(73 - 140)**	**4.0**	**(0-30)**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVCLD1AX-MS **Matrix.....:** WG
MS Lot-Sample #: A0B060440-002 LVCLD1A0-MSD
Date Sampled...: 02/04/10 14:41 **Date Received..:** 02/06/10
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047085
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Methane	**0.00019**	**0.11**	**0.072**	**mg/L**	**66 a**		**RSK SOP-175**
	0.00019	**0.11**	**0.070**	**mg/L**	**64 a**	**3.5**	**RSK SOP-175**
Ethane	**ND**	**0.20**	**0.14**	**mg/L**	**71 a**		**RSK SOP-175**
	ND	**0.20**	**0.14**	**mg/L**	**67 a**	**4.8**	**RSK SOP-175**
Ethene	**ND**	**0.19**	**0.13**	**mg/L**	**70 a**		**RSK SOP-175**
	ND	**0.19**	**0.13**	**mg/L**	**67 a**	**4.0**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

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GENERAL CHEMISTRY DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW19-020410

General Chemistry

Lot-Sample #...: A0B060440-001 **Work Order #...:** LVCK5 **Matrix.....:** WG
Date Sampled...: 02/04/10 13:02 **Date Received..:** 02/06/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	3.0	0.2	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 2				
Sulfate	45.7	1.0	mg/L	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 1				
Total Alkalinity	380 J	5.0	mg/L	MCAWW 310.1	02/09/10	0040087
		Dilution Factor: 1				
Total Organic Carbon	2	1	mg/L	SW846 9060	02/08/10	0039268
		Dilution Factor: 1				
Total Sulfide	0.93 B	1.0	mg/L	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

B Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW08-020410

General Chemistry

Lot-Sample #...: A0B060440-002 **Work Order #...:** LVCLD **Matrix.....:** WG
Date Sampled...: 02/04/10 14:41 **Date Received..:** 02/06/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**1.9**	**0.5**	**mg/L**	**MCAWW 353.2**	**02/15/10**	**0046254**
		Dilution Factor: 5				
Sulfate	**48.9**	**5.0**	**mg/L**	**MCAWW 300.0A**	**02/15/10**	**0047081**
		Dilution Factor: 5				
Total Alkalinity	**430 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**02/09/10**	**0040087**
		Dilution Factor: 1				
Total Organic Carbon	**4**	**1**	**mg/L**	**SW846 9060**	**02/08/10**	**0039268**
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW04-020410

General Chemistry

Lot-Sample #...: A0B060440-003 **Work Order #...:** LVCLN **Matrix.....:** WG
Date Sampled...: 02/04/10 16:07 **Date Received..:** 02/06/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**0.9**	**0.1**	**mg/L**	**MCAWW 353.2**	**02/15/10**	**0046254**
		Dilution Factor: 1				
Sulfate	**43.8**	**5.0**	**mg/L**	**MCAWW 300.0A**	**02/15/10**	**0047081**
		Dilution Factor: 5				
Total Alkalinity	**410 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**02/09/10**	**0040087**
		Dilution Factor: 1				
Total Organic Carbon	**2**	**1**	**mg/L**	**SW846 9060**	**02/08/10**	**0039268**
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-GMZ02-020510

General Chemistry

Lot-Sample #...: A0B060440-004 **Work Order #...:** LVCLV **Matrix.....:** WG
Date Sampled...: 02/05/10 09:10 **Date Received..:** 02/06/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**0.2**	**0.1**	**mg/L**	**MCAWW 353.2**	**02/15/10**	**0046254**
		Dilution Factor: 1				
Sulfate	**77.7**	**5.0**	**mg/L**	**MCAWW 300.0A**	**02/15/10**	**0047081**
		Dilution Factor: 5				
Total Alkalinity	**220 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**02/09/10**	**0040087**
		Dilution Factor: 1				
Total Organic Carbon	**1**	**1**	**mg/L**	**SW846 9060**	**02/08/10**	**0039268**
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM01-020510

General Chemistry

Lot-Sample #...: A0B060440-005 **Work Order #...:** LVCLW **Matrix.....:** WG
Date Sampled...: 02/05/10 10:37 **Date Received..:** 02/06/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	3.0	0.2	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 2				
Sulfate	41.0	5.0	mg/L	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 5				
Total Alkalinity	410 J	5.0	mg/L	MCAWW 310.1	02/09/10	0040087
		Dilution Factor: 1				
Total Organic Carbon	4	1	mg/L	SW846 9060	02/08/10	0039268
		Dilution Factor: 1				
Total Sulfide	1.4	1.0	mg/L	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM02-020510

General Chemistry

Lot-Sample #...: A0B060440-006 Work Order #...: LVCLX Matrix.....: WG
Date Sampled...: 02/05/10 11:51 Date Received..: 02/06/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	1.4	0.1	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1				
Sulfate	39.5	5.0	mg/L	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 5				
Total Alkalinity	450 J	5.0	mg/L	MCAWW 310.1	02/09/10	0040087
		Dilution Factor: 1				
Total Organic Carbon	5	1	mg/L	SW846 9060	02/08/10	0039268
		Dilution Factor: 1				
Total Sulfide	1.4	1.0	mg/L	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM03-020510

General Chemistry

Lot-Sample #...: A0B060440-007 **Work Order #...:** LVCL0 **Matrix.....:** WG
Date Sampled...: 02/05/10 12:54 **Date Received..:** 02/06/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	3.1	0.2	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 2				
Sulfate	40.0	5.0	mg/L	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 5				
Total Alkalinity	390 J	5.0	mg/L	MCAWW 310.1	02/09/10	0040087
		Dilution Factor: 1				
Total Organic Carbon	5	1	mg/L	SW846 9060	02/08/10	0039268
		Dilution Factor: 1				
Total Sulfide	2.2	1.0	mg/L	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM04-020510

General Chemistry

Lot-Sample #...: A0B060440-008 **Work Order #...:** LVCL1 **Matrix.....:** WG
Date Sampled...: 02/05/10 14:00 **Date Received..:** 02/06/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	0.2	0.1	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1				
Sulfate	35.5	5.0	mg/L	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 5				
Total Alkalinity	410 J	5.0	mg/L	MCAWW 310.1	02/09/10	0040087
		Dilution Factor: 1				
Total Organic Carbon	7	1	mg/L	SW846 9060	02/08/10	0039268
		Dilution Factor: 1				
Total Sulfide	1.4	1.0	mg/L	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A0B060440 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: LVPEJ1AA		MB Lot-Sample #:	A0B150000-254	
	ND	0.1	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1				
Sulfate		Work Order #: LVP441AA		MB Lot-Sample #:	A0B160000-081	
	ND	1.0	mg/L	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 1				
Total Alkalinity		Work Order #: LVGHN1AA		MB Lot-Sample #:	A0B090000-087	
	4.3 B	**5.0**	**mg/L**	**MCAWW 310.1**	**02/08/10**	**0040087**
		Dilution Factor: 1				
Total Organic Carbon		Work Order #: LVD9K1AA		MB Lot-Sample #:	A0B080000-268	
	ND	1	mg/L	SW846 9060	02/08/10	0039268
		Dilution Factor: 1				
Total Sulfide		Work Order #: LVHR71AA		MB Lot-Sample #:	A0B100000-342	
	ND	1.0	mg/L	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A0B060440 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#:LVP441AC-LCS/LVP441AD-LCSD				LCS Lot-Sample#: A0B160000-081	
	96	(90 - 110)			MCAWW 300.0A	02/15/10	0047081
	96	(90 - 110)	0.41	(0-20)	MCAWW 300.0A	02/15/10	0047081

Dilution Factor: 1

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A0B060440 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#:LVP441AC-LCS/LVP441AD-LCSD				LCS Lot-Sample#: A0B160000-081		
	50.0	48.2	mg/L	96		MCAWW 300.0A	02/15/10	0047081
	50.0	48.0	mg/L	96	0.41	MCAWW 300.0A	02/15/10	0047081

Dilution Factor: 1

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B060440 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: LVPEJ1AC	LCS Lot-Sample#: A0B150000-254		
	103	(79 - 117)	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1			
Total Alkalinity		Work Order #: LVGHN1AC	LCS Lot-Sample#: A0B090000-087		
	107	(90 - 127)	MCAWW 310.1	02/08/10	0040087
		Dilution Factor: 1			
Total Organic Carbon		Work Order #: LVD9K1AC	LCS Lot-Sample#: A0B080000-268		
	98	(88 - 115)	SW846 9060	02/08/10	0039268
		Dilution Factor: 1			
Total Sulfide		Work Order #: LVHR71AC	LCS Lot-Sample#: A0B100000-342		
	101	(79 - 104)	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B060440 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			Work Order #: LVPEJ1AC		LCS Lot-Sample#:	A0B150000-254	
	10	10	mg/L	103	MCAWW 353.2	02/15/10	0046254
			Dilution Factor: 1				
Total Alkalinity			Work Order #: LVGHN1AC		LCS Lot-Sample#:	A0B090000-087	
	35	37	mg/L	107	MCAWW 310.1	02/08/10	0040087
			Dilution Factor: 1				
Total Organic Carbon			Work Order #: LVD9K1AC		LCS Lot-Sample#:	A0B080000-268	
	69	68	mg/L	98	SW846 9060	02/08/10	0039268
			Dilution Factor: 1				
Total Sulfide			Work Order #: LVHR71AC		LCS Lot-Sample#:	A0B100000-342	
	17	17	mg/L	101	MCAWW 376.1	02/10/10	0041342
			Dilution Factor: 1				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B060440 **Matrix.....:** WG
Date Sampled...: 02/04/10 14:41 **Date Received..:** 02/06/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		WO#: LVCLD1AQ-MS/LVCLD1AR-MSD				MS Lot-Sample #: A0B060440-002	
	99	(34 - 125)			MCAWW 353.2	02/15/10	0046254
	95	(34 - 125)	1.9	(0-20)	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1					
Sulfate		WO#: LVCLD1AF-MS/LVCLD1AG-MSD				MS Lot-Sample #: A0B060440-002	
	82	(80 - 120)			MCAWW 300.0A	02/15/10	0047081
	81	(80 - 120)	0.33	(0-20)	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 5					
Total Alkalinity		WO#: LVCLD1AJ-MS/LVCLD1AK-MSD				MS Lot-Sample #: A0B060440-002	
	44	(10 - 160)			MCAWW 310.1	02/09/10	0040087
	44	(10 - 160)	0.20	(0-24)	MCAWW 310.1	02/09/10	0040087
		Dilution Factor: 1					
Total Organic Carbon		WO#: LVCLD1AU-MS/LVCLD1AV-MSD				MS Lot-Sample #: A0B060440-002	
	97	(72 - 136)			SW846 9060	02/08/10	0039268
	97	(72 - 136)	0.21	(0-20)	SW846 9060	02/08/10	0039268
		Dilution Factor: 1					
Total Sulfide		WO#: LVCLD1AM-MS/LVCLD1AN-MSD				MS Lot-Sample #: A0B060440-002	
	94	(75 - 107)			MCAWW 376.1	02/10/10	0041342
	96	(75 - 107)	2.0	(0-20)	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B060440 **Matrix.....:** WG
Date Sampled...: 02/04/10 14:41 **Date Received..:** 02/06/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			WO#: LVCLD1AQ-MS/LVCLD1AR-MSD				MS Lot-Sample #: A0B060440-002		
	1.9	2.5	4.4	mg/L	99		MCAWW 353.2	02/15/10	0046254
	1.9	2.5	4.3	mg/L	95	1.9	MCAWW 353.2	02/15/10	0046254
			Dilution Factor: 1						
Sulfate			WO#: LVCLD1AF-MS/LVCLD1AG-MSD				MS Lot-Sample #: A0B060440-002		
	48.9	50.0	89.8	mg/L	82		MCAWW 300.0A	02/15/10	0047081
	48.9	50.0	89.5	mg/L	81	0.33	MCAWW 300.0A	02/15/10	0047081
			Dilution Factor: 5						
Total Alkalinity			WO#: LVCLD1AJ-MS/LVCLD1AK-MSD				MS Lot-Sample #: A0B060440-002		
	430	500	650	mg/L	44		MCAWW 310.1	02/09/10	0040087
	430	500	650	mg/L	44	0.20	MCAWW 310.1	02/09/10	0040087
			Dilution Factor: 1						
Total Organic Carbon			WO#: LVCLD1AU-MS/LVCLD1AV-MSD				MS Lot-Sample #: A0B060440-002		
	4	25	28	mg/L	97		SW846 9060	02/08/10	0039268
	4	25	28	mg/L	97	0.21	SW846 9060	02/08/10	0039268
			Dilution Factor: 1						
Total Sulfide			WO#: LVCLD1AM-MS/LVCLD1AN-MSD				MS Lot-Sample #: A0B060440-002		
	ND	17	16	mg/L	94		MCAWW 376.1	02/10/10	0041342
	ND	17	16	mg/L	96	2.0	MCAWW 376.1	02/10/10	0041342
			Dilution Factor: 1						

NOTE(S):

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

END OF REPORT

TestAmerica

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ANALYTICAL REPORT

PROJECT NO. 182602078

HSSER-IL

Lot #: A0B060440-B

John Dennison

Stantec Consulting Corporation
446 Eisenhower Lane North
Lombard, IL 60148

TESTAMERICA LABORATORIES, INC.

Alesia M. Danford

Approved for release.
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Project Manager
2/26/2010 9:52 AM

Alesia M. Danford
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February 25, 2010

ACCREDITED IN ACCORDANCE WITH nelac

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THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A0B060440 B

The following report contains the analytical results for one water sample and one quality control sample submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HSSER-IL Site, project number 182602078. The samples were received February 06, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to John Dennison on February 16, 2010. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 2.0 and 2.1°C.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for HSSER-RAMW02-020310 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

DISSOLVED GASES/RSK

The analytical results met the requirements of the laboratory's QA/QC program.

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analytes(s).

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0B060440

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-RAMW02-020310 02/03/10 15:36 010				
Ethene	0.00096	0.00050	mg/L	RSK SOP-175
Methane	0.065	0.00050	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.0011 J	0.0050	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.12	0.0050	mg/L	SW846 8260B
Tetrachloroethylene	0.099	0.0050	mg/L	SW846 8260B
Trichloroethylene	0.0058	0.0050	mg/L	SW846 8260B
Vinyl chloride	0.015	0.0050	mg/L	SW846 8260B
1,1-Dichloroethane	0.025	0.0050	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.017	0.0050	mg/L	SW846 8260B
Nitrate-Nitrite	2.6	0.5	mg/L	MCAWW 353.2
Total Sulfide	1.8	1.0	mg/L	MCAWW 376.1
Sulfate	52.4	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	17	1	mg/L	SW846 9060
Total Alkalinity	450 J	5.0	mg/L	MCAWW 310.1

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METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0B060440

PARAMETER	ANALYTICAL METHOD
Alkalinity	MCAWW 310.1
Dissolved Gases in Water	RSK SOP-175
Nitrate-Nitrite	MCAWW 353.2
Sulfate	MCAWW 300.0A
Sulfide	MCAWW 376.1
Total Organic Carbon	SW846 9060
Volatile Organics by GC/MS	SW846 8260B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

RSK Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

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SAMPLE SUMMARY

SAMPLE SUMMARY

A0B060440

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LVCL4	010	HSSER-RAMW02-020310	02/03/10	15:36
LVCL8	011	HSSER-TRIP02-020510	02/05/10	

NOTE(S):

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☑

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: Stantec	Project Manager: John Dennison	Date: 2/	Chain of Custody Number: 145197
Address: 446 Eisenhower Ln N	Telephone Number (Area Code)/Fax Number: 630-792-1680	Lab Number:	Page 2 of 2
City: Lombard; State: IL; Zip Code: 60148	Site Contact:	Lab Contact:	
Project Name and Location (State): HSSER - IL	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: 182602078			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Matrix: Aqueous	Matrix: Sed.	Matrix: Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Alkalinity 310.1	Sulfate 300.0A	Diss. Gases 175 MEE	Nitrite/Nitrate 353.2	Sulfide 376.1	TDC 9060	VOCs 8260B*	Special Instructions/ Conditions of Receipt
HSSER-RAMW02-020310	2/3/10	1536		X			1	3		5		1	X	X	X	X	X	X	X	MS/MSD taken
HSSER-MS01-020310	2/3/10	1536		X			1	3		5		1	X	X	X	X	X	X	X	
HSSER-MSD01-020310	2/3/10	1536		X			1	3		5		1	X	X	X	X	X	X	X	
HSSER-TRIP02-020310	2/5/10			X						1									X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____ STANDARD

QC Requirements (Specify): * List of 13 VOCs / Level 4 Data

	Date	Time		Date	Time
1. Relinquished By: [signature]	2/5/10	18:30	1. Received By: FedEx		
2. Relinquished By:			2. Received By: [signature]	2/6/10	10:50
3. Relinquished By:			3. Received By:		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

North Canton

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** A0B060440
North Canton Facility

Client Stantec Project HSSER-IL By [signature] (Signature)
Cooler Received on 2/6/10 Opened on 2/6/10
FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____
TestAmerica Cooler # _____ Multiple Coolers ☒ Foam Box ☐ Client Cooler ☐ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☒ Intact? Yes ☐ No ☐ NA ☒
   If YES, Quantity _____ Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☒
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☒ None ☐ Other _____
6. Cooler temperature upon receipt BACK °C See back of form for multiple coolers/temps ☒
   METHOD: IR ☒ Other ☐ _____
   COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☒ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☒ No ☐ Were VOAs on the COC? Yes ☒ No ☐

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

_____

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 121709-*HNO_3; Sulfuric Acid Lot#* 082509-*H_2SO_4; Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-*$(CH_3COO)_2ZN/NaOH$.* What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials
SMW19	<2	2/6/10	[initials]
SMW108	<2<2<2		
SMW04	<2		
GMZ02	<2		
ASDM01	<2		
ASDM02	<2		
ASDM03	<2		
ASDM04	<2		

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials
RAMW02	<2<2<2	2/6/10	[illegible]

Cooler #	Temp. °C	Method	Coolant
241-488	2.1°C	IOB	Wetfee
Client Cooler	2.0°C	↓	↓

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW02-020310

GC/MS Volatiles

Lot-Sample #...: A0B060440-010 **Work Order #...:** LVCL41AA **Matrix.....:** WG
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 5 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0011 J**	**0.0050**	**mg/L**
cis-1,2-Dichloroethylene	**0.12**	**0.0050**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0050	mg/L
Tetrachloroethylene	**0.099**	**0.0050**	**mg/L**
Trichloroethylene	**0.0058**	**0.0050**	**mg/L**
Vinyl chloride	**0.015**	**0.0050**	**mg/L**
Methylene chloride	ND	0.0050	mg/L
1,1-Dichloroethane	**0.025**	**0.0050**	**mg/L**
1,2-Dichloroethane	ND	0.0050	mg/L
1,1,1-Trichloroethane	**0.017**	**0.0050**	**mg/L**
1,1,2-Trichloroethane	ND	0.0050	mg/L
Toluene	ND	0.0050	mg/L
Ethylbenzene	ND	0.0050	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
1,2-Dichloroethane-d4	88	(61 - 128)
Toluene-d8	88	(76 - 110)
4-Bromofluorobenzene	86	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-TRIP02-020510

GC/MS Volatiles

Lot-Sample #...: A0B060440-011 **Work Order #...:** LVCL81AA **Matrix.....:** WQ
Date Sampled...: 02/05/10 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
Toluene-d8	90	(76 - 110)
4-Bromofluorobenzene	88	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVKGN1AA **Matrix.....:** WATER
MB Lot-Sample #: A0B110000-361

Prep Date.....: 02/09/10 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 02/09/10 **Prep Batch #...:** 0042361
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
Toluene-d8	88	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVKGN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B110000-361 LVKGN1AD-LCSD
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**109**	**(63 - 130)**			**SW846 8260B**
	109	**(63 - 130)**	**0.44**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**97**	**(75 - 122)**			**SW846 8260B**
	100	**(75 - 122)**	**3.2**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	99	(88 - 113)			SW846 8260B
	101	(88 - 113)	2.0	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	101	(85 - 113)			SW846 8260B
	101	(85 - 113)	0.35	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	103	(80 - 120)			SW846 8260B
	102	(80 - 120)	0.65	(0-30)	SW846 8260B
Vinyl chloride	88	(61 - 120)			SW846 8260B
	87	(61 - 120)	0.81	(0-30)	SW846 8260B
Methylene chloride	101	(78 - 118)			SW846 8260B
	98	(78 - 118)	2.7	(0-30)	SW846 8260B
1,1-Dichloroethane	101	(86 - 123)			SW846 8260B
	101	(86 - 123)	0.29	(0-30)	SW846 8260B
1,2-Dichloroethane	95	(79 - 136)			SW846 8260B
	93	(79 - 136)	2.0	(0-30)	SW846 8260B
1,1,1-Trichloroethane	100	(78 - 140)			SW846 8260B
	102	(78 - 140)	2.0	(0-30)	SW846 8260B
1,1,2-Trichloroethane	92	(83 - 122)			SW846 8260B
	94	(83 - 122)	1.7	(0-30)	SW846 8260B
Toluene	**96**	**(74 - 119)**			**SW846 8260B**
	99	**(74 - 119)**	**2.4**	**(0-20)**	**SW846 8260B**
Ethylbenzene	98	(86 - 116)			SW846 8260B
	100	(86 - 116)	2.6	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
	92	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	87	(61 - 128)
Toluene-d8	91	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	96	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVKGN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B110000-361 LVKGN1AD-LCSD
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.011**	**mg/L**	**109**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**109**	**0.44**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.0097**	**mg/L**	**97**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**100**	**3.2**	**SW846 8260B**
Tetrachloroethylene	0.010	0.0099	mg/L	99		SW846 8260B
	0.010	0.010	mg/L	101	2.0	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.010	mg/L	101	0.35	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.010	mg/L	102	0.65	SW846 8260B
Vinyl chloride	0.010	0.0088	mg/L	88		SW846 8260B
	0.010	0.0087	mg/L	87	0.81	SW846 8260B
Methylene chloride	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.0098	mg/L	98	2.7	SW846 8260B
1,1-Dichloroethane	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.010	mg/L	101	0.29	SW846 8260B
1,2-Dichloroethane	0.010	0.0095	mg/L	95		SW846 8260B
	0.010	0.0093	mg/L	93	2.0	SW846 8260B
1,1,1-Trichloroethane	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	102	2.0	SW846 8260B
1,1,2-Trichloroethane	0.010	0.0092	mg/L	92		SW846 8260B
	0.010	0.0094	mg/L	94	1.7	SW846 8260B
Toluene	**0.010**	**0.0096**	**mg/L**	**96**		**SW846 8260B**
	0.010	**0.0099**	**mg/L**	**99**	**2.4**	**SW846 8260B**
Ethylbenzene	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.010	mg/L	100	2.6	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
	92	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	87	(61 - 128)
Toluene-d8	91	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	96	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVCL41AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0B060440-010 LVCL41AD-MSD
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 5 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**106**	**(62 - 130)**			**SW846 8260B**
	110	**(62 - 130)**	**4.0**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**94**	**(62 - 130)**			**SW846 8260B**
	98	**(62 - 130)**	**3.6**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	97	(85 - 121)			SW846 8260B
	99	(85 - 121)	0.60	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	82 a	(87 - 114)			SW846 8260B
	100	(87 - 114)	5.3	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	97	(85 - 116)			SW846 8260B
	104	(85 - 116)	6.8	(0-30)	SW846 8260B
Vinyl chloride	84 a	(88 - 126)			SW846 8260B
	88	(88 - 126)	3.4	(0-30)	SW846 8260B
Methylene chloride	98	(82 - 115)			SW846 8260B
	100	(82 - 115)	2.0	(0-30)	SW846 8260B
1,1-Dichloroethane	94	(88 - 127)			SW846 8260B
	101	(88 - 127)	5.0	(0-30)	SW846 8260B
1,2-Dichloroethane	91	(71 - 160)			SW846 8260B
	94	(71 - 160)	2.3	(0-30)	SW846 8260B
1,1,1-Trichloroethane	96	(71 - 162)			SW846 8260B
	103	(71 - 162)	5.4	(0-30)	SW846 8260B
1,1,2-Trichloroethane	93	(86 - 129)			SW846 8260B
	92	(86 - 129)	1.2	(0-30)	SW846 8260B
Toluene	**95**	**(70 - 119)**			**SW846 8260B**
	98	**(70 - 119)**	**3.0**	**(0-20)**	**SW846 8260B**
Ethylbenzene	97	(86 - 132)			SW846 8260B
	99	(86 - 132)	2.0	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
	91	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	84	(61 - 128)
Toluene-d8	93	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	97	(74 - 116)
	98	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVCL41AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0B060440-010 LVCL41AD-MSD
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10
Prep Date.....: 02/09/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0042361
Dilution Factor: 5 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethylene	**0.0011**	**0.050**	**0.054**	**mg/L**	**106**		**SW846 8260B**
	0.0011	**0.050**	**0.056**	**mg/L**	**110**	**4.0**	**SW846 8260B**
Trichloroethylene	**0.0058**	**0.050**	**0.053**	**mg/L**	**94**		**SW846 8260B**
	0.0058	**0.050**	**0.055**	**mg/L**	**98**	**3.6**	**SW846 8260B**
Tetrachloroethylene	0.099	0.050	0.15	mg/L	97		SW846 8260B
	0.099	0.050	0.15	mg/L	99	0.60	SW846 8260B
cis-1,2-Dichloroethylene	0.12	0.050	0.17	mg/L	82 a		SW846 8260B
	0.12	0.050	0.17	mg/L	100	5.3	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.050	0.049	mg/L	97		SW846 8260B
	ND	0.050	0.053	mg/L	104	6.8	SW846 8260B
Vinyl chloride	0.015	0.050	0.056	mg/L	84 a		SW846 8260B
	0.015	0.050	0.058	mg/L	88	3.4	SW846 8260B
Methylene chloride	ND	0.050	0.049	mg/L	98		SW846 8260B
	ND	0.050	0.050	mg/L	100	2.0	SW846 8260B
1,1-Dichloroethane	0.025	0.050	0.072	mg/L	94		SW846 8260B
	0.025	0.050	0.076	mg/L	101	5.0	SW846 8260B
1,2-Dichloroethane	ND	0.050	0.046	mg/L	91		SW846 8260B
	ND	0.050	0.047	mg/L	94	2.3	SW846 8260B
1,1,1-Trichloroethane	0.017	0.050	0.065	mg/L	96		SW846 8260B
	0.017	0.050	0.068	mg/L	103	5.4	SW846 8260B
1,1,2-Trichloroethane	ND	0.050	0.046	mg/L	93		SW846 8260B
	ND	0.050	0.046	mg/L	92	1.2	SW846 8260B
Toluene	**ND**	**0.050**	**0.048**	**mg/L**	**95**		**SW846 8260B**
	ND	**0.050**	**0.049**	**mg/L**	**98**	**3.0**	**SW846 8260B**
Ethylbenzene	ND	0.050	0.049	mg/L	97		SW846 8260B
	ND	0.050	0.049	mg/L	99	2.0	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
	91	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	84	(61 - 128)
Toluene-d8	93	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	97	(74 - 116)
	98	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GC VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW02-020310

GC Volatiles

Lot-Sample #...: A0B060440-010 **Work Order #...:** LVCL41AW **Matrix.....:** WG
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	**0.00096**	**0.00050**	**mg/L**
Methane	**0.065**	**0.00050**	**mg/L**

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVP4L1AA **Matrix.....:** WATER
MB Lot-Sample #: A0B160000-073

Prep Date.....: 02/15/10 **Final Wgt/Vol..:** 0 mL
Analysis Date..: 02/15/10 **Prep Batch #...:** 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methane	ND	0.00050	mg/L	RSK SOP-175
Ethane	ND	0.00050	mg/L	RSK SOP-175
Ethene	ND	0.00050	mg/L	RSK SOP-175

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVP4L1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B160000-073 LVP4L1AD-LCSD
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	84	(75 - 127)			RSK SOP-175
	84	(75 - 127)	0.15	(0-30)	RSK SOP-175
Ethane	97	(74 - 138)			RSK SOP-175
	96	(74 - 138)	1.9	(0-30)	RSK SOP-175
Ethene	98	(73 - 140)			RSK SOP-175
	97	(73 - 140)	1.2	(0-30)	RSK SOP-175

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVP4L1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B160000-073 LVP4L1AD-LCSD
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Methane	**0.11**	**0.092**	**mg/L**	**84**		**RSK SOP-175**
	0.11	**0.092**	**mg/L**	**84**	**0.15**	**RSK SOP-175**
Ethane	**0.20**	**0.20**	**mg/L**	**97**		**RSK SOP-175**
	0.20	**0.20**	**mg/L**	**96**	**1.9**	**RSK SOP-175**
Ethene	**0.19**	**0.19**	**mg/L**	**98**		**RSK SOP-175**
	0.19	**0.18**	**mg/L**	**97**	**1.2**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVCL41AX-MS **Matrix.....:** WG
MS Lot-Sample #: A0B060440-010 LVCL41A0-MSD
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	**89**	**(75 - 127)**			**RSK SOP-175**
	98	**(75 - 127)**	**5.7**	**(0-30)**	**RSK SOP-175**
Ethane	**81**	**(74 - 138)**			**RSK SOP-175**
	77	**(74 - 138)**	**5.9**	**(0-30)**	**RSK SOP-175**
Ethene	**89**	**(73 - 140)**			**RSK SOP-175**
	82	**(73 - 140)**	**7.9**	**(0-30)**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A0B060440 **Work Order #...:** LVCL41AX-MS **Matrix.....:** WG
MS Lot-Sample #: A0B060440-010 LVCL41A0-MSD
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Methane	0.065	0.11	0.16	mg/L	89		RSK SOP-175
	0.065	0.11	0.17	mg/L	98	5.7	RSK SOP-175
Ethane	ND	0.20	0.17	mg/L	81		RSK SOP-175
	ND	0.20	0.16	mg/L	77	5.9	RSK SOP-175
Ethene	0.00096	0.19	0.17	mg/L	89		RSK SOP-175
	0.00096	0.19	0.16	mg/L	82	7.9	RSK SOP-175

NOTE(S):

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

Bold print denotes control parameters

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GENERAL CHEMISTRY DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW02-020310

General Chemistry

Lot-Sample #...: A0B060440-010 **Work Order #...:** LVCL4 **Matrix.....:** WG
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	2.6	0.5	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 5				
Sulfate	52.4	5.0	mg/L	MCAWW 300.0A	02/16/10	0047081
		Dilution Factor: 5				
Total Alkalinity	450 J	5.0	mg/L	MCAWW 310.1	02/09/10	0040087
		Dilution Factor: 1				
Total Organic Carbon	17	1	mg/L	SW846 9060	02/08/10	0039270
		Dilution Factor: 1				
Total Sulfide	1.8	1.0	mg/L	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A0B060440 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: LVPEJ1AA		MB Lot-Sample #:	A0B150000-254	
	ND	0.1	mg/L	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1				
Sulfate		Work Order #: LVP441AA		MB Lot-Sample #:	A0B160000-081	
	ND	1.0	mg/L	MCAWW 300.0A	02/15/10	0047081
		Dilution Factor: 1				
Total Alkalinity		Work Order #: LVGHN1AA		MB Lot-Sample #:	A0B090000-087	
	4.3 B	**5.0**	**mg/L**	**MCAWW 310.1**	**02/08/10**	**0040087**
		Dilution Factor: 1				
Total Organic Carbon		Work Order #: LVD9M1AA		MB Lot-Sample #:	A0B080000-270	
	ND	1	mg/L	SW846 9060	02/08/10	0039270
		Dilution Factor: 1				
Total Sulfide		Work Order #: LVHR71AA		MB Lot-Sample #:	A0B100000-342	
	ND	1.0	mg/L	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A0B060440 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#:LVP441AC-LCS/LVP441AD-LCSD LCS Lot-Sample#: A0B160000-081					
	96	(90 - 110)			MCAWW 300.0A	02/15/10	0047081
	96	(90 - 110)	0.41	(0-20)	MCAWW 300.0A	02/15/10	0047081

Dilution Factor: 1

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A0B060440 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#:LVP441AC-LCS/LVP441AD-LCSD				LCS Lot-Sample#: A0B160000-081		
	50.0	48.2	mg/L	96		MCAWW 300.0A	02/15/10	0047081
	50.0	48.0	mg/L	96	0.41	MCAWW 300.0A	02/15/10	0047081

Dilution Factor: 1

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B060440 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: LVPEJ1AC	LCS Lot-Sample#: A0B150000-254		
	103	(79 - 117)	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1			
Total Alkalinity		Work Order #: LVGHN1AC	LCS Lot-Sample#: A0B090000-087		
	107	(90 - 127)	MCAWW 310.1	02/08/10	0040087
		Dilution Factor: 1			
Total Organic Carbon		Work Order #: LVD9M1AC	LCS Lot-Sample#: A0B080000-270		
	96	(88 - 115)	SW846 9060	02/08/10	0039270
		Dilution Factor: 1			
Total Sulfide		Work Order #: LVHR71AC	LCS Lot-Sample#: A0B100000-342		
	101	(79 - 104)	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B060440 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			Work Order #: LVPEJ1AC LCS Lot-Sample#: A0B150000-254				
	10	10	mg/L	103	MCAWW 353.2	02/15/10	0046254
			Dilution Factor: 1				
Total Alkalinity			Work Order #: LVGHN1AC LCS Lot-Sample#: A0B090000-087				
	35	37	mg/L	107	MCAWW 310.1	02/08/10	0040087
			Dilution Factor: 1				
Total Organic Carbon			Work Order #: LVD9M1AC LCS Lot-Sample#: A0B080000-270				
	69	66	mg/L	96	SW846 9060	02/08/10	0039270
			Dilution Factor: 1				
Total Sulfide			Work Order #: LVHR71AC LCS Lot-Sample#: A0B100000-342				
	17	17	mg/L	101	MCAWW 376.1	02/10/10	0041342
			Dilution Factor: 1				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B060440 **Matrix.....:** WG
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		WO#: LVCL41AQ-MS/LVCL41AR-MSD				MS Lot-Sample #: A0B060440-010	
	82	(34 - 125)			MCAWW 353.2	02/15/10	0046254
	82	(34 - 125)	0.0	(0-20)	MCAWW 353.2	02/15/10	0046254
		Dilution Factor: 1					
Sulfate		WO#: LVCL41AF-MS/LVCL41AG-MSD				MS Lot-Sample #: A0B060440-010	
	85	(80 - 120)			MCAWW 300.0A	02/16/10	0047081
	82	(80 - 120)	1.8	(0-20)	MCAWW 300.0A	02/16/10	0047081
		Dilution Factor: 5					
Total Alkalinity		WO#: LVCL41AJ-MS/LVCL41AK-MSD				MS Lot-Sample #: A0B060440-010	
	34	(10 - 160)			MCAWW 310.1	02/09/10	0040087
	37	(10 - 160)	2.5	(0-24)	MCAWW 310.1	02/09/10	0040087
		Dilution Factor: 1					
Total Organic Carbon		WO#: LVCL41AU-MS/LVCL41AV-MSD				MS Lot-Sample #: A0B060440-010	
	98	(72 - 136)			SW846 9060	02/08/10	0039270
	96	(72 - 136)	1.1	(0-20)	SW846 9060	02/08/10	0039270
		Dilution Factor: 1					
Total Sulfide		WO#: LVCL41AM-MS/LVCL41AN-MSD				MS Lot-Sample #: A0B060440-010	
	90	(75 - 107)			MCAWW 376.1	02/10/10	0041342
	89	(75 - 107)	0.96	(0-20)	MCAWW 376.1	02/10/10	0041342
		Dilution Factor: 1					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B060440 **Matrix.....:** WG
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			WO#: LVCL41AQ-MS/LVCL41AR-MSD				MS Lot-Sample #: A0B060440-010		
	2.6	2.5	4.7	mg/L	82		MCAWW 353.2	02/15/10	0046254
	2.6	2.5	4.7	mg/L	82	0.0	MCAWW 353.2	02/15/10	0046254
			Dilution Factor: 1						
Sulfate			WO#: LVCL41AF-MS/LVCL41AG-MSD				MS Lot-Sample #: A0B060440-010		
	52.4	50.0	94.9	mg/L	85		MCAWW 300.0A	02/16/10	0047081
	52.4	50.0	93.2	mg/L	82	1.8	MCAWW 300.0A	02/16/10	0047081
			Dilution Factor: 5						
Total Alkalinity			WO#: LVCL41AJ-MS/LVCL41AK-MSD				MS Lot-Sample #: A0B060440-010		
	450	500	620	mg/L	34		MCAWW 310.1	02/09/10	0040087
	450	500	630	mg/L	37	2.5	MCAWW 310.1	02/09/10	0040087
			Dilution Factor: 1						
Total Organic Carbon			WO#: LVCL41AU-MS/LVCL41AV-MSD				MS Lot-Sample #: A0B060440-010		
	17	25	42	mg/L	98		SW846 9060	02/08/10	0039270
	17	25	41	mg/L	96	1.1	SW846 9060	02/08/10	0039270
			Dilution Factor: 1						
Total Sulfide			WO#: LVCL41AM-MS/LVCL41AN-MSD				MS Lot-Sample #: A0B060440-010		
	1.8	17	17	mg/L	90		MCAWW 376.1	02/10/10	0041342
	1.8	17	17	mg/L	89	0.96	MCAWW 376.1	02/10/10	0041342
			Dilution Factor: 1						

NOTE(S):

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

END OF REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 182602078

HSSER, IL

Lot #: A0B110444-A

John Dennison

Stantec Consulting Corporation
446 Eisenhower Lane North
Lombard, IL 60148

TESTAMERICA LABORATORIES, INC.

Alesia M. Danford

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February 25, 2010

ACCREDITED IN ACCORDANCE WITH nelac

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A0B110444 A

The following report contains the analytical results for seven water samples submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HSSER, IL Site, project number 182602078. The samples were received February 11, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Amy Rodebaugh and John Dennison on February 22, 2010. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 0.4 and 1.2°C.

See TestAmerica's Cooler Receipt Form for additional information.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

DISSOLVED GASES/RSK

The analytical results met the requirements of the laboratory's QA/QC program.

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analytes(s).

The matrix spike/matrix spike duplicate(s) for HSSER-SMW21-020910 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 032609.doc

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0B110444

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-EBLK01-020810 02/08/10 11:30 002				
Total Organic Carbon	0.3 B	1	mg/L	SW846 9060
Total Alkalinity	3.3 B,J	5.0	mg/L	MCAWW 310.1
HSSER-GMZ04-020810 02/08/10 13:50 003				
cis-1,2-Dichloroethylene	0.0028	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.00071 J	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.00028 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0023	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0046	0.0010	mg/L	SW846 8260B
Nitrate-Nitrite	0.6	0.1	mg/L	MCAWW 353.2
Sulfate	40.7	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	3	1	mg/L	SW846 9060
Total Alkalinity	180 J	5.0	mg/L	MCAWW 310.1
HSSER-SMW20-020810 02/08/10 16:16 004				
1,1-Dichloroethylene	0.00039 J	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.0046	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.00081 J	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.00040 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0089	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0068	0.0010	mg/L	SW846 8260B
Nitrate-Nitrite	1.4	0.1	mg/L	MCAWW 353.2
Sulfate	96.0	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	1	1	mg/L	SW846 9060
Total Alkalinity	210 J	5.0	mg/L	MCAWW 310.1
HSSER-GMZ03-020910 02/09/10 09:44 005				
cis-1,2-Dichloroethylene	0.0059	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.00047 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.012	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0036	0.0010	mg/L	SW846 8260B
Nitrate-Nitrite	0.2	0.1	mg/L	MCAWW 353.2
Sulfate	171	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	6	1	mg/L	SW846 9060
Total Alkalinity	190 J	5.0	mg/L	MCAWW 310.1

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0B110444

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-SMW21-020910 02/09/10 11:11 006				
1,1-Dichloroethylene	0.0014 J	0.0017	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.011	0.0017	mg/L	SW846 8260B
Tetrachloroethylene	0.0028	0.0017	mg/L	SW846 8260B
Trichloroethylene	0.0013 J	0.0017	mg/L	SW846 8260B
1,1-Dichloroethane	0.0030	0.0017	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.053	0.0017	mg/L	SW846 8260B
Nitrate-Nitrite	0.8	0.1	mg/L	MCAWW 353.2
Sulfate	24.6	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	3	1	mg/L	SW846 9060
Total Alkalinity	230 J	5.0	mg/L	MCAWW 310.1
HSSER-DUP01-020810 02/08/10 007				
1,1-Dichloroethylene	0.00038 J	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.0049	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.00081 J	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.00042 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0090	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0068	0.0010	mg/L	SW846 8260B
Nitrate-Nitrite	1.4	0.1	mg/L	MCAWW 353.2
Sulfate	94.9	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	2	1	mg/L	SW846 9060
Total Alkalinity	200 J	5.0	mg/L	MCAWW 310.1

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METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0B110444

PARAMETER	ANALYTICAL METHOD
Alkalinity	MCAWW 310.1
Dissolved Gases in Water	RSK SOP-175
Nitrate-Nitrite	MCAWW 353.2
Sulfate	MCAWW 300.0A
Sulfide	MCAWW 376.1
Total Organic Carbon	SW846 9060
Volatile Organics by GC/MS	SW846 8260B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

RSK Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

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SAMPLE SUMMARY

SAMPLE SUMMARY

A0B110444

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LVJ3F	001	HSSER-FBLK01-020810	02/08/10	11:30
LVJ3N	002	HSSER-EBLK01-020810	02/08/10	11:30
LVJ31	003	HSSER-GMZ04-020810	02/08/10	13:50
LVJ32	004	HSSER-SMW20-020810	02/08/10	16:16
LVJ33	005	HSSER-GMZ03-020910	02/09/10	09:44
LVJ34	006	HSSER-SMW21-020910	02/09/10	11:11
LVJ36	007	HSSER-DUP01-020810	02/08/10	

NOTE(S):

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

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SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☑

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TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Stantec	John Dennison	2/8/10	145199

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page
446 Eisenhower Ln N	630 792 1680		1 of 1

City	State	Zip Code	Site Contact	Lab Contact
Lombard	IL	60148		

Project Name and Location (State)	Carrier/Waybill Number
HSSER-IL	

Contract/Purchase Order/Quote No.: 182602078

Matrix: Air, Aqueous, Sed., Soil

Containers & Preservatives: Unpres., H2SO4, HNO3, HCl, NaOH, ZnAc/NaOH

Analysis (Attach list if more space is needed): Alkalinity 310.1, Sulfate 300.0, Dis. Gases 175 MEE, Nitrate/Nitrite 353.1, Sulfide 376.1, TOC 9060, VOCs 8260*

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Alkalinity 310.1	Sulfate 300.0	Dis. Gases 175 MEE	Nitrate/Nitrite 353.1	Sulfide 376.1	TOC 9060	VOCs 8260*	Special Instructions/ Conditions of Receipt
HSSER-FBLK01-020810	2/8/10	1130		X			1	3		3		1							X	
HSSER-EBLK01-020810	2/8/10	1130		X			1	3		5		1	X	X	X	X	X	X	X	
HSSER-GMZ04-020810	2/8/10	1350		X			1	3		5		1	X	X	X	X	X	X	X	
HSSER-SMW20-020810	2/8/10	1616		X			1	3		5		1	X	X	X	X	X	X	X	
HSSER-GMZ03-020910	2/9/10	0944		X			1	3		5		1	X	X	X	X	X	X	X	
HSSER-SMW21-020910	2/9/10	1111		X			1	3		5		1	X	X	X	X	X	X	X	
HSSER-~~DUPE01~~ DUP01 BSL-020810	2/8/10	—		X			1	3		5		1	X	X	X	X	X	X	X	

Possible Hazard Identification: ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☑ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify): *List of 13 VOCs / Level 4 Data

	Date	Time		Date	Time
1. Relinquished By: Brian Gabell / Stantec	2/10/10	1620	1. Received By: Walt Lhoan	2/10	16:50
2. Relinquished By: Walt Lhoan	2/10		2. Received By: Matthew Ferrel TEST AMERICA	11 FEB 2010	0920
3. Relinquished By:			3. Received By:		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** A0B110444
North Canton Facility

Client STRATEC Project HESSER By: Matthew Jones
Cooler Received on 11 FEB 2010 Opened on 11 FEB 2010 (Signature)
FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other
TestAmerica Cooler # CBACK Multiple Coolers ☒ Foam Box ☐ Client Cooler ☐ Other

1. Were custody seals on the outside of the cooler(s)? Yes ☒ No ☐ Intact? Yes ☒ No ☐ NA ☐
   If YES, Quantity 2 Quantity Unsalvageable
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☒ No ☐ NA ☐
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions?
2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☒ None ☐ Other PLASTIC BAG
6. Cooler temperature upon receipt CBACK °C See back of form for multiple coolers/temps ☒
   METHOD: IR ☒ Other ☐
   COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☐ No ☒
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☒ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☐ No ☒
13. Was a trip blank present in the cooler(s)? Yes ☒ No ☐ Were VOAs on the COC? Yes ☒ No ☐

Contacted PM AMD Date 2/11/10 by AM via Verbal ☒ Voice Mail ☐ Other ☐
Concerning #4

14. CHAIN OF CUSTODY

The following discrepancies occurred:
1x40ml TOC RAMW02-201010 on 2/10/10 @1100 BROKEN & DISPOSED OF
1x40ml (HCl) DUP 02 on 2/10/10 BROKEN & DISPOSED OF
RAMW03 ... 1x250ml LABELED H_2SO_4 (pH ≈ 0) WILL MARK AS ALK (LINED OUT PRESERVATIVE STICKER) ... 1x250ml LABELED NONE. (pH = <2) WILL MARK AS NO/NO3

15. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) SEE ABOVE were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot# 121709-HNO_3; Sulfuric Acid Lot# 082509-H_2SO_4; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-$(CH_3COO)_2ZN/NaOH$.* What time was preservative added to sample(s)?

Client ID	pH		Date	Initials
ETBL01	>9	<2	FEB 2010	MAF
GMZ04	>9	<2		
MW20	>9	<2		
GMZ03	>9	<2		
MW21	>9	<2		
DUP01	>9	<2		
RAMW04	>9	<2		
RAMW03	>9	<2		

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials
RAMW05	>9 <2	11 FEB 2010	MAF
RAMW08	>9 <2		
RAMW07	>9 <2		
RAMW06	>9 <2		
DUP02	>9 <2		

Cooler #	Temp. °C	Method	Coolant
344	1.2	IR	WET ICE
241 522	0.4		

Discrepancies Cont'd:

Received 3x40ml Trip Blank, not on COC. Will log.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-FBLK01-020810

GC/MS Volatiles

Lot-Sample #...: A0B110444-001 **Work Order #...:** LVJ3F1AA **Matrix.....:** WQ
Date Sampled...: 02/08/10 11:30 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

Stantec Consulting Corporation

Client Sample ID: HSSER-EBLK01-020810

GC/MS Volatiles

Lot-Sample #...: A0B110444-002 **Work Order #...:** LVJ3N1AA **Matrix.....:** WQ
Date Sampled...: 02/08/10 11:30 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

Stantec Consulting Corporation

Client Sample ID: HSSER-GMZ04-020810

GC/MS Volatiles

Lot-Sample #...: A0B110444-003 **Work Order #...:** LVJ311AA **Matrix.....:** WG
Date Sampled...: 02/08/10 13:50 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.0028**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00071 J**	**0.0010**	**mg/L**
Trichloroethylene	**0.00028 J**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0023**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0046**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
1,2-Dichloroethane-d4	100	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	94	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW20-020810

GC/MS Volatiles

Lot-Sample #...: A0B110444-004 **Work Order #...:** LVJ321AA **Matrix.....:** WG
Date Sampled...: 02/08/10 16:16 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00039 J**	**0.0010**	**mg/L**
cis-1,2-Dichloroethylene	**0.0046**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00081 J**	**0.0010**	**mg/L**
Trichloroethylene	**0.00040 J**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0089**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0068**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
1,2-Dichloroethane-d4	89	(61 - 128)
Toluene-d8	84	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-GMZ03-020910

GC/MS Volatiles

Lot-Sample #...: A0B110444-005 **Work Order #...:** LVJ331AA **Matrix.....:** WG
Date Sampled...: 02/09/10 09:44 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.0059**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00047 J**	**0.0010**	**mg/L**
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.012**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0036**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	95	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	85	(76 - 110)
4-Bromofluorobenzene	88	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW21-020910

GC/MS Volatiles

Lot-Sample #...: A0B110444-006 **Work Order #...:** LVJ341AA **Matrix.....:** WG
Date Sampled...: 02/09/10 11:11 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0014 J**	**0.0017**	**mg/L**
cis-1,2-Dichloroethylene	**0.011**	**0.0017**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0017	mg/L
Tetrachloroethylene	**0.0028**	**0.0017**	**mg/L**
Trichloroethylene	**0.0013 J**	**0.0017**	**mg/L**
Vinyl chloride	ND	0.0017	mg/L
Methylene chloride	ND	0.0017	mg/L
1,1-Dichloroethane	**0.0030**	**0.0017**	**mg/L**
1,2-Dichloroethane	ND	0.0017	mg/L
1,1,1-Trichloroethane	**0.053**	**0.0017**	**mg/L**
1,1,2-Trichloroethane	ND	0.0017	mg/L
Toluene	ND	0.0017	mg/L
Ethylbenzene	ND	0.0017	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	88	(61 - 128)
Toluene-d8	87	(76 - 110)
4-Bromofluorobenzene	86	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-DUP01-020810

GC/MS Volatiles

Lot-Sample #...: A0B110444-007 **Work Order #...:** LVJ361AA **Matrix.....:** WG
Date Sampled...: 02/08/10 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00038 J**	**0.0010**	**mg/L**
cis-1,2-Dichloroethylene	**0.0049**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00081 J**	**0.0010**	**mg/L**
Trichloroethylene	**0.00042 J**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0090**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0068**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	85	(76 - 110)
4-Bromofluorobenzene	85	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVTGX1AA **Matrix.....:** WATER
MB Lot-Sample #: A0B180000-076

Prep Date.....: 02/17/10 **Final Wgt/Vol..:** 5 mL

Analysis Date..: 02/17/10 **Prep Batch #...:** 0049076
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
1,2-Dichloroethane-d4	99	(61 - 128)
Toluene-d8	95	(76 - 110)
4-Bromofluorobenzene	93	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVTGX1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B180000-076 LVTGX1AD-LCSD
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**114**	**(63 - 130)**			**SW846 8260B**
	115	**(63 - 130)**	**0.55**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**101**	**(75 - 122)**			**SW846 8260B**
	102	**(75 - 122)**	**1.0**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	100	(88 - 113)			SW846 8260B
	101	(88 - 113)	0.67	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	102	(85 - 113)			SW846 8260B
	104	(85 - 113)	1.9	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	107	(80 - 120)			SW846 8260B
	107	(80 - 120)	0.030	(0-30)	SW846 8260B
Vinyl chloride	94	(61 - 120)			SW846 8260B
	93	(61 - 120)	0.85	(0-30)	SW846 8260B
Methylene chloride	105	(78 - 118)			SW846 8260B
	107	(78 - 118)	1.6	(0-30)	SW846 8260B
1,1-Dichloroethane	103	(86 - 123)			SW846 8260B
	105	(86 - 123)	1.9	(0-30)	SW846 8260B
1,2-Dichloroethane	98	(79 - 136)			SW846 8260B
	97	(79 - 136)	0.94	(0-30)	SW846 8260B
1,1,1-Trichloroethane	102	(78 - 140)			SW846 8260B
	103	(78 - 140)	1.7	(0-30)	SW846 8260B
1,1,2-Trichloroethane	97	(83 - 122)			SW846 8260B
	94	(83 - 122)	2.6	(0-30)	SW846 8260B
Toluene	**98**	**(74 - 119)**			**SW846 8260B**
	97	**(74 - 119)**	**0.63**	**(0-20)**	**SW846 8260B**
Ethylbenzene	98	(86 - 116)			SW846 8260B
	99	(86 - 116)	0.12	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
	92	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	84	(61 - 128)
Toluene-d8	92	(76 - 110)
	90	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	97	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVTGX1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B180000-076 LVTGX1AD-LCSD
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.011**	**mg/L**	**114**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**115**	**0.55**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.010**	**mg/L**	**101**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**102**	**1.0**	**SW846 8260B**
Tetrachloroethylene	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	101	0.67	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.010	mg/L	102		SW846 8260B
	0.010	0.010	mg/L	104	1.9	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.011	mg/L	107		SW846 8260B
	0.010	0.011	mg/L	107	0.030	SW846 8260B
Vinyl chloride	0.010	0.0094	mg/L	94		SW846 8260B
	0.010	0.0093	mg/L	93	0.85	SW846 8260B
Methylene chloride	0.010	0.010	mg/L	105		SW846 8260B
	0.010	0.011	mg/L	107	1.6	SW846 8260B
1,1-Dichloroethane	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.011	mg/L	105	1.9	SW846 8260B
1,2-Dichloroethane	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.0097	mg/L	97	0.94	SW846 8260B
1,1,1-Trichloroethane	0.010	0.010	mg/L	102		SW846 8260B
	0.010	0.010	mg/L	103	1.7	SW846 8260B
1,1,2-Trichloroethane	0.010	0.0097	mg/L	97		SW846 8260B
	0.010	0.0094	mg/L	94	2.6	SW846 8260B
Toluene	**0.010**	**0.0098**	**mg/L**	**98**		**SW846 8260B**
	0.010	**0.0097**	**mg/L**	**97**	**0.63**	**SW846 8260B**
Ethylbenzene	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.0099	mg/L	99	0.12	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
	92	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	84	(61 - 128)
Toluene-d8	92	(76 - 110)
	90	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	97	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVJ311AJ-MS **Matrix.....:** WG
MS Lot-Sample #: A0B110444-003 LVJ311AK-MSD
Date Sampled...: 02/08/10 13:50 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**115**	**(62 - 130)**			**SW846 8260B**
	114	**(62 - 130)**	**1.6**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**98**	**(62 - 130)**			**SW846 8260B**
	99	**(62 - 130)**	**0.82**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	94	(85 - 121)			SW846 8260B
	96	(85 - 121)	1.7	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	102	(87 - 114)			SW846 8260B
	103	(87 - 114)	0.50	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	105	(85 - 116)			SW846 8260B
	103	(85 - 116)	1.7	(0-30)	SW846 8260B
Vinyl chloride	95	(88 - 126)			SW846 8260B
	92	(88 - 126)	3.3	(0-30)	SW846 8260B
Methylene chloride	100	(82 - 115)			SW846 8260B
	97	(82 - 115)	2.6	(0-30)	SW846 8260B
1,1-Dichloroethane	102	(88 - 127)			SW846 8260B
	102	(88 - 127)	0.29	(0-30)	SW846 8260B
1,2-Dichloroethane	91	(71 - 160)			SW846 8260B
	95	(71 - 160)	4.4	(0-30)	SW846 8260B
1,1,1-Trichloroethane	99	(71 - 162)			SW846 8260B
	98	(71 - 162)	0.70	(0-30)	SW846 8260B
1,1,2-Trichloroethane	90	(86 - 129)			SW846 8260B
	94	(86 - 129)	4.8	(0-30)	SW846 8260B
Toluene	**93**	**(70 - 119)**			**SW846 8260B**
	95	**(70 - 119)**	**2.4**	**(0-20)**	**SW846 8260B**
Ethylbenzene	97	(86 - 132)			SW846 8260B
	99	(86 - 132)	1.9	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
	90	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
	84	(61 - 128)
Toluene-d8	88	(76 - 110)
	89	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	97	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVJ311AJ-MS **Matrix.....:** WG
MS Lot-Sample #: A0B110444-003 LVJ311AK-MSD
Date Sampled...: 02/08/10 13:50 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethylene	**ND**	**0.010**	**0.012**	**mg/L**	**115**		**SW846 8260B**
	ND	**0.010**	**0.011**	**mg/L**	**114**	**1.6**	**SW846 8260B**
Trichloroethylene	**0.00028**	**0.010**	**0.010**	**mg/L**	**98**		**SW846 8260B**
	0.00028	**0.010**	**0.010**	**mg/L**	**99**	**0.82**	**SW846 8260B**
Tetrachloroethylene	0.00071	0.010	0.010	mg/L	94		SW846 8260B
	0.00071	0.010	0.010	mg/L	96	1.7	SW846 8260B
cis-1,2-Dichloroethylene	0.0028	0.010	0.013	mg/L	102		SW846 8260B
	0.0028	0.010	0.013	mg/L	103	0.50	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.010	0.010	mg/L	105		SW846 8260B
	ND	0.010	0.010	mg/L	103	1.7	SW846 8260B
Vinyl chloride	ND	0.010	0.0095	mg/L	95		SW846 8260B
	ND	0.010	0.0092	mg/L	92	3.3	SW846 8260B
Methylene chloride	ND	0.010	0.010	mg/L	100		SW846 8260B
	ND	0.010	0.0097	mg/L	97	2.6	SW846 8260B
1,1-Dichloroethane	0.0023	0.010	0.013	mg/L	102		SW846 8260B
	0.0023	0.010	0.013	mg/L	102	0.29	SW846 8260B
1,2-Dichloroethane	ND	0.010	0.0091	mg/L	91		SW846 8260B
	ND	0.010	0.0095	mg/L	95	4.4	SW846 8260B
1,1,1-Trichloroethane	0.0046	0.010	0.015	mg/L	99		SW846 8260B
	0.0046	0.010	0.014	mg/L	98	0.70	SW846 8260B
1,1,2-Trichloroethane	ND	0.010	0.0090	mg/L	90		SW846 8260B
	ND	0.010	0.0094	mg/L	94	4.8	SW846 8260B
Toluene	**ND**	**0.010**	**0.0093**	**mg/L**	**93**		**SW846 8260B**
	ND	**0.010**	**0.0095**	**mg/L**	**95**	**2.4**	**SW846 8260B**
Ethylbenzene	ND	0.010	0.0097	mg/L	97		SW846 8260B
	ND	0.010	0.0099	mg/L	99	1.9	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
	90	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
	84	(61 - 128)
Toluene-d8	88	(76 - 110)
	89	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	97	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

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DISSOLVED GASES/RSK DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-EBLK01-020810

GC Volatiles

Lot-Sample #...: A0B110444-002 **Work Order #...:** LVJ3N1AH **Matrix.....:** WQ
Date Sampled...: 02/08/10 11:30 **Date Received..:** 02/11/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

Stantec Consulting Corporation

Client Sample ID: HSSER-GMZ04-020810

GC Volatiles

Lot-Sample #...: A0B110444-003 **Work Order #...:** LVJ311AH **Matrix.....:** WG
Date Sampled...: 02/08/10 13:50 **Date Received..:** 02/11/10
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW20-020810

GC Volatiles

Lot-Sample #...: A0B110444-004 **Work Order #...:** LVJ321AH **Matrix.....:** WG
Date Sampled...: 02/08/10 16:16 **Date Received..:** 02/11/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

Stantec Consulting Corporation

Client Sample ID: HSSER-GMZ03-020910

GC Volatiles

Lot-Sample #...: A0B110444-005 **Work Order #...:** LVJ331AJ **Matrix.....:** WG
Date Sampled...: 02/09/10 09:44 **Date Received..:** 02/11/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW21-020910

GC Volatiles

Lot-Sample #...: A0B110444-006 **Work Order #...:** LVJ341AH **Matrix.....:** WG
Date Sampled...: 02/09/10 11:11 **Date Received..:** 02/11/10
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

Stantec Consulting Corporation

Client Sample ID: HSSER-DUP01-020810

GC Volatiles

Lot-Sample #...:	A0B110444-007	**Work Order #...:**	LVJ361AH	**Matrix.....:**	WG
Date Sampled...:	02/08/10	**Date Received..:**	02/11/10		
Prep Date.....:	02/15/10	**Analysis Date..:**	02/15/10		
Prep Batch #...:	0047073				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	ND	0.00050	mg/L
Methane	ND	0.00050	mg/L

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVP4L1AA **Matrix.....:** WATER
MB Lot-Sample #: A0B160000-073

Prep Date.....: 02/15/10 **Final Wgt/Vol..:** 0 mL
Analysis Date..: 02/15/10 **Prep Batch #...:** 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methane	ND	0.00050	mg/L	RSK SOP-175
Ethane	ND	0.00050	mg/L	RSK SOP-175
Ethene	ND	0.00050	mg/L	RSK SOP-175

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVP4L1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B160000-073 LVP4L1AD-LCSD
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	**84**	**(75 - 127)**			**RSK SOP-175**
	84	**(75 - 127)**	**0.15**	**(0-30)**	**RSK SOP-175**
Ethane	**97**	**(74 - 138)**			**RSK SOP-175**
	96	**(74 - 138)**	**1.9**	**(0-30)**	**RSK SOP-175**
Ethene	**98**	**(73 - 140)**			**RSK SOP-175**
	97	**(73 - 140)**	**1.2**	**(0-30)**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVP4L1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B160000-073 LVP4L1AD-LCSD
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Methane	**0.11**	**0.092**	**mg/L**	**84**		**RSK SOP-175**
	0.11	**0.092**	**mg/L**	**84**	**0.15**	**RSK SOP-175**
Ethane	**0.20**	**0.20**	**mg/L**	**97**		**RSK SOP-175**
	0.20	**0.20**	**mg/L**	**96**	**1.9**	**RSK SOP-175**
Ethene	**0.19**	**0.19**	**mg/L**	**98**		**RSK SOP-175**
	0.19	**0.18**	**mg/L**	**97**	**1.2**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

GENERAL CHEMISTRY DATA

North Canton

Stantec Consulting Corporation

Client Sample ID: HSSER-EBLK01-020810

General Chemistry

Lot-Sample #...: A0B110444-002 **Work Order #...:** LVJ3N **Matrix.....:** WQ
Date Sampled...: 02/08/10 11:30 **Date Received..:** 02/11/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	ND	0.1	mg/L	MCAWW 353.2	02/15/10	0046379
	Dilution Factor: 1					
Sulfate	ND	1.0	mg/L	MCAWW 300.0A	02/17/10	0049247
	Dilution Factor: 1					
Total Alkalinity	**3.3 B,J**	**5.0**	**mg/L**	**MCAWW 310.1**	**02/12/10**	**0044054**
	Dilution Factor: 1					
Total Organic Carbon	**0.3 B**	**1**	**mg/L**	**SW846 9060**	**02/16/10**	**0047024**
	Dilution Factor: 1					
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/12/10	0044026
	Dilution Factor: 1					

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

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

Stantec Consulting Corporation

Client Sample ID: HSSER-GMZ04-020810

General Chemistry

Lot-Sample #...: A0B110444-003 **Work Order #...:** LVJ31 **Matrix.....:** WG
Date Sampled...: 02/08/10 13:50 **Date Received..:** 02/11/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**0.6**	**0.1**	**mg/L**	**MCAWW 353.2**	**02/15/10**	**0046379**
		Dilution Factor: 1				
Sulfate	**40.7**	**1.0**	**mg/L**	**MCAWW 300.0A**	**02/17/10**	**0049247**
		Dilution Factor: 1				
Total Alkalinity	**180 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**02/12/10**	**0044054**
		Dilution Factor: 1				
Total Organic Carbon	**3**	**1**	**mg/L**	**SW846 9060**	**02/16/10**	**0047024**
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/12/10	0044026
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW20-020810

General Chemistry

Lot-Sample #...: A0B110444-004 **Work Order #...:** LVJ32 **Matrix.....:** WG
Date Sampled...: 02/08/10 16:16 **Date Received..:** 02/11/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**1.4**	**0.1**	**mg/L**	**MCAWW 353.2**	**02/15/10**	**0046379**
		Dilution Factor: 1				
Sulfate	**96.0**	**1.0**	**mg/L**	**MCAWW 300.0A**	**02/17/10**	**0049247**
		Dilution Factor: 1				
Total Alkalinity	**210 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**02/12/10**	**0044054**
		Dilution Factor: 1				
Total Organic Carbon	**1**	**1**	**mg/L**	**SW846 9060**	**02/16/10**	**0047024**
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/12/10	0044026
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-GMZ03-020910

General Chemistry

Lot-Sample #...: A0B110444-005 **Work Order #...:** LVJ33 **Matrix.....:** WG
Date Sampled...: 02/09/10 09:44 **Date Received..:** 02/11/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**0.2**	**0.1**	**mg/L**	**MCAWW 353.2**	**02/19/10**	**0050329**
		Dilution Factor: 1				
Sulfate	**171**	**1.0**	**mg/L**	**MCAWW 300.0A**	**02/17/10**	**0049247**
		Dilution Factor: 1				
Total Alkalinity	**190 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**02/19/10**	**0053137**
		Dilution Factor: 1				
Total Organic Carbon	**6**	**1**	**mg/L**	**SW846 9060**	**02/16/10**	**0047024**
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/16/10	0047304
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW21-020910

General Chemistry

Lot-Sample #...: A0B110444-006 **Work Order #...:** LVJ34 **Matrix.....:** WG
Date Sampled...: 02/09/10 11:11 **Date Received..:** 02/11/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**0.8**	**0.1**	**mg/L**	**MCAWW 353.2**	**02/15/10**	**0046379**
		Dilution Factor: 1				
Sulfate	**24.6**	**1.0**	**mg/L**	**MCAWW 300.0A**	**02/17/10**	**0049247**
		Dilution Factor: 1				
Total Alkalinity	**230 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**02/12/10**	**0044054**
		Dilution Factor: 1				
Total Organic Carbon	**3**	**1**	**mg/L**	**SW846 9060**	**02/16/10**	**0047024**
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/12/10	0044026
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-DUP01-020810

General Chemistry

Lot-Sample #...: A0B110444-007 **Work Order #...:** LVJ36 **Matrix.....:** WG
Date Sampled...: 02/08/10 **Date Received..:** 02/11/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**1.4**	**0.1**	**mg/L**	**MCAWW 353.2**	**02/15/10**	**0046379**
		Dilution Factor: 1				
Sulfate	**94.9**	**1.0**	**mg/L**	**MCAWW 300.0A**	**02/17/10**	**0049247**
		Dilution Factor: 1				
Total Alkalinity	**200 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**02/12/10**	**0044054**
		Dilution Factor: 1				
Total Organic Carbon	**2**	**1**	**mg/L**	**SW846 9060**	**02/16/10**	**0047024**
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/12/10	0044026
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: LVP2R1AA		MB Lot-Sample #:	A0B150000-379	
	ND	0.1	mg/L	MCAWW 353.2	02/15/10	0046379
		Dilution Factor: 1				
Nitrate-Nitrite		Work Order #: LVWWP1AA		MB Lot-Sample #:	A0B190000-329	
	ND	0.1	mg/L	MCAWW 353.2	02/19/10	0050329
		Dilution Factor: 1				
Sulfate		Work Order #: LVT541AA		MB Lot-Sample #:	A0B180000-247	
	ND	1.0	mg/L	MCAWW 300.0A	02/17/10	0049247
		Dilution Factor: 1				
Total Alkalinity		Work Order #: LVM3R1AA		MB Lot-Sample #:	A0B130000-054	
	3.0 B	**5.0**	**mg/L**	**MCAWW 310.1**	**02/12/10**	**0044054**
		Dilution Factor: 1				
Total Alkalinity		Work Order #: LVXR71AA		MB Lot-Sample #:	A0B220000-137	
	4.0 B	**5.0**	**mg/L**	**MCAWW 310.1**	**02/19/10**	**0053137**
		Dilution Factor: 1				
Total Organic Carbon		Work Order #: LVQ3T1AA		MB Lot-Sample #:	A0B160000-024	
	ND	1	mg/L	SW846 9060	02/16/10	0047024
		Dilution Factor: 1				
Total Sulfide		Work Order #: LVM151AA		MB Lot-Sample #:	A0B130000-026	
	ND	1.0	mg/L	MCAWW 376.1	02/12/10	0044026
		Dilution Factor: 1				
Total Sulfide		Work Order #: LVQQR1AA		MB Lot-Sample #:	A0B160000-304	
	ND	1.0	mg/L	MCAWW 376.1	02/16/10	0047304
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A0B110444 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#:LVT541AC-LCS/LVT541AD-LCSD				LCS Lot-Sample#: A0B180000-247	
	96	(90 - 110)			MCAWW 300.0A	02/17/10	0049247
	97	(90 - 110)	0.62	(0-20)	MCAWW 300.0A	02/17/10	0049247
		Dilution Factor: 1					
Total Sulfide		WO#:LVM151AC-LCS/LVM151AD-LCSD				LCS Lot-Sample#: A0B130000-026	
	91	(79 - 104)			MCAWW 376.1	02/12/10	0044026
	96	(79 - 104)	6.1	(0-20)	MCAWW 376.1	02/12/10	0044026
		Dilution Factor: 1					
Total Sulfide		WO#:LVQQR1AC-LCS/LVQQR1AD-LCSD				LCS Lot-Sample#: A0B160000-304	
	100	(79 - 104)			MCAWW 376.1	02/16/10	0047304
	100	(79 - 104)	0.0	(0-20)	MCAWW 376.1	02/16/10	0047304
		Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A0B110444 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate			WO#:LVT541AC-LCS/LVT541AD-LCSD			LCS Lot-Sample#: A0B180000-247		
	50.0	48.0	mg/L	96		MCAWW 300.0A	02/17/10	0049247
	50.0	48.3	mg/L	97	0.62	MCAWW 300.0A	02/17/10	0049247
			Dilution Factor: 1					
Total Sulfide			WO#:LVM151AC-LCS/LVM151AD-LCSD			LCS Lot-Sample#: A0B130000-026		
	17	16	mg/L	91		MCAWW 376.1	02/12/10	0044026
	17	17	mg/L	96	6.1	MCAWW 376.1	02/12/10	0044026
			Dilution Factor: 1					
Total Sulfide			WO#:LVQQR1AC-LCS/LVQQR1AD-LCSD			LCS Lot-Sample#: A0B160000-304		
	15	15	mg/L	100		MCAWW 376.1	02/16/10	0047304
	15	15	mg/L	100	0.0	MCAWW 376.1	02/16/10	0047304
			Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: LVP2R1AC		LCS Lot-Sample#: A0B150000-379	
	105	(79 - 117)	MCAWW 353.2	02/15/10	0046379
		Dilution Factor: 1			
Nitrate-Nitrite		Work Order #: LVWWP1AC		LCS Lot-Sample#: A0B190000-329	
	104	(79 - 117)	MCAWW 353.2	02/19/10	0050329
		Dilution Factor: 1			
Total Alkalinity		Work Order #: LVM3R1AC		LCS Lot-Sample#: A0B130000-054	
	110	(90 - 127)	MCAWW 310.1	02/12/10	0044054
		Dilution Factor: 1			
Total Alkalinity		Work Order #: LVXR71AC		LCS Lot-Sample#: A0B220000-137	
	109	(90 - 127)	MCAWW 310.1	02/19/10	0053137
		Dilution Factor: 1			
Total Organic Carbon		Work Order #: LVQ3T1AC		LCS Lot-Sample#: A0B160000-024	
	99	(88 - 115)	SW846 9060	02/16/10	0047024
		Dilution Factor: 1			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			Work Order #:	LVP2R1AC	LCS Lot-Sample#:	A0B150000-379	
	10	11	mg/L	105	MCAWW 353.2	02/15/10	0046379
			Dilution Factor: 1				
Nitrate-Nitrite			Work Order #:	LVWWP1AC	LCS Lot-Sample#:	A0B190000-329	
	10	11	mg/L	104	MCAWW 353.2	02/19/10	0050329
			Dilution Factor: 1				
Total Alkalinity			Work Order #:	LVM3R1AC	LCS Lot-Sample#:	A0B130000-054	
	35	38	mg/L	110	MCAWW 310.1	02/12/10	0044054
			Dilution Factor: 1				
Total Alkalinity			Work Order #:	LVXR71AC	LCS Lot-Sample#:	A0B220000-137	
	35	38	mg/L	109	MCAWW 310.1	02/19/10	0053137
			Dilution Factor: 1				
Total Organic Carbon			Work Order #:	LVQ3T1AC	LCS Lot-Sample#:	A0B160000-024	
	69	69	mg/L	99	SW846 9060	02/16/10	0047024
			Dilution Factor: 1				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WQ
Date Sampled...: 02/08/10 11:30 **Date Received..:** 02/11/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		WO#:	LVJ3N1AJ-MS/LVJ3N1AK-MSD			MS Lot-Sample #:	A0B110444-002
	103	(34 - 125)			MCAWW 353.2	02/15/10	0046379
	99	(34 - 125)	3.5	(0-20)	MCAWW 353.2	02/15/10	0046379
		Dilution Factor: 1					
Total Organic Carbon		WO#:	LVJ3N1AL-MS/LVJ3N1AM-MSD			MS Lot-Sample #:	A0B110444-002
	108	(72 - 136)			SW846 9060	02/16/10	0047024
	105	(72 - 136)	2.5	(0-20)	SW846 9060	02/16/10	0047024
		Dilution Factor: 1					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WQ
Date Sampled...: 02/08/10 11:30 **Date Received..:** 02/11/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			WO#: LVJ3N1AJ-MS/LVJ3N1AK-MSD				MS Lot-Sample #: A0B110444-002		
	ND	0.5	0.5	mg/L	103		MCAWW 353.2	02/15/10	0046379
	ND	0.5	0.5	mg/L	99	3.5	MCAWW 353.2	02/15/10	0046379
			Dilution Factor: 1						
Total Organic Carbon			WO#: LVJ3N1AL-MS/LVJ3N1AM-MSD				MS Lot-Sample #: A0B110444-002		
	0.3	25	27	mg/L	108		SW846 9060	02/16/10	0047024
	0.3	25	27	mg/L	105	2.5	SW846 9060	02/16/10	0047024
			Dilution Factor: 1						

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WG
Date Sampled...: 02/10/10 11:00 **Date Received..:** 02/11/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity			WO#: LVJ4J1AJ-MS/LVJ4J1AK-MSD			MS Lot-Sample #: A0B110444-011	
	39	(10 - 160)			MCAWW 310.1	02/12/10	0044054
	38	(10 - 160)	0.44	(0-24)	MCAWW 310.1	02/12/10	0044054

Dilution Factor: 1

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WG
Date Sampled...: 02/10/10 11:00 **Date Received..:** 02/11/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity			WO#: LVJ4J1AJ-MS/LVJ4J1AK-MSD				MS Lot-Sample #: A0B110444-011		
		500	630	mg/L	39		MCAWW 310.1	02/12/10	0044054
		500	620	mg/L	38	0.44	MCAWW 310.1	02/12/10	0044054
			Dilution Factor: 1						

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WG
Date Sampled...: 02/09/10 11:11 **Date Received..:** 02/11/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		Work Order #...: LVJ341AJ		MS Lot-Sample #: A0B110444-006	
	115	(80 - 120)	MCAWW 300.0A	02/17/10	0049247

Dilution Factor: 1

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WG
Date Sampled...: 02/09/10 11:11 **Date Received..:** 02/11/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate			Work Order #...:		LVJ341AJ	MS Lot-Sample #: A0B110444-006		
	24.6	50.0	81.9	mg/L	115	MCAWW 300.0A	02/17/10	0049247
			Dilution Factor: 1					

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WATER
Date Sampled...: 02/16/10 09:56 **Date Received..:** 02/17/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		WO#:	LVR431AG-MS/LVR431AH-MSD			MS Lot-Sample #:	A0B170497-001
	113	(34 - 125)			MCAWW 353.2	02/19/10	0050329
	113	(34 - 125)	0.01	(0-20)	MCAWW 353.2	02/19/10	0050329
		Dilution Factor: 1					
Total Alkalinity		WO#:	LVND21AM-MS/LVND21AN-MSD			MS Lot-Sample #:	A0B130434-004
	94	(10 - 160)			MCAWW 310.1	02/19/10	0053137
	88	(10 - 160)	3.6	(0-24)	MCAWW 310.1	02/19/10	0053137
		Dilution Factor: 1					
Total Alkalinity		WO#:	LVRRD1AX-MS/LVRRD1A0-MSD			MS Lot-Sample #:	A0B170463-009
	63	(10 - 160)			MCAWW 310.1	02/19/10	0053137
	61	(10 - 160)	1.4	(0-24)	MCAWW 310.1	02/19/10	0053137
		Dilution Factor: 1					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WATER
Date Sampled...: 02/16/10 09:56 **Date Received..:** 02/17/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			WO#: LVR431AG-MS/LVR431AH-MSD				MS Lot-Sample #: A0B170497-001		
	0.1	0.5	0.7	mg/L	113		MCAWW 353.2	02/19/10	0050329
	0.1	0.5	0.7	mg/L	113	0.01	MCAWW 353.2	02/19/10	0050329
			Dilution Factor: 1						
Total Alkalinity			WO#: LVND21AM-MS/LVND21AN-MSD				MS Lot-Sample #: A0B130434-004		
	380	500	850	mg/L	94		MCAWW 310.1	02/19/10	0053137
	380	500	820	mg/L	88	3.6	MCAWW 310.1	02/19/10	0053137
			Dilution Factor: 1						
Total Alkalinity			WO#: LVRRD1AX-MS/LVRRD1A0-MSD				MS Lot-Sample #: A0B170463-009		
	370	500	690	mg/L	63		MCAWW 310.1	02/19/10	0053137
	370	500	680	mg/L	61	1.4	MCAWW 310.1	02/19/10	0053137
			Dilution Factor: 1						

NOTE(S):

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

END OF REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

REVISED

PROJECT NO. 182602078

HSSER, IL

Lot #: A0B110444 B

John Dennison

Stantec Consulting Corporation
446 Eisenhower Lane North
Lombard, IL 60148

TESTAMERICA LABORATORIES, INC.

Alesia M. Danford

Approved for release.
Alesia M. Danford
Project Manager
5/3/2010 2:35 PM

Alesia M. Danford
Project Manager
alesia.danford@testamericainc.com

May 3, 2010

ACCREDITED IN ACCORDANCE WITH nelac

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A0B110444 B

The following report contains the analytical results for seven water samples and one quality control sample submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HSSER, IL Site, project number 182602078. The samples were received February 11, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Amy Rodebaugh and John Dennison on February 22, 2010. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 0.4 and 1.2 °C.

See TestAmerica's Cooler Receipt Form for additional information.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

DISSOLVED GASES/RSK

The analytical results met the requirements of the laboratory's QA/QC program.

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) had elevated reporting limits due to matrix interferences. Refer to the sample report pages for the affected analyte(s) flagged with "G".

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analytes(s).

Due to an analyst oversight, more than ten samples were analyzed between QC for the Ion Chromatography test. Sample(s) HSSER-RAMW03-020910 were surrounded by a passing initial and final CCV and CCB. Sample results are reported.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 032609.doc

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0B110444

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-RAMW04-020810 02/08/10 15:13 008				
Ethene	0.0037	0.00050	mg/L	RSK SOP-175
Methane	0.15	0.00050	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.12	0.025	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.22	0.025	mg/L	SW846 8260B
Vinyl chloride	0.056	0.025	mg/L	SW846 8260B
1,1-Dichloroethane	0.044	0.025	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.61	0.025	mg/L	SW846 8260B
Toluene	0.0080 J	0.025	mg/L	SW846 8260B
Ethylbenzene	0.096	0.025	mg/L	SW846 8260B
Nitrate-Nitrite	0.3	0.1	mg/L	MCAWW 353.2
Total Sulfide	0.50 B,\	1.0	mg/L	MCAWW 376.1
Sulfate	6.6	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	4	1	mg/L	SW846 9060
Total Alkalinity	440 J	5.0	mg/L	MCAWW 310.1
HSSER-RAMW03-020910 02/09/10 13:10 009				
Ethene	0.0029	0.0010	mg/L	RSK SOP-175
Methane	0.78	0.0010	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.18 J	0.25	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	7.6	0.25	mg/L	SW846 8260B
Methylene chloride	0.085 J	0.25	mg/L	SW846 8260B
1,1-Dichloroethane	3.2	0.25	mg/L	SW846 8260B
1,1,1-Trichloroethane	4.4	0.25	mg/L	SW846 8260B
Toluene	0.20 J	0.25	mg/L	SW846 8260B
Sulfate	491	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	11	1	mg/L	SW846 9060
HSSER-RAMW05-020910 02/09/10 14:36 010				
Ethene	0.0035	0.0010	mg/L	RSK SOP-175
Methane	2.3	0.0010	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.75	0.42	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	1.1	0.42	mg/L	SW846 8260B
1,1-Dichloroethane	0.34 J	0.42	mg/L	SW846 8260B
1,1,1-Trichloroethane	8.4	0.42	mg/L	SW846 8260B
Ethylbenzene	0.20 J	0.42	mg/L	SW846 8260B
Nitrate-Nitrite	0.2	0.1	mg/L	MCAWW 353.2
Sulfate	11.1	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	21	1	mg/L	SW846 9060

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0B110444

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-RAMW05-020910 02/09/10 14:36 010				
Total Alkalinity	480 J	5.0	mg/L	MCAWW 310.1
HSSER-RAMW08-021010 02/10/10 11:00 011				
Methane	4.1	0.0025	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.65 J	0.71	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.23 J	0.71	mg/L	SW846 8260B
Methylene chloride	0.25 J	0.71	mg/L	SW846 8260B
1,1,1-Trichloroethane	19	0.71	mg/L	SW846 8260B
Nitrate-Nitrite	1.4	0.5	mg/L	MCAWW 353.2
Sulfate	22.4	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	22	1	mg/L	SW846 9060
Total Alkalinity	430 J	5.0	mg/L	MCAWW 310.1
HSSER-RAMW07-021010 02/10/10 13:32 012				
Methane	5.8	0.0025	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.75 J	1.0	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	2.0	1.0	mg/L	SW846 8260B
Methylene chloride	0.41 J	1.0	mg/L	SW846 8260B
1,1,1-Trichloroethane	26	1.0	mg/L	SW846 8260B
Nitrate-Nitrite	0.4	0.1	mg/L	MCAWW 353.2
Sulfate	23.2	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	9	1	mg/L	SW846 9060
Total Alkalinity	480 J	5.0	mg/L	MCAWW 310.1
HSSER-RAMW06-021010 02/10/10 14:57 013				
Methane	0.74	0.0010	mg/L	RSK SOP-175
1,1-Dichloroethylene	1.2	1.2	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	3.2	1.2	mg/L	SW846 8260B
Methylene chloride	0.95 J	1.2	mg/L	SW846 8260B
1,1,1-Trichloroethane	35	1.2	mg/L	SW846 8260B
Nitrate-Nitrite	2.6	0.5	mg/L	MCAWW 353.2
Sulfate	32.1	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	6	1	mg/L	SW846 9060
Total Alkalinity	410 J	5.0	mg/L	MCAWW 310.1

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0B110444

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-DUP02-021010 02/10/10 014				
Methane	2.2	0.0025	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.63 J	0.83	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.20 J	0.83	mg/L	SW846 8260B
1,1,1-Trichloroethane	18	0.83	mg/L	SW846 8260B
Nitrate-Nitrite	2.1	0.5	mg/L	MCAWW 353.2
Sulfate	30.2	5.0	mg/L	MCAWW 300.0A
Total Organic Carbon	24	1	mg/L	SW846 9060
Total Alkalinity	430 J	5.0	mg/L	MCAWW 310.1

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0B110444

PARAMETER	ANALYTICAL METHOD
Alkalinity	MCAWW 310.1
Dissolved Gases in Water	RSK SOP-175
Nitrate-Nitrite	MCAWW 353.2
Sulfate	MCAWW 300.0A
Sulfide	MCAWW 376.1
Total Organic Carbon	SW846 9060
Volatile Organics by GC/MS	SW846 8260B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

RSK Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SAMPLE SUMMARY

SAMPLE SUMMARY

A0B110444

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LVJ39	008	HSSER-RAMW04-020810	02/08/10	15:13
LVJ4D	009	HSSER-RAMW03-020910	02/09/10	13:10
LVJ4G	010	HSSER-RAMW05-020910	02/09/10	14:36
LVJ4J	011	HSSER-RAMW08-021010	02/10/10	11:00
LVJ4K	012	HSSER-RAMW07-021010	02/10/10	13:32
LVJ4M	013	HSSER-RAMW06-021010	02/10/10	14:57
LVJ4N	014	HSSER-DUP02-021010	02/10/10	
LVJ4R	015	HSSER-TRIP01-020910	02/10/10	

NOTE(S):

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: _____
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other _____

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: Stantec	Client Project Manager: [redacted] Dennison	Site Contact:	Lab Contact:	COC No:
Address: 446 Eisenhower Ln N	Telephone: [redacted]7921680	Telephone:	Telephone:	1 of 1 COCs
City/State/Zip: Lombard, IL 60148	Email: john.dennison@stantec.com			
Phone: 6307921680		TAT if different from below _____ ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day. Standard		
Project Name: HSSER	Method of Shipment/Carrier: Courier			
Project Number: 182602078	Shipping/Tracking No:			
PO#				

Analyses

Sample Identification	Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Alkalinity 310.1	Sulfate 300.0A	Diss Gases 175 MEE	Nitrite/Nitrate 353.2	Sulfide 376.1	TOC 9060	VOCs 8260B*	Sample Specific Notes / Special Instructions:
HSSER-RAMW04-020810	2/8/10	15:13		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-RAMW03-020910	2/9/10	1310		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-RAMW05-020910	2/9/10	1436		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-RAMW08-021010	2/10/10	1100		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-RAMW07-021010	2/10/10	13:32		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-RAMW06-021010	2/10/10	14:57		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-DUP02-021010	2/10/10	—		X				3		5		1	1		X	X	X	X	X	X	X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☐ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:
*List B VOCs / Level 4 Data

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Brian Campbell / Stantec		2/10/10 1620	[signature]	Test	2/10 16:50
Walt Johnson	Test	2/10			
			Received in Laboratory by: Matthew J. Jones	TESTAMERICA	11 FEB 2010 09:20

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TAL-0018 (1008)

Northcanton

16

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** A0B110444
North Canton Facility

Client STANTEC Project HESSER By: Matthew Ferrell
Cooler Received on 11 FEB 2010 Opened on 11 FEB 2010 (Signature)
FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other ____
TestAmerica Cooler # BACK Multiple Coolers ☒ Foam Box ☐ Client Cooler ☐ Other ____

1. Were custody seals on the outside of the cooler(s)? Yes ☒ No ☐ Intact? Yes ☒ No ☐ NA ☐
   If YES, Quantity 2 Quantity Unsalvageable ____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☒ No ☐ NA ☐
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions? ____
2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☒ None ☐ Other PLASTIC BAG
6. Cooler temperature upon receipt BACK °C See back of form for multiple coolers/temps ☒
   METHOD: IR ☒ Other ☐ ____
   COOLANT: Wet ice ☒ Blue ice ☐ Dry ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☐ No ☒
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☒ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☐ No ☒
13. Was a trip blank present in the cooler(s)? Yes ☒ No ☐ Were VOAs on the COC? Yes ☒ No ☐

Contacted PM AMD Date 2/11/10 by AM via Verbal ☒ Voice Mail ☐ Other ☐
Concerning #4

14. CHAIN OF CUSTODY

The following discrepancies occurred:
1x40ml TOC RAMW02-201010 on 2/10/10 @ 1100 BROKEN & DISPOSED OF
1x40ml (HCl) DUP 02 on 2/10/10 BROKEN & DISPOSED OF
RAMW03 ... 1x250ml LABELED H_2SO_4 (pH ≈ 0) WILL MARK AS ALK (LINED OUT PRESERVATIVE STICKER) ... 1x250ml LABELED NONE. (pH = <2) WILL MARK AS NO2/NO3

15. SAMPLE CONDITION

Sample(s) ____ were received after the recommended holding time had expired.
Sample(s) SEE ABOVE were received in a broken container.
Sample(s) ____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) ____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot# 121709-HNO_3; Sulfuric Acid Lot# 082509-H_2SO_4; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-$(CH_3COO)_2ZN/NaOH$.* What time was preservative added to sample(s)? ____

Client ID	pH		Date	Initials
EBLK01	≥9	<2	FEB 2010	MAF
GMZ04	≥9	<2		
MW20	≥9	<2		
GMZ03	≥9	<2		
MW21	≥9	<2		
DUP01	≥9	<2		
RAMW04	≥9	<2		
RAMW03	≥9	<2		

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials
RAMW05	>9 <2	11 FEB 2010	MAF
RAMW08	>9 <2		
RAMW07	>9 <2		
RAMW06	>9 <2		
DUP02	>9 <2		

Cooler #	Temp. °C	Method	Coolant
344	1.2	IR	WET ICE
241 522	0.4		

Discrepancies Cont'd.

Received 3x40ml Trip Blank, not on COC. Will log.

TestAmerica
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GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW04-020810

GC/MS Volatiles

Lot-Sample #...: A0B110444-008 **Work Order #...:** LVJ391AA **Matrix.....:** WG
Date Sampled...: 02/08/10 15:13 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 25 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.12**	**0.025**	**mg/L**
cis-1,2-Dichloroethylene	**0.22**	**0.025**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.025	mg/L
Tetrachloroethylene	ND	0.025	mg/L
Trichloroethylene	ND	0.025	mg/L
Vinyl chloride	**0.056**	**0.025**	**mg/L**
Methylene chloride	ND	0.025	mg/L
1,1-Dichloroethane	**0.044**	**0.025**	**mg/L**
1,2-Dichloroethane	ND	0.025	mg/L
1,1,1-Trichloroethane	**0.61**	**0.025**	**mg/L**
1,1,2-Trichloroethane	ND	0.025	mg/L
Toluene	**0.0080 J**	**0.025**	**mg/L**
Ethylbenzene	**0.096**	**0.025**	**mg/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	95	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	85	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW03-020910

GC/MS Volatiles

Lot-Sample #...: A0B110444-009 **Work Order #...:** LVJ4D1AA **Matrix.....:** WG
Date Sampled...: 02/09/10 13:10 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 250 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.18 J**	**0.25**	**mg/L**
cis-1,2-Dichloroethylene	**7.6**	**0.25**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.25	mg/L
Tetrachloroethylene	ND	0.25	mg/L
Trichloroethylene	ND	0.25	mg/L
Vinyl chloride	ND	0.25	mg/L
Methylene chloride	**0.085 J**	**0.25**	**mg/L**
1,1-Dichloroethane	**3.2**	**0.25**	**mg/L**
1,2-Dichloroethane	ND	0.25	mg/L
1,1,1-Trichloroethane	**4.4**	**0.25**	**mg/L**
1,1,2-Trichloroethane	ND	0.25	mg/L
Toluene	**0.20 J**	**0.25**	**mg/L**
Ethylbenzene	ND	0.25	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
1,2-Dichloroethane-d4	87	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW05-020910

GC/MS Volatiles

Lot-Sample #...: A0B110444-010 **Work Order #...:** LVJ4G1AA **Matrix.....:** WG
Date Sampled...: 02/09/10 14:36 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 416.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.75**	**0.42**	**mg/L**
cis-1,2-Dichloroethylene	**1.1**	**0.42**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.42	mg/L
Tetrachloroethylene	ND	0.42	mg/L
Trichloroethylene	ND	0.42	mg/L
Vinyl chloride	ND	0.42	mg/L
Methylene chloride	ND	0.42	mg/L
1,1-Dichloroethane	**0.34 J**	**0.42**	**mg/L**
1,2-Dichloroethane	ND	0.42	mg/L
1,1,1-Trichloroethane	**8.4**	**0.42**	**mg/L**
1,1,2-Trichloroethane	ND	0.42	mg/L
Toluene	ND	0.42	mg/L
Ethylbenzene	**0.20 J**	**0.42**	**mg/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	87	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	92	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW08-021010

GC/MS Volatiles

Lot-Sample #...: A0B110444-011 **Work Order #...:** LVJ4J1AA **Matrix.....:** WG
Date Sampled...: 02/10/10 11:00 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 714.29 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.65 J**	**0.71**	**mg/L**
cis-1,2-Dichloroethylene	**0.23 J**	**0.71**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.71	mg/L
Tetrachloroethylene	ND	0.71	mg/L
Trichloroethylene	ND	0.71	mg/L
Vinyl chloride	ND	0.71	mg/L
Methylene chloride	**0.25 J**	**0.71**	**mg/L**
1,1-Dichloroethane	ND	0.71	mg/L
1,2-Dichloroethane	ND	0.71	mg/L
1,1,1-Trichloroethane	**19**	**0.71**	**mg/L**
1,1,2-Trichloroethane	ND	0.71	mg/L
Toluene	ND	0.71	mg/L
Ethylbenzene	ND	0.71	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	95	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	88	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW07-021010

GC/MS Volatiles

Lot-Sample #...: A0B110444-012 **Work Order #...:** LVJ4K1AA **Matrix.....:** WG
Date Sampled...: 02/10/10 13:32 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1000 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.75 J**	**1.0**	**mg/L**
cis-1,2-Dichloroethylene	**2.0**	**1.0**	**mg/L**
trans-1,2-Dichloroethylene	ND	1.0	mg/L
Tetrachloroethylene	ND	1.0	mg/L
Trichloroethylene	ND	1.0	mg/L
Vinyl chloride	ND	1.0	mg/L
Methylene chloride	**0.41 J**	**1.0**	**mg/L**
1,1-Dichloroethane	ND	1.0	mg/L
1,2-Dichloroethane	ND	1.0	mg/L
1,1,1-Trichloroethane	**26**	**1.0**	**mg/L**
1,1,2-Trichloroethane	ND	1.0	mg/L
Toluene	ND	1.0	mg/L
Ethylbenzene	ND	1.0	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	84	(76 - 110)
4-Bromofluorobenzene	90	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW06-021010

GC/MS Volatiles

Lot-Sample #...: A0B110444-013 **Work Order #...:** LVJ4M1AA **Matrix.....:** WG
Date Sampled...: 02/10/10 14:57 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1250 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**1.2**	**1.2**	**mg/L**
cis-1,2-Dichloroethylene	**3.2**	**1.2**	**mg/L**
trans-1,2-Dichloroethylene	ND	1.2	mg/L
Tetrachloroethylene	ND	1.2	mg/L
Trichloroethylene	ND	1.2	mg/L
Vinyl chloride	ND	1.2	mg/L
Methylene chloride	**0.95 J**	**1.2**	**mg/L**
1,1-Dichloroethane	ND	1.2	mg/L
1,2-Dichloroethane	ND	1.2	mg/L
1,1,1-Trichloroethane	**35**	**1.2**	**mg/L**
1,1,2-Trichloroethane	ND	1.2	mg/L
Toluene	ND	1.2	mg/L
Ethylbenzene	ND	1.2	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	84	(76 - 110)
4-Bromofluorobenzene	88	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-DUP02-021010

GC/MS Volatiles

Lot-Sample #...: A0B110444-014 **Work Order #...:** LVJ4N1AA **Matrix.....:** WG
Date Sampled...: 02/10/10 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 833.33 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.63 J**	**0.83**	**mg/L**
cis-1,2-Dichloroethylene	**0.20 J**	**0.83**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.83	mg/L
Tetrachloroethylene	ND	0.83	mg/L
Trichloroethylene	ND	0.83	mg/L
Vinyl chloride	ND	0.83	mg/L
Methylene chloride	ND	0.83	mg/L
1,1-Dichloroethane	ND	0.83	mg/L
1,2-Dichloroethane	ND	0.83	mg/L
1,1,1-Trichloroethane	**18**	**0.83**	**mg/L**
1,1,2-Trichloroethane	ND	0.83	mg/L
Toluene	ND	0.83	mg/L
Ethylbenzene	ND	0.83	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	85	(76 - 110)
4-Bromofluorobenzene	86	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-TRIP01-020910

GC/MS Volatiles

Lot-Sample #...: A0B110444-015 **Work Order #...:** LVJ4R1AA **Matrix.....:** WQ
Date Sampled...: 02/10/10 **Date Received..:** 02/11/10
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	88	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
Toluene-d8	87	(76 - 110)
4-Bromofluorobenzene	89	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVTGX1AA **Matrix.....:** WATER
MB Lot-Sample #: A0B180000-076

Prep Date.....: 02/17/10 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 02/17/10 **Prep Batch #...:** 0049076
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
1,2-Dichloroethane-d4	99	(61 - 128)
Toluene-d8	95	(76 - 110)
4-Bromofluorobenzene	93	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVTGX1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B180000-076 LVTGX1AD-LCSD
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**114**	**(63 - 130)**			**SW846 8260B**
	115	**(63 - 130)**	**0.55**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**101**	**(75 - 122)**			**SW846 8260B**
	102	**(75 - 122)**	**1.0**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	100	(88 - 113)			SW846 8260B
	101	(88 - 113)	0.67	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	102	(85 - 113)			SW846 8260B
	104	(85 - 113)	1.9	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	107	(80 - 120)			SW846 8260B
	107	(80 - 120)	0.030	(0-30)	SW846 8260B
Vinyl chloride	94	(61 - 120)			SW846 8260B
	93	(61 - 120)	0.85	(0-30)	SW846 8260B
Methylene chloride	105	(78 - 118)			SW846 8260B
	107	(78 - 118)	1.6	(0-30)	SW846 8260B
1,1-Dichloroethane	103	(86 - 123)			SW846 8260B
	105	(86 - 123)	1.9	(0-30)	SW846 8260B
1,2-Dichloroethane	98	(79 - 136)			SW846 8260B
	97	(79 - 136)	0.94	(0-30)	SW846 8260B
1,1,1-Trichloroethane	102	(78 - 140)			SW846 8260B
	103	(78 - 140)	1.7	(0-30)	SW846 8260B
1,1,2-Trichloroethane	97	(83 - 122)			SW846 8260B
	94	(83 - 122)	2.6	(0-30)	SW846 8260B
Toluene	**98**	**(74 - 119)**			**SW846 8260B**
	97	**(74 - 119)**	**0.63**	**(0-20)**	**SW846 8260B**
Ethylbenzene	98	(86 - 116)			SW846 8260B
	99	(86 - 116)	0.12	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
	92	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	84	(61 - 128)
Toluene-d8	92	(76 - 110)
	90	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	97	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVTGX1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B180000-076 LVTGX1AD-LCSD
Prep Date.....: 02/17/10 **Analysis Date..:** 02/17/10
Prep Batch #...: 0049076
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.011**	**mg/L**	**114**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**115**	**0.55**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.010**	**mg/L**	**101**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**102**	**1.0**	**SW846 8260B**
Tetrachloroethylene	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	101	0.67	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.010	mg/L	102		SW846 8260B
	0.010	0.010	mg/L	104	1.9	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.011	mg/L	107		SW846 8260B
	0.010	0.011	mg/L	107	0.030	SW846 8260B
Vinyl chloride	0.010	0.0094	mg/L	94		SW846 8260B
	0.010	0.0093	mg/L	93	0.85	SW846 8260B
Methylene chloride	0.010	0.010	mg/L	105		SW846 8260B
	0.010	0.011	mg/L	107	1.6	SW846 8260B
1,1-Dichloroethane	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.011	mg/L	105	1.9	SW846 8260B
1,2-Dichloroethane	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.0097	mg/L	97	0.94	SW846 8260B
1,1,1-Trichloroethane	0.010	0.010	mg/L	102		SW846 8260B
	0.010	0.010	mg/L	103	1.7	SW846 8260B
1,1,2-Trichloroethane	0.010	0.0097	mg/L	97		SW846 8260B
	0.010	0.0094	mg/L	94	2.6	SW846 8260B
Toluene	**0.010**	**0.0098**	**mg/L**	**98**		**SW846 8260B**
	0.010	**0.0097**	**mg/L**	**97**	**0.63**	**SW846 8260B**
Ethylbenzene	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.0099	mg/L	99	0.12	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
	92	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	84	(61 - 128)
Toluene-d8	92	(76 - 110)
	90	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	97	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

GC VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW04-020810

GC Volatiles

Lot-Sample #...: A0B110444-008 **Work Order #...:** LVJ391AH **Matrix.....:** WG
Date Sampled...: 02/08/10 15:13 **Date Received..:** 02/11/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	**0.0037**	**0.00050**	**mg/L**
Methane	**0.15**	**0.00050**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW03-020910

GC Volatiles

Lot-Sample #...: A0B110444-009 **Work Order #...:** LVJ4D1AH **Matrix.....:** WG
Date Sampled...: 02/09/10 13:10 **Date Received..:** 02/11/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 2 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.0010	mg/L
Ethene	**0.0029**	**0.0010**	**mg/L**
Methane	**0.78**	**0.0010**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW05-020910

GC Volatiles

Lot-Sample #...:	A0B110444-010	**Work Order #...:**	LVJ4G1AH	**Matrix.....:**	WG
Date Sampled...:	02/09/10 14:36	**Date Received..:**	02/11/10		
Prep Date.....:	02/15/10	**Analysis Date..:**	02/15/10		
Prep Batch #...:	0047073				
Dilution Factor:	2	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.0010	mg/L
Ethene	**0.0035**	**0.0010**	**mg/L**
Methane	**2.3**	**0.0010**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW08-021010

GC Volatiles

Lot-Sample #...:	A0B110444-011	**Work Order #...:**	LVJ4J1AH	**Matrix.....:**	WG
Date Sampled...:	02/10/10 11:00	**Date Received..:**	02/11/10		
Prep Date.....:	02/15/10	**Analysis Date..:**	02/15/10		
Prep Batch #...:	0047073				
Dilution Factor:	5	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.0025	mg/L
Ethene	ND	0.0025	mg/L
Methane	**4.1**	**0.0025**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW07-021010

GC Volatiles

Lot-Sample #...: A0B110444-012 **Work Order #...:** LVJ4K1AH **Matrix.....:** WG
Date Sampled...: 02/10/10 13:32 **Date Received..:** 02/11/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 5 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.0025	mg/L
Ethene	ND	0.0025	mg/L
Methane	**5.8**	**0.0025**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW06-021010

GC Volatiles

Lot-Sample #...: A0B110444-013 **Work Order #...:** LVJ4M1AH **Matrix.....:** WG
Date Sampled...: 02/10/10 14:57 **Date Received..:** 02/11/10
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047073
Dilution Factor: 2 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.0010	mg/L
Ethene	ND	0.0010	mg/L
Methane	**0.74**	**0.0010**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-DUP02-021010

GC Volatiles

Lot-Sample #...: A0B110444-014 **Work Order #...:** LVJ4N1AH **Matrix.....:** WG
Date Sampled...: 02/10/10 **Date Received..:** 02/11/10
Prep Date.....: 02/16/10 **Analysis Date..:** 02/16/10
Prep Batch #...: 0047073
Dilution Factor: 5 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.0025	mg/L
Ethene	ND	0.0025	mg/L
Methane	**2.2**	**0.0025**	**mg/L**

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVP4L1AA **Matrix.....:** WATER
MB Lot-Sample #: A0B160000-073

Prep Date.....: 02/15/10 **Final Wgt/Vol..:** 0 mL
Analysis Date..: 02/15/10 **Prep Batch #...:** 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methane	ND	0.00050	mg/L	RSK SOP-175
Ethane	ND	0.00050	mg/L	RSK SOP-175
Ethene	ND	0.00050	mg/L	RSK SOP-175

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVP4L1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B160000-073 LVP4L1AD-LCSD
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	**84**	**(75 - 127)**			**RSK SOP-175**
	84	**(75 - 127)**	**0.15**	**(0-30)**	**RSK SOP-175**
Ethane	**97**	**(74 - 138)**			**RSK SOP-175**
	96	**(74 - 138)**	**1.9**	**(0-30)**	**RSK SOP-175**
Ethene	**98**	**(73 - 140)**			**RSK SOP-175**
	97	**(73 - 140)**	**1.2**	**(0-30)**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVP4L1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0B160000-073 LVP4L1AD-LCSD
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Methane	**0.11**	**0.092**	**mg/L**	**84**		**RSK SOP-175**
	0.11	**0.092**	**mg/L**	**84**	**0.15**	**RSK SOP-175**
Ethane	**0.20**	**0.20**	**mg/L**	**97**		**RSK SOP-175**
	0.20	**0.20**	**mg/L**	**96**	**1.9**	**RSK SOP-175**
Ethene	**0.19**	**0.19**	**mg/L**	**98**		**RSK SOP-175**
	0.19	**0.18**	**mg/L**	**97**	**1.2**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVCL41AX-MS **Matrix.....:** WATER
MS Lot-Sample #: A0B060440-010 LVCL41A0-MSD
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	**89**	**(75 - 127)**			**RSK SOP-175**
	98	**(75 - 127)**	**5.7**	**(0-30)**	**RSK SOP-175**
Ethane	**81**	**(74 - 138)**			**RSK SOP-175**
	77	**(74 - 138)**	**5.9**	**(0-30)**	**RSK SOP-175**
Ethene	**89**	**(73 - 140)**			**RSK SOP-175**
	82	**(73 - 140)**	**7.9**	**(0-30)**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A0B110444 **Work Order #...:** LVCL41AX-MS **Matrix.....:** WATER
MS Lot-Sample #: A0B060440-010 LVCL41A0-MSD
Date Sampled...: 02/03/10 15:36 **Date Received..:** 02/06/10
Prep Date.....: 02/15/10 **Analysis Date..:** 02/15/10
Prep Batch #...: 0047073
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Methane	**0.065**	**0.11**	**0.16**	**mg/L**	**89**		**RSK SOP-175**
	0.065	**0.11**	**0.17**	**mg/L**	**98**	**5.7**	**RSK SOP-175**
Ethane	**ND**	**0.20**	**0.17**	**mg/L**	**81**		**RSK SOP-175**
	ND	**0.20**	**0.16**	**mg/L**	**77**	**5.9**	**RSK SOP-175**
Ethene	**0.00096**	**0.19**	**0.17**	**mg/L**	**89**		**RSK SOP-175**
	0.00096	**0.19**	**0.16**	**mg/L**	**82**	**7.9**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

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GENERAL CHEMISTRY DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW04-020810

General Chemistry

Lot-Sample #...: A0B110444-008 Work Order #...: LVJ39 Matrix.....: WG
Date Sampled...: 02/08/10 15:13 Date Received..: 02/11/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	0.3	0.1	mg/L	MCAWW 353.2	02/15/10	0046379
		Dilution Factor: 1				
Sulfate	6.6	1.0	mg/L	MCAWW 300.0A	02/17/10	0049247
		Dilution Factor: 1				
Total Alkalinity	440 J	5.0	mg/L	MCAWW 310.1	02/12/10	0044054
		Dilution Factor: 1				
Total Organic Carbon	4	1	mg/L	SW846 9060	02/16/10	0047024
		Dilution Factor: 1				
Total Sulfide	0.50 B	1.0	mg/L	MCAWW 376.1	02/12/10	0044026
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

B Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW03-020910

General Chemistry

Lot-Sample #...: A0B110444-009 **Work Order #...:** LVJ4D **Matrix.....:** WG
Date Sampled...: 02/09/10 13:10 **Date Received..:** 02/11/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	ND	0.1	mg/L	MCAWW 353.2	02/15/10	0046379
		Dilution Factor: 1				
Sulfate	**491**	**5.0**	**mg/L**	**MCAWW 300.0A**	**02/18/10**	**0050288**
		Dilution Factor: 5				
Total Alkalinity	ND	5.0	mg/L	MCAWW 310.1	02/12/10	0044054
		Dilution Factor: 1				
Total Organic Carbon	**11**	**1**	**mg/L**	**SW846 9060**	**02/16/10**	**0047024**
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/12/10	0044026
		Dilution Factor: 1				

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW05-020910

General Chemistry

Lot-Sample #...: A0B110444-010 **Work Order #...:** LVJ4G **Matrix.....:** WG
Date Sampled...: 02/09/10 14:36 **Date Received..:** 02/11/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**0.2**	**0.1**	**mg/L**	**MCAWW 353.2**	**02/15/10**	**0046379**
		Dilution Factor: 1				
Sulfate	**11.1**	**5.0**	**mg/L**	**MCAWW 300.0A**	**02/18/10**	**0049247**
		Dilution Factor: 5				
Total Alkalinity	**480 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**02/12/10**	**0044054**
		Dilution Factor: 1				
Total Organic Carbon	**21**	**1**	**mg/L**	**SW846 9060**	**02/16/10**	**0047024**
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/12/10	0044026
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW08-021010

General Chemistry

Lot-Sample #...: A0B110444-011 **Work Order #...:** LVJ4J **Matrix.....:** WG
Date Sampled...: 02/10/10 11:00 **Date Received..:** 02/11/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	1.4	0.5	mg/L	MCAWW 353.2	02/15/10	0046379
		Dilution Factor: 5				
Sulfate	22.4	5.0	mg/L	MCAWW 300.0A	02/18/10	0049247
		Dilution Factor: 5				
Total Alkalinity	430 J	5.0	mg/L	MCAWW 310.1	02/12/10	0044054
		Dilution Factor: 1				
Total Organic Carbon	22	1	mg/L	SW846 9060	02/16/10	0047024
		Dilution Factor: 1				
Total Sulfide	ND G	5.0	mg/L	MCAWW 376.1	02/12/10	0044026
		Dilution Factor: 5				

NOTE(S):

RL Reporting Limit

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

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW07-021010

General Chemistry

Lot-Sample #...: A0B110444-012 **Work Order #...:** LVJ4K **Matrix.....:** WG
Date Sampled...: 02/10/10 13:32 **Date Received..:** 02/11/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**0.4**	**0.1**	**mg/L**	**MCAWW 353.2**	**02/15/10**	**0046379**
		Dilution Factor: 1				
Sulfate	**23.2**	**5.0**	**mg/L**	**MCAWW 300.0A**	**02/18/10**	**0049247**
		Dilution Factor: 5				
Total Alkalinity	**480 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**02/13/10**	**0044057**
		Dilution Factor: 1				
Total Organic Carbon	**9**	**1**	**mg/L**	**SW846 9060**	**02/16/10**	**0047024**
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/16/10	0047304
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW06-021010

General Chemistry

Lot-Sample #...: A0B110444-013 **Work Order #...:** LVJ4M **Matrix.....:** WG
Date Sampled...: 02/10/10 14:57 **Date Received..:** 02/11/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	2.6	0.5	mg/L	MCAWW 353.2	02/15/10	0046379
		Dilution Factor: 5				
Sulfate	32.1	5.0	mg/L	MCAWW 300.0A	02/18/10	0049247
		Dilution Factor: 5				
Total Alkalinity	410 J	5.0	mg/L	MCAWW 310.1	02/13/10	0044057
		Dilution Factor: 1				
Total Organic Carbon	6	1	mg/L	SW846 9060	02/16/10	0047024
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	02/16/10	0047304
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-DUP02-021010

General Chemistry

Lot-Sample #...: A0B110444-014 **Work Order #...:** LVJ4N **Matrix.....:** WG
Date Sampled...: 02/10/10 **Date Received..:** 02/11/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**2.1**	**0.5**	**mg/L**	**MCAWW 353.2**	**02/15/10**	**0046379**
		Dilution Factor: 5				
Sulfate	**30.2**	**5.0**	**mg/L**	**MCAWW 300.0A**	**02/18/10**	**0049247**
		Dilution Factor: 5				
Total Alkalinity	**430 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**02/13/10**	**0044057**
		Dilution Factor: 1				
Total Organic Carbon	**24**	**1**	**mg/L**	**SW846 9060**	**02/16/10**	**0047024**
		Dilution Factor: 1				
Total Sulfide	ND G	5.0	mg/L	MCAWW 376.1	02/16/10	0047304
		Dilution Factor: 5				

NOTE(S):

RL Reporting Limit

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

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: LVP2R1AA		MB Lot-Sample #:	A0B150000-379	
	ND	0.1	mg/L	MCAWW 353.2	02/15/10	0046379
		Dilution Factor: 1				
Sulfate		Work Order #: LVT541AA		MB Lot-Sample #:	A0B180000-247	
	ND	1.0	mg/L	MCAWW 300.0A	02/17/10	0049247
		Dilution Factor: 1				
Sulfate		Work Order #: LVWP31AA		MB Lot-Sample #:	A0B190000-288	
	ND	1.0	mg/L	MCAWW 300.0A	02/18/10	0050288
		Dilution Factor: 1				
Total Alkalinity		Work Order #: LVM3R1AA		MB Lot-Sample #:	A0B130000-054	
	3.0 B	**5.0**	**mg/L**	**MCAWW 310.1**	**02/12/10**	**0044054**
		Dilution Factor: 1				
Total Alkalinity		Work Order #: LVM3X1AA		MB Lot-Sample #:	A0B130000-057	
	3.1 B	**5.0**	**mg/L**	**MCAWW 310.1**	**02/13/10**	**0044057**
		Dilution Factor: 1				
Total Organic Carbon		Work Order #: LVQ3T1AA		MB Lot-Sample #:	A0B160000-024	
	ND	1	mg/L	SW846 9060	02/16/10	0047024
		Dilution Factor: 1				
Total Sulfide		Work Order #: LVM151AA		MB Lot-Sample #:	A0B130000-026	
	ND	1.0	mg/L	MCAWW 376.1	02/12/10	0044026
		Dilution Factor: 1				
Total Sulfide		Work Order #: LVQQR1AA		MB Lot-Sample #:	A0B160000-304	
	ND	1.0	mg/L	MCAWW 376.1	02/16/10	0047304
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A0B110444 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#:LVT541AC-LCS/LVT541AD-LCSD LCS Lot-Sample#: A0B180000-247					
	96	(90 - 110)			MCAWW 300.0A	02/17/10	0049247
	97	(90 - 110)	0.62	(0-20)	MCAWW 300.0A	02/17/10	0049247
		Dilution Factor: 1					
Sulfate		WO#:LVWP31AC-LCS/LVWP31AD-LCSD LCS Lot-Sample#: A0B190000-288					
	96	(90 - 110)			MCAWW 300.0A	02/18/10	0050288
	96	(90 - 110)	0.20	(0-20)	MCAWW 300.0A	02/18/10	0050288
		Dilution Factor: 1					
Total Sulfide		WO#:LVM151AC-LCS/LVM151AD-LCSD LCS Lot-Sample#: A0B130000-026					
	91	(79 - 104)			MCAWW 376.1	02/12/10	0044026
	96	(79 - 104)	6.1	(0-20)	MCAWW 376.1	02/12/10	0044026
		Dilution Factor: 1					
Total Sulfide		WO#:LVQQR1AC-LCS/LVQQR1AD-LCSD LCS Lot-Sample#: A0B160000-304					
	100	(79 - 104)			MCAWW 376.1	02/16/10	0047304
	100	(79 - 104)	0.0	(0-20)	MCAWW 376.1	02/16/10	0047304
		Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A0B110444 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate			WO#:LVT541AC-LCS/LVT541AD-LCSD			LCS Lot-Sample#: A0B180000-247		
	50.0	48.0	mg/L	96		MCAWW 300.0A	02/17/10	0049247
	50.0	48.3	mg/L	97	0.62	MCAWW 300.0A	02/17/10	0049247
			Dilution Factor: 1					
Sulfate			WO#:LVWP31AC-LCS/LVWP31AD-LCSD			LCS Lot-Sample#: A0B190000-288		
	50.0	48.0	mg/L	96		MCAWW 300.0A	02/18/10	0050288
	50.0	47.9	mg/L	96	0.20	MCAWW 300.0A	02/18/10	0050288
			Dilution Factor: 1					
Total Sulfide			WO#:LVM151AC-LCS/LVM151AD-LCSD			LCS Lot-Sample#: A0B130000-026		
	17	16	mg/L	91		MCAWW 376.1	02/12/10	0044026
	17	17	mg/L	96	6.1	MCAWW 376.1	02/12/10	0044026
			Dilution Factor: 1					
Total Sulfide			WO#:LVQQR1AC-LCS/LVQQR1AD-LCSD			LCS Lot-Sample#: A0B160000-304		
	15	15	mg/L	100		MCAWW 376.1	02/16/10	0047304
	15	15	mg/L	100	0.0	MCAWW 376.1	02/16/10	0047304
			Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: LVP2R1AC	LCS Lot-Sample#: A0B150000-379		
	105	(79 - 117)	MCAWW 353.2	02/15/10	0046379
		Dilution Factor: 1			
Total Alkalinity		Work Order #: LVM3R1AC	LCS Lot-Sample#: A0B130000-054		
	110	(90 - 127)	MCAWW 310.1	02/12/10	0044054
		Dilution Factor: 1			
Total Alkalinity		Work Order #: LVM3X1AC	LCS Lot-Sample#: A0B130000-057		
	107	(90 - 127)	MCAWW 310.1	02/12/10	0044057
		Dilution Factor: 1			
Total Organic Carbon		Work Order #: LVQ3T1AC	LCS Lot-Sample#: A0B160000-024		
	99	(88 - 115)	SW846 9060	02/16/10	0047024
		Dilution Factor: 1			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			Work Order #: LVP2R1AC LCS Lot-Sample#: A0B150000-379				
	10	11	mg/L	105	MCAWW 353.2	02/15/10	0046379
			Dilution Factor: 1				
Total Alkalinity			Work Order #: LVM3R1AC LCS Lot-Sample#: A0B130000-054				
	35	38	mg/L	110	MCAWW 310.1	02/12/10	0044054
			Dilution Factor: 1				
Total Alkalinity			Work Order #: LVM3X1AC LCS Lot-Sample#: A0B130000-057				
	35	38	mg/L	107	MCAWW 310.1	02/12/10	0044057
			Dilution Factor: 1				
Total Organic Carbon			Work Order #: LVQ3T1AC LCS Lot-Sample#: A0B160000-024				
	69	69	mg/L	99	SW846 9060	02/16/10	0047024
			Dilution Factor: 1				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WATER
Date Sampled...: 02/10/10 14:35 **Date Received..:** 02/11/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity		WO#:	LVKHK1AK-MS/LVKHK1AL-MSD			MS Lot-Sample #: A0B110491-013	
	54	(10 - 160)			MCAWW 310.1	02/13/10	0044057
	53	(10 - 160)	0.45	(0-24)	MCAWW 310.1	02/13/10	0044057

Dilution Factor: 1

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WATER
Date Sampled...: 02/10/10 14:35 **Date Received..:** 02/11/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity			WO#: LVKHK1AK-MS/LVKHK1AL-MSD				MS Lot-Sample #: A0B110491-013		
	430	500	700	mg/L	54		MCAWW 310.1	02/13/10	0044057
	430	500	700	mg/L	53	0.45	MCAWW 310.1	02/13/10	0044057

Dilution Factor: 1

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WG
Date Sampled...: 02/09/10 11:11 **Date Received..:** 02/11/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		Work Order #...: LVJ341AJ		MS Lot-Sample #: A0B110444-006	
	155 N	(80 - 120)	MCAWW 300.0A	02/17/10	0049247

Dilution Factor: 1

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0B110444 **Matrix.....:** WG
Date Sampled...: 02/09/10 11:11 **Date Received..:** 02/11/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate			Work Order #...:		LVJ341AJ	MS Lot-Sample #: A0B110444-006		
		50.0	81.9 N	mg/L	155	MCAWW 300.0A	02/17/10	0049247
			Dilution Factor: 1					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

END OF REPORT

QUARTER 2

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 182602078.204.42114

HSSER

Lot #: A0D160531

John Dennison

Stantec Consulting Corporation
446 Eisenhower Lane North
Lombard, IL 60148

TESTAMERICA LABORATORIES, INC.

Alesia M. Danford

Approved for release.
Alesia M. Danford
Project Manager
4/30/2010 9:02 AM

Alesia M. Danford
Project Manager
alesia.danford@testamericainc.com

April 29, 2010

ACCREDITED IN ACCORDANCE WITH nelac

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A0D160531

The following report contains the analytical results for thirteen water samples and one quality control sample submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HSSER Site, project number 182602078.204.42114. The samples were received April 16, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Amy Rodebaugh and John Dennison on April 26, 2010, and Amy Rodebaugh on April 27, 2010. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

CASE NARRATIVE (continued)

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 3.8°C.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for HSSER-SMW21-041410 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 032609.doc

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0D160531

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-SMW04-041210 04/12/10 17:04 001				
1,1-Dichloroethylene	0.0010	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.014	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.024	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.0077	0.0010	mg/L	SW846 8260B
Vinyl chloride	0.0029	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0041	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0030	0.0010	mg/L	SW846 8260B
HSSER-MW07FGA-041310 04/13/10 09:50 002				
cis-1,2-Dichloroethylene	0.00047 J	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.0013	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.00040 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0024	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0018	0.0010	mg/L	SW846 8260B
HSSER-MW203-041310 04/13/10 11:05 003				
Tetrachloroethylene	0.013	0.0010	mg/L	SW846 8260B
HSSER-SMW02-041310 04/13/10 12:15 004				
cis-1,2-Dichloroethylene	0.0011	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.00074 J	0.0010	mg/L	SW846 8260B
HSSER-SMW01-041310 04/13/10 14:30 005				
Tetrachloroethylene	0.00046 J	0.0010	mg/L	SW846 8260B
HSSER-SMW08-041310 04/13/10 16:05 006				
1,1-Dichloroethylene	0.00080 J	0.0014	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.042	0.0014	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.0012 J	0.0014	mg/L	SW846 8260B
Tetrachloroethylene	0.042	0.0014	mg/L	SW846 8260B
Trichloroethylene	0.0057	0.0014	mg/L	SW846 8260B
1,1-Dichloroethane	0.0098	0.0014	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.020	0.0014	mg/L	SW846 8260B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0D160531

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-SMW19-041310 04/13/10 17:35 007				
cis-1,2-Dichloroethylene	0.0011	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.0016	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.015	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.00044 J	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.00058 J	0.0010	mg/L	SW846 8260B
HSSER-GMZ04-041410 04/14/10 09:05 008				
1,1-Dichloroethylene	0.0018	0.0014	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.050	0.0014	mg/L	SW846 8260B
Tetrachloroethylene	0.0050	0.0014	mg/L	SW846 8260B
Trichloroethylene	0.0022	0.0014	mg/L	SW846 8260B
Vinyl chloride	0.0037	0.0014	mg/L	SW846 8260B
1,1-Dichloroethane	0.022	0.0014	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.045	0.0014	mg/L	SW846 8260B
1,1,2-Trichloroethane	0.0045	0.0014	mg/L	SW846 8260B
Ethylbenzene	0.00057 J	0.0014	mg/L	SW846 8260B
HSSER-SMW21-041410 04/14/10 10:20 009				
1,1-Dichloroethylene	0.0054	0.0033	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.023	0.0033	mg/L	SW846 8260B
Tetrachloroethylene	0.0010 J	0.0033	mg/L	SW846 8260B
Trichloroethylene	0.0012 J	0.0033	mg/L	SW846 8260B
1,1-Dichloroethane	0.0049	0.0033	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.11	0.0033	mg/L	SW846 8260B
HSSER-SMW20-041410 04/14/10 11:25 010				
1,1-Dichloroethylene	0.00041 J	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.0096	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.00050 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0085	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0059	0.0010	mg/L	SW846 8260B
HSSER-GMZ03-041410 04/14/10 12:30 011				
cis-1,2-Dichloroethylene	0.20	0.0091	mg/L	SW846 8260B
1,1-Dichloroethane	0.28	0.0091	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.011	0.0091	mg/L	SW846 8260B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0D160531

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-GMZ02-041410 04/14/10 14:25 012				
cis-1,2-Dichloroethylene	0.073	0.0057	mg/L	SW846 8260B
1,1-Dichloroethane	0.17	0.0057	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0049 J	0.0057	mg/L	SW846 8260B
HSSER-DUP03-041410 04/14/10 013				
cis-1,2-Dichloroethylene	0.073	0.0057	mg/L	SW846 8260B
1,1-Dichloroethane	0.17	0.0057	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0057	0.0057	mg/L	SW846 8260B

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THE LEADER IN ENVIRONMENTAL TESTING

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0D160531

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SAMPLE SUMMARY

SAMPLE SUMMARY

A0D160531

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LX4FJ	001	HSSER-SMW04-041210	04/12/10	17:04
LX4GG	002	HSSER-MW07FGA-041310	04/13/10	09:50
LX4GH	003	HSSER-MW203-041310	04/13/10	11:05
LX4GJ	004	HSSER-SMW02-041310	04/13/10	12:15
LX4GM	005	HSSER-SMW01-041310	04/13/10	14:30
LX4GP	006	HSSER-SMW08-041310	04/13/10	16:05
LX4GR	007	HSSER-SMW19-041310	04/13/10	17:35
LX4GV	008	HSSER-GMZ04-041410	04/14/10	09:05
LX4G0	009	HSSER-SMW21-041410	04/14/10	10:20
LX4G4	010	HSSER-SMW20-041410	04/14/10	11:25
LX4HA	011	HSSER-GMZ03-041410	04/14/10	12:30
LX4HD	012	HSSER-GMZ02-041410	04/14/10	14:25
LX4HE	013	HSSER-DUP03-041410	04/14/10	
LX4HF	014	HSSER-TRIP01-041410	04/14/10	

NOTE(S):

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

16

TestAmerica Laboratory location: NORTH CANTON, OH

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact			
Company Name: STANTEC	Client Project Manager: AMY ROBERAUGH	Site Contact: BRIAN CAMPBELL	Lab Contact: ALESIA DANFORTH
Address: 446 EISENHOWER LN. N.	Telephone: 630.792.1680	Telephone: 630.824.7854	Telephone:
City/State/Zip: LOMBARD, IL 60148	Email: amy.roberaugh@stantec.com		
Phone: 630.792.1680		TAT if different from below STANDARD: ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day	
Project Name: HS SER	Method of Shipment/Carrier: COURIER		
Project Number: 182602078	Shipping/Tracking No:		
PO# 204.42114			

COC No: 1 of 2 COCs

Analyses: * VOC 8260B

Sample Identification	Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	* VOC 8260B	Sample Specific Notes / Special Instructions:
HSSER-SMW04-041210	4-12-10	1704		X						3					X	
HSSER-MW7FGA-041310	4-13-10	0950		X						3					X	
HSSER-MW203-041310	4-13-10	1105		X						3					X	
HSSER-SMW02-041310	4-13-10	1215		X						3					X	
HSSER-SMW01-041310	4-13-10	~~1415~~ 1430		X						3					X	
HSSER-SMW08-041310	4-13-10	1605		X						3					X	
HSSER-SMW19-041310	4-13-10	1735		X						3					X	
HSSER-GMZ04-041410	4-14-10	0905		X						3					X	
HSSER-SMW21-041410	4-14-10	1020		X						3					X	
HSSER-SMW20-041410	4-14-10	1125		X						3					X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☐ Disposal By Lab ☒ Archive For 1 Months

Special Instructions/QC Requirements & Comments:

* LIST OF 13 VOCs ; LEVEL 4 DATA

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Brian Campbell	Stantec	4/14/10 1692	Walt Shea	TA	4/14 16:30
Walt Shea	Test	4/15 12:15	Sandra Greeley	TA	04/15/10 1258
Sandra Greeley	TA	04/15 1258	Matthew L. Jerome	TEST AMERICA	16 APR 2010 09

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TAL-0018 (1006)

North Canton

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: NORTH CANTON, OH
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: STANTEC	Client Project Manager: AMY RODEBAUGH	Site Contact: BRIAN CAMPBELL	Lab Contact: ALESIA DANFORTH	COC No:
Address: 446 EISENHOWER LN N.	Telephone: 630.792.1680	Telephone: 630.824.7854	Telephone:	2 of 2 COCs
City/State/Zip: LOMBARD, IL 60148	Email: amy.rodebaugh@stantec.com			
Phone: 630.792.1680		TAT if different from below STANDARD ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		
Project Name: HS SER	Method of Shipment/Carrier: COURIER			
Project Number: 182602078	Shipping/Tracking No:			
PO# 204.42114				

Analyses

Sample Identification	Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	VOC 8260B *	Sample Specific Notes / Special Instructions:
HSSER-MS03-041410	4-14-10	1125		X						3					X	
HSSER-MSD03-041410	4-14-10	1125		X						3					X	
HSSER-GMZ03-041410	4-14-10	1230		X						3					X	
HSSER-GMZ02-041410	4-14-10	1425		X						3					X	
HSSER-DUP03-041410	4-14-10	—		X						3					X	
HSSER-TRIP01-041410	4-14-10	—		X						1					X	TRIP BLANK

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☐ Disposal By Lab ☒ Archive For 1 Months

Special Instructions/QC Requirements & Comments:

* LIST OF 13 VOCs ; LEVEL 4 DATA

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Brian Campbell	Stantec	4/14/10 1632	Walt Johnson	Test	4/14 16:30
Walt Johnson	Test	4/15	[signature]	TA	04/15 1257
[signature]	TA	4/15/10 1258	Received in Laboratory by: [signature]	TEST AMERICA	16 APR 2010 0975

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TAL-0018 (1008)

North Canton

17

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** A0D160531
North Canton Facility

Client STANTEC Project HS SER By: [signature] (Signature)
Cooler Received on 16 Apr 2010 Opened on 16 Apr 2010
FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____
TestAmerica Cooler # A344 Multiple Coolers ☐ Foam Box ☐ Client Cooler ☐ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☒ No ☐ Intact? Yes ☒ No ☐ NA ☐
   If YES, Quantity 2 Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☒ No ☐ NA ☐
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☐ None ☐ Other PLASTIC BAG
6. Cooler temperature upon receipt 3.8 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☒ Other ☐ _____
   COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☐ No ☐ NA ☒
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☒ No ☐ Were VOAs on the COC? Yes ☒ No ☐

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

_____

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 121709-*HNO_3; Sulfuric Acid Lot#* 121709-*H_2SO_4; Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-*$(CH_3COO)_2ZN/NaOH$.* What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW04-041210

GC/MS Volatiles

Lot-Sample #...: A0D160531-001 **Work Order #...:** LX4FJ1AA **Matrix.....:** WG
Date Sampled...: 04/12/10 17:04 **Date Received..:** 04/16/10
Prep Date.....: 04/23/10 **Analysis Date..:** 04/23/10
Prep Batch #...: 0116226
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0010**	**0.0010**	**mg/L**
cis-1,2-Dichloroethylene	**0.014**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.024**	**0.0010**	**mg/L**
Trichloroethylene	**0.0077**	**0.0010**	**mg/L**
Vinyl chloride	**0.0029**	**0.0010**	**mg/L**
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0041**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0030**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
1,2-Dichloroethane-d4	92	(61 - 128)
Toluene-d8	83	(76 - 110)
4-Bromofluorobenzene	81	(74 - 116)

Stantec Consulting Corporation

Client Sample ID: HSSER-MW07FGA-041310

GC/MS Volatiles

Lot-Sample #...: A0D160531-002 **Work Order #...:** LX4GG1AA **Matrix.....:** WG
Date Sampled...: 04/13/10 09:50 **Date Received..:** 04/16/10
Prep Date.....: 04/23/10 **Analysis Date..:** 04/23/10
Prep Batch #...: 0116226
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.00047 J**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.0013**	**0.0010**	**mg/L**
Trichloroethylene	**0.00040 J**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0024**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0018**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	84	(76 - 110)
4-Bromofluorobenzene	78	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-MW203-041310

GC/MS Volatiles

Lot-Sample #...: A0D160531-003 **Work Order #...:** LX4GH1AA **Matrix.....:** WG
Date Sampled...: 04/13/10 11:05 **Date Received..:** 04/16/10
Prep Date.....: 04/23/10 **Analysis Date..:** 04/23/10
Prep Batch #...: 0116226
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.013**	**0.0010**	**mg/L**
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	81	(76 - 110)
4-Bromofluorobenzene	80	(74 - 116)

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW02-041310

GC/MS Volatiles

Lot-Sample #...: A0D160531-004 **Work Order #...:** LX4GJ1AA **Matrix.....:** WG
Date Sampled...: 04/13/10 12:15 **Date Received..:** 04/16/10
Prep Date.....: 04/23/10 **Analysis Date..:** 04/23/10
Prep Batch #...: 0116226
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.0011**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00074 J**	**0.0010**	**mg/L**
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(73 - 122)
1,2-Dichloroethane-d4	92	(61 - 128)
Toluene-d8	84	(76 - 110)
4-Bromofluorobenzene	77	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW01-041310

GC/MS Volatiles

Lot-Sample #...: A0D160531-005 **Work Order #...:** LX4GM1AA **Matrix.....:** WG
Date Sampled...: 04/13/10 14:30 **Date Received..:** 04/16/10
Prep Date.....: 04/21/10 **Analysis Date..:** 04/21/10
Prep Batch #...: 0113238
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00046 J**	**0.0010**	**mg/L**
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	88	(76 - 110)
4-Bromofluorobenzene	74	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW08-041310

GC/MS Volatiles

Lot-Sample #...: A0D160531-006 **Work Order #...:** LX4GP1AA **Matrix.....:** WG
Date Sampled...: 04/13/10 16:05 **Date Received..:** 04/16/10
Prep Date.....: 04/21/10 **Analysis Date..:** 04/21/10
Prep Batch #...: 0113238
Dilution Factor: 1.43 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00080 J**	**0.0014**	**mg/L**
cis-1,2-Dichloroethylene	**0.042**	**0.0014**	**mg/L**
trans-1,2-Dichloroethylene	**0.0012 J**	**0.0014**	**mg/L**
Tetrachloroethylene	**0.042**	**0.0014**	**mg/L**
Trichloroethylene	**0.0057**	**0.0014**	**mg/L**
Vinyl chloride	ND	0.0014	mg/L
Methylene chloride	ND	0.0014	mg/L
1,1-Dichloroethane	**0.0098**	**0.0014**	**mg/L**
1,2-Dichloroethane	ND	0.0014	mg/L
1,1,1-Trichloroethane	**0.020**	**0.0014**	**mg/L**
1,1,2-Trichloroethane	ND	0.0014	mg/L
Toluene	ND	0.0014	mg/L
Ethylbenzene	ND	0.0014	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(73 - 122)
1,2-Dichloroethane-d4	93	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	76	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW19-041310

GC/MS Volatiles

Lot-Sample #...: A0D160531-007 **Work Order #...:** LX4GR1AA **Matrix.....:** WG
Date Sampled...: 04/13/10 17:35 **Date Received..:** 04/16/10
Prep Date.....: 04/23/10 **Analysis Date..:** 04/23/10
Prep Batch #...: 0116226
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.0011**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.0016**	**0.0010**	**mg/L**
Trichloroethylene	**0.015**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.00044 J**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.00058 J**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	88	(73 - 122)
1,2-Dichloroethane-d4	89	(61 - 128)
Toluene-d8	84	(76 - 110)
4-Bromofluorobenzene	78	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-GMZ04-041410

GC/MS Volatiles

Lot-Sample #...: A0D160531-008 **Work Order #...:** LX4GV1AA **Matrix.....:** WG
Date Sampled...: 04/14/10 09:05 **Date Received..:** 04/16/10
Prep Date.....: 04/21/10 **Analysis Date..:** 04/21/10
Prep Batch #...: 0113238
Dilution Factor: 1.43 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0018**	**0.0014**	**mg/L**
cis-1,2-Dichloroethylene	**0.050**	**0.0014**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0014	mg/L
Tetrachloroethylene	**0.0050**	**0.0014**	**mg/L**
Trichloroethylene	**0.0022**	**0.0014**	**mg/L**
Vinyl chloride	**0.0037**	**0.0014**	**mg/L**
Methylene chloride	ND	0.0014	mg/L
1,1-Dichloroethane	**0.022**	**0.0014**	**mg/L**
1,2-Dichloroethane	ND	0.0014	mg/L
1,1,1-Trichloroethane	**0.045**	**0.0014**	**mg/L**
1,1,2-Trichloroethane	**0.0045**	**0.0014**	**mg/L**
Toluene	ND	0.0014	mg/L
Ethylbenzene	**0.00057 J**	**0.0014**	**mg/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	89	(76 - 110)
4-Bromofluorobenzene	78	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW21-041410

GC/MS Volatiles

Lot-Sample #...: A0D160531-009 **Work Order #...:** LX4G01AA **Matrix.....:** WG
Date Sampled...: 04/14/10 10:20 **Date Received..:** 04/16/10
Prep Date.....: 04/23/10 **Analysis Date..:** 04/23/10
Prep Batch #...: 0116226
Dilution Factor: 3.33 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0054**	**0.0033**	**mg/L**
cis-1,2-Dichloroethylene	**0.023**	**0.0033**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0033	mg/L
Tetrachloroethylene	**0.0010 J**	**0.0033**	**mg/L**
Trichloroethylene	**0.0012 J**	**0.0033**	**mg/L**
Vinyl chloride	ND	0.0033	mg/L
Methylene chloride	ND	0.0033	mg/L
1,1-Dichloroethane	**0.0049**	**0.0033**	**mg/L**
1,2-Dichloroethane	ND	0.0033	mg/L
1,1,1-Trichloroethane	**0.11**	**0.0033**	**mg/L**
1,1,2-Trichloroethane	ND	0.0033	mg/L
Toluene	ND	0.0033	mg/L
Ethylbenzene	ND	0.0033	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
1,2-Dichloroethane-d4	92	(61 - 128)
Toluene-d8	89	(76 - 110)
4-Bromofluorobenzene	78	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-SMW20-041410

GC/MS Volatiles

Lot-Sample #...: A0D160531-010 **Work Order #...:** LX4G41AA **Matrix.....:** WG
Date Sampled...: 04/14/10 11:25 **Date Received..:** 04/16/10
Prep Date.....: 04/21/10 **Analysis Date..:** 04/21/10
Prep Batch #...: 0113238
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00041 J**	**0.0010**	**mg/L**
cis-1,2-Dichloroethylene	**0.0096**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00050 J**	**0.0010**	**mg/L**
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0085**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0059**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(73 - 122)
1,2-Dichloroethane-d4	89	(61 - 128)
Toluene-d8	89	(76 - 110)
4-Bromofluorobenzene	77	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-GMZ03-041410

GC/MS Volatiles

Lot-Sample #...: A0D160531-011 **Work Order #...:** LX4HA1AA **Matrix.....:** WG
Date Sampled...: 04/14/10 12:30 **Date Received..:** 04/16/10
Prep Date.....: 04/21/10 **Analysis Date..:** 04/21/10
Prep Batch #...: 0113238
Dilution Factor: 9.09 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0091	mg/L
cis-1,2-Dichloroethylene	**0.20**	**0.0091**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0091	mg/L
Tetrachloroethylene	ND	0.0091	mg/L
Trichloroethylene	ND	0.0091	mg/L
Vinyl chloride	ND	0.0091	mg/L
Methylene chloride	ND	0.0091	mg/L
1,1-Dichloroethane	**0.28**	**0.0091**	**mg/L**
1,2-Dichloroethane	ND	0.0091	mg/L
1,1,1-Trichloroethane	**0.011**	**0.0091**	**mg/L**
1,1,2-Trichloroethane	ND	0.0091	mg/L
Toluene	ND	0.0091	mg/L
Ethylbenzene	ND	0.0091	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	77	(74 - 116)

Stantec Consulting Corporation

Client Sample ID: HSSER-GMZ02-041410

GC/MS Volatiles

Lot-Sample #...: A0D160531-012 **Work Order #...:** LX4HD1AA **Matrix.....:** WG
Date Sampled...: 04/14/10 14:25 **Date Received..:** 04/16/10
Prep Date.....: 04/21/10 **Analysis Date..:** 04/21/10
Prep Batch #...: 0113238
Dilution Factor: 5.71 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0057	mg/L
cis-1,2-Dichloroethylene	**0.073**	**0.0057**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0057	mg/L
Tetrachloroethylene	ND	0.0057	mg/L
Trichloroethylene	ND	0.0057	mg/L
Vinyl chloride	ND	0.0057	mg/L
Methylene chloride	ND	0.0057	mg/L
1,1-Dichloroethane	**0.17**	**0.0057**	**mg/L**
1,2-Dichloroethane	ND	0.0057	mg/L
1,1,1-Trichloroethane	**0.0049 J**	**0.0057**	**mg/L**
1,1,2-Trichloroethane	ND	0.0057	mg/L
Toluene	ND	0.0057	mg/L
Ethylbenzene	ND	0.0057	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	74	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-DUP03-041410

GC/MS Volatiles

Lot-Sample #...: A0D160531-013 **Work Order #...:** LX4HE1AA **Matrix.....:** WG
Date Sampled...: 04/14/10 **Date Received..:** 04/16/10
Prep Date.....: 04/23/10 **Analysis Date..:** 04/23/10
Prep Batch #...: 0116226
Dilution Factor: 5.71 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0057	mg/L
cis-1,2-Dichloroethylene	**0.073**	**0.0057**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0057	mg/L
Tetrachloroethylene	ND	0.0057	mg/L
Trichloroethylene	ND	0.0057	mg/L
Vinyl chloride	ND	0.0057	mg/L
Methylene chloride	ND	0.0057	mg/L
1,1-Dichloroethane	**0.17**	**0.0057**	**mg/L**
1,2-Dichloroethane	ND	0.0057	mg/L
1,1,1-Trichloroethane	**0.0057**	**0.0057**	**mg/L**
1,1,2-Trichloroethane	ND	0.0057	mg/L
Toluene	ND	0.0057	mg/L
Ethylbenzene	ND	0.0057	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	93	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	76	(74 - 116)

Stantec Consulting Corporation

Client Sample ID: HSSER-TRIP01-041410

GC/MS Volatiles

Lot-Sample #...: A0D160531-014 **Work Order #...:** LX4HF1AA **Matrix.....:** WQ
Date Sampled...: 04/14/10 **Date Received..:** 04/16/10
Prep Date.....: 04/21/10 **Analysis Date..:** 04/21/10
Prep Batch #...: 0113238
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
Toluene-d8	88	(76 - 110)
4-Bromofluorobenzene	78	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0D160531
MB Lot-Sample #: A0D230000-238
Analysis Date..: 04/21/10
Dilution Factor: 1

Work Order #...: L0EXT1AA
Prep Date.....: 04/21/10
Prep Batch #...: 0113238
Initial Wgt/Vol: 5 mL

Matrix.....: WATER
Final Wgt/Vol..: 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(73 - 122)
1,2-Dichloroethane-d4	89	(61 - 128)
Toluene-d8	91	(76 - 110)
4-Bromofluorobenzene	79	(74 - 116)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0D160531 **Work Order #...:** L0H8N1AA **Matrix.....:** WATER
MB Lot-Sample #: A0D260000-226

Prep Date.....: 04/23/10 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 04/23/10 **Prep Batch #...:** 0116226
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(73 - 122)
1,2-Dichloroethane-d4	92	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	81	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0D160531 **Work Order #...:** L0EXT1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0D230000-238 L0EXT1AD-LCSD
Prep Date.....: 04/21/10 **Analysis Date..:** 04/21/10
Prep Batch #...: 0113238
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**113**	**(63 - 130)**			**SW846 8260B**
	100	**(63 - 130)**	**12**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**100**	**(75 - 122)**			**SW846 8260B**
	100	**(75 - 122)**	**0.18**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	93	(88 - 113)			SW846 8260B
	103	(88 - 113)	9.4	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	103	(85 - 113)			SW846 8260B
	96	(85 - 113)	7.6	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	109	(80 - 120)			SW846 8260B
	98	(80 - 120)	10	(0-30)	SW846 8260B
Vinyl chloride	105	(61 - 120)			SW846 8260B
	96	(61 - 120)	9.7	(0-30)	SW846 8260B
Methylene chloride	103	(78 - 118)			SW846 8260B
	90	(78 - 118)	13	(0-30)	SW846 8260B
1,1-Dichloroethane	104	(86 - 123)			SW846 8260B
	97	(86 - 123)	6.9	(0-30)	SW846 8260B
1,2-Dichloroethane	101	(79 - 136)			SW846 8260B
	98	(79 - 136)	3.2	(0-30)	SW846 8260B
1,1,1-Trichloroethane	102	(78 - 140)			SW846 8260B
	94	(78 - 140)	8.3	(0-30)	SW846 8260B
1,1,2-Trichloroethane	95	(83 - 122)			SW846 8260B
	103	(83 - 122)	8.0	(0-30)	SW846 8260B
Toluene	**101**	**(74 - 119)**			**SW846 8260B**
	104	**(74 - 119)**	**3.0**	**(0-20)**	**SW846 8260B**
Ethylbenzene	93	(86 - 116)			SW846 8260B
	93	(86 - 116)	0.040	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(73 - 122)
	79	(73 - 122)
1,2-Dichloroethane-d4	93	(61 - 128)
	84	(61 - 128)
Toluene-d8	91	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	100	(74 - 116)
	98	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0D160531 **Work Order #...:** L0EXT1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0D230000-238 L0EXT1AD-LCSD
Prep Date.....: 04/21/10 **Analysis Date..:** 04/21/10
Prep Batch #...: 0113238
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.011**	**mg/L**	**113**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**100**	**12**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.010**	**mg/L**	**100**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**100**	**0.18**	**SW846 8260B**
Tetrachloroethylene	0.010	0.0093	mg/L	93		SW846 8260B
	0.010	0.010	mg/L	103	9.4	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.0096	mg/L	96	7.6	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.011	mg/L	109		SW846 8260B
	0.010	0.0098	mg/L	98	10	SW846 8260B
Vinyl chloride	0.010	0.011	mg/L	105		SW846 8260B
	0.010	0.0096	mg/L	96	9.7	SW846 8260B
Methylene chloride	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.0090	mg/L	90	13	SW846 8260B
1,1-Dichloroethane	0.010	0.010	mg/L	104		SW846 8260B
	0.010	0.0097	mg/L	97	6.9	SW846 8260B
1,2-Dichloroethane	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.0098	mg/L	98	3.2	SW846 8260B
1,1,1-Trichloroethane	0.010	0.010	mg/L	102		SW846 8260B
	0.010	0.0094	mg/L	94	8.3	SW846 8260B
1,1,2-Trichloroethane	0.010	0.0095	mg/L	95		SW846 8260B
	0.010	0.010	mg/L	103	8.0	SW846 8260B
Toluene	**0.010**	**0.010**	**mg/L**	**101**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**104**	**3.0**	**SW846 8260B**
Ethylbenzene	0.010	0.0093	mg/L	93		SW846 8260B
	0.010	0.0093	mg/L	93	0.040	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(73 - 122)
	79	(73 - 122)
1,2-Dichloroethane-d4	93	(61 - 128)
	84	(61 - 128)
Toluene-d8	91	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	100	(74 - 116)
	98	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0D160531 **Work Order #...:** L0H8N1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0D260000-226 L0H8N1AD-LCSD
Prep Date.....: 04/23/10 **Analysis Date..:** 04/23/10
Prep Batch #...: 0116226
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**98**	**(63 - 130)**			**SW846 8260B**
	106	**(63 - 130)**	**7.6**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**100**	**(75 - 122)**			**SW846 8260B**
	100	**(75 - 122)**	**0.16**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	96	(88 - 113)			SW846 8260B
	95	(88 - 113)	1.8	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	92	(85 - 113)			SW846 8260B
	95	(85 - 113)	2.4	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	93	(80 - 120)			SW846 8260B
	99	(80 - 120)	5.9	(0-30)	SW846 8260B
Vinyl chloride	77	(61 - 120)			SW846 8260B
	80	(61 - 120)	3.5	(0-30)	SW846 8260B
Methylene chloride	88	(78 - 118)			SW846 8260B
	92	(78 - 118)	5.3	(0-30)	SW846 8260B
1,1-Dichloroethane	90	(86 - 123)			SW846 8260B
	94	(86 - 123)	4.5	(0-30)	SW846 8260B
1,2-Dichloroethane	98	(79 - 136)			SW846 8260B
	101	(79 - 136)	2.1	(0-30)	SW846 8260B
1,1,1-Trichloroethane	100	(78 - 140)			SW846 8260B
	105	(78 - 140)	4.8	(0-30)	SW846 8260B
1,1,2-Trichloroethane	100	(83 - 122)			SW846 8260B
	98	(83 - 122)	1.4	(0-30)	SW846 8260B
Toluene	**100**	**(74 - 119)**			**SW846 8260B**
	101	**(74 - 119)**	**0.75**	**(0-20)**	**SW846 8260B**
Ethylbenzene	92	(86 - 116)			SW846 8260B
	95	(86 - 116)	2.9	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	83	(73 - 122)
	82	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	90	(61 - 128)
Toluene-d8	91	(76 - 110)
	89	(76 - 110)
4-Bromofluorobenzene	105	(74 - 116)
	104	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0D160531 **Work Order #...:** L0H8N1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0D260000-226 L0H8N1AD-LCSD
Prep Date.....: 04/23/10 **Analysis Date..:** 04/23/10
Prep Batch #...: 0116226
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.0098**	**mg/L**	**98**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**106**	**7.6**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.010**	**mg/L**	**100**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**100**	**0.16**	**SW846 8260B**
Tetrachloroethylene	0.010	0.0096	mg/L	96		SW846 8260B
	0.010	0.0095	mg/L	95	1.8	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.0092	mg/L	92		SW846 8260B
	0.010	0.0095	mg/L	95	2.4	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.0093	mg/L	93		SW846 8260B
	0.010	0.0099	mg/L	99	5.9	SW846 8260B
Vinyl chloride	0.010	0.0077	mg/L	77		SW846 8260B
	0.010	0.0080	mg/L	80	3.5	SW846 8260B
Methylene chloride	0.010	0.0088	mg/L	88		SW846 8260B
	0.010	0.0092	mg/L	92	5.3	SW846 8260B
1,1-Dichloroethane	0.010	0.0090	mg/L	90		SW846 8260B
	0.010	0.0094	mg/L	94	4.5	SW846 8260B
1,2-Dichloroethane	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.010	mg/L	101	2.1	SW846 8260B
1,1,1-Trichloroethane	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	105	4.8	SW846 8260B
1,1,2-Trichloroethane	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.0098	mg/L	98	1.4	SW846 8260B
Toluene	**0.010**	**0.010**	**mg/L**	**100**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**101**	**0.75**	**SW846 8260B**
Ethylbenzene	0.010	0.0092	mg/L	92		SW846 8260B
	0.010	0.0095	mg/L	95	2.9	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	83	(73 - 122)
	82	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	90	(61 - 128)
Toluene-d8	91	(76 - 110)
	89	(76 - 110)
4-Bromofluorobenzene	105	(74 - 116)
	104	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0D160531 **Work Order #...:** LX4G41AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0D160531-010 LX4G41AD-MSD
Date Sampled...: 04/14/10 11:25 **Date Received..:** 04/16/10
Prep Date.....: 04/21/10 **Analysis Date..:** 04/21/10
Prep Batch #...: 0113238
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**115**	**(62 - 130)**			**SW846 8260B**
	112	**(62 - 130)**	**2.6**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**99**	**(62 - 130)**			**SW846 8260B**
	101	**(62 - 130)**	**1.6**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	103	(85 - 121)			SW846 8260B
	99	(85 - 121)	3.9	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	92	(87 - 114)			SW846 8260B
	90	(87 - 114)	1.1	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	105	(85 - 116)			SW846 8260B
	104	(85 - 116)	1.1	(0-30)	SW846 8260B
Vinyl chloride	111	(88 - 126)			SW846 8260B
	103	(88 - 126)	6.8	(0-30)	SW846 8260B
Methylene chloride	101	(82 - 115)			SW846 8260B
	98	(82 - 115)	3.4	(0-30)	SW846 8260B
1,1-Dichloroethane	94	(88 - 127)			SW846 8260B
	95	(88 - 127)	0.15	(0-30)	SW846 8260B
1,2-Dichloroethane	99	(71 - 160)			SW846 8260B
	96	(71 - 160)	2.8	(0-30)	SW846 8260B
1,1,1-Trichloroethane	110	(71 - 162)			SW846 8260B
	107	(71 - 162)	1.8	(0-30)	SW846 8260B
1,1,2-Trichloroethane	95	(86 - 129)			SW846 8260B
	96	(86 - 129)	1.1	(0-30)	SW846 8260B
Toluene	**99**	**(70 - 119)**			**SW846 8260B**
	99	**(70 - 119)**	**0.13**	**(0-20)**	**SW846 8260B**
Ethylbenzene	91	(86 - 132)			SW846 8260B
	89	(86 - 132)	2.0	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(73 - 122)
	91	(73 - 122)
1,2-Dichloroethane-d4	98	(61 - 128)
	99	(61 - 128)
Toluene-d8	96	(76 - 110)
	96	(76 - 110)
4-Bromofluorobenzene	99	(74 - 116)
	100	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0D160531 **Work Order #...:** LX4G41AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0D160531-010 LX4G41AD-MSD
Date Sampled...: 04/14/10 11:25 **Date Received..:** 04/16/10
Prep Date.....: 04/21/10 **Analysis Date..:** 04/21/10
Prep Batch #...: 0113238
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethylene	**0.00041**	**0.010**	**0.012**	**mg/L**	**115**		**SW846 8260B**
	0.00041	**0.010**	**0.012**	**mg/L**	**112**	**2.6**	**SW846 8260B**
Trichloroethylene	**ND**	**0.010**	**0.0099**	**mg/L**	**99**		**SW846 8260B**
	ND	**0.010**	**0.010**	**mg/L**	**101**	**1.6**	**SW846 8260B**
Tetrachloroethylene	0.00050	0.010	0.011	mg/L	103		SW846 8260B
	0.00050	0.010	0.010	mg/L	99	3.9	SW846 8260B
cis-1,2-Dichloroethylene	0.0096	0.010	0.019	mg/L	92		SW846 8260B
	0.0096	0.010	0.019	mg/L	90	1.1	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.010	0.011	mg/L	105		SW846 8260B
	ND	0.010	0.010	mg/L	104	1.1	SW846 8260B
Vinyl chloride	ND	0.010	0.011	mg/L	111		SW846 8260B
	ND	0.010	0.010	mg/L	103	6.8	SW846 8260B
Methylene chloride	ND	0.010	0.010	mg/L	101		SW846 8260B
	ND	0.010	0.0098	mg/L	98	3.4	SW846 8260B
1,1-Dichloroethane	0.0085	0.010	0.018	mg/L	94		SW846 8260B
	0.0085	0.010	0.018	mg/L	95	0.15	SW846 8260B
1,2-Dichloroethane	ND	0.010	0.0099	mg/L	99		SW846 8260B
	ND	0.010	0.0096	mg/L	96	2.8	SW846 8260B
1,1,1-Trichloroethane	0.0059	0.010	0.017	mg/L	110		SW846 8260B
	0.0059	0.010	0.017	mg/L	107	1.8	SW846 8260B
1,1,2-Trichloroethane	ND	0.010	0.0095	mg/L	95		SW846 8260B
	ND	0.010	0.0096	mg/L	96	1.1	SW846 8260B
Toluene	**ND**	**0.010**	**0.0099**	**mg/L**	**99**		**SW846 8260B**
	ND	**0.010**	**0.0099**	**mg/L**	**99**	**0.13**	**SW846 8260B**
Ethylbenzene	ND	0.010	0.0091	mg/L	91		SW846 8260B
	ND	0.010	0.0089	mg/L	89	2.0	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(73 - 122)
	91	(73 - 122)
1,2-Dichloroethane-d4	98	(61 - 128)
	99	(61 - 128)
Toluene-d8	96	(76 - 110)
	96	(76 - 110)
4-Bromofluorobenzene	99	(74 - 116)
	100	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0D160531 **Work Order #...:** LX4G01AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0D160531-009 LX4G01AD-MSD
Date Sampled...: 04/14/10 10:20 **Date Received..:** 04/16/10
Prep Date.....: 04/23/10 **Analysis Date..:** 04/23/10
Prep Batch #...: 0116226
Dilution Factor: 3.33 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**109**	**(62 - 130)**			**SW846 8260B**
	99	**(62 - 130)**	**8.3**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**95**	**(62 - 130)**			**SW846 8260B**
	103	**(62 - 130)**	**7.7**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	92	(85 - 121)			SW846 8260B
	97	(85 - 121)	4.7	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	90	(87 - 114)			SW846 8260B
	95	(87 - 114)	2.9	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	95	(85 - 116)			SW846 8260B
	99	(85 - 116)	4.2	(0-30)	SW846 8260B
Vinyl chloride	86 a	(88 - 126)			SW846 8260B
	91	(88 - 126)	5.8	(0-30)	SW846 8260B
Methylene chloride	90	(82 - 115)			SW846 8260B
	95	(82 - 115)	5.0	(0-30)	SW846 8260B
1,1-Dichloroethane	88	(88 - 127)			SW846 8260B
	94	(88 - 127)	5.2	(0-30)	SW846 8260B
1,2-Dichloroethane	102	(71 - 160)			SW846 8260B
	104	(71 - 160)	2.4	(0-30)	SW846 8260B
1,1,1-Trichloroethane	50 a	(71 - 162)			SW846 8260B
	72	(71 - 162)	6.0	(0-30)	SW846 8260B
1,1,2-Trichloroethane	97	(86 - 129)			SW846 8260B
	100	(86 - 129)	2.2	(0-30)	SW846 8260B
Toluene	**96**	**(70 - 119)**			**SW846 8260B**
	103	**(70 - 119)**	**6.6**	**(0-20)**	**SW846 8260B**
Ethylbenzene	88	(86 - 132)			SW846 8260B
	93	(86 - 132)	5.7	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(73 - 122)
	84	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
	90	(61 - 128)
Toluene-d8	90	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	106	(74 - 116)
	106	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0D160531 **Work Order #...:** LX4G01AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0D160531-009 LX4G01AD-MSD
Date Sampled...: 04/14/10 10:20 **Date Received..:** 04/16/10
Prep Date.....: 04/23/10 **Analysis Date..:** 04/23/10
Prep Batch #...: 0116226
Dilution Factor: 3.33 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethylene	**0.0054**	**0.033**	**0.042**	**mg/L**	**109**		**SW846 8260B**
	0.0054	**0.033**	**0.039**	**mg/L**	**99**	**8.3**	**SW846 8260B**
Trichloroethylene	**0.0012**	**0.033**	**0.033**	**mg/L**	**95**		**SW846 8260B**
	0.0012	**0.033**	**0.035**	**mg/L**	**103**	**7.7**	**SW846 8260B**
Tetrachloroethylene	0.0010	0.033	0.032	mg/L	92		SW846 8260B
	0.0010	0.033	0.033	mg/L	97	4.7	SW846 8260B
cis-1,2-Dichloroethylene	0.023	0.033	0.053	mg/L	90		SW846 8260B
	0.023	0.033	0.055	mg/L	95	2.9	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.033	0.032	mg/L	95		SW846 8260B
	ND	0.033	0.033	mg/L	99	4.2	SW846 8260B
Vinyl chloride	ND	0.033	0.029	mg/L	86 a		SW846 8260B
	ND	0.033	0.030	mg/L	91	5.8	SW846 8260B
Methylene chloride	ND	0.033	0.031	mg/L	90		SW846 8260B
	ND	0.033	0.033	mg/L	95	5.0	SW846 8260B
1,1-Dichloroethane	0.0049	0.033	0.034	mg/L	88		SW846 8260B
	0.0049	0.033	0.036	mg/L	94	5.2	SW846 8260B
1,2-Dichloroethane	ND	0.033	0.034	mg/L	102		SW846 8260B
	ND	0.033	0.035	mg/L	104	2.4	SW846 8260B
1,1,1-Trichloroethane	0.11	0.033	0.12	mg/L	50 a		SW846 8260B
	0.11	0.033	0.13	mg/L	72	6.0	SW846 8260B
1,1,2-Trichloroethane	ND	0.033	0.032	mg/L	97		SW846 8260B
	ND	0.033	0.033	mg/L	100	2.2	SW846 8260B
Toluene	**ND**	**0.033**	**0.032**	**mg/L**	**96**		**SW846 8260B**
	ND	**0.033**	**0.034**	**mg/L**	**103**	**6.6**	**SW846 8260B**
Ethylbenzene	ND	0.033	0.029	mg/L	88		SW846 8260B
	ND	0.033	0.031	mg/L	93	5.7	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(73 - 122)
	84	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
	90	(61 - 128)
Toluene-d8	90	(76 - 110)
	92	(76 - 110)
4-Bromofluorobenzene	106	(74 - 116)
	106	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

END OF REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 182602078.204.421114

HS SER

Lot #: A0D170438

John Dennison

Stantec Consulting Corporation
446 Eisenhower Lane North
Lombard, IL 60148

TESTAMERICA LABORATORIES, INC.

Alesia M. Danford

Approved for release.
Alesia M. Danford
Project Manager
4/30/2010 9:01 AM

Alesia M. Danford
Project Manager
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April 29, 2010

ACCREDITED IN ACCORDANCE WITH nelac

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A0D170438

The following report contains the analytical results for four water samples and one quality control sample submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HSSER Site, project number 182602078.204.421114. The samples were received April 17, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Amy Rodebaugh and John Dennison on April 28, 2010. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 1.5 and 1.7°C.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for batch(es) 0117309 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 032609.doc

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0D170438

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-ASDM01-041410 04/14/10 16:05 001				
1,1-Dichloroethylene	0.0022 J	0.0033	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.023	0.0033	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00070 J	0.0033	mg/L	SW846 8260B
Tetrachloroethylene	0.098	0.0033	mg/L	SW846 8260B
Trichloroethylene	0.019	0.0033	mg/L	SW846 8260B
1,1-Dichloroethane	0.031	0.0033	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.079	0.0033	mg/L	SW846 8260B
HSSER-ASDM02-041410 04/14/10 17:30 002				
1,1-Dichloroethylene	0.00094 J	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.024	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00057 J	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.024	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.0054	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.011	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.017	0.0010	mg/L	SW846 8260B
HSSER-ASDM03-041510 04/15/10 09:40 003				
1,1-Dichloroethylene	0.0012 J	0.0014	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.017	0.0014	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00039 J	0.0014	mg/L	SW846 8260B
Tetrachloroethylene	0.046	0.0014	mg/L	SW846 8260B
Trichloroethylene	0.011	0.0014	mg/L	SW846 8260B
1,1-Dichloroethane	0.017	0.0014	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.038	0.0014	mg/L	SW846 8260B
HSSER-ASDM04-041510 04/15/10 10:40 004				
1,1-Dichloroethylene	0.0014	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.039	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00058 J	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.025	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.0062	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.031	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.039	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	0.00031 J	0.0010	mg/L	SW846 8260B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0D170438

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-TRIP02-041610 04/16/10 005				
Methylene chloride	0.00035 J	0.0010	mg/L	SW846 8260B

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METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0D170438

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

SAMPLE SUMMARY

SAMPLE SUMMARY

A0D170438

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LX5JN	001	HSSER-ASDM01-041410	04/14/10	16:05
LX5J0	002	HSSER-ASDM02-041410	04/14/10	17:30
LX5J1	003	HSSER-ASDM03-041510	04/15/10	09:40
LX5J2	004	HSSER-ASDM04-041510	04/15/10	10:40
LX5J3	005	HSSER-TRIP02-041610	04/16/10	

NOTE(S):

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

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SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

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15

TestAmerica Laboratory location: NORTH CANTON, OH
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact			
Company Name: STANTEC	Client Project Manager: AMY RODEBAUGH	Site Contact: BRIAN CAMPBELL	Lab Contact: ALESIA DANFORTH
COC No:			
Address: 446 EISENHOWER LN. N.	Telephone: 630.792.1680	Telephone: 630.824.7854	Telephone: 330.966.9783
1 of 1 COCs			
City/State/Zip: LOMBARD, IL 60148	Email: amy.rodebaugh@stantec.com		
Phone: 630.792.1680		TAT if different from below STANDARD ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day	
Project Name: HS SER	Method of Shipment/Carrier: FED-EX		
Project Number: 182602078	Shipping/Tracking No: 8696 0681 9179		
PO# 204.42114			

Analyses: VOC 8260B

Sample Identification	Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	VOC 8260B	Sample Specific Notes / Special Instructions:
HSSER-ASDM01-041410	4-14-10	1605		X						3					X	
HSSER-ASDM02-041410	4-14-10	1730		X						3					X	
HSSER-ASDM03-041510	4-15-10	0940		X						3					X	
HSSER-ASDM04-041510	4-15-10	1040		X						3					X	
HSSER-TRIP02-041610	4-16-10	—		X						1					X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☐ Disposal By Lab ☒ Archive For 1 Months

Special Instructions/QC Requirements & Comments:

* LIST OF 13 VOCs ; LEVEL 4 DATA

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Brian Campbell	Stantec	4/16/10 1715			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
					4/17/10 9:30am

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TAL-0018 (1008)

North Canton

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** 40D170438
North Canton Facility

Client STANTEC Project HSSFR By: [signature] (Signature)
Cooler Received on 4-17-10 Opened on 4-17-10
FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other ____
TestAmerica Cooler # ____ Multiple Coolers ☒ Foam Box ☐ Client Cooler ☐ Other ____

1. Were custody seals on the outside of the cooler(s)? Yes ☒ No ☐ Intact? Yes ☒ No ☐ NA ☐
   If YES, Quantity 2 Quantity Unsalvageable ____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☒ No ☐ NA ☐
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions? ____
2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☒ None ☐ Other ____
6. Cooler temperature upon receipt ____ °C See back of form for multiple coolers/temps ☒
   METHOD: IR ☒ Other ☐ ____
   COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☐ No ☐ NA ☒
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☒ No ☐ Were VOAs on the COC? Yes ☒ No ☐

Contacted PM ____ Date ____ by ____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning ____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

Sample(s) ____ were received after the recommended holding time had expired.
Sample(s) ____ were received in a broken container.
Sample(s) ____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) ____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 121709-HNO_3; *Sulfuric Acid Lot#* 121709-H_2SO_4; *Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-$(CH_3COO)_2ZN/NaOH$. What time was preservative added to sample(s)? ____

Client ID	pH	Date	Initials

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant
A403	1.5	IR	Ice
A364	1.7	↓	↓

Discrepancies Cont'd:

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM01-041410

GC/MS Volatiles

Lot-Sample #...: A0D170438-001 **Work Order #...:** LX5JN1AA **Matrix.....:** WG
Date Sampled...: 04/14/10 16:05 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 3.33 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0022 J**	**0.0033**	**mg/L**
cis-1,2-Dichloroethylene	**0.023**	**0.0033**	**mg/L**
trans-1,2-Dichloroethylene	**0.00070 J**	**0.0033**	**mg/L**
Tetrachloroethylene	**0.098**	**0.0033**	**mg/L**
Trichloroethylene	**0.019**	**0.0033**	**mg/L**
Vinyl chloride	ND	0.0033	mg/L
Methylene chloride	ND	0.0033	mg/L
1,1-Dichloroethane	**0.031**	**0.0033**	**mg/L**
1,2-Dichloroethane	ND	0.0033	mg/L
1,1,1-Trichloroethane	**0.079**	**0.0033**	**mg/L**
1,1,2-Trichloroethane	ND	0.0033	mg/L
Toluene	ND	0.0033	mg/L
Ethylbenzene	ND	0.0033	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	82	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
Toluene-d8	81	(76 - 110)
4-Bromofluorobenzene	81	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM02-041410

GC/MS Volatiles

Lot-Sample #...: A0D170438-002 **Work Order #...:** LX5J01AA **Matrix.....:** WG
Date Sampled...: 04/14/10 17:30 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00094 J**	**0.0010**	**mg/L**
cis-1,2-Dichloroethylene	**0.024**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	**0.00057 J**	**0.0010**	**mg/L**
Tetrachloroethylene	**0.024**	**0.0010**	**mg/L**
Trichloroethylene	**0.0054**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.011**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.017**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	81	(73 - 122)
1,2-Dichloroethane-d4	81	(61 - 128)
Toluene-d8	85	(76 - 110)
4-Bromofluorobenzene	76	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM03-041510

GC/MS Volatiles

Lot-Sample #...: A0D170438-003 **Work Order #...:** LX5J11AA **Matrix.....:** WG
Date Sampled...: 04/15/10 09:40 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 1.43 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0012 J**	**0.0014**	**mg/L**
cis-1,2-Dichloroethylene	**0.017**	**0.0014**	**mg/L**
trans-1,2-Dichloroethylene	**0.00039 J**	**0.0014**	**mg/L**
Tetrachloroethylene	**0.046**	**0.0014**	**mg/L**
Trichloroethylene	**0.011**	**0.0014**	**mg/L**
Vinyl chloride	ND	0.0014	mg/L
Methylene chloride	ND	0.0014	mg/L
1,1-Dichloroethane	**0.017**	**0.0014**	**mg/L**
1,2-Dichloroethane	ND	0.0014	mg/L
1,1,1-Trichloroethane	**0.038**	**0.0014**	**mg/L**
1,1,2-Trichloroethane	ND	0.0014	mg/L
Toluene	ND	0.0014	mg/L
Ethylbenzene	ND	0.0014	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	79	(73 - 122)
1,2-Dichloroethane-d4	79	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	80	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM04-041510

GC/MS Volatiles

Lot-Sample #...: A0D170438-004 **Work Order #...:** LX5J21AA **Matrix.....:** WG
Date Sampled...: 04/15/10 10:40 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0014**	**0.0010**	**mg/L**
cis-1,2-Dichloroethylene	**0.039**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	**0.00058 J**	**0.0010**	**mg/L**
Tetrachloroethylene	**0.025**	**0.0010**	**mg/L**
Trichloroethylene	**0.0062**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.031**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.039**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	**0.00031 J**	**0.0010**	**mg/L**
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	81	(73 - 122)
1,2-Dichloroethane-d4	81	(61 - 128)
Toluene-d8	88	(76 - 110)
4-Bromofluorobenzene	83	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-TRIP02-041610

GC/MS Volatiles

Lot-Sample #...: A0D170438-005 **Work Order #...:** LX5J31AA **Matrix.....:** WQ
Date Sampled...: 04/16/10 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	**0.00035 J**	**0.0010**	**mg/L**
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	85	(73 - 122)
1,2-Dichloroethane-d4	84	(61 - 128)
Toluene-d8	85	(76 - 110)
4-Bromofluorobenzene	80	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0D170438 **Work Order #...:** L0LFA1AA **Matrix.....:** WATER
MB Lot-Sample #: A0D270000-309

Prep Date.....: 04/27/10 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 04/27/10 **Prep Batch #...:** 0117309
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	82	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	81	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0D170438 **Work Order #...:** L0LFA1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0D270000-309 L0LFA1AD-LCSD
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**105**	**(63 - 130)**			**SW846 8260B**
	107	**(63 - 130)**	**2.4**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**99**	**(75 - 122)**			**SW846 8260B**
	101	**(75 - 122)**	**1.9**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	99	(88 - 113)			SW846 8260B
	102	(88 - 113)	3.1	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	94	(85 - 113)			SW846 8260B
	92	(85 - 113)	2.5	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	95	(80 - 120)			SW846 8260B
	98	(80 - 120)	3.4	(0-30)	SW846 8260B
Vinyl chloride	84	(61 - 120)			SW846 8260B
	88	(61 - 120)	4.5	(0-30)	SW846 8260B
Methylene chloride	89	(78 - 118)			SW846 8260B
	90	(78 - 118)	0.21	(0-30)	SW846 8260B
1,1-Dichloroethane	88	(86 - 123)			SW846 8260B
	89	(86 - 123)	1.7	(0-30)	SW846 8260B
1,2-Dichloroethane	95	(79 - 136)			SW846 8260B
	99	(79 - 136)	4.5	(0-30)	SW846 8260B
1,1,1-Trichloroethane	98	(78 - 140)			SW846 8260B
	104	(78 - 140)	5.7	(0-30)	SW846 8260B
1,1,2-Trichloroethane	95	(83 - 122)			SW846 8260B
	98	(83 - 122)	3.2	(0-30)	SW846 8260B
Toluene	**101**	**(74 - 119)**			**SW846 8260B**
	102	**(74 - 119)**	**0.52**	**(0-20)**	**SW846 8260B**
Ethylbenzene	93	(86 - 116)			SW846 8260B
	96	(86 - 116)	2.7	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	76	(73 - 122)
	81	(73 - 122)
1,2-Dichloroethane-d4	78	(61 - 128)
	86	(61 - 128)
Toluene-d8	88	(76 - 110)
	90	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0D170438 **Work Order #...:** L0LFA1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0D270000-309 L0LFA1AD-LCSD
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.010**	**mg/L**	**105**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**107**	**2.4**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.0099**	**mg/L**	**99**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**101**	**1.9**	**SW846 8260B**
Tetrachloroethylene	0.010	0.0099	mg/L	99		SW846 8260B
	0.010	0.010	mg/L	102	3.1	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.0094	mg/L	94		SW846 8260B
	0.010	0.0092	mg/L	92	2.5	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.0095	mg/L	95		SW846 8260B
	0.010	0.0098	mg/L	98	3.4	SW846 8260B
Vinyl chloride	0.010	0.0084	mg/L	84		SW846 8260B
	0.010	0.0088	mg/L	88	4.5	SW846 8260B
Methylene chloride	0.010	0.0089	mg/L	89		SW846 8260B
	0.010	0.0090	mg/L	90	0.21	SW846 8260B
1,1-Dichloroethane	0.010	0.0088	mg/L	88		SW846 8260B
	0.010	0.0089	mg/L	89	1.7	SW846 8260B
1,2-Dichloroethane	0.010	0.0095	mg/L	95		SW846 8260B
	0.010	0.0099	mg/L	99	4.5	SW846 8260B
1,1,1-Trichloroethane	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.010	mg/L	104	5.7	SW846 8260B
1,1,2-Trichloroethane	0.010	0.0095	mg/L	95		SW846 8260B
	0.010	0.0098	mg/L	98	3.2	SW846 8260B
Toluene	**0.010**	**0.010**	**mg/L**	**101**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**102**	**0.52**	**SW846 8260B**
Ethylbenzene	0.010	0.0093	mg/L	93		SW846 8260B
	0.010	0.0096	mg/L	96	2.7	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	76	(73 - 122)
	81	(73 - 122)
1,2-Dichloroethane-d4	78	(61 - 128)
	86	(61 - 128)
Toluene-d8	88	(76 - 110)
	90	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0D170438 **Work Order #...:** LX5L61AJ-MS **Matrix.....:** WATER
MS Lot-Sample #: A0D170440-002 LX5L61AK-MSD
Date Sampled...: 04/15/10 14:25 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 2 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**106**	**(62 - 130)**			**SW846 8260B**
	106	**(62 - 130)**	**0.13**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**99**	**(62 - 130)**			**SW846 8260B**
	101	**(62 - 130)**	**1.3**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	111	(85 - 121)			SW846 8260B
	88	(85 - 121)	8.0	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	58 a	(87 - 114)			SW846 8260B
	73 a	(87 - 114)	3.7	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	89	(85 - 116)			SW846 8260B
	95	(85 - 116)	6.2	(0-30)	SW846 8260B
Vinyl chloride	77 a	(88 - 126)			SW846 8260B
	73 a	(88 - 126)	2.8	(0-30)	SW846 8260B
Methylene chloride	89	(82 - 115)			SW846 8260B
	91	(82 - 115)	1.2	(0-30)	SW846 8260B
1,1-Dichloroethane	71 a	(88 - 127)			SW846 8260B
	85 a	(88 - 127)	4.1	(0-30)	SW846 8260B
1,2-Dichloroethane	97	(71 - 160)			SW846 8260B
	99	(71 - 160)	1.9	(0-30)	SW846 8260B
1,1,1-Trichloroethane	100	(71 - 162)			SW846 8260B
	98	(71 - 162)	0.58	(0-30)	SW846 8260B
1,1,2-Trichloroethane	94	(86 - 129)			SW846 8260B
	95	(86 - 129)	1.3	(0-30)	SW846 8260B
Toluene	**105**	**(70 - 119)**			**SW846 8260B**
	103	**(70 - 119)**	**1.6**	**(0-20)**	**SW846 8260B**
Ethylbenzene	96	(86 - 132)			SW846 8260B
	96	(86 - 132)	0.03	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	79	(73 - 122)
	78	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
	83	(61 - 128)
Toluene-d8	90	(76 - 110)
	86	(76 - 110)
4-Bromofluorobenzene	104	(74 - 116)
	102	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0D170438 **Work Order #...:** LX5L61AJ-MS **Matrix.....:** WATER
MS Lot-Sample #: A0D170440-002 LX5L61AK-MSD
Date Sampled...: 04/15/10 14:25 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 2 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethylene	**0.0025**	**0.020**	**0.024**	**mg/L**	**106**		**SW846 8260B**
	0.0025	**0.020**	**0.024**	**mg/L**	**106**	**0.13**	**SW846 8260B**
Trichloroethylene	**0.0075**	**0.020**	**0.027**	**mg/L**	**99**		**SW846 8260B**
	0.0075	**0.020**	**0.028**	**mg/L**	**101**	**1.3**	**SW846 8260B**
Tetrachloroethylene	0.037	0.020	0.060	mg/L	111		SW846 8260B
	0.037	0.020	0.055	mg/L	88	8.0	SW846 8260B
cis-1,2-Dichloroethylene	0.066	0.020	0.078	mg/L	58 a		SW846 8260B
	0.066	0.020	0.081	mg/L	73 a	3.7	SW846 8260B
trans-1,2-Dichloroethylen	0.00052	0.020	0.018	mg/L	89		SW846 8260B
	0.00052	0.020	0.020	mg/L	95	6.2	SW846 8260B
Vinyl chloride	0.0097	0.020	0.025	mg/L	77 a		SW846 8260B
	0.0097	0.020	0.024	mg/L	73 a	2.8	SW846 8260B
Methylene chloride	ND	0.020	0.018	mg/L	89		SW846 8260B
	ND	0.020	0.019	mg/L	91	1.2	SW846 8260B
1,1-Dichloroethane	0.052	0.020	0.066	mg/L	71 a		SW846 8260B
	0.052	0.020	0.069	mg/L	85 a	4.1	SW846 8260B
1,2-Dichloroethane	ND	0.020	0.019	mg/L	97		SW846 8260B
	ND	0.020	0.020	mg/L	99	1.9	SW846 8260B
1,1,1-Trichloroethane	0.026	0.020	0.046	mg/L	100		SW846 8260B
	0.026	0.020	0.045	mg/L	98	0.58	SW846 8260B
1,1,2-Trichloroethane	ND	0.020	0.019	mg/L	94		SW846 8260B
	ND	0.020	0.019	mg/L	95	1.3	SW846 8260B
Toluene	**ND**	**0.020**	**0.021**	**mg/L**	**105**		**SW846 8260B**
	ND	**0.020**	**0.021**	**mg/L**	**103**	**1.6**	**SW846 8260B**
Ethylbenzene	ND	0.020	0.019	mg/L	96		SW846 8260B
	ND	0.020	0.019	mg/L	96	0.03	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	79	(73 - 122)
	78	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
	83	(61 - 128)
Toluene-d8	90	(76 - 110)
	86	(76 - 110)
4-Bromofluorobenzene	104	(74 - 116)
	102	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

END OF REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 182602078.204

HSSER

Lot #: A0D170440

John Dennison

Stantec Consulting Corporation
446 Eisenhower Lane North
Lombard, IL 60148

TESTAMERICA LABORATORIES, INC.

Alesia M. Danford

Approved for release.
Alesia M. Danford
Project Manager
4/30/2010 8:59 AM

Alesia M. Danford
Project Manager
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April 29, 2010

ACCREDITED IN ACCORDANCE WITH nelac

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE
A0D170440

The following report contains the analytical results for eleven water samples and one quality control sample submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HSSER Site, project number 182602078.204. The samples were received April 17, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Amy Rodebaugh and John Dennison on April 28, 2010. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 1.5 and 1.7°C.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for HSSER-RAMW02-041510 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

DISSOLVED GASES/RSK

The matrix spike/matrix spike duplicate(s) for HSSER-RAMW02-041510 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analytes(s).

The matrix spike/matrix spike duplicate(s) for HSSER-RAMW02-041510 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

CASE NARRATIVE (continued)

GENERAL CHEMISTRY (continued)

The matrix spike/matrix spike duplicate data for batch(es) 0116057 are not included in this report for Total Alkalinity. The batch QC samples, which document the effect of a specific sample matrix on method performance, were not associated with a sample reported in this lot. The data, therefore, has no bearing on the samples reported herein. In order to document compliance with the QC requirement for an MS/MSD per 20 environmental samples, a summary of sample/QC associations has been provided following this case narrative.

The method blank for the associated Alkalinity sample(s) HSSER-RAMW01-041510, HSSER-RAMW02-041510, HSSER-RAMW04-041510, HSSER-RAMW03-041510, HSSER-RAMW05-041610, HSSER-RAMW06-041610, and HSSER-RAMW07-041610 failed high at 6.3 mg/L (RL is 5.0 mg/L). Since the LCS associated with batch(es) 0112058 was within criteria and all sample results were greater than twenty times the blank contamination level the data was reported.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

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North Canton

TESTAMERICA LABORATORIES, INC.

MS RUN NUMBER REVIEW

Lot ID	Smp#	Work Order	Batch	MS Run#	SDG	Prep Date	Method
A0D160494	020	LX34L1AC	0116057	0116035		04/24/10	MCAWW 310.1
A0D160494	031	LX35F1AC	0116057	0116035		04/24/10	MCAWW 310.1
A0D170440	008	LX5M61AD	0116057	0116035		04/24/10	MCAWW 310.1
A0D170440	009	LX5M71AD	0116057	0116035		04/24/10	MCAWW 310.1
A0D160508	016	LX7NP1AM	0116058	0116035		04/24/10	SM18 2320 B
A0D160508	016	LX7NP1AP D	0116058	0116035		04/24/10	SM18 2320 B
A0D160508	016	LX7NP1AN S	0116058	0116035		04/24/10	SM18 2320 B
A0D230420	001	L0EK71AC	0116058	0116035		04/24/10	SM18 2320 B

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0D170440

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-RAMW01-041510 04/15/10 12:25 001				
Ethene	0.0017	0.00050	mg/L	RSK SOP-175
Methane	0.036	0.00050	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.0019 J	0.0040	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.0094	0.0040	mg/L	SW846 8260B
Tetrachloroethylene	0.12	0.0040	mg/L	SW846 8260B
Trichloroethylene	0.0057	0.0040	mg/L	SW846 8260B
Vinyl chloride	0.0058	0.0040	mg/L	SW846 8260B
1,1-Dichloroethane	0.043	0.0040	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.035	0.0040	mg/L	SW846 8260B
Nitrate-Nitrite	1.9	0.1	mg/L	MCAWW 353.2
Total Sulfide	0.62 B	1.0	mg/L	MCAWW 376.1
Sulfate	27.6	2.0	mg/L	MCAWW 300.0A
Total Organic Carbon	6	1	mg/L	SW846 9060
Total Alkalinity	410 J	5.0	mg/L	MCAWW 310.1
HSSER-RAMW02-041510 04/15/10 14:25 002				
Ethene	0.0019	0.00050	mg/L	RSK SOP-175
Methane	0.23	0.00050	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.0025	0.0020	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.066	0.0020	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00052 J	0.0020	mg/L	SW846 8260B
Tetrachloroethylene	0.037	0.0020	mg/L	SW846 8260B
Trichloroethylene	0.0075	0.0020	mg/L	SW846 8260B
Vinyl chloride	0.0097	0.0020	mg/L	SW846 8260B
1,1-Dichloroethane	0.052	0.0020	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.026	0.0020	mg/L	SW846 8260B
Nitrate-Nitrite	0.2	0.1	mg/L	MCAWW 353.2
Total Sulfide	0.62 B	1.0	mg/L	MCAWW 376.1
Sulfate	102	2.0	mg/L	MCAWW 300.0A
Total Organic Carbon	65	4	mg/L	SW846 9060
Total Alkalinity	450 J	5.0	mg/L	MCAWW 310.1
HSSER-RAMW04-041510 04/15/10 16:05 003				
Ethene	0.0024	0.00050	mg/L	RSK SOP-175
Methane	0.18	0.00050	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.063	0.025	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.094	0.025	mg/L	SW846 8260B
Vinyl chloride	0.057	0.025	mg/L	SW846 8260B
1,1-Dichloroethane	0.026	0.025	mg/L	SW846 8260B

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EXECUTIVE SUMMARY - Detection Highlights

A0D170440

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-RAMW04-041510 04/15/10 16:05 003				
1,1,1-Trichloroethane	0.45	0.025	mg/L	SW846 8260B
Toluene	0.0070 J	0.025	mg/L	SW846 8260B
Ethylbenzene	0.10	0.025	mg/L	SW846 8260B
Total Sulfide	1.1	1.0	mg/L	MCAWW 376.1
Sulfate	2.1	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	5	1	mg/L	SW846 9060
Total Alkalinity	450 J	5.0	mg/L	MCAWW 310.1
HSSER-RAMW03-041510 04/15/10 17:20 004				
Ethene	0.0027	0.0010	mg/L	RSK SOP-175
Methane	1.1	0.0010	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.65	0.56	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	17	0.56	mg/L	SW846 8260B
1,1-Dichloroethane	4.6	0.56	mg/L	SW846 8260B
1,1,1-Trichloroethane	12	0.56	mg/L	SW846 8260B
Toluene	0.49 J	0.56	mg/L	SW846 8260B
Total Sulfide	0.79 B	1.0	mg/L	MCAWW 376.1
Sulfate	2.7	2.0	mg/L	MCAWW 300.0A
Total Organic Carbon	28	1	mg/L	SW846 9060
Total Alkalinity	470 J	5.0	mg/L	MCAWW 310.1
HSSER-RAMW05-041610 04/16/10 09:30 005				
Ethene	0.0017	0.0010	mg/L	RSK SOP-175
Methane	1.6	0.0010	mg/L	RSK SOP-175
1,1-Dichloroethylene	1.1	0.42	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.83	0.42	mg/L	SW846 8260B
1,1-Dichloroethane	0.26 J	0.42	mg/L	SW846 8260B
1,1,1-Trichloroethane	13	0.42	mg/L	SW846 8260B
Ethylbenzene	0.37 J	0.42	mg/L	SW846 8260B
Nitrate-Nitrite	0.03 B	0.1	mg/L	MCAWW 353.2
Total Sulfide	0.62 B	1.0	mg/L	MCAWW 376.1
Sulfate	7.3	2.0	mg/L	MCAWW 300.0A
Total Organic Carbon	16	1	mg/L	SW846 9060
Total Alkalinity	450 J	5.0	mg/L	MCAWW 310.1

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0D170440

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-RAMW06-041610 04/16/10 11:10 006				
Methane	0.79	0.0010	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.47	0.33	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.97	0.33	mg/L	SW846 8260B
1,1-Dichloroethane	0.080 J	0.33	mg/L	SW846 8260B
1,1,1-Trichloroethane	11	0.33	mg/L	SW846 8260B
Nitrate-Nitrite	25 J	5.0	mg/L	MCAWW 353.2
Sulfate	83.3	2.0	mg/L	MCAWW 300.0A
Total Organic Carbon	5	1	mg/L	SW846 9060
Total Alkalinity	410 J	5.0	mg/L	MCAWW 310.1
HSSER-RAMW07-041610 04/16/10 12:50 007				
Methane	7.3	0.0025	mg/L	RSK SOP-175
1,1-Dichloroethylene	1.1	0.83	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	2.5	0.83	mg/L	SW846 8260B
1,1,1-Trichloroethane	32	0.83	mg/L	SW846 8260B
Ethylbenzene	0.45 J	0.83	mg/L	SW846 8260B
Nitrate-Nitrite	2.9	1.0	mg/L	MCAWW 353.2
Total Sulfide	0.46 B	1.0	mg/L	MCAWW 376.1
Sulfate	24.0	2.0	mg/L	MCAWW 300.0A
Total Organic Carbon	12	1	mg/L	SW846 9060
Total Alkalinity	490 J	5.0	mg/L	MCAWW 310.1
HSSER-RAMW08-041610 04/16/10 14:45 008				
Methane	1.6	0.0025	mg/L	RSK SOP-175
1,1-Dichloroethylene	0.36	0.25	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.17 J	0.25	mg/L	SW846 8260B
1,1-Dichloroethane	0.079 J	0.25	mg/L	SW846 8260B
1,1,1-Trichloroethane	9.0	0.25	mg/L	SW846 8260B
Ethylbenzene	0.13 J	0.25	mg/L	SW846 8260B
Nitrate-Nitrite	17	1.0	mg/L	MCAWW 353.2
Sulfate	73.1	2.0	mg/L	MCAWW 300.0A
Total Organic Carbon	30	1	mg/L	SW846 9060
Total Alkalinity	440 J	5.0	mg/L	MCAWW 310.1

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0D170440

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-DUP04-041610 04/16/10 009				
Methane	1.7	0.0025	mg/L	RSK SOP-175
1,1-Dichloroethylene	1.2	0.42	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.81	0.42	mg/L	SW846 8260B
1,1-Dichloroethane	0.30 J	0.42	mg/L	SW846 8260B
1,1,1-Trichloroethane	13	0.42	mg/L	SW846 8260B
Ethylbenzene	0.35 J	0.42	mg/L	SW846 8260B
Nitrate-Nitrite	0.08 B	0.1	mg/L	MCAWW 353.2
Total Sulfide	0.46 B	1.0	mg/L	MCAWW 376.1
Sulfate	7.8	2.0	mg/L	MCAWW 300.0A
Total Organic Carbon	17	1	mg/L	SW846 9060
Total Alkalinity	440 J	5.0	mg/L	MCAWW 310.1
HSSER-EBLK02-041510 04/15/10 08:15 011				
Methylene chloride	0.0016	0.0010	mg/L	SW846 8260B
HSSER-FBLK02-041510 04/15/10 08:20 012				
Methylene chloride	0.0020	0.0010	mg/L	SW846 8260B

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0D170440

PARAMETER	ANALYTICAL METHOD
Alkalinity	MCAWW 310.1
Dissolved Gases in Water	RSK SOP-175
Nitrate-Nitrite	MCAWW 353.2
Sulfate	MCAWW 300.0A
Sulfide	MCAWW 376.1
Total Organic Carbon	SW846 9060
Volatile Organics by GC/MS	SW846 8260B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

RSK Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SAMPLE SUMMARY

SAMPLE SUMMARY

A0D170440

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LX5K4	001	HSSER-RAMW01-041510	04/15/10	12:25
LX5L6	002	HSSER-RAMW02-041510	04/15/10	14:25
LX5L7	003	HSSER-RAMW04-041510	04/15/10	16:05
LX5M0	004	HSSER-RAMW03-041510	04/15/10	17:20
LX5M3	005	HSSER-RAMW05-041610	04/16/10	09:30
LX5M4	006	HSSER-RAMW06-041610	04/16/10	11:10
LX5M5	007	HSSER-RAMW07-041610	04/16/10	12:50
LX5M6	008	HSSER-RAMW08-041610	04/16/10	14:45
LX5M7	009	HSSER-DUP04-041610	04/16/10	
LX5M8	010	HSSER-TRIP03-041610	04/16/10	
LX5M9	011	HSSER-EBLK02-041510	04/15/10	08:15
LX5NA	012	HSSER-FBLK02-041510	04/15/10	08:20

NOTE(S):

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: NORTH CANTON, OH
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact			
Company Name: STANTEC	Client Project Manager: AMY RODEBAUGH	Site Contact: BRIAN CAMPBELL	Lab Contact: ALESIA DANFORTH
Address: 446 EISENHOWER LN. N.	Telephone: 630.792.1680	Telephone: 630.824.7854	Telephone: 330.966.9783
City/State/Zip: LOMBARD, IL 60148	Email: amy.rodebaugh@stantec.com		
Phone: 630.792.1680		TAT if different from below: STANDARD	
Project Name: HS-BER	Method of Shipment/Carrier: FEX-EX	☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day	
Project Number: 182602078	Shipping/Tracking No: 8696 0681 9168 & 8696 0681 9179		
PO# 204.42114			

COC No: 1 of 2 COCs

Analyses

Sample Identification	Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Alkalinity 310.1	Sulfate 300.0	Diss. Gases 175 mod	Nitrate/Nitrite 353.2	Sulfide 376.1	TOC 9060	VOC 8260B *	Sample Specific Notes / Special Instructions:
HSSER-RAMW01-041510	4-15-10	1225		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-RAMW02-041510	4-15-10	1425		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-MS04-041510	4-15-10	1425		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-MSD04-041510	4-15-10	1425		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-RAMW04-041510	4-15-10	1605		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-RAMW03-041510	4-15-10	1720		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-RAMW05-041610	4-16-10	0930		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-RAMW06-041610	4-16-10	1110		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-RAMW07-041610	4-16-10	1250		X				3		5		1	1		X	X	X	X	X	X	X	
HSSER-RAMW08-041610	4-16-10	1445		X				3		5		1	1		X	X	X	X	X	X	X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☐ Disposal By Lab ☒ Archive For 1 Months

Special Instructions/QC Requirements & Comments:

* LIST OF 13 VOCs; LEVEL 4 DATA

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Stantec	4/16/10 1715			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Company: TAL	Date/Time: 4/17/10 900

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TAL-0018 (1008)

North Canton

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

20

TestAmerica Laboratory location: NORTH CANTON, OH
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact			
Company Name: STANTEC	Client Project Manager: AMY RODEBAUGH	Site Contact: BRIAN CAMPBELL	Lab Contact: ALESIA DANFORTH
Address: 446 EISENHOWER LN. N.	Telephone: 630.792.1680	Telephone: 630.~~966.9903~~ 824.7859	Telephone: 330.966.9783
City/State/Zip: LOMBARD, IL 60148	Email: amy.rodebaugh@stantec.com		
Phone: 630.792.1680		TAT if different from below STANDARD: ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day	
Project Name: HS-SER	Method of Shipment/Carrier: FED-EX		
Project Number: 182602078	Shipping/Tracking No: 8646 0681 9168 8696 0681 9179		
PO# 204.42114			

COC No: 2 of 2 COCs

Sample Identification	Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	ALKALINITY 310.1	SULFATE 300.0	DISS. GASES RSK MEE	NITRATE/NITRITE 353.2	SULFIDE 376.1	TOC 9060	VOC 8260B*				Sample Specific Notes / Special Instructions:
HSSER-DUP04-041610	4-16-10	—		X				3		5		1	1		X	X	X	X	X	X	X				
HSSER-TRIP03-041610	4-16-10	—		X						1											X				
HSSER-EBLK02-041510	4-15-10	0815		X						3											X				
HSSER-FBLK02-041510	4-15-10	0820		X						3											X				

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☐ Disposal By Lab ☒ Archive For 1 Months

Special Instructions/QC Requirements & Comments:

*LIST OF 13 VOCs ; LEVEL 4 DATA

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Brian Campbell	Stantec	4/16/10 1715			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
			[illegible]	TAL	4/19/10 1330

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TAL-0018 (1008)

North Canton

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** A0D140440
North Canton Facility

Client STANTEC Project _____ By: [signature] (Signature)
Cooler Received on 4-17-10 Opened on 4-17-10
FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____
TestAmerica Cooler # _____ Multiple Coolers ☒ Foam Box ☐ Client Cooler ☐ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☒ No ☐ Intact? Yes ☒ No ☐ NA ☐
   If YES, Quantity 2 Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☒ No ☐ NA ☐
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☒ None ☐ Other _____
6. Cooler temperature upon receipt _____ °C See back of form for multiple coolers/temps ☒
   METHOD: IR ☒ Other ☐ _____
   COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☒ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☒ No ☐ Were VOAs on the COC? Yes ☒ No ☐

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

_____

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot# 121709-HNO_3; Sulfuric Acid Lot# 121709-H_2SO_4; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-$(CH_3COO)_2ZN/NaOH$.* What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials
RAMW01	<2 >9	4/17/10	CSL
RAMW02	<2 >9		
MSMSD	<2 <2 >9 >9		
RAMW04	<2 >9		
RAMW03	<2 >9		
RAMW05	<2 >9		
RAMW06	<2 >9		
RAMW07	<2 >9		

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials
RAMW08	<2 79	4/17/10	CSL
DUP04	<2 79	↓	↓

Cooler #	Temp. °C	Method	Coolant
A403	1.5	IR	Ice
A364	1.7	↓	↓

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW01-041510

GC/MS Volatiles

Lot-Sample #...: A0D170440-001 **Work Order #...:** LX5K41AA **Matrix.....:** WG
Date Sampled...: 04/15/10 12:25 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 4 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0019 J**	**0.0040**	**mg/L**
cis-1,2-Dichloroethylene	**0.0094**	**0.0040**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0040	mg/L
Tetrachloroethylene	**0.12**	**0.0040**	**mg/L**
Trichloroethylene	**0.0057**	**0.0040**	**mg/L**
Vinyl chloride	**0.0058**	**0.0040**	**mg/L**
Methylene chloride	ND	0.0040	mg/L
1,1-Dichloroethane	**0.043**	**0.0040**	**mg/L**
1,2-Dichloroethane	ND	0.0040	mg/L
1,1,1-Trichloroethane	**0.035**	**0.0040**	**mg/L**
1,1,2-Trichloroethane	ND	0.0040	mg/L
Toluene	ND	0.0040	mg/L
Ethylbenzene	ND	0.0040	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	79	(73 - 122)
1,2-Dichloroethane-d4	82	(61 - 128)
Toluene-d8	85	(76 - 110)
4-Bromofluorobenzene	83	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW02-041510

GC/MS Volatiles

Lot-Sample #...: A0D170440-002 **Work Order #...:** LX5L61AA **Matrix.....:** WG
Date Sampled...: 04/15/10 14:25 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 2 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0025**	**0.0020**	**mg/L**
cis-1,2-Dichloroethylene	**0.066**	**0.0020**	**mg/L**
trans-1,2-Dichloroethylene	**0.00052 J**	**0.0020**	**mg/L**
Tetrachloroethylene	**0.037**	**0.0020**	**mg/L**
Trichloroethylene	**0.0075**	**0.0020**	**mg/L**
Vinyl chloride	**0.0097**	**0.0020**	**mg/L**
Methylene chloride	ND	0.0020	mg/L
1,1-Dichloroethane	**0.052**	**0.0020**	**mg/L**
1,2-Dichloroethane	ND	0.0020	mg/L
1,1,1-Trichloroethane	**0.026**	**0.0020**	**mg/L**
1,1,2-Trichloroethane	ND	0.0020	mg/L
Toluene	ND	0.0020	mg/L
Ethylbenzene	ND	0.0020	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	79	(73 - 122)
1,2-Dichloroethane-d4	77	(61 - 128)
Toluene-d8	83	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW04-041510

GC/MS Volatiles

Lot-Sample #...: A0D170440-003 **Work Order #...:** LX5L71AA **Matrix.....:** WG
Date Sampled...: 04/15/10 16:05 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 25 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.063**	**0.025**	**mg/L**
cis-1,2-Dichloroethylene	**0.094**	**0.025**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.025	mg/L
Tetrachloroethylene	ND	0.025	mg/L
Trichloroethylene	ND	0.025	mg/L
Vinyl chloride	**0.057**	**0.025**	**mg/L**
Methylene chloride	ND	0.025	mg/L
1,1-Dichloroethane	**0.026**	**0.025**	**mg/L**
1,2-Dichloroethane	ND	0.025	mg/L
1,1,1-Trichloroethane	**0.45**	**0.025**	**mg/L**
1,1,2-Trichloroethane	ND	0.025	mg/L
Toluene	**0.0070 J**	**0.025**	**mg/L**
Ethylbenzene	**0.10**	**0.025**	**mg/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	84	(73 - 122)
1,2-Dichloroethane-d4	82	(61 - 128)
Toluene-d8	84	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW03-041510

GC/MS Volatiles

Lot-Sample #...: A0D170440-004 **Work Order #...:** LX5M01AA **Matrix.....:** WG
Date Sampled...: 04/15/10 17:20 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 555.56 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.65**	**0.56**	**mg/L**
cis-1,2-Dichloroethylene	**17**	**0.56**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.56	mg/L
Tetrachloroethylene	ND	0.56	mg/L
Trichloroethylene	ND	0.56	mg/L
Vinyl chloride	ND	0.56	mg/L
Methylene chloride	ND	0.56	mg/L
1,1-Dichloroethane	**4.6**	**0.56**	**mg/L**
1,2-Dichloroethane	ND	0.56	mg/L
1,1,1-Trichloroethane	**12**	**0.56**	**mg/L**
1,1,2-Trichloroethane	ND	0.56	mg/L
Toluene	**0.49 J**	**0.56**	**mg/L**
Ethylbenzene	ND	0.56	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	80	(73 - 122)
1,2-Dichloroethane-d4	82	(61 - 128)
Toluene-d8	82	(76 - 110)
4-Bromofluorobenzene	81	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW05-041610

GC/MS Volatiles

Lot-Sample #...: A0D170440-005 **Work Order #...:** LX5M31AA **Matrix.....:** WG
Date Sampled...: 04/16/10 09:30 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date...:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 416.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**1.1**	**0.42**	**mg/L**
cis-1,2-Dichloroethylene	**0.83**	**0.42**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.42	mg/L
Tetrachloroethylene	ND	0.42	mg/L
Trichloroethylene	ND	0.42	mg/L
Vinyl chloride	ND	0.42	mg/L
Methylene chloride	ND	0.42	mg/L
1,1-Dichloroethane	**0.26 J**	**0.42**	**mg/L**
1,2-Dichloroethane	ND	0.42	mg/L
1,1,1-Trichloroethane	**13**	**0.42**	**mg/L**
1,1,2-Trichloroethane	ND	0.42	mg/L
Toluene	ND	0.42	mg/L
Ethylbenzene	**0.37 J**	**0.42**	**mg/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	83	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
Toluene-d8	83	(76 - 110)
4-Bromofluorobenzene	88	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW06-041610

GC/MS Volatiles

Lot-Sample #...: A0D170440-006 **Work Order #...:** LX5M41AA **Matrix.....:** WG
Date Sampled...: 04/16/10 11:10 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 333.33 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.47**	**0.33**	**mg/L**
cis-1,2-Dichloroethylene	**0.97**	**0.33**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.33	mg/L
Tetrachloroethylene	ND	0.33	mg/L
Trichloroethylene	ND	0.33	mg/L
Vinyl chloride	ND	0.33	mg/L
Methylene chloride	ND	0.33	mg/L
1,1-Dichloroethane	**0.080 J**	**0.33**	**mg/L**
1,2-Dichloroethane	ND	0.33	mg/L
1,1,1-Trichloroethane	**11**	**0.33**	**mg/L**
1,1,2-Trichloroethane	ND	0.33	mg/L
Toluene	ND	0.33	mg/L
Ethylbenzene	ND	0.33	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	81	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	81	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW07-041610

GC/MS Volatiles

Lot-Sample #...: A0D170440-007 **Work Order #...:** LX5M51AA **Matrix.....:** WG
Date Sampled...: 04/16/10 12:50 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 833.33 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**1.1**	**0.83**	**mg/L**
cis-1,2-Dichloroethylene	**2.5**	**0.83**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.83	mg/L
Tetrachloroethylene	ND	0.83	mg/L
Trichloroethylene	ND	0.83	mg/L
Vinyl chloride	ND	0.83	mg/L
Methylene chloride	ND	0.83	mg/L
1,1-Dichloroethane	ND	0.83	mg/L
1,2-Dichloroethane	ND	0.83	mg/L
1,1,1-Trichloroethane	**32**	**0.83**	**mg/L**
1,1,2-Trichloroethane	ND	0.83	mg/L
Toluene	ND	0.83	mg/L
Ethylbenzene	**0.45 J**	**0.83**	**mg/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	82	(73 - 122)
1,2-Dichloroethane-d4	80	(61 - 128)
Toluene-d8	83	(76 - 110)
4-Bromofluorobenzene	84	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW08-041610

GC/MS Volatiles

Lot-Sample #...: A0D170440-008 **Work Order #...:** LX5M61AA **Matrix.....:** WG
Date Sampled...: 04/16/10 14:45 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 250 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.36**	**0.25**	**mg/L**
cis-1,2-Dichloroethylene	**0.17 J**	**0.25**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.25	mg/L
Tetrachloroethylene	ND	0.25	mg/L
Trichloroethylene	ND	0.25	mg/L
Vinyl chloride	ND	0.25	mg/L
Methylene chloride	ND	0.25	mg/L
1,1-Dichloroethane	**0.079 J**	**0.25**	**mg/L**
1,2-Dichloroethane	ND	0.25	mg/L
1,1,1-Trichloroethane	**9.0**	**0.25**	**mg/L**
1,1,2-Trichloroethane	ND	0.25	mg/L
Toluene	ND	0.25	mg/L
Ethylbenzene	**0.13 J**	**0.25**	**mg/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	79	(73 - 122)
1,2-Dichloroethane-d4	82	(61 - 128)
Toluene-d8	85	(76 - 110)
4-Bromofluorobenzene	81	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-DUP04-041610

GC/MS Volatiles

Lot-Sample #...: A0D170440-009 **Work Order #...:** LX5M71AA **Matrix.....:** WG
Date Sampled...: 04/16/10 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 416.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**1.2**	**0.42**	**mg/L**
cis-1,2-Dichloroethylene	**0.81**	**0.42**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.42	mg/L
Tetrachloroethylene	ND	0.42	mg/L
Trichloroethylene	ND	0.42	mg/L
Vinyl chloride	ND	0.42	mg/L
Methylene chloride	ND	0.42	mg/L
1,1-Dichloroethane	**0.30 J**	**0.42**	**mg/L**
1,2-Dichloroethane	ND	0.42	mg/L
1,1,1-Trichloroethane	**13**	**0.42**	**mg/L**
1,1,2-Trichloroethane	ND	0.42	mg/L
Toluene	ND	0.42	mg/L
Ethylbenzene	**0.35 J**	**0.42**	**mg/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	80	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
Toluene-d8	81	(76 - 110)
4-Bromofluorobenzene	84	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-TRIP03-041610

GC/MS Volatiles

Lot-Sample #...: A0D170440-010 **Work Order #...:** LX5M81AA **Matrix.....:** WQ
Date Sampled...: 04/16/10 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	81	(73 - 122)
1,2-Dichloroethane-d4	76	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	79	(74 - 116)

Stantec Consulting Corporation

Client Sample ID: HSSER-EBLK02-041510

GC/MS Volatiles

Lot-Sample #...: A0D170440-011 **Work Order #...:** LX5M91AA **Matrix.....:** WQ
Date Sampled...: 04/15/10 08:15 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	**0.0016**	**0.0010**	**mg/L**
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	81	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
Toluene-d8	87	(76 - 110)
4-Bromofluorobenzene	74	(74 - 116)

Stantec Consulting Corporation

Client Sample ID: HSSER-FBLK02-041510

GC/MS Volatiles

Lot-Sample #...: A0D170440-012 **Work Order #...:** LX5NA1AA **Matrix.....:** WQ
Date Sampled...: 04/15/10 08:20 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	**0.0020**	**0.0010**	**mg/L**
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	84	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
Toluene-d8	85	(76 - 110)
4-Bromofluorobenzene	78	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0D170440 **Work Order #...:** L0LFA1AA **Matrix.....:** WATER
MB Lot-Sample #: A0D270000-309

Prep Date.....: 04/27/10 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 04/27/10 **Prep Batch #...:** 0117309
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	82	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
Toluene-d8	86	(76 - 110)
4-Bromofluorobenzene	81	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0D170440 **Work Order #...:** L0LFA1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0D270000-309 L0LFA1AD-LCSD
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**105**	**(63 - 130)**			**SW846 8260B**
	107	**(63 - 130)**	**2.4**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**99**	**(75 - 122)**			**SW846 8260B**
	101	**(75 - 122)**	**1.9**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	99	(88 - 113)			SW846 8260B
	102	(88 - 113)	3.1	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	94	(85 - 113)			SW846 8260B
	92	(85 - 113)	2.5	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	95	(80 - 120)			SW846 8260B
	98	(80 - 120)	3.4	(0-30)	SW846 8260B
Vinyl chloride	84	(61 - 120)			SW846 8260B
	88	(61 - 120)	4.5	(0-30)	SW846 8260B
Methylene chloride	89	(78 - 118)			SW846 8260B
	90	(78 - 118)	0.21	(0-30)	SW846 8260B
1,1-Dichloroethane	88	(86 - 123)			SW846 8260B
	89	(86 - 123)	1.7	(0-30)	SW846 8260B
1,2-Dichloroethane	95	(79 - 136)			SW846 8260B
	99	(79 - 136)	4.5	(0-30)	SW846 8260B
1,1,1-Trichloroethane	98	(78 - 140)			SW846 8260B
	104	(78 - 140)	5.7	(0-30)	SW846 8260B
1,1,2-Trichloroethane	95	(83 - 122)			SW846 8260B
	98	(83 - 122)	3.2	(0-30)	SW846 8260B
Toluene	**101**	**(74 - 119)**			**SW846 8260B**
	102	**(74 - 119)**	**0.52**	**(0-20)**	**SW846 8260B**
Ethylbenzene	93	(86 - 116)			SW846 8260B
	96	(86 - 116)	2.7	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	76	(73 - 122)
	81	(73 - 122)
1,2-Dichloroethane-d4	78	(61 - 128)
	86	(61 - 128)
Toluene-d8	88	(76 - 110)
	90	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0D170440 **Work Order #...:** L0LFA1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0D270000-309 L0LFA1AD-LCSD
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.010**	**mg/L**	**105**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**107**	**2.4**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.0099**	**mg/L**	**99**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**101**	**1.9**	**SW846 8260B**
Tetrachloroethylene	0.010	0.0099	mg/L	99		SW846 8260B
	0.010	0.010	mg/L	102	3.1	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.0094	mg/L	94		SW846 8260B
	0.010	0.0092	mg/L	92	2.5	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.0095	mg/L	95		SW846 8260B
	0.010	0.0098	mg/L	98	3.4	SW846 8260B
Vinyl chloride	0.010	0.0084	mg/L	84		SW846 8260B
	0.010	0.0088	mg/L	88	4.5	SW846 8260B
Methylene chloride	0.010	0.0089	mg/L	89		SW846 8260B
	0.010	0.0090	mg/L	90	0.21	SW846 8260B
1,1-Dichloroethane	0.010	0.0088	mg/L	88		SW846 8260B
	0.010	0.0089	mg/L	89	1.7	SW846 8260B
1,2-Dichloroethane	0.010	0.0095	mg/L	95		SW846 8260B
	0.010	0.0099	mg/L	99	4.5	SW846 8260B
1,1,1-Trichloroethane	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.010	mg/L	104	5.7	SW846 8260B
1,1,2-Trichloroethane	0.010	0.0095	mg/L	95		SW846 8260B
	0.010	0.0098	mg/L	98	3.2	SW846 8260B
Toluene	**0.010**	**0.010**	**mg/L**	**101**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**102**	**0.52**	**SW846 8260B**
Ethylbenzene	0.010	0.0093	mg/L	93		SW846 8260B
	0.010	0.0096	mg/L	96	2.7	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	76	(73 - 122)
	81	(73 - 122)
1,2-Dichloroethane-d4	78	(61 - 128)
	86	(61 - 128)
Toluene-d8	88	(76 - 110)
	90	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0D170440 **Work Order #...:** LX5L61AJ-MS **Matrix.....:** WG
MS Lot-Sample #: A0D170440-002 LX5L61AK-MSD
Date Sampled...: 04/15/10 14:25 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 2 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**106**	**(62 - 130)**			**SW846 8260B**
	106	**(62 - 130)**	**0.13**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**99**	**(62 - 130)**			**SW846 8260B**
	101	**(62 - 130)**	**1.3**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	111	(85 - 121)			SW846 8260B
	88	(85 - 121)	8.0	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	58 a	(87 - 114)			SW846 8260B
	73 a	(87 - 114)	3.7	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	89	(85 - 116)			SW846 8260B
	95	(85 - 116)	6.2	(0-30)	SW846 8260B
Vinyl chloride	77 a	(88 - 126)			SW846 8260B
	73 a	(88 - 126)	2.8	(0-30)	SW846 8260B
Methylene chloride	89	(82 - 115)			SW846 8260B
	91	(82 - 115)	1.2	(0-30)	SW846 8260B
1,1-Dichloroethane	71 a	(88 - 127)			SW846 8260B
	85 a	(88 - 127)	4.1	(0-30)	SW846 8260B
1,2-Dichloroethane	97	(71 - 160)			SW846 8260B
	99	(71 - 160)	1.9	(0-30)	SW846 8260B
1,1,1-Trichloroethane	100	(71 - 162)			SW846 8260B
	98	(71 - 162)	0.58	(0-30)	SW846 8260B
1,1,2-Trichloroethane	94	(86 - 129)			SW846 8260B
	95	(86 - 129)	1.3	(0-30)	SW846 8260B
Toluene	**105**	**(70 - 119)**			**SW846 8260B**
	103	**(70 - 119)**	**1.6**	**(0-20)**	**SW846 8260B**
Ethylbenzene	96	(86 - 132)			SW846 8260B
	96	(86 - 132)	0.03	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	79	(73 - 122)
	78	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
	83	(61 - 128)
Toluene-d8	90	(76 - 110)
	86	(76 - 110)
4-Bromofluorobenzene	104	(74 - 116)
	102	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0D170440 **Work Order #...:** LX5L61AJ-MS **Matrix.....:** WG
MS Lot-Sample #: A0D170440-002 LX5L61AK-MSD
Date Sampled...: 04/15/10 14:25 **Date Received..:** 04/17/10
Prep Date.....: 04/27/10 **Analysis Date..:** 04/27/10
Prep Batch #...: 0117309
Dilution Factor: 2 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethylene	**0.0025**	**0.020**	**0.024**	**mg/L**	**106**		**SW846 8260B**
	0.0025	**0.020**	**0.024**	**mg/L**	**106**	**0.13**	**SW846 8260B**
Trichloroethylene	**0.0075**	**0.020**	**0.027**	**mg/L**	**99**		**SW846 8260B**
	0.0075	**0.020**	**0.028**	**mg/L**	**101**	**1.3**	**SW846 8260B**
Tetrachloroethylene	0.037	0.020	0.060	mg/L	111		SW846 8260B
	0.037	0.020	0.055	mg/L	88	8.0	SW846 8260B
cis-1,2-Dichloroethylene	0.066	0.020	0.078	mg/L	58 a		SW846 8260B
	0.066	0.020	0.081	mg/L	73 a	3.7	SW846 8260B
trans-1,2-Dichloroethylen	0.00052	0.020	0.018	mg/L	89		SW846 8260B
	0.00052	0.020	0.020	mg/L	95	6.2	SW846 8260B
Vinyl chloride	0.0097	0.020	0.025	mg/L	77 a		SW846 8260B
	0.0097	0.020	0.024	mg/L	73 a	2.8	SW846 8260B
Methylene chloride	ND	0.020	0.018	mg/L	89		SW846 8260B
	ND	0.020	0.019	mg/L	91	1.2	SW846 8260B
1,1-Dichloroethane	0.052	0.020	0.066	mg/L	71 a		SW846 8260B
	0.052	0.020	0.069	mg/L	85 a	4.1	SW846 8260B
1,2-Dichloroethane	ND	0.020	0.019	mg/L	97		SW846 8260B
	ND	0.020	0.020	mg/L	99	1.9	SW846 8260B
1,1,1-Trichloroethane	0.026	0.020	0.046	mg/L	100		SW846 8260B
	0.026	0.020	0.045	mg/L	98	0.58	SW846 8260B
1,1,2-Trichloroethane	ND	0.020	0.019	mg/L	94		SW846 8260B
	ND	0.020	0.019	mg/L	95	1.3	SW846 8260B
Toluene	**ND**	**0.020**	**0.021**	**mg/L**	**105**		**SW846 8260B**
	ND	**0.020**	**0.021**	**mg/L**	**103**	**1.6**	**SW846 8260B**
Ethylbenzene	ND	0.020	0.019	mg/L	96		SW846 8260B
	ND	0.020	0.019	mg/L	96	0.03	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	79	(73 - 122)
	78	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
	83	(61 - 128)
Toluene-d8	90	(76 - 110)
	86	(76 - 110)
4-Bromofluorobenzene	104	(74 - 116)
	102	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

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GC VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW01-041510

GC Volatiles

Lot-Sample #...: A0D170440-001 **Work Order #...:** LX5K41AH **Matrix.....:** WG
Date Sampled...: 04/15/10 12:25 **Date Received..:** 04/17/10
Prep Date.....: 04/20/10 **Analysis Date...:** 04/20/10
Prep Batch #...: 0110383
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	**0.0017**	**0.00050**	**mg/L**
Methane	**0.036**	**0.00050**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW02-041510

GC Volatiles

Lot-Sample #...: A0D170440-002 **Work Order #...:** LX5L61AH **Matrix.....:** WG
Date Sampled...: 04/15/10 14:25 **Date Received..:** 04/17/10
Prep Date.....: 04/20/10 **Analysis Date..:** 04/20/10
Prep Batch #...: 0110383
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	**0.0019**	**0.00050**	**mg/L**
Methane	**0.23**	**0.00050**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW04-041510

GC Volatiles

Lot-Sample #...: A0D170440-003 **Work Order #...:** LX5L71AH **Matrix.....:** WG
Date Sampled...: 04/15/10 16:05 **Date Received..:** 04/17/10
Prep Date.....: 04/20/10 **Analysis Date...:** 04/20/10
Prep Batch #...: 0110383
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.00050	mg/L
Ethene	**0.0024**	**0.00050**	**mg/L**
Methane	**0.18**	**0.00050**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW03-041510

GC Volatiles

Lot-Sample #...: A0D170440-004 **Work Order #...:** LX5M01AH **Matrix.....:** WG
Date Sampled...: 04/15/10 17:20 **Date Received..:** 04/17/10
Prep Date.....: 04/20/10 **Analysis Date..:** 04/20/10
Prep Batch #...: 0110383
Dilution Factor: 2 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.0010	mg/L
Ethene	**0.0027**	**0.0010**	**mg/L**
Methane	**1.1**	**0.0010**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW05-041610

GC Volatiles

Lot-Sample #...: A0D170440-005 **Work Order #...:** LX5M31AH **Matrix.....:** WG
Date Sampled...: 04/16/10 09:30 **Date Received..:** 04/17/10
Prep Date.....: 04/20/10 **Analysis Date..:** 04/20/10
Prep Batch #...: 0110383
Dilution Factor: 2 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.0010	mg/L
Ethene	**0.0017**	**0.0010**	**mg/L**
Methane	**1.6**	**0.0010**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW06-041610

GC Volatiles

Lot-Sample #...:	A0D170440-006	**Work Order #...:**	LX5M41AH	**Matrix.....:**	WG
Date Sampled...:	04/16/10 11:10	**Date Received..:**	04/17/10		
Prep Date.....:	04/20/10	**Analysis Date..:**	04/20/10		
Prep Batch #...:	0110383				
Dilution Factor:	2	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.0010	mg/L
Ethene	ND	0.0010	mg/L
Methane	**0.79**	**0.0010**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW07-041610

GC Volatiles

Lot-Sample #...: A0D170440-007 **Work Order #...:** LX5M51AH **Matrix.....:** WG
Date Sampled...: 04/16/10 12:50 **Date Received..:** 04/17/10
Prep Date.....: 04/20/10 **Analysis Date..:** 04/20/10
Prep Batch #...: 0110383
Dilution Factor: 5 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.0025	mg/L
Ethene	ND	0.0025	mg/L
Methane	**7.3**	**0.0025**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW08-041610

GC Volatiles

Lot-Sample #...: A0D170440-008 **Work Order #...:** LX5M61AH **Matrix.....:** WG
Date Sampled...: 04/16/10 14:45 **Date Received..:** 04/17/10
Prep Date.....: 04/20/10 **Analysis Date..:** 04/20/10
Prep Batch #...: 0110383
Dilution Factor: 5 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.0025	mg/L
Ethene	ND	0.0025	mg/L
Methane	**1.6**	**0.0025**	**mg/L**

Stantec Consulting Corporation

Client Sample ID: HSSER-DUP04-041610

GC Volatiles

Lot-Sample #...: A0D170440-009 **Work Order #...:** LX5M71AH **Matrix.....:** WG
Date Sampled...: 04/16/10 **Date Received..:** 04/17/10
Prep Date.....: 04/20/10 **Analysis Date..:** 04/20/10
Prep Batch #...: 0110383
Dilution Factor: 5 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethane	ND	0.0025	mg/L
Ethene	ND	0.0025	mg/L
Methane	**1.7**	**0.0025**	**mg/L**

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: A0D170440 **Work Order #...:** LX8P41AA **Matrix.....:** WATER
MB Lot-Sample #: A0D200000-383
Prep Date.....: 04/20/10 **Final Wgt/Vol..:** 1 mL
Analysis Date..: 04/20/10 **Prep Batch #...:** 0110383
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methane	ND	0.00050	mg/L	RSK SOP-175
Ethane	ND	0.00050	mg/L	RSK SOP-175
Ethene	ND	0.00050	mg/L	RSK SOP-175

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A0D170440 **Work Order #...:** LX8P41AC **Matrix.....:** WATER
LCS Lot-Sample#: A0D200000-383
Prep Date.....: 04/20/10 **Analysis Date..:** 04/20/10
Prep Batch #...: 0110383
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Methane	**90**	**(75 - 127)**	**RSK SOP-175**
Ethane	**92**	**(74 - 138)**	**RSK SOP-175**
Ethene	**97**	**(73 - 140)**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A0D170440 **Work Order #...:** LX8P41AC **Matrix.....:** WATER
LCS Lot-Sample#: A0D200000-383
Prep Date.....: 04/20/10 **Analysis Date..:** 04/20/10
Prep Batch #...: 0110383
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Methane	**0.11**	**0.098**	**mg/L**	**90**	**RSK SOP-175**
Ethane	**0.20**	**0.19**	**mg/L**	**92**	**RSK SOP-175**
Ethene	**0.19**	**0.19**	**mg/L**	**97**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A0D170440 **Work Order #...:** LX5L61AX-MS **Matrix.....:** WG
MS Lot-Sample #: A0D170440-002 LX5L61A0-MSD
Date Sampled...: 04/15/10 14:25 **Date Received..:** 04/17/10
Prep Date.....: 04/20/10 **Analysis Date..:** 04/20/10
Prep Batch #...: 0110383
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	**50 a**	**(75 - 127)**			**RSK SOP-175**
	114	**(75 - 127)**	**22**	**(0-30)**	**RSK SOP-175**
Ethane	**51 a**	**(74 - 138)**			**RSK SOP-175**
	59 a	**(74 - 138)**	**16**	**(0-30)**	**RSK SOP-175**
Ethene	**50 a**	**(73 - 140)**			**RSK SOP-175**
	62 a	**(73 - 140)**	**22**	**(0-30)**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A0D170440 **Work Order #...:** LX5L61AX-MS **Matrix.....:** WG
MS Lot-Sample #: A0D170440-002 LX5L61A0-MSD
Date Sampled...: 04/15/10 14:25 **Date Received..:** 04/17/10
Prep Date.....: 04/20/10 **Analysis Date..:** 04/20/10
Prep Batch #...: 0110383
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Methane	**0.23**	**0.11**	**0.28**	**mg/L**	**50 a**		**RSK SOP-175**
	0.23	**0.11**	**0.35**	**mg/L**	**114**	**22**	**RSK SOP-175**
Ethane	**ND**	**0.20**	**0.10**	**mg/L**	**51 a**		**RSK SOP-175**
	ND	**0.20**	**0.12**	**mg/L**	**59 a**	**16**	**RSK SOP-175**
Ethene	**0.0019**	**0.19**	**0.097**	**mg/L**	**50 a**		**RSK SOP-175**
	0.0019	**0.19**	**0.12**	**mg/L**	**62 a**	**22**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

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GENERAL CHEMISTRY DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW01-041510

General Chemistry

Lot-Sample #...: A0D170440-001 **Work Order #...:** LX5K4 **Matrix.....:** WG
Date Sampled...: 04/15/10 12:25 **Date Received..:** 04/17/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	1.9	0.1	mg/L	MCAWW 353.2	04/22/10	0112284
		Dilution Factor: 1				
Sulfate	27.6	2.0	mg/L	MCAWW 300.0A	04/20/10	0111116
		Dilution Factor: 2				
Total Alkalinity	410 J	5.0	mg/L	MCAWW 310.1	04/22/10	0112058
		Dilution Factor: 1				
Total Organic Carbon	6	1	mg/L	SW846 9060	04/20/10	0110237
		Dilution Factor: 1				
Total Sulfide	0.62 B	1.0	mg/L	MCAWW 376.1	04/20/10	0110353
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

B Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW02-041510

General Chemistry

Lot-Sample #...: A0D170440-002 **Work Order #...:** LX5L6 **Matrix.....:** WG
Date Sampled...: 04/15/10 14:25 **Date Received..:** 04/17/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	0.2	0.1	mg/L	MCAWW 353.2	04/22/10	0112284
		Dilution Factor: 1				
Sulfate	102	2.0	mg/L	MCAWW 300.0A	04/20/10	0111116
		Dilution Factor: 2				
Total Alkalinity	450 J	5.0	mg/L	MCAWW 310.1	04/22/10	0112058
		Dilution Factor: 1				
Total Organic Carbon	65	4	mg/L	SW846 9060	04/19/10	0110237
		Dilution Factor: 4				
Total Sulfide	0.62 B	1.0	mg/L	MCAWW 376.1	04/20/10	0110353
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

B Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW04-041510

General Chemistry

Lot-Sample #...: A0D170440-003 **Work Order #...:** LX5L7 **Matrix.....:** WG
Date Sampled...: 04/15/10 16:05 **Date Received..:** 04/17/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	ND	0.1	mg/L	MCAWW 353.2	04/22/10	0112284
		Dilution Factor: 1				
Sulfate	**2.1**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/21/10**	**0112125**
		Dilution Factor: 1				
Total Alkalinity	**450 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**04/22/10**	**0112058**
		Dilution Factor: 1				
Total Organic Carbon	**5**	**1**	**mg/L**	**SW846 9060**	**04/20/10**	**0110237**
		Dilution Factor: 1				
Total Sulfide	**1.1**	**1.0**	**mg/L**	**MCAWW 376.1**	**04/20/10**	**0110353**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW03-041510

General Chemistry

Lot-Sample #...: A0D170440-004 **Work Order #...:** LX5M0 **Matrix.....:** WG
Date Sampled...: 04/15/10 17:20 **Date Received..:** 04/17/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	ND	0.1	mg/L	MCAWW 353.2	04/22/10	0112284
		Dilution Factor: 1				
Sulfate	**2.7**	**2.0**	**mg/L**	**MCAWW 300.0A**	**04/20/10**	**0111116**
		Dilution Factor: 2				
Total Alkalinity	**470 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**04/22/10**	**0112058**
		Dilution Factor: 1				
Total Organic Carbon	**28**	**1**	**mg/L**	**SW846 9060**	**04/20/10**	**0110237**
		Dilution Factor: 1				
Total Sulfide	**0.79 B**	**1.0**	**mg/L**	**MCAWW 376.1**	**04/20/10**	**0110353**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

B Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW05-041610

General Chemistry

Lot-Sample #...: A0D170440-005 **Work Order #...:** LX5M3 **Matrix.....:** WG
Date Sampled...: 04/16/10 09:30 **Date Received..:** 04/17/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	0.03 B	0.1	mg/L	MCAWW 353.2	04/22/10	0112284
		Dilution Factor: 1				
Sulfate	7.3	2.0	mg/L	MCAWW 300.0A	04/21/10	0111116
		Dilution Factor: 2				
Total Alkalinity	450 J	5.0	mg/L	MCAWW 310.1	04/22/10	0112058
		Dilution Factor: 1				
Total Organic Carbon	16	1	mg/L	SW846 9060	04/20/10	0110237
		Dilution Factor: 1				
Total Sulfide	0.62 B	1.0	mg/L	MCAWW 376.1	04/20/10	0110353
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

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

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW06-041610

General Chemistry

Lot-Sample #...: A0D170440-006 **Work Order #...:** LX5M4 **Matrix.....:** WG
Date Sampled...: 04/16/10 11:10 **Date Received..:** 04/17/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	25 J	5.0	mg/L	MCAWW 353.2	04/27/10	0117207
		Dilution Factor: 50				
Sulfate	83.3	2.0	mg/L	MCAWW 300.0A	04/21/10	0111116
		Dilution Factor: 2				
Total Alkalinity	410 J	5.0	mg/L	MCAWW 310.1	04/23/10	0112058
		Dilution Factor: 1				
Total Organic Carbon	5	1	mg/L	SW846 9060	04/20/10	0110237
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	04/20/10	0110353
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW07-041610

General Chemistry

Lot-Sample #...: A0D170440-007 **Work Order #...:** LX5M5 **Matrix.....:** WG
Date Sampled...: 04/16/10 12:50 **Date Received..:** 04/17/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	2.9	1.0	mg/L	MCAWW 353.2	04/22/10	0112284
		Dilution Factor: 10				
Sulfate	24.0	2.0	mg/L	MCAWW 300.0A	04/21/10	0111116
		Dilution Factor: 2				
Total Alkalinity	490 J	5.0	mg/L	MCAWW 310.1	04/23/10	0112058
		Dilution Factor: 1				
Total Organic Carbon	12	1	mg/L	SW846 9060	04/20/10	0110237
		Dilution Factor: 1				
Total Sulfide	0.46 B	1.0	mg/L	MCAWW 376.1	04/20/10	0110353
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

B Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-RAMW08-041610

General Chemistry

Lot-Sample #...: A0D170440-008 **Work Order #...:** LX5M6 **Matrix.....:** WG
Date Sampled...: 04/16/10 14:45 **Date Received..:** 04/17/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**17**	**1.0**	**mg/L**	**MCAWW 353.2**	**04/22/10**	**0112284**
		Dilution Factor: 10				
Sulfate	**73.1**	**2.0**	**mg/L**	**MCAWW 300.0A**	**04/21/10**	**0111116**
		Dilution Factor: 2				
Total Alkalinity	**440 J**	**5.0**	**mg/L**	**MCAWW 310.1**	**04/24/10**	**0116057**
		Dilution Factor: 1				
Total Organic Carbon	**30**	**1**	**mg/L**	**SW846 9060**	**04/20/10**	**0110237**
		Dilution Factor: 1				
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	04/20/10	0110353
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

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

Stantec Consulting Corporation

Client Sample ID: HSSER-DUP04-041610

General Chemistry

Lot-Sample #...: A0D170440-009 **Work Order #...:** LX5M7 **Matrix.....:** WG
Date Sampled...: 04/16/10 **Date Received..:** 04/17/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	0.08 B	0.1	mg/L	MCAWW 353.2	04/22/10	0112284
		Dilution Factor: 1				
Sulfate	7.8	2.0	mg/L	MCAWW 300.0A	04/21/10	0111116
		Dilution Factor: 2				
Total Alkalinity	440 J	5.0	mg/L	MCAWW 310.1	04/24/10	0116057
		Dilution Factor: 1				
Total Organic Carbon	17	1	mg/L	SW846 9060	04/20/10	0110237
		Dilution Factor: 1				
Total Sulfide	0.46 B	1.0	mg/L	MCAWW 376.1	04/20/10	0110353
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

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

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A0D170440 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: L0C611AD		MB Lot-Sample #:	A0D220000-284	
	ND	0.1	mg/L	MCAWW 353.2	04/22/10	0112284
		Dilution Factor: 1				
Nitrate-Nitrite		Work Order #: L0KML1AA		MB Lot-Sample #:	A0D270000-207	
	0.06 B	**0.1**	**mg/L**	**MCAWW 353.2**	**04/27/10**	**0117207**
		Dilution Factor: 1				
Sulfate		Work Order #: LX9CQ1AA		MB Lot-Sample #:	A0D210000-116	
	ND	1.0	mg/L	MCAWW 300.0A	04/20/10	0111116
		Dilution Factor: 1				
Sulfate		Work Order #: L0A7E1AA		MB Lot-Sample #:	A0D220000-125	
	ND	1.0	mg/L	MCAWW 300.0A	04/21/10	0112125
		Dilution Factor: 1				
Total Alkalinity		Work Order #: L0A1X1AA		MB Lot-Sample #:	A0D220000-058	
	6.3	**5.0**	**mg/L**	**MCAWW 310.1**	**04/22/10**	**0112058**
		Dilution Factor: 1				
Total Alkalinity		Work Order #: L0HWG1AA		MB Lot-Sample #:	A0D260000-057	
	2.4 B	**5.0**	**mg/L**	**MCAWW 310.1**	**04/24/10**	**0116057**
		Dilution Factor: 1				
Total Organic Carbon		Work Order #: LX8GD1AA		MB Lot-Sample #:	A0D200000-237	
	ND	1	mg/L	SW846 9060	04/19/10	0110237
		Dilution Factor: 1				
Total Sulfide		Work Order #: LX8J41AA		MB Lot-Sample #:	A0D200000-353	
	ND	1.0	mg/L	MCAWW 376.1	04/20/10	0110353
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A0D170440 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		WO#:L0C611AA-LCS/L0C611AC-LCSD LCS Lot-Sample#: A0D220000-284					
	110	(79 - 117)			MCAWW 353.2	04/22/10	0112284
	110	(79 - 117)	0.41	(0-20)	MCAWW 353.2	04/22/10	0112284
		Dilution Factor: 1					
Sulfate		WO#:LX9CQ1AC-LCS/LX9CQ1AD-LCSD LCS Lot-Sample#: A0D210000-116					
	95	(90 - 110)			MCAWW 300.0A	04/20/10	0111116
	95	(90 - 110)	0.0	(0-20)	MCAWW 300.0A	04/20/10	0111116
		Dilution Factor: 1					
Sulfate		WO#:L0A7E1AC-LCS/L0A7E1AD-LCSD LCS Lot-Sample#: A0D220000-125					
	96	(90 - 110)			MCAWW 300.0A	04/21/10	0112125
	96	(90 - 110)	0.0	(0-20)	MCAWW 300.0A	04/21/10	0112125
		Dilution Factor: 1					
Total Sulfide		WO#:LX8J41AC-LCS/LX8J41AD-LCSD LCS Lot-Sample#: A0D200000-353					
	98	(79 - 104)			MCAWW 376.1	04/20/10	0110353
	101	(79 - 104)	2.8	(0-20)	MCAWW 376.1	04/20/10	0110353
		Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A0D170440 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			WO#:L0C611AA-LCS/L0C611AC-LCSD			LCS Lot-Sample#: A0D220000-284		
	7.2	7.9	mg/L	110		MCAWW 353.2	04/22/10	0112284
	7.2	7.9	mg/L	110	0.41	MCAWW 353.2	04/22/10	0112284
			Dilution Factor: 1					
Sulfate			WO#:LX9CQ1AC-LCS/LX9CQ1AD-LCSD			LCS Lot-Sample#: A0D210000-116		
	50.0	47.4	mg/L	95		MCAWW 300.0A	04/20/10	0111116
	50.0	47.4	mg/L	95	0.0	MCAWW 300.0A	04/20/10	0111116
			Dilution Factor: 1					
Sulfate			WO#:L0A7E1AC-LCS/L0A7E1AD-LCSD			LCS Lot-Sample#: A0D220000-125		
	50.0	48.0	mg/L	96		MCAWW 300.0A	04/21/10	0112125
	50.0	48.0	mg/L	96	0.0	MCAWW 300.0A	04/21/10	0112125
			Dilution Factor: 1					
Total Sulfide			WO#:LX8J41AC-LCS/LX8J41AD-LCSD			LCS Lot-Sample#: A0D200000-353		
	17	17	mg/L	98		MCAWW 376.1	04/20/10	0110353
	17	17	mg/L	101	2.8	MCAWW 376.1	04/20/10	0110353
			Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D170440 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		Work Order #: L0KML1AC	LCS Lot-Sample#: A0D270000-207		
	105	(79 - 117)	MCAWW 353.2	04/27/10	0117207
		Dilution Factor: 1			
Total Alkalinity		Work Order #: L0A1X1AC	LCS Lot-Sample#: A0D220000-058		
	101	(90 - 127)	MCAWW 310.1	04/22/10	0112058
		Dilution Factor: 1			
Total Alkalinity		Work Order #: L0HWG1AC	LCS Lot-Sample#: A0D260000-057		
	97	(90 - 127)	MCAWW 310.1	04/24/10	0116057
		Dilution Factor: 1			
Total Organic Carbon		Work Order #: LX8GD1AC	LCS Lot-Sample#: A0D200000-237		
	98	(88 - 115)	SW846 9060	04/20/10	0110237
		Dilution Factor: 1			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0D170440 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			Work Order #:	L0KML1AC	LCS Lot-Sample#:	A0D270000-207	
	7.8	8.2	mg/L	105	MCAWW 353.2	04/27/10	0117207
			Dilution Factor: 1				
Total Alkalinity			Work Order #:	L0A1X1AC	LCS Lot-Sample#:	A0D220000-058	
	41	42	mg/L	101	MCAWW 310.1	04/22/10	0112058
			Dilution Factor: 1				
Total Alkalinity			Work Order #:	L0HWG1AC	LCS Lot-Sample#:	A0D260000-057	
	41	40	mg/L	97	MCAWW 310.1	04/24/10	0116057
			Dilution Factor: 1				
Total Organic Carbon			Work Order #:	LX8GD1AC	LCS Lot-Sample#:	A0D200000-237	
	69	68	mg/L	98	SW846 9060	04/20/10	0110237
			Dilution Factor: 1				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D170440 **Matrix.....:** WG
Date Sampled...: 04/15/10 16:05 **Date Received..:** 04/17/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		Work Order #...: LX5L71AJ		MS Lot-Sample #: A0D170440-003	
	95	(80 - 120)	MCAWW 300.0A	04/21/10	0112125
		Dilution Factor: 1			
Sulfate		Work Order #...: LX5M51AJ		MS Lot-Sample #: A0D170440-007	
	99	(80 - 120)	MCAWW 300.0A	04/21/10	0111116
		Dilution Factor: 2			

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0D170440 **Matrix.....:** WG
Date Sampled...: 04/15/10 16:05 **Date Received..:** 04/17/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate			Work Order #...:		LX5L71AJ	MS Lot-Sample #:		A0D170440-003
	2.1	50.0	49.4	mg/L	95	MCAWW 300.0A	04/21/10	0112125
			Dilution Factor: 1					
Sulfate			Work Order #...:		LX5M51AJ	MS Lot-Sample #:		A0D170440-007
	24.0	50.0	73.7	mg/L	99	MCAWW 300.0A	04/21/10	0111116
			Dilution Factor: 2					

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D170440 **Matrix.....:** WG
Date Sampled...: 04/16/10 **Date Received..:** 04/17/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			WO#: LX5L61AT-MS/LX5L61AU-MSD			MS Lot-Sample #: A0D170440-002	
	121	(34 - 125)			MCAWW 353.2	04/22/10	0112284
	114	(34 - 125)	4.5	(0-20)	MCAWW 353.2	04/22/10	0112284
		Dilution Factor: 1					
Nitrate-Nitrite			WO#: LX5M71AJ-MS/LX5M71AK-MSD			MS Lot-Sample #: A0D170440-009	
	65	(34 - 125)			MCAWW 353.2	04/22/10	0112284
	69	(34 - 125)	4.7	(0-20)	MCAWW 353.2	04/22/10	0112284
		Dilution Factor: 1					
Sulfate			WO#: LX5L61AL-MS/LX5L61AM-MSD			MS Lot-Sample #: A0D170440-002	
	121 N	(80 - 120)			MCAWW 300.0A	04/20/10	0111116
	109	(80 - 120)	3.8	(0-20)	MCAWW 300.0A	04/20/10	0111116
		Dilution Factor: 2					
Total Alkalinity			WO#: LX5L61A1-MS/LX5L61A2-MSD			MS Lot-Sample #: A0D170440-002	
	32	(10 - 160)			MCAWW 310.1	04/22/10	0112058
	34	(10 - 160)	1.5	(0-24)	MCAWW 310.1	04/22/10	0112058
		Dilution Factor: 1					
Total Organic Carbon			WO#: LX5L61AV-MS/LX5L61AW-MSD			MS Lot-Sample #: A0D170440-002	
	113	(72 - 136)			SW846 9060	04/19/10	0110237
	112	(72 - 136)	0.50	(0-20)	SW846 9060	04/19/10	0110237
		Dilution Factor: 1					
Total Sulfide			WO#: LX5L61AQ-MS/LX5L61AR-MSD			MS Lot-Sample #: A0D170440-002	
	128 N	(75 - 107)			MCAWW 376.1	04/20/10	0110353
	128 N	(75 - 107)	0.0	(0-20)	MCAWW 376.1	04/20/10	0110353
		Dilution Factor: 1					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0D170440 **Matrix.....:** WG
Date Sampled...: 04/16/10 **Date Received..:** 04/17/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			WO#: LX5L61AT-MS/LX5L61AU-MSD				MS Lot-Sample #: A0D170440-002		
	0.2	0.5	0.9	mg/L	121		MCAWW 353.2	04/22/10	0112284
	0.2	0.5	0.8	mg/L	114	4.5	MCAWW 353.2	04/22/10	0112284
			Dilution Factor: 1						
Nitrate-Nitrite			WO#: LX5M71AJ-MS/LX5M71AK-MSD				MS Lot-Sample #: A0D170440-009		
	0.08	0.5	0.4	mg/L	65		MCAWW 353.2	04/22/10	0112284
	0.08	0.5	0.4	mg/L	69	4.7	MCAWW 353.2	04/22/10	0112284
			Dilution Factor: 1						
Sulfate			WO#: LX5L61AL-MS/LX5L61AM-MSD				MS Lot-Sample #: A0D170440-002		
	102	50.0	162 N	mg/L	121		MCAWW 300.0A	04/20/10	0111116
	102	50.0	156	mg/L	109	3.8	MCAWW 300.0A	04/20/10	0111116
			Dilution Factor: 2						
Total Alkalinity			WO#: LX5L61A1-MS/LX5L61A2-MSD				MS Lot-Sample #: A0D170440-002		
	450	500	610	mg/L	32		MCAWW 310.1	04/22/10	0112058
	450	500	620	mg/L	34	1.5	MCAWW 310.1	04/22/10	0112058
			Dilution Factor: 1						
Total Organic Carbon			WO#: LX5L61AV-MS/LX5L61AW-MSD				MS Lot-Sample #: A0D170440-002		
	65	100	180	mg/L	113		SW846 9060	04/19/10	0110237
	65	100	180	mg/L	112	0.50	SW846 9060	04/19/10	0110237
			Dilution Factor: 1						
Total Sulfide			WO#: LX5L61AQ-MS/LX5L61AR-MSD				MS Lot-Sample #: A0D170440-002		
	0.62	17	23 N	mg/L	128		MCAWW 376.1	04/20/10	0110353
	0.62	17	23 N	mg/L	128	0.0	MCAWW 376.1	04/20/10	0110353
			Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D170440 **Matrix.....:** WATER
Date Sampled...: 04/12/10 **Date Received..:** 04/16/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		WO#: LX9661A1-MS/LX9661A2-MSD				MS Lot-Sample #: A0D210486-001	
	104	(34 - 125)			MCAWW 353.2	04/27/10	0117207
	106	(34 - 125)	1.8	(0-20)	MCAWW 353.2	04/27/10	0117207
		Dilution Factor: 1					
Total Alkalinity		WO#: LX7NP1AN-MS/LX7NP1AP-MSD				MS Lot-Sample #: A0D160508-016	
	118	(10 - 160)			MCAWW 310.1	04/24/10	0116058
	123	(10 - 160)	3.6	(0-24)	MCAWW 310.1	04/24/10	0116058
		Dilution Factor: 1					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0D170440 **Matrix.....:** WATER
Date Sampled...: 04/12/10 **Date Received..:** 04/16/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			WO#: LX9661A1-MS/LX9661A2-MSD				MS Lot-Sample #: A0D210486-001		
	0.1	0.5	0.6	mg/L	104		MCAWW 353.2	04/27/10	0117207
	0.1	0.5	0.6	mg/L	106	1.8	MCAWW 353.2	04/27/10	0117207
			Dilution Factor: 1						
Total Alkalinity			WO#: LX7NP1AN-MS/LX7NP1AP-MSD				MS Lot-Sample #: A0D160508-016		
	11.8	500	603	mg/L	118		MCAWW 310.1	04/24/10	0116058
	11.8	500	625	mg/L	123	3.6	MCAWW 310.1	04/24/10	0116058
			Dilution Factor: 1						

NOTE(S):

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

END OF REPORT

QUARTER 3

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 182602078.204.42115

HAMILTON SUNDSTRAND ROCKFORD

Lot #: A0G280449

John Dennison

Stantec Consulting Corporation
446 Eisenhower Lane North
Lombard, IL 60148

TESTAMERICA LABORATORIES, INC.

Alesia M. Danford

Approved for release.
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8/12/2010 3:42 PM

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August 12, 2010

ACCREDITED IN ACCORDANCE WITH nelac

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A0G280449

The following report contains the analytical results for ten water samples and one quality control sample submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HAMILTON SUNDSTRAND ROCKFORD Site, project number 182602078.204.42115. The samples were received July 28, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Alan Gorski, Amy Rodebaugh, and John Dennison on August 06, 2010. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 2.8°C.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 032609.doc

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0G280449

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HS SER-MW07FGA-072610 07/26/10 13:55	**001**			
cis-1,2-Dichloroethylene	0.00056 J	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.0011	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.00053 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0025	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0017	0.0010	mg/L	SW846 8260B
HS SER-SMW02-072610 07/26/10 15:00	**002**			
Tetrachloroethylene	0.00062 J	0.0010	mg/L	SW846 8260B
HS SER-SMW01-072610 07/26/10 15:50	**003**			
Tetrachloroethylene	0.0024	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0019	0.0010	mg/L	SW846 8260B
HS SER-SMW19-072610 07/26/10 17:05	**004**			
cis-1,2-Dichloroethylene	0.00079 J	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.0014	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.010	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.00036 J	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.00030 J	0.0010	mg/L	SW846 8260B
HS SER-MW203-072710 07/27/10 10:05	**007**			
Tetrachloroethylene	0.0076	0.0010	mg/L	SW846 8260B
HS SER-SMW20-072710 07/27/10 11:10	**008**			
cis-1,2-Dichloroethylene	0.0023	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.00052 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0025	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0021	0.0010	mg/L	SW846 8260B
HS SER-SMW04-072710 07/27/10 13:00	**009**			
1,1-Dichloroethylene	0.00062 J	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.0078	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.020	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.0082	0.0010	mg/L	SW846 8260B
Vinyl chloride	0.0043	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0035	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0035	0.0010	mg/L	SW846 8260B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0G280449

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HS SER-SMW08-072710 07/27/10 16:00 011				
1,1-Dichloroethylene	0.00069 J	0.0025	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.040	0.0025	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00059 J	0.0025	mg/L	SW846 8260B
Tetrachloroethylene	0.070	0.0025	mg/L	SW846 8260B
Trichloroethylene	0.0059	0.0025	mg/L	SW846 8260B
1,1-Dichloroethane	0.013	0.0025	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.029	0.0025	mg/L	SW846 8260B

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0G280449

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SAMPLE SUMMARY

SAMPLE SUMMARY

A0G280449

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
L4RG3	001	HS SER-MW07FGA-072610	07/26/10	13:55
L4RG8	002	HS SER-SMW02-072610	07/26/10	15:00
L4RG9	003	HS SER-SMW01-072610	07/26/10	15:50
L4RHA	004	HS SER-SMW19-072610	07/26/10	17:05
L4RHD	005	HS SER-FBLK03-072710	07/27/10	08:45
L4RHH	006	HS SER-EBLK03-072710	07/27/10	09:00
L4RHJ	007	HS SER-MW203-072710	07/27/10	10:05
L4RHL	008	HS SER-SMW20-072710	07/27/10	11:10
L4RHN	009	HS SER-SMW04-072710	07/27/10	13:00
L4RHQ	010	HS SER-TRIP01-072710	07/27/10	
L4RHT	011	HS SER-SMW08-072710	07/27/10	16:00

NOTE(S):

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

TestAmerica Laboratory location: NORTH CANTON, OH

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

15

TestAmerica Laboratories, Inc.

Client Contact			
Company Name: STANTEC	Client Project Manager: JOHN PUCKETT	Site Contact: BRIAN CAMPBELL	Lab Contact: ALEXIA DANFORTH	COC No:
Address: 446 EISENHOWER LANE NORTH	Telephone: 630.792.1680	Telephone: 630.792.1680	Telephone: 330.966.9783	1 of 2 COCs
City/State/Zip: LOMBARD, IL 60148	Email: john.puckett@stantec.com			
Phone: 630.792.1680		TAT if different from below STANDARD: ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		
Project Name: HAMILTON SUNDSTRAND SE ROCKFORD	Method of Shipment/Carrier: TEST AMERICA COURIER			
Project Number: 182602078.204.42115	Shipping/Tracking No:			
PO#				

Analyses

Sample Identification	Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:			VOC 8260B*								Sample Specific Notes / Special Instructions:
HS SER - MW07FGA - 072610	7-26-10	1255		X						3					N	G	X								
HS SER - SMW02 - 072610	7-26-10	1500		X						3					N	G	X								
HS SER - SMW01 - 072610	7-26-10	1550		X						3					N	G	X								
HS SER - MS05 - 072610	7-26-10	1550		X						3					N	G	X								
HS SER - MSD05 - 072610	7-26-10	1550		X						3					N	G	X								
HS SER - SMW19 - 072610	7-26-10	1705		X						3					N	G	X								
HS SER - FBLK03 - 072710	7-27-10	0845		X						3					N	G	X								
HS SER - EBLK03 - 072710	7-27-10	0900		X						3					N	G	X								
HS SER - MW203 - 072710	7-27-10	1005		X						3					N	G	X								
HS SER - SMW20 - 072710	7-27-10	1110		X						3					N	G	X								

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☐ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: * LIST OF 13 VOCs
LEVEL IV DATA

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Matthew J. Tantini	STANTEC	7-27-10 / 1640	Walt Johnson	TEST	7/27 1645
Walt Johnson	TEST	7/27 1720			
			Received in Laboratory by:	Company:	Date/Time:
			[illegible]	TAL	7/28/10 0905

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TAL-0018 (1008)

North Canton

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: NORTH CANTON, OH

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other _____

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: STANTEC	Client Project Manager: JOHN PUCKETT	Site Contact: BRIAN CAMPBELL	Lab Contact: ALESIA DANFORTH	COC No:
Address: 446 EISENHOWER LANE NORTH	Telephone: 630.792.1680	Telephone: 630.792.1680	Telephone: 330.966.9783	2 of 2 COCs
City/State/Zip: LOMBARD, IL 60148	Email: john.puckett@stantec.com			
Phone: 630.792.1680		TAT if different from below: STANDARD ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		
Project Name: HAMILTON SUNSTRAND - SE ROCKFORD	Method of Shipment/Carrier: TEST AMERICA COURIER			
Project Number: 182602078.204.42115	Skipping/Tracking No:			
PO#				

Analyses

Sample Identification	Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:			VOC 8260B *									Sample Specific Notes / Special Instructions:
HS SER-SMW04-072710	7-27-10	1300		X						3					N	G	X									
HS SER-TRIP01-072710	7-27-10	—								1					N	G	X									
HS SER-SMW08-072710	7-27-10	1600		X						3					N	G	X									

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☐ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: * LIST OF 13 VOCs LEVEL IV DATA

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Matthew J. Pontier	STANTEC	7-27-10/1640	Walt Johnson	Test	7/27 16:45
Walt Johnson	Test	7/27 1720			
			Received in Laboratory by: [signature]	TANC	7-28-10 0905

North Canton

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TAL-0018 (1008)

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** A0G280449
North Canton Facility

Client Stantec Project Hamilton Sandcleaned By: [illegible]
Cooler Received on 7-28-10 Opened on 7-28-10 (Signature)
FedEx ☑ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____
TestAmerica Cooler # _____ Multiple Coolers ☐ Foam Box ☐ Client Cooler ☑ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☑ Intact? Yes ☐ No ☐ NA ☑
   If YES, Quantity _____ Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☑
   Were custody seals on the bottle(s)? Yes ☐ No ☑
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☑ No ☐
3. Did custody papers accompany the sample(s)? Yes ☑ No ☐ Relinquished by client? Yes ☑ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☑ No ☐
5. Packing material used: Bubble Wrap ☑ Foam ☐ None ☐ Other _____
6. Cooler temperature upon receipt 2.8 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☑ Other ☐ _____
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☑ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☐ No ☐ NA ☑
10. Were correct bottle(s) used for the test(s) indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☑ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☑ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☑ No ☐ Were VOAs on the COC? Yes ☑ No ☐

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

_____

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 051010-HNO_3; *Sulfuric Acid Lot#* 121709-H_2SO_4; *Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-$(CH_3COO)_2ZN/NaOH$. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HS SER-MW07FGA-072610

GC/MS Volatiles

Lot-Sample #...: A0G280449-001 **Work Order #...:** L4RG31AA **Matrix.....:** WG
Date Sampled...: 07/26/10 13:55 **Date Received..:** 07/28/10
Prep Date.....: 08/02/10 **Analysis Date..:** 08/02/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.00056 J**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.0011**	**0.0010**	**mg/L**
Trichloroethylene	**0.00053 J**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0025**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0017**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 122)
1,2-Dichloroethane-d4	102	(61 - 128)
Toluene-d8	103	(76 - 110)
4-Bromofluorobenzene	97	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW02-072610

GC/MS Volatiles

Lot-Sample #...: A0G280449-002 **Work Order #...:** L4RG81AA **Matrix.....:** WG
Date Sampled...: 07/26/10 15:00 **Date Received..:** 07/28/10
Prep Date.....: 08/02/10 **Analysis Date..:** 08/02/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00062 J**	**0.0010**	**mg/L**
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 122)
1,2-Dichloroethane-d4	101	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW01-072610

GC/MS Volatiles

Lot-Sample #...: A0G280449-003 **Work Order #...:** L4RG91AA **Matrix.....:** WG
Date Sampled...: 07/26/10 15:50 **Date Received..:** 07/28/10
Prep Date.....: 08/02/10 **Analysis Date..:** 08/02/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.0024**	**0.0010**	**mg/L**
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0019**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
1,2-Dichloroethane-d4	101	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	99	(74 - 116)

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW19-072610

GC/MS Volatiles

Lot-Sample #...: A0G280449-004 **Work Order #...:** L4RHA1AA **Matrix.....:** WG
Date Sampled...: 07/26/10 17:05 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.00079 J**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.0014**	**0.0010**	**mg/L**
Trichloroethylene	**0.010**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.00036 J**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.00030 J**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
1,2-Dichloroethane-d4	100	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	103	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-FBLK03-072710

GC/MS Volatiles

Lot-Sample #...: A0G280449-005 **Work Order #...:** L4RHD1AA **Matrix.....:** WQ
Date Sampled...: 07/27/10 08:45 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
1,2-Dichloroethane-d4	102	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	100	(74 - 116)

Stantec Consulting Corporation

Client Sample ID: HS SER-EBLK03-072710

GC/MS Volatiles

Lot-Sample #...: A0G280449-006 **Work Order #...:** L4RHH1AA **Matrix.....:** WQ
Date Sampled...: 07/27/10 09:00 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
1,2-Dichloroethane-d4	99	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	100	(74 - 116)

Stantec Consulting Corporation

Client Sample ID: HS SER-MW203-072710

GC/MS Volatiles

Lot-Sample #...: A0G280449-007 **Work Order #...:** L4RHJ1AA **Matrix.....:** WG
Date Sampled...: 07/27/10 10:05 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.0076**	**0.0010**	**mg/L**
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 122)
1,2-Dichloroethane-d4	101	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW20-072710

GC/MS Volatiles

Lot-Sample #...: A0G280449-008 **Work Order #...:** L4RHL1AA **Matrix.....:** WG
Date Sampled...: 07/27/10 11:10 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.0023**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00052 J**	**0.0010**	**mg/L**
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0025**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0021**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 122)
1,2-Dichloroethane-d4	99	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW04-072710

GC/MS Volatiles

Lot-Sample #...: A0G280449-009 **Work Order #...:** L4RHN1AA **Matrix.....:** WG
Date Sampled...: 07/27/10 13:00 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00062 J**	**0.0010**	**mg/L**
cis-1,2-Dichloroethylene	**0.0078**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.020**	**0.0010**	**mg/L**
Trichloroethylene	**0.0082**	**0.0010**	**mg/L**
Vinyl chloride	**0.0043**	**0.0010**	**mg/L**
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0035**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0035**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
1,2-Dichloroethane-d4	100	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	100	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-TRIP01-072710

GC/MS Volatiles

Lot-Sample #...: A0G280449-010 **Work Order #...:** L4RHQ1AA **Matrix.....:** WQ
Date Sampled...: 07/27/10 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	97	(73 - 122)
1,2-Dichloroethane-d4	101	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW08-072710

GC/MS Volatiles

Lot-Sample #...: A0G280449-011 **Work Order #...:** L4RHT1AA **Matrix.....:** WG
Date Sampled...: 07/27/10 16:00 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 2.5 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00069 J**	**0.0025**	**mg/L**
cis-1,2-Dichloroethylene	**0.040**	**0.0025**	**mg/L**
trans-1,2-Dichloroethylene	**0.00059 J**	**0.0025**	**mg/L**
Tetrachloroethylene	**0.070**	**0.0025**	**mg/L**
Trichloroethylene	**0.0059**	**0.0025**	**mg/L**
Vinyl chloride	ND	0.0025	mg/L
Methylene chloride	ND	0.0025	mg/L
1,1-Dichloroethane	**0.013**	**0.0025**	**mg/L**
1,2-Dichloroethane	ND	0.0025	mg/L
1,1,1-Trichloroethane	**0.029**	**0.0025**	**mg/L**
1,1,2-Trichloroethane	ND	0.0025	mg/L
Toluene	ND	0.0025	mg/L
Ethylbenzene	ND	0.0025	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
1,2-Dichloroethane-d4	104	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	100	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0G280449 **Work Order #...:** L41RN1AA **Matrix.....:** WATER
MB Lot-Sample #: A0H030000-127

Prep Date.....: 08/02/10 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 08/02/10 **Prep Batch #...:** 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	101	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0G280449 **Work Order #...:** L41RN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0H030000-127 L41RN1AD-LCSD
Prep Date.....: 08/02/10 **Analysis Date..:** 08/02/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**106**	**(63 - 130)**			**SW846 8260B**
	109	**(63 - 130)**	**2.7**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**104**	**(75 - 122)**			**SW846 8260B**
	105	**(75 - 122)**	**0.53**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	102	(88 - 113)			SW846 8260B
	101	(88 - 113)	0.85	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	100	(85 - 113)			SW846 8260B
	103	(85 - 113)	3.1	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	100	(80 - 120)			SW846 8260B
	103	(80 - 120)	2.7	(0-30)	SW846 8260B
Vinyl chloride	108	(61 - 120)			SW846 8260B
	112	(61 - 120)	4.1	(0-30)	SW846 8260B
Methylene chloride	100	(78 - 118)			SW846 8260B
	102	(78 - 118)	2.3	(0-30)	SW846 8260B
1,1-Dichloroethane	103	(86 - 123)			SW846 8260B
	105	(86 - 123)	2.0	(0-30)	SW846 8260B
1,2-Dichloroethane	102	(79 - 136)			SW846 8260B
	104	(79 - 136)	2.4	(0-30)	SW846 8260B
1,1,1-Trichloroethane	99	(78 - 140)			SW846 8260B
	98	(78 - 140)	0.42	(0-30)	SW846 8260B
1,1,2-Trichloroethane	103	(83 - 122)			SW846 8260B
	101	(83 - 122)	1.7	(0-30)	SW846 8260B
Toluene	**103**	**(74 - 119)**			**SW846 8260B**
	100	**(74 - 119)**	**3.3**	**(0-20)**	**SW846 8260B**
Ethylbenzene	103	(86 - 116)			SW846 8260B
	101	(86 - 116)	2.2	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
	100	(73 - 122)
1,2-Dichloroethane-d4	98	(61 - 128)
	98	(61 - 128)
Toluene-d8	104	(76 - 110)
	103	(76 - 110)
4-Bromofluorobenzene	111	(74 - 116)
	108	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0G280449 **Work Order #...:** L41RN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0H030000-127 L41RN1AD-LCSD
Prep Date.....: 08/02/10 **Analysis Date..:** 08/02/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.011**	**mg/L**	**106**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**109**	**2.7**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.010**	**mg/L**	**104**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**105**	**0.53**	**SW846 8260B**
Tetrachloroethylene	0.010	0.010	mg/L	102		SW846 8260B
	0.010	0.010	mg/L	101	0.85	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	103	3.1	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	103	2.7	SW846 8260B
Vinyl chloride	0.010	0.011	mg/L	108		SW846 8260B
	0.010	0.011	mg/L	112	4.1	SW846 8260B
Methylene chloride	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	102	2.3	SW846 8260B
1,1-Dichloroethane	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.011	mg/L	105	2.0	SW846 8260B
1,2-Dichloroethane	0.010	0.010	mg/L	102		SW846 8260B
	0.010	0.010	mg/L	104	2.4	SW846 8260B
1,1,1-Trichloroethane	0.010	0.0099	mg/L	99		SW846 8260B
	0.010	0.0098	mg/L	98	0.42	SW846 8260B
1,1,2-Trichloroethane	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.010	mg/L	101	1.7	SW846 8260B
Toluene	**0.010**	**0.010**	**mg/L**	**103**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**100**	**3.3**	**SW846 8260B**
Ethylbenzene	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.010	mg/L	101	2.2	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
	100	(73 - 122)
1,2-Dichloroethane-d4	98	(61 - 128)
	98	(61 - 128)
Toluene-d8	104	(76 - 110)
	103	(76 - 110)
4-Bromofluorobenzene	111	(74 - 116)
	108	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0G280449 **Work Order #...:** L4RG91AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0G280449-003 L4RG91AD-MSD
Date Sampled...: 07/26/10 15:50 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**100**	**(62 - 130)**			**SW846 8260B**
	104	**(62 - 130)**	**3.8**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**98**	**(62 - 130)**			**SW846 8260B**
	101	**(62 - 130)**	**3.3**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	93	(85 - 121)			SW846 8260B
	100	(85 - 121)	5.2	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	94	(87 - 114)			SW846 8260B
	99	(87 - 114)	5.2	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	97	(85 - 116)			SW846 8260B
	100	(85 - 116)	2.8	(0-30)	SW846 8260B
Vinyl chloride	102	(88 - 126)			SW846 8260B
	102	(88 - 126)	0.12	(0-30)	SW846 8260B
Methylene chloride	91	(82 - 115)			SW846 8260B
	96	(82 - 115)	4.6	(0-30)	SW846 8260B
1,1-Dichloroethane	95	(88 - 127)			SW846 8260B
	101	(88 - 127)	6.1	(0-30)	SW846 8260B
1,2-Dichloroethane	97	(71 - 160)			SW846 8260B
	99	(71 - 160)	1.3	(0-30)	SW846 8260B
1,1,1-Trichloroethane	97	(71 - 162)			SW846 8260B
	101	(71 - 162)	3.4	(0-30)	SW846 8260B
1,1,2-Trichloroethane	96	(86 - 129)			SW846 8260B
	98	(86 - 129)	2.7	(0-30)	SW846 8260B
Toluene	**92**	**(70 - 119)**			**SW846 8260B**
	96	**(70 - 119)**	**3.6**	**(0-20)**	**SW846 8260B**
Ethylbenzene	93	(86 - 132)			SW846 8260B
	99	(86 - 132)	6.1	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 122)
	102	(73 - 122)
1,2-Dichloroethane-d4	103	(61 - 128)
	104	(61 - 128)
Toluene-d8	102	(76 - 110)
	104	(76 - 110)
4-Bromofluorobenzene	107	(74 - 116)
	108	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0G280449 **Work Order #...:** L4RG91AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0G280449-003 L4RG91AD-MSD
Date Sampled...: 07/26/10 15:50 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethylene	**ND**	**0.010**	**0.010**	**mg/L**	**100**		**SW846 8260B**
	ND	**0.010**	**0.010**	**mg/L**	**104**	**3.8**	**SW846 8260B**
Trichloroethylene	**ND**	**0.010**	**0.0098**	**mg/L**	**98**		**SW846 8260B**
	ND	**0.010**	**0.010**	**mg/L**	**101**	**3.3**	**SW846 8260B**
Tetrachloroethylene	0.0024	0.010	0.012	mg/L	93		SW846 8260B
	0.0024	0.010	0.012	mg/L	100	5.2	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.010	0.0094	mg/L	94		SW846 8260B
	ND	0.010	0.0099	mg/L	99	5.2	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.010	0.0097	mg/L	97		SW846 8260B
	ND	0.010	0.010	mg/L	100	2.8	SW846 8260B
Vinyl chloride	ND	0.010	0.010	mg/L	102		SW846 8260B
	ND	0.010	0.010	mg/L	102	0.12	SW846 8260B
Methylene chloride	ND	0.010	0.0091	mg/L	91		SW846 8260B
	ND	0.010	0.0096	mg/L	96	4.6	SW846 8260B
1,1-Dichloroethane	ND	0.010	0.0095	mg/L	95		SW846 8260B
	ND	0.010	0.010	mg/L	101	6.1	SW846 8260B
1,2-Dichloroethane	ND	0.010	0.0097	mg/L	97		SW846 8260B
	ND	0.010	0.0099	mg/L	99	1.3	SW846 8260B
1,1,1-Trichloroethane	0.0019	0.010	0.012	mg/L	97		SW846 8260B
	0.0019	0.010	0.012	mg/L	101	3.4	SW846 8260B
1,1,2-Trichloroethane	ND	0.010	0.0096	mg/L	96		SW846 8260B
	ND	0.010	0.0098	mg/L	98	2.7	SW846 8260B
Toluene	**ND**	**0.010**	**0.0092**	**mg/L**	**92**		**SW846 8260B**
	ND	**0.010**	**0.0096**	**mg/L**	**96**	**3.6**	**SW846 8260B**
Ethylbenzene	ND	0.010	0.0093	mg/L	93		SW846 8260B
	ND	0.010	0.0099	mg/L	99	6.1	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 122)
	102	(73 - 122)
1,2-Dichloroethane-d4	103	(61 - 128)
	104	(61 - 128)
Toluene-d8	102	(76 - 110)
	104	(76 - 110)
4-Bromofluorobenzene	107	(74 - 116)
	108	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

END OF REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 182602078.204.42115

HAMILTON SUNDSTRAND ROCKFORD

Lot #: A0G280458

John Dennison

Stantec Consulting Corporation
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TESTAMERICA LABORATORIES, INC.

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August 12, 2010

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ACCREDITED IN ACCORDANCE WITH nelac

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A0G280458

The following report contains the analytical results for two water samples submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HAMILTON SUNDSTRAND ROCKFORD Site, project number 182602078.204.42115. The samples were received July 28, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Alan Gorski, Amy Rodebaugh, and John Dennison on August 06, 2010. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 2.8°C.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 032609.doc

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0G280458

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HS SER-PMW01-072710 07/27/10 13:50 001				
1,1-Dichloroethylene	0.00082 J	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.0059	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.033	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.0036	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.036	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.025	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	0.00037 J	0.0010	mg/L	SW846 8260B
HS SER-PMW02-072710 07/27/10 14:45 002				
1,1-Dichloroethylene	0.00066 J	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.0022	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.026	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.0027	0.0010	mg/L	SW846 8260B
Vinyl chloride	0.00052 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.011	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.017	0.0010	mg/L	SW846 8260B

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METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0G280458

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

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SAMPLE SUMMARY

SAMPLE SUMMARY

A0G280458

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
L4RH6	001	HS SER-PMW01-072710	07/27/10	13:50
L4RJA	002	HS SER-PMW02-072710	07/27/10	14:45

NOTE(S):

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

SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: NORTH CANTON, OH
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other _____

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: STANTEC	Client Project Manager: JOHN PUCKETT	Site Contact: BRIAN CAMPBELL	Lab Contact: ALESIA DANFORTH	COC No:
Address: 446 EISENHOWER LANE NORTH	Telephone: 630.792.1680	Telephone: 630.792.1680	Telephone: 330.966.9783	1 of 1 COCs
City/State/Zip: LOMBARD, IL 60148	Email: john.puckett@stantec.com			
Phone: 630.792.1680		TAT if different from below: STANDARD ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		
Project Name: HAMILTON SUNDSTRAND - SE ROCKFORD	Method of Shipment/Carrier: TESTAMERICA COURIER			
Project Number: 182602078.204.42115	Shipping/Tracking No:			
PO#				

Analyses: * VOC 8260B

Sample Identification	Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:			VOC 8260B										Sample Specific Notes / Special Instructions:
~~HS SER - SMW04 - 072710~~	~~7-27-10~~	~~1300~~		~~X~~						~~3~~					N	G	~~X~~ MP										
HS SER - PMW01 - 072710	7-27-10	1350		X						3					N	G	X										
HS SER - PMW02 - 072710	7-27-10	1445		X						3					N	G	X										

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☐ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: *LIST OF 13 VOCs
LEVEL IV QAQC

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Matthew J. Pontier	STANTEC	7-27-10 / 1640	Walt Johnson	Tesa	7/27 16:45
Walt Johnson	Tesa	7/27 17:20			
			Received in Laboratory by: [signature]	TAL	7-28-10 0905

North Canton

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TAL-0018 (1008)

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** A0G280458
North Canton Facility

Client Stantec Project Hamilton Sundstrand By: [illegible]
Cooler Received on 7-28-10 Opened on 7-28-10 (Signature)
FedEx ☑ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____
TestAmerica Cooler # _____ Multiple Coolers ☐ Foam Box ☐ Client Cooler ☑ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☑ Intact? Yes ☐ No ☐ NA ☑
   If YES, Quantity _____ Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☑
   Were custody seals on the bottle(s)? Yes ☐ No ☑
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☑ No ☐
3. Did custody papers accompany the sample(s)? Yes ☑ No ☐ Relinquished by client? Yes ☑ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☑ No ☐
5. Packing material used: Bubble Wrap ☑ Foam ☐ None ☐ Other _____
6. Cooler temperature upon receipt 2.8 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☑ Other ☐ _____
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☑ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☐ No ☐ NA ☑
10. Were correct bottle(s) used for the test(s) indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☑ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☑ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☐ No ☑ Were VOAs on the COC? Yes ☑ No ☐

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

_____

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s): *Nitric Acid Lot# 051010-HNO_3; Sulfuric Acid Lot# 121709-H_2SO_4; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-$(CH_3COO)_2ZN/NaOH$.* What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd

TestAmerica
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GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HS SER-PMW01-072710

GC/MS Volatiles

Lot-Sample #...: A0G280458-001 **Work Order #...:** L4RH61AA **Matrix.....:** WG
Date Sampled...: 07/27/10 13:50 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00082 J**	**0.0010**	**mg/L**
cis-1,2-Dichloroethylene	**0.0059**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.033**	**0.0010**	**mg/L**
Trichloroethylene	**0.0036**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.036**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.025**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	**0.00037 J**	**0.0010**	**mg/L**
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
1,2-Dichloroethane-d4	101	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-PMW02-072710

GC/MS Volatiles

Lot-Sample #...: A0G280458-002 **Work Order #...:** L4RJA1AA **Matrix.....:** WG
Date Sampled...: 07/27/10 14:45 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00066 J**	**0.0010**	**mg/L**
cis-1,2-Dichloroethylene	**0.0022**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.026**	**0.0010**	**mg/L**
Trichloroethylene	**0.0027**	**0.0010**	**mg/L**
Vinyl chloride	**0.00052 J**	**0.0010**	**mg/L**
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.011**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.017**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
1,2-Dichloroethane-d4	103	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0G280458
MB Lot-Sample #: A0H030000-127

Analysis Date..: 08/02/10
Dilution Factor: 1

Work Order #...: L41RN1AA

Prep Date.....: 08/02/10
Prep Batch #...: 0215127
Initial Wgt/Vol: 5 mL

Matrix.....: WATER

Final Wgt/Vol..: 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	101	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0G280458 **Work Order #...:** L41RN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0H030000-127 L41RN1AD-LCSD
Prep Date.....: 08/02/10 **Analysis Date..:** 08/02/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**106**	**(63 - 130)**			**SW846 8260B**
	109	**(63 - 130)**	**2.7**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**104**	**(75 - 122)**			**SW846 8260B**
	105	**(75 - 122)**	**0.53**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	102	(88 - 113)			SW846 8260B
	101	(88 - 113)	0.85	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	100	(85 - 113)			SW846 8260B
	103	(85 - 113)	3.1	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	100	(80 - 120)			SW846 8260B
	103	(80 - 120)	2.7	(0-30)	SW846 8260B
Vinyl chloride	108	(61 - 120)			SW846 8260B
	112	(61 - 120)	4.1	(0-30)	SW846 8260B
Methylene chloride	100	(78 - 118)			SW846 8260B
	102	(78 - 118)	2.3	(0-30)	SW846 8260B
1,1-Dichloroethane	103	(86 - 123)			SW846 8260B
	105	(86 - 123)	2.0	(0-30)	SW846 8260B
1,2-Dichloroethane	102	(79 - 136)			SW846 8260B
	104	(79 - 136)	2.4	(0-30)	SW846 8260B
1,1,1-Trichloroethane	99	(78 - 140)			SW846 8260B
	98	(78 - 140)	0.42	(0-30)	SW846 8260B
1,1,2-Trichloroethane	103	(83 - 122)			SW846 8260B
	101	(83 - 122)	1.7	(0-30)	SW846 8260B
Toluene	**103**	**(74 - 119)**			**SW846 8260B**
	100	**(74 - 119)**	**3.3**	**(0-20)**	**SW846 8260B**
Ethylbenzene	103	(86 - 116)			SW846 8260B
	101	(86 - 116)	2.2	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
	100	(73 - 122)
1,2-Dichloroethane-d4	98	(61 - 128)
	98	(61 - 128)
Toluene-d8	104	(76 - 110)
	103	(76 - 110)
4-Bromofluorobenzene	111	(74 - 116)
	108	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0G280458 **Work Order #...:** L41RN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0H030000-127 L41RN1AD-LCSD
Prep Date.....: 08/02/10 **Analysis Date..:** 08/02/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.011**	**mg/L**	**106**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**109**	**2.7**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.010**	**mg/L**	**104**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**105**	**0.53**	**SW846 8260B**
Tetrachloroethylene	0.010	0.010	mg/L	102		SW846 8260B
	0.010	0.010	mg/L	101	0.85	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	103	3.1	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	103	2.7	SW846 8260B
Vinyl chloride	0.010	0.011	mg/L	108		SW846 8260B
	0.010	0.011	mg/L	112	4.1	SW846 8260B
Methylene chloride	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	102	2.3	SW846 8260B
1,1-Dichloroethane	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.011	mg/L	105	2.0	SW846 8260B
1,2-Dichloroethane	0.010	0.010	mg/L	102		SW846 8260B
	0.010	0.010	mg/L	104	2.4	SW846 8260B
1,1,1-Trichloroethane	0.010	0.0099	mg/L	99		SW846 8260B
	0.010	0.0098	mg/L	98	0.42	SW846 8260B
1,1,2-Trichloroethane	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.010	mg/L	101	1.7	SW846 8260B
Toluene	**0.010**	**0.010**	**mg/L**	**103**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**100**	**3.3**	**SW846 8260B**
Ethylbenzene	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.010	mg/L	101	2.2	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
	100	(73 - 122)
1,2-Dichloroethane-d4	98	(61 - 128)
	98	(61 - 128)
Toluene-d8	104	(76 - 110)
	103	(76 - 110)
4-Bromofluorobenzene	111	(74 - 116)
	108	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0G280458 **Work Order #...:** L4RG91AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A0G280449-003 L4RG91AD-MSD
Date Sampled...: 07/26/10 15:50 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**100**	**(62 - 130)**			**SW846 8260B**
	104	**(62 - 130)**	**3.8**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**98**	**(62 - 130)**			**SW846 8260B**
	101	**(62 - 130)**	**3.3**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	93	(85 - 121)			SW846 8260B
	100	(85 - 121)	5.2	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	94	(87 - 114)			SW846 8260B
	99	(87 - 114)	5.2	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	97	(85 - 116)			SW846 8260B
	100	(85 - 116)	2.8	(0-30)	SW846 8260B
Vinyl chloride	102	(88 - 126)			SW846 8260B
	102	(88 - 126)	0.12	(0-30)	SW846 8260B
Methylene chloride	91	(82 - 115)			SW846 8260B
	96	(82 - 115)	4.6	(0-30)	SW846 8260B
1,1-Dichloroethane	95	(88 - 127)			SW846 8260B
	101	(88 - 127)	6.1	(0-30)	SW846 8260B
1,2-Dichloroethane	97	(71 - 160)			SW846 8260B
	99	(71 - 160)	1.3	(0-30)	SW846 8260B
1,1,1-Trichloroethane	97	(71 - 162)			SW846 8260B
	101	(71 - 162)	3.4	(0-30)	SW846 8260B
1,1,2-Trichloroethane	96	(86 - 129)			SW846 8260B
	98	(86 - 129)	2.7	(0-30)	SW846 8260B
Toluene	**92**	**(70 - 119)**			**SW846 8260B**
	96	**(70 - 119)**	**3.6**	**(0-20)**	**SW846 8260B**
Ethylbenzene	93	(86 - 132)			SW846 8260B
	99	(86 - 132)	6.1	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 122)
	102	(73 - 122)
1,2-Dichloroethane-d4	103	(61 - 128)
	104	(61 - 128)
Toluene-d8	102	(76 - 110)
	104	(76 - 110)
4-Bromofluorobenzene	107	(74 - 116)
	108	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0G280458 **Work Order #...:** L4RG91AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A0G280449-003 L4RG91AD-MSD
Date Sampled...: 07/26/10 15:50 **Date Received..:** 07/28/10
Prep Date.....: 08/03/10 **Analysis Date..:** 08/03/10
Prep Batch #...: 0215127
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethylene	**ND**	**0.010**	**0.010**	**mg/L**	**100**		**SW846 8260B**
	ND	**0.010**	**0.010**	**mg/L**	**104**	**3.8**	**SW846 8260B**
Trichloroethylene	**ND**	**0.010**	**0.0098**	**mg/L**	**98**		**SW846 8260B**
	ND	**0.010**	**0.010**	**mg/L**	**101**	**3.3**	**SW846 8260B**
Tetrachloroethylene	0.0024	0.010	0.012	mg/L	93		SW846 8260B
	0.0024	0.010	0.012	mg/L	100	5.2	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.010	0.0094	mg/L	94		SW846 8260B
	ND	0.010	0.0099	mg/L	99	5.2	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.010	0.0097	mg/L	97		SW846 8260B
	ND	0.010	0.010	mg/L	100	2.8	SW846 8260B
Vinyl chloride	ND	0.010	0.010	mg/L	102		SW846 8260B
	ND	0.010	0.010	mg/L	102	0.12	SW846 8260B
Methylene chloride	ND	0.010	0.0091	mg/L	91		SW846 8260B
	ND	0.010	0.0096	mg/L	96	4.6	SW846 8260B
1,1-Dichloroethane	ND	0.010	0.0095	mg/L	95		SW846 8260B
	ND	0.010	0.010	mg/L	101	6.1	SW846 8260B
1,2-Dichloroethane	ND	0.010	0.0097	mg/L	97		SW846 8260B
	ND	0.010	0.0099	mg/L	99	1.3	SW846 8260B
1,1,1-Trichloroethane	0.0019	0.010	0.012	mg/L	97		SW846 8260B
	0.0019	0.010	0.012	mg/L	101	3.4	SW846 8260B
1,1,2-Trichloroethane	ND	0.010	0.0096	mg/L	96		SW846 8260B
	ND	0.010	0.0098	mg/L	98	2.7	SW846 8260B
Toluene	**ND**	**0.010**	**0.0092**	**mg/L**	**92**		**SW846 8260B**
	ND	**0.010**	**0.0096**	**mg/L**	**96**	**3.6**	**SW846 8260B**
Ethylbenzene	ND	0.010	0.0093	mg/L	93		SW846 8260B
	ND	0.010	0.0099	mg/L	99	6.1	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 122)
	102	(73 - 122)
1,2-Dichloroethane-d4	103	(61 - 128)
	104	(61 - 128)
Toluene-d8	102	(76 - 110)
	104	(76 - 110)
4-Bromofluorobenzene	107	(74 - 116)
	108	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

END OF REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

HAMILTON SUNSTRAND SE ROCKFORD

Lot #: A0G300529

John Dennison

Stantec Consulting Corporation
446 Eisenhower Lane North
Lombard, IL 60148

TESTAMERICA LABORATORIES, INC.

Kris Brooks

Approved for release.
Kris Brooks
Project Manager
8/16/2010 5:28 PM

Designee for

Alesia M. Danford
Project Manager
alesia.danford@testamericainc.com

August 16, 2010

ACCREDITED IN ACCORDANCE WITH nelac

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A0G300529

The following report contains the analytical results for five water samples and one quality control sample submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HAMILTON SUNSTRAND SE ROCKFORD Site. The samples were received July 30, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Alan Gorski, Amy Rodebaugh, and John Dennison on August 09, 2010. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 2.3°C.

See TestAmerica's Cooler Receipt Form for additional information.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0G300529

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HS SER-GMZ04-072810 07/28/10 14:15 001				
cis-1,2-Dichloroethylene	0.0014	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.00041 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0019	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0031	0.0010	mg/L	SW846 8260B
HS SER-SMW21-072810 07/28/10 14:55 002				
1,1-Dichloroethylene	0.0047 J	0.0057	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.070	0.0057	mg/L	SW846 8260B
1,1-Dichloroethane	0.0091	0.0057	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.20	0.0057	mg/L	SW846 8260B
HS SER-GMZ03-072810 07/28/10 15:40 003				
cis-1,2-Dichloroethylene	0.0048	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.00042 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0076	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0024	0.0010	mg/L	SW846 8260B
HS SER-GMZ02-072810 07/28/10 16:35 004				
1,1-Dichloroethylene	0.00032 J	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.0044	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.00083 J	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.00073 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.016	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0073	0.0010	mg/L	SW846 8260B
HS SER-DUP05-072810 07/28/10 005				
1,1-Dichloroethylene	0.0050 J	0.0067	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.066	0.0067	mg/L	SW846 8260B
1,1-Dichloroethane	0.0080	0.0067	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.19	0.0067	mg/L	SW846 8260B

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0G300529

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SAMPLE SUMMARY

SAMPLE SUMMARY

A0G300529

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
L4W9J	001	HS SER-GMZ04-072810	07/28/10	14:15
L4W9M	002	HS SER-SMW21-072810	07/28/10	14:55
L4W9N	003	HS SER-GMZ03-072810	07/28/10	15:40
L4W9P	004	HS SER-GMZ02-072810	07/28/10	16:35
L4W9R	005	HS SER-DUP05-072810	07/28/10	
L4W9T	006	HS SER-TRIP02-072810	07/28/10	

NOTE(S):

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

SHIPPING AND RECEIVING DOCUMENTS

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica
2417 Bond Street
University Park, IL 60466
708.534.5200

Sampler ID _____
Temperature on Receipt _____
Drinking Water? Yes ☐ No ☒

Chain of Custody Record

TAL-4124-500 (1107)

Client	Project Manager	Date	Chain of Custody Number
STANTEC	JOHN PUCKETT		
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	
446 EISENHOWER LANE NORTH	630.792.1680	N. CANTON, OH	Page 1 of 1

City	State	Zip Code	Site Contact	Lab Contact
LOMBARD	IL	60148	BRIAN CAMPBELL	ALESIA DANFORTH

Project Name and Location (State): HAMILTON SUNSTRAND - SE ROCKFORD
Carrier/Waybill Number:
Contract/Purchase Order/Quote No.:

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		Analysis (Attach list if more space is needed): * VOC 8260B	Special Instructions/ Conditions of Receipt
HS SER - GMZ04 - 072810	7-28-10	1415		X						3				X	* LIST OF
HS SER - SMW21 - 072810	7-28-10	1455		X						3				X	* 13 VOCs
HS SER - GMZ03 - 072810	7-28-10	1540		X						3				X	
HS SER - GMZ02 - 072810	7-28-10	1635		X						3				X	LEVEL IV
HS SER - DUP05 - 072810	7-28-10	—		X						3				X	DATA
HS SER - TRIP02 - 072810	7-28-10	—		X						1				X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STANDARD

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: Matthew Porter	7-29-10	0830	1. Received By: Walt Johnson	7/29	8:30
2. Relinquished By: Walt Johnson	7/29	12:15	2. Received By: [illegible]	7-30-10	0915
3. Relinquished By:			3. Received By:		

Comments:

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

North Canton

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** A0G300529
North Canton Facility

Client Stantec Project Hamilton Sandstrand By: NG
Cooler Received on 7-30-10 Opened on 7-30-10 (Signature)
FedEx ☑ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other
TestAmerica Cooler # Multiple Coolers ☐ Foam Box ☐ Client Cooler ☑ Other

1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☑ Intact? Yes ☐ No ☐ NA ☑
   If YES, Quantity Quantity Unsalvageable
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☑
   Were custody seals on the bottle(s)? Yes ☐ No ☑
   If YES, are there any exceptions?
2. Shippers' packing slip attached to the cooler(s)? Yes ☑ No ☐
3. Did custody papers accompany the sample(s)? Yes ☑ No ☐ Relinquished by client? Yes ☑ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☑ No ☐
5. Packing material used: Bubble Wrap ☑ Foam ☑ None ☐ Other
6. Cooler temperature upon receipt 2.3 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☑ Other ☐
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☑ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☐ No ☐ NA ☑
10. Were correct bottle(s) used for the test(s) indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☑ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☑ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☑ No ☐ Were VOAs on the COC? Yes ☑ No ☐

Contacted PM Date by via Verbal ☐ Voice Mail ☐ Other ☐
Concerning

14. CHAIN OF CUSTODY

The following discrepancies occurred:

COC= 1x40 TB, rec'd 3x40 will log
Rec'd 1x L labeled Distilled water, not on coc.

15. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot# 051010-HNO_3; Sulfuric Acid Lot# 051010-H_2SO_4; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-$(CH_3COO)_2ZN/NaOH$.* What time was preservative added to sample(s)?

Client ID	pH	Date	Initials

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HS SER-GMZ04-072810

GC/MS Volatiles

Lot-Sample #...: A0G300529-001 **Work Order #...:** L4W9J1AA **Matrix.....:** WG
Date Sampled...: 07/28/10 14:15 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.0014**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00041 J**	**0.0010**	**mg/L**
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0019**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0031**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
1,2-Dichloroethane-d4	105	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	92	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW21-072810

GC/MS Volatiles

Lot-Sample #...: A0G300529-002 **Work Order #...:** L4W9M1AA **Matrix.....:** WG
Date Sampled...: 07/28/10 14:55 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 5.71 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0047 J**	**0.0057**	**mg/L**
cis-1,2-Dichloroethylene	**0.070**	**0.0057**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0057	mg/L
Tetrachloroethylene	ND	0.0057	mg/L
Trichloroethylene	ND	0.0057	mg/L
Vinyl chloride	ND	0.0057	mg/L
Methylene chloride	ND	0.0057	mg/L
1,1-Dichloroethane	**0.0091**	**0.0057**	**mg/L**
1,2-Dichloroethane	ND	0.0057	mg/L
1,1,1-Trichloroethane	**0.20**	**0.0057**	**mg/L**
1,1,2-Trichloroethane	ND	0.0057	mg/L
Toluene	ND	0.0057	mg/L
Ethylbenzene	ND	0.0057	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	104	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	95	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-GMZ03-072810

GC/MS Volatiles

Lot-Sample #...: A0G300529-003 **Work Order #...:** L4W9N1AA **Matrix.....:** WG
Date Sampled...: 07/28/10 15:40 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.0048**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00042 J**	**0.0010**	**mg/L**
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0076**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0024**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
1,2-Dichloroethane-d4	103	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	95	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-GMZ02-072810

GC/MS Volatiles

Lot-Sample #...: A0G300529-004 **Work Order #...:** L4W9P1AA **Matrix.....:** WG
Date Sampled...: 07/28/10 16:35 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00032 J**	**0.0010**	**mg/L**
cis-1,2-Dichloroethylene	**0.0044**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	**0.00083 J**	**0.0010**	**mg/L**
Trichloroethylene	**0.00073 J**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.016**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0073**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
1,2-Dichloroethane-d4	106	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	94	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-DUP05-072810

GC/MS Volatiles

Lot-Sample #...: A0G300529-005 **Work Order #...:** L4W9R1AA **Matrix.....:** WG
Date Sampled...: 07/28/10 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 6.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.0050 J**	**0.0067**	**mg/L**
cis-1,2-Dichloroethylene	**0.066**	**0.0067**	**mg/L**
trans-1,2-Dichloroethylene	ND	0.0067	mg/L
Tetrachloroethylene	ND	0.0067	mg/L
Trichloroethylene	ND	0.0067	mg/L
Vinyl chloride	ND	0.0067	mg/L
Methylene chloride	ND	0.0067	mg/L
1,1-Dichloroethane	**0.0080**	**0.0067**	**mg/L**
1,2-Dichloroethane	ND	0.0067	mg/L
1,1,1-Trichloroethane	**0.19**	**0.0067**	**mg/L**
1,1,2-Trichloroethane	ND	0.0067	mg/L
Toluene	ND	0.0067	mg/L
Ethylbenzene	ND	0.0067	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(73 - 122)
1,2-Dichloroethane-d4	103	(61 - 128)
Toluene-d8	103	(76 - 110)
4-Bromofluorobenzene	92	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-TRIP02-072810

GC/MS Volatiles

Lot-Sample #...: A0G300529-006 **Work Order #...:** L4W9T1AA **Matrix.....:** WQ
Date Sampled...: 07/28/10 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	ND	0.0010	mg/L
trans-1,2-Dichloroethylene	ND	0.0010	mg/L
Tetrachloroethylene	ND	0.0010	mg/L
Trichloroethylene	ND	0.0010	mg/L
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	102	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	93	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0G300529 **Work Order #...:** L46CG1AA **Matrix.....:** WATER
MB Lot-Sample #: A0H050000-305

Prep Date.....: 08/05/10 **Final Wgt/Vol..:** 5 mL

Analysis Date..: 08/05/10 **Prep Batch #...:** 0217305
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	104	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	94	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0G300529 **Work Order #...:** L46CG1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0H050000-305 L46CG1AD-LCSD
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**100**	**(63 - 130)**			**SW846 8260B**
	103	**(63 - 130)**	**2.7**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**102**	**(75 - 122)**			**SW846 8260B**
	102	**(75 - 122)**	**0.090**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	100	(88 - 113)			SW846 8260B
	102	(88 - 113)	2.0	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	99	(85 - 113)			SW846 8260B
	97	(85 - 113)	2.2	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	97	(80 - 120)			SW846 8260B
	102	(80 - 120)	5.4	(0-30)	SW846 8260B
Vinyl chloride	97	(61 - 120)			SW846 8260B
	97	(61 - 120)	0.67	(0-30)	SW846 8260B
Methylene chloride	99	(78 - 118)			SW846 8260B
	100	(78 - 118)	0.90	(0-30)	SW846 8260B
1,1-Dichloroethane	101	(86 - 123)			SW846 8260B
	99	(86 - 123)	2.6	(0-30)	SW846 8260B
1,2-Dichloroethane	98	(79 - 136)			SW846 8260B
	101	(79 - 136)	2.5	(0-30)	SW846 8260B
1,1,1-Trichloroethane	95	(78 - 140)			SW846 8260B
	97	(78 - 140)	2.0	(0-30)	SW846 8260B
1,1,2-Trichloroethane	96	(83 - 122)			SW846 8260B
	102	(83 - 122)	5.9	(0-30)	SW846 8260B
Toluene	**98**	**(74 - 119)**			**SW846 8260B**
	99	**(74 - 119)**	**1.0**	**(0-20)**	**SW846 8260B**
Ethylbenzene	98	(86 - 116)			SW846 8260B
	98	(86 - 116)	0.12	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
	99	(73 - 122)
1,2-Dichloroethane-d4	105	(61 - 128)
	104	(61 - 128)
Toluene-d8	103	(76 - 110)
	104	(76 - 110)
4-Bromofluorobenzene	106	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0G300529 **Work Order #...:** L46CG1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0H050000-305 L46CG1AD-LCSD
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.010**	**mg/L**	**100**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**103**	**2.7**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.010**	**mg/L**	**102**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**102**	**0.090**	**SW846 8260B**
Tetrachloroethylene	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	102	2.0	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.0099	mg/L	99		SW846 8260B
	0.010	0.0097	mg/L	97	2.2	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.0097	mg/L	97		SW846 8260B
	0.010	0.010	mg/L	102	5.4	SW846 8260B
Vinyl chloride	0.010	0.0097	mg/L	97		SW846 8260B
	0.010	0.0097	mg/L	97	0.67	SW846 8260B
Methylene chloride	0.010	0.0099	mg/L	99		SW846 8260B
	0.010	0.010	mg/L	100	0.90	SW846 8260B
1,1-Dichloroethane	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.0099	mg/L	99	2.6	SW846 8260B
1,2-Dichloroethane	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.010	mg/L	101	2.5	SW846 8260B
1,1,1-Trichloroethane	0.010	0.0095	mg/L	95		SW846 8260B
	0.010	0.0097	mg/L	97	2.0	SW846 8260B
1,1,2-Trichloroethane	0.010	0.0096	mg/L	96		SW846 8260B
	0.010	0.010	mg/L	102	5.9	SW846 8260B
Toluene	**0.010**	**0.0098**	**mg/L**	**98**		**SW846 8260B**
	0.010	**0.0099**	**mg/L**	**99**	**1.0**	**SW846 8260B**
Ethylbenzene	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.0098	mg/L	98	0.12	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
	99	(73 - 122)
1,2-Dichloroethane-d4	105	(61 - 128)
	104	(61 - 128)
Toluene-d8	103	(76 - 110)
	104	(76 - 110)
4-Bromofluorobenzene	106	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0G300529 **Work Order #...:** L4W9R1AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0G300529-005 L4W9R1AD-MSD
Date Sampled...: 07/28/10 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 6.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**106**	**(62 - 130)**			**SW846 8260B**
	104	**(62 - 130)**	**1.6**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**101**	**(62 - 130)**			**SW846 8260B**
	104	**(62 - 130)**	**2.8**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	101	(85 - 121)			SW846 8260B
	101	(85 - 121)	0.94	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	107	(87 - 114)			SW846 8260B
	108	(87 - 114)	0.51	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	101	(85 - 116)			SW846 8260B
	105	(85 - 116)	3.1	(0-30)	SW846 8260B
Vinyl chloride	98	(88 - 126)			SW846 8260B
	99	(88 - 126)	0.19	(0-30)	SW846 8260B
Methylene chloride	98	(82 - 115)			SW846 8260B
	99	(82 - 115)	1.4	(0-30)	SW846 8260B
1,1-Dichloroethane	101	(88 - 127)			SW846 8260B
	104	(88 - 127)	3.0	(0-30)	SW846 8260B
1,2-Dichloroethane	99	(71 - 160)			SW846 8260B
	100	(71 - 160)	1.7	(0-30)	SW846 8260B
1,1,1-Trichloroethane	93	(71 - 162)			SW846 8260B
	95	(71 - 162)	0.35	(0-30)	SW846 8260B
1,1,2-Trichloroethane	96	(86 - 129)			SW846 8260B
	97	(86 - 129)	0.65	(0-30)	SW846 8260B
Toluene	**96**	**(70 - 119)**			**SW846 8260B**
	99	**(70 - 119)**	**2.4**	**(0-20)**	**SW846 8260B**
Ethylbenzene	101	(86 - 132)			SW846 8260B
	100	(86 - 132)	0.54	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
	104	(73 - 122)
1,2-Dichloroethane-d4	101	(61 - 128)
	102	(61 - 128)
Toluene-d8	103	(76 - 110)
	102	(76 - 110)
4-Bromofluorobenzene	109	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0G300529 **Work Order #...:** L4W9R1AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0G300529-005 L4W9R1AD-MSD
Date Sampled...: 07/28/10 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 6.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethylene	**0.0050**	**0.067**	**0.075**	**mg/L**	**106**		**SW846 8260B**
	0.0050	**0.067**	**0.074**	**mg/L**	**104**	**1.6**	**SW846 8260B**
Trichloroethylene	**ND**	**0.067**	**0.067**	**mg/L**	**101**		**SW846 8260B**
	ND	**0.067**	**0.069**	**mg/L**	**104**	**2.8**	**SW846 8260B**
Tetrachloroethylene	ND	0.067	0.068	mg/L	101		SW846 8260B
	ND	0.067	0.067	mg/L	101	0.94	SW846 8260B
cis-1,2-Dichloroethylene	0.066	0.067	0.14	mg/L	107		SW846 8260B
	0.066	0.067	0.14	mg/L	108	0.51	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.067	0.068	mg/L	101		SW846 8260B
	ND	0.067	0.070	mg/L	105	3.1	SW846 8260B
Vinyl chloride	ND	0.067	0.066	mg/L	98		SW846 8260B
	ND	0.067	0.066	mg/L	99	0.19	SW846 8260B
Methylene chloride	ND	0.067	0.065	mg/L	98		SW846 8260B
	ND	0.067	0.066	mg/L	99	1.4	SW846 8260B
1,1-Dichloroethane	0.0080	0.067	0.075	mg/L	101		SW846 8260B
	0.0080	0.067	0.078	mg/L	104	3.0	SW846 8260B
1,2-Dichloroethane	ND	0.067	0.066	mg/L	99		SW846 8260B
	ND	0.067	0.067	mg/L	100	1.7	SW846 8260B
1,1,1-Trichloroethane	0.19	0.067	0.25	mg/L	93		SW846 8260B
	0.19	0.067	0.25	mg/L	95	0.35	SW846 8260B
1,1,2-Trichloroethane	ND	0.067	0.064	mg/L	96		SW846 8260B
	ND	0.067	0.065	mg/L	97	0.65	SW846 8260B
Toluene	**ND**	**0.067**	**0.064**	**mg/L**	**96**		**SW846 8260B**
	ND	**0.067**	**0.066**	**mg/L**	**99**	**2.4**	**SW846 8260B**
Ethylbenzene	ND	0.067	0.067	mg/L	101		SW846 8260B
	ND	0.067	0.067	mg/L	100	0.54	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
	104	(73 - 122)
1,2-Dichloroethane-d4	101	(61 - 128)
	102	(61 - 128)
Toluene-d8	103	(76 - 110)
	102	(76 - 110)
4-Bromofluorobenzene	109	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

END OF REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

HAMILTON SUNSTRAND-SE ROCKFORD

Lot #: A0G300534

John Dennison

Stantec Consulting Corporation
446 Eisenhower Lane North
Lombard, IL 60148

TESTAMERICA LABORATORIES, INC.

Kris Brooks

Approved for release.
Kris Brooks
Project Manager
8/16/2010 5:11 PM

Designee for

Alesia M. Danford
Project Manager
alesia.danford@testamericainc.com

August 16, 2010

ACCREDITED IN ACCORDANCE WITH nelac

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A0G300534

The following report contains the analytical results for four water samples submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HAMILTON SUNSTRAND-SE ROCKFORD Site. The samples were received July 30, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Alan Gorski, Amy Rodebaugh, and John Dennison on August 09, 2010. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 2.3°C.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 032609.doc

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0G300534

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HSSER-ASDM03-072810 07/28/10 09:45 001				
1,1-Dichloroethylene	0.00067 J	0.0014	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.0098	0.0014	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00027 J	0.0014	mg/L	SW846 8260B
Tetrachloroethylene	0.056	0.0014	mg/L	SW846 8260B
Trichloroethylene	0.0093	0.0014	mg/L	SW846 8260B
1,1-Dichloroethane	0.013	0.0014	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.030	0.0014	mg/L	SW846 8260B
HSSER-ASDM02-072810 07/28/10 10:35 002				
cis-1,2-Dichloroethylene	0.0073	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00049 J	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.021	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.0024	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0039	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0059	0.0010	mg/L	SW846 8260B
HSSER-ASDM04-072810 07/28/10 11:25 003				
1,1-Dichloroethylene	0.00041 J	0.0014	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.048	0.0014	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00040 J	0.0014	mg/L	SW846 8260B
Tetrachloroethylene	0.019	0.0014	mg/L	SW846 8260B
Trichloroethylene	0.0075	0.0014	mg/L	SW846 8260B
1,1-Dichloroethane	0.011	0.0014	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.022	0.0014	mg/L	SW846 8260B
HSSER-ASDM01-072810 07/28/10 12:20 004				
cis-1,2-Dichloroethylene	0.0024	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00049 J	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.016	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.0021	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	0.0048	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0049	0.0010	mg/L	SW846 8260B

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0G300534

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

SAMPLE SUMMARY

SAMPLE SUMMARY

A0G300534

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
L4W97	001	HSSER-ASDM03-072810	07/28/10	09:45
L4XAC	002	HSSER-ASDM02-072810	07/28/10	10:35
L4XAE	003	HSSER-ASDM04-072810	07/28/10	11:25
L4XAJ	004	HSSER-ASDM01-072810	07/28/10	12:20

NOTE(S):

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

SHIPPING AND RECEIVING DOCUMENTS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica
~~2417 Bond Street~~
~~University Park, IL 60466~~
~~708 534 5200~~

TAL-4124-500 (1107)

Sampler ID _____

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

Chain of Custody Record

Client	Project Manager	Date	Chain of Custody Number
STANTEC	JOHN PUCKETT		
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	
446 EISENHOWER LANE NORTH	630.792.1680	N. CANTON, OH	Page 1 of 1

City	State	Zip Code	Site Contact	Lab Contact
LOMBARD	IL	60148	BRIAN CAMPBELL	ALESIA DANFORTH

Project Name and Location (State): HAMILTON SUNSTRAND - SE ROCKFORD, IL

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Analysis (Attach list if more space is needed): VOC 8260B *

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil		Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		VOC 8260B *	Special Instructions/ Conditions of Receipt
HSSER - ASDM03 - 072810	7-28-10	0945		X							3				X	* LIST OF
HSSER - ASDM02 - 072810	7-28-10	1035		X							3				X	13 VOCs
HSSER - ASDM04 - 072810	7-28-10	1125		X							3				X	
HSSER - ASDM01 - 072810	7-28-10	1220		X							3				X	LEVEL IV
																DATA

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STANDARD

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: Matthew Taylor	7-29-10	0830	1. Received By: Walt Johnson	7/29	8:30
2. Relinquished By: Walt Johnson	7/29	12:15	2. Received By: [illegible]	7-30-10	0915
3. Relinquished By:			3. Received By:		

Comments:

DISTRIBU[illegible] WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Cop[illegible]

North Canton

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** A0G300534
North Canton Facility

Client Stantec Project Hamilton Sandstrand By: [illegible] (Signature)
Cooler Received on 7-30-10 Opened on 7-30-10
FedEx ☑ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____
TestAmerica Cooler # _____ Multiple Coolers ☐ Foam Box ☐ Client Cooler ☑ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☑ Intact? Yes ☐ No ☐ NA ☑
   If YES, Quantity _____ Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☑
   Were custody seals on the bottle(s)? Yes ☐ No ☑
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☑ No ☐
3. Did custody papers accompany the sample(s)? Yes ☑ No ☐ Relinquished by client? Yes ☑ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☑ No ☐
5. Packing material used: Bubble Wrap ☑ Foam ☑ None ☐ Other _____
6. Cooler temperature upon receipt 2.3 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☑ Other ☐ _____
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☑ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☐ No ☐ NA ☑
10. Were correct bottle(s) used for the test(s) indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☑ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☑ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☐ No ☑ Were VOAs on the COC? Yes ☑ No ☐

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

_____

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot# 051010-HNO_3; Sulfuric Acid Lot# 051010-H_2SO_4; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-$(CH_3COO)_2ZN/NaOH$.* What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM03-072810

GC/MS Volatiles

Lot-Sample #...: A0G300534-001 **Work Order #...:** L4W971AA **Matrix.....:** WG
Date Sampled...: 07/28/10 09:45 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 1.43 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00067 J**	**0.0014**	**mg/L**
cis-1,2-Dichloroethylene	**0.0098**	**0.0014**	**mg/L**
trans-1,2-Dichloroethylene	**0.00027 J**	**0.0014**	**mg/L**
Tetrachloroethylene	**0.056**	**0.0014**	**mg/L**
Trichloroethylene	**0.0093**	**0.0014**	**mg/L**
Vinyl chloride	ND	0.0014	mg/L
Methylene chloride	ND	0.0014	mg/L
1,1-Dichloroethane	**0.013**	**0.0014**	**mg/L**
1,2-Dichloroethane	ND	0.0014	mg/L
1,1,1-Trichloroethane	**0.030**	**0.0014**	**mg/L**
1,1,2-Trichloroethane	ND	0.0014	mg/L
Toluene	ND	0.0014	mg/L
Ethylbenzene	ND	0.0014	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
1,2-Dichloroethane-d4	105	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	92	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM02-072810

GC/MS Volatiles

Lot-Sample #...: A0G300534-002 **Work Order #...:** L4XAC1AA **Matrix.....:** WG
Date Sampled...: 07/28/10 10:35 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.0073**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	**0.00049 J**	**0.0010**	**mg/L**
Tetrachloroethylene	**0.021**	**0.0010**	**mg/L**
Trichloroethylene	**0.0024**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0039**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0059**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	105	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	90	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM04-072810

GC/MS Volatiles

Lot-Sample #...: A0G300534-003 **Work Order #...:** L4XAE1AA **Matrix.....:** WG
Date Sampled...: 07/28/10 11:25 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 1.43 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	**0.00041 J**	**0.0014**	**mg/L**
cis-1,2-Dichloroethylene	**0.048**	**0.0014**	**mg/L**
trans-1,2-Dichloroethylene	**0.00040 J**	**0.0014**	**mg/L**
Tetrachloroethylene	**0.019**	**0.0014**	**mg/L**
Trichloroethylene	**0.0075**	**0.0014**	**mg/L**
Vinyl chloride	ND	0.0014	mg/L
Methylene chloride	ND	0.0014	mg/L
1,1-Dichloroethane	**0.011**	**0.0014**	**mg/L**
1,2-Dichloroethane	ND	0.0014	mg/L
1,1,1-Trichloroethane	**0.022**	**0.0014**	**mg/L**
1,1,2-Trichloroethane	ND	0.0014	mg/L
Toluene	ND	0.0014	mg/L
Ethylbenzene	ND	0.0014	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(73 - 122)
1,2-Dichloroethane-d4	102	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	89	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HSSER-ASDM01-072810

GC/MS Volatiles

Lot-Sample #...: A0G300534-004 **Work Order #...:** L4XAJ1AA **Matrix.....:** WG
Date Sampled...: 07/28/10 12:20 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethylene	ND	0.0010	mg/L
cis-1,2-Dichloroethylene	**0.0024**	**0.0010**	**mg/L**
trans-1,2-Dichloroethylene	**0.00049 J**	**0.0010**	**mg/L**
Tetrachloroethylene	**0.016**	**0.0010**	**mg/L**
Trichloroethylene	**0.0021**	**0.0010**	**mg/L**
Vinyl chloride	ND	0.0010	mg/L
Methylene chloride	ND	0.0010	mg/L
1,1-Dichloroethane	**0.0048**	**0.0010**	**mg/L**
1,2-Dichloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	**0.0049**	**0.0010**	**mg/L**
1,1,2-Trichloroethane	ND	0.0010	mg/L
Toluene	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
1,2-Dichloroethane-d4	106	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	92	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0G300534 **Work Order #...:** L46CG1AA **Matrix.....:** WATER
MB Lot-Sample #: A0H050000-305

Prep Date.....: 08/05/10 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 08/05/10 **Prep Batch #...:** 0217305
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	104	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	94	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0G300534 **Work Order #...:** L46CG1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0H050000-305 L46CG1AD-LCSD
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**100**	**(63 - 130)**			**SW846 8260B**
	103	**(63 - 130)**	**2.7**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**102**	**(75 - 122)**			**SW846 8260B**
	102	**(75 - 122)**	**0.090**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	100	(88 - 113)			SW846 8260B
	102	(88 - 113)	2.0	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	99	(85 - 113)			SW846 8260B
	97	(85 - 113)	2.2	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	97	(80 - 120)			SW846 8260B
	102	(80 - 120)	5.4	(0-30)	SW846 8260B
Vinyl chloride	97	(61 - 120)			SW846 8260B
	97	(61 - 120)	0.67	(0-30)	SW846 8260B
Methylene chloride	99	(78 - 118)			SW846 8260B
	100	(78 - 118)	0.90	(0-30)	SW846 8260B
1,1-Dichloroethane	101	(86 - 123)			SW846 8260B
	99	(86 - 123)	2.6	(0-30)	SW846 8260B
1,2-Dichloroethane	98	(79 - 136)			SW846 8260B
	101	(79 - 136)	2.5	(0-30)	SW846 8260B
1,1,1-Trichloroethane	95	(78 - 140)			SW846 8260B
	97	(78 - 140)	2.0	(0-30)	SW846 8260B
1,1,2-Trichloroethane	96	(83 - 122)			SW846 8260B
	102	(83 - 122)	5.9	(0-30)	SW846 8260B
Toluene	**98**	**(74 - 119)**			**SW846 8260B**
	99	**(74 - 119)**	**1.0**	**(0-20)**	**SW846 8260B**
Ethylbenzene	98	(86 - 116)			SW846 8260B
	98	(86 - 116)	0.12	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
	99	(73 - 122)
1,2-Dichloroethane-d4	105	(61 - 128)
	104	(61 - 128)
Toluene-d8	103	(76 - 110)
	104	(76 - 110)
4-Bromofluorobenzene	106	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0G300534 **Work Order #...:** L46CG1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A0H050000-305 L46CG1AD-LCSD
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethylene	**0.010**	**0.010**	**mg/L**	**100**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**103**	**2.7**	**SW846 8260B**
Trichloroethylene	**0.010**	**0.010**	**mg/L**	**102**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**102**	**0.090**	**SW846 8260B**
Tetrachloroethylene	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	102	2.0	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.0099	mg/L	99		SW846 8260B
	0.010	0.0097	mg/L	97	2.2	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.0097	mg/L	97		SW846 8260B
	0.010	0.010	mg/L	102	5.4	SW846 8260B
Vinyl chloride	0.010	0.0097	mg/L	97		SW846 8260B
	0.010	0.0097	mg/L	97	0.67	SW846 8260B
Methylene chloride	0.010	0.0099	mg/L	99		SW846 8260B
	0.010	0.010	mg/L	100	0.90	SW846 8260B
1,1-Dichloroethane	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.0099	mg/L	99	2.6	SW846 8260B
1,2-Dichloroethane	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.010	mg/L	101	2.5	SW846 8260B
1,1,1-Trichloroethane	0.010	0.0095	mg/L	95		SW846 8260B
	0.010	0.0097	mg/L	97	2.0	SW846 8260B
1,1,2-Trichloroethane	0.010	0.0096	mg/L	96		SW846 8260B
	0.010	0.010	mg/L	102	5.9	SW846 8260B
Toluene	**0.010**	**0.0098**	**mg/L**	**98**		**SW846 8260B**
	0.010	**0.0099**	**mg/L**	**99**	**1.0**	**SW846 8260B**
Ethylbenzene	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.0098	mg/L	98	0.12	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
	99	(73 - 122)
1,2-Dichloroethane-d4	105	(61 - 128)
	104	(61 - 128)
Toluene-d8	103	(76 - 110)
	104	(76 - 110)
4-Bromofluorobenzene	106	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0G300534 **Work Order #...:** L4W9R1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A0G300529-005 L4W9R1AD-MSD
Date Sampled...: 07/28/10 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 6.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethylene	**106**	**(62 - 130)**			**SW846 8260B**
	104	**(62 - 130)**	**1.6**	**(0-20)**	**SW846 8260B**
Trichloroethylene	**101**	**(62 - 130)**			**SW846 8260B**
	104	**(62 - 130)**	**2.8**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	101	(85 - 121)			SW846 8260B
	101	(85 - 121)	0.94	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	107	(87 - 114)			SW846 8260B
	108	(87 - 114)	0.51	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	101	(85 - 116)			SW846 8260B
	105	(85 - 116)	3.1	(0-30)	SW846 8260B
Vinyl chloride	98	(88 - 126)			SW846 8260B
	99	(88 - 126)	0.19	(0-30)	SW846 8260B
Methylene chloride	98	(82 - 115)			SW846 8260B
	99	(82 - 115)	1.4	(0-30)	SW846 8260B
1,1-Dichloroethane	101	(88 - 127)			SW846 8260B
	104	(88 - 127)	3.0	(0-30)	SW846 8260B
1,2-Dichloroethane	99	(71 - 160)			SW846 8260B
	100	(71 - 160)	1.7	(0-30)	SW846 8260B
1,1,1-Trichloroethane	93	(71 - 162)			SW846 8260B
	95	(71 - 162)	0.35	(0-30)	SW846 8260B
1,1,2-Trichloroethane	96	(86 - 129)			SW846 8260B
	97	(86 - 129)	0.65	(0-30)	SW846 8260B
Toluene	**96**	**(70 - 119)**			**SW846 8260B**
	99	**(70 - 119)**	**2.4**	**(0-20)**	**SW846 8260B**
Ethylbenzene	101	(86 - 132)			SW846 8260B
	100	(86 - 132)	0.54	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
	104	(73 - 122)
1,2-Dichloroethane-d4	101	(61 - 128)
	102	(61 - 128)
Toluene-d8	103	(76 - 110)
	102	(76 - 110)
4-Bromofluorobenzene	109	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0G300534 **Work Order #...:** L4W9R1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A0G300529-005 L4W9R1AD-MSD
Date Sampled...: 07/28/10 **Date Received..:** 07/30/10
Prep Date.....: 08/05/10 **Analysis Date..:** 08/05/10
Prep Batch #...: 0217305
Dilution Factor: 6.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethylene	**0.0050**	**0.067**	**0.075**	**mg/L**	**106**		**SW846 8260B**
	0.0050	**0.067**	**0.074**	**mg/L**	**104**	**1.6**	**SW846 8260B**
Trichloroethylene	**ND**	**0.067**	**0.067**	**mg/L**	**101**		**SW846 8260B**
	ND	**0.067**	**0.069**	**mg/L**	**104**	**2.8**	**SW846 8260B**
Tetrachloroethylene	ND	0.067	0.068	mg/L	101		SW846 8260B
	ND	0.067	0.067	mg/L	101	0.94	SW846 8260B
cis-1,2-Dichloroethylene	0.066	0.067	0.14	mg/L	107		SW846 8260B
	0.066	0.067	0.14	mg/L	108	0.51	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.067	0.068	mg/L	101		SW846 8260B
	ND	0.067	0.070	mg/L	105	3.1	SW846 8260B
Vinyl chloride	ND	0.067	0.066	mg/L	98		SW846 8260B
	ND	0.067	0.066	mg/L	99	0.19	SW846 8260B
Methylene chloride	ND	0.067	0.065	mg/L	98		SW846 8260B
	ND	0.067	0.066	mg/L	99	1.4	SW846 8260B
1,1-Dichloroethane	0.0080	0.067	0.075	mg/L	101		SW846 8260B
	0.0080	0.067	0.078	mg/L	104	3.0	SW846 8260B
1,2-Dichloroethane	ND	0.067	0.066	mg/L	99		SW846 8260B
	ND	0.067	0.067	mg/L	100	1.7	SW846 8260B
1,1,1-Trichloroethane	0.19	0.067	0.25	mg/L	93		SW846 8260B
	0.19	0.067	0.25	mg/L	95	0.35	SW846 8260B
1,1,2-Trichloroethane	ND	0.067	0.064	mg/L	96		SW846 8260B
	ND	0.067	0.065	mg/L	97	0.65	SW846 8260B
Toluene	**ND**	**0.067**	**0.064**	**mg/L**	**96**		**SW846 8260B**
	ND	**0.067**	**0.066**	**mg/L**	**99**	**2.4**	**SW846 8260B**
Ethylbenzene	ND	0.067	0.067	mg/L	101		SW846 8260B
	ND	0.067	0.067	mg/L	100	0.54	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
	104	(73 - 122)
1,2-Dichloroethane-d4	101	(61 - 128)
	102	(61 - 128)
Toluene-d8	103	(76 - 110)
	102	(76 - 110)
4-Bromofluorobenzene	109	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

END OF REPORT

QUARTER 4

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 182602078.204.42115

HAMILTON-SUNDSTRAND ROCKFORD

Lot #: A0L300514

Alan Gorski

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4444 Centerville Road
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TESTAMERICA LABORATORIES, INC.

Alesia M. Danford

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January 10, 2011

ACCREDITED IN ACCORDANCE WITH nelac

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A0L300514

The following report contains the analytical results for eight water samples and one quality control sample submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HAMILTON-SUNDSTRAND ROCKFORD Site, project number 182602078.204.42115. The samples were received December 30, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Alan Gorski on January 05, 2011, and Alan Gorski, Andrew Riemer, and Anna Sutton on January 07, 2011. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

CASE NARRATIVE (continued)

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 4.9°C.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-00048200&A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 032609.doc

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0L300514

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HS SER-MW07FGA-122810 12/28/10 15:55	**001**			
1,1-Dichloroethane	0.0014	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.00049 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethylene	0.00034 J	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.0017	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0041	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.00068 J	0.0010	mg/L	SW846 8260B
HS SER-MW203-122910 12/29/10 08:55	**002**			
Tetrachloroethylene	0.0073	0.0010	mg/L	SW846 8260B
HS SER-SMW01-122910 12/29/10 09:50	**003**			
Tetrachloroethylene	0.0017	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.00090 J	0.0010	mg/L	SW846 8260B
HS SER-SMW02-122910 12/29/10 10:45	**004**			
Tetrachloroethylene	0.0011	0.0010	mg/L	SW846 8260B
HS SER-SMW19-122910 12/29/10 12:25	**005**			
cis-1,2-Dichloroethylene	0.0028	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00031 J	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.0017	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.00063 J	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.028	0.0010	mg/L	SW846 8260B
HS SER-SMW04-122910 12/29/10 13:25	**006**			
1,1-Dichloroethane	0.0023	0.0014	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.0070	0.0014	mg/L	SW846 8260B
1,1-Dichloroethylene	0.00062 J	0.0014	mg/L	SW846 8260B
Tetrachloroethylene	0.037	0.0014	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0050	0.0014	mg/L	SW846 8260B
Trichloroethylene	0.0035	0.0014	mg/L	SW846 8260B
HS SER-SMW20-122910 12/29/10 14:15	**007**			
1,1-Dichloroethane	0.0030	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.0042	0.0010	mg/L	SW846 8260B
1,1-Dichloroethylene	0.00031 J	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	0.00053 J	0.0010	mg/L	SW846 8260B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0L300514

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HS SER-SMW20-122910 12/29/10 14:15 007				
1,1,1-Trichloroethane	0.0048	0.0010	mg/L	SW846 8260B
Trichloroethylene	0.00032 J	0.0010	mg/L	SW846 8260B
HS SER-SMW08-122910 12/29/10 15:10 008				
1,1-Dichloroethane	0.0044	0.0020	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	0.062	0.0020	mg/L	SW846 8260B
trans-1,2-Dichloroethylene	0.00056 J	0.0020	mg/L	SW846 8260B
1,1-Dichloroethylene	0.00081 J	0.0020	mg/L	SW846 8260B
Tetrachloroethylene	0.042	0.0020	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0075	0.0020	mg/L	SW846 8260B
Trichloroethylene	0.0058	0.0020	mg/L	SW846 8260B

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0L300514

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SAMPLE SUMMARY

SAMPLE SUMMARY

A0L300514

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MCXJT	001	HS SER-MW07FGA-122810	12/28/10	15:55
MCXK2	002	HS SER-MW203-122910	12/29/10	08:55
MCXK3	003	HS SER-SMW01-122910	12/29/10	09:50
MCXK6	004	HS SER-SMW02-122910	12/29/10	10:45
MCXK9	005	HS SER-SMW19-122910	12/29/10	12:25
MCXLA	006	HS SER-SMW04-122910	12/29/10	13:25
MCXLC	007	HS SER-SMW20-122910	12/29/10	14:15
MCXLD	008	HS SER-SMW08-122910	12/29/10	15:10
MCXLF	009	HS SER-TRIP01-122910	12/29/10	

NOTE(S):

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

15

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
STANTEC CONSULTING CORP.	JOHN PUCKETT	12-29-2010	186112
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	
446 EISENHOWER LANE NORTH	630.792.1680 john.puckett@stantec.com		Page 1 of 1
City / State / Zip Code	**Site Contact / Lab Contact**		
LOMBARD / IL / 60148	BRIAN CAMPBELL / ALESIA DANFORTH		
Project Name and Location (State)	**Carrier/Waybill Number**		
HAMILTON - SUNDSTRAND SE ROCKFORD	TA COURIER		
Contract/Purchase Order/Quote No.			
182602078.204.42115			

Analysis (Attach list if more space is needed): * VOC 8260B

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		* VOC 8260B
HS SER-MW07FGA-122810	12-28-10	1555		X							3				X
HS SER-MW203-122910	12-29-10	0855		X							3				X
HS SER-SMW01-122910		0950		X							3				X
HS SER-MS06-122910		0950		X							3				X
HS SER-MSD06-122910		0950		X							3				X
HS SER-SMW02-122910		1045		X							3				X
HS SER-SMW19-122910		1225		X							3				X
HS SER-SMW04-122910		1325		X							3				X
HS SER-SMW20-122910		1415		X							3				X
HS SER-SMW08-122910		1510		X							3				X
HS SER-TRIP 01-122910	—	—		X							1				X

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other STANDARD TAT

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: - STANTEC	12-29-10	1610	1. Received By: Walt Johnson	12/29	16.10
2. Relinquished By: Walt Johnson	12/29	16.30	2. Received By: [illegible]	12/30/10	915
3. Relinquished By:			3. Received By:		

Comments: * LIST OF 13 VOC, LEVEL IV DATA

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

North Canton

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** 40630054
North Canton Facility

Client Stantec Project _____ By: [signature]
Cooler Received on 12-30-10 Opened on 12-30-10 (Signature)
FedEx ☑ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____
TestAmerica Cooler # _____ Multiple Coolers ☐ Foam Box ☐ Client Cooler ☑ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☑ Intact? Yes ☐ No ☐ NA ☑
   If YES, Quantity _____ Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☑
   Were custody seals on the bottle(s)? Yes ☐ No ☑
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☑ No ☐
3. Did custody papers accompany the sample(s)? Yes ☑ No ☐ Relinquished by client? Yes ☑ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☑ No ☐
5. Packing material used: Bubble Wrap ☑ Foam ☑ None ☐ Other _____
6. Cooler temperature upon receipt 4.9 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☑ Other ☐ _____
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☑ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☐ No ☐ NA ☑
10. Were correct bottle(s) used for the test(s) indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☑ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☑ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☑ No ☐ Were VOAs on the COC? Yes ☑ No ☐

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

_____

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 100110-*HNO_3; Sulfuric Acid Lot#* 110410-*H_2SO_4; Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-*$(CH_3COO)_2ZN/NaOH$*. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HS SER-MW07FGA-122810

GC/MS Volatiles

Lot-Sample #...: A0L300514-001 **Work Order #...:** MCXJT1AA **Matrix.....:** WG
Date Sampled...: 12/28/10 15:55 **Date Received..:** 12/30/10
Prep Date.....: 01/04/11 **Analysis Date..:** 01/04/11
Prep Batch #...: 1005084
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,4-Dioxane	ND	0.20	mg/L	0.019
1,1-Dichloroethane	**0.0014**	**0.0010**	**mg/L**	**0.00015**
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethylene	**0.00049 J**	**0.0010**	**mg/L**	**0.00017**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethylene	**0.00034 J**	**0.0010**	**mg/L**	**0.00019**
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	ND	0.0010	mg/L	0.00033
Tetrachloroethylene	**0.0017**	**0.0010**	**mg/L**	**0.00029**
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	**0.0041**	**0.0010**	**mg/L**	**0.00022**
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethylene	**0.00068 J**	**0.0010**	**mg/L**	**0.00017**
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	112	(75 - 121)
1,2-Dichloroethane-d4	105	(63 - 129)
Toluene-d8	85	(74 - 115)
4-Bromofluorobenzene	80	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-MW203-122910

GC/MS Volatiles

Lot-Sample #...: A0L300514-002 **Work Order #...:** MCXK21AA **Matrix.....:** WG
Date Sampled...: 12/29/10 08:55 **Date Received..:** 12/30/10
Prep Date.....: 01/04/11 **Analysis Date..:** 01/04/11
Prep Batch #...: 1005084
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,4-Dioxane	ND	0.20	mg/L	0.019
1,1-Dichloroethane	ND	0.0010	mg/L	0.00015
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	0.00017
trans-1,2-Dichloroethylene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethylene	ND	0.0010	mg/L	0.00019
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	ND	0.0010	mg/L	0.00033
Tetrachloroethylene	**0.0073**	**0.0010**	**mg/L**	**0.00029**
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	ND	0.0010	mg/L	0.00022
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethylene	ND	0.0010	mg/L	0.00017
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	112	(75 - 121)
1,2-Dichloroethane-d4	119	(63 - 129)
Toluene-d8	89	(74 - 115)
4-Bromofluorobenzene	89	(66 - 117)

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW01-122910

GC/MS Volatiles

Lot-Sample #...: A0L300514-003 **Work Order #...:** MCXK31AA **Matrix.....:** WG
Date Sampled...: 12/29/10 09:50 **Date Received..:** 12/30/10
Prep Date.....: 01/04/11 **Analysis Date..:** 01/04/11
Prep Batch #...: 1005084
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,4-Dioxane	ND	0.20	mg/L	0.019
1,1-Dichloroethane	ND	0.0010	mg/L	0.00015
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	0.00017
trans-1,2-Dichloroethylene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethylene	ND	0.0010	mg/L	0.00019
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	ND	0.0010	mg/L	0.00033
Tetrachloroethylene	**0.0017**	**0.0010**	**mg/L**	**0.00029**
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	**0.00090 J**	**0.0010**	**mg/L**	**0.00022**
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethylene	ND	0.0010	mg/L	0.00017
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	111	(75 - 121)
1,2-Dichloroethane-d4	105	(63 - 129)
Toluene-d8	86	(74 - 115)
4-Bromofluorobenzene	82	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW02-122910

GC/MS Volatiles

Lot-Sample #...: A0L300514-004 **Work Order #...:** MCXK61AA **Matrix.....:** WG
Date Sampled...: 12/29/10 10:45 **Date Received..:** 12/30/10
Prep Date.....: 01/04/11 **Analysis Date..:** 01/04/11
Prep Batch #...: 1005084
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,4-Dioxane	ND	0.20	mg/L	0.019
1,1-Dichloroethane	ND	0.0010	mg/L	0.00015
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	0.00017
trans-1,2-Dichloroethylene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethylene	ND	0.0010	mg/L	0.00019
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	ND	0.0010	mg/L	0.00033
Tetrachloroethylene	**0.0011**	**0.0010**	**mg/L**	**0.00029**
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	ND	0.0010	mg/L	0.00022
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethylene	ND	0.0010	mg/L	0.00017
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(75 - 121)
1,2-Dichloroethane-d4	103	(63 - 129)
Toluene-d8	87	(74 - 115)
4-Bromofluorobenzene	84	(66 - 117)

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW19-122910

GC/MS Volatiles

Lot-Sample #...: A0L300514-005 **Work Order #...:** MCXK91AA **Matrix.....:** WG
Date Sampled...: 12/29/10 12:25 **Date Received..:** 12/30/10
Prep Date.....: 01/04/11 **Analysis Date..:** 01/04/11
Prep Batch #...: 1005084
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,4-Dioxane	ND	0.20	mg/L	0.019
1,1-Dichloroethane	ND	0.0010	mg/L	0.00015
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethylene	**0.0028**	**0.0010**	**mg/L**	**0.00017**
trans-1,2-Dichloroethylene	**0.00031 J**	**0.0010**	**mg/L**	**0.00019**
1,1-Dichloroethylene	ND	0.0010	mg/L	0.00019
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	ND	0.0010	mg/L	0.00033
Tetrachloroethylene	**0.0017**	**0.0010**	**mg/L**	**0.00029**
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	**0.00063 J**	**0.0010**	**mg/L**	**0.00022**
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethylene	**0.028**	**0.0010**	**mg/L**	**0.00017**
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(75 - 121)
1,2-Dichloroethane-d4	100	(63 - 129)
Toluene-d8	87	(74 - 115)
4-Bromofluorobenzene	80	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW04-122910

GC/MS Volatiles

Lot-Sample #...: A0L300514-006 **Work Order #...:** MCXLA1AA **Matrix.....:** WG
Date Sampled...: 12/29/10 13:25 **Date Received..:** 12/30/10
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 1.43 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,4-Dioxane	ND	0.29	mg/L	0.027
1,1-Dichloroethane	**0.0023**	**0.0014**	**mg/L**	**0.00021**
1,2-Dichloroethane	ND	0.0014	mg/L	0.00031
cis-1,2-Dichloroethylene	**0.0070**	**0.0014**	**mg/L**	**0.00024**
trans-1,2-Dichloroethylene	ND	0.0014	mg/L	0.00027
1,1-Dichloroethylene	**0.00062 J**	**0.0014**	**mg/L**	**0.00027**
Ethylbenzene	ND	0.0014	mg/L	0.00024
Methylene chloride	ND	0.0014	mg/L	0.00047
Tetrachloroethylene	**0.037**	**0.0014**	**mg/L**	**0.00041**
Toluene	ND	0.0014	mg/L	0.00019
1,1,1-Trichloroethane	**0.0050**	**0.0014**	**mg/L**	**0.00031**
1,1,2-Trichloroethane	ND	0.0014	mg/L	0.00039
Trichloroethylene	**0.0035**	**0.0014**	**mg/L**	**0.00024**
Vinyl chloride	ND	0.0014	mg/L	0.00031

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	120	(75 - 121)
1,2-Dichloroethane-d4	115	(63 - 129)
Toluene-d8	92	(74 - 115)
4-Bromofluorobenzene	88	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW20-122910

GC/MS Volatiles

Lot-Sample #...: A0L300514-007 **Work Order #...:** MCXLC1AA **Matrix.....:** WG
Date Sampled...: 12/29/10 14:15 **Date Received..:** 12/30/10
Prep Date.....: 01/04/11 **Analysis Date..:** 01/04/11
Prep Batch #...: 1005084
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,4-Dioxane	ND	0.20	mg/L	0.019
1,1-Dichloroethane	**0.0030**	**0.0010**	**mg/L**	**0.00015**
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethylene	**0.0042**	**0.0010**	**mg/L**	**0.00017**
trans-1,2-Dichloroethylene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethylene	**0.00031 J**	**0.0010**	**mg/L**	**0.00019**
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	ND	0.0010	mg/L	0.00033
Tetrachloroethylene	**0.00053 J**	**0.0010**	**mg/L**	**0.00029**
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	**0.0048**	**0.0010**	**mg/L**	**0.00022**
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethylene	**0.00032 J**	**0.0010**	**mg/L**	**0.00017**
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(75 - 121)
1,2-Dichloroethane-d4	100	(63 - 129)
Toluene-d8	83	(74 - 115)
4-Bromofluorobenzene	76	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW08-122910

GC/MS Volatiles

Lot-Sample #...: A0L300514-008 **Work Order #...:** MCXLD1AA **Matrix.....:** WG
Date Sampled...: 12/29/10 15:10 **Date Received..:** 12/30/10
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 2 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,4-Dioxane	ND	0.40	mg/L	0.038
1,1-Dichloroethane	**0.0044**	**0.0020**	**mg/L**	**0.00030**
1,2-Dichloroethane	ND	0.0020	mg/L	0.00044
cis-1,2-Dichloroethylene	**0.062**	**0.0020**	**mg/L**	**0.00034**
trans-1,2-Dichloroethylene	**0.00056 J**	**0.0020**	**mg/L**	**0.00038**
1,1-Dichloroethylene	**0.00081 J**	**0.0020**	**mg/L**	**0.00038**
Ethylbenzene	ND	0.0020	mg/L	0.00034
Methylene chloride	ND	0.0020	mg/L	0.00066
Tetrachloroethylene	**0.042**	**0.0020**	**mg/L**	**0.00058**
Toluene	ND	0.0020	mg/L	0.00026
1,1,1-Trichloroethane	**0.0075**	**0.0020**	**mg/L**	**0.00044**
1,1,2-Trichloroethane	ND	0.0020	mg/L	0.00054
Trichloroethylene	**0.0058**	**0.0020**	**mg/L**	**0.00034**
Vinyl chloride	ND	0.0020	mg/L	0.00044

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	115	(75 - 121)
1,2-Dichloroethane-d4	110	(63 - 129)
Toluene-d8	94	(74 - 115)
4-Bromofluorobenzene	89	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-TRIP01-122910

GC/MS Volatiles

Lot-Sample #...: A0L300514-009 **Work Order #...:** MCXLF1AA **Matrix.....:** WQ
Date Sampled...: 12/29/10 **Date Received..:** 12/30/10
Prep Date.....: 01/04/11 **Analysis Date..:** 01/04/11
Prep Batch #...: 1005084
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,4-Dioxane	ND	0.20	mg/L	0.019
1,1-Dichloroethane	ND	0.0010	mg/L	0.00015
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	0.00017
trans-1,2-Dichloroethylene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethylene	ND	0.0010	mg/L	0.00019
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	ND	0.0010	mg/L	0.00033
Tetrachloroethylene	ND	0.0010	mg/L	0.00029
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	ND	0.0010	mg/L	0.00022
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethylene	ND	0.0010	mg/L	0.00017
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(75 - 121)
1,2-Dichloroethane-d4	102	(63 - 129)
Toluene-d8	85	(74 - 115)
4-Bromofluorobenzene	77	(66 - 117)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0L300514 **Work Order #...:** MC2A61AA **Matrix.....:** WATER
MB Lot-Sample #: A1A050000-084

Prep Date.....: 01/04/11 **Final Wgt/Vol..:** 5 mL

Analysis Date..: 01/04/11 **Prep Batch #...:** 1005084
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,4-Dioxane	ND	0.20	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(75 - 121)
1,2-Dichloroethane-d4	101	(63 - 129)
Toluene-d8	92	(74 - 115)
4-Bromofluorobenzene	85	(66 - 117)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A0L300514 **Work Order #...:** MC4RT1AA **Matrix.....:** WATER
MB Lot-Sample #: A1A070000-051

Prep Date.....: 01/06/11 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 01/06/11 **Prep Batch #...:** 1007051
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,4-Dioxane	ND	0.20	mg/L	SW846 8260B
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethylene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Trichloroethylene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(75 - 121)
1,2-Dichloroethane-d4	103	(63 - 129)
Toluene-d8	90	(74 - 115)
4-Bromofluorobenzene	84	(66 - 117)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0L300514 **Work Order #...:** MC2A61AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A1A050000-084 MC2A61AD-LCSD
Prep Date.....: 01/04/11 **Analysis Date..:** 01/04/11
Prep Batch #...: 1005084
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethane	94	(82 - 115)			SW846 8260B
	93	(82 - 115)	1.2	(0-30)	SW846 8260B
1,2-Dichloroethane	107	(71 - 127)			SW846 8260B
	106	(71 - 127)	1.0	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	98	(80 - 113)			SW846 8260B
	98	(80 - 113)	0.55	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	104	(83 - 117)			SW846 8260B
	101	(83 - 117)	3.3	(0-30)	SW846 8260B
1,1-Dichloroethylene	**103**	**(78 - 131)**			**SW846 8260B**
	104	**(78 - 131)**	**0.99**	**(0-30)**	**SW846 8260B**
Ethylbenzene	100	(83 - 112)			SW846 8260B
	101	(83 - 112)	1.4	(0-30)	SW846 8260B
Methylene chloride	74	(66 - 131)			SW846 8260B
	74	(66 - 131)	0.29	(0-30)	SW846 8260B
Tetrachloroethylene	116 a	(79 - 114)			SW846 8260B
	119 a	(79 - 114)	2.1	(0-30)	SW846 8260B
Toluene	**93**	**(84 - 111)**			**SW846 8260B**
	93	**(84 - 111)**	**0.40**	**(0-30)**	**SW846 8260B**
1,1,1-Trichloroethane	115	(74 - 118)			SW846 8260B
	114	(74 - 118)	0.34	(0-30)	SW846 8260B
1,1,2-Trichloroethane	97	(80 - 112)			SW846 8260B
	98	(80 - 112)	0.18	(0-30)	SW846 8260B
Trichloroethylene	**111**	**(76 - 117)**			**SW846 8260B**
	110	**(76 - 117)**	**0.97**	**(0-20)**	**SW846 8260B**
Vinyl chloride	69	(53 - 127)			SW846 8260B
	75	(53 - 127)	7.8	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(75 - 121)
	102	(75 - 121)
1,2-Dichloroethane-d4	103	(63 - 129)
	99	(63 - 129)
Toluene-d8	90	(74 - 115)
	90	(74 - 115)
4-Bromofluorobenzene	95	(66 - 117)
	96	(66 - 117)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0L300514 **Work Order #...:** MC2A61AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A1A050000-084 MC2A61AD-LCSD
Prep Date.....: 01/04/11 **Analysis Date..:** 01/04/11
Prep Batch #...: 1005084
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethane	0.010	0.0094	mg/L	94		SW846 8260B
	0.010	0.0093	mg/L	93	1.2	SW846 8260B
1,2-Dichloroethane	0.010	0.011	mg/L	107		SW846 8260B
	0.010	0.011	mg/L	106	1.0	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.0098	mg/L	98		SW846 8260B
	0.010	0.0098	mg/L	98	0.55	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.010	mg/L	104		SW846 8260B
	0.010	0.010	mg/L	101	3.3	SW846 8260B
1,1-Dichloroethylene	**0.010**	**0.010**	**mg/L**	**103**		**SW846 8260B**
	0.010	**0.010**	**mg/L**	**104**	**0.99**	**SW846 8260B**
Ethylbenzene	0.010	0.010	mg/L	100		SW846 8260B
	0.010	0.010	mg/L	101	1.4	SW846 8260B
Methylene chloride	0.010	0.0074	mg/L	74		SW846 8260B
	0.010	0.0074	mg/L	74	0.29	SW846 8260B
Tetrachloroethylene	0.010	0.012 a	mg/L	116		SW846 8260B
	0.010	0.012 a	mg/L	119	2.1	SW846 8260B
Toluene	**0.010**	**0.0093**	**mg/L**	**93**		**SW846 8260B**
	0.010	**0.0093**	**mg/L**	**93**	**0.40**	**SW846 8260B**
1,1,1-Trichloroethane	0.010	0.011	mg/L	115		SW846 8260B
	0.010	0.011	mg/L	114	0.34	SW846 8260B
1,1,2-Trichloroethane	0.010	0.0097	mg/L	97		SW846 8260B
	0.010	0.0098	mg/L	98	0.18	SW846 8260B
Trichloroethylene	**0.010**	**0.011**	**mg/L**	**111**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**110**	**0.97**	**SW846 8260B**
Vinyl chloride	0.010	0.0069	mg/L	69		SW846 8260B
	0.010	0.0075	mg/L	75	7.8	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(75 - 121)
	102	(75 - 121)
1,2-Dichloroethane-d4	103	(63 - 129)
	99	(63 - 129)
Toluene-d8	90	(74 - 115)
	90	(74 - 115)
4-Bromofluorobenzene	95	(66 - 117)
	96	(66 - 117)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0L300514 **Work Order #...:** MC4RT1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A1A070000-051 MC4RT1AD-LCSD
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethane	96	(82 - 115)			SW846 8260B
	89	(82 - 115)	6.9	(0-30)	SW846 8260B
1,2-Dichloroethane	112	(71 - 127)			SW846 8260B
	103	(71 - 127)	8.1	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	101	(80 - 113)			SW846 8260B
	94	(80 - 113)	7.1	(0-30)	SW846 8260B
trans-1,2-Dichloroethylene	104	(83 - 117)			SW846 8260B
	99	(83 - 117)	5.0	(0-30)	SW846 8260B
1,1-Dichloroethylene	**101**	**(78 - 131)**			**SW846 8260B**
	96	**(78 - 131)**	**5.5**	**(0-30)**	**SW846 8260B**
Ethylbenzene	103	(83 - 112)			SW846 8260B
	95	(83 - 112)	8.4	(0-30)	SW846 8260B
Methylene chloride	77	(66 - 131)			SW846 8260B
	67	(66 - 131)	14	(0-30)	SW846 8260B
Tetrachloroethylene	122 a	(79 - 114)			SW846 8260B
	115 a	(79 - 114)	5.5	(0-30)	SW846 8260B
Toluene	**95**	**(84 - 111)**			**SW846 8260B**
	90	**(84 - 111)**	**6.0**	**(0-30)**	**SW846 8260B**
1,1,1-Trichloroethane	114	(74 - 118)			SW846 8260B
	108	(74 - 118)	5.2	(0-30)	SW846 8260B
1,1,2-Trichloroethane	105	(80 - 112)			SW846 8260B
	95	(80 - 112)	10	(0-30)	SW846 8260B
Trichloroethylene	**114**	**(76 - 117)**			**SW846 8260B**
	108	**(76 - 117)**	**5.1**	**(0-20)**	**SW846 8260B**
Vinyl chloride	63	(53 - 127)			SW846 8260B
	66	(53 - 127)	4.9	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(75 - 121)
	103	(75 - 121)
1,2-Dichloroethane-d4	109	(63 - 129)
	100	(63 - 129)
Toluene-d8	95	(74 - 115)
	88	(74 - 115)
4-Bromofluorobenzene	105	(66 - 117)
	93	(66 - 117)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0L300514 **Work Order #...:** MC4RT1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A1A070000-051 MC4RT1AD-LCSD
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethane	0.010	0.0096	mg/L	96		SW846 8260B
	0.010	0.0089	mg/L	89	6.9	SW846 8260B
1,2-Dichloroethane	0.010	0.011	mg/L	112		SW846 8260B
	0.010	0.010	mg/L	103	8.1	SW846 8260B
cis-1,2-Dichloroethylene	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.0094	mg/L	94	7.1	SW846 8260B
trans-1,2-Dichloroethylene	0.010	0.010	mg/L	104		SW846 8260B
	0.010	0.0099	mg/L	99	5.0	SW846 8260B
1,1-Dichloroethylene	**0.010**	**0.010**	**mg/L**	**101**		**SW846 8260B**
	0.010	**0.0096**	**mg/L**	**96**	**5.5**	**SW846 8260B**
Ethylbenzene	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.0095	mg/L	95	8.4	SW846 8260B
Methylene chloride	0.010	0.0077	mg/L	77		SW846 8260B
	0.010	0.0067	mg/L	67	14	SW846 8260B
Tetrachloroethylene	0.010	0.012 a	mg/L	122		SW846 8260B
	0.010	0.012 a	mg/L	115	5.5	SW846 8260B
Toluene	**0.010**	**0.0095**	**mg/L**	**95**		**SW846 8260B**
	0.010	**0.0090**	**mg/L**	**90**	**6.0**	**SW846 8260B**
1,1,1-Trichloroethane	0.010	0.011	mg/L	114		SW846 8260B
	0.010	0.011	mg/L	108	5.2	SW846 8260B
1,1,2-Trichloroethane	0.010	0.010	mg/L	105		SW846 8260B
	0.010	0.0095	mg/L	95	10	SW846 8260B
Trichloroethylene	**0.010**	**0.011**	**mg/L**	**114**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**108**	**5.1**	**SW846 8260B**
Vinyl chloride	0.010	0.0063	mg/L	63		SW846 8260B
	0.010	0.0066	mg/L	66	4.9	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(75 - 121)
	103	(75 - 121)
1,2-Dichloroethane-d4	109	(63 - 129)
	100	(63 - 129)
Toluene-d8	95	(74 - 115)
	88	(74 - 115)
4-Bromofluorobenzene	105	(66 - 117)
	93	(66 - 117)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A0L300514 **Work Order #...:** MCXK31AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0L300514-003 MCXK31AD-MSD
Date Sampled...: 12/29/10 09:50 **Date Received..:** 12/30/10
Prep Date.....: 01/04/11 **Analysis Date..:** 01/04/11
Prep Batch #...: 1005084
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethane	94	(79 - 116)			SW846 8260B
	90	(79 - 116)	4.2	(0-30)	SW846 8260B
1,2-Dichloroethane	111	(68 - 129)			SW846 8260B
	109	(68 - 129)	2.2	(0-30)	SW846 8260B
cis-1,2-Dichloroethylene	99	(70 - 120)			SW846 8260B
	89	(70 - 120)	11	(0-30)	SW846 8260B
trans-1,2-Dichloroethylen	102	(80 - 119)			SW846 8260B
	89	(80 - 119)	14	(0-30)	SW846 8260B
1,1-Dichloroethylene	**103**	**(74 - 135)**			**SW846 8260B**
	88	**(74 - 135)**	**15**	**(0-30)**	**SW846 8260B**
Ethylbenzene	101	(75 - 116)			SW846 8260B
	100	(75 - 116)	1.6	(0-30)	SW846 8260B
Methylene chloride	76	(63 - 128)			SW846 8260B
	68	(63 - 128)	12	(0-30)	SW846 8260B
Tetrachloroethylene	117	(70 - 117)			SW846 8260B
	114	(70 - 117)	2.4	(0-30)	SW846 8260B
Toluene	**94**	**(78 - 114)**			**SW846 8260B**
	93	**(78 - 114)**	**1.6**	**(0-30)**	**SW846 8260B**
1,1,1-Trichloroethane	113	(68 - 121)			SW846 8260B
	112	(68 - 121)	0.13	(0-30)	SW846 8260B
1,1,2-Trichloroethane	99	(75 - 115)			SW846 8260B
	101	(75 - 115)	2.0	(0-30)	SW846 8260B
Trichloroethylene	**112**	**(66 - 120)**			**SW846 8260B**
	111	**(66 - 120)**	**1.4**	**(0-30)**	**SW846 8260B**
Vinyl chloride	64	(49 - 130)			SW846 8260B
	67	(49 - 130)	4.0	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(75 - 121)
	102	(75 - 121)
1,2-Dichloroethane-d4	106	(63 - 129)
	102	(63 - 129)
Toluene-d8	92	(74 - 115)
	89	(74 - 115)
4-Bromofluorobenzene	102	(66 - 117)
	95	(66 - 117)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A0L300514 **Work Order #...:** MCXK31AC-MS **Matrix.....:** WG
MS Lot-Sample #: A0L300514-003 MCXK31AD-MSD
Date Sampled...: 12/29/10 09:50 **Date Received..:** 12/30/10
Prep Date.....: 01/04/11 **Analysis Date..:** 01/04/11
Prep Batch #...: 1005084
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethane	ND	0.010	0.0094	mg/L	94		SW846 8260B
	ND	0.010	0.0090	mg/L	90	4.2	SW846 8260B
1,2-Dichloroethane	ND	0.010	0.011	mg/L	111		SW846 8260B
	ND	0.010	0.011	mg/L	109	2.2	SW846 8260B
cis-1,2-Dichloroethylene	ND	0.010	0.0099	mg/L	99		SW846 8260B
	ND	0.010	0.0089	mg/L	89	11	SW846 8260B
trans-1,2-Dichloroethylen	ND	0.010	0.010	mg/L	102		SW846 8260B
	ND	0.010	0.0089	mg/L	89	14	SW846 8260B
1,1-Dichloroethylene	**ND**	**0.010**	**0.010**	**mg/L**	**103**		**SW846 8260B**
	ND	**0.010**	**0.0088**	**mg/L**	**88**	**15**	**SW846 8260B**
Ethylbenzene	ND	0.010	0.010	mg/L	101		SW846 8260B
	ND	0.010	0.010	mg/L	100	1.6	SW846 8260B
Methylene chloride	ND	0.010	0.0076	mg/L	76		SW846 8260B
	ND	0.010	0.0068	mg/L	68	12	SW846 8260B
Tetrachloroethylene	0.0017	0.010	0.013	mg/L	117		SW846 8260B
	0.0017	0.010	0.013	mg/L	114	2.4	SW846 8260B
Toluene	**ND**	**0.010**	**0.0094**	**mg/L**	**94**		**SW846 8260B**
	ND	**0.010**	**0.0093**	**mg/L**	**93**	**1.6**	**SW846 8260B**
1,1,1-Trichloroethane	0.00090	0.010	0.012	mg/L	113		SW846 8260B
	0.00090	0.010	0.012	mg/L	112	0.13	SW846 8260B
1,1,2-Trichloroethane	ND	0.010	0.0099	mg/L	99		SW846 8260B
	ND	0.010	0.010	mg/L	101	2.0	SW846 8260B
Trichloroethylene	**ND**	**0.010**	**0.011**	**mg/L**	**112**		**SW846 8260B**
	ND	**0.010**	**0.011**	**mg/L**	**111**	**1.4**	**SW846 8260B**
Vinyl chloride	ND	0.010	0.0064	mg/L	64		SW846 8260B
	ND	0.010	0.0067	mg/L	67	4.0	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(75 - 121)
	102	(75 - 121)
1,2-Dichloroethane-d4	106	(63 - 129)
	102	(63 - 129)
Toluene-d8	92	(74 - 115)
	89	(74 - 115)
4-Bromofluorobenzene	102	(66 - 117)
	95	(66 - 117)

NOTE(S):

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

Bold print denotes control parameters

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

END OF REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 182602078.204.42115

HAMILTON-SUNDSTRAND ROCKFORD

Lot #: A1A040434

Alan Gorski

Stantec Consulting Corporation
4444 Centerville Road
Suite 140
White Bear Lake, MN 55127

TESTAMERICA LABORATORIES, INC.

Alesia M. Danford

Approved for release.
Alesia M. Danford
Project Manager
1/10/2011 10:36 AM

Alesia M. Danford
Project Manager
alesia.danford@testamericainc.com

January 10, 2011

ACCREDITED IN ACCORDANCE WITH nelac

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE
A1A040434

The following report contains the analytical results for ten water samples and one quality control sample submitted to TestAmerica North Canton by Stantec Consulting Corporation from the HAMILTON-SUNDSTRAND ROCKFORD Site, project number 182602078.204.42115. The samples were received January 04, 2011, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Alan Gorski, Andrew Riemer, and Anna Sutton on January 07, 2011. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet the requirements specified in the United Technologies Corporation Environmental Laboratory program, Chem_03; Analytical Minimum Standards for Laboratories, June 2008, Revision 4.0. Any exceptions to these requirements are noted in this report.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Alesia M. Danford, at 330-497-9396.

CASE NARRATIVE (continued)

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 2.1°C.

See TestAmerica's Cooler Receipt Form for additional information.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 032609.doc

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A1A040434

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HS SER-FBLK04-123010 12/30/10 08:05 001				
Methylene chloride	0.00087 J	0.0010	mg/L	SW846 8260B
HS SER-EBLK04-123010 12/30/10 08:15 002				
Methylene chloride	0.00059 J	0.0010	mg/L	SW846 8260B
HS SER-SMW21-123010 12/30/10 08:55 003				
1,1-Dichloroethane	0.0044 J	0.0057	mg/L	SW846 8260B
cis-1,2-Dichloroethene	0.044	0.0057	mg/L	SW846 8260B
1,1-Dichloroethene	0.017	0.0057	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.20	0.0057	mg/L	SW846 8260B
HS SER-GMZ04-123010 12/30/10 09:55 004				
1,1-Dichloroethane	0.00068 J	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethene	0.00046 J	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0015	0.0010	mg/L	SW846 8260B
HS SER-GMZ03-123010 12/30/10 10:50 005				
1,1-Dichloroethane	0.022	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethene	0.0063	0.0010	mg/L	SW846 8260B
1,1-Dichloroethene	0.00019 J	0.0010	mg/L	SW846 8260B
Tetrachloroethene	0.00041 J	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0025	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	0.00027 J	0.0010	mg/L	SW846 8260B
HS SER-GMZ02-123010 12/30/10 11:30 006				
1,1-Dichloroethane	0.0029	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethene	0.00092 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethene	0.00031 J	0.0010	mg/L	SW846 8260B
Tetrachloroethene	0.00075 J	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0037	0.0010	mg/L	SW846 8260B
Trichloroethene	0.00031 J	0.0010	mg/L	SW846 8260B
HS SER-BGW01-123010 12/30/10 12:50 007				
1,1-Dichloroethane	0.00080 J	0.0010	mg/L	SW846 8260B
Tetrachloroethene	0.0021	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.00060 J	0.0010	mg/L	SW846 8260B
Trichloroethene	0.0021	0.0010	mg/L	SW846 8260B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A1A040434

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HS SER-BGW02-123010 12/30/10 13:35 008				
1,1-Dichloroethane	0.00061 J	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethene	0.00030 J	0.0010	mg/L	SW846 8260B
1,1-Dichloroethene	0.00040 J	0.0010	mg/L	SW846 8260B
Tetrachloroethene	0.0023	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.0017	0.0010	mg/L	SW846 8260B
Trichloroethene	0.0025	0.0010	mg/L	SW846 8260B
HS SER-GMZ01-123010 12/30/10 14:55 009				
1,1-Dichloroethane	0.026	0.0025	mg/L	SW846 8260B
cis-1,2-Dichloroethene	0.029	0.0025	mg/L	SW846 8260B
1,1-Dichloroethene	0.0035	0.0025	mg/L	SW846 8260B
Tetrachloroethene	0.088	0.0025	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.055	0.0025	mg/L	SW846 8260B
Trichloroethene	0.013	0.0025	mg/L	SW846 8260B
HS SER-DUP06-123010 12/30/10 010				
1,1-Dichloroethane	0.0040 J	0.0057	mg/L	SW846 8260B
cis-1,2-Dichloroethene	0.042	0.0057	mg/L	SW846 8260B
1,1-Dichloroethene	0.015	0.0057	mg/L	SW846 8260B
1,1,1-Trichloroethane	0.19	0.0057	mg/L	SW846 8260B

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METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A1A040434

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SAMPLE SUMMARY

SAMPLE SUMMARY

A1A040434

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MC1CL	001	HS SER-FBLK04-123010	12/30/10	08:05
MC1CV	002	HS SER-EBLK04-123010	12/30/10	08:15
MC1CX	003	HS SER-SMW21-123010	12/30/10	08:55
MC1C5	004	HS SER-GMZ04-123010	12/30/10	09:55
MC1C7	005	HS SER-GMZ03-123010	12/30/10	10:50
MC1DA	006	HS SER-GMZ02-123010	12/30/10	11:30
MC1DD	007	HS SER-BGW01-123010	12/30/10	12:50
MC1DG	008	HS SER-BGW02-123010	12/30/10	13:35
MC1DJ	009	HS SER-GMZ01-123010	12/30/10	14:55
MC1DN	010	HS SER-DUP06-123010	12/30/10	
MC1D3	011	HS SER-TRIP02-123010	12/30/10	

NOTE(S):

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

15

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
STANTEC CONSULTING CORP	JOHN PUCKETT	12-30-2010	186113

Address	Telephone Number (Area Code)/Fax Number	Lab Number	
446 EISENHOWER LANE NORTH	630.792.1680 john.puckett@stantec.com		Page 1 of 1

City	State	Zip Code	Site Contact	Lab Contact
LOMBARD, T	IL	60148	BRIAN CAMPBELL	ALESIA DANFORTH

Project Name and Location (State)	Carrier/Waybill Number
HAMILTON - SUNDSTRAND SE ROCKFORD	TA COURIER

Contract/Purchase Order/Quote No.: 182602078.204.4211S

Analysis (Attach list if more space is needed): * VOC 8260B

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		* VOC 8260B
HS SER - FBLK04 - 123010	12-30-10	0805		X							3				X
HS SER - EBLK04 - 123010		0815		X							3				X
HS SER - SMW21 - 123010		0855		X							3				X
HS SER - GMZ04 - 123010		0955		X							3				X
HS SER - GMZ03 - 123010		1050		X							3				X
HS SER - GMZ02 - 123010		1130		X							3				X
HS SER - BGW01 - 123010		1260		X							3				X
HS SER - BGW02 - 123010		(EW) 1335 ~~1355~~		X							3				X
HS SER - GMZ01 - 123010		1455		X							3				X
HS SER - DUP06 - 123010		—		X							3				X
HS SER - TRIP02 - 123010		—		X							1				X

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other STANDARD TAT

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature] - STANTEC	12-31-10	0805	1. Received By: [signature]	12/31	805
2. Relinquished By: [signature]	1/3/11	8:40	2. Received By: [signature]	1-4-11	0900
3. Relinquished By			3. Received By		

Comments: * LIST OF 13 VOC. LEVEL IV DATA

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

North Canton

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** ALA0410434
North Canton Facility

Client Stantec Project Hamilton Sundstrand By: [illegible]
Cooler Received on 1-4-11 Opened on 1-4-11 (Signature)
FedEx ☑ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other
TestAmerica Cooler # N-# Multiple Coolers ☐ Foam Box ☐ Client Cooler ☐ Other

1. Were custody seals on the outside of the cooler(s)? Yes ☑ No ☐ Intact? Yes ☑ No ☐ NA ☐
   If YES, Quantity Quantity Unsalvageable
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☑ No ☐ NA ☐
   Were custody seals on the bottle(s)? Yes ☐ No ☑
   If YES, are there any exceptions?
2. Shippers' packing slip attached to the cooler(s)? Yes ☑ No ☐
3. Did custody papers accompany the sample(s)? Yes ☑ No ☐ Relinquished by client? Yes ☑ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☑ No ☐
5. Packing material used: Bubble Wrap ☑ Foam ☐ None ☐ Other
6. Cooler temperature upon receipt 21 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☑ Other ☐
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☑ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☐ No ☐ NA ☑
10. Were correct bottle(s) used for the test(s) indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☑ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☑ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☑ No ☐ Were VOAs on the COC? Yes ☑ No ☐

Contacted PM ALM Date 1-4-11 by CSL via Verbal ☑ Voice Mail ☐ Other ☐
Concerning #14

14. CHAIN OF CUSTODY

The following discrepancies occurred:

COC = 1x40 TB, rec'd 3x40.
Rec'd 1x1L DI water Lot# 9-13-2011 not on coc.
Per PM Archive 1x1L, also only run 1x40 trip blank

15. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot# 100110-HNO_3; Sulfuric Acid Lot# 110410-H_2SO_4; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-$(CH_3COO)_2ZN/NaOH$.* What time was preservative added to sample(s)?

Client ID	pH	Date	Initials

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS VOLATILE DATA

Stantec Consulting Corporation

Client Sample ID: HS SER-FBLK04-123010

GC/MS Volatiles

Lot-Sample #...: A1A040434-001 **Work Order #...:** MC1CL1AA **Matrix.....:** WQ
Date Sampled...: 12/30/10 08:05 **Date Received..:** 01/04/11
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1-Dichloroethane	ND	0.0010	mg/L	0.00015
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethene	ND	0.0010	mg/L	0.00017
trans-1,2-Dichloroethene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethene	ND	0.0010	mg/L	0.00019
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	**0.00087 J**	**0.0010**	**mg/L**	**0.00033**
Tetrachloroethene	ND	0.0010	mg/L	0.00029
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	ND	0.0010	mg/L	0.00022
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethene	ND	0.0010	mg/L	0.00017
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(75 - 121)
1,2-Dichloroethane-d4	103	(63 - 129)
Toluene-d8	83	(74 - 115)
4-Bromofluorobenzene	78	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-EBLK04-123010

GC/MS Volatiles

Lot-Sample #...: A1A040434-002 **Work Order #...:** MC1CV1AA **Matrix.....:** WQ
Date Sampled...: 12/30/10 08:15 **Date Received..:** 01/04/11
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1-Dichloroethane	ND	0.0010	mg/L	0.00015
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethene	ND	0.0010	mg/L	0.00017
trans-1,2-Dichloroethene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethene	ND	0.0010	mg/L	0.00019
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	**0.00059 J**	**0.0010**	**mg/L**	**0.00033**
Tetrachloroethene	ND	0.0010	mg/L	0.00029
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	ND	0.0010	mg/L	0.00022
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethene	ND	0.0010	mg/L	0.00017
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(75 - 121)
1,2-Dichloroethane-d4	103	(63 - 129)
Toluene-d8	84	(74 - 115)
4-Bromofluorobenzene	77	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-SMW21-123010

GC/MS Volatiles

Lot-Sample #...: A1A040434-003 **Work Order #...:** MC1CX1AA **Matrix.....:** WG
Date Sampled...: 12/30/10 08:55 **Date Received..:** 01/04/11
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 5.71 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1-Dichloroethane	**0.0044 J**	**0.0057**	**mg/L**	**0.00086**
1,2-Dichloroethane	ND	0.0057	mg/L	0.0013
cis-1,2-Dichloroethene	**0.044**	**0.0057**	**mg/L**	**0.00097**
trans-1,2-Dichloroethene	ND	0.0057	mg/L	0.0011
1,1-Dichloroethene	**0.017**	**0.0057**	**mg/L**	**0.0011**
Ethylbenzene	ND	0.0057	mg/L	0.00097
Methylene chloride	ND	0.0057	mg/L	0.0019
Tetrachloroethene	ND	0.0057	mg/L	0.0017
Toluene	ND	0.0057	mg/L	0.00074
1,1,1-Trichloroethane	**0.20**	**0.0057**	**mg/L**	**0.0013**
1,1,2-Trichloroethane	ND	0.0057	mg/L	0.0015
Trichloroethene	ND	0.0057	mg/L	0.00097
Vinyl chloride	ND	0.0057	mg/L	0.0013

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(75 - 121)
1,2-Dichloroethane-d4	103	(63 - 129)
Toluene-d8	85	(74 - 115)
4-Bromofluorobenzene	79	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-GMZ04-123010

GC/MS Volatiles

Lot-Sample #...: A1A040434-004 **Work Order #...:** MC1C51AA **Matrix.....:** WG
Date Sampled...: 12/30/10 09:55 **Date Received..:** 01/04/11
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1-Dichloroethane	**0.00068 J**	**0.0010**	**mg/L**	**0.00015**
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethene	**0.00046 J**	**0.0010**	**mg/L**	**0.00017**
trans-1,2-Dichloroethene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethene	ND	0.0010	mg/L	0.00019
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	ND	0.0010	mg/L	0.00033
Tetrachloroethene	ND	0.0010	mg/L	0.00029
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	**0.0015**	**0.0010**	**mg/L**	**0.00022**
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethene	ND	0.0010	mg/L	0.00017
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(75 - 121)
1,2-Dichloroethane-d4	104	(63 - 129)
Toluene-d8	87	(74 - 115)
4-Bromofluorobenzene	76	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-GMZ03-123010

GC/MS Volatiles

Lot-Sample #...: A1A040434-005 **Work Order #...:** MC1C71AA **Matrix.....:** WG
Date Sampled...: 12/30/10 10:50 **Date Received..:** 01/04/11
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1-Dichloroethane	**0.022**	**0.0010**	**mg/L**	**0.00015**
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethene	**0.0063**	**0.0010**	**mg/L**	**0.00017**
trans-1,2-Dichloroethene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethene	**0.00019 J**	**0.0010**	**mg/L**	**0.00019**
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	ND	0.0010	mg/L	0.00033
Tetrachloroethene	**0.00041 J**	**0.0010**	**mg/L**	**0.00029**
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	**0.0025**	**0.0010**	**mg/L**	**0.00022**
1,1,2-Trichloroethane	**0.00027 J**	**0.0010**	**mg/L**	**0.00027**
Trichloroethene	ND	0.0010	mg/L	0.00017
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(75 - 121)
1,2-Dichloroethane-d4	102	(63 - 129)
Toluene-d8	83	(74 - 115)
4-Bromofluorobenzene	73	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-GMZ02-123010

GC/MS Volatiles

Lot-Sample #...: A1A040434-006 **Work Order #...:** MC1DA1AA **Matrix.....:** WG
Date Sampled...: 12/30/10 11:30 **Date Received..:** 01/04/11
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1-Dichloroethane	**0.0029**	**0.0010**	**mg/L**	**0.00015**
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethene	**0.00092 J**	**0.0010**	**mg/L**	**0.00017**
trans-1,2-Dichloroethene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethene	**0.00031 J**	**0.0010**	**mg/L**	**0.00019**
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	ND	0.0010	mg/L	0.00033
Tetrachloroethene	**0.00075 J**	**0.0010**	**mg/L**	**0.00029**
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	**0.0037**	**0.0010**	**mg/L**	**0.00022**
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethene	**0.00031 J**	**0.0010**	**mg/L**	**0.00017**
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(75 - 121)
1,2-Dichloroethane-d4	103	(63 - 129)
Toluene-d8	85	(74 - 115)
4-Bromofluorobenzene	76	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-BGW01-123010

GC/MS Volatiles

Lot-Sample #...: A1A040434-007 **Work Order #...:** MC1DD1AA **Matrix.....:** WG
Date Sampled...: 12/30/10 12:50 **Date Received..:** 01/04/11
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1-Dichloroethane	**0.00080 J**	**0.0010**	**mg/L**	**0.00015**
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethene	ND	0.0010	mg/L	0.00017
trans-1,2-Dichloroethene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethene	ND	0.0010	mg/L	0.00019
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	ND	0.0010	mg/L	0.00033
Tetrachloroethene	**0.0021**	**0.0010**	**mg/L**	**0.00029**
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	**0.00060 J**	**0.0010**	**mg/L**	**0.00022**
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethene	**0.0021**	**0.0010**	**mg/L**	**0.00017**
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	115	(75 - 121)
1,2-Dichloroethane-d4	112	(63 - 129)
Toluene-d8	87	(74 - 115)
4-Bromofluorobenzene	83	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-BGW02-123010

GC/MS Volatiles

Lot-Sample #...: A1A040434-008 **Work Order #...:** MC1DG1AA **Matrix.....:** WG
Date Sampled...: 12/30/10 13:35 **Date Received..:** 01/04/11
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1-Dichloroethane	**0.00061 J**	**0.0010**	**mg/L**	**0.00015**
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethene	**0.00030 J**	**0.0010**	**mg/L**	**0.00017**
trans-1,2-Dichloroethene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethene	**0.00040 J**	**0.0010**	**mg/L**	**0.00019**
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	ND	0.0010	mg/L	0.00033
Tetrachloroethene	**0.0023**	**0.0010**	**mg/L**	**0.00029**
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	**0.0017**	**0.0010**	**mg/L**	**0.00022**
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethene	**0.0025**	**0.0010**	**mg/L**	**0.00017**
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(75 - 121)
1,2-Dichloroethane-d4	106	(63 - 129)
Toluene-d8	83	(74 - 115)
4-Bromofluorobenzene	80	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-GMZ01-123010

GC/MS Volatiles

Lot-Sample #...: A1A040434-009 **Work Order #...:** MC1DJ1AA **Matrix.....:** WG
Date Sampled...: 12/30/10 14:55 **Date Received..:** 01/04/11
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 2.5 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1-Dichloroethane	**0.026**	**0.0025**	**mg/L**	**0.00038**
1,2-Dichloroethane	ND	0.0025	mg/L	0.00055
cis-1,2-Dichloroethene	**0.029**	**0.0025**	**mg/L**	**0.00042**
trans-1,2-Dichloroethene	ND	0.0025	mg/L	0.00048
1,1-Dichloroethene	**0.0035**	**0.0025**	**mg/L**	**0.00048**
Ethylbenzene	ND	0.0025	mg/L	0.00042
Methylene chloride	ND	0.0025	mg/L	0.00082
Tetrachloroethene	**0.088**	**0.0025**	**mg/L**	**0.00072**
Toluene	ND	0.0025	mg/L	0.00032
1,1,1-Trichloroethane	**0.055**	**0.0025**	**mg/L**	**0.00055**
1,1,2-Trichloroethane	ND	0.0025	mg/L	0.00068
Trichloroethene	**0.013**	**0.0025**	**mg/L**	**0.00042**
Vinyl chloride	ND	0.0025	mg/L	0.00055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	115	(75 - 121)
1,2-Dichloroethane-d4	111	(63 - 129)
Toluene-d8	88	(74 - 115)
4-Bromofluorobenzene	83	(66 - 117)

Stantec Consulting Corporation

Client Sample ID: HS SER-DUP06-123010

GC/MS Volatiles

Lot-Sample #...: A1A040434-010 **Work Order #...:** MC1DN1AA **Matrix.....:** WG
Date Sampled...: 12/30/10 **Date Received..:** 01/04/11
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 5.71 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1-Dichloroethane	**0.0040 J**	**0.0057**	**mg/L**	**0.00086**
1,2-Dichloroethane	ND	0.0057	mg/L	0.0013
cis-1,2-Dichloroethene	**0.042**	**0.0057**	**mg/L**	**0.00097**
trans-1,2-Dichloroethene	ND	0.0057	mg/L	0.0011
1,1-Dichloroethene	**0.015**	**0.0057**	**mg/L**	**0.0011**
Ethylbenzene	ND	0.0057	mg/L	0.00097
Methylene chloride	ND	0.0057	mg/L	0.0019
Tetrachloroethene	ND	0.0057	mg/L	0.0017
Toluene	ND	0.0057	mg/L	0.00074
1,1,1-Trichloroethane	**0.19**	**0.0057**	**mg/L**	**0.0013**
1,1,2-Trichloroethane	ND	0.0057	mg/L	0.0015
Trichloroethene	ND	0.0057	mg/L	0.00097
Vinyl chloride	ND	0.0057	mg/L	0.0013

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	117	(75 - 121)
1,2-Dichloroethane-d4	114	(63 - 129)
Toluene-d8	95	(74 - 115)
4-Bromofluorobenzene	90	(66 - 117)

NOTE(S):

J Estimated result. Result is less than RL.

Stantec Consulting Corporation

Client Sample ID: HS SER-TRIP02-123010

GC/MS Volatiles

Lot-Sample #...: A1A040434-011 **Work Order #...:** MC1D31AA **Matrix.....:** WQ
Date Sampled...: 12/30/10 **Date Received..:** 01/04/11
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1-Dichloroethane	ND	0.0010	mg/L	0.00015
1,2-Dichloroethane	ND	0.0010	mg/L	0.00022
cis-1,2-Dichloroethene	ND	0.0010	mg/L	0.00017
trans-1,2-Dichloroethene	ND	0.0010	mg/L	0.00019
1,1-Dichloroethene	ND	0.0010	mg/L	0.00019
Ethylbenzene	ND	0.0010	mg/L	0.00017
Methylene chloride	ND	0.0010	mg/L	0.00033
Tetrachloroethene	ND	0.0010	mg/L	0.00029
Toluene	ND	0.0010	mg/L	0.00013
1,1,1-Trichloroethane	ND	0.0010	mg/L	0.00022
1,1,2-Trichloroethane	ND	0.0010	mg/L	0.00027
Trichloroethene	ND	0.0010	mg/L	0.00017
Vinyl chloride	ND	0.0010	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(75 - 121)
1,2-Dichloroethane-d4	101	(63 - 129)
Toluene-d8	83	(74 - 115)
4-Bromofluorobenzene	79	(66 - 117)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A1A040434 **Work Order #...:** MC4RT1AA **Matrix.....:** WATER
MB Lot-Sample #: A1A070000-051

Prep Date.....: 01/06/11 **Final Wgt/Vol..:** 5 mL

Analysis Date..: 01/06/11 **Prep Batch #...:** 1007051
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.0010	mg/L	SW846 8260B
cis-1,2-Dichloroethene	ND	0.0010	mg/L	SW846 8260B
trans-1,2-Dichloroethene	ND	0.0010	mg/L	SW846 8260B
1,1-Dichloroethene	ND	0.0010	mg/L	SW846 8260B
Ethylbenzene	ND	0.0010	mg/L	SW846 8260B
Methylene chloride	ND	0.0010	mg/L	SW846 8260B
Tetrachloroethene	ND	0.0010	mg/L	SW846 8260B
Toluene	ND	0.0010	mg/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.0010	mg/L	SW846 8260B
Trichloroethene	ND	0.0010	mg/L	SW846 8260B
Vinyl chloride	ND	0.0010	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(75 - 121)
1,2-Dichloroethane-d4	103	(63 - 129)
Toluene-d8	90	(74 - 115)
4-Bromofluorobenzene	84	(66 - 117)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1A040434 **Work Order #...:** MC4RT1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A1A070000-051 MC4RT1AD-LCSD
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethane	96	(82 - 115)			SW846 8260B
	89	(82 - 115)	6.9	(0-30)	SW846 8260B
1,2-Dichloroethane	112	(71 - 127)			SW846 8260B
	103	(71 - 127)	8.1	(0-30)	SW846 8260B
cis-1,2-Dichloroethene	101	(80 - 113)			SW846 8260B
	94	(80 - 113)	7.1	(0-30)	SW846 8260B
trans-1,2-Dichloroethene	104	(83 - 117)			SW846 8260B
	99	(83 - 117)	5.0	(0-30)	SW846 8260B
1,1-Dichloroethene	**101**	**(78 - 131)**			**SW846 8260B**
	96	**(78 - 131)**	**5.5**	**(0-30)**	**SW846 8260B**
Ethylbenzene	103	(83 - 112)			SW846 8260B
	95	(83 - 112)	8.4	(0-30)	SW846 8260B
Methylene chloride	77	(66 - 131)			SW846 8260B
	67	(66 - 131)	14	(0-30)	SW846 8260B
Tetrachloroethene	122 a	(79 - 114)			SW846 8260B
	115 a	(79 - 114)	5.5	(0-30)	SW846 8260B
Toluene	**95**	**(84 - 111)**			**SW846 8260B**
	90	**(84 - 111)**	**6.0**	**(0-30)**	**SW846 8260B**
1,1,1-Trichloroethane	114	(74 - 118)			SW846 8260B
	108	(74 - 118)	5.2	(0-30)	SW846 8260B
1,1,2-Trichloroethane	105	(80 - 112)			SW846 8260B
	95	(80 - 112)	10	(0-30)	SW846 8260B
Trichloroethene	**114**	**(76 - 117)**			**SW846 8260B**
	108	**(76 - 117)**	**5.1**	**(0-20)**	**SW846 8260B**
Vinyl chloride	63	(53 - 127)			SW846 8260B
	66	(53 - 127)	4.9	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(75 - 121)
	103	(75 - 121)
1,2-Dichloroethane-d4	109	(63 - 129)
	100	(63 - 129)
Toluene-d8	95	(74 - 115)
	88	(74 - 115)
4-Bromofluorobenzene	105	(66 - 117)
	93	(66 - 117)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1A040434 **Work Order #...:** MC4RT1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A1A070000-051 MC4RT1AD-LCSD
Prep Date.....: 01/06/11 **Analysis Date..:** 01/06/11
Prep Batch #...: 1007051
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethane	0.010	0.0096	mg/L	96		SW846 8260B
	0.010	0.0089	mg/L	89	6.9	SW846 8260B
1,2-Dichloroethane	0.010	0.011	mg/L	112		SW846 8260B
	0.010	0.010	mg/L	103	8.1	SW846 8260B
cis-1,2-Dichloroethene	0.010	0.010	mg/L	101		SW846 8260B
	0.010	0.0094	mg/L	94	7.1	SW846 8260B
trans-1,2-Dichloroethene	0.010	0.010	mg/L	104		SW846 8260B
	0.010	0.0099	mg/L	99	5.0	SW846 8260B
1,1-Dichloroethene	**0.010**	**0.010**	**mg/L**	**101**		**SW846 8260B**
	0.010	**0.0096**	**mg/L**	**96**	**5.5**	**SW846 8260B**
Ethylbenzene	0.010	0.010	mg/L	103		SW846 8260B
	0.010	0.0095	mg/L	95	8.4	SW846 8260B
Methylene chloride	0.010	0.0077	mg/L	77		SW846 8260B
	0.010	0.0067	mg/L	67	14	SW846 8260B
Tetrachloroethene	0.010	0.012 a	mg/L	122		SW846 8260B
	0.010	0.012 a	mg/L	115	5.5	SW846 8260B
Toluene	**0.010**	**0.0095**	**mg/L**	**95**		**SW846 8260B**
	0.010	**0.0090**	**mg/L**	**90**	**6.0**	**SW846 8260B**
1,1,1-Trichloroethane	0.010	0.011	mg/L	114		SW846 8260B
	0.010	0.011	mg/L	108	5.2	SW846 8260B
1,1,2-Trichloroethane	0.010	0.010	mg/L	105		SW846 8260B
	0.010	0.0095	mg/L	95	10	SW846 8260B
Trichloroethene	**0.010**	**0.011**	**mg/L**	**114**		**SW846 8260B**
	0.010	**0.011**	**mg/L**	**108**	**5.1**	**SW846 8260B**
Vinyl chloride	0.010	0.0063	mg/L	63		SW846 8260B
	0.010	0.0066	mg/L	66	4.9	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(75 - 121)
	103	(75 - 121)
1,2-Dichloroethane-d4	109	(63 - 129)
	100	(63 - 129)
Toluene-d8	95	(74 - 115)
	88	(74 - 115)
4-Bromofluorobenzene	105	(66 - 117)
	93	(66 - 117)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

END OF REPORT

Stantec

APPENDIX D

QA/QC Validation Documents:

Quarter 1

Quarter 2

Quarter 3

Quarter 4

QUARTER 1

Stantec Analytical Validation Checklist **Report No. 031710-EC-01**

Project Name: UTC Rockford, IL	Project Number: 182602078
SECOR Validator: Elizabeth Crowley	Laboratory: Test America – North Canton, OH
Date Validated: 03/12-03/15/10	Laboratory Project Number: A0B040546-A&B
Sample Start-End Date: 02/03/10	Laboratory Report Date: 02/25/10

Parameters Validated: Volatile Organic Compounds (VOC) by SW846 8260B, Dissolved Gases by RSK SOP-175, Total Organic Carbon by 9060, Sulfide by MCAWW 376.1, Sulfate by 300.0A, Nitrate-Nitrite by 353.2 and Alkalinity by 310.1

Associated Chain(s) of Custody – 145195 and 145196
Samples Validated – 5 aqueous field samples and 1 Trip Blank

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

- **U** The analyte was analyzed for, but not detected above the reported sample quantitation limit.
- **J** The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ** The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- **N** The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
- **NJ** The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- **R** The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- **B** The analyte was detected in the method, field and/or trip blank.

Additional data validation flags are provided in Table 10 of the QAPP.

	Yes	No
1. Were all the analyses requested for the samples submitted with each COC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?	X	
Comments: Case narrative reports matrix issues and minor analytical problems.		
3. Were sample Chain-of-Custody forms complete?	X	
Comments:		
4. Were samples received in good condition and at the appropriate temperature?	X	
Comments		
5. Were sample holding times met?	X	
Comments:		
6. Were correct concentration units reported?	X	

Comments:			
7. Were detections found in laboratory blank samples?		Yes X	No
Comments: Alkalinity batch 0040087 – Method Blank = 4.3 mg/L Associated sample results below the blank value were validated to non-detect (ND) and flagged "UJ". Sample results above the blank value were flagged "J". Sample results greater than 100 times the blank value require no qualifying.			
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?		Yes	No X
Comments:			
9. Were instrument calibrations within method criteria?	NA	Yes	No
Comments:			
10. Were surrogate recoveries within control limits?		Yes X	No
Comments:			
11. Were laboratory control sample recoveries within control limits?		Yes X	No
Comments:			
12. Were matrix spike recoveries within control limits?		Yes	No X
Comments: 8260B batch 0042361 - %Rs below limits for Tetrachloroethylene and 1,1,1-Trichloroethane. Sample site specific. Associated results flagged "J" in HSSER-SMW08-020410 in data package A0B060440-A. No additional qualifying action required.			
13. Were RPDs within control limits?		Yes X	No
Comments:			
14. Were dilutions required on any samples?		Yes X	No
Comments: Sample results for target analytes with reporting limits greater than standard levels flagged "UJ".			
15. Were Tentatively Identified Compounds (TIC) present?		Yes X	No
Comments: Analytes reported at levels below the reporting limit were flagged "NJ".			
16. Were organic system performance criteria met?	NA	Yes	No
Comments:			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No

Comments:			
18. Were inorganic system performance criteria met?	NA	Yes	No
Comments:			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results. Duplicate Sample No. Primary Sample No.		Yes	No X
Comments:			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes X	No	Initials EAC
Comments:			
21. Other:		Yes	No X
Comments:			

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			

Stantec Analytical Validation Checklist **Report No. 031710-EC-02**

Project Name: UTC Rockford, IL	Project Number: 182602078
SECOR Validator: Elizabeth Crowley	Laboratory: Test America – North Canton, OH
Date Validated: 03/15/10	Laboratory Project Number: A0B060440-A&B
Sample Start-End Date: 02/03-02/05/10	Laboratory Report Date: 02/25/10

Parameters Validated: Volatile Organic Compounds (VOC) by SW846 8260B, Dissolved Gases by RSK SOP-175, Total Organic Carbon by 9060, Sulfide by MCAWW 376.1, Sulfate by 300.0A, Nitrate-Nitrite by 353.2 and Alkalinity by 310.1

Associated Chain(s) of Custody – 145197 and 145198

Samples Validated – 9 aqueous field samples and 2 Trip Blanks

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

- **U** The analyte was analyzed for, but not detected above the reported sample quantitation limit.
- **J** The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ** The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- **N** The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
- **NJ** The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- **R** The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- **B** The analyte was detected in the method, field and/or trip blank.

Additional data validation flags are provided in Table 10 of the QAPP.

	Yes	No
1. Were all the analyses requested for the samples submitted with each COC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?	X	
Comments: Case narrative reports matrix issues and minor analytical problems.		
3. Were sample Chain-of-Custody forms complete?	X	
Comments:		
4. Were samples received in good condition and at the appropriate temperature?	X	
Comments		
5. Were sample holding times met?	X	
Comments:		
6. Were correct concentration units reported?	X	

Comments:			
7. Were detections found in laboratory blank samples?		Yes X	No
Comments: Alkalinity batch 0040087 – Method Blank = 4.3 mg/L Associated sample results below the blank value were validated to non-detect (ND) and flagged "UJ". Sample results above the blank value were flagged "J". Sample results greater than 100 times the blank value require no qualifying.			
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?		Yes	No X
Comments:			
9. Were instrument calibrations within method criteria?	NA	Yes	No
Comments:			
10. Were surrogate recoveries within control limits?		Yes X	No
Comments:			
11. Were laboratory control sample recoveries within control limits?		Yes X	No
Comments:			
12. Were matrix spike recoveries within control limits?		Yes	No X
Comments: 8260B batch 0042361 - %Rs below limits for Tetrachloroethylene and 1,1,1-Trichloroethane. Sample site specific. Associated results flagged "J" in HSSER-SMW08-020410. No additional qualifying action required.			
13. Were RPDs within control limits?		Yes X	No
Comments:			
14. Were dilutions required on any samples?		Yes X	No
Comments: Sample results for target analytes with reporting limits greater than standard levels flagged "UJ".			
15. Were Tentatively Identified Compounds (TIC) present?		Yes X	No
Comments: Analytes reported at levels below the reporting limit were flagged "NJ".			
16. Were organic system performance criteria met?	NA	Yes	No
Comments:			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No

Comments:			
18. Were inorganic system performance criteria met?	NA	Yes	No
Comments:			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results. Duplicate Sample No. Primary Sample No.		Yes	No X
Comments:			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes X	No	Initials EAC
Comments:			
21. Other:		Yes	No X
Comments:			

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			

Stantec Analytical Validation Checklist **Report No. 031710-EC-03**

Project Name: UTC Rockford, IL	Project Number: 182602078
SECOR Validator: Elizabeth Crowley	Laboratory: Test America – North Canton, OH
Date Validated: 03/16/10	Laboratory Project Number: A0B110444-A&B
Sample Start-End Date: 02/08-02/10/10	Laboratory Report Date: 02/25/10

Parameters Validated: Volatile Organic Compounds (VOC) by SW846 8260B, Dissolved Gases by RSK SOP-175, Total Organic Carbon (TOC) by 9060, Sulfide by MCAWW 376.1, Sulfate by 300.0A, Nitrate-Nitrite by 353.2 and Alkalinity by 310.1

Associated Chain(s) of Custody – 145199 and no number

Samples Validated – 12 aqueous field samples, 1 Equipment blank, 1 Field Blank and 1 Trip Blank

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

- **U** The analyte was analyzed for, but not detected above the reported sample quantitation limit.
- **J** The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ** The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- **N** The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
- **NJ** The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- **R** The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- **B** The analyte was detected in the method, field and/or trip blank.

Additional data validation flags are provided in Table 10 of the QAPP.

	Yes	No
1. Were all the analyses requested for the samples submitted with each COC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?	X	
Comments: Case narrative reports matrix issues and minor analytical problems.		
3. Were sample Chain-of-Custody forms complete?		X
Comments: Trip Blank not listed on CofC, added to job by laboratory		
4. Were samples received in good condition and at the appropriate temperature?		X
Comments: Multiple bottles broken during shipment, sufficient volume remained for analysis. No qualifying action required. Discrepancies between labeled means or preservation and lab detected means of preservation documented. Laboratory able to identify means of sample preservation and analyzed samples properly. No qualifying action required.		
5. Were sample holding times met?	X	

Comments:			
6. Were correct concentration units reported?		Yes X	No
Comments:			
7. Were detections found in laboratory blank samples?		Yes X	No
Comments: Alkalinity batch 0044054 – Method Blank = 3.0 mg/L, Alkalinity batch 0053137 – Method Blank = 4.0 mg/L. Associated sample results below the blank value were validated to non-detect (ND) and flagged "UJ". Sample results above the blank value were flagged "J". Sample results greater than 100 times the blank value require no qualifying.			
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?		Yes X	No
Comments: Equipment Blank – TOC = 0.3 mg/L, 5x = 1.5 mg/L and Alkalinity = 3.3 mg/L. Associated sample results below the blank or x value were validated to non-detect (ND) and flagged "UJ". Sample results above the blank or x value were flagged "J". Sample results greater than 100 times the blank value require no qualifying.			
9. Were instrument calibrations within method criteria?	NA	Yes	No
Comments:			
10. Were surrogate recoveries within control limits?		Yes X	No
Comments:			
11. Were laboratory control sample recoveries within control limits?		Yes X	No
Comments:			
12. Were matrix spike recoveries within control limits?		Yes	No X
Comments: Alkalinity batch 0044054 - %Rs below limits. Sample site specific. Associated results flagged "J" in HSSER-RAM07-021010. No additional qualifying action required. Alkalinity batch 0053137 - %Rs below limits. Sample not site specific. No qualifying action taken.			
13. Were RPDs within control limits?		Yes X	No
Comments:			
14. Were dilutions required on any samples?		Yes X	No
Comments: Sample results for target analytes with reporting limits greater than standard levels flagged "UJ".			

15. Were Tentatively Identified Compounds (TIC) present?		Yes X	No
Comments: Analytes reported at levels below the reporting limit were flagged "NJ".			
16. Were organic system performance criteria met?	NA	Yes	No
Comments:			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments:			
18. Were inorganic system performance criteria met?	NA	Yes	No
Comments:			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results. Duplicate Sample No. — Primary Sample No. HSSER-DUP01-020810 — HSSER-SMW20-020810 HSSER-DUP02-021010 — HSSER-RAMW08-021010		Yes X	No
Comments: RPDs within limits except TOC in duplicate pair 1 and Methane and Sulfate in duplicate pair 2. Associated results flagged "J" or "UJ" in duplicate samples only. No additional qualifying action taken.			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes X	No	Initials EAC
Comments:			
21. Other:		Yes	No X
Comments:			

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			

QUARTER 2

Stantec Analytical Validation Checklist — Report No. 052010-EC-01

Project Name: UTC Rockford, IL	Project Number: 182602078
SECOR Validator: Elizabeth Crowley	Laboratory: Test America – North Canton, OH
Date Validated: 03/17/10	Laboratory Project Number: A0D160531
Sample Start-End Date: 04/12-04/14/10	Laboratory Report Date: 04/29/10

Parameters Validated: Volatile Organic Compounds (VOC) by SW846 8260B

Associated Chain(s) of Custody – no numbers
Samples Validated – 13 aqueous field samples and 1Trip Blank

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

- **U** The analyte was analyzed for, but not detected above the reported sample quantitation limit.
- **J** The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ** The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- **N** The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
- **NJ** The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- **R** The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- **B** The analyte was detected in the method, field and/or trip blank.

Additional data validation flags are provided in Table 10 of the QAPP.

	Yes	No
1. Were all the analyses requested for the samples submitted with each COC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?	X	
Comments: Case narrative reports matrix issues and minor analytical problems.		
3. Were sample Chain-of-Custody forms complete?	X	
Comments:		
4. Were samples received in good condition and at the appropriate temperature?	X	
Comments		
5. Were sample holding times met?	X	
Comments:		
6. Were correct concentration units reported?	X	
Comments:		

7. Were detections found in laboratory blank samples?		Yes	No X
Comments:			
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?		Yes	No X
Comments:			
9. Were instrument calibrations within method criteria?	NA	Yes	No
Comments:			
10. Were surrogate recoveries within control limits?		Yes X	No
Comments:			
11. Were laboratory control sample recoveries within control limits?		Yes X	No
Comments:			
12. Were matrix spike recoveries within control limits?		Yes X	No
Comments:			
13. Were RPDs within control limits?		Yes X	No
Comments:			
14. Were dilutions required on any samples?		Yes X	No
Comments: Non-detect sample results for target analytes with reporting limits greater than standard levels flagged "UJ".			
15. Were Tentatively Identified Compounds (TIC) present?		Yes X	No
Comments: Analytes reported at levels below one half the reporting limit were flagged "NJ".			
16. Were organic system performance criteria met?	NA	Yes	No
Comments:			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments:			
18. Were inorganic system performance criteria met?	NA	Yes	No
Comments:			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.		Yes X	No

Duplicate Sample No.	Primary Sample No.
HSSER-DUP03-041410	HSSER-GMZ02-041410

Comments: All RPDs within limits.

20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes	No	Initials
	X		EAC

Comments:

21. Other:	Yes	No
		X

Comments:

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			

Stantec Analytical Validation Checklist **Report No. 052010-EC-02**

Project Name: UTC Rockford, IL	Project Number: 182602078
SECOR Validator: Elizabeth Crowley	Laboratory: Test America – North Canton, OH
Date Validated: 03/17/10	Laboratory Project Number: A0D170438
Sample Start-End Date: 04/14-04/16/10	Laboratory Report Date: 04/29/10

Parameters Validated: Volatile Organic Compounds (VOC) by SW846 8260B

Associated Chain(s) of Custody – no numbers
Samples Validated – 4 aqueous field samples and 1Trip Blank

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

- **U** The analyte was analyzed for, but not detected above the reported sample quantitation limit.
- **J** The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ** The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- **N** The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
- **NJ** The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- **R** The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- **B** The analyte was detected in the method, field and/or trip blank.

Additional data validation flags are provided in Table 10 of the QAPP.

	Yes	No
1. Were all the analyses requested for the samples submitted with each COC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?	X	
Comments: Case narrative reports matrix issues and minor analytical problems.		
3. Were sample Chain-of-Custody forms complete?	X	
Comments:		
4. Were samples received in good condition and at the appropriate temperature?	X	
Comments		
5. Were sample holding times met?	X	
Comments:		
6. Were correct concentration units reported?	X	
Comments:		

7. Were detections found in laboratory blank samples?		Yes	No X
Comments:			
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?		Yes X	No
Comments: Trip Blank – Methylene Chloride = 0.00035 mg/L, 10x = 0.0035 mg/L. Associated sample results below the x value were validated to non-detect (ND) and flagged "UJB". Sample results above the x value were flagged "JB". Sample results greater than 100 times the blank value require no qualifying.			
9. Were instrument calibrations within method criteria?	NA	Yes	No
Comments:			
10. Were surrogate recoveries within control limits?		Yes X	No
Comments:			
11. Were laboratory control sample recoveries within control limits?		Yes X	No
Comments:			
12. Were matrix spike recoveries within control limits?		Yes	No X
Comments: 8260B batch 0117309 - %R below limits for cis-1,2-Dichloroethene. Sample not job specific. Additional QA/QC within limits. No qualifying action required.			
13. Were RPDs within control limits?		Yes X	No
Comments:			
14. Were dilutions required on any samples?		Yes X	No
Comments: Non-detect sample results for target analytes with reporting limits greater than standard levels flagged "UJ".			
15. Were Tentatively Identified Compounds (TIC) present?		Yes X	No
Comments: Analytes reported at levels below one half the reporting limit were flagged "NJ".			
16. Were organic system performance criteria met?	NA	Yes	No
Comments:			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments:			
18. Were inorganic system performance criteria met?	NA	Yes	No

Comments:		
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results. Duplicate Sample No. Primary Sample No.	Yes	No X
Comments:		
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes X	No	Initials EAC
Comments:		
21. Other:	Yes	No X
Comments:		

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			

Stantec Analytical Validation Checklist — Report No. 052010-EC-03

Project Name: UTC Rockford, IL	Project Number: 182602078
SECOR Validator: Elizabeth Crowley	Laboratory: Test America – North Canton, OH
Date Validated: 03/19/10	Laboratory Project Number: A0D170531
Sample Start-End Date: 04/15-04/16/10	Laboratory Report Date: 04/29/10

Parameters Validated: Volatile Organic Compounds (VOC) by SW846 8260B, Dissolved Gases by RSK SOP-175, Total Organic Carbon by 9060, Sulfide by MCAWW 376.1, Sulfate by 300.0A, Nitrate-Nitrite by 353.2 and Alkalinity by 310.1

Associated Chain(s) of Custody – no numbers

Samples Validated – 11 aqueous field samples and 1Trip Blank

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

- **U** The analyte was analyzed for, but not detected above the reported sample quantitation limit.
- **J** The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ** The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- **N** The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
- **NJ** The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- **R** The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- **B** The analyte was detected in the method, field and/or trip blank.

Additional data validation flags are provided in Table 10 of the QAPP.

	Yes	No
1. Were all the analyses requested for the samples submitted with each COC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?	X	
Comments: Case narrative reports matrix issues and minor analytical problems.		
3. Were sample Chain-of-Custody forms complete?	X	
Comments:		
4. Were samples received in good condition and at the appropriate temperature?	X	
Comments		
5. Were sample holding times met?	X	
Comments:		
6. Were correct concentration units reported?	X	

Comments:			
7. Were detections found in laboratory blank samples?		Yes X	No
Comments: 353.2 batch 0117207 – Nitrate Method Blank = 0.06 mg/L, 5x = 0.30 mg/L. Alkalinity batch 0112058 – Method Blank = 6.3 mg/L. Alkalinity batch 0116057 – Method Blank = 2.4 mg/L. Associated sample results below the blank or x value were validated to non-detect (ND) and flagged "UJB". Sample results above the blank or x value were flagged "JB". The reporting limit is changed to the blank or x value as required. Sample results greater than 100 times the blank value require no qualifying.			
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?		Yes X	No
Comments: Equipment Blank – Methylene Chloride = 0.0016 mg/L, 10x = 0.016 mg/L. Field Blank – Methylene Chloride = 0.0020 mg/L, 10x = 0.020 mg/L. Associated sample results below the blank or x value were validated to non-detect (ND) and flagged "UJB". Sample results above the blank or x value were flagged "JB". The reporting limit is changed to the blank or x value as required. Sample results greater than 100 times the blank value require no qualifying.			
9. Were instrument calibrations within method criteria?	NA	Yes	No
Comments:			
10. Were surrogate recoveries within control limits?		Yes X	No
Comments:			
11. Were laboratory control sample recoveries within control limits?		Yes X	No
Comments:			
12. Were matrix spike recoveries within control limits?		Yes	No X

Comments: 8260B batch 0117309 - %R below limits for cis-1,2-Dichloroethene. Sample site specific. Associated results flagged "J" in HSSER-RAMW02-041510. No additional qualifying action required.

RSK SOP-175 batch 0110383 - %R below limits for all analytes. Sample site specific. Associated results flagged "J" in HSSER-RAMW02-041510. No additional qualifying action required.

353.2 batch 0117207 - %R below limits for Nitrate. Sample site specific. Associated results flagged "J" in HSSER-DUP04-041610. No additional qualifying action required.

Alkalinity batch 0112058 - %R below limits. Sample site specific. Associated results flagged "J" in HSSER-RAMW02-041510. No additional qualifying action required.

376.1 batch 0110353 - %Rs above limits for Sulfide. Sample site specific. Associated results flagged "J" in HSSER-RAMW02-041510. No additional qualifying action required.

13. Were RPDs within control limits?		Yes X	No
Comments:			
14. Were dilutions required on any samples?		Yes X	No
Comments: Sample results for target analytes with reporting limits greater than standard levels flagged "UJ".			
15. Were Tentatively Identified Compounds (TIC) present?		Yes X	No
Comments: Analytes reported at levels below the reporting limit were flagged "NJ".			
16. Were organic system performance criteria met?	NA	Yes	No
Comments:			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments:			
18. Were inorganic system performance criteria met?	NA	Yes	No
Comments:			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results. Duplicate Sample No. HSSER-DUP04-041610 Primary Sample No. HSSER-RAMW05-041610		Yes X	No
Comments: All RPDs within limits except Sulfide, Nitrite and Ethene. Associated results flagged "J" if positive or "UJ" if ND in duplicate samples only.			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes X	No	Initials EAC
Comments:			
21. Other:		Yes	No

			X
Comments:			
PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT			
Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			

QUARTER 3

Stantec Analytical Validation Checklist — Report No. 090210-EC-02

Project Name: UTC Rockford, IL	Project Number: 182602078
SECOR Validator: Elizabeth Crowley	Laboratory: Test America – North Canton, OH
Date Validated: 09/01/10	Laboratory Project Number: A0G280449
Sample Start-End Date: 07/26-07/27/10	Laboratory Report Date: 08/12/10

Parameters Validated: Volatile Organic Compounds (VOC) by SW846 8260B

Associated Chain(s) of Custody – no numbers
Samples Validated – 8 aqueous field samples, 1 Equipment Blank, 1 Field Blank and 1 Trip Blank.

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

U The analyte was analyzed for, but not detected above the reported sample quantitation limit.
J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
B The analyte was detected in the method, field and/or trip blank.

Additional data validation flags are provided in Table 10 of the QAPP.

	Yes	No
1. Were all the analyses requested for the samples submitted with each COC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?	X	
Comments: Case narrative reports matrix issues and minor analytical problems.		
3. Were sample Chain-of-Custody forms complete?	X	
Comments:		
4. Were samples received in good condition and at the appropriate temperature?	X	
Comments		
5. Were sample holding times met?	X	
Comments:		
6. Were correct concentration units reported?	X	
Comments:		

7. Were detections found in laboratory blank samples?		Yes	No X
Comments:			
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?		Yes	No X
Comments:			
9. Were instrument calibrations within method criteria?	NA	Yes	No
Comments:			
10. Were surrogate recoveries within control limits?		Yes X	No
Comments:			
11. Were laboratory control sample recoveries within control limits?		Yes X	No
Comments:			
12. Were matrix spike recoveries within control limits?		Yes X	No
Comments:			
13. Were RPDs within control limits?		Yes X	No
Comments:			
14. Were dilutions required on any samples?		Yes	No X
Comments:			
15. Were Tentatively Identified Compounds (TIC) present?		Yes X	No
Comments: Analytes reported at levels below the reporting limit were flagged "NJ".			
16. Were organic system performance criteria met?	NA	Yes	No
Comments:			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments:			
18. Were inorganic system performance criteria met?	NA	Yes	No
Comments:			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.		Yes	No X

Duplicate Sample No.	Primary Sample No.		
Comments:			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes X	No	Initials EAC
Comments:			
21. Other:		Yes	No X
Comments:			

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			

Stantec Analytical Validation Checklist — Report No. 090210-EC-03

Project Name: UTC Rockford, IL	Project Number: 182602078
SECOR Validator: Elizabeth Crowley	Laboratory: Test America – North Canton, OH
Date Validated: 09/01/10	Laboratory Project Number: A0G280458
Sample Start-End Date: 07/27/10	Laboratory Report Date: 08/12/10

Parameters Validated: Volatile Organic Compounds (VOC) by SW846 8260B

Associated Chain(s) of Custody – no numbers
Samples Validated – 2 aqueous field samples

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

U The analyte was analyzed for, but not detected above the reported sample quantitation limit.
J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
B The analyte was detected in the method, field and/or trip blank.

Additional data validation flags are provided in Table 10 of the QAPP.

	Yes	No
1. Were all the analyses requested for the samples submitted with each COC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?	X	
Comments: Case narrative reports matrix issues and minor analytical problems.		
3. Were sample Chain-of-Custody forms complete?	X	
Comments:		
4. Were samples received in good condition and at the appropriate temperature?	X	
Comments		
5. Were sample holding times met?	X	
Comments:		
6. Were correct concentration units reported?	X	
Comments:		

7. Were detections found in laboratory blank samples?		Yes	No X
Comments:			
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?		Yes	No X
Comments: Trip Blank included in cooler but reported in A0G280449.			
9. Were instrument calibrations within method criteria?	NA	Yes	No
Comments:			
10. Were surrogate recoveries within control limits?		Yes X	No
Comments:			
11. Were laboratory control sample recoveries within control limits?		Yes X	No
Comments:			
12. Were matrix spike recoveries within control limits?		Yes X	No
Comments:			
13. Were RPDs within control limits?		Yes X	No
Comments:			
14. Were dilutions required on any samples?		Yes	No X
Comments:			
15. Were Tentatively Identified Compounds (TIC) present?		Yes X	No
Comments: Analytes reported at levels below the reporting limit were flagged "NJ".			
16. Were organic system performance criteria met?	NA	Yes	No
Comments:			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments:			
18. Were inorganic system performance criteria met?	NA	Yes	No
Comments:			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.		Yes	No X

Duplicate Sample No.	Primary Sample No.		
Comments:			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes X	No	Initials EAC
Comments:			
21. Other:		Yes	No X
Comments:			

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			

Stantec Analytical Validation Checklist — Report No. 090210-EC-04

Project Name: UTC Rockford, IL	Project Number: 182602078
SECOR Validator: Elizabeth Crowley	Laboratory: Test America – North Canton, OH
Date Validated: 09/01/10	Laboratory Project Number: A0G300529
Sample Start-End Date: 07/28/10	Laboratory Report Date: 08/16/10

Parameters Validated: Volatile Organic Compounds (VOC) by SW846 8260B

Associated Chain(s) of Custody – no numbers
Samples Validated – 5 aqueous field samples and 1 Trip Blank

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

U The analyte was analyzed for, but not detected above the reported sample quantitation limit.
J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
B The analyte was detected in the method, field and/or trip blank.

Additional data validation flags are provided in Table 10 of the QAPP.

	Yes	No
1. Were all the analyses requested for the samples submitted with each COC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?	X	
Comments: Case narrative reports matrix issues and minor analytical problems.		
3. Were sample Chain-of-Custody forms complete?	X	
Comments:		
4. Were samples received in good condition and at the appropriate temperature?	X	
Comments		
5. Were sample holding times met?	X	
Comments:		
6. Were correct concentration units reported?	X	
Comments:		

7. Were detections found in laboratory blank samples?		Yes	No X
Comments:			
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?		Yes	No X
Comments:			
9. Were instrument calibrations within method criteria?	NA	Yes	No
Comments:			
10. Were surrogate recoveries within control limits?		Yes X	No
Comments:			
11. Were laboratory control sample recoveries within control limits?		Yes X	No
Comments:			
12. Were matrix spike recoveries within control limits?		Yes X	No
Comments:			
13. Were RPDs within control limits?		Yes X	No
Comments:			
14. Were dilutions required on any samples?		Yes X	No
Comments: Non-detect sample results with reporting limits greater than standard level flagged "UJ".			
15. Were Tentatively Identified Compounds (TIC) present?		Yes X	No
Comments: Analytes reported at levels below the reporting limit were flagged "NJ".			
16. Were organic system performance criteria met?	NA	Yes	No
Comments:			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments:			
18. Were inorganic system performance criteria met?	NA	Yes	No
Comments:			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.		Yes X	No

Duplicate Sample No.	Primary Sample No.
HS SER-DUP05	HS SER-SMW21

Comments: All RPDs within limits.

20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes	No	Initials
	X		EAC

Comments:

21. Other:	Yes	No
		X

Comments:

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			

Stantec Analytical Validation Checklist **Report No. 090210-EC-05**

Project Name: UTC Rockford, IL	Project Number: 182602078
SECOR Validator: Elizabeth Crowley	Laboratory: Test America – North Canton, OH
Date Validated: 09/01/10	Laboratory Project Number: A0G300534
Sample Start-End Date: 07/28/10	Laboratory Report Date: 08/16/10
Parameters Validated: Volatile Organic Compounds (VOC) by SW846 8260B	
Associated Chain(s) of Custody – no numbers Samples Validated – 4 aqueous field samples	

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

U The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

B The analyte was detected in the method, field and/or trip blank.

Additional data validation flags are provided in Table 10 of the QAPP.

	Yes	No
1. Were all the analyses requested for the samples submitted with each COC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?	X	
Comments: Case narrative reports matrix issues and minor analytical problems.		
3. Were sample Chain-of-Custody forms complete?	X	
Comments:		
4. Were samples received in good condition and at the appropriate temperature?	X	
Comments		
5. Were sample holding times met?	X	
Comments:		
6. Were correct concentration units reported?	X	
Comments:		

7. Were detections found in laboratory blank samples?		Yes	No X
Comments:			
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?		Yes	No X
Comments: Trip Blank included in cooler but reported in A0G300529.			
9. Were instrument calibrations within method criteria?	NA	Yes	No
Comments:			
10. Were surrogate recoveries within control limits?		Yes X	No
Comments:			
11. Were laboratory control sample recoveries within control limits?		Yes X	No
Comments:			
12. Were matrix spike recoveries within control limits?		Yes X	No
Comments:			
13. Were RPDs within control limits?		Yes X	No
Comments:			
14. Were dilutions required on any samples?		Yes X	No
Comments: Non-detect results with reporting limits above standard levels were flagged "UJ".			
15. Were Tentatively Identified Compounds (TIC) present?		Yes X	No
Comments: Analytes reported at levels below the reporting limit were flagged "NJ".			
16. Were organic system performance criteria met?	NA	Yes	No
Comments:			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments:			
18. Were inorganic system performance criteria met?	NA	Yes	No
Comments:			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.		Yes	No X

Duplicate Sample No.	Primary Sample No.		
Comments:			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes X	No	Initials EAC
Comments:			
21. Other:		Yes	No X
Comments:			

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			

QUARTER 4

Stantec Analytical Validation Checklist — Report No. 011011-EC-01

Project Name: UTC Rockford, IL	Project Number: 182602078
Stantec Validator: Elizabeth Crowley	Laboratory: Test America – North Canton, OH
Date Validated: 01/10/11	Laboratory Project Number: A0L300514
Sample Start-End Date: 12/29/10	Laboratory Report Date: 01/07/11

Parameters Validated: Volatile Organic Compounds (VOC) by SW846 8260B

Associated Chain(s) of Custody – no numbers
Samples Validated – 8 aqueous field samples and 1 Trip Blank

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

U The analyte was analyzed for, but not detected above the reported sample quantitation limit.
J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
B The analyte was detected in the method, field and/or trip blank.

Additional data validation flags are provided in Table 10 of the QAPP.

	Yes	No
1. Were all the analyses requested for the samples submitted with each COC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?	X	
Comments: Case narrative reports matrix issues and minor analytical problems.		
3. Were sample Chain-of-Custody forms complete?	X	
Comments:		
4. Were samples received in good condition and at the appropriate temperature?	X	
Comments:		
5. Were sample holding times met?	X	
Comments:		
6. Were correct concentration units reported?	X	
Comments:		

7. Were detections found in laboratory blank samples?		Yes	No X
Comments:			
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?		Yes	No X
Comments:			
9. Were instrument calibrations within method criteria?	NA	Yes	No
Comments:			
10. Were surrogate recoveries within control limits?		Yes X	No
Comments:			
11. Were laboratory control sample recoveries within control limits?		Yes	No X
Comments: 8260B batch 1007051 - %Rs below limits for Methylene Chloride and Vinyl Chloride. Associated sample results flagged "J" if positive or "UJ" if non-detect.			
12. Were matrix spike recoveries within control limits?	NA	Yes	No
Comments:			
13. Were RPDs within control limits?		Yes X	No
Comments:			
14. Were dilutions required on any samples?		Yes X	No
Comments: Non-detect sample results with reporting limits above standard limits flagged "UJ".			
15. Were Tentatively Identified Compounds (TIC) present?		Yes X	No
Comments: Analytes results reported at levels below ½ the reporting limit were flagged "N" and results greater than ½ the reporting limit but below the reporting limit were flagged "NJ".			
16. Were organic system performance criteria met?	NA	Yes	No
Comments:			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments:			
18. Were inorganic system performance criteria met?	NA	Yes	No
Comments:			

19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results. Duplicate Sample No. Primary Sample No.	Yes	No X
Comments:		
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes X	No	Initials EAC
Comments:		
21. Other:	Yes	No X
Comments:		

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			

Stantec Analytical Validation Checklist — Report No. 011011-EC-02

Project Name: UTC Rockford, IL	Project Number: 182602078
Stantec Validator: Elizabeth Crowley	Laboratory: Test America – North Canton, OH
Date Validated: 01/10/11	Laboratory Project Number: A1A040434
Sample Start-End Date: 12/30/10	Laboratory Report Date: 01/07/11

Parameters Validated: Volatile Organic Compounds (VOC) by SW846 8260B

Associated Chain(s) of Custody – no numbers
Samples Validated – 8 aqueous field samples, 1 Field Blank, 1 Equipment Blank and 1 Trip Blank

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

U The analyte was analyzed for, but not detected above the reported sample quantitation limit.
J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
B The analyte was detected in the method, field and/or trip blank.

Additional data validation flags are provided in Table 10 of the QAPP.

	Yes	No
1. Were all the analyses requested for the samples submitted with each COC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?	X	
Comments: Case narrative reports matrix issues and minor analytical problems.		
3. Were sample Chain-of-Custody forms complete?	X	
Comments:		
4. Were samples received in good condition and at the appropriate temperature?	X	
Comments:		
5. Were sample holding times met?	X	
Comments:		
6. Were correct concentration units reported?	X	
Comments:		

7. Were detections found in laboratory blank samples?		Yes	No X
Comments:			
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?		Yes X	No
Comments: Field Blank – Methylene Chloride = 0.00087 mg/L. Equipment Blank – Methylene Chloride = 0.00059 mg/L. Methylene Chloride not detected in the field samples. No qualifying action required.			
9. Were instrument calibrations within method criteria?	NA	Yes	No
Comments:			
10. Were surrogate recoveries within control limits?		Yes X	No
Comments:			
11. Were laboratory control sample recoveries within control limits?		Yes	No X
Comments: 8260B batch 10055084 - %Rs below limits for Methylene Chloride and Vinyl Chloride. 8260 batch 1007051- %Rs below limits for Methylene Chloride and Vinyl Chloride. Associated sample results flagged "J" if positive or "UJ" if non-detect.			
12. Were matrix spike recoveries within control limits?		Yes	No X
Comments: 8260B batch 10050084 - %Rs below limits for Methylene Chloride and Vinyl Chloride. Sample site specific. Associated results flagged "J" if positive or "UJ" if non-detect in HS SER SMW01 1222810. No additional qualifying action required.			
13. Were RPDs within control limits?		Yes X	No
Comments:			
14. Were dilutions required on any samples?		Yes X	No
Comments: Non-detect sample results with reporting limits above standard levels were flagged "UJ".			
15. Were Tentatively Identified Compounds (TIC) present?		Yes X	No
Comments: Analytes results reported at levels below ½ the reporting limit were flagged "N" and results greater than ½ the reporting limit but below the reporting limit were flagged "NJ".			
16. Were organic system performance criteria met?	NA	Yes	No
Comments:			

17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments:			
18. Were inorganic system performance criteria met?	NA	Yes	No
Comments:			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results. Duplicate Sample No. HS SER-DUP06-123010 Primary Sample No. HS SER-SMW21-123010		Yes X	No
Comments: All RPDs within limits.			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes X	No	Initials EAC
Comments:			
21. Other:		Yes	No X
Comments:			

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			