

FINAL
ANNUAL GROUNDWATER MONITORING REPORT 2008
BUILDING BB-190

NCDENR Incident Number: 22793
Marine Corps Base
Camp Lejeune, North Carolina

June 27, 2008

Prepared for:



Ms. Lori Reuther
Marine Corps North Carolina IPT
Naval Facilities Engineering Command Mid-Atlantic
6506 Hampton Blvd
Norfolk, VA 23508-1278



Ms. Johanna Arnold
I&E/EMD/EQB
Building 12, Post Lane
MCB Camp Lejeune, NC 28542

Prepared by:



Sovereign Consulting Inc.
405 Oakmeads Crescent, Suite 1
Virginia Beach, Virginia 23462

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LIST OF ACRONYMS

2000 Guidelines	Groundwater Section Guidelines for Investigation and Remediation of Soil and Groundwater
2001 Guidelines	Guidelines for Assessment and Corrective Action, North Carolina Underground Storage Tank Section (Effective July 1, 2001)
2L GWQS	NCAC T15A:02L Groundwater Quality Standards
AS	Air Sparge
AST	Aboveground Storage Tank
BDL	Below Detection Limit
BN	Base/Neutral (extractables)
BNA	Base/Neutral/Acid (extractables)
BQL	Below Quantitation Limit
BLS	Below Land Surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAP	Corrective Action Plan
CFR	Code of Federal Regulations
Cr	Chromium
CSA	Comprehensive Site Assessment
DIPE	Di-isopropyl Ether
DO	Dissolved Oxygen
DOD	Department of Defense
DPT	Direct Push Technology
DWQ	Division of Water Quality
DWM	Division of Waste Management
DTW	Depth to Water
EDB	Ethylene di-bromide
EMD	Environmental Management Division
EPA	Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbons
EQB	Environmental Quality Branch
Fe	Iron
FID	Flame Ionization Detector
FT	Feet
GCL	Gross Contaminant Level
GIS	Geographic Information System
GPS	Global Positioning System
Guidelines Vol. II	Groundwater Section Guidelines for Investigation and Remediation of Soil and Groundwater, Volume II, Petroleum Underground Storage Tanks (January 2, 1998)
HDPE	High Density Polyethylene
I/C	Industrial/Commercial
ID	Identification
I&E	Installations and Environment Department
IGWQS	Interim Groundwater Quality Standards
IPE	Isopropyl Ether
LSA	Limited Site Assessment
LUST	Leaking Underground Storage Tank
m	Meter
MADEP	Massachusetts Department of Environmental Protection
MCAS	Marine Corps Air Station
MCB	Marine Corps Base

MDL	Method Detection Limit
mg/Kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
MSCC	Maximum Soil Contaminant Concentration
MSL	Mean Sea Level
MTBE	Methyl tertiary butyl ether
µg/Kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
NA	Not Analyzed
N/A	Not Applicable
NAVFAC	Naval Facilities Engineering Command Atlantic
NC	North Carolina
NCAC	North Carolina Administrative Code
NCDENR	North Carolina Department of Environment and Natural Resources
NE	None Established
NM	Not Measured
NMT	No Measurable Thickness
NS	Not Sampled
OVA	Organic Vapor Analyzer
PAH	Polynuclear Aromatic Hydrocarbons
Pb	Lead
PPB	Parts Per Billion
PPM	Parts Per Million
PID	Photo Ionization Detector
PQL	Practical Quantitation Limit
PVC	Polyvinyl chloride
RBCA	Risk-Based Corrective Action
RCRA	Resource Conservation and Recovery Act
Res	Residential
SOW	Scope of Work
STGW	Soil-to-Groundwater
SVE	Soil Vapor Extraction
SVOC	Semi Volatile Organic Compound
TCLP	Toxicity Characteristic Leaching Procedure
TIC	Tentatively Identified Compound
TOC	Top of Casing
TPH	Total Petroleum Hydrocarbons
US	United States
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
VPH	Volatile Petroleum Hydrocarbons
WiRO	NCDENR Wilmington Regional Office

EXECUTIVE SUMMARY

Building BB-190 is located in the Courthouse Bay area of MCB Camp Lejeune off of Marines Road. It is an active water treatment plant. An active potable water supply well, PSWBB47, is located approximately 100 feet north of Building BB-190. The former 500-gallon underground storage tank (UST) located at the subject site was used to store diesel fuel for heat production and was abandoned in place in May 1994.

Soil samples, collected during tank closure activities, showed the presence of total petroleum hydrocarbons (TPH) - gasoline range organics (GRO) and diesel range organics (DRO) above state action levels. As a result, a comprehensive site assessment (CSA) was conducted at the site by Richard Catlin and Associates (now known as Catlin Engineers and Scientists, CATLIN) in 1995. Two areas exhibited soil TPH concentrations above action levels during the CSA - one in the vicinity of monitoring well MW16 and the other in the vicinity of former UST BB-190-1. Of these two areas, only soils in the vicinity of the former UST exhibited soil TPH concentrations above the Final Clean-up Level calculated at 120 ppm as TPH-Gasoline. Free product was not identified during the CSA. Dissolved phase constituents, however, were detected in groundwater at the site.

Due to soil and groundwater contamination, the CSA recommended a corrective action plan (CAP) be prepared to address contamination at the site. The 1996 CATLIN CAP recommended biosparging to address groundwater contamination, using a combination of horizontal and vertical biosparge wells. To address vadose zone soil contamination and to collect vapors from the biosparge wells, the CAP proposed soil vapor extraction using horizontal soil vapor extraction wells. The biosparge/soil vapor extraction system was subsequently installed by J.A. Jones Environmental Services, Inc. (J.A. Jones) in October 1998 and operated until December 1999, when the system was shut down based on low contaminant concentrations.

Following system deactivation in December 1999, post-operation groundwater monitoring was conducted quarterly. No free product was present, and dissolved phase constituents remained below detectable concentrations at most site wells. Wells MW07 and MW16 were the only wells that exhibited contaminants (benzene and/or ethylbenzene) above NCGWQSSs. Soil sampling conducted in September 2001 showed soil contaminant levels were below NCDENR established soil-to-groundwater maximum soil contaminant concentrations.

Based on J.A. Jones soil and groundwater data, a May 2002 monitoring report was prepared. It stated that the site qualified for a low risk classification and recommended the site be considered for No Further Action (NFA) status by NCDENR. NCDENR subsequently denied the request for NFA due to the close proximity of potable water supply well PSWBB47. NCDENR recommended that groundwater monitoring be continued at the site and that the monitoring program should include water supply well PSWBB47. Alternatively, they recommended that the potable water supply well be properly abandoned, and a well abandonment record be submitted to NCDENR.

Subsequent gauging and sampling of the site's 17 monitoring wells, as well as the nearby potable water supply well, was conducted by Engineering and Environment, Inc. (EEI) in both June 2004 and 2005. Sampling was not performed in 2003 due to funding issues. Neither monitoring event

detected free product at the site. In addition, no contaminants were detected in the water supply well, PSWBB47, or in the site's three deep monitoring wells. Contamination above NCGWQSSs were detected only in the two wells closest to the former UST, MW07 and MW16. Contaminant concentrations were below GCLs.

During the February 2007 monitoring event, Sovereign Consulting Inc. (Sovereign) conducted monitoring well gauging of 16 site monitoring wells and sampling of 9 wells. Samples were analyzed for volatile and semi-volatile compounds via EPA Methods 602 and 625 in accordance with the program scope of work, as well as volatile and extractable hydrocarbons using the MADEP methods.

Measurable free product was not identified during that monitoring event. Groundwater contaminant levels remained generally the same as compared to historical data showing monitoring wells MW07 and MW16 being the most impacted wells. Contaminant levels continued to show an overall decrease as compared to pre-remediation conditions.

The current monitoring period includes June 2007 through May 2008. During the January 2008 monitoring event Sovereign Consulting Inc. (Sovereign) conducted monitoring well gauging of 17 site monitoring wells and sampling of 9 monitoring wells and 1 water supply well. Samples were analyzed for volatiles and semi-volatile compounds via EPA Methods 602 and 625 in accordance with the program scope of work, as well as volatile and extractable hydrocarbons using the MADEP methods.

Four monitoring wells at the site, MW03, MW07, MW16, and MW17 exhibited contaminant concentrations above NCGWQSSs. Monitoring wells MW07 and MW16 were the most impacted wells with noncompliant concentrations of benzene, naphthalene, C₅-C₈ Aliphatics, and C₉-C₂₂ Aromatics. MW03 and MW17 contained C₉-C₂₂ Aromatics above their applicable NCGWQSSs. None of the concentrations, however, were above the GCLs, where established. Since this site is classified by NCDENR as a high risk site due to the close proximity of active potable water supply well PSWBB47, Sovereign recommends MCB Camp Lejeune continue annual groundwater monitoring and reporting at the site.

1.0 TITLE PAGE

DATE OF REPORT: June 2008

Facility I.D.: N/A

NCDENR Incident Number: 22793

Site Name: Building BB-190

Site Location: Marine Corps Base Camp Lejeune, North Carolina

Nearest City/Town: Camp Lejeune

County: Onslow

Risk Classification: High Risk

Land Use Classification: Industrial/Commercial

Property Owner: Commanding Officer – MCB Camp Lejeune
I&E/EMD/EQB
PSC Box 20004

Address: MCB Camp Lejeune, NC 28542-0004

Phone: (910) 451-5068

Tank Owner: Same as above

Address: Same as above

Phone: Same as above

Property Occupant: Same as above

Address: MCB Camp Lejeune, NC

Phone: None

Consultant/Contractor: Sovereign Consulting Inc.

Address: 405 Oakmeads Crescent, Suite 1
Virginia Beach, VA 23462

Phone: (757) 456-5093

Release Information

Date Discovered: June 14, 1994

Latitude:

34° 54' 84" N

Longitude:

77° 21' 48.96" W

Estimated Quantity of Release: Unknown

Cause of Release: Leaking underground storage tank system

Source of Release (Piping/UST): UST and associated system

Sizes and contents of UST system(s) from which the release occurred: The former UST was a 500-gallon diesel tank.

*I, **Kevin P. Wheeler** a Professional Geologist for Sovereign Consulting Inc., do certify that the information contained in this report is correct and accurate to the best of my knowledge.*

2.0 INTRODUCTION

The purpose of this report is to summarize data from a recent groundwater gauging and sampling event at the Building BB-190 site aboard MCB Camp Lejeune, North Carolina. This data was collected in January 2008. The project's scope of work entailed gauging of 16 site monitoring wells (each are preceded by the prefix USTBB190) – MW01-MW12 and MW15-MW17, as well as a nearby water supply well, PSWBB47. Groundwater samples from monitoring wells MW01, MW02, MW03, MW07, MW08, MW12, MW15, MW16, MW17, and water supply well PSWBB47 were also collected during the January 2008 event. Analyses run included EPA Methods 602 + Xylenes, 625 + 10 largest non-target peaks, and the MADEP methods. Results of Sovereign's 2008 gauging and sampling event are presented in this report.

3.0 SITE HISTORY

Building BB-190 is located in the Courthouse Bay area of MCB Camp Lejeune off of Marines Road. It is an active water treatment plant, and an active potable water supply well, PSWBB47, is located approximately 100 feet north of Building BB-190.

The former 500-gallon diesel UST located at the subject site was used to store diesel fuel for heat production. The tank system was abandoned in May 1994. The tank closure report states the delivery and vent lines servicing the UST were disconnected and capped, and the tank was abandoned in place, after appropriate cleaning, by pumping it full with a concrete slurry. Two soil samples were collected during tank closure activities. Results showed the presence of TPH-GRO and DRO above state action levels in one of the two samples.

As a result, a comprehensive site assessment was conducted at the site by Richard Catlin and Associates (now known as Catlin Engineers and Scientists, CATLIN) in 1995. The report was performed in order to determine the magnitude and extent of soil and ground water contamination associated with the former UST, and identify and delineate free product accumulation, if present. Two areas exhibited soil TPH concentrations above action levels during the CSA - one in the vicinity of monitoring well MW16 and the other in the vicinity of former UST BB-190-1. Of these two areas, only soils in the vicinity of the former UST exhibited soil TPH concentrations above the Final Clean-up Level calculated at 120 ppm as TPH-Gasoline. Free product was not identified during the CSA. Dissolved phase constituents, however, were detected in groundwater at the site.

Due to soil and groundwater contamination, the CSA recommended a CAP be prepared to address contamination at the site. The 1996 CATLIN CAP recommended biosparging to address groundwater contamination, using a combination of horizontal and vertical biosparge wells. To address vadose zone soil contamination and to collect vapors from the biosparge wells, the CAP proposed soil vapor extraction using horizontal soil vapor extraction wells. The biosparge/soil vapor extraction system was subsequently installed by J.A. Jones in October 1998. The system included one horizontal biosparge well, four vertical biosparge wells, and two horizontal soil vapor extraction wells.

The remediation system operated from October 1998 until December 1999 when the system was shut down based on low contaminant concentrations. A baseline groundwater sampling event was conducted in August 1998. Monthly groundwater sampling events were conducted during the first quarter of system operation (November 1998, December 1998, and January 1999), after which groundwater sampling was conducted quarterly (April, July, and October 1999). Following the October 1999 sampling event, most monitoring wells had not exhibited detectable concentrations of any dissolved phase contaminants. In addition, only the two monitoring wells located closest to the former UST (wells MW07 and MW16) exhibited constituent concentrations above NCGWQSs (limited to benzene and/or ethylbenzene).

Following system deactivation in December 1999, post-operation groundwater monitoring was conducted quarterly during the months of January, April, July, and October 2000. Data from the post-operation monitoring indicated no free product was present, and dissolved phase constituents remained below detectable concentrations at most site wells. Wells MW07 and MW16 were the only monitoring wells that exhibited contaminants above NCGWQSs (again limited to benzene and/or ethylbenzene).

In September 2001, five soil samples were collected from five borings advanced in areas where previous investigations had identified elevated TPH concentrations in vadose zone soils. Only one of the five soil samples contained detectable contamination concentrations. These concentrations, however, were all were below NCDENR established soil-to-groundwater maximum soil contaminant concentrations. J.A. Jones generated a May 2002 monitoring report documenting the remediation system operation, groundwater monitoring program (during and post system operation), and 2001 soil sampling event. The report indicated the site qualified for a low risk classification and recommended the site be considered for No Further Action status by NCDENR.

In a response letter dated July 10, 2002, NCDENR denied the Request for No Further Action due to the close proximity of the site to potable water supply well PSWBB47. The supply well is located on the northern portion of the site approximately 100 feet from the former UST. NCDENR recommended that groundwater monitoring be continued at the site, and that the monitoring program should include water supply well PSWBB47. Alternatively, NCDENR recommended that the potable water supply well be properly abandoned, and a well abandonment record be submitted to NCDENR.

Follow up gauging and sampling of the site's 17 monitoring wells, as well as the nearby potable water supply well, was conducted by EEI in both June 2004 and 2005. Sampling was not performed in 2003 due to funding issues. There was no measurable free product detected during the June 2004 monitoring event. In addition, no contaminants were detected in the water supply well, PSWBB47, or in the site's three deep monitoring wells. Contamination above NCGWQSs were detected only in the two monitoring wells closest to the former UST, MW07 and MW16. Contaminant concentrations were below GCLs. EEI also gauged and sampled the site in June 2005. Findings were the same as those in the June 2004 event with contaminant concentrations being slightly lower.

The 2006 monitoring program was conducted by Sovereign in May 2006. Site activities included well gauging of the 17 site monitoring wells, as well as groundwater sampling from the 17 monitoring wells and from potable water supply well PSWBB47. No measurable free product was detected during the May 2006 monitoring event. In addition, laboratory analysis did not detect any target analyte in potable water supply well PSWBB47. Only two shallow monitoring wells at the site, MW07 and MW16, exhibited contaminant concentrations above NCGWQSs in 2006. Each well contained naphthalene, C₅-C₈ aliphatics, and C₉-C₂₂ aromatics at levels above their applicable groundwater quality standards. None, however, were above the GCLs, where established. No target analytes were detected in the three deep monitoring wells at the site.

Sovereign Consulting Inc. (Sovereign) conducted annual groundwater monitoring in February 2007. Site activities included well gauging of 16 site monitoring wells (monitoring well MW01 was inaccessible) groundwater samples were collected from monitoring wells MW02, MW03, MW07, MW08, MW12, MW15, MW16, and MW17, as well as potable water supply well PSWBB47. Measurable free product was not identified during the monitoring event. Two shallow monitoring wells at the site, MW07 and MW16, exhibited contaminant concentrations above the NCGWQSs. Each well contained C₉-C₂₂ aromatics at levels above their applicable groundwater quality standards. Benzene was detected in monitoring well MW16 at levels above the NCGWQS, C₅-C₈ aliphatics were detected in both wells however MW07 had levels higher than the NCGWQS. None, however, were above the GCLs, where established.

Sovereign carried out the 2008 monitoring event in January 2008. Sovereign gauged and sampled monitoring wells MW01-MW3, MW07, MW08, MW12 and MW15-MW17, as well as the potable water supply well PSWBB47. This report outlines and describes site activities as performed by Sovereign during the 2008 gauging and sampling event.

4.0 GAUGING AND SAMPLING RESULTS

The 2008 field program for the Building BB-190 site consisted of a one time gauging event of seventeen monitoring wells and a one time groundwater sampling event of nine site monitoring wells (MW01-MW3, MW07, MW08, MW12 and MW15-MW17), as well as the potable water supply well PSWBB47. Activities were conducted in accordance with NCDENR guidance.

4.1 WELL GAUGING

Groundwater gauging conducted in January 2008 included all seventeen monitoring wells (MW01-MW17) and the water supply well (PSWBB47). Gauging data is summarized in Table 2. Monitoring wells were gauged using an interface probe to measure the depth to groundwater and depth to product (if present). Depth to water values ranged from 4.71 feet to 8.18 feet below TOC in Type II monitoring wells, and from 5.35 feet to 13.57 feet below TOC in Type III monitoring wells. No measurable free product was detected at any monitoring well designated for gauging during the 2008 monitoring program.

Top of casing elevations and DTW values were used to obtain groundwater elevations at the site. Figure 3 shows shallow groundwater elevations. From the map, groundwater generally

flows in a southwesterly direction, which is consistent with the direction observed from previous investigations.

4.2 GROUNDWATER SAMPLING

Groundwater sampling was also conducted at the site. Annual groundwater samples were collected during the January 2008 event from monitoring wells MW01, MW02, MW03, MW07, MW08, MW12, MW15, MW16, and MW17, as well as potable water supply well PSWBB47. Sampling was reduced to these ten wells based upon the absence of contaminants in historical data from the remainder of site monitoring wells (MW04, MW05, MW06, MW09, MW10, MW11, MW13, and MW14).

One duplicate sample was collected from well MW16 and a laboratory supplied trip blank was submitted for analysis. Prior to sampling, wells were purged of one well casing volume of water using a peristaltic pump with connected polyethylene discharge tubing and a low flow purging and sampling procedure. Purging of the wells was completed using the techniques described in the NCDENR UST Section *Guidelines for Sampling, Version 1.2*, dated September 1, 2003. Specifically, Sovereign field personnel follow purging completion criteria detailed in Appendix F of the *Guidelines for Sampling*. One option of these criteria state that adequate purging is achieved when three consecutive measurements in which the three parameters listed below are within the stated limits, dissolved oxygen is no greater than 20 percent of saturation at the field measured temperature, and turbidity is no greater than 20 Nephelometric Turbidity Units (NTUs):

1. Temperature: +/- 0.2° C
2. pH: +/- 0.2 Standard Units
3. Specific Conductance: +/- 5.0% of reading

This method is used, as opposed to purging three well volumes, in order to make the most efficient use of time when sampling. As in any scenario, professional judgment is also relied upon in the field during gauging and sampling events. Water quality indicator parameters (pH, temperature, conductivity, oxidation-reduction potential, dissolved oxygen, and turbidity) were measured and recorded. If a well purged to dryness, the well was allowed to recharge before sampling.

Samples were collected after purging using the laboratory-prepared sample bottles, placed on ice, and shipped under proper chain of custody to SGS/Paradigm Analytical Laboratories Inc. (SGS) in Wilmington, North Carolina (NC Certification Number 481). The lab tested the groundwater samples for volatiles via EPA method 602, semivolatiles using EPA method 625, and volatile and extractable petroleum hydrocarbons with the MADEP methods. Laboratory reports and chain of custody documentation are included in Appendix B.

Four volatile compounds were detected at the site-Benzene, ethylbenzene, toluene, and total xylenes. All four of these compounds were detected in MW07 and MW16. However, benzene was the only compound detected above groundwater standards. Benzene was detected in monitoring wells MW07 and MW16 at concentration of 2.60 µg/L and 13.7 µg/L

respectively. The two monitoring wells are both screened in the surficial aquifer and located close to and downgradient of the former UST.

Ethylbenzene and total xylenes were also detected in monitoring wells MW03 and MW17 but the concentrations of the compound found in these monitoring wells were well below the established groundwater standards. None of the other wells sampled, including MW02, MW08, MW12, MW15, MW17, and potable water supply well PSWBB47, contained detectable volatile contaminant concentrations. Results for the remaining monitoring wells were below quantitation limits for all EPA Method 602 target analytes. Volatile organic compound results are summarized in Table 3 and shown on Figure 4.

Four semi-volatile compounds, acenaphthene, bis(2-ethylhexyl)phthalate, fluorene, and naphthalene were detected at the site. This number decreased from nine in 2007. Acenaphthene was detected in MW02, MW07, MW12, and MW17 at concentrations well below the NCGWQS of 80 µg/L. Bis(2-ethylhexyl)phthalate was detected in MW07 at concentrations below the NCGWQS of 2.5 µg/L. Fluorene was detected in MW07 at concentrations well below the NCGWQS of 280 µg/L. Naphthalene was detected in MW03, MW07, MW16, and MW17 at concentrations of 1.50J µg/L, 21.0 µg/L, 44.0 µg/L, and 17.9 µg/L respectively. The naphthalene concentrations in monitoring wells MW7 and MW16 were at or above the groundwater quality standard of 21 µg/L. No semi-volatile compounds were detected in the groundwater sample from PSWBB47.

Seven of the wells sampled (MW01, MW03, MW07, MW08, MW12, MW16 and MW17) at the site exhibited one or more TICs. TICs are substances not on the target compound list, and not all TICs are identified and quantitated using individual standards. All TIC quantitations are estimated. Most of the TICs were identified as unknown or isomer compounds, such as isomer of tetra methylbenzene, unknown aromatic, etc. Semivolatile compound results are summarized in Table 4 and shown on Figure 5.

MADEP constituents were also detected in four wells at the site – monitoring wells MW03, MW07, MW16 and MW17. The C₅-C₈ aliphatics and C₉-C₂₂ aromatics concentrations were detected in the wells at concentration above the NCGWQSs. Monitoring wells MW07, MW16 and MW17 contained C₅-C₈ aliphatics concentrations of 244 µg/L, 460 µg/L, and 214 µg/L respectively. Only the MW16 C₅-C₈ concentration exceeded the NCGWQS of 420 µg/L. Monitoring wells MW03, MW07, MW16 and MW17 exhibited concentrations of C₉-C₂₂ aromatics at <381 µg/L, 876µg/L, 568 µg/L and 829 µg/L, as well as C₉-C₁₈ aliphatics concentrations of <379 µg/L, <842 µg/L, <519 µg/L and <793 µg/L. The C₉-C₁₈ aliphatics concentrations were below the applicable groundwater quality standard of 4,200 µg/L, while the four wells were noncompliant with the C₉-C₂₂ aromatic standard of 210 µg/L. There were no detections of C₁₉-C₃₆ aliphatics in any site well, and the supply well, PSWBB47, did not exhibit any MADEP constituents.

The duplicate sample was obtained from MW16. The duplicate results closely mirrored the named groundwater sample results. The laboratory supplied trip blank was also free of target analytes as was the method blank.

Overall, the site continues to display a downward trend in contaminant concentrations as compared to pre-remediation conditions. The number of volatiles detected at the site, stayed the same from 2007 to 2008. Benzene however was also detected in MW07 and MW16 above the NCGWQS. Semi-volatile contaminants at the site decreased from nine in 2007 to four in 2008. MADEP constituents at the site were present in the groundwater samples obtained from MW03, MW07, MW16 and MW17. In the 2007 sampling event MADEP constituents were only found in MW07 and MW16.

Current monitoring data from the 2008 event shows an overall decrease in concentrations as compared to 2007 data, with the exception of the benzene hit in MW16 (13.7 µg/L), and total xylenes hit in MW17 (78.8 µg/L). An overview similar to that performed in the 2006 and 2005 annual reports shows the following information and compares the most recent data to the last four years. Groundwater contaminant concentrations remain well below pre-remediation conditions and significantly below GCLs.

Maximum Detected Concentrations

Analyte	NCGWQS	GCL	Pre-Remediation 1995	Immediately following Deactivation (Jan 2000)	Ten Months after Deactivation (Oct 2000)	2004 Data	2005 Data	2006 Data	2007 Data	Current Data (2008)
Benzene	1	5000	3210	31	5	4.81	2.86	ND	10.2	13.7
Ethylbenzene	550	84,500	895	23	68	267	151	214	112	45.7
Total Xylenes	530	87,500	2390	19	11	671	419.5	284.7	77.11	78.8
Naphthalene	21	15,500	423	ND	17	113	72.4	151	71.4	44.0
Benzo(a)pyrene	0.00479	1.5	37.2	ND	ND	ND	ND	ND	ND	ND

Concentrations are expressed in micrograms per liter

ND indicates the analyte was not detected at the laboratory detection limit.

(1995 data from Catlin, 1995; 2000 data from Jones, 2002; 2004/2005 data from EEI, 2004/2005, 2006, 2007 data from Sovereign)

Historical groundwater sampling data from previous annual reports can be found in Appendix A for comparison.

5.0 RECEPTOR SURVEY

Sovereign reassessed site conditions and concluded that the receptor survey previously completed by J.A. Jones in the May 2002 annual monitoring report still applies. Sovereign updated a risk classification and land use form as part of the 2006 monitoring report. Both forms can be found in the 2006 report. There has been no change in receptor impact during the current monitoring period, and there have been no changes to land use of the site or the immediate surrounding areas.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on historical data and fieldwork and laboratory analytical data gathered during the 2008 monitoring period, the following conclusions and recommendations are presented:

1. Surficial aquifer groundwater flows to the southwest across the site, consistent with previous investigations. Depth to water values ranged from 4.71 feet to 8.18 feet below TOC in Type II monitoring wells, and from 5.35 feet to 13.57 feet below TOC in Type III monitoring wells.
2. No measurable free product was detected during the January 2008 monitoring event.
3. No target analytes were detected in potable water supply well PSWBB47, indicating there has been no impact to this well.
4. Four monitoring wells at the site, MW03, MW07, MW16, and MW17 exhibited contaminant concentrations above NCGWQSs. Monitoring wells MW07 and MW16 were the most impacted wells with noncompliant concentrations of benzene, naphthalene, C₅-C₈ Aliphatics, and C₉-C₂₂ Aromatics. MW03 and MW17 contained C₉-C₂₂ Aromatics above their applicable NCGWQSs. None of the concentrations, however, were above the GCLs, where established.
5. No target analytes were detected in deep monitoring well MW15 (screened in the groundwater of the limestone unit), located adjacent to the near source surficial aquifer well MW07.
6. Previous investigations indicated constituent concentrations in soil are below NCDENR Soil-to-Groundwater Maximum Contaminant Concentrations.

Since this site is classified by NCDENR as high risk due to the close proximity of active potable water supply well PSWBB47 and given the presence of groundwater contamination, Sovereign recommends MCB Camp Lejeune continue annual groundwater monitoring and reporting at the site, with select wells being sampled semi-annually. The annual sampling program should include five site monitoring wells (MW01, MW02, MW08, MW12, and MW15), as well as water supply well PSWBB47. The semi-annual sampling program should include four monitoring wells (MW03, MW07, MW16, and MW17) that typically have higher groundwater contaminant concentrations.

The benzene concentrations in MW16 and MW07 should be tracked during the next monitoring event to determine if they are originating from a new and/or separate source. Any increase in the compounds should be further evaluated, including evaluation of the former fuel lines abandoned-in-place.

In addition, monitoring wells MW07 and MW16 have historically been the two wells at the site that continually display noncompliant contaminant concentrations. In order to address the contamination in these two wells, additional remediation could be implemented to assist in contaminant degradation. For example, the application of iSOC®, which stands for in situ Submerged Oxygen Curtain technology, could be employed. iSOC® is a groundwater bioremediation delivery system for introducing supersaturated oxygen (or other gaseous substrates) into groundwater. It is a low cost technology for supersaturating the ground water with oxygen to enhance natural attenuation and can be used for polishing.

7.0 REFERENCES

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TABLES

TABLE 1
WELL CONSTRUCTION INFORMATION
Incident Number and Name: 22793 - Building BB-190

Monitoring Well	Date Installed	Well Depth (feet below TOC)	Top of Casing Elevation (feet)	Well Type
USTBB190-MW01	3/15/1995	15	12.92	II
USTBB190-MW02	3/15/1995	15	11.46	II
USTBB190-MW03	3/15/1995	15	13.65	II
USTBB190-MW04	3/16/1995	15	13.58	II
USTBB190-MW05	3/16/1995	10	11.61	II
USTBB190-MW06	3/16/1995	10	9.86	II
USTBB190-MW07	3/22/1995	15	10.88	II
USTBB190-MW08	3/23/1995	15	13.63	II
USTBB190-MW09	3/23/1995	15	13.48	II
USTBB190-MW10	3/24/1995	15	10.00	II
USTBB190-MW11	3/24/1995	15	12.84	II
USTBB190-MW12	3/24/1995	13.5	12.18	II
USTBB190-MW13	3/20/1995	50	13.40	III
USTBB190-MW14	3/24/1995	48.5	9.88	III
USTBB190-MW15	3/24/1995	50	11.13	III
USTBB190-MW16	3/23/1995	36	10.94	Pumping Well
USTBB190-MW17	Unknown	15	10.83	II

- Source: CATLIN CSA 1995; well depths per well construction records; Top of Casing elevations taken from Sovereign Consulting Well Survey January 2007

TABLE 2
GROUNDWATER ELEVATION AND PRODUCT THICKNESS DATA
January 2008
Incident Number and Name: 22793 - Building BB-190

Monitoring Well	Top of Casing Elevation (feet)	Groundwater Elevation (feet)	Product Thickness (feet)
		01/24/08	01/24/08
USTBB190-MW01	12.92	6.40	
USTBB190-MW02	11.46	6.44	--
USTBB190-MW03	13.65	5.94	--
USTBB190-MW04	13.58	6.58	--
USTBB190-MW05	11.61	5.13	--
USTBB190-MW06	9.86	4.96	--
USTBB190-MW07	10.88	6.17	--
USTBB190-MW08	13.63	6.72	--
USTBB190-MW09	13.48	6.96	--
USTBB190-MW10	10.00	5.10	--
USTBB190-MW11	12.84	4.66	--
USTBB190-MW12	12.18	6.96	--
USTBB190-MW13	13.40	-0.17	--
USTBB190-MW14	9.88	1.71	--
USTBB190-MW15	11.13	0.95	--
USTBB190-MW16	10.94	5.59	--
USTBB190-MW17	10.83	Not Calculated	--
PSWBB47	Unknown	ND	--

- NM = Well not measured; well not accessible during the event.
- Not Calculated due to insufficient data or well not measured.
- Top of Casing elevations taken from Sovereign Consulting Well Survey January 2007
- "--"= free product not present during gauging event.

TABLE 3
SUMMARY OF GROUNDWATER SAMPLING RESULTS – EPA METHOD 602

Incident Number and Name: 22793 – Building BB-190

Contaminant of Concern			Benzene	Diisopropyl ether (DIPE)	Ethylbenzene	Methyl-tert butyl ether (MTBE)	Toluene	Total Xylenes
Well ID	Sample ID	Date Collected						
USTBB190-MW01	USTBB190-MW01	1/25/2008	BQL	BQL	BQL	BQL	BQL	BQL
USTBB190-MW02	USTBB190-MW02	1/24/2008	BQL	BQL	BQL	BQL	BQL	BQL
USTBB190-MW03	USTBB190-MW03	1/24/2008	BQL	BQL	1.93	BQL	BQL	10.6
USTBB190-MW07	USTBB190-MW07	1/24/2008	2.60J	BQL	45.2	BQL	0.960J	130
USTBB190-MW08	USTBB190-MW08	1/25/2008	BQL	BQL	BQL	BQL	BQL	BQL
USTBB190-MW12	USTBB190-MW12	1/25/2008	BQL	BQL	BQL	BQL	BQL	BQL
USTBB190-MW15	USTBB190-MW15	1/25/2008	BQL	BQL	BQL	BQL	BQL	BQL
USTBB190-MW16	USTBB190-MW16	1/25/2008	13.7	BQL	45.7	BQL	1.42	11.9
USTBB190-MW17	USTBB190-MW17	1/25/2008	BQL	BQL	21.6	BQL	BQL	78.8
PSWBB47	PSWBB47	1/25/2008	BQL	BQL	BQL	BQL	BQL	BQL
Duplicate	Duplicate	1/25/2008	13.2	BQL	42.9	BQL	0.988J	10.9
2L Standard (µg/l)			1	70	550	200	1,000	530
GCL (µg/l)			5,000	70,000	84,500	200,000	257,500	87,500

- All results reported in µg/l
- µg/L =micrograms per liter
- GCL = gross contamination level
- BQL = Below Quantitation Limits; see laboratory report for specific limits.
- <# = less than the laboratory reporting limit.
- **BOLD** = detected contaminant concentration.
- Duplicate sample obtained from MW16.
- NS – Not sampled; well taken out of sampling plan as no contaminants historically present.

TABLE 4
SUMMARY OF GROUNDWATER SAMPLING RESULTS – EPA METHOD 625

Incident Number and Name: 22793 – Building BB-190

Contaminant of Concern			Acenaphthene	Bis(2-chloroisopropyl)ether	Bis(2-ethylhexyl)phthalate	Diethylphthalate	Dimethylphthalate	Di-n-butylphthalate+	Fluorene	Naphthalene	Phenanthrene	All Other Compounds	Tentatively Identified Compounds (TICs)
Well ID	Sample ID	Date Collected											
USTBB190-MW01	USTBB190-MW01	1/25/2008	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	4.44
USTBB190-MW02	USTBB190-MW02	1/24/2008	13.1	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
USTBB190-MW03	USTBB190-MW03	1/24/2008	BQL	BQL	BQL	BQL	BQL	BQL	BQL	1.50J	BQL	BQL	50.09
USTBB190-MW07	USTBB190-MW07	1/24/2008	12.5	BQL	1.90J	BQL	BQL	BQL	2.30J	21.0	BQL	BQL	189.8
USTBB190-MW08	USTBB190-MW08	1/25/2008	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	4.26
USTBB190-MW12	USTBB190-MW12	1/25/2008	13.2	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	4.89
USTBB190-MW15	USTBB190-MW15	1/24/2008	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
USTBB190-MW16	USTBB190-MW16	1/25/2008	BQL	BQL	BQL	BQL	BQL	BQL	BQL	44.0	BQL	BQL	257.2
USTBB190-MW17	USTBB190-MW17	1/24/2008	12.5	BQL	BQL	BQL	BQL	BQL	BQL	17.9	BQL	BQL	191.5
PSWBB47	PSWBB47	1/24/2008	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Duplicate	Duplicate	1/25/2008	12.7	BQL	BQL	BQL	BQL	BQL	2.50J	42.8	BQL	BQL	266.6
2L Standard (µg/l)			80	NE	2.5	5,000	NE	700	280	21	210	Varies	NA
GCL (µg/l)			2,120	NE	2,500	NE	NE	NE	950	15,500	410	Varies	NA

- All results reported in µg/l; µg/L =micrograms per liter
- GCL = gross contamination level
- BQL = Below Quantitation Limits; see laboratory report for specific limits.
- J = Detected below the laboratory quantitation limit.
- **BOLD** = detected contaminant concentration.
- **BOLD** and **shaded** = detected contaminant concentration above the NCGWQS.
- Duplicate sample obtained from MW16.

TABLE 5
SUMMARY OF GROUNDWATER SAMPLING RESULTS – VPH/EPH METHODS

Incident Number and Name: 22793 – Building BB-190

Contaminant of Concern →			C ₅ -C ₈ Aliphatics	C ₉ -C ₁₂ Aliphatics	C ₉ -C ₁₀ Aromatics	C ₉ -C ₁₈ Aliphatics	C ₁₉ -C ₃₆ Aliphatics	C ₁₁ -C ₂₂ Aromatics
Well ID	Sample ID	Date Collected						
USTBB190-MW01	USTBB190-MW01	1/25/2008	<100	<100	<100	<100	<100	<100
USTBB190-MW02	USTBB190-MW02	1/24/2008	<100	<100	<100	<100	<100	<100
USTBB190-MW03	USTBB190-MW03	1/24/2008	<100	279	281	<100	<100	<100
USTBB190-MW07	USTBB190-MW07	1/24/2008	244	742	616	<100	<100	260
USTBB190-MW08	USTBB190-MW08	1/25/2008	<100	<100	<100	<100	<100	<100
USTBB190-MW12	USTBB190-MW12	1/25/2008	<100	<100	<100	<100	<100	<100
USTBB190-MW15	USTBB190-MW15	1/24/2008	<100	<100	<100	<100	<100	<100
USTBB190-MW16	USTBB190-MW16	1/25/2008	460	419	356	<100	<100	212
USTBB190-MW17	USTBB190-MW17	1/24/2008	214	693	637	<100	<100	192
PSWBB47	PSWBB47	1/24/2008	<100	<100	<100	<100	<100	<100
Duplicate	Duplicate	1/25/2008	424	401	330	<100	<100	210

- All results reported in µg/l
- µg/L =micrograms per liter
- GCL = gross contamination level
- **BOLD** = detected contaminant concentration.
- <# = less than the laboratory reporting limit.
- Duplicate sample obtained from MW16.

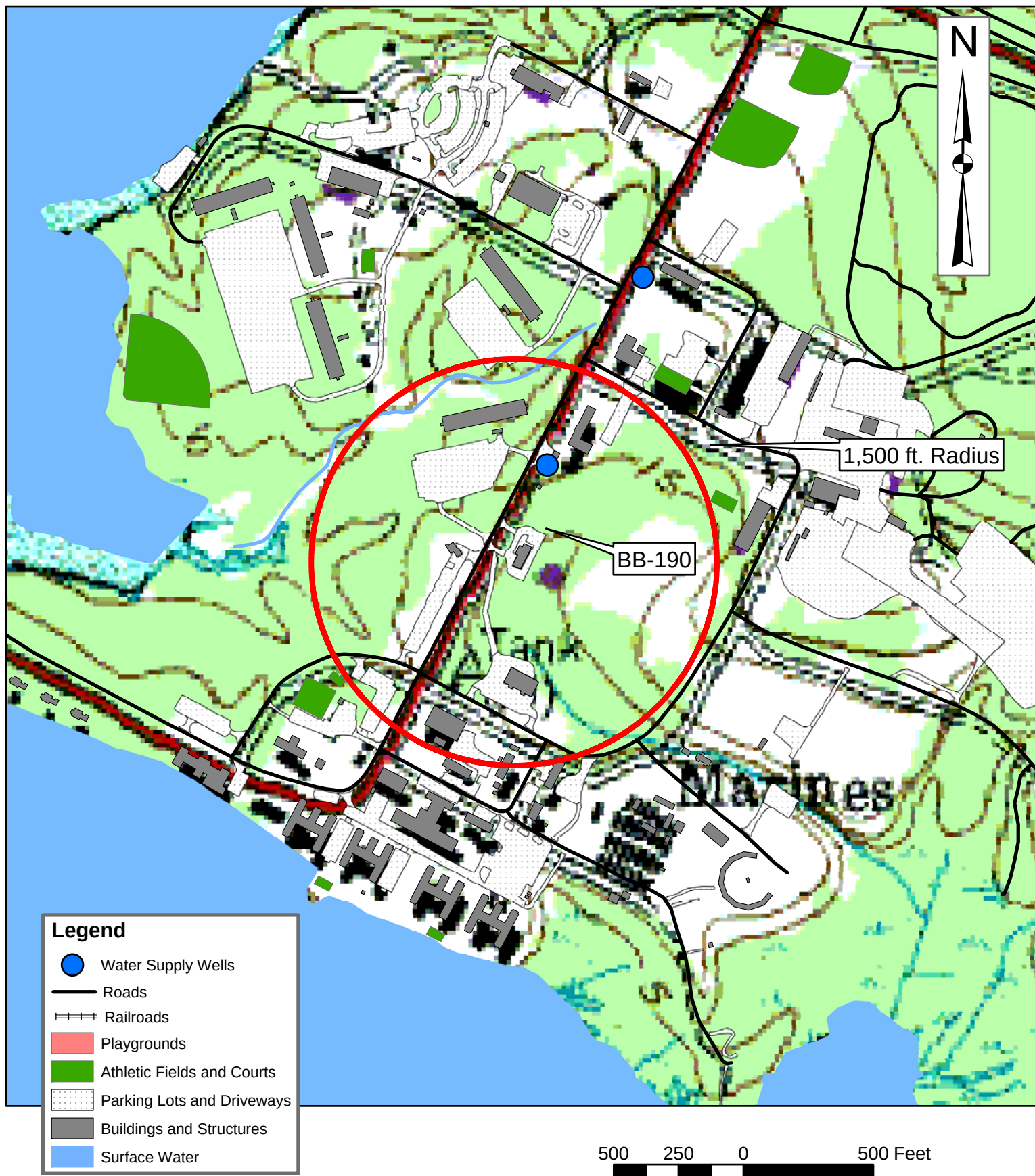
TABLE 6
SUMMARY OF GROUNDWATER SAMPLING RESULTS -
VPH/EPH METHODS AS COMPARED TO NCDENR 2L GWQS

Incident Number and Name: 22793 – Building BB-190

Contaminant of Concern →			C ₅ -C ₈ Aliphatics	C ₉ -C ₁₈ Aliphatics	C ₉ -C ₂₂ Aromatics	C ₁₉ -C ₃₆ Aliphatics
Well ID	Sample ID	Date Collected				
USTBB190-MW01	USTBB190-MW01	1/25/2008	<100	<100	<200	<100
USTBB190-MW02	USTBB190-MW02	1/24/2008	<100	<100	<200	<100
USTBB190-MW03	USTBB190-MW03	1/24/2008	<100	379	381	<100
USTBB190-MW07	USTBB190-MW07	1/24/2008	244	842	876	<100
USTBB190-MW08	USTBB190-MW08	1/25/2008	<100	<100	<200	<100
USTBB190-MW12	USTBB190-MW12	1/25/2008	<100	<100	<200	<100
USTBB190-MW15	USTBB190-MW15	1/24/2008	<100	<100	<200	<100
USTBB190-MW16	USTBB190-MW16	1/25/2008	460	519	568	<100
USTBB190-MW17	USTBB190-MW17	1/24/2008	214	793	829	<100
PSWBB47	PSWBB47	1/24/2008	<100	<100	<200	<100
Duplicate	Duplicate	1/25/2008	424	501	540	<100
2L Interim Standard (µg/l)			420	4,200	210	42,000
GCL (µg/l)			NE	NE	NE	NE

- All results reported in µg/l
 - µg/L = micrograms per liter
 - GCL = Gross Contaminant Level
 - NE = Not Established
 - <# = less than the laboratory reporting limit.
 - **BOLD** = detected contaminant concentration.
 - **BOLD** and **shaded** = detected contaminant concentration above the NCGWQS.
- Duplicate sample obtained from MW16.

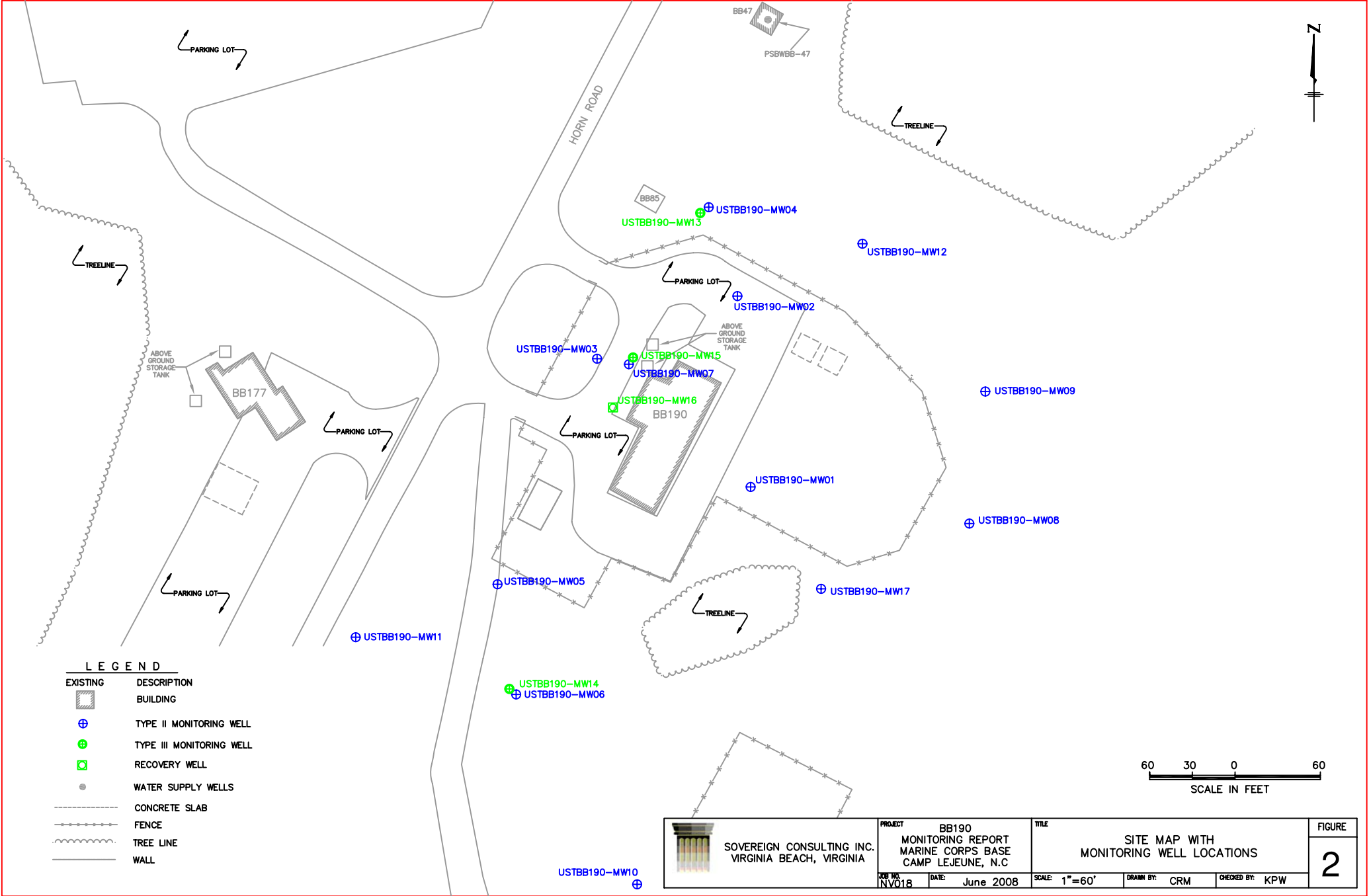
FIGURES



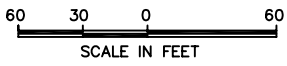
Data Sources: Data Layers provided by MCB Camp Lejeune GIS Office.

SCALE

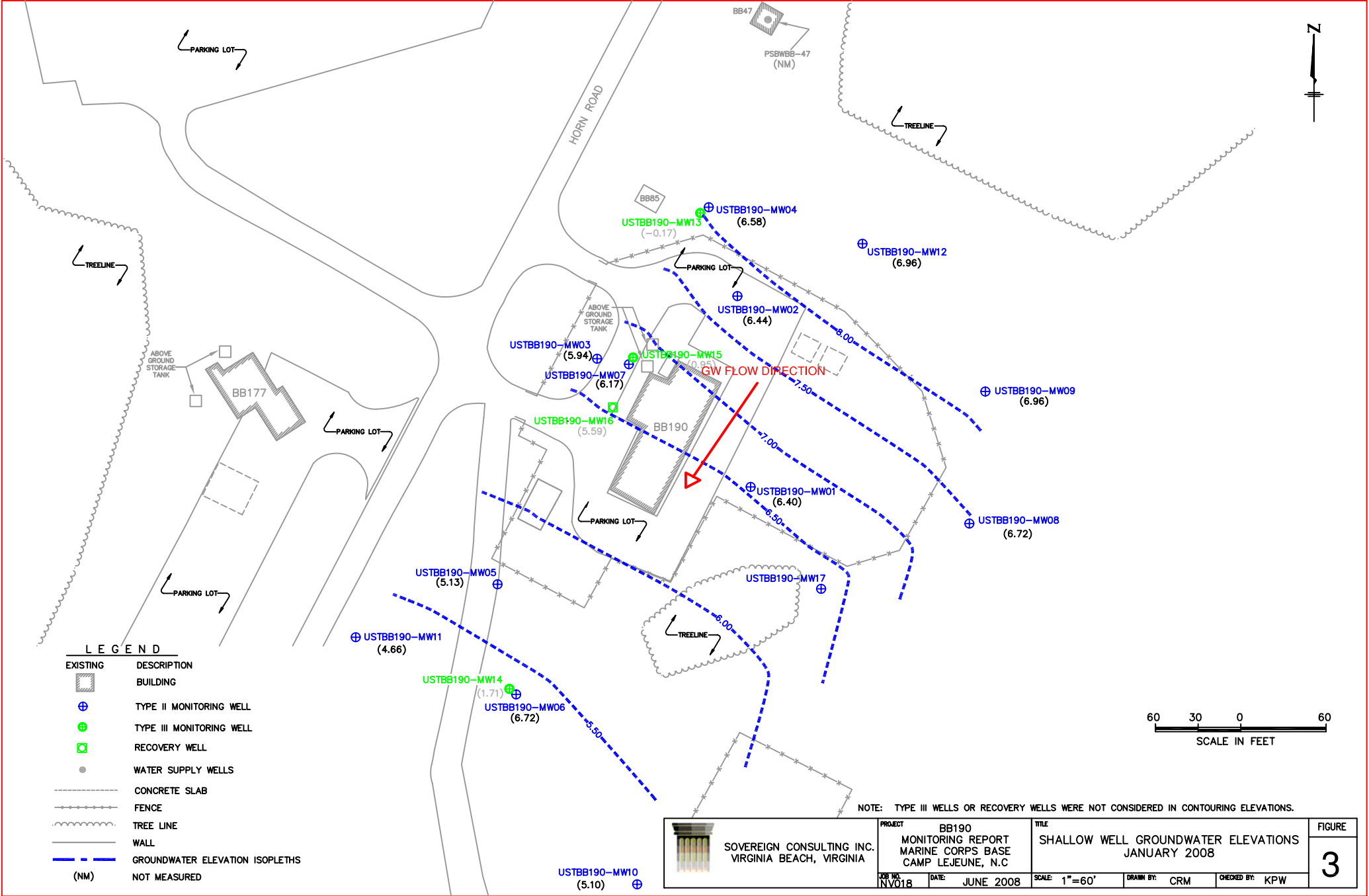
 SOVEREIGN CONSULTING INC. VIRGINIA BEACH, VIRGINIA	PROJECT BB-190 MARINE CORPS BASE CAMP LEJEUNE, NC		TITLE GENERAL VICINITY TOPOGRAPHIC SITE MAP			FIGURE 1
	JOB NO. 206-063	DATE MAY 2007	SCALE AS SHOWN	DRAWN BY KAWS	CHECKED BY JAC	



LEGEND	
EXISTING	DESCRIPTION
	BUILDING
	TYPE II MONITORING WELL
	TYPE III MONITORING WELL
	RECOVERY WELL
	WATER SUPPLY WELLS
	CONCRETE SLAB
	FENCE
	TREE LINE
	WALL



	PROJECT BB190 MONITORING REPORT MARINE CORPS BASE CAMP LEJEUNE, N.C.		TITLE SITE MAP WITH MONITORING WELL LOCATIONS		FIGURE
	JOB NO. INV018		DATE: June 2008	SCALE: 1"=60'	2
			DRAWN BY: CRM	CHECKED BY: KPW	



LEGEND

EXISTING	DESCRIPTION
	BUILDING
	TYPE II MONITORING WELL
	TYPE III MONITORING WELL
	RECOVERY WELL
	WATER SUPPLY WELLS
	CONCRETE SLAB
	FENCE
	TREE LINE
	WALL
	GROUNDWATER ELEVATION ISOPLETHS
(NM)	NOT MEASURED

NOTE: TYPE III WELLS OR RECOVERY WELLS WERE NOT CONSIDERED IN CONTOURING ELEVATIONS.

	SOVEREIGN CONSULTING INC. VIRGINIA BEACH, VIRGINIA		PROJECT BB190		TITLE			FIGURE
			MONITORING REPORT		SHALLOW WELL GROUNDWATER ELEVATIONS			3
			MARINE CORPS BASE		JANUARY 2008			
			JOB NO. NV018	DATE: JUNE 2008	SCALE: 1"=60'	DRAWN BY: CRM	CHECKED BY: KPW	

APPENDIX A
HISTORICAL DATA

Sample Location Date Sampled	NCGWQS	GCL	MW-1			MW-2			MW-3			MW-4			MW-5			MW-6			MW-7			MW-8			MW-9			MW-10			MW-11																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
			6/3/2004	6/7/2005	5/2006	6/3/2004	6/7/2005	5/2006	2/2007	6/3/2004	6/7/2005	5/2006	2/2007	6/2/2004	6/6/2005	5/2006	6/3/2004	6/7/2005	5/2006	6/2/2004	6/6/2005	5/2006	6/3/2004	6/6/2005	5/2006	2/2007	6/2/2004	6/6/2005	5/2006	6/2/2004	6/6/2005	5/2006																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
EPA 602 (ug/L)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

(1) DUP is a duplicate sample collected from well MW-13

(2) TIC: Tentatively identified Compound; sum of all TICs is presented; any TIC identified as a specific compound is footnoted seperately

(3) One TIC was identified as 2-Methylnaphthalene, reported at an estimated concentration of 45 ug/L; the NCGWQS for 2-Methylnaphthalene is 14 ug/L; the GCL for 2-Methylnaphthalene is 12,500 ug/L

(4) Laboratory quantiation is performed on each of the indicated hydrocarbon fractions; NCGWQSs are based on the sum of the indicated fractions; the sums for the indicated fractions are presented as MADEP VPH + EPH

Bold type indicates analyte detection

Shaded area in bold indicates analyte detection at a concentration above the NCGWQS

Shaded area in bold *italics* indicates analyte detection at a concentration above the GCL

ug/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than the reporting limit

ND: None detetcted; no benzene, toluene, ethylbenzene, or total xylenes were detected

NE: Not Established; a GCL has not been established for the analyte

NR: None Reported; no TICs were identified in the sample

GCL: Gross Contamination Level

NCGWQS: North Carolina Groundwater Quality Standard

Sample Location	NCGWQS	GCL	MW-12				MW-13				MW-14		MW-15				MW-16				MW-17				BB-47					
Date Sampled			6/2/2004	6/6/2005	5/2006	2/2007	6/2/2004	Dup (1) 6/2/2004	6/6/2005	Dup (1) (2) 6/6/2005	5/2006	6/2/2004	6/7/2005	6/3/2004	6/7/2005	5/2006	2/2007	6/3/2004	6/7/2005	5/2006	2/2007	DUP 2/2007	6/3/2004	6/7/2005	5/2006	2/2007	6/8/2004	6/20/2005	Dup (1) 6/20/2004	2/2007
EPA 602 (ug/L)																														
Benzene	1	5000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	2.3	<25.0	<25.0	10.2	9.88	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Ethylbenzene	29	29000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	267	151	214	108	107	<1.00	<1.00	1.29	<1.00	<1.00	<1.00	<1.00	
Toluene	1000	257500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	3.97	<25.0	<25.0	<25.0	<25.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Total Xylenes	530	87500	<3.00	<4.00	<4.00	<4.00	<3.00	<4.00	<3.00	<4.00	<4.00	<3.00	<4.00	<3.00	<4.00	<4.00	<4.00	671	419.5	284.7	6.61 J	6.66 J	<3.00	<4.00	6.14	<4.00	<4.00	<4.00	<4.00	<4.00
Total BTEX			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	944.27	570.5	498.7	124.81	123.54	ND	ND	7.43	ND	ND	ND	ND	ND
EPA 625 (ug/L)																														
Acenaphthene	80	2120	2.10 J	1.70 J	5.10 J	2.30 J	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	2.20 J	<10.0	1.50 J	2.40 J	2.50 J	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Benzo(a)pyrene	0.00479	1.5	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Fluorene	280	950	<10.0	<10.0	1.30 J	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	2.10 J	2.00 J	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Naphthalene	21	15500	<10.0	<10.0	3.80 J	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	113	72.4	151	68.3	71.4	<10.0	<10.0	<10.0	1.10 J	<10.0	<10.0	<10.0	<10.0
Phenanthrene	210	410	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	1.40 J	1.40 J	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
TICs (total) (2)			NR	5.16 J	6.57	10.2	8.1 J	NR	5.24 J	9.57 J	5.27	NR	21.6 J	NR	12.8 J	NR	10.5	1572 J	1127.3 J	2342	356	363.6	NR	17.12 J	NR	10.3	19 J	NR	NR	24.1
MADEP VPH (ug/L)																														
C5-C8 Aliphatics	420	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	350	<400	740	360	370	<100	<100	<100	<100	<100	<100	<100	<100
C19-C12 Aliphatics (4)			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	3000	910	1500	580	600	<100	<100	<100	<100	<100	<100	<100	<100
C9-C10 Aromatics (4)			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	960	730	3100	230	240	<100	<100	<100	<100	<100	<100	<100	<100
MADEP EPH (ug/L)																														
C9-C18 Aliphatics (4)	42,000	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	190	400	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C19-C36 Aliphatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C11-C22 Aliphatics (4)			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	180	200	410	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
MADEP VPH/EPH (ug/L)																														
C9-C12 + C9-C18 Aliphatics (4)	4200	NE	<200	<200	<200	<200		<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	3190	1310	<1600	<680	<700		<200	<200	<200		<200	<200	<200
C9-C10 + C11-C22 Aromatics (4)	210	NE	<200	<200	<200	<200		<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	1140	930	3510	<330	<340		<200	<200	<200		<200	<200	<200

(1) DUP is a duplicate sample collected from well MW-13

(2) TIC: Tentatively Identified Compound; sum of all TICs is presented; any TIC identified as a specific compound is footnoted separately

(3) One TIC was identified as 2-Methylnaphthalene, reported at an estimated concentration of 45 ug/L; the NCGWQS for 2-Methylnaphthalene is 14 ug/L; the GCL for 2-Methylnaphthalene is 12,500 ug/L

(4) Laboratory quantitation is performed on each of the indicated hydrocarbon fractions; NCGWQSs are based on the sum of the indicated fractions; the sums for the indicated fractions are presented as MADEP VPH + EPH

Bold type indicates analyte detection

Shaded area in bold indicates analyte detection at a concentration above the NCGWQS

Shaded area in bold italics indicates analyte detection at a concentration above the GCL

ug/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than the reporting limit

ND: None detected; no benzene, toluene, ethylbenzene, or total xylenes were detected

NE: Not Established; a GCL has not been established for the analyte

NR: None Reported; no TICs were identified in the sample

GCL: Gross Contamination Level

NCGWQS: North Carolina Groundwater Quality Standard

APPENDIX B

LABORATORY REPORTS AND CHAIN OF CUSTODY DOCUMENTATION FROM 2007 SAMPLING EVENT



Mr. Chris Murray
Sovereign Consulting
405 Oakmears Crescent
Suite 1
Virginia Beach VA 23462
Report Number: G650-128
Client Project: NV018

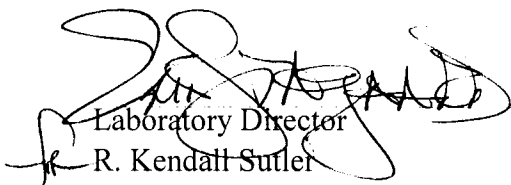
Dear Mr. Murray:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call SGS at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS Environmental Services for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
SGS Environmental Services, Inc.


Laboratory Director
R. Kendall Sutler

2/7/03
Date



List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% solids = Percent Solids

Special Notes:

- 1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
- 2) Uncertainty for all reported data is less than or equal to 30 percent.

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-MW15

Analyzed By: RSB

Client Project ID: NV018

Date Collected: 1/24/08 14:35

Lab Sample ID: G650-128-1A

Date Received: 1/25/08

Lab Project ID: G650-128

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.183	1	1/28/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/28/08	
Ethylbenzene	BQL	1.00	0.181	1	1/28/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/28/08	
Toluene	BQL	1.00	0.157	1	1/28/08	
m/p-Xylene	BQL	2.00	0.481	1	1/28/08	
o-Xylene	BQL	2.00	0.584	1	1/28/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.2	101

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-MW07

Analyzed By: RSB

Client Project ID: NV018

Date Collected: 1/24/08 15:10

Lab Sample ID: G650-128-2A

Date Received: 1/25/08

Lab Project ID: G650-128

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	2.60	4.00	0.732	4	1/30/08	J
Diisopropyl ether (DIPE)	BQL	4.00	0.916	4	1/30/08	
Ethylbenzene	45.2	4.00	0.724	4	1/30/08	
Methyl-tert butyl ether (MTBE)	BQL	8.00	1.44	4	1/30/08	
Toluene	0.960	4.00	0.628	4	1/30/08	J
m/p-Xylene	130	8.00	1.92	4	1/30/08	
o-Xylene	BQL	8.00	2.34	4	1/30/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.7	102

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

Reviewed By: 

GC-VOL_WA.XLS

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-PSWBB47

Analyzed By: RSB

Client Project ID: NV018

Date Collected: 1/24/08 15:38

Lab Sample ID: G650-128-3A

Date Received: 1/25/08

Lab Project ID: G650-128

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.183	1	1/28/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/28/08	
Ethylbenzene	BQL	1.00	0.181	1	1/28/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/28/08	
Toluene	BQL	1.00	0.157	1	1/28/08	
m/p-Xylene	BQL	2.00	0.481	1	1/28/08	
o-Xylene	BQL	2.00	0.584	1	1/28/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.5	101

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-MW03

Analyzed By: RSB

Client Project ID: NV018

Date Collected: 1/24/08 14:16

Lab Sample ID: G650-128-4A

Date Received: 1/25/08

Lab Project ID: G650-128

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.183	1	1/28/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/28/08	
Ethylbenzene	1.93	1.00	0.181	1	1/28/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/28/08	
Toluene	BQL	1.00	0.157	1	1/28/08	
m/p-Xylene	10.6	2.00	0.481	1	1/28/08	
o-Xylene	BQL	2.00	0.584	1	1/28/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	41.5	104

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-MW17

Analyzed By: RSB

Client Project ID: NV018

Date Collected: 1/24/08 15:05

Lab Sample ID: G650-128-5A

Date Received: 1/25/08

Lab Project ID: G650-128

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	4.00	0.732	4	1/30/08	
Diisopropyl ether (DIPE)	BQL	4.00	0.916	4	1/30/08	
Ethylbenzene	21.6	4.00	0.724	4	1/30/08	
Methyl-tert butyl ether (MTBE)	BQL	8.00	1.44	4	1/30/08	
Toluene	BQL	4.00	0.628	4	1/30/08	
m/p-Xylene	78.8	8.00	1.92	4	1/30/08	
o-Xylene	BQL	8.00	2.34	4	1/30/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.8	102

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-MW02

Analyzed By: RSB

Client Project ID: NV018

Date Collected: 1/24/08 15:55

Lab Sample ID: G650-128-6A

Date Received: 1/25/08

Lab Project ID: G650-128

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.183	1	1/28/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/28/08	
Ethylbenzene	BQL	1.00	0.181	1	1/28/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/28/08	
Toluene	BQL	1.00	0.157	1	1/28/08	
m/p-Xylene	BQL	2.00	0.481	1	1/28/08	
o-Xylene	BQL	2.00	0.584	1	1/28/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.2	101

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-MW16

Analyzed By: RSB

Client Project ID: NV018

Date Collected: 1/25/08 13:25

Lab Sample ID: G650-128-7A

Date Received: 1/25/08

Lab Project ID: G650-128

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	13.7	1.00	0.183	1	1/28/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/28/08	
Ethylbenzene	45.7	1.00	0.181	1	1/28/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/28/08	
Toluene	1.42	1.00	0.157	1	1/28/08	
m/p-Xylene	11.9	2.00	0.481	1	1/28/08	
o-Xylene	BQL	2.00	0.584	1	1/28/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.5	101

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-MW01

Analyzed By: RSB

Client Project ID: NV018

Date Collected: 1/25/08 8:55

Lab Sample ID: G650-128-8A

Date Received: 1/25/08

Lab Project ID: G650-128

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.183	1	1/28/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/28/08	
Ethylbenzene	BQL	1.00	0.181	1	1/28/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/28/08	
Toluene	BQL	1.00	0.157	1	1/28/08	
m/p-Xylene	BQL	2.00	0.481	1	1/28/08	
o-Xylene	BQL	2.00	0.584	1	1/28/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.3	101

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-MW12

Analyzed By: RSB

Client Project ID: NV018

Date Collected: 1/25/08 9:40

Lab Sample ID: G650-128-9A

Date Received: 1/25/08

Lab Project ID: G650-128

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.183	1	1/28/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/28/08	
Ethylbenzene	BQL	1.00	0.181	1	1/28/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/28/08	
Toluene	BQL	1.00	0.157	1	1/28/08	
m/p-Xylene	BQL	2.00	0.481	1	1/28/08	
o-Xylene	BQL	2.00	0.584	1	1/28/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.3	101

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-MW08

Analyzed By: RSB

Client Project ID: NV018

Date Collected: 1/25/08 10:10

Lab Sample ID: G650-128-10A

Date Received: 1/25/08

Lab Project ID: G650-128

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.183	1	1/30/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/30/08	
Ethylbenzene	BQL	1.00	0.181	1	1/30/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/30/08	
Toluene	BQL	1.00	0.157	1	1/30/08	
m/p-Xylene	BQL	2.00	0.481	1	1/30/08	
o-Xylene	BQL	2.00	0.584	1	1/30/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	39.6	99

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-Duplicate

Analyzed By: RSB

Client Project ID: NV018

Date Collected: 1/25/08 0:00

Lab Sample ID: G650-128-11B

Date Received: 1/25/08

Lab Project ID: G650-128

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	13.2	1.00	0.183	1	1/31/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/31/08	
Ethylbenzene	42.9	1.00	0.181	1	1/31/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/31/08	
Toluene	0.988	1.00	0.157	1	1/31/08	J
m/p-Xylene	10.9	2.00	0.481	1	1/31/08	
o-Xylene	BQL	2.00	0.584	1	1/31/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	39.4	98.6

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

Reviewed By: 

GC-VOA_WA.XLS

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-Trip Blank

Analyzed By: RSB

Client Project ID: NV018

Date Collected: 1/24/08 0:00

Lab Sample ID: G650-128-12A

Date Received: 1/25/08

Lab Project ID: G650-128

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.183	1	1/28/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/28/08	
Ethylbenzene	BQL	1.00	0.181	1	1/28/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/28/08	
Toluene	BQL	1.00	0.157	1	1/28/08	
m/p-Xylene	BQL	2.00	0.481	1	1/28/08	
o-Xylene	BQL	2.00	0.584	1	1/28/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.2	100

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: Method Blank

Analyzed By: RSB

Client Project ID:

Date Collected:

Lab Sample ID: VBLK3012808A

Date Received:

Lab Project ID:

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.183	1	1/28/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/28/08	
Ethylbenzene	BQL	1.00	0.181	1	1/28/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/28/08	
Toluene	BQL	1.00	0.157	1	1/28/08	
m/p-Xylene	BQL	2.00	0.481	1	1/28/08	
o-Xylene	BQL	2.00	0.584	1	1/28/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.2	101

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

Summary Results for QC Check

Method: 602

Filename : 3012808/012R

Compound	SA	Resul	Rec	QC Limits	
	ug/L	ug/L	(%)	Lower	Upper
Benzene	20.0	21.8	108.9	77.0	123.0
Chlorobenzene	20.0	21.8	109.0	80.5	119.5
1,2-Dichlorobenzene	40.0	46.1	115.2	68.0	132.0
1,3-Dichlorobenzene	20.0	44.5	222.6 +	72.5	127.5
1,4-Dichlorobenzene	40.0	22.4	56.0 +	69.5	130.5
• Diisopropyl ether	20.0	21.7	108.5	43.1	156.9
Ethylbenzene	20.0	21.9	109.5	63.0	137.0
• MTBE	40.0	44.0	109.9	46.8	153.2
Toluene	20.0	21.7	108.5	77.5	127.0
• m,p-Xylene	40.0	43.8	109.5	11.2	188.8
• o-Xylene	40.0	44.3	110.8	47.6	152.4

Flags :

- + = out of QC limits.
- = lab generated limits.
- D = Detected
- SA = Spiked Amount



Summary Results for Laboratory Control Spike

Method: 602

Filename : 3012808/013R

Compound	SA	Result	Rec	LCS Limits	
	ug/L	ug/L	(%)	Lower	Upper
Benzene	10.0	10.6	105.9	39	150
Chlorobenzene	10.0	10.6	106.1	55	135
1,2-Dichlorobenzene	20.0	23.1	115.5	37	154
1,3-Dichlorobenzene	10.0	22.0	220.4 +	50	141
1,4-Dichlorobenzene	20.0	11.1	55.7	42	143
• Diisopropyl ether	10.0	10.4	104.4	30	170
Ethylbenzene	10.0	10.6	106.4	32	160
• MTBE	20.0	21.3	106.7	35	165
Toluene	10.0	10.5	105.2	46	148
• m,p-Xylene	20.0	21.6	108.1	0	239
• o-Xylene	20.0	21.7	108.7	36	164

Flags :

- + = out of QC limits.
- = lab generated limits.
- D = Detected
- SA = Spiked Amount

Summary Results for MS-MSD

Sample : 3012808/026F::3012808/026R

MS : 3012808/028F::3012808/028R

MSD : 3012808/029F::3012808/029R

Compound	SA	µg/L			REC(%)		REC Limits	
		Sam.	MS	MSD	MS	MSD	Lower	Upper
Benzene	10.0	ND	10.2	8.0	102	102	39	150
Chlorobenzene	10.0	ND	10.1	8.0	101	101	55	135
1,2-Dichlorobenzene	10.0	ND	20.6	17.3	206 +	206 +	37	164
1,3-Dichlorobenzene	10.0	2.1	18.3	14.4	183 +	183 +	50	141
1,4-Dichlorobenzene	10.0	ND	10.7	8.4	107	107	42	143
• Diisopropyl ether	10.0	ND	9.9	7.8	99	99	30	170
Ethylbenzene	10.0	ND	10.1	8.0	101	101	32	160
• MTBE	20.0	ND	20.3	16.0	102	102	35	165
Toluene	10.0	ND	10.1	8.0	101	101	46	148
• m,p-Xylene	20.0	ND	20.4	16.4	102	102	D	239
• o-Xylene	20.0	ND	20.6	16.5	103	103	36	164

Flags :

- + = out of QC limits.
- = lab generated limits.
- D = Detected
- ND = None Detected
- SA= Spike Added

**Results for Volatiles**

by GC 602

Client Sample ID: Method Blank

Analyzed By: RSB

Client Project ID:

Date Collected:

Lab Sample ID: VBLK1013008A

Date Received:

Lab Project ID:

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.183	1	1/30/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/30/08	
Ethylbenzene	BQL	1.00	0.181	1	1/30/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/30/08	
Toluene	BQL	1.00	0.157	1	1/30/08	
m/p-Xylene	BQL	2.00	0.481	1	1/30/08	
o-Xylene	BQL	2.00	0.584	1	1/30/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	39.7	99.3

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

Reviewed By: 

GC-VOL_WA.XLS



Summary Results for QC Check

Method: 602

Filename : 1013008/004R

Compound	SA	Resul	Rec	QC Limits	
	ug/L	ug/L	(%)	Lower	Upper
Benzene	20.0	20.7	103.5	77.0	123.0
Chlorobenzene	20.0	20.5	102.7	80.5	119.5
1,2-Dichlorobenzene	40.0	43.8	109.6	68.0	132.0
1,3-Dichlorobenzene	20.0	21.8	108.9	72.5	127.5
1,4-Dichlorobenzene	40.0	42.5	106.2	69.5	130.5
• Diisopropyl ether	20.0	20.9	104.3	43.1	156.9
Ethylbenzene	20.0	20.7	103.4	63.0	137.0
• MTBE	40.0	41.1	102.7	46.8	153.2
Toluene	20.0	20.6	102.8	77.5	127.0
• m,p-Xylene	40.0	41.8	104.6	11.2	188.8
• o-Xylene	40.0	42.2	105.4	47.6	152.4

Flags :

- + = out of QC limits.
- = lab generated limits.
- D = Detected
- SA = Spiked Amount



Summary Results for Laboratory Control Spike

Method: 602

Filename : 1013008/005R

Compound	SA	Result	Rec	LCS Limits	
	ug/L	ug/L	(%)	Lower	Upper
Benzene	10.0	9.8	97.9	39	150
Chlorobenzene	10.0	9.8	97.9	55	135
1,2-Dichlorobenzene	20.0	21.4	106.9	37	154
1,3-Dichlorobenzene	10.0	10.7	106.8	50	141
1,4-Dichlorobenzene	20.0	20.8	104.1	42	143
• Diisopropyl ether	10.0	9.7	97.0	30	170
Ethylbenzene	10.0	9.9	99.4	32	160
• MTBE	20.0	19.1	95.6	35	165
Toluene	10.0	9.8	97.9	46	148
• m,p-Xylene	20.0	20.1	100.5	0	239
• o-Xylene	20.0	20.3	101.6	36	164

Flags :

- + = out of QC limits.
- ♦ = lab generated limits.
- D = Detected
- SA = Spiked Amount

Summary Results for MS-MSD

Method: 602

Sample : 1013008/018F::1013008/018R

MS : 1013008/020F::1013008/020R

MSD : 1013008/021F::1013008/021R

Compound	SA	µg/L			REC(%)		REC Limits	
		Sam.	MS	MSD	MS	MSD	Lower	Upper
Benzene	10.0	10.1	9.9	9.8	99	99	39	150
Chlorobenzene	10.0	ND	10.3	10.1	103	103	55	135
1,2-Dichlorobenzene	10.0	5.4	20.6	20.7	206 +	206 +	37	154
1,3-Dichlorobenzene	10.0	ND	11.0	11.0	110	110	50	141
1,4-Dichlorobenzene	10.0	15.3	4.9	4.7	49	49	42	143
• Diisopropyl ether	10.0	1.7	11.6	11.3	116	116	30	170
Ethylbenzene	10.0	8.9	10.0	9.9	100	100	32	160
• MTBE	20.0	ND	20.4	20.0	102	102	35	165
Toluene	10.0	16.3	9.4	9.4	94	94	46	148
• m,p-Xylene	20.0	22.1	19.4	19.5	97	97	D	239
• o-Xylene	20.0	32.1	18.6	18.9	93	93	36	164

Flags :

+ = out of QC limits.

• = lab generated limits.

D = Detected

ND = None Detected

SA= Spike Added

**Results for Volatiles**

by GC 602

Client Sample ID: Method Blank

Analyzed By: RSB

Client Project ID:

Date Collected:

Lab Sample ID: VBLK1013108A

Date Received:

Lab Project ID:

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.183	1	1/31/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/31/08	
Ethylbenzene	BQL	1.00	0.181	1	1/31/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/31/08	
Toluene	BQL	1.00	0.157	1	1/31/08	
m/p-Xylene	BQL	2.00	0.481	1	1/31/08	
o-Xylene	BQL	2.00	0.584	1	1/31/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.0	99.9

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

Summary Results for QC Check

Method: 602

Filename : 1013108/003R

Compound	SA	Result	Rec	QC Limits	
	ug/L	ug/L	(%)	Lower	Upper
Benzene	20.0	20.9	104.3	77.0	123.0
Chlorobenzene	20.0	20.9	104.4	80.5	119.5
1,2-Dichlorobenzene	40.0	41.9	104.8	68.0	132.0
1,3-Dichlorobenzene	20.0	20.9	104.4	72.5	127.5
1,4-Dichlorobenzene	40.0	41.7	104.4	69.5	130.5
• Diisopropyl ether	20.0	20.7	103.6	43.1	156.9
Ethylbenzene	20.0	21.1	105.3	63.0	137.0
• MTBE	40.0	41.2	103.0	46.8	153.2
Toluene	20.0	20.9	104.4	77.5	127.0
• m,p-Xylene	40.0	41.9	104.7	11.2	188.8
• o-Xylene	40.0	42.4	106.0	47.6	152.4

Flags :

- + = out of QC limits.
- ♦ = lab generated limits.
- D = Detected
- SA = Spiked Amount



Summary Results for Laboratory Control Spike

Method: 602

Filename : 1013108/004R

Compound	SA	Result	Rec	LCS Limits	
	ug/L	ug/L	(%)	Lower	Upper
Benzene	10.0	9.9	99.4	39	150
Chlorobenzene	10.0	10.0	99.8	55	135
1,2-Dichlorobenzene	20.0	20.5	102.3	37	154
1,3-Dichlorobenzene	10.0	10.3	102.6	50	141
1,4-Dichlorobenzene	20.0	20.6	102.8	42	143
• Diisopropyl ether	10.0	9.7	97.1	30	170
Ethylbenzene	10.0	10.1	101.1	32	160
• MTBE	20.0	19.6	97.9	35	165
Toluene	10.0	10.0	99.8	46	148
• m,p-Xylene	20.0	20.3	101.4	0	239
• o-Xylene	20.0	20.5	102.4	36	164

Flags :

- + = out of QC limits.
- = lab generated limits.
- D = Detected
- SA = Spiked Amount

**Results for Volatiles**

by GC 602

Client Sample ID: Method Blank

Analyzed By: RSB

Client Project ID:

Date Collected:

Lab Sample ID: VBLK1012908B

Date Received:

Lab Project ID:

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.183	1	1/29/08	
Diisopropyl ether (DIPE)	BQL	1.00	0.229	1	1/29/08	
Ethylbenzene	BQL	1.00	0.181	1	1/29/08	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.359	1	1/29/08	
Toluene	BQL	1.00	0.157	1	1/29/08	
m/p-Xylene	BQL	2.00	0.481	1	1/29/08	
o-Xylene	BQL	2.00	0.584	1	1/29/08	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	39.4	98.6

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

Reviewed By: 

GC-VOA_WA.XLS

Summary Results for QC Check

Method: 602

Filename : 1012908/021R

Compound	SA	Resul	Rec	QC Limits	
	ug/L	ug/L	(%)	Lower	Upper
Benzene	20.0	20.3	101.4	77.0	123.0
Chlorobenzene	20.0	20.2	100.8	80.5	119.5
1,2-Dichlorobenzene	40.0	41.2	103.1	68.0	132.0
1,3-Dichlorobenzene	20.0	21.0	105.0	72.5	127.5
1,4-Dichlorobenzene	40.0	40.4	101.1	69.5	130.5
• Diisopropyl ether	20.0	20.3	101.4	43.1	156.9
Ethylbenzene	20.0	20.2	100.8	63.0	137.0
• MTBE	40.0	39.6	99.0	46.8	153.2
Toluene	20.0	20.1	100.3	77.5	127.0
• m,p-Xylene	40.0	40.5	101.3	11.2	188.8
• o-Xylene	40.0	40.9	102.2	47.6	152.4

Flags :

- + = out of QC limits.
- = lab generated limits.
- D = Detected
- SA = Spiked Amount

Summary Results for Laboratory Control Spike

Method: 602

Filename : 1012908/022R

Compound	SA	Result	Rec	LCS Limits	
	ug/L	ug/L	(%)	Lower	Upper
Benzene	10.0	10.0	100.2	39	150
Chlorobenzene	10.0	10.1	101.1	55	135
1,2-Dichlorobenzene	20.0	21.5	107.3	37	154
1,3-Dichlorobenzene	10.0	10.7	106.6	50	141
1,4-Dichlorobenzene	20.0	21.2	105.8	42	143
• Diisopropyl ether	10.0	9.8	97.9	30	170
Ethylbenzene	10.0	10.2	102.0	32	160
• MTBE	20.0	19.6	98.0	35	165
Toluene	10.0	10.1	100.5	46	148
• m,p-Xylene	20.0	20.5	102.6	0	239
• o-Xylene	20.0	20.7	103.4	36	164

Flags :

- + = out of QC limits.
- = lab generated limits.
- D = Detected
- SA = Spiked Amount

Summary Results for MS-MSD

Method: 802

Sample : 1012908/035F::1012908/035R

MS : 1012908/037F::1012908/037R

MSD : 1012908/038F::1012908/038R

Compound	SA	µg/L			REC(%)		REC Limits	
		Sam.	MS	MSD	MS	MSD	Lower	Upper
Benzene	10.0	ND	10.4	10.3	104	104	39	150
Chlorobenzene	10.0	ND	10.0	9.9	100	100	55	135
1,2-Dichlorobenzene	10.0	8.4	19.3	18.9	193 +	193 +	37	164
1,3-Dichlorobenzene	10.0	ND	10.9	10.7	109	109	50	141
1,4-Dichlorobenzene	10.0	20.0	-0.3	-0.4	-3 +	-3 +	42	143
Diisopropyl ether	10.0	ND	10.5	10.4	105	105	30	170
Ethylbenzene	10.0	5.4	9.5	9.3	95	95	32	160
MTBE	20.0	ND	19.5	19.2	97	97	35	165
Toluene	10.0	ND	9.9	9.9	99	99	46	148
m,p-Xylene	20.0	19.7	18.1	17.6	91	91	D	239
o-Xylene	20.0	ND	20.5	20.4	103	103	36	164

Flags :

+ = out of QC limits.

♦ = lab generated limits.

D = Detected

ND = None Detected

SA= Spike Added

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW15
Client Project ID: NV018
Lab Sample ID: G650-128-1H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/24/2008 14:35
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	1/31/2008	
Acenaphthylene	BQL	10.0	1.12	1	1/31/2008	
Anthracene	BQL	10.0	1.75	1	1/31/2008	
Benzo[a]anthracene	BQL	10.0	1.36	1	1/31/2008	
Benzo[a]pyrene	BQL	10.0	1.27	1	1/31/2008	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	1/31/2008	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	1/31/2008	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	1/31/2008	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	1/31/2008	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	1/31/2008	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	1/31/2008	
Butylbenzylphthalate	BQL	10.0	1.53	1	1/31/2008	
2-Chloronaphthalene	BQL	10.0	1.25	1	1/31/2008	
2-Chlorophenol	BQL	10.0	4.22	1	1/31/2008	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	1/31/2008	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	1/31/2008	
Chrysene	BQL	10.0	1.11	1	1/31/2008	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	1/31/2008	
Di-n-Butylphthalate	BQL	10.0	1.65	1	1/31/2008	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	1/31/2008	
2,4-Dichlorophenol	BQL	10.0	3.75	1	1/31/2008	
Diethylphthalate	BQL	10.0	1.48	1	1/31/2008	
Dimethylphthalate	BQL	10.0	1.04	1	1/31/2008	
2,4-Dimethylphenol	BQL	10.0	9.25	1	1/31/2008	
Di-n-octylphthalate	BQL	10.0	1.16	1	1/31/2008	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	1/31/2008	
2,4-Dinitrophenol	BQL	50.0	4.20	1	1/31/2008	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	1/31/2008	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	1/31/2008	
Diphenylamine *	BQL	10.0	1.53	1	1/31/2008	
Fluoranthene	BQL	10.0	1.41	1	1/31/2008	
Fluorene	BQL	10.0	1.22	1	1/31/2008	
Hexachlorobenzene	BQL	10.0	1.22	1	1/31/2008	
Hexachlorobutadiene	BQL	10.0	1.58	1	1/31/2008	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	1/31/2008	
Hexachloroethane	BQL	10.0	1.58	1	1/31/2008	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	1/31/2008	
Isophorone	BQL	10.0	1.27	1	1/31/2008	
Naphthalene	BQL	10.0	1.08	1	1/31/2008	
Nitrobenzene	BQL	10.0	1.32	1	1/31/2008	
2-Nitrophenol	BQL	10.0	3.52	1	1/31/2008	
4-Nitrophenol	BQL	50.0	3.17	1	1/31/2008	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	1/31/2008	
Pentachlorophenol	BQL	50.0	2.83	1	1/31/2008	
Phenanthrene	BQL	10.0	1.38	1	1/31/2008	

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW15
Client Project ID: NV018
Lab Sample ID: G650-128-1H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/24/2008 14:35
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	10.0	3.38	1	1/31/2008	
Pyrene	BQL	10.0	2.08	1	1/31/2008	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	1/31/2008	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	1/31/2008	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	7.7	77		
2-Fluorophenol		10	8.4	84		
Nitrobenzene-d5		10	8.8	88		
Phenol-d6		10	8.4	84		
2,4,6-Tribromophenol		10	8	80		
4-Terphenyl-d14		10	9.6	96		

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-MW15
Client Project ID: NV018
Lab Sample ID: G650-128-1H
Lab Project ID: G650-128
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/24/2008 14:35
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Date Analyzed: 1/31/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	No library search compounds detected.				
2					
3					
4					
5					
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW07
Client Project ID: NV018
Lab Sample ID: G650-128-2H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/24/2008 15:10
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	12.5	10.0	1.22	1	1/31/2008	
Acenaphthylene	BQL	10.0	1.12	1	1/31/2008	
Anthracene	BQL	10.0	1.75	1	1/31/2008	
Benzo[a]anthracene	BQL	10.0	1.36	1	1/31/2008	
Benzo[a]pyrene	BQL	10.0	1.27	1	1/31/2008	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	1/31/2008	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	1/31/2008	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	1/31/2008	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	1/31/2008	
Bis(2-ethylhexyl)phthalate	1.90	10.0	1.33	1	1/31/2008	J
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	1/31/2008	
Butylbenzylphthalate	BQL	10.0	1.53	1	1/31/2008	
2-Chloronaphthalene	BQL	10.0	1.25	1	1/31/2008	
2-Chlorophenol	BQL	10.0	4.22	1	1/31/2008	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	1/31/2008	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	1/31/2008	
Chrysene	BQL	10.0	1.11	1	1/31/2008	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	1/31/2008	
Di-n-Butylphthalate	BQL	10.0	1.65	1	1/31/2008	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	1/31/2008	
2,4-Dichlorophenol	BQL	10.0	3.75	1	1/31/2008	
Diethylphthalate	BQL	10.0	1.48	1	1/31/2008	
Dimethylphthalate	BQL	10.0	1.04	1	1/31/2008	
2,4-Dimethylphenol	BQL	10.0	9.25	1	1/31/2008	
Di-n-octylphthalate	BQL	10.0	1.16	1	1/31/2008	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	1/31/2008	
2,4-Dinitrophenol	BQL	50.0	4.20	1	1/31/2008	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	1/31/2008	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	1/31/2008	
Diphenylamine *	BQL	10.0	1.53	1	1/31/2008	
Fluoranthene	BQL	10.0	1.41	1	1/31/2008	
Fluorene	2.30	10.0	1.22	1	1/31/2008	J
Hexachlorobenzene	BQL	10.0	1.22	1	1/31/2008	
Hexachlorobutadiene	BQL	10.0	1.58	1	1/31/2008	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	1/31/2008	
Hexachloroethane	BQL	10.0	1.58	1	1/31/2008	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	1/31/2008	
Isophorone	BQL	10.0	1.27	1	1/31/2008	
Naphthalene	21.0	10.0	1.08	1	1/31/2008	
Nitrobenzene	BQL	10.0	1.32	1	1/31/2008	
2-Nitrophenol	BQL	10.0	3.52	1	1/31/2008	
4-Nitrophenol	BQL	50.0	3.17	1	1/31/2008	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	1/31/2008	
Pentachlorophenol	BQL	50.0	2.83	1	1/31/2008	
Phenanthrene	BQL	10.0	1.38	1	1/31/2008	

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW07
Client Project ID: NV018
Lab Sample ID: G650-128-2H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/24/2008 15:10
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	10.0	3.38	1	1/31/2008	
Pyrene	BQL	10.0	2.08	1	1/31/2008	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	1/31/2008	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	1/31/2008	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	7.6	76		
2-Fluorophenol		10	8.1	81		
Nitrobenzene-d5		10	8.4	84		
Phenol-d6		10	7.9	79		
2,4,6-Tribromophenol		10	8.1	81		
4-Terphenyl-d14		10	9.5	94		

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds by GCMS

Client Sample ID: USTBB190-MW07
Client Project ID: NV018
Lab Sample ID: G650-128-2H
Lab Project ID: G650-128
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/24/2008 15:10
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Date Analyzed: 1/31/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	Unknown	4.17			62.5
2	Benzene, 1,2,3-trimethyl-	4.06	000526-73-8	94	53.2
3	2,3-Dihydro-1-methylindene	4.94	027133-93-3	91	33.2
4	Benzene, 1,2-diethyl-	4.22	000135-01-3	95	16.2
5	Benzene, 1,3-diethyl-	4.28	000141-93-5	94	13.4
6	1H-Indene, 2,3-dihydro-4-methyl-	4.87	000824-22-6	97	11.3
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____



**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-PSWBB47

Client Project ID: NV018

Lab Sample ID: G650-128-3H

Lab Project ID: G650-128

Analyzed By: DCS

Date Collected: 1/24/2008 15:38

Date Received: 1/25/2008

Date Extracted: 1/29/2008

Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	1/31/2008	
Acenaphthylene	BQL	10.0	1.12	1	1/31/2008	
Anthracene	BQL	10.0	1.75	1	1/31/2008	
Benzo[a]anthracene	BQL	10.0	1.36	1	1/31/2008	
Benzo[a]pyrene	BQL	10.0	1.27	1	1/31/2008	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	1/31/2008	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	1/31/2008	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	1/31/2008	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	1/31/2008	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	1/31/2008	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	1/31/2008	
Butylbenzylphthalate	BQL	10.0	1.53	1	1/31/2008	
2-Chloronaphthalene	BQL	10.0	1.25	1	1/31/2008	
2-Chlorophenol	BQL	10.0	4.22	1	1/31/2008	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	1/31/2008	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	1/31/2008	
Chrysene	BQL	10.0	1.11	1	1/31/2008	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	1/31/2008	
Di-n-Butylphthalate	BQL	10.0	1.65	1	1/31/2008	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	1/31/2008	
2,4-Dichlorophenol	BQL	10.0	3.75	1	1/31/2008	
Diethylphthalate	BQL	10.0	1.48	1	1/31/2008	
Dimethylphthalate	BQL	10.0	1.04	1	1/31/2008	
2,4-Dimethylphenol	BQL	10.0	9.25	1	1/31/2008	
Di-n-octylphthalate	BQL	10.0	1.16	1	1/31/2008	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	1/31/2008	
2,4-Dinitrophenol	BQL	50.0	4.20	1	1/31/2008	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	1/31/2008	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	1/31/2008	
Diphenylamine *	BQL	10.0	1.53	1	1/31/2008	
Fluoranthene	BQL	10.0	1.41	1	1/31/2008	
Fluorene	BQL	10.0	1.22	1	1/31/2008	
Hexachlorobenzene	BQL	10.0	1.22	1	1/31/2008	
Hexachlorobutadiene	BQL	10.0	1.58	1	1/31/2008	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	1/31/2008	
Hexachloroethane	BQL	10.0	1.58	1	1/31/2008	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	1/31/2008	
Isophorone	BQL	10.0	1.27	1	1/31/2008	
Naphthalene	BQL	10.0	1.08	1	1/31/2008	
Nitrobenzene	BQL	10.0	1.32	1	1/31/2008	
2-Nitrophenol	BQL	10.0	3.52	1	1/31/2008	
4-Nitrophenol	BQL	50.0	3.17	1	1/31/2008	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	1/31/2008	
Pentachlorophenol	BQL	50.0	2.83	1	1/31/2008	
Phenanthrene	BQL	10.0	1.38	1	1/31/2008	

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-PSWBB47
Client Project ID: NV018
Lab Sample ID: G650-128-3H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/24/2008 15:38
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	10.0	3.38	1	1/31/2008	
Pyrene	BQL	10.0	2.08	1	1/31/2008	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	1/31/2008	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	1/31/2008	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	8	80		
2-Fluorophenol		10	8.4	84		
Nitrobenzene-d5		10	9	90		
Phenol-d6		10	8.3	83		
2,4,6-Tribromophenol		10	7.8	78		
4-Terphenyl-d14		10	9.8	98		

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-PSWBB47
Client Project ID: NV018
Lab Sample ID: G650-128-3H
Lab Project ID: G650-128
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/24/2008 15:38
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Date Analyzed: 1/31/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	No library search compounds detected.				
2					
3					
4					
5					
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW03
Client Project ID: NV018
Lab Sample ID: G650-128-4H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/24/2008 14:16
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	1/31/2008	
Acenaphthylene	BQL	10.0	1.12	1	1/31/2008	
Anthracene	BQL	10.0	1.75	1	1/31/2008	
Benzo[a]anthracene	BQL	10.0	1.36	1	1/31/2008	
Benzo[a]pyrene	BQL	10.0	1.27	1	1/31/2008	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	1/31/2008	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	1/31/2008	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	1/31/2008	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	1/31/2008	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	1/31/2008	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	1/31/2008	
Butylbenzylphthalate	BQL	10.0	1.53	1	1/31/2008	
2-Chloronaphthalene	BQL	10.0	1.25	1	1/31/2008	
2-Chlorophenol	BQL	10.0	4.22	1	1/31/2008	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	1/31/2008	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	1/31/2008	
Chrysene	BQL	10.0	1.11	1	1/31/2008	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	1/31/2008	
Di-n-Butylphthalate	BQL	10.0	1.65	1	1/31/2008	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	1/31/2008	
2,4-Dichlorophenol	BQL	10.0	3.75	1	1/31/2008	
Diethylphthalate	BQL	10.0	1.48	1	1/31/2008	
Dimethylphthalate	BQL	10.0	1.04	1	1/31/2008	
2,4-Dimethylphenol	BQL	10.0	9.25	1	1/31/2008	
Di-n-octylphthalate	BQL	10.0	1.16	1	1/31/2008	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	1/31/2008	
2,4-Dinitrophenol	BQL	50.0	4.20	1	1/31/2008	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	1/31/2008	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	1/31/2008	
Diphenylamine *	BQL	10.0	1.53	1	1/31/2008	
Fluoranthene	BQL	10.0	1.41	1	1/31/2008	
Fluorene	BQL	10.0	1.22	1	1/31/2008	
Hexachlorobenzene	BQL	10.0	1.22	1	1/31/2008	
Hexachlorobutadiene	BQL	10.0	1.58	1	1/31/2008	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	1/31/2008	
Hexachloroethane	BQL	10.0	1.58	1	1/31/2008	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	1/31/2008	
Isophorone	BQL	10.0	1.27	1	1/31/2008	
Naphthalene	1.50	10.0	1.08	1	1/31/2008	J
Nitrobenzene	BQL	10.0	1.32	1	1/31/2008	
2-Nitrophenol	BQL	10.0	3.52	1	1/31/2008	
4-Nitrophenol	BQL	50.0	3.17	1	1/31/2008	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	1/31/2008	
Pentachlorophenol	BQL	50.0	2.83	1	1/31/2008	
Phenanthrene	BQL	10.0	1.38	1	1/31/2008	

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW03
Client Project ID: NV018
Lab Sample ID: G650-128-4H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/24/2008 14:16
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	10.0	3.38	1	1/31/2008	
Pyrene	BQL	10.0	2.08	1	1/31/2008	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	1/31/2008	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	1/31/2008	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.8	78
2-Fluorophenol	10	8.7	87
Nitrobenzene-d5	10	9.1	91
Phenol-d6	10	8.4	84
2,4,6-Tribromophenol	10	8	80
4-Terphenyl-d14	10	9.5	95

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-MW03
Client Project ID: NV018
Lab Sample ID: G650-128-4H
Lab Project ID: G650-128
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/24/2008 14:16
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Date Analyzed: 1/31/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	Benzene, 1,2,4-trimethyl-	4.06	000095-63-6	91	16.9
2	2,3-Dihydro-1-methylindene	4.94	027133-93-3	91	16
3	Benzene, 1,1'-(1-ethenyl-1,3-propanediyl)bis	4.17	061141-97-7	78	12.5
4	Benzene, 1-ethyl-2,3-dimethyl-	4.28	000933-98-2	86	7.99
5	Unknown	4.22			5.7
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: 

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW17

Client Project ID: NV018

Lab Sample ID: G650-128-5H

Lab Project ID: G650-128

Analyzed By: DCS

Date Collected: 1/24/2008 15:05

Date Received: 1/25/2008

Date Extracted: 1/29/2008

Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	12.5	10.0	1.22	1	1/31/2008	
Acenaphthylene	BQL	10.0	1.12	1	1/31/2008	
Anthracene	BQL	10.0	1.75	1	1/31/2008	
Benzo[a]anthracene	BQL	10.0	1.36	1	1/31/2008	
Benzo[a]pyrene	BQL	10.0	1.27	1	1/31/2008	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	1/31/2008	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	1/31/2008	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	1/31/2008	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	1/31/2008	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	1/31/2008	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	1/31/2008	
Butylbenzylphthalate	BQL	10.0	1.53	1	1/31/2008	
2-Chloronaphthalene	BQL	10.0	1.25	1	1/31/2008	
2-Chlorophenol	BQL	10.0	4.22	1	1/31/2008	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	1/31/2008	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	1/31/2008	
Chrysene	BQL	10.0	1.11	1	1/31/2008	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	1/31/2008	
Di-n-Butylphthalate	BQL	10.0	1.65	1	1/31/2008	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	1/31/2008	
2,4-Dichlorophenol	BQL	10.0	3.75	1	1/31/2008	
Diethylphthalate	BQL	10.0	1.48	1	1/31/2008	
Dimethylphthalate	BQL	10.0	1.04	1	1/31/2008	
2,4-Dimethylphenol	BQL	10.0	9.25	1	1/31/2008	
Di-n-octylphthalate	BQL	10.0	1.16	1	1/31/2008	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	1/31/2008	
2,4-Dinitrophenol	BQL	50.0	4.20	1	1/31/2008	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	1/31/2008	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	1/31/2008	
Diphenylamine *	BQL	10.0	1.53	1	1/31/2008	
Fluoranthene	BQL	10.0	1.41	1	1/31/2008	
Fluorene	BQL	10.0	1.22	1	1/31/2008	
Hexachlorobenzene	BQL	10.0	1.22	1	1/31/2008	
Hexachlorobutadiene	BQL	10.0	1.58	1	1/31/2008	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	1/31/2008	
Hexachloroethane	BQL	10.0	1.58	1	1/31/2008	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	1/31/2008	
Isophorone	BQL	10.0	1.27	1	1/31/2008	
Naphthalene	17.9	10.0	1.08	1	1/31/2008	
Nitrobenzene	BQL	10.0	1.32	1	1/31/2008	
2-Nitrophenol	BQL	10.0	3.52	1	1/31/2008	
4-Nitrophenol	BQL	50.0	3.17	1	1/31/2008	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	1/31/2008	
Pentachlorophenol	BQL	50.0	2.83	1	1/31/2008	
Phenanthrene	BQL	10.0	1.38	1	1/31/2008	

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW17
Client Project ID: NV018
Lab Sample ID: G650-128-5H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/24/2008 15:05
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	10.0	3.38	1	1/31/2008	
Pyrene	BQL	10.0	2.08	1	1/31/2008	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	1/31/2008	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	1/31/2008	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	7.7	77		
2-Fluorophenol		10	8.5	85		
Nitrobenzene-d5		10	9.1	91		
Phenol-d6		10	8.3	83		
2,4,6-Tribromophenol		10	8.4	84		
4-Terphenyl-d14		10	9.9	99		

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds by GCMS

Client Sample ID: USTBB190-MW17
Client Project ID: NV018
Lab Sample ID: G650-128-5H
Lab Project ID: G650-128
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/24/2008 15:05
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Date Analyzed: 1/31/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	Alkane, Unknown	4.17			53.5
2	1H-Indene, 2,3-dihydro-4-methyl-	4.94	000824-22-6	93	43.4
3	Benzene, 1,3,5-trimethyl-	4.06	000108-67-8	93	36.3
4	Benzene, 1,2-diethyl-	4.28	000135-01-3	95	22.6
5	Benzene, 1,2-diethyl-	4.22	000135-01-3	94	18.9
6	Benzene, 2-ethyl-1,4-dimethyl-	4.41	001758-88-9	91	16.8
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____



**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW02
Client Project ID: NV018
Lab Sample ID: G650-128-6H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/24/2008 15:55
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	13.1	10.0	1.22	1	1/31/2008	
Acenaphthylene	BQL	10.0	1.12	1	1/31/2008	
Anthracene	BQL	10.0	1.75	1	1/31/2008	
Benzo[a]anthracene	BQL	10.0	1.36	1	1/31/2008	
Benzo[a]pyrene	BQL	10.0	1.27	1	1/31/2008	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	1/31/2008	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	1/31/2008	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	1/31/2008	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	1/31/2008	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	1/31/2008	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	1/31/2008	
Butylbenzylphthalate	BQL	10.0	1.53	1	1/31/2008	
2-Chloronaphthalene	BQL	10.0	1.25	1	1/31/2008	
2-Chlorophenol	BQL	10.0	4.22	1	1/31/2008	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	1/31/2008	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	1/31/2008	
Chrysene	BQL	10.0	1.11	1	1/31/2008	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	1/31/2008	
Di-n-Butylphthalate	BQL	10.0	1.65	1	1/31/2008	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	1/31/2008	
2,4-Dichlorophenol	BQL	10.0	3.75	1	1/31/2008	
Diethylphthalate	BQL	10.0	1.48	1	1/31/2008	
Dimethylphthalate	BQL	10.0	1.04	1	1/31/2008	
2,4-Dimethylphenol	BQL	10.0	9.25	1	1/31/2008	
Di-n-octylphthalate	BQL	10.0	1.16	1	1/31/2008	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	1/31/2008	
2,4-Dinitrophenol	BQL	50.0	4.20	1	1/31/2008	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	1/31/2008	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	1/31/2008	
Diphenylamine *	BQL	10.0	1.53	1	1/31/2008	
Fluoranthene	BQL	10.0	1.41	1	1/31/2008	
Fluorene	BQL	10.0	1.22	1	1/31/2008	
Hexachlorobenzene	BQL	10.0	1.22	1	1/31/2008	
Hexachlorobutadiene	BQL	10.0	1.58	1	1/31/2008	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	1/31/2008	
Hexachloroethane	BQL	10.0	1.58	1	1/31/2008	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	1/31/2008	
Isophorone	BQL	10.0	1.27	1	1/31/2008	
Naphthalene	BQL	10.0	1.08	1	1/31/2008	
Nitrobenzene	BQL	10.0	1.32	1	1/31/2008	
2-Nitrophenol	BQL	10.0	3.52	1	1/31/2008	
4-Nitrophenol	BQL	50.0	3.17	1	1/31/2008	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	1/31/2008	
Pentachlorophenol	BQL	50.0	2.83	1	1/31/2008	
Phenanthrene	BQL	10.0	1.38	1	1/31/2008	

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW02
Client Project ID: NV018
Lab Sample ID: G650-128-6H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/24/2008 15:55
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	10.0	3.38	1	1/31/2008	
Pyrene	BQL	10.0	2.08	1	1/31/2008	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	1/31/2008	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	1/31/2008	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	8	80		
2-Fluorophenol		10	8.6	86		
Nitrobenzene-d5		10	9	90		
Phenol-d6		10	8.2	82		
2,4,6-Tribromophenol		10	8.2	82		
4-Terphenyl-d14		10	10.2	102		

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-MW02
Client Project ID: NV018
Lab Sample ID: G650-128-6H
Lab Project ID: G650-128
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/24/2008 15:55
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Date Analyzed: 1/31/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	No library search compounds detected.				
2					
3					
4					
5					
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: 

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW16
Client Project ID: NV018
Lab Sample ID: G650-128-7H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/25/2008 13:25
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	1/31/2008	
Acenaphthylene	BQL	10.0	1.12	1	1/31/2008	
Anthracene	BQL	10.0	1.75	1	1/31/2008	
Benzo[a]anthracene	BQL	10.0	1.36	1	1/31/2008	
Benzo[a]pyrene	BQL	10.0	1.27	1	1/31/2008	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	1/31/2008	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	1/31/2008	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	1/31/2008	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	1/31/2008	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	1/31/2008	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	1/31/2008	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	1/31/2008	
Butylbenzylphthalate	BQL	10.0	1.53	1	1/31/2008	
2-Chloronaphthalene	BQL	10.0	1.25	1	1/31/2008	
2-Chlorophenol	BQL	10.0	4.22	1	1/31/2008	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	1/31/2008	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	1/31/2008	
Chrysene	BQL	10.0	1.11	1	1/31/2008	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	1/31/2008	
Di-n-Butylphthalate	BQL	10.0	1.65	1	1/31/2008	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	1/31/2008	
2,4-Dichlorophenol	BQL	10.0	3.75	1	1/31/2008	
Diethylphthalate	BQL	10.0	1.48	1	1/31/2008	
Dimethylphthalate	BQL	10.0	1.04	1	1/31/2008	
2,4-Dimethylphenol	BQL	10.0	9.25	1	1/31/2008	
Di-n-octylphthalate	BQL	10.0	1.16	1	1/31/2008	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	1/31/2008	
2,4-Dinitrophenol	BQL	50.0	4.20	1	1/31/2008	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	1/31/2008	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	1/31/2008	
Diphenylamine *	BQL	10.0	1.53	1	1/31/2008	
Fluoranthene	BQL	10.0	1.41	1	1/31/2008	
Fluorene	BQL	10.0	1.22	1	1/31/2008	
Hexachlorobenzene	BQL	10.0	1.22	1	1/31/2008	
Hexachlorobutadiene	BQL	10.0	1.58	1	1/31/2008	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	1/31/2008	
Hexachloroethane	BQL	10.0	1.58	1	1/31/2008	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	1/31/2008	
Isophorone	BQL	10.0	1.27	1	1/31/2008	
Naphthalene	44.0	10.0	1.08	1	1/31/2008	
Nitrobenzene	BQL	10.0	1.32	1	1/31/2008	
2-Nitrophenol	BQL	10.0	3.52	1	1/31/2008	
4-Nitrophenol	BQL	50.0	3.17	1	1/31/2008	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	1/31/2008	
Pentachlorophenol	BQL	50.0	2.83	1	1/31/2008	
Phenanthrene	BQL	10.0	1.38	1	1/31/2008	

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW16
Client Project ID: NV018
Lab Sample ID: G650-128-7H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/25/2008 13:25
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	10.0	3.38	1	1/31/2008	
Pyrene	BQL	10.0	2.08	1	1/31/2008	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	1/31/2008	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	1/31/2008	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	8	80		
2-Fluorophenol		10	9.2	92		
Nitrobenzene-d5		10	9.5	95		
Phenol-d6		10	8.6	86		
2,4,6-Tribromophenol		10	8.3	83		
4-Terphenyl-d14		10	9.5	95		

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-MW16
Client Project ID: NV018
Lab Sample ID: G650-128-7H
Lab Project ID: G650-128
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/25/2008 13:25
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Date Analyzed: 1/31/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	Benzene, 1,2,4-trimethyl-	4.06	000095-63-6	95	96
2	Aromatic, Unknown	4.17			88.8
3	Aromatic, Unknown	4.94			38.8
4	Benzene, 1,3-diethyl-	4.21	000141-93-5	94	17.4
5	Benzene, 1,2-diethyl-	4.28	000135-01-3	95	16.2
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: 

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW01
Client Project ID: NV018
Lab Sample ID: G650-128-8H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/25/2008 8:55
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	2/1/2008	
Acenaphthylene	BQL	10.0	1.12	1	2/1/2008	
Anthracene	BQL	10.0	1.75	1	2/1/2008	
Benzo[a]anthracene	BQL	10.0	1.36	1	2/1/2008	
Benzo[a]pyrene	BQL	10.0	1.27	1	2/1/2008	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	2/1/2008	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	2/1/2008	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	2/1/2008	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	2/1/2008	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	2/1/2008	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	2/1/2008	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	2/1/2008	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	2/1/2008	
Butylbenzylphthalate	BQL	10.0	1.53	1	2/1/2008	
2-Chloronaphthalene	BQL	10.0	1.25	1	2/1/2008	
2-Chlorophenol	BQL	10.0	4.22	1	2/1/2008	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	2/1/2008	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	2/1/2008	
Chrysene	BQL	10.0	1.11	1	2/1/2008	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	2/1/2008	
Di-n-Butylphthalate	BQL	10.0	1.65	1	2/1/2008	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	2/1/2008	
2,4-Dichlorophenol	BQL	10.0	3.75	1	2/1/2008	
Diethylphthalate	BQL	10.0	1.48	1	2/1/2008	
Dimethylphthalate	BQL	10.0	1.04	1	2/1/2008	
2,4-Dimethylphenol	BQL	10.0	9.25	1	2/1/2008	
Di-n-octylphthalate	BQL	10.0	1.16	1	2/1/2008	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	2/1/2008	
2,4-Dinitrophenol	BQL	50.0	4.20	1	2/1/2008	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	2/1/2008	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	2/1/2008	
Diphenylamine *	BQL	10.0	1.53	1	2/1/2008	
Fluoranthene	BQL	10.0	1.41	1	2/1/2008	
Fluorene	BQL	10.0	1.22	1	2/1/2008	
Hexachlorobenzene	BQL	10.0	1.22	1	2/1/2008	
Hexachlorobutadiene	BQL	10.0	1.58	1	2/1/2008	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	2/1/2008	
Hexachloroethane	BQL	10.0	1.58	1	2/1/2008	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	2/1/2008	
Isophorone	BQL	10.0	1.27	1	2/1/2008	
Naphthalene	BQL	10.0	1.08	1	2/1/2008	
Nitrobenzene	BQL	10.0	1.32	1	2/1/2008	
2-Nitrophenol	BQL	10.0	3.52	1	2/1/2008	
4-Nitrophenol	BQL	50.0	3.17	1	2/1/2008	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	2/1/2008	
Pentachlorophenol	BQL	50.0	2.83	1	2/1/2008	
Phenanthrene	BQL	10.0	1.38	1	2/1/2008	

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW01
Client Project ID: NV018
Lab Sample ID: G650-128-8H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/25/2008 8:55
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	10.0	3.38	1	2/1/2008	
Pyrene	BQL	10.0	2.08	1	2/1/2008	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	2/1/2008	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	2/1/2008	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.6	76
2-Fluorophenol	10	8.2	82
Nitrobenzene-d5	10	8.6	86
Phenol-d6	10	7.9	79
2,4,6-Tribromophenol	10	7.9	79
4-Terphenyl-d14	10	9.8	98

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-MW01
Client Project ID: NV018
Lab Sample ID: G650-128-8H
Lab Project ID: G650-128
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/25/2008 8:55
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Date Analyzed: 2/1/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	Unknown	4.92			4.44
2					
3					
4					
5					
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: 

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW12
Client Project ID: NV018
Lab Sample ID: G650-128-9H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/25/2008 9:40
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	13.2	10.0	1.22	1	2/1/2008	
Acenaphthylene	BQL	10.0	1.12	1	2/1/2008	
Anthracene	BQL	10.0	1.75	1	2/1/2008	
Benzo[a]anthracene	BQL	10.0	1.36	1	2/1/2008	
Benzo[a]pyrene	BQL	10.0	1.27	1	2/1/2008	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	2/1/2008	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	2/1/2008	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	2/1/2008	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	2/1/2008	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	2/1/2008	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	2/1/2008	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	2/1/2008	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	2/1/2008	
Butylbenzylphthalate	BQL	10.0	1.53	1	2/1/2008	
2-Chloronaphthalene	BQL	10.0	1.25	1	2/1/2008	
2-Chlorophenol	BQL	10.0	4.22	1	2/1/2008	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	2/1/2008	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	2/1/2008	
Chrysene	BQL	10.0	1.11	1	2/1/2008	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	2/1/2008	
Di-n-Butylphthalate	BQL	10.0	1.65	1	2/1/2008	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	2/1/2008	
2,4-Dichlorophenol	BQL	10.0	3.75	1	2/1/2008	
Diethylphthalate	BQL	10.0	1.48	1	2/1/2008	
Dimethylphthalate	BQL	10.0	1.04	1	2/1/2008	
2,4-Dimethylphenol	BQL	10.0	9.25	1	2/1/2008	
Di-n-octylphthalate	BQL	10.0	1.16	1	2/1/2008	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	2/1/2008	
2,4-Dinitrophenol	BQL	50.0	4.20	1	2/1/2008	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	2/1/2008	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	2/1/2008	
Diphenylamine *	BQL	10.0	1.53	1	2/1/2008	
Fluoranthene	BQL	10.0	1.41	1	2/1/2008	
Fluorene	BQL	10.0	1.22	1	2/1/2008	
Hexachlorobenzene	BQL	10.0	1.22	1	2/1/2008	
Hexachlorobutadiene	BQL	10.0	1.58	1	2/1/2008	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	2/1/2008	
Hexachloroethane	BQL	10.0	1.58	1	2/1/2008	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	2/1/2008	
Isophorone	BQL	10.0	1.27	1	2/1/2008	
Naphthalene	BQL	10.0	1.08	1	2/1/2008	
Nitrobenzene	BQL	10.0	1.32	1	2/1/2008	
2-Nitrophenol	BQL	10.0	3.52	1	2/1/2008	
4-Nitrophenol	BQL	50.0	3.17	1	2/1/2008	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	2/1/2008	
Pentachlorophenol	BQL	50.0	2.83	1	2/1/2008	
Phenanthrene	BQL	10.0	1.38	1	2/1/2008	

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW12
Client Project ID: NV018
Lab Sample ID: G650-128-9H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/25/2008 9:40
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	10.0	3.38	1	2/1/2008	
Pyrene	BQL	10.0	2.08	1	2/1/2008	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	2/1/2008	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	2/1/2008	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.1	71
2-Fluorophenol	10	7.7	78
Nitrobenzene-d5	10	8	80
Phenol-d6	10	7.4	74
2,4,6-Tribromophenol	10	7.2	72
4-Terphenyl-d14	10	8.9	89

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-MW12
Client Project ID: NV018
Lab Sample ID: G650-128-9H
Lab Project ID: G650-128
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/25/2008 9:40
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Date Analyzed: 2/1/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	Unknown	4.92			4.89
2					
3					
4					
5					
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: 

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW08
Client Project ID: NV018
Lab Sample ID: G650-128-10H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/25/2008 10:10
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	2/1/2008	
Acenaphthylene	BQL	10.0	1.12	1	2/1/2008	
Anthracene	BQL	10.0	1.75	1	2/1/2008	
Benzo[a]anthracene	BQL	10.0	1.36	1	2/1/2008	
Benzo[a]pyrene	BQL	10.0	1.27	1	2/1/2008	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	2/1/2008	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	2/1/2008	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	2/1/2008	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	2/1/2008	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	2/1/2008	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	2/1/2008	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	2/1/2008	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	2/1/2008	
Butylbenzylphthalate	BQL	10.0	1.53	1	2/1/2008	
2-Chloronaphthalene	BQL	10.0	1.25	1	2/1/2008	
2-Chlorophenol	BQL	10.0	4.22	1	2/1/2008	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	2/1/2008	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	2/1/2008	
Chrysene	BQL	10.0	1.11	1	2/1/2008	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	2/1/2008	
Di-n-Butylphthalate	BQL	10.0	1.65	1	2/1/2008	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	2/1/2008	
2,4-Dichlorophenol	BQL	10.0	3.75	1	2/1/2008	
Diethylphthalate	BQL	10.0	1.48	1	2/1/2008	
Dimethylphthalate	BQL	10.0	1.04	1	2/1/2008	
2,4-Dimethylphenol	BQL	10.0	9.25	1	2/1/2008	
Di-n-octylphthalate	BQL	10.0	1.16	1	2/1/2008	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	2/1/2008	
2,4-Dinitrophenol	BQL	50.0	4.20	1	2/1/2008	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	2/1/2008	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	2/1/2008	
Diphenylamine *	BQL	10.0	1.53	1	2/1/2008	
Fluoranthene	BQL	10.0	1.41	1	2/1/2008	
Fluorene	BQL	10.0	1.22	1	2/1/2008	
Hexachlorobenzene	BQL	10.0	1.22	1	2/1/2008	
Hexachlorobutadiene	BQL	10.0	1.58	1	2/1/2008	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	2/1/2008	
Hexachloroethane	BQL	10.0	1.58	1	2/1/2008	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	2/1/2008	
Isophorone	BQL	10.0	1.27	1	2/1/2008	
Naphthalene	BQL	10.0	1.08	1	2/1/2008	
Nitrobenzene	BQL	10.0	1.32	1	2/1/2008	
2-Nitrophenol	BQL	10.0	3.52	1	2/1/2008	
4-Nitrophenol	BQL	50.0	3.17	1	2/1/2008	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	2/1/2008	
Pentachlorophenol	BQL	50.0	2.83	1	2/1/2008	
Phenanthrene	BQL	10.0	1.38	1	2/1/2008	

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW08
Client Project ID: NV018
Lab Sample ID: G650-128-10H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/25/2008 10:10
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	10.0	3.38	1	2/1/2008	
Pyrene	BQL	10.0	2.08	1	2/1/2008	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	2/1/2008	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	2/1/2008	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.6	76
2-Fluorophenol	10	8	80
Nitrobenzene-d5	10	8.5	85
Phenol-d6	10	7.7	77
2,4,6-Tribromophenol	10	7.4	74
4-Terphenyl-d14	10	9.1	91

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-MW08
Client Project ID: NV018
Lab Sample ID: G650-128-10H
Lab Project ID: G650-128
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/25/2008 10:10
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Date Analyzed: 2/1/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	Unknown	4.92			4.26
2					
3					
4					
5					
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: 

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-Duplicate
Client Project ID: NV018
Lab Sample ID: G650-128-11H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/25/2008 0:00
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	12.7	10.0	1.22	1	2/1/2008	
Acenaphthylene	BQL	10.0	1.12	1	2/1/2008	
Anthracene	BQL	10.0	1.75	1	2/1/2008	
Benzo[a]anthracene	BQL	10.0	1.36	1	2/1/2008	
Benzo[a]pyrene	BQL	10.0	1.27	1	2/1/2008	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	2/1/2008	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	2/1/2008	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	2/1/2008	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	2/1/2008	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	2/1/2008	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	2/1/2008	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	2/1/2008	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	2/1/2008	
Butylbenzylphthalate	BQL	10.0	1.53	1	2/1/2008	
2-Chloronaphthalene	BQL	10.0	1.25	1	2/1/2008	
2-Chlorophenol	BQL	10.0	4.22	1	2/1/2008	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	2/1/2008	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	2/1/2008	
Chrysene	BQL	10.0	1.11	1	2/1/2008	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	2/1/2008	
Di-n-Butylphthalate	BQL	10.0	1.65	1	2/1/2008	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	2/1/2008	
2,4-Dichlorophenol	BQL	10.0	3.75	1	2/1/2008	
Diethylphthalate	BQL	10.0	1.48	1	2/1/2008	
Dimethylphthalate	BQL	10.0	1.04	1	2/1/2008	
2,4-Dimethylphenol	BQL	10.0	9.25	1	2/1/2008	
Di-n-octylphthalate	BQL	10.0	1.16	1	2/1/2008	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	2/1/2008	
2,4-Dinitrophenol	BQL	50.0	4.20	1	2/1/2008	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	2/1/2008	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	2/1/2008	
Diphenylamine *	BQL	10.0	1.53	1	2/1/2008	
Fluoranthene	BQL	10.0	1.41	1	2/1/2008	
Fluorene	2.50	10.0	1.22	1	2/1/2008	J
Hexachlorobenzene	BQL	10.0	1.22	1	2/1/2008	
Hexachlorobutadiene	BQL	10.0	1.58	1	2/1/2008	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	2/1/2008	
Hexachloroethane	BQL	10.0	1.58	1	2/1/2008	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	2/1/2008	
Isophorone	BQL	10.0	1.27	1	2/1/2008	
Naphthalene	42.8	10.0	1.08	1	2/1/2008	
Nitrobenzene	BQL	10.0	1.32	1	2/1/2008	
2-Nitrophenol	BQL	10.0	3.52	1	2/1/2008	
4-Nitrophenol	BQL	50.0	3.17	1	2/1/2008	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	2/1/2008	
Pentachlorophenol	BQL	50.0	2.83	1	2/1/2008	
Phenanthrene	BQL	10.0	1.38	1	2/1/2008	

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-Duplicate
Client Project ID: NV018
Lab Sample ID: G650-128-11H
Lab Project ID: G650-128

Analyzed By: DCS
Date Collected: 1/25/2008 0:00
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	10.0	3.38	1	2/1/2008	
Pyrene	BQL	10.0	2.08	1	2/1/2008	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	2/1/2008	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	2/1/2008	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	7.7	77		
2-Fluorophenol		10	8.5	85		
Nitrobenzene-d5		10	9.1	91		
Phenol-d6		10	8.3	83		
2,4,6-Tribromophenol		10	8.1	81		
4-Terphenyl-d14		10	10	100		

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-Duplicate
Client Project ID: NV018
Lab Sample ID: G650-128-11H
Lab Project ID: G650-128
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/25/2008 0:00
Date Received: 1/25/2008
Date Extracted: 1/29/2008
Date Analyzed: 2/1/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	Benzene, 1,2,4-trimethyl-	4.06	000095-63-6	95	95.4
2	Aromatic, Unknown	4.17			85.5
3	Aromatic, Unknown	4.94			37.6
4	Benzene, 1,3-diethyl-	4.28	000141-93-5	95	16.9
5	Benzene, 1,2-diethyl-	4.22	000135-01-3	93	16.8
6	1H-Indene, 2,3-dihydro-4-methyl-	4.88	000824-22-6	94	14.4
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: 

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: PB10251
Lab Project ID:

Analyzed By: DES
Date Collected:
Date Received:
Date Extracted: 1/29/2008
Matrix: WATER

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	1/30/2008	
Acenaphthylene	BQL	10.0	1.12	1	1/30/2008	
Anthracene	BQL	10.0	1.75	1	1/30/2008	
Benzo[a]anthracene	BQL	10.0	1.36	1	1/30/2008	
Benzo[a]pyrene	BQL	10.0	1.27	1	1/30/2008	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	1/30/2008	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	1/30/2008	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	1/30/2008	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	1/30/2008	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	1/30/2008	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	1/30/2008	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	1/30/2008	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	1/30/2008	
Butylbenzylphthalate	BQL	10.0	1.53	1	1/30/2008	
2-Chloronaphthalene	BQL	10.0	1.25	1	1/30/2008	
2-Chlorophenol	BQL	10.0	4.22	1	1/30/2008	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	1/30/2008	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	1/30/2008	
Chrysene	BQL	10.0	1.11	1	1/30/2008	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	1/30/2008	
Di-n-Butylphthalate	BQL	10.0	1.65	1	1/30/2008	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	1/30/2008	
2,4-Dichlorophenol	BQL	10.0	3.75	1	1/30/2008	
Diethylphthalate	BQL	10.0	1.48	1	1/30/2008	
Dimethylphthalate	BQL	10.0	1.04	1	1/30/2008	
2,4-Dimethylphenol	BQL	10.0	9.25	1	1/30/2008	
Di-n-octylphthalate	BQL	10.0	1.16	1	1/30/2008	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	1/30/2008	
2,4-Dinitrophenol	BQL	50.0	4.20	1	1/30/2008	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	1/30/2008	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	1/30/2008	
Diphenylamine *	BQL	10.0	1.53	1	1/30/2008	
Fluoranthene	BQL	10.0	1.41	1	1/30/2008	
Fluorene	BQL	10.0	1.22	1	1/30/2008	
Hexachlorobenzene	BQL	10.0	1.22	1	1/30/2008	
Hexachlorobutadiene	BQL	10.0	1.58	1	1/30/2008	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	1/30/2008	
Hexachloroethane	BQL	10.0	1.58	1	1/30/2008	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	1/30/2008	
Isophorone	BQL	10.0	1.27	1	1/30/2008	
Naphthalene	BQL	10.0	1.08	1	1/30/2008	
Nitrobenzene	BQL	10.0	1.32	1	1/30/2008	
2-Nitrophenol	BQL	10.0	3.52	1	1/30/2008	
4-Nitrophenol	BQL	50.0	3.17	1	1/30/2008	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	1/30/2008	
Pentachlorophenol	BQL	50.0	2.83	1	1/30/2008	
Phenanthrene	BQL	10.0	1.38	1	1/30/2008	

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: PB10251
Lab Project ID:

Analyzed By: DES
Date Collected:
Date Received:
Date Extracted: 1/29/2008
Matrix: WATER

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	10.0	3.38	1	1/30/2008	
Pyrene	BQL	10.0	2.08	1	1/30/2008	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	1/30/2008	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	1/30/2008	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.9	88
2-Fluorophenol	10	7.4	74
Nitrobenzene-d5	10	8.9	89
Phenol-d6	10	8.1	81
2,4,6-Tribromophenol	10	7.6	76
4-Terphenyl-d14	10	12.2	122

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: 



LABORATORY CONTROL SAMPLE SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: SGS Environmental Services, Inc.

Lab Code: NC00919

Case No.:

SAS No.:

SDG No:

Matrix: (soil/water) WATER

Lab Sample ID: LCS10251

Sample wt/vol: 0.5 (L)

Lab File ID: 0130A18.D

Level: (low/med) LOW

% Moisture: NA Decanted: (Y/N) NA

Date Analyzed: 01/31/08 15:54

Concentrated Extract Volume: 5000 (µL)

Dilution Factor: 1

Injection Volume: 1 (µL)

Extraction: (Type) CONT

GPC Cleanup: N

CAS NO.	COMPOUND	SPIKE AMT (µg/L)	SAMP CONC (µg/L)	% REC #	QC LIMITS
83-32-9	Acenaphthene	100	98.6	98.6	52.8-133
208-96-8	Acenaphthylene	100	112	112	52.1-145
120-12-7	Anthracene	100	87.6	87.6	50.1-138
56-55-3	Benzo[a]anthracene	100	95.1	95.1	50.6-152
50-32-8	Benzo[a]pyrene	100	93.5	93.5	46.5-154
205-99-2	Benzo[b]fluoranthene	100	97.9	97.9	49.9-144
191-24-2	Benzo[g,h,i]perylene	100	94.6	94.6	33.2-173
207-08-9	Benzo[k]fluoranthene	100	99.5	99.5	43.9-153
65-85-0	Benzoic Acid	100	128	128	23.8-164
100-51-6	Benzyl Alcohol	100	91.1	91.1	23.8-164
111-91-1	Bis(2-chloroethoxy)methane	100	88.8	88.8	51.0-134
111-44-4	Bis(2-chloroethyl)ether	100	92.0	92.0	48.8-122
108-60-1	Bis(2-chloroisopropyl)ether	100	86.3	86.3	50.5-126
117-81-7	Bis(2-ethylhexyl)phthalate	100	94.4	94.4	35.6-155
101-55-3	4-bromophenyl phenyl ether	100	88.3	88.3	47.1-138
85-68-7	Butylbenzylphthalate	100	93.3	93.3	53.2-145
106-47-8	4-Chloroaniline	100	64.2	64.2	0.00-212
59-50-7	4-Chloro-3-methylphenol	100	88.7	88.7	51.1-135
91-58-7	2-Chloronaphthalene	100	111	111	34.9-166
95-57-8	2-Chlorophenol	100	87.7	87.7	43.7-128
7005-72-3	4-Chlorophenyl phenyl ether	100	95.7	95.7	51.1-135
218-01-9	Chrysene	100	99.4	99.4	53.7-137
84-74-2	Di-n-Butylphthalate	100	92.0	92.0	58.0-140
117-84-0	Di-n-octylphthalate	100	95.8	95.8	30.9-159
53-70-3	Dibenzo[a,h]anthracene	100	86.3	86.3	0.00-208
132-64-9	Dibenzofuran	100	96.4	96.4	54.0-130
95-50-1	1,2-Dichlorobenzene	100	69.8	69.8	32.5-111
541-73-1	1,3-Dichlorobenzene	100	71.1	71.1	26.7-109
106-46-7	1,4-Dichlorobenzene	100	71.2	71.2	30.0-110
91-94-1	3,3'-Dichlorobenzidine	100	83.3	83.3	0.00-243
120-83-2	2,4-Dichlorophenol	100	82.5	82.5	47.5-133
84-66-2	Diethylphthalate	100	101	101	58.5-144
105-67-9	2,4-Dimethylphenol	100	85.1	85.1	5.40-141
131-11-3	Dimethylphthalate	100	95.0	95.0	55.7-140
534-52-1	4,6-Dinitro-2-methylphenol	100	99.7	99.7	60.0-139
51-28-5	2,4-Dinitrophenol	100	97.3	97.3	55.4-130
121-14-2	2,4-Dinitrotoluene	100	95.0	95.0	56.3-144
606-20-2	2,6-Dinitrotoluene	100	97.3	97.3	55.0-150
206-44-0	Fluoranthene	100	90.6	90.6	55.5-132
86-73-7	Fluorene	100	100	100	55.0-136
118-74-1	Hexachlorobenzene	100	91.2	91.2	49.9-139



LABORATORY CONTROL SAMPLE SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: SGS Environmental Services, Inc.

Lab Code: NC00919

Case No.:

SAS No.:

SDG No:

Matrix: (soil/water) WATER

Lab Sample ID: LCS10251

Sample wt/vol: 0.5 (L)

Lab File ID: 0130A18.D

Level: (low/med) LOW

% Moisture: NA Decanted: (Y/N) NA

Date Analyzed: 01/31/08 15:54

Concentrated Extract Volume: 5000 (µL)

Dilution Factor: 1

Injection Volume: 1 (µL)

Extraction: (Type) CONT

GPC Cleanup: N

CAS NO.	COMPOUND	SPIKE AMT (µg/L)	SAMP CONC (µg/L)	% REC #	QC LIMITS
87-68-3	Hexachlorobutadiene	100	74.4	74.4	37.9-123
77-47-4	Hexachlorocyclopentadiene	100	127	127	0.00-181
67-72-1	Hexachloroethane	100	68.4	68.4	20.3-112
193-39-5	Indeno(1,2,3-c,d)pyrene	100	88.1	88.1	22.5-158
78-59-1	Isophorone	100	87.9	87.9	58.0-146
90-12-0	1-Methylnaphthalene	100	92.0	92.0	52.2-134
91-57-6	2-Methylnaphthalene	100	90.8	90.8	40.4-120
95-48-7	2-Methylphenol	100	90.2	90.2	49.3-126
108-39-4	4-Methylphenol	200	165	82.5	75.6-244
621-64-7	N-Nitrosodi-n-propylamine	100	91.3	91.3	55.9-143
86-30-6	Diphenylamine	50.0	48.6	97.2	24.4-236
91-20-3	Naphthalene	100	81.9	81.9	35.6-130
88-74-4	2-Nitroaniline	100	93.9	93.9	55.0-139
99-09-2	3-Nitroaniline	100	83.7	83.7	0.00-286
100-01-6	4-Nitroaniline	100	77.9	77.9	0.00-238
98-95-3	Nitrobenzene	100	85.2	85.2	52.0-137
88-75-5	2-Nitrophenol	100	86.9	86.9	23.8-145
100-02-7	4-Nitrophenol	100	83.7	83.7	47.8-148
87-86-5	Pentachlorophenol	100	72.3	72.3	43.9-118
85-01-8	Phenanthrene	100	92.3	92.3	53.6-136
108-95-2	Phenol	100	76.8	76.8	48.0-124
129-00-0	Pyrene	100	97.8	97.8	29.9-185
110-86-1	Pyridine	100	12.6	12.6	0.00-125
120-82-1	1,2,4-Trichlorobenzene	100	81.8	81.8	43.9-122
95-95-4	2,4,5-Trichlorophenol	100	94.6	94.6	51.1-140
88-06-2	2,4,6-Trichlorophenol	100	90.3	90.3	70.7-112



SGS ENVIRONMENTAL SERVICES, INC.

Paradigm Analytical Laboratories, INC.

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SGS Environmental Services, Inc.

Contract:

Lab Code: NC00919

Case No.:

SAS No.:

SDG No.:

Matrix Spike - EPA Sample No.: G650-128-11H

COMPOUND	SAMPLE CONC (µg/L)	MS SPIKE (µg/L)	MS CONC (µg/L)	MS % REC #	MSD SPIKE (µg/L)	MSD CONC (µg/L)	MSD % REC #	%	QC LIMITS	
									RPD	REC
Acenaphthene	12.7	278	194	69.7	278	203	73.1	4.76	30	55.0-106
Acenaphthylene	BQL	278	233	83.9	278	245	88.1	4.88	30	62.0-119
Anthracene	BQL	278	221	79.4	278	229	82.3	3.59	30	44.0-96.0
Benzo[a]anthracene	BQL	278	239	86.2	278	242	87.0	0.924	30	50.0-109
Benzo[a]pyrene	BQL	278	220	79.2	278	225	81.1	2.37	30	39.0-100
Benzo[b]fluoranthene	BQL	278	200	72.0	278	207	74.5	3.41	30	34.0-105
Benzo[g,h,i]perylene	BQL	278	249	89.8	278	255	91.9	2.31	30	36.0-116
Benzo[k]fluoranthene	BQL	278	243	87.5	278	252	90.7	3.59	30	26.0-120
Benzoic Acid	BQL	278	165	59.4	278	274	98.6	49.6*	30	44.0-107
Benzyl Alcohol	BQL	278	226	81.4	278	240	86.4	5.96	30	62.0-104
Bis(2-chloroethoxy)methane	BQL	278	252	90.7	278	266	95.6	5.26	30	58.0-101
Bis(2-chloroethyl)ether	BQL	278	234	84.4	278	252	90.7	7.20	30	47.0-93.0
Bis(2-chloroisopropyl)ether	BQL	278	230	82.7	278	243	87.5	5.64	30	58.0-100
Bis(2-ethylhexyl)phthalate	BQL	278	261	93.8	278	261	93.9	0.107	30	46.0-131
4-bromophenyl phenyl ether	BQL	278	213	76.8	278	222	80.0	4.08	30	36.0-112
Butylbenzylphthalate	BQL	278	234	84.3	278	236	84.9	0.709	30	54.0-117
4-Chloroaniline	BQL	278	191	68.6	278	193	69.6	1.45	30	12.0-198
4-Chloro-3-methylphenol	BQL	278	240	86.3	278	255	91.9	6.29	30	67.0-109
2-Chloronaphthalene	BQL	278	241	86.6	278	253	91.1	5.06	30	54.0-105
2-Chlorophenol	BQL	278	200	71.9	278	211	75.9	5.41	30	59.0-95.0
4-Chlorophenyl phenyl ether	BQL	278	224	80.5	278	237	85.2	5.67	30	51.0-114
Chrysene	BQL	278	243	87.6	278	243	87.5	0.114	30	52.0-114
Di-n-Butylphthalate	BQL	278	244	88.0	278	246	88.5	0.567	30	53.0-111
Di-n-octylphthalate	BQL	278	227	81.8	278	233	83.9	2.53	30	22.0-113
Dibenzo[a,h]anthracene	BQL	278	237	85.3	278	243	87.5	2.55	30	33.0-117
Dibenzofuran	BQL	278	202	72.7	278	214	77.0	5.74	30	62.0-108
1,2-Dichlorobenzene	BQL	278	147	52.9	278	159	57.2	7.81	30	31.0-93.0
1,3-Dichlorobenzene	BQL	278	134	48.4	278	145	52.2	7.55	30	25.0-87.0
1,4-Dichlorobenzene	BQL	278	140	50.3	278	151	54.3	7.65	30	29.0-86.0
3,3'-Dichlorobenzidine	BQL	278	203	73.0	278	198	71.3	2.36	30	10.0-383
2,4-Dichlorophenol	BQL	278	206	74.2	278	215	77.5	4.35	30	61.0-97.0
Diethylphthalate	BQL	278	232	83.5	278	241	86.9	3.99	30	65.0-102
2,4-Dimethylphenol	BQL	278	200	71.9	278	194	69.9	2.82	30	29.0-110
Dimethylphthalate	BQL	278	216	77.8	278	226	81.3	4.40	30	61.0-100
4,6-Dinitro-2-methylphenol	BQL	278	205	73.8	278	210	75.5	2.28	30	46.0-104
2,4-Dinitrophenol	BQL	278	157	56.6	278	162	58.4	3.13	30	47.0-109
2,4-Dinitrotoluene	BQL	278	204	73.3	278	214	76.9	4.79	30	63.0-103
2,6-Dinitrotoluene	BQL	278	216	77.7	278	230	82.9	6.48	30	61.0-101
Fluoranthene	BQL	278	228	81.9	278	233	84.0	2.53	30	49.0-109
Fluorene	BQL	278	242	87.0	278	254	91.4	4.93	30	58.0-108
Hexachlorobenzene	BQL	278	217	78.2	278	227	81.8	4.50	30	38.0-114

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 2 out of 72 outside of limits

Spike Recovery: 2 out of 144 outside of limits

COMMENTS:

Paradigm Analytical Laboratories, INC.

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SGS Environmental Services, Inc.

Contract:

Lab Code: NC00919

Case No. :

SAS No. :

SDG No. :

Matrix Spike - EPA Sample No.: G650-128-11H

[illegible]

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 2 out of 72 outside of limits

Spike Recovery: 2 out of 144 outside of limits

COMMENTS :

**VPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Sovereign ConsultingProject Name: NV018

Sample Information	
Sample Identification	USTBB190-MW15
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/24/08
Date Received	01/25/08
Date Extracted	02/28/08 16:38 - 02/28/08 16:38
Date Analyzed	02/28/08 16:38 - 02/28/08 16:38
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C ₅ -C ₈ Aliphatics**	BQL	100	
C ₉ -C ₁₂ Aliphatics**	BQL	100	
C ₉ -C ₁₀ Aromatics**	BQL	100	
	Percent Recovery	Flags	Limits Lower Upper
Surrogate % Recovery - PID	83.9		70 130
Surrogate % Recovery - FID	97.9		70 130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g650-128-1d	Lab Info: g650-128-1d
FID Info: VP012808/020F0101.D	PID Info: VP012808/020R0101.D

Reviewed By: 



VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign ConsultingProject Name: NV018

Sample Information	
Sample Identification	USTBB190-MW07
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/24/08
Date Received	01/25/08
Date Extracted	02/29/08 01:00 - 02/29/08 01:00
Date Analyzed	02/29/08 01:00 - 02/29/08 01:00
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C ₅ -C ₈ Aliphatics**	244	100	
C ₉ -C ₁₂ Aliphatics**	742	100	
C ₉ -C ₁₀ Aromatics**	616	100	
		Percent Recovery	Limits Flags Lower Upper
Surrogate % Recovery - PID		85.3	70 130
Surrogate % Recovery - FID		97.8	70 130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g650-128-2d	Lab Info: g650-128-2d
FID Info: VP012808/039F0101.D	PID Info: VP012808/039R0101.D

Reviewed By: 

**VPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Sovereign ConsultingProject Name: NV018

Sample Information	
Sample Identification	USTBB190-PSWBB47
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/24/08
Date Received	01/25/08
Date Extracted	02/28/08 17:04 - 02/28/08 17:04
Date Analyzed	02/28/08 17:04 - 02/28/08 17:04
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	BQL	100		
C ₉ -C ₁₀ Aromatics**	BQL	100		
		Percent Recovery	Flags	Limits Lower Upper
Surrogate % Recovery - PID		82.2		70 130
Surrogate % Recovery - FID		95.5		70 130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g650-128-3d	Lab Info: g650-128-3d
FID Info: VP012808/021F0101.D	PID Info: VP012808/021R0101.D

Reviewed By: 

**VPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Sovereign ConsultingProject Name: NV018

Sample Information	
Sample Identification	USTBB190-MW03
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/24/08
Date Received	01/25/08
Date Extracted	02/28/08 23:14 - 02/28/08 23:14
Date Analyzed	02/28/08 23:14 - 02/28/08 23:14
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	279	100		
C ₉ -C ₁₀ Aromatics**	281	100		
		Percent Recovery	Flags	Limits Lower Upper
Surrogate % Recovery - PID		88.4		70 130
Surrogate % Recovery - FID		103		70 130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g650-128-4d	Lab Info: g650-128-4d
FID Info: VP012808/035F0101.D	PID Info: VP012808/035R0101.D

Reviewed By: 

**VPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Sovereign ConsultingProject Name: NV018

Sample Information	
Sample Identification	USTBB190-MW17
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/24/08
Date Received	01/25/08
Date Extracted	02/28/08 23:40 - 02/28/08 23:40
Date Analyzed	02/28/08 23:40 - 02/28/08 23:40
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	214	100		
C ₉ -C ₁₂ Aliphatics**	693	100		
C ₉ -C ₁₀ Aromatics**	637	100		
		Percent Recovery	Flags	Limits Lower Upper
Surrogate % Recovery - PID		86.8		70 130
Surrogate % Recovery - FID		99.7		70 130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g650-128-5d	Lab Info: g650-128-5d
FID Info: VP012808/036F0101.D	PID Info: VP012808/036R0101.D

Reviewed By: 



VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign ConsultingProject Name: NV018

Sample Information	
Sample Identification	USTBB190-MW02
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/24/08
Date Received	01/25/08
Date Extracted	02/28/08 17:31 - 02/28/08 17:31
Date Analyzed	02/28/08 17:31 - 02/28/08 17:31
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	BQL	100		
C ₉ -C ₁₀ Aromatics**	BQL	100		
		Percent Recovery	Flags	Limits Lower Upper
Surrogate % Recovery - PID		85.7		70 130
Surrogate % Recovery - FID		98.7		70 130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g650-128-6d	Lab Info: g650-128-6d
FID Info: VP012808/022F0101.D	PID Info: VP012808/022R0101.D

Reviewed By: 

**VPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Sovereign ConsultingProject Name: NV018

Sample Information	
Sample Identification	USTBB190-MW16
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/25/08
Date Received	01/25/08
Date Extracted	02/29/08 00:07 - 02/29/08 00:07
Date Analyzed	02/29/08 00:07 - 02/29/08 00:07
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	460	100		
C ₉ -C ₁₂ Aliphatics**	419	100		
C ₉ -C ₁₀ Aromatics**	356	100		
	Percent Recovery	Flags	Limits Lower Upper	
Surrogate % Recovery - PID	90.3		70	130
Surrogate % Recovery - FID	103		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g650-128-7d	Lab Info: g650-128-7d
FID Info: VP012808/037F0101.D	PID Info: VP012808/037R0101.D

Reviewed By: 



VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign ConsultingProject Name: NV018

Sample Information	
Sample Identification	USTBB190-MW01
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/25/08
Date Received	01/25/08
Date Extracted	02/28/08 17:57 - 02/28/08 17:57
Date Analyzed	02/28/08 17:57 - 02/28/08 17:57
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	BQL	100		
C ₉ -C ₁₀ Aromatics**	BQL	100		
		Percent Recovery	Flags	Limits Lower Upper
Surrogate % Recovery - PID		83.3		70 130
Surrogate % Recovery - FID		96.3		70 130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g650-128-8d	Lab Info: g650-128-8d
FID Info: VP012808/023F0101.D	PID Info: VP012808/023R0101.D

Reviewed By: 

**VPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Sovereign ConsultingProject Name: NV018

Sample Information	
Sample Identification	USTBB190-MW12
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/25/08
Date Received	01/25/08
Date Extracted	02/28/08 22:21 - 02/28/08 22:21
Date Analyzed	02/28/08 22:21 - 02/28/08 22:21
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	BQL	100		
C ₉ -C ₁₀ Aromatics**	BQL	100		
		Percent Recovery	Flags	Limits Lower Upper
Surrogate % Recovery - PID		86.5		70 130
Surrogate % Recovery - FID		100		70 130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g650-128-9d	Lab Info: g650-128-9d
FID Info: VP012808/033F0101.D	PID Info: VP012808/033R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign Consulting

Project Name: NV018

Sample Information	
Sample Identification	USTBB190-MW08
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/25/08
Date Received	01/25/08
Date Extracted	02/28/08 22:48 - 02/28/08 22:48
Date Analyzed	02/28/08 22:48 - 02/28/08 22:48
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	BQL	100		
C ₉ -C ₁₀ Aromatics**	BQL	100		
	Percent Recovery	Flags	Limits Lower Upper	
Surrogate % Recovery - PID	88.0		70	130
Surrogate % Recovery - FID	101		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g650-128-10d	Lab Info: g650-128-10d
FID Info: VP012808/034F0101.D	PID Info: VP012808/034R0101.D

Reviewed By: 

**VPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Sovereign ConsultingProject Name: NV018

Sample Information	
Sample Identification	USTBB190-Duplicate
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/25/08
Date Received	01/25/08
Date Extracted	02/29/08 00:33 - 02/29/08 00:33
Date Analyzed	02/29/08 00:33 - 02/29/08 00:33
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	424	100		
C ₉ -C ₁₂ Aliphatics**	401	100		
C ₉ -C ₁₀ Aromatics**	330	100		
	Percent Recovery	Flags	Limits	
			Lower	Upper
Surrogate % Recovery - PID	87.7		70	130
Surrogate % Recovery - FID	102		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g650-128-11d	Lab Info: g650-128-11d
FID Info: VP012808/038F0101.D	PID Info: VP012808/038R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: _____

Project Name: _____

Sample Information	
Sample Identification	vblk4012808a
Sample Matrix	Water
Collection Option (for Soil)*	2
Date Collected	
Date Received	
Date Extracted	
Date Analyzed	02/28/08 10:28 - 02/28/08 10:28
Dry Weight	100
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	BQL	100		
C ₉ -C ₁₀ Aromatics**	BQL	100		
	Percent Recovery	Flags	Limits Lower Upper	
Surrogate % Recovery - PID	83.7		70	130
Surrogate % Recovery - FID	96.1		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: vblk4012808a	Lab Info: vblk4012808a
FID Info: VP012808/006F0101.D	PID Info: VP012808/006R0101.D

Reviewed By:



**LABORATORY CONTROL SPIKE RESULTS**
by Method VPH

SGS Environmental Services, Inc.

Lab Sample ID: LCS4012808A
Lab Project ID: Batch QC
Report Basis: Wet

Analyzed By:
Matrix: Water
Percent Solids: NA %

Analytical QC Results Summary

Analyte	Expected Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
C5-C8 Aliphatics		144				
C9-C12 Aliphatics		58.4				
C9-C10 Aromatics		34.3				
Total VPH	200	237	119	70.0	130	

Surrogate Standards	Expected Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
Surrogate - PID	1250	1079	86.3	70.0	130	
Surrogate - FID	1250	1233	98.6	70.0	130	

Reviewed By: _____

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULTS**
by Method VPH

SGS Environmental Services, Inc.

Lab Sample ID: g510-604-1a
MS Sample ID: g510-604-1a
MSD Sample ID: g510-604-1a
Lab Project ID: Batch QC for VP012808
Report Basis: Dry

Analyzed By: DVG
Matrix: Soil
Percent Solids: 91.9 %

Matrix Spike Results Summary

Analyte	Sample Amount mg/Kg	Spiked Amount mg/Kg	Measured Amount mg/Kg	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
C5-C8 Aliphatics	0.519	-	9.90	-	-	-	
C9-C12 Aliphatics	0.692	-	5.05	-	-	-	
C9-C10 Aromatics	1.700	-	2.94	-	-	-	
Total VPH	2.910	17.3	17.9	86.4	70	130	

Matrix Spike Duplicate Results Summary

Analyte	Spiked Amount mg/Kg	Measured Amount mg/Kg	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
C5-C8 Aliphatics	-	10.20	-	-	-	
C9-C12 Aliphatics	-	5.15	-	-	-	
C9-C10 Aromatics	-	2.98	-	-	-	
Total VPH	17.3	18.3	88.7	70	130	

Analyte	MS Amount mg/Kg	MSD Amount mg/Kg	RPD Value (%)	RPD Limit (%)	Qualifier
C5-C8 Aliphatics	-	-	-	-	
C9-C12 Aliphatics	-	-	-	-	
C9-C10 Aromatics	-	-	-	-	
Total VPH	17.9	18.3	2	20	

Reviewed By: _____



Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 01/02/08PID Initial Calibration Date: 01/02/08

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C ₅ -C ₈ Aliphatics	33.1	0.265	105	0.842	100	10
C ₉ -C ₁₂ Aliphatics	30.9	0.247	98.3	0.786	100	10
C ₉ -C ₁₀ Aromatics	27.7	0.222	88.1	0.705	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₅ -C ₈ Aliphatics	10	0.8	5.53	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₂ Aliphatics	10	0.8	1.00	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₀ Aromatics	10	0.8	1.00	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 01/28/08Filename: VP012808/002F0101.d

Calibration Check

Range	Levels (µg/L) (mg/Kg)	%Difference if CF %Drift if LR	Limits
C ₅ -C ₈ Aliphatics	200 1.6	4.6	±25%
C ₉ -C ₁₂ Aliphatics	200 1.6	10.4	±25%
C ₉ -C ₁₀ Aromatics	200 1.6	-9.6	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 01/02/08

PID Initial Calibration Date: 01/02/08

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C ₅ -C ₈ Aliphatics	33.1	0.265	105	0.842	100	10
C ₉ -C ₁₂ Aliphatics	30.9	0.247	98.3	0.786	100	10
C ₉ -C ₁₀ Aromatics	27.7	0.222	88.1	0.705	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₅ -C ₈ Aliphatics	10	0.8	5.53	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₂ Aliphatics	10	0.8	1.00	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₀ Aromatics	10	0.8	1.00	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 01/28/08

Filename: VP012808/031F0101.d

Calibration Check

Range	Levels (mg/Kg)	(µg/L)	%Difference if CF %Drift if LR	Limits
C ₅ -C ₈ Aliphatics	200	1.6	2.9	±25%
C ₉ -C ₁₂ Aliphatics	200	1.6	1.7	±25%
C ₉ -C ₁₀ Aromatics	200	1.6	-10.0	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Sovereign ConsultingProject Name: NV018

Sample Information	
Sample Identification	USTBB190-MW15
Sample Matrix	WATER
Date Collected	01/24/08
Date Received	01/25/08
Date Extracted	01/30/08
Date Analyzed	01/31/08 17:43 - 01/31/08 17:43
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	500
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (chloro-octadecane)	75.6		40	140
Aromatic (ortho-terphenyl)	77.5		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G650-128-1I	Lab Info: G650-128-1I
Aliphatic: EP013108/013F1101.D	Aromatic: EP013108/013F1101.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign Consulting

Project Name: NV018

Sample Information	
Sample Identification	USTBB190-MW07
Sample Matrix	WATER
Date Collected	01/24/08
Date Received	01/25/08
Date Extracted	01/30/08
Date Analyzed	02/02/08 00:48 - 02/02/08 01:16
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	500
Final Volume (mL)	5.0

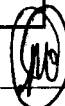
Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	260	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (chloro-octadecane)	40.4		40	140
Aromatic (ortho-terphenyl)	66.8		40	140
Fractionation 1 (2-bromonaphthalene)	96.5		40	140
Fractionation 2 (2-fluorobiphenyl)	98.3		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Duplicate analysis confirms low surrogates.

Lab Info: G650-128-2I	Lab Info: G650-128-2I
Aliphatic: EP020108/019F1901.D	Aromatic: EP020108/020F2001.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign Consulting

Project Name: NV018

Sample Information	
Sample Identification	USTBB190-PSWBB47
Sample Matrix	WATER
Date Collected	01/24/08
Date Received	01/25/08
Date Extracted	01/30/08
Date Analyzed	01/31/08 18:39 - 01/31/08 18:39
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	500
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (chloro-octadecane)	66.2		40	140
Aromatic (ortho-terphenyl)	68.6		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G650-128-3I	Lab Info: G650-128-3I
Aliphatic: EP013108/015F1301.D	Aromatic: EP013108/015F1301.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign Consulting

Project Name: NV018

Sample Information	
Sample Identification	USTBB190-MW03
Sample Matrix	WATER
Date Collected	01/24/08
Date Received	01/25/08
Date Extracted	01/30/08
Date Analyzed	02/05/08 11:10 - 02/04/08 14:42
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	500
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (chloro-octadecane)	41.2		40	140
Aromatic (ortho-terphenyl)	59.5		40	140
Fractionation 1 (2-bromonaphthalene)	80.1		40	140
Fractionation 2 (2-fluorobiphenyl)	78.7		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Duplicate analysis confirms low surrogates.

Lab Info: G650-128-4I	Lab Info: G650-128-4I
Aliphatic: EP020508/006F0601.D	Aromatic: EP020408/014F1201.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign Consulting

Project Name: NV018

Sample Information	
Sample Identification	USTBB190-MW17
Sample Matrix	WATER
Date Collected	01/24/08
Date Received	01/25/08
Date Extracted	01/30/08
Date Analyzed	02/02/08 02:40 - 02/04/08 10:56
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	500
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	192	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (chloro-octadecane)	41.1		40	140
Aromatic (ortho-terphenyl)	60.9		40	140
Fractionation 1 (2-bromonaphthalene)	87.8		40	140
Fractionation 2 (2-fluorobiphenyl)	90.0		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Duplicate analysis confirms low surrogates.

Lab Info: G650-128-5I	Lab Info: G650-128-5I
Aliphatic: EP020108/023F2301.D	Aromatic: EP020408/006F0401.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign Consulting

Project Name: NV018

Sample Information	
Sample Identification	USTBB190-MW02
Sample Matrix	WATER
Date Collected	01/24/08
Date Received	01/25/08
Date Extracted	01/30/08
Date Analyzed	01/31/08 20:03 - 01/31/08 20:03
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	500
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (chloro-octadecane)	67.0		40	140
Aromatic (ortho-terphenyl)	71.6		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G650-128-6I	Lab Info: G650-128-6I
Aliphatic: EP013108/018F1601.D	Aromatic: EP013108/018F1601.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign Consulting

Project Name: NV018

Sample Information	
Sample Identification	USTBB190-MW16
Sample Matrix	WATER
Date Collected	01/25/08
Date Received	01/25/08
Date Extracted	01/30/08
Date Analyzed	02/05/08 13:31 - 02/05/08 14:01
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	500
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	212	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (chloro-octadecane)	60.9		40	140
Aromatic (ortho-terphenyl)	63.8		40	140
Fractionation 1 (2-bromonaphthalene)	93.9		40	140
Fractionation 2 (2-fluorobiphenyl)	95.0		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Duplicate analysis confirms low surrogates.

Lab Info: G650-128-71	Lab Info: G650-128-71
Aliphatic: EP020508/011F1101.D	Aromatic: EP020508/012F0101.D

Reviewed By: 

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Sovereign ConsultingProject Name: NV018

Sample Information	
Sample Identification	USTBB190-MW01
Sample Matrix	WATER
Date Collected	01/25/08
Date Received	01/25/08
Date Extracted	01/30/08
Date Analyzed	01/31/08 20:59 - 01/31/08 20:59
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	500
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (chloro-octadecane)	63.9		40	140
Aromatic (ortho-terphenyl)	71.3		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G650-128-8I	Lab Info: G650-128-8I
Aliphatic: EP013108/020F1801.D	Aromatic: EP013108/020F1801.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign Consulting

Project Name: NV018

Sample Information	
Sample Identification	USTBB190-MW12
Sample Matrix	WATER
Date Collected	01/25/08
Date Received	01/25/08
Date Extracted	01/30/08
Date Analyzed	01/31/08 21:27 - 01/31/08 21:27
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	500
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (chloro-octadecane)	62.1		40	140
Aromatic (ortho-terphenyl)	73.4		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G650-128-9I	Lab Info: G650-128-9I
Aliphatic: EP013108/021F1901.D	Aromatic: EP013108/021F1901.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign Consulting

Project Name: NV018

Sample Information	
Sample Identification	USTBB190-MW08
Sample Matrix	WATER
Date Collected	01/25/08
Date Received	01/25/08
Date Extracted	01/30/08
Date Analyzed	01/31/08 21:55 - 01/31/08 21:55
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	500
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (chloro-octadecane)	63.1		40	140
Aromatic (ortho-terphenyl)	74.8		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G650-128-10I	Lab Info: G650-128-10I
Aliphatic: EP013108/022F2001.D	Aromatic: EP013108/022F2001.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign Consulting

Project Name: NV018

Sample Information	
Sample Identification	USTBB190-Duplicate
Sample Matrix	WATER
Date Collected	01/25/08
Date Received	01/25/08
Date Extracted	01/30/08
Date Analyzed	02/04/08 15:10 - 02/04/08 15:38
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	500
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	210	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (chloro-octadecane)	54.1		40	140
Aromatic (ortho-terphenyl)	60.5		40	140
Fractionation 1 (2-bromonaphthalene)	90.9		40	140
Fractionation 2 (2-fluorobiphenyl)	93.8		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G650-128-11K	Lab Info: G650-128-11K
Aliphatic: EP020408/015F1301.D	Aromatic: EP020408/016F1401.D

Reviewed By: 

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 12/26/07

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(10/17/06) (µg/L)	(10/17/06) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	28.1	0.847	89	2.69	100	10
C19-C36 Aliphatics	36.5	1.17	116	3.72	100	10
C11-C22 Aromatics	27.6	9.47	87.8	30.1	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	400	12.5	3.80	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C ₁₉ -C ₃₆ Aliphatics	400	12.5	6.26	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C ₁₁ -C ₂₂ Aromatics	400	12.5	4.66	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		

Calibration Check Date: 01/31/08
01/31/08

Filenames: ep013108/001f0101.d
ep013108/002f0201.d

Calibration Check

Range	Levels		%Difference if CF %Drift if LR	Limits
	(µg/L)	(mg/Kg)		
C9-C18 Aliphatics	200	6.25	0.8	≤±25%
C19-C36 Aliphatics	200	6.25	0.1	≤±25%
C11-C22 Aromatics	200	6.25	5.4	≤±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 12/26/07

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(10/17/06) (µg/L)	(10/17/06) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	28.1	0.847	89	2.69	100	10
C19-C36 Aliphatics	36.5	1.17	116	3.72	100	10
C11-C22 Aromatics	27.6	9.47	87.8	30.1	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	400	12.5	3.80	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C ₁₉ -C ₃₆ Aliphatics	400	12.5	6.26	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C ₁₁ -C ₂₂ Aromatics	400	12.5	4.66	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		

Calibration Check Date: 01/31/08
02/01/08

Filenames: ep013108/031f2901.d
ep013108/032f3001.d

Calibration Check

Range	Levels (µg/L) (mg/Kg)		%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	200	6.25	10.5	±25%
C19-C36 Aliphatics	200	6.25	10.7	±25%
C11-C22 Aromatics	200	6.25	19.8	±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit

RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 12/26/07

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(10/17/06) (µg/L)	(10/17/06) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	28.1	0.847	89	2.69	100	10
C19-C36 Aliphatics	36.5	1.17	116	3.72	100	10
C11-C22 Aromatics	27.6	9.47	87.8	30.1	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	400	12.5	3.80	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C ₁₉ -C ₃₆ Aliphatics	400	12.5	6.26	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C ₁₁ -C ₂₂ Aromatics	400	12.5	4.66	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		

Calibration Check Date: 01/31/08
02/01/08

Filenames: ep013108/077f5701.d
ep013108/078f5801.d

Calibration Check

Range	Levels		%Difference if CF %Drift if LR	Limits
	(µg/L)	(mg/Kg)		
C9-C18 Aliphatics	200	6.25	9.2	±25%
C19-C36 Aliphatics	200	6.25	9.3	±25%
C11-C22 Aromatics	200	6.25	13.7	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 12/26/07

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(10/17/06) (µg/L)	(10/17/06) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	28.1	0.847	89	2.69	100	10
C19-C36 Aliphatics	36.5	1.17	116	3.72	100	10
C11-C22 Aromatics	27.6	9.47	87.8	30.1	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	400	12.5	3.80	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C ₁₉ -C ₃₆ Aliphatics	400	12.5	6.26	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C ₁₁ -C ₂₂ Aromatics	400	12.5	4.66	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		

Calibration Check Date: 02/04/08
02/04/08

Filenames: ep020408/001f0101.d
ep020408/002f0201.d

Calibration Check

Range	Levels		%Difference if CF %Drift if LR	Limits
	(µg/L)	(mg/Kg)		
C9-C18 Aliphatics	200	6.25	10.4	≤±25%
C19-C36 Aliphatics	200	6.25	5.2	≤±25%
C11-C22 Aromatics	200	6.25	18.4	≤±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 12/26/07

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(10/17/06) (µg/L)	(10/17/06) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	28.1	0.847	89	2.69	100	10
C19-C36 Aliphatics	36.5	1.17	116	3.72	100	10
C11-C22 Aromatics	27.6	9.47	87.8	30.1	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	400	12.5	3.80	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C ₁₉ -C ₃₆ Aliphatics	400	12.5	6.26	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C ₁₁ -C ₂₂ Aromatics	400	12.5	4.66	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		

Calibration Check Date: 02/05/08
02/05/08

Filenames: ep020508/001f0101.d
ep020508/002f0201.d

Calibration Check

Range	Levels		%Difference if CF %Drift if LR	Limits
	(µg/L)	(mg/Kg)		
C9-C18 Aliphatics	200	6.25	9.7	±25%
C19-C36 Aliphatics	200	6.25	9.0	±25%
C11-C22 Aromatics	200	6.25	15.0	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 12/26/07

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(10/17/06) (µg/L)	(10/17/06) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	28.1	0.847	89	2.69	100	10
C19-C36 Aliphatics	36.5	1.17	116	3.72	100	10
C11-C22 Aromatics	27.6	9.47	87.8	30.1	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	400	12.5	3.80	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C ₁₉ -C ₃₆ Aliphatics	400	12.5	6.26	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C ₁₁ -C ₂₂ Aromatics	400	12.5	4.66	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		

Calibration Check Date: 02/05/08
02/06/08

Filenames: ep020508/038f2501.d
ep020508/039f2601.d

Calibration Check

Range	Levels		%Difference if CF %Drift if LR	Limits
	(µg/L)	(mg/Kg)		
C9-C18 Aliphatics	200	6.25	10.0	±25%
C19-C36 Aliphatics	200	6.25	11.3	±25%
C11-C22 Aromatics	200	6.25	-1.1	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

APPENDIX C

FIELD DATA



CHAIN OF CUSTODY RECORD
SGS Environmental Services Inc.

Locations Nationwide
• Alaska
• Hawaii
• Ohio
• Maryland
• New Jersey
• North Carolina
• West Virginia

www.us.sgs.com

093110

SGS Reference:

PAGE 1 OF 2

CLIENT: SADEIGH CONSULTING INC

CONTACT: AMY MEYER PHONE NO: (910) 250-0555

PROJECT: NV019 SITE/PROJECT#: 28190

REPORTS TO: CMIS MURRAY E-MAIL: cmurray@sovc01.com

INVOICE TO: CMIS MURRAY QUOTE #

425 OAK LEAVES CHURCH DRIVE, P.O. NUMBER NV019

VA BEACON VA 22417 FAX NO:

LAB NO. SAMPLE IDENTIFICATION DATE TIME MATRIX

15TPB190-MW15 01/24/08 1425 GW

15TPB190-MW13 01/24/08 1510 GW

15TPB190-PSW1904 01/24/08 1538 GW

15TPB190-MW03 01/24/08 1416 GW

15TPB190-MW17 01/24/08 1505 GW

15TPB190-MW02 01/24/08 1505 GW

15TPB190-MW16 01/24/08 1525 GW

15TPB190-MW01 01/24/08 1555 GW

15TPB190-MW12 01/24/08 1540 GW

15TPB190-MW08 01/24/08 1510 GW

Collected/Relinquished By: (1) Date 01/25/08 Time 2:10 Received By: Date 01/25/08 Time 2:10

Relinquished By: (2) Date Time Received By: Date Time

Relinquished By: (3) Date Time Received By: Date Time

Relinquished By: (4) Date Time Received By: Date Time

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602 + XYLOX
6025 + TICS
YPH (MADE)
EPH (MADE)

REMARKS

Shipping Carrier: Samples Received Cold? (Circle) YES NO

Shipping Ticket No: Temperature (C):

Special Deliverable Requirements: Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:

☐ RUSH ☒ STD



CHAIN OF CUSTODY RECORD
SGS Environmental Services Inc.

- Locations Nationwide
- Alaska
 - Ohio
 - New Jersey
 - West Virginia
 - Hawaii
 - Maryland
 - North Carolina

www.us.sgs.com

093101

1 CLIENT: Savcon Consulting Inc

CONTACT:

PHONE NO.:

PROJECT:

SITE/PROJECT ID#:

REPORTS TO:

E-MAIL:

FAX NO.:

INVOICE TO:

QUOTE #

P.O. NUMBER

2 LAB NO.

SAMPLE IDENTIFICATION

DATE

TIME

MATRIX

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SAMPLE TYPE

Preservatives Used

Analysis Required

Analysis Required

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PAGE 2 OF 2

5 Collected/Relinquished By: (1) AMALIA

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Received By:

Date

Time

Relinquished By: (2) AMALIA

Date

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Received By:

Date

Time

Relinquished By: (3)

Date

Time

Received By:

Date

Time

Relinquished By: (4)

Date

Time

Received By:

Date

Time

REMARKS

602 + XVCITPS
625 + TICS
VPH (MADEP)
EPM (MADEP)

Shipping Carrier:

Shipping Ticket No:

Special Deliverable Requirements:

Special Instructions:

Requested Turnaround Time:

☐ RUSH

Date Needed

☒ STD

200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5307
5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

1270 Gleebur Street Charleston, WV 25311 Tel: (304) 346-0725 Fax: (304) 346-0761

White - Retained by Lab

GROUNDWATER MONITORING WELL GAUGING DATA

Gauged By: S. Murray

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
UST 88190-MW01		16.49	0938	6.52			
MW02		14.45	0931	5.02			
MW03		17.09	0924	7.71			
MW04		16.73	1027	7.00			
MW05		16.31	0916	6.48			
MW06		17.10	0904	4.90			
MW07		14.36	1011	4.71			
MW08		16.33	1051	6.91			
MW09		16.22	1044	6.52			
MW10		15.99	0917	4.90			
MW11		15.96	0850	8.18			
MW12		14.11	1037	5.22			
MW13		50.81	1030	13.57			
MW14		14.27	0857	8.17			
MW15		49.33	1005	10.18			
MW16		34.55	1020	5.35			
MW17		13.71	1012	5.16			

PURGING AND BAILING GROUNDWATER SAMPLING FORM
MCB Camp LeJeune and New River MCAS

Weather

Older 30s

Well Condition

good

ALL DEPTHS ARE TO BE COLLECTED FROM THE TOP OF THE CASING.

Inner Casing Diameter (inch)

2" (0.168)

Water Column (feet)

Casing Volume (gal)

Purge/Sample Method:

Start Purge Date/Time:

Total Volume Purged (gal)

Sample Time/Date

Sampler Name:

Low Flow Method

LC

AVL K

Time	Rate (ml/min) 200-500ml	Cumulative Gallons Purged	pH	Conductivity ms/cm	Temp (°C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mv)	Comments
0835	500	0							
0841									
0844			6.06	0.967	17.20	2.11	19.42	77.0	
0847			5.81	1.019	17.42	1.55	13.19	78.8	
0850		2.0	5.88	1.017	17.25	1.50	12.96	77.4	
			5.81	1.018	17.30	1.57	13.06	80.0	

MCB Camp LeJeune and New River MCAS

Project Name

Date: _____

Weather

NV018-001-04
BB190

BB190

129108

cloudy 45°

Well ID:

Sample ID:

Well Condition

USTBB190-MW03

USTB B190-MW

good

ALL DEPTHS ARE TO BE COLLECTED FROM THE TOP OF THE CASING.

Protective Casing Diameter (inch).

inner Casing Diameter (inch)

Depth to Product from TOC (feet)

Initial Depth to Water from TOC (feet)

Product Thickness (feet):

Total Depth from TOC (feet):

44

24 (0.153)

17.00

Water Column (feet)

Casing Volume (gal).

Purge/Sample Method:

Start Purge Date/Time:

Total Volume Purged (gal)

Sample Time/Date

Sampler Name:

938

152

Low Flow Method

112468 1340

102410

1910

Time	Rate (ml/min) 200-500ml	Cumulative Gallons Purged	pH	Conductivity 25°C µS/cm	Temp (°C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mv)	Comments
1340	400	0							
1355	400	1.0	7.31	340	17.02	0.78	67.5	212.0	
1358	400	-	7.31	338	16.82	0.78	62.8	215.3	
1401	400	-	7.31	337	16.68	0.81	54.5	220.9	sewer
1404	400	-	7.31	335	16.57	0.82	49.3	223.5	white flecks
1407	400	2.0	7.31	334	16.59	0.83	40.1	225.2	in water
1410	400	-	7.31	333	16.50	0.82	38.9	226.4	
1413	400	-	7.31	332	16.50	0.84	16.1	226.0	
1416	400	2.8	7.31	331	16.55	0.89	9.82	227.2	

Project Number:

Project Name:

Date:

01/24/08

Weather

cloudy 40s

Well ID:

USTBB190-MV07

Sample ID:

USTBB190-MW07

Well Condition

good

Protective Casing Diameter (inch):

10" Manway

Inner Casing Diameter (inch):

2" (0.163)

Water Column (feet):

965

Casing Volume (gal):

157

Purge/Sample Method:

Low Flow Method

Start Purge Date/Time:

01/24/08 1450

Total Volume Purged (gal)

Sample Time/Date

01/24/08 15/0

Sampler Name:

AW/KK

[illegible]

Project Number

Project Name

Date _____

Weather

NV018-001-04

BB190

0 25 00

clear 305

Well ID

Sample ID:

Well Condition

USTBB190-MW/2

USTBB190-MW12

good

Protective Casing Diameter (inch).

Inner Casing Diameter (inch)

Depth to Product from TOC (feet):

Initial Depth to Water from TOC (feet):

Product Thickness (feet):

Total Depth from TOC (feet).

7.4
[0.163]

5.22

14.11

Water Column (feet)

Casing Volume (gal):

Purge/Sample Method:

Start Purge Date/Time

Total Volume Purged (gal)

Sample Time/Date

Sampler Name:

880

1.427

Low Flow Method

01/25/08 092

1.75

01/25/08 0940

ANLR

[illegible]

1. The first step is to identify the problem or question that needs to be addressed. This involves understanding the context and the specific requirements of the task.

Collect Duplicate

Project Number NVO18-001-04
Project Name BB190
Date 11/24/08
Weather cloudy & 45°

Well ID: USTBB190-MW 17
Sample ID: USTBB190-MW 17
Well Condition: good

Protective Casing Diameter (inch).	8"
Inner Casing Diameter (inch)	2" (0.163)
Depth to Product from TOC (feet)	
Initial Depth to Water from TOC (feet)	5.10
Product Thickness (feet)	
Total Depth from TOC (feet)	13.71

Water Column (feet) 8.61

Casing Volume (gal.) 1.40

Purge/Sample Method: Low Flow Method

Start Purge Date/Time: 11/24/08 1733

Total Volume Purged (gal) 2.20

Sample Time/Date 11/24/08 1805

Sampler Name: 142 AW

[illegible]