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LOCKHEED MARTIN

Transmitted by Overnight Mail

Mr. James W. Metz

April 21, 2008

Chief, Voluntary Cleanup Division
Environmental Restoration and Redevelopment Program
Maryland Department of the Environment
1800 Washington Blvd. Ste. 625
Baltimore, MD 21230

Re: Middle River Complex VCP – Soil Response Action Plan, Block D, MRC, Middle River, Maryland

Dear Mr. Metz:

Please find enclosed document for your review and approval.

Please let me know if you have any questions about this transmittal; I can be reached at (301) 214-9958.

Sincerely,

Thomas D. Blackman
Project Lead, Environmental Remediation

Attachment: Soil Response Action Plan, Block D, MRC, Middle River, Maryland
BET 127

cc: Via Email

Brad Owens, Lockheed Martin	Mr. Horacio Tablada, MDE
Christine Kline, Lockheed Martin	Mr. James R. Carroll, MDE
Mary Morningstar, Lockheed Martin	Ms. Richelle Hanson, MDE
Mike Martin, Tetra Tech	Mr. Gary Schold, MDE

SOIL RESPONSE ACTION PLAN
BLOCK D
LOCKHEED MARTIN MIDDLE RIVER COMPLEX

2323 Eastern Boulevard
Middle River, Maryland

LOCKHEED MARTIN

Tetra Tech
Environmental Engineers & Scientists

April 2008

Final Soil Response Action Plan
Block D
Lockheed Martin Middle River Complex
2323 Eastern Boulevard
Middle River, Maryland

Prepared for:

Lockheed Martin Corporation

Prepared by:

Tetra Tech, Inc.

Michael Martin, P.G.
Project Manager

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ACRONYMS

µg/kg	micrograms per kilogram
ARAR	Applicable or Relevant and Appropriate Requirement
ASTM	American Society for Testing and Materials International
ATC	Average Typical Concentration
AWQC	Ambient Water Quality Criteria
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	chemical of concern
COMAR	Code of Maryland Regulations
COPC	chemical of potential concern
CSF	Cancer Slope Factor
CSM	Conceptual Site Model
CWA	Clean Water Act
cy	cubic yards
DEPRM	Department of Environmental Protection and Resource Management
DRO	diesel range organics
EDD	electronic data deliverable
EM	electromagnetic
EPA	United States Environmental Protection Agency
ESA	Environmental Site Assessment
GLM	Glenn L. Martin Company
GPR	ground penetrating radar
GRA	general response action
GRO	gasoline range organics
HASP	Health and Safety Plan
HHRA	human health risk assessment
LDR	Land Disposal Restriction

LUC	land use control
MCL	Maximum Contaminant Level
MDE	Maryland Department of the Environment
mg/kg	milligrams per kilogram
MRAS	Middle River Aircraft Systems
MRC	Middle River Complex
MS2-LS&S	Maritime Systems & Sensors – Littoral Ships & Systems
MSDS	Material Safety Data Sheet
msl	mean sea level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act
NIOSH	National Institute of Occupational Safety and Health
NPDES	National Pollutant Discharge Elimination System
NPW	net present worth
O&M	operation and maintenance
OCP	Oil Control Program
OSHA	Occupational Safety and Health Administration
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PLS	pure live seed
PPE	personal protective equipment
RAO	response action objective
RAP	Response Action Plan
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RfD	Reference Dose
RME	Reasonable Maximum Exposure
sf	square feet
SSO	Site Safety Officer
SVOC	semivolatile organic compound
TBC	To Be Considered
TCLP	Toxicity Characteristic Leaching Procedure

TPH	total petroleum hydrocarbon
TSDF	treatment, storage, and disposal facility
Tetra Tech	Tetra Tech, Inc.
UCL	upper confidence limit
UECA	Uniform Environmental Covenants Act
USC	United States Code
USCS	Unified Soil Classification System
UTS	Universal Treatment Standard
VCP	Voluntary Cleanup Program
VOC	volatile organic compound

Executive Summary

This Response Action Plan (RAP) is being submitted by Tetra Tech, Inc. (Tetra Tech) on behalf of Lockheed Martin Corporation (Lockheed Martin) for soil media at Block D of the Lockheed Martin Middle River Complex (MRC) located in Middle River, Maryland. The RAP was prepared in accordance with the requirements of the Maryland Department of the Environment's (MDE's) Voluntary Cleanup Program (VCP) (Section 7-508 of the Environment Article, Annotated Code of Maryland). The purpose of the RAP is to provide the information necessary to support the decision to remove contaminated soil in order to receive a Certificate of Completion from the MDE under a Tier 1A (Residential Unrestricted) future land use and restriction category based on potential future residential development.

The MRC is located in Middle River, Maryland, approximately 11.5 miles northeast of downtown Baltimore and covers approximately 161 acres. Block D (12.76 acres) is located in the southeastern portion of the MRC. Block D is entirely paved in asphalt and is alternately known as Parking Lot No. 6. This entire block (along with the adjacent portion of Block F) comprises Recognized Environmental Condition (REC) #6.

Investigations at Block D were conducted starting in 2003 and included record reviews, discussions with MRC personnel, geophysical surveys, and soil and groundwater sampling. The analytical results for the soil and groundwater samples were evaluated in a site-specific human health risk assessment (HHRA), which identified benzo(a)pyrene, mercury, and vanadium as chemicals of concern (COCs) in soil. The greatest concentrations of benzo(a)pyrene, mercury, and vanadium were generally detected in the subsurface soils in Block D. Cleanup goals were developed to satisfy the requirements of the VCP and to be consistent with the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) Part 400.430, as implemented through the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Attainment of the cleanup goals at Block D will result in a cancer risk less than 1×10^{-5} and a hazard index less than 1.0.

An additional field investigation was conducted at Block D during the fall of 2007 to refine the horizontal and vertical limits of soil with COC concentrations greater than cleanup goals. Based on the investigation, benzo(a)pyrene concentrations in two of the 81 soil samples exceeded the cleanup goal (400 µg/kg). The maximum benzo(a)pyrene concentration (940 µg/kg) was detected in the subsurface soil sample (2 to 3 feet bgs) from soil boring SB-321. Two samples that exceeded the cleanup goals are located within 20 feet of previously defined anomalous soil boring locations SB-59 and SB-33. The mercury concentrations in soils ranged from non-detect to a maximum of 0.84 mg/kg detected at soil boring SB-342 (5 to 6 feet bgs.). There were a total of 15 detections of mercury from the 81 soil samples collected with no detection greater than the cleanup goal (1.0 mg/kg).

As required by the VCP, selected technologies and land use controls (LUCs) were evaluated. The NCP served as a guide for the process used to arrive at the selected technology (i.e., selected alternative). This process included the identification, screening, and evaluation of potential technologies and process options; preliminary and detailed screening of technologies and process options; selection of representative process options; development and detailed analysis of alternatives; comparative analysis of alternatives; and description of the proposed alternative. The proposed response action selected was Excavation to Allow Unrestricted Residential Site Use and Off-Site Disposal.

The proposed response action would remove soil with COC concentrations greater than the cleanup goals to the extent necessary to allow unrestricted residential use of Block D. A total of 800 cubic yards of soils from three areas will be removed. Site preparation would include construction of temporary materials handling pad, decontamination zones, haul routes and clearing of the areas to be excavated. Shallow excavation of soil would be conducted using a bulldozer, front-end loader, hydraulic excavators, backhoe, or similar equipment. Post-removal/confirmation samples would be collected from the sidewalls and base of the excavation(s). Following excavation and confirmation sampling, the excavated areas would be backfilled with certified clean material, graded to original contours, and restored using vegetation. It is assumed that all excavated soil would be disposed at an off-site permitted Resource Conservation and Recovery Act (RCRA) Subtitle D landfill. Because the soil remaining on site would no longer contain concentrations of COCs that could be harmful to potential future residential receptors, soil-related LUCs would not be required.

Lockheed Martin will meet local, State, and federal permitting requirements for the response action. Based on a review of requirements of MDE and Baltimore County, permitting requirements for the response action are related to earth-moving activities.

As stipulated by MDE's VCP, administrative requirements, including a written agreement, zoning certification, performance bond or other form of security, and health and safety plan requirements will be met. A written agreement stipulating that if the RAP is approved, the applicant agrees to comply with the provisions of the RAP is provided herein. A zoning certification, a certified written statement that the property meets all applicable county and municipal zoning requirements, is also provided with this RAP. A project-specific Health and Safety Plan (HASP) will be prepared and submitted to MDE prior to implementation of the MDE-approved RAP.

Section 1
Introduction

1.1 PURPOSE

On behalf of Lockheed Martin Corporation (Lockheed Martin), Tetra Tech, Inc. (Tetra Tech) has prepared this Response Action Plan (RAP) for soil media at Block D of the Lockheed Martin Middle River Complex (MRC) located in Middle River, Maryland. The location of the MRC is shown on Figure 1-1. This RAP has been prepared in accordance with the requirements of the Maryland Department of the Environment's (MDE's) Voluntary Cleanup Program (VCP) (Section 7-508 of the Environment Article, Annotated Code of Maryland).

The purpose of the RAP is to provide the background, support, and framework for remediation of soil with chemicals of concern (COC) concentrations greater than the cleanup goals in order to receive a Certificate of Completion from the MDE under a Tier IA (Residential Unrestricted) future land use and restriction category based on potential future residential development. Block D and physical features are shown on Figure 1-2.

A Certificate of Completion will be sought from the MDE following the satisfactory implementation and completion of the MDE-approved RAP.

1.2 SCOPE

The response action for Block D, which will address soil with COC concentrations greater than the cleanup goals, is summarized as follows:

- The soil response action proposed in this RAP will include removal of soil with COC concentrations greater than the cleanup goals.

- A description of the proposed response action for groundwater at the MRC is described in the Groundwater Response Action Plan provided under separate cover. A response action for groundwater in Block D is not required.

1.3 ORGANIZATION

This RAP is organized as follows:

- Section 1 – Introduction: Presents the purpose, scope, and organization of the RAP.

- Section 2 – Block D Overview: Presents a brief description of MRC and Block D history, environmental investigations and results, nature and extent of contamination, and a summary of the proposed soil response action.

- Section 3 – Additional Investigatory Information: Presents a summary of the additional investigation completed in support of the response action.

- Section 4 – Exposure Assessment: Presents the current and proposed land use, media of concern, and Conceptual Site Model (CSM).

- Section 5 – Cleanup Criteria: Presents cleanup criteria, a risk assessment summary, cleanup goals, and information associated with attainment of cleanup goals.

- Section 6 – Selected Technologies and Land Use Controls: Presents the screening of technologies and process options, development and analysis of alternatives, comparative analysis of alternatives, and the selected alternative to achieve cleanup of Block D.

- Section 7 – Evaluation Criteria for the Selected Technology: Presents the criteria required for a Certificate of Completion.

- Section 8 – Proposed Response Actions: Presents the plan for all work necessary to perform the proposed response action.

- Section 9 – Permits, Notifications, and Contingencies: Presents the local, State, and federal laws and regulations that prescribe the permits and approvals required to implement the MDE-approved RAP.

- Section 10 – Implementation Schedule: Presents the detailed schedule for all work necessary to implement the MDE-approved RAP.

- Section 11 – Administrative Requirements: Presents the administrative documents required to implement the MDE-approved RAP.

- Section 12 – References: Lists references and citations used in compiling this RAP.

Appendix A includes a summary of soil analytical results. Appendix B includes a statistical summary of pre- and post-removal action data. Appendix C includes field documentation notes and boring logs. Appendix D includes data validation reports. Appendix E includes documentation required to comply with administrative requirements.

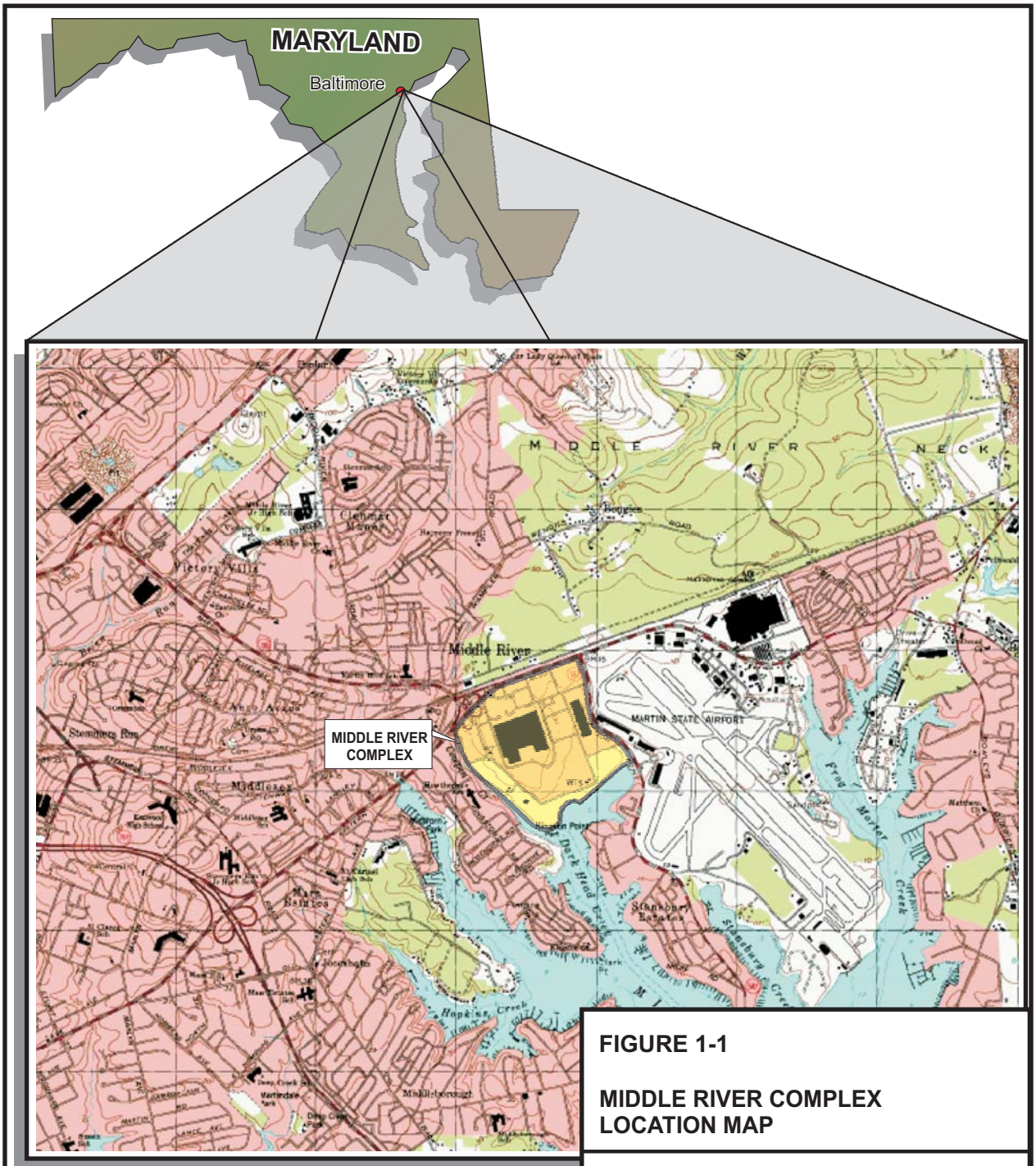


FIGURE 1-1

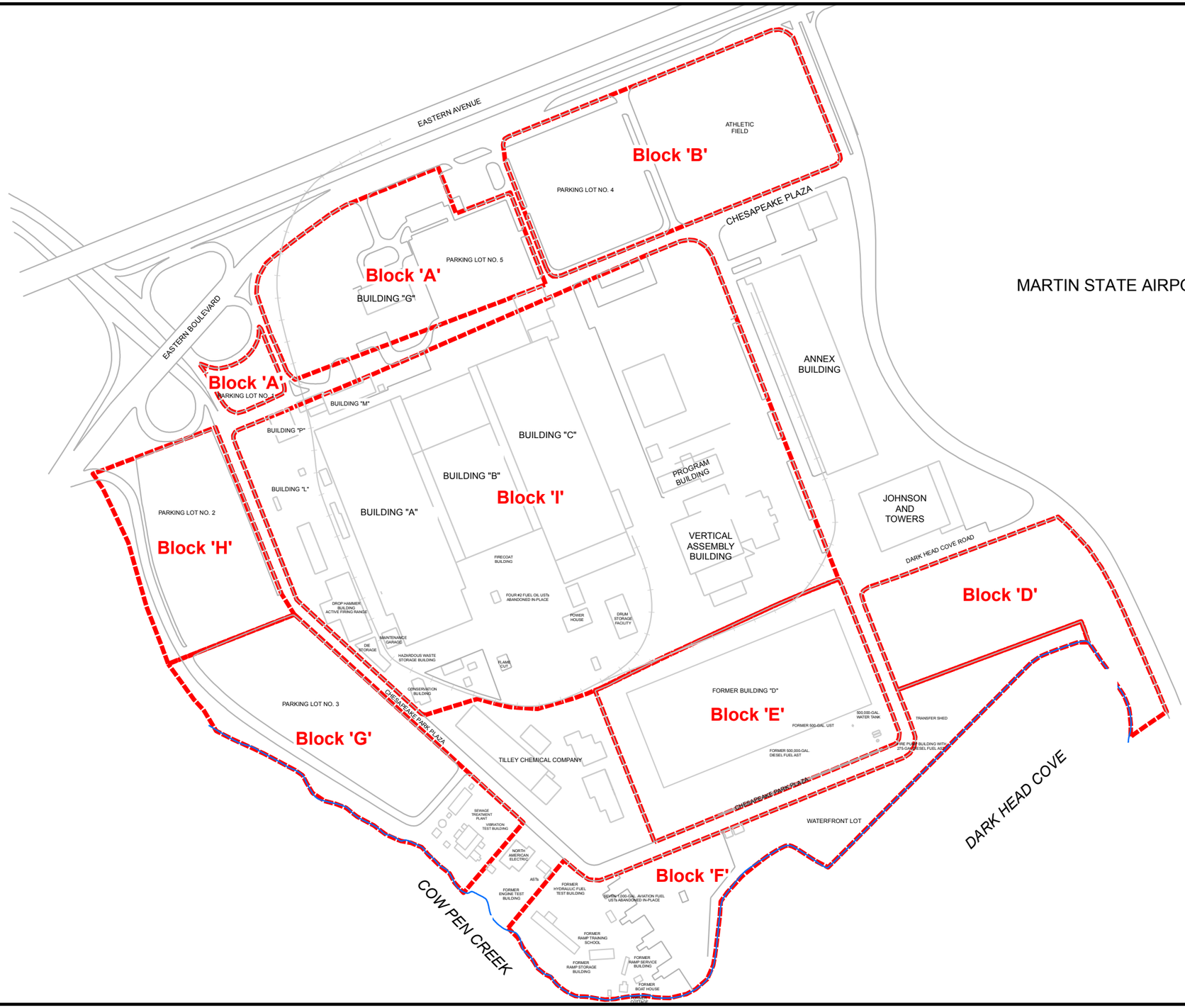
MIDDLE RIVER COMPLEX LOCATION MAP

Lockheed Martin Middle River Complex
Middle River, Maryland

NOT TO SCALE	N
DATE MODIFIED: 8/21/07	CREATED BY: J. F.

Tetra Tech, Inc.

K:\GProject\middle_river\graphics\Middle River Complex Loc Map_Revised.cdr



MARTIN STATE AIRPORT

FIGURE 1-2

MIDDLE RIVER COMPLEX
TAX BLOCKS

LEGEND

- TAX BLOCK
- STRUCTURE
- RAILROAD TRACKS

Lockheed Martin Middle River Complex
Middle River, Maryland

0 100 200 400 Feet

N

DATE MODIFIED: 3/13/07

CREATED BY: J. F.

Tetra Tech, Inc.

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Section 2
Block D Overview

2.1 BLOCK D BACKGROUND

The MRC, which is part of the Chesapeake Industrial Park, is located at 2323 Eastern Boulevard in Middle River, Maryland, approximately 11.5 miles northeast of downtown Baltimore. The MRC covers approximately 161 acres and consists of 12 main buildings, an active industrial area and yard, perimeter parking lots, an athletic field, a concrete-covered vacant lot, a trailer and parts storage lot, and numerous grass-covered green spaces along it's perimeter. The MRC is bounded by Eastern Boulevard (Route 150) to the north, Dark Head Cove to the south, Cow Pen Creek to the west, and Martin State Airport to the east. The location of the MRC is shown in Figure 1-1. A MRC layout map is presented as Figure 2-1.

The MRC is comprised of several tax blocks. Block D, consisting of 12.76 acres, is located in the southeastern portion of the MRC. Block D is bounded on the north by Dark Head Cove Road and Johnson and Towers, to the east by Wilson Point Road and Martin State Airport, to the south by the Waterfront Lot (Block F), and to the west by Former Building D (Block E). Block D has been identified, along with a portion of the adjacent Waterfront Lot, as Recognized Environmental Condition (REC) #6.

2.1.1 Block D Description

Currently, Lockheed Martin's MRC primary activities include facility and building management and maintenance. The MRC has two main tenants: Middle River Aircraft Systems (MRAS), a subsidiary of General Electric that conducts design, manufacturing, fabrication, testing, overhaul, repair, and maintenance of aeronautical structures, parts, and components for military and commercial applications, and Maritime Systems & Sensors – Littoral Ships & Systems (MS2-LS&S), a subsidiary of Lockheed Martin that conducts fabrication, assembly, testing, and

support of vertical launch systems. Lockheed Martin and tenant operations are primarily contained within Block I.

Block D is entirely paved with asphalt and is alternately known as Parking Lot No. 6. This entire block (along with the adjacent portion of Block F) comprises REC #6. REC #6 was identified in the Phase I Environmental Site Assessment (ESA) (Earth Tech, February 2003). No structures are known to have existed within this asphalt parking lot. The parking lot is surrounded on all sides by a chain-link fence. Locked gates are present along Dark Head Cove Road, Chesapeake Park Plaza, and from the Waterfront Lot. Access is restricted to authorized personnel only.

2.1.2 Block D History

In 1929, Glenn L. Martin Company (GLM), a predecessor of Lockheed Martin, acquired a large parcel of land in Middle River, Maryland to conduct aircraft manufacturing for the United States government and for commercial clients. Prior to the property's first occupancy, the MRC was undeveloped land. In the early 1960s, GLM merged with American-Marietta Company, forming Martin Marietta Corporation. Around 1975, the adjacent eastern airport (Martin State Airport), totaling approximately 750 acres, was transferred to the State of Maryland. In the mid-1990s, Martin Marietta Corporation merged with Lockheed, forming Lockheed Martin Corporation, with its principal subsidiary specializing in construction and testing of new ordnance for the United States government and for commercial clients. Shortly following the merger, General Electric acquired the majority of Lockheed Martin's aeronautical business in Middle River, which began to function as MRAS.

Based on limited information provided in the Phase I ESA, MRC records and historical aerial photographs, a portion of Parking Lot No. 6 and the waterfront was backfilled between 1938 and 1949, raising the topography to the current elevations and extending the MRC's property to its current layout. During filling activities, a steel bulkhead was constructed and a 100-foot-wide swath of the cove along the bulkhead was proposed for dredging. Dredging activities were planned to lower the bottom of Dark Head Cove near the shoreline to 8 feet below sea level. The dredging and filling activities were conducted to facilitate use of the creek as a proposed anchor

basin. After the shoreline was reconstructed, Parking Lot No. 6 was paved with asphalt. No structures are known to have existed within this asphalt parking lot.

The area was used primarily as a parking lot as shown in 1954, 1957, 1964, 1971, and 1972 aerial photographs. In 1979 and 1982 photographs, the parking lot was being used as a staging area for trailers and equipment. In a 1986 photograph, the parking lot is vacant with the exception of parked cars, but in 1989, equipment and materials were staged in this area. Parking Lot No. 6 is currently characterized by deteriorating asphalt and is occasionally leased for temporary vehicle storage.

2.1.3 Block D Characteristics

2.1.3.1 Current and Surrounding Land Use

The MRC is an industrial facility, and the area surrounding the MRC primarily consists of commercial, industrial, and residential establishments. Six facilities comprise the remaining portion of the Chesapeake Industrial Park including Tilley Chemical Company, Inc., a food and pharmaceutical chemical distributor for personal care and industries; North American Electric, Inc., an industrial and commercial electrical contractor; Johnson and Towers, a heavy duty automotive and boat repair and maintenance company; Poly-Seal Corp., a company that produces flexible packaging; Exxon, a gasoline fill station and convenience store; and the Middle River Post Office. Residential developments are present on the opposite shores of Cow Pen Creek, Dark Head Cove, and Dark Head Creek and north of Eastern Boulevard (Route 150).

2.1.3.2 Physiography

The MRC is located within the Western Shore of the Coastal Plain Physiographic Province, which is generally characterized by low relief. The topography of the MRC is gently sloping, ranging from sea level to 32 feet above mean sea level (msl) (Cassell, 1977). The topography slopes from Eastern Boulevard to the southwest and south towards Cow Pen Creek and Dark Head Cove.

Block D is a relatively flat parcel of land ranging from 10 above mean sea level (msl) in the extreme western portion of the Block to 4 feet above msl in the far eastern portion of the Block (Cassell, July 1977).

2.1.3.3 Hydrology

The MRC lies at the junction of Cow Pen Creek and Dark Head Cove. Both surface water bodies discharge into Dark Head Creek, a tributary to Middle River, which is a tributary to Chesapeake Bay. The MRC lies approximately 3.24 miles (17,100 feet) upstream of Chesapeake Bay.

No surface water bodies lie within or cross the MRC. Excluding areas immediately adjacent to Cow Pen Creek and Dark Head Creek, surface water runoff discharges from the MRC via storm drains. Lockheed Martin maintains a State of Maryland National Pollution Discharge Elimination System (NPDES) permit (State Discharge Permit No.: 00-DP-0298, NPDES No.: MD0002852), issued by MDE Industrial Discharge Permits Division, Water Management Administration. The permit covers stormwater discharge from the entire property rather than individual tenants. The NPDES permitted outfall locations are shown on Figure 2-1.

No surface water bodies cross or emanate from Block D. Surface water runoff generated from the parking lot most likely ponds onsite, slowly infiltrating into the underlying soil, or discharging to the Waterfront Lot as overland sheet flow. Stormwater management features are located within Block D and are indicated on the MRC utility map included as Appendix J of the Site Characterization Report (Tetra Tech, May 2006). No wetlands have been identified in or around Block D, and Block D is not located within the 100-year floodplain.

2.1.3.4 Soils

Soils underlying MRC have been mapped as Mattapex-Urban Land Complex and Sassafras-Urban Land Complex by the United States Department of Agriculture Soil Conservation Service. Mattapex-Urban Land soils consist of deep, well-drained silty soils whose original texture has been disturbed, graded over, or otherwise altered. Sassafras-Urban Land soils consist of deep, well-drained sandy soils whose original texture has been disturbed, graded over, or otherwise

altered. Site characterization studies indicate that a high degree of fine-grained (e.g., silt and clay) soils with low permeabilities are present at the MRC.

2.1.3.5 Geology

The surfical geology of Block D is summarized below. The geology of the MRC is described in the Site Characterization Report (Tetra Tech, May 2006).

Based on the lithologic logging of soil borings at Block D, the subsurface soils consisted primarily of silty clay underlain by sand. However, several borings contained sand at shallower depths in the subsurface. These borings generally occurred in the central portion of Parking Lot No. 6 and may reflect the former drainage channel filled in during the 1940s. Peat was observed in soil boring SB-59 at 12 feet below ground surface (bgs) and soil boring SB-62 at 6 feet bgs. Both borings were located along the western edge of Parking Lot No. 6.

2.1.3.6 Hydrogeology

A summary of groundwater measurements taken at Block D is presented in Table 2-1. The groundwater elevation contours using the shallow/intermediate surficial aquifer monitoring wells are presented on Figure 2-2. Groundwater flows in a radial fashion from the hydraulically upgradient northern portion of the MRC at Eastern Boulevard to the southeast, south, and southwest toward Dark Head Cove and Cow Pen Creek.

Groundwater was typically encountered at Block D between 8 and 23.5 feet bgs. Groundwater was generally encountered at shallower depths in the areas known to have been filled in the 1940s.

2.2 SUMMARY OF BLOCK D INVESTIGATIONS

Investigations associated with Block D included record reviews, discussions with MRC personnel, geophysical surveys, and soil and groundwater sampling. Investigations[1] included the Phase I Environmental Site Assessment (2003) (Earth Tech, Inc., 2003), Phase II Investigation

[1] Investigations cited by investigation title, performance period, and reference.

(Fall/Winter 2003) (Tetra Tech, February 2004), Historical Survey (2004) (Tetra Tech, August 2004), Site-Wide Phase II Investigation (2004) (Tetra Tech, April 2005), Phase II Soil Investigation (Summer 2005) (Tetra Tech, May 2006), Groundwater Characterization (Summer 2005) (Tetra Tech, May 2006), and Groundwater Investigation (Fall 2005) (Tetra Tech, May 2006). The summary of Block D investigations provided below is limited to the media of concern, soil, whereas a summary of groundwater investigations is provided in the Groundwater Response Action Plan.

2.2.1 Phase I Environmental Site Assessment (2003)

A Phase I ESA was conducted on the MRC in February 2003. The Phase I ESA (Earth Tech, Inc., 2003) consisted of a historical review of the MRC (i.e., a review of available MRC documents, aerial photographs, and city directories); a review of federal, state, and local agency databases; interviews with MRC personnel; and a site visit. The Phase I ESA identified 13 RECs associated with the MRC.

Based on a review of available MRC documents, the Phase I ESA documented the possible presence of fill material beneath the water front area and Parking Lot No. 6. No additional information regarding fill activities was obtained. In addition, information reviewed during the Phase I ESA did not indicate any chemical handling activities, chemical storage, or waste stream disposal occurring at the unit. Due to the unknown quality of the fill material, the Phase I ESA identified Parking Lot No. 6 and the adjacent Waterfront Lot as REC #6.

In addition to the identification of the 13 RECs, the Phase I ESA also recommended further investigation into the MRC's historic site activities to identify other potential environmental concerns.

2.2.2 Phase II Investigation (Fall/Winter 2003)

During the fall of 2003, a Phase II investigation consisting of soil and groundwater sampling and analysis and a geophysical survey was conducted on 7 of the 13 Phase I ESA RECs (Tetra Tech, February 2004). The objective of the Phase II investigation was to determine baseline conditions

by identifying and evaluating contaminants of potential concern (COPC) present in the underlying media.

Two soil borings (SB-32 and SB-33) were installed in Parking Lot No. 6 (Block D) during this investigation. One subsurface soil sample (5 feet bgs) and one groundwater sample were collected from each boring and analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), total Priority Pollutant metals, total petroleum hydrocarbons (TPH), gasoline-range organics (GRO), and diesel-range organics (DRO). Sample locations are shown on Figure 2-3. Tables AD-1 and AD-2 (Appendix A) provide a summary of the detected concentrations in the surface soil and subsurface soil samples, respectively.

Minor soil impacts of benzo(a)pyrene, arsenic and mercury were detected in the soil samples at concentrations that exceeded MDE screening criteria along the extreme eastern portion of Block D, while the groundwater results indicated that Aroclor-1254, beryllium, and nickel were detected at concentrations that exceeded the MDE screening criteria.

An electromagnetic (EM) survey was conducted at Block D in order to characterize the fill area and determine if metallic waste was buried, indicating waste disposal. A follow-up ground penetrating radar (GPR) survey of one identified EM anomaly in Parking Lot No. 6 was conducted. GPR imaging of this anomaly, running northwest to southeast through the center of Parking Lot No. 6, did not indicate any definitive source for the anomaly. This anomaly was not considered consistent with any known potential subsurface metallic objects or utilities. The results of the geophysical survey are presented in Appendix A of the Final Report, Phase II Site Investigation of Exterior Areas (Tetra Tech, February 2004).

2.2.3 Historical Survey (2004)

The historical survey consisted of review of available MRC maps (e.g., as-builts, proposed construction plans, and plot maps), interviews with Lockheed Martin and tenant personnel, and site visits. Based on the data available during this survey, there were no indications that Parking Lot No. 6 (Block D) was used for anything other than parking and crate storage. No additional

information was obtained indicating the source of the geophysical anomaly or the soil and groundwater contamination noted in the Phase II Investigation.

2.2.4 Site-Wide Phase II Investigation (2004)

As part of the Site-Wide Phase II investigation conducted by Tetra Tech in the fall of 2004, the investigation of Block D was expanded. Surface soil samples were collected from the 2003 soil boring locations (designated SB-32A and SB-33A) as well as from nine additional soil borings (SB-59 through SB-67). The additional soil borings were evenly spaced throughout Parking Lot No. 6, with soil borings SB-66 and SB-67 installed within the confines of the geophysical anomaly identified in 2003. Subsurface soil samples and one Hydropunch® groundwater sample were collected from each of the nine borings. The subsurface soil samples were collected at 5-foot intervals until groundwater was encountered. All samples were analyzed for VOC, SVOC, metals, PCBs, GRO, and DRO. Sample locations are shown on Figure 2-3. The results of this investigation are provided in the Final Report, Phase II Site Investigation of Exterior Areas (Tetra Tech, February 2004). Tables AD-1 and AD-2 (Appendix A) provide a summary of the detected concentrations in the surface soil and subsurface soil samples, respectively.

Polycyclic aromatic hydrocarbon (PAH) concentrations in excess of risk-based screening criteria were detected in several surface soil samples collected from 0 to 1 foot bgs in Parking Lot No. 6. The degraded asphalt pavement covering the parking lot was identified at that time as the most likely source of the PAH compounds in the soil.

2.2.5 Phase II Soil Investigation (Summer 2005)

Further characterization of Block D was conducted in the summer of 2005 to address the concern caused by the elevated PAH concentrations in the soil samples collected in 2004 and the concern of the Aroclor-1254 detection in the groundwater samples collected in 2003.

In order to evaluate whether the pavement was the source of the PAHs in the soil, five soil borings (SB-239 through SB-243) were installed within the parking lot. Soil samples were collected from 0- to 6-inch, 6- to 12-inch and 12- to 18-inch intervals beginning immediately below the asphalt

and were submitted for PAH analysis. In addition, the asphalt material from one location (SB-239) was sampled and analyzed for PAHs.

To further delineate potential PCBs in soil in the vicinity of soil borings SB-32 and SB-33, six borings (SB-244 through SB-249), three around each previous boring, were installed and samples were collected from various depths (5, 10 and 15 feet bgs). The samples were analyzed for PCBs. Mercury had also been noted as a concern in one of the soil samples from soil boring SB-33 (5 feet). Therefore, the soil samples collected at 5- and 10-foot bgs from the additional borings around soil boring SB-33 (SB-247 through SB-249) were also analyzed for metals.

Sample locations are shown on Figure 2-3. The results of this investigation are provided in the Site Characterization Report (Tetra Tech, May 2006). Tables AD-1 and AD-2 (Appendix A) provide a summary of the detected concentrations in the surface soil and subsurface soil samples, respectively.

The results of this investigation indicated that PAH compounds leaching from the asphalt were not significant, and it is likely that the 2003 samples were collected from soil cores driven through the asphalt, producing cross-contamination of the samples and false positives for PAHs in soils at a depth of 1-foot. For this reason the earlier samples were removed from the database prior to conducting the human health risk assessment (HHRA). The new data also indicated that PCB and mercury contamination detected during previous sampling is limited in extent.

2.3 NATURE AND EXTENT OF CONTAMINATION

This section presents a summary of the nature and extent of contamination in soil and groundwater at Block D based on the results of all investigations conducted prior to the fall of 2007. Tables AD-1 and AD-2 (Appendix A) provide a summary of the detected concentrations in surface soil and subsurface soil samples, respectively.

2.3.1 Soil

The HHRA prepared for the Site Characterization Report (Tetra Tech, May 2006) identified a number of COPCs by comparing maximum concentrations to MDE soil cleanup standards. COPCs detected in soil samples collected within Block D included 10 metals (antimony, arsenic, cadmium, chromium, cobalt, lead, mercury, nickel, vanadium, and zinc), DRO, GRO, and six PAHs identified as benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Results of the site-specific HHRA were used to assist in determining which COPCs were the principal contributors to risk, also referred to as COCs. The COCs identified for Block D were carcinogenic PAHs, mercury, and vanadium in surface and subsurface soils.

Although, the PAHs in the soil at Block D may be associated with the asphalt paving or motor oil dripping from cars, an alternative source may also be present since elevated concentrations are also found at depth. The highest concentration of benzo(a)pyrene of 5,800 micrograms per kilogram (µg/kg) was detected in the surface soil sample from soil boring SB-67. Detected concentrations of benzo(a)pyrene ranged from 52 µg/kg (SB-242) to 5,800 µg/kg (SB-67) in the surface soil and from 73 µg/kg (SB-241 – 1.5 feet) to 770 µg/kg (SB-59 – 15 feet) in the subsurface soil. Most of the exceedances of MDE soil cleanup standards were found in soil borings SB-33 and SB-59.

Mercury and vanadium were not detected in the surface soil samples. The detected concentrations of mercury ranged from 0.06 mg/kg (SB-248 – 5 feet) to 303 mg/kg (SB-33 – 5 feet) in the subsurface soil and the detected concentrations of vanadium ranged from 24.5 mg/kg (SB-249 – 5 feet) to 90.5 mg/kg (SB-249 – 10 feet). Concentrations of mercury and vanadium above the MDE soil cleanup standards were noted in soil borings SB-32, SB-33, SB-248, and SB-249.

In addition to soil contaminated with PAHs, mercury, and vanadium, surface soil containing DRO above the MDE Oil Control Program (OCP) standards is also present. Detected DRO concentrations ranged from 12 mg/kg (SB-62) to 1,800 mg/kg (SB-32A) in the surface soil. Concentrations above the MDE OCP standards were also noted in soil borings SB-60 and SB-64.

As there are no indicated risks from individual compounds considered under the reasonable maximum exposure (RME) scenario, further consideration of the DRO does not appear to be warranted (Tetra Tech, May 2006).

Figure 2-4 shows the concentrations of benzo(a)pyrene and mercury in the soil samples that exceed the cleanup goal established in Section 5.3.

2.3.2 Groundwater

The primary impact to groundwater in Block D appears to be antimony. However, the concentrations of antimony are less than its MCL and its MDE groundwater cleanup standard. No COCs were identified for the groundwater at Block D.

The area is currently served by public water and there are currently no wells (other than monitoring wells) anywhere on the MRC. Further discussions of impacts to groundwater are discussed in the Groundwater Response Action Plan.

2.4 RESPONSE ACTION SUMMARY

This RAP was developed in accordance with VCP guidance to support Lockheed Martin's application to the VCP for Block D at the MRC. This RAP was prepared to address elevated concentrations of benzo(a)pyrene and mercury in soils within Block D. A separate RAP is being prepared to address contaminated groundwater beneath the MRC.

2.4.1 Proposed Response Actions

Soil at Block D with benzo(a)pyrene and mercury concentrations greater than the cleanup goals will be removed and disposed at a permitted off-site disposal facility. Development of the cleanup goals is presented in Section 5. The response action is described in Section 8.

2.4.2 Future Land Use Category

The MRC is currently an industrial facility and the area surrounding the property primarily consists of commercial and industrial establishments. Residential developments are present on the opposite shores of Cow Pen Creek, Dark Head Cove, Dark Head Creek and north of Eastern Boulevard (Route 150). The implementation of the proposed RAP will allow for unrestricted residential use of Block D.

2.4.3 Proposed Land Use Control

The proposed RAP for Block D includes the removal of all soil with concentrations of benzo(a)pyrene and mercury greater than the cleanup goals. Consequently, Block D will be considered for unrestricted residential uses, and land use controls (LUCs) will not be required. LUCs for the groundwater beneath Block D may be required and are discussed in the Groundwater Response Action Plan provided under separate cover.

Table 2-1

Summary of Groundwater Level Measurements
Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland

Monitoring Well Number	Top of Riser Elevation (ft)	Ground Surface Elevation (ft)	Screened Interval Length (ft)	Elevation of Bottom of Screened Interval (ft)	Measurement Date					
					6/5/2005		10/13/2005		12/6/2005	
					Groundwater Elevation (ft)	Depth to Groundwater (ft bgs)	Groundwater Elevation (ft)	Depth to Groundwater (ft bgs)	Groundwater Elevation (ft)	Depth to Groundwater (ft bgs)
MW32A	12.69	12.92	10	-1.08	9.68	3.24	9.24	3.68	8.79	4.13
MW34A	12.62	12.96	10	-1.04	9.37	3.59	8.92	4.04	8.42	4.54
MW35A	10.14	10.77	10	-2.23	7.89	2.88	9.01	1.76	6.84	3.93
MW38A	9.70	9.99	10	-4.01	4.49	5.50	4.15	5.84	4.14	5.85
MW39A	6.60	6.93	10	-7.07	6.6	0.33	6.60	0.33	3.55	3.38
MW40A	6.24	6.53	10	-8.47	6.24	0.29	6.24	0.29	6.24	0.29

1 Monitoring well data for monitoring wells located within or near the Block D limits.
2 See Figure 2-2 for monitoring well locations.
3 Elevations reference National Geodetic Vertical Datum (NGVD), 1929.
4 Monitoring well information obtained from Site Characterization Report (Tetra Tech, May 2006).

bgs - Below ground surface.
ft - Feet.
NA - Not available.
" - " - Denotes negative number.

FIGURE 2-1

MIDDLE RIVER COMPLEX LAYOUT MAP

LEGEND

OUTFALL 004 NPDES PERMITTED OUTFALL

STORMWATER AND FLOW DIRECTION

PRE-1950 SHORELINE

EXISTING STRUCTURE

FORMER STRUCTURE

REC LOCATION (APPROXIMATE)

Lockheed Martin Middle River Complex
Middle River, Maryland

0 200 400

N

DATE MODITFIED 8/21/07

CREATED BY JF

Tetra Tech Inc.

filename: k:\gproject\middle_river\cad\newfolder\2003SiteLocationMapFigure2_16Jan07.dwg

MARTIN STATE AIRPORT

MW03A 24.92
MW01A 20.69
MW02A 21.27
MW06A 20.16
MW05A 19.50
MW49A 16.13
EXT-MW04 NM
MW51A 13.01
MW50A 16.42
MW52A 15.34
MW41A 17.39
MW53A 14.47
MW08A 11.46
MW54A 14.88
MW17A 28.15
MW64A 25.50
MW18A 22.15
MW19A 26.27
MW20A 26.40
MW07A 23.19
MW16A 15.14
MW09A 9.37
MW21A-B 31.69(A)
EXT-MW06 23.04
MW22A 18.66
MW15A 18.36
MW10A 11.31
MW14A-C 15.22(A)
MW11A
MW11C 13.49(A)
MW12A
MW12C 9.38(A)
MW63A 15.14(A)
MW13A 11.09
MW55A 25.25
MW57A 28.34
MW56A 32.68
MW58A 32.13
MW59A 34.01
MW65A 11.42
MW66A 9.90
MW47A 12.30
MW45A *
MW46A 2.27
MW04A 23.10
MW61A NM
MW23A 17.32
MW60A 24.62
MW48A 17.44
MW24A NM
MW28A 11.01
MW29A 10.12
MW42A 15.12
MW26A 13.94
MW27A-C 12.40(A)
MW25A 15.23
MW30A 11.84
MW62A
MW62C 11.67(A)
MW33A 10.95
MW44A 11.45
MW43A 11.57
MW32A 8.79
MW31A 9.65
MW34A-C 8.42(A) 8.65(B)
MW35A 6.84
MW36A 4.78
MW37A 4.63
MW37B-C 3.55
MW38A 4.14
MW39A 3.55
MW40A 6.24

5 10 15 20 25 30

COW PEN CREEK
DARK HEAD COVE

FIGURE 2-2

GROUNDWATER CONTOURS OF THE UPPER SURFICIAL AQUIFER, DECEMBER 2005

LEGEND

- GROUNDWATER MONITORING WELL
- GROUNDWATER CONTOUR
- INFERRED
- 15.23 WATER ELEVATION (FEET ABOVE MSL)
- NM NOT MEASURED
- * ELEVATION WAS NOT CONSISTENT WITH SURROUNDING ELEVATIONS AND WAS NOT USED FOR CONTOURING.

Lockheed Martin Middle River Complex
Middle River, Maryland

0 85 170 340 Feet

N

DATE MODIFIED: 3/27/07

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K:\GProject\middle_river\Maps\draft response action plan\Middle River GW Contours of Upper Surficial Aquifer_16Jan07.mxd

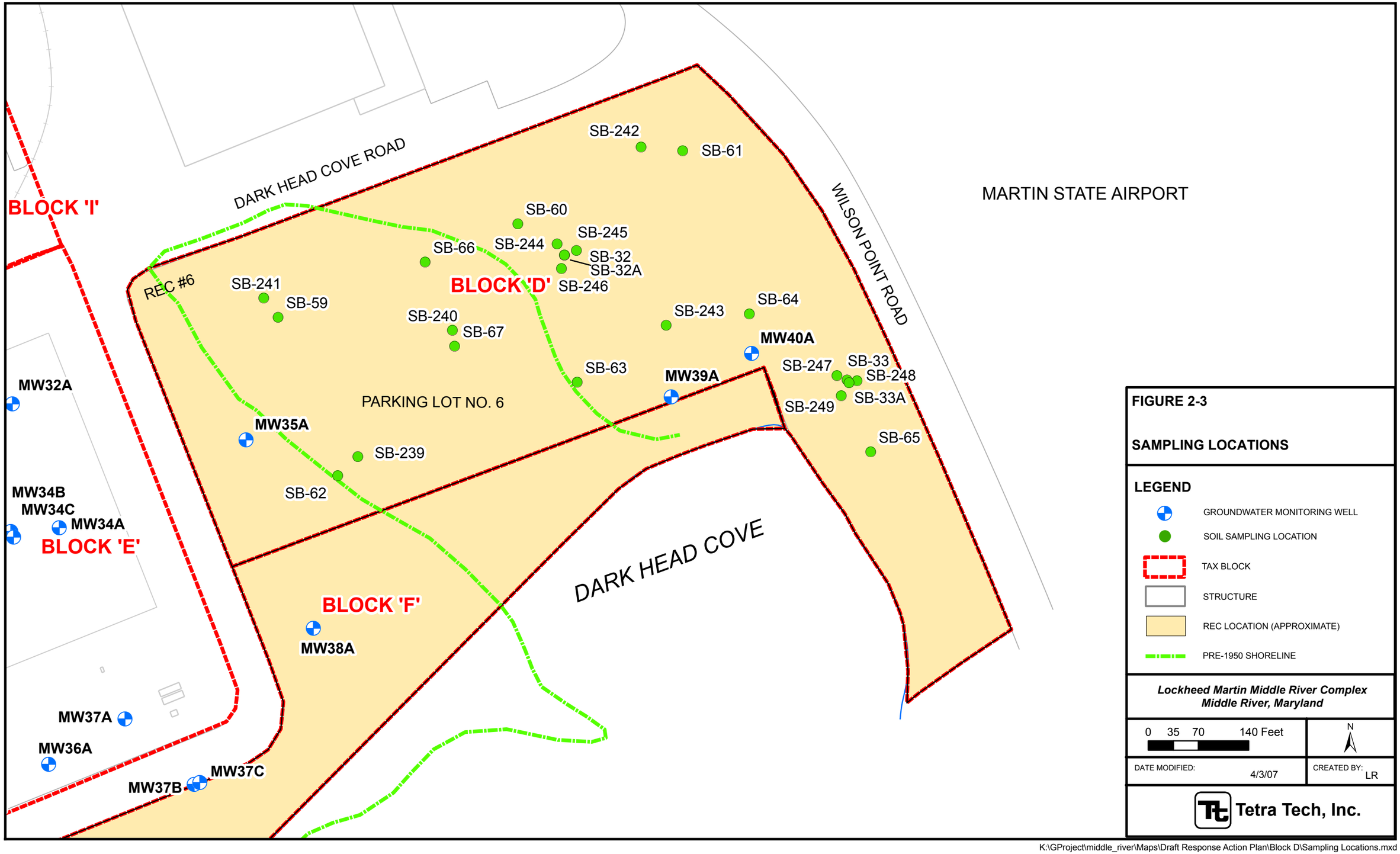

FIGURE 2-3

SAMPLING LOCATIONS

LEGEND

- GROUNDWATER MONITORING WELL
- SOIL SAMPLING LOCATION
- TAX BLOCK
- STRUCTURE
- REC LOCATION (APPROXIMATE)
- PRE-1950 SHORELINE

Lockheed Martin Middle River Complex
Middle River, Maryland

0 35 70 140 Feet

N

DATE MODIFIED: 4/3/07

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Tetra Tech, Inc.

K:\GProject\middle_river\Maps\Draft Response Action Plan\Block D\Sampling Locations.mxd

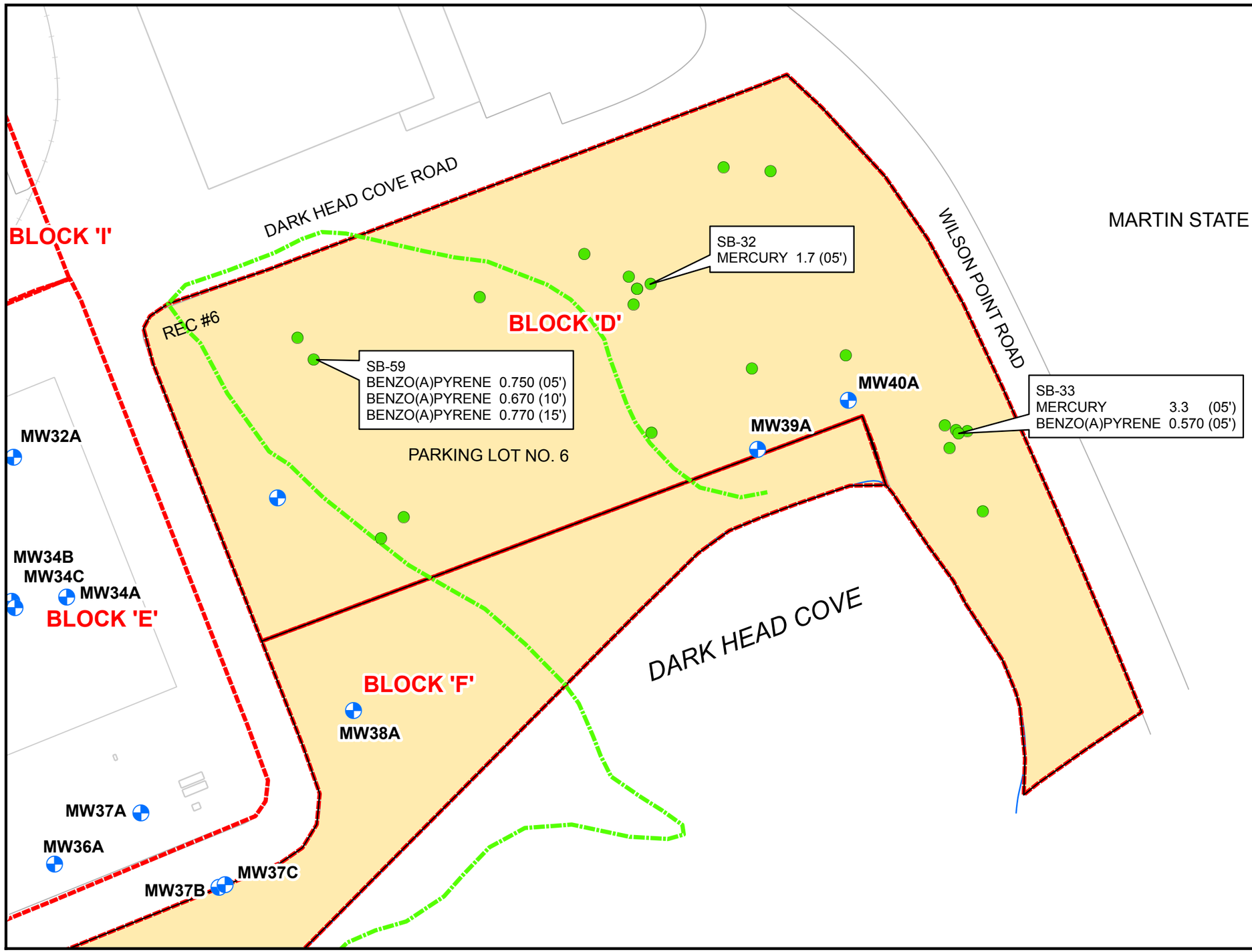

FIGURE 2-4

COC EXCEEDANCES OF CLEANUP GOALS

LEGEND

- GROUNDWATER MONITORING WELL
- SOIL SAMPLING LOCATION
- TAX BLOCK
- STRUCTURE
- REC LOCATION (APPROXIMATE)
- PRE-1950 SHORELINE

CONCENTRATIONS IN MILLIGRAMS PER KILOGRAM (mg/kg).
CLEANUP GOAL FOR MERCURY IS 1.0 mg/kg.
CLEANUP GOAL FOR BENZO(A)PYRENE IS 0.400 mg/kg (400 ug/kg).

Lockheed Martin Middle River Complex
Middle River, Maryland

0 35 70 140 Feet

N

DATE MODIFIED: 4/3/07

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Section 3
Additional Investigatory Information

3.1 ADDITIONAL SOIL INVESTIGATIONS

Tetra Tech performed an additional field investigation at Block D during the fall of 2007 to confirm previous results and refine the limits of COCs greater than the cleanup goals. The risk assessment included in the Site Characterization Report (Tetra Tech, May 2006) identified benzo(a)pyrene and mercury concentrations that require mitigation. Concentrations of benzo(a)pyrene and mercury in excess of the cleanup goals were identified at previous soil boring location SB-33. The benzo(a)pyrene concentration at soil boring SB-59 and mercury concentration at soil boring SB-32 exceeded cleanup goals. The extent of COCs in excess of cleanup goals in the vicinity of these soil borings was refined by locating borings around the soil boring SB-33, SB-59 and SB-32 locations in a radial pattern to determine the extent and confirm previous results. A work plan was prepared in November 2007 (Tetra Tech, 2007) documenting field investigation protocols, sampling procedures, and analytical requirements. The field investigation was performed in accordance with the work plan.

Twenty seven soil borings were installed in the vicinity of soil borings SB-33, SB-59 and SB-32 using a direct push technology (DPT). The borings were spaced on a grid pattern across the previously identified geophysical anomaly areas to cover significant horizontal and vertical areas for further delineation of COCs greater than the cleanup goals. Soil boring locations are shown on Figure 3-1. These borings were drilled to a maximum depth of 9 feet bgs. The soil samples were obtained continuously from the surface to the termination depth of the borehole with samples obtained for chemical analysis at 2 foot intervals (2 to 3, 5 to 6 and 8 to 9 ft bgs). The samples were logged in the field to document geologic description of the lithology for USCS classification, moisture content, and the depth of the water table. The field documentation notes and geologic logs are provided in Appendix C. The lithology is consistent with presence of mainly moist brown

clay mixed with clayey sands and sand-silt mixtures. The soils were generally moist with the shallow water table present between 4 to 8 feet bgs. Most of the borings were terminated at 9 feet bgs. Soil samples were collected in precleaned sample containers, packed in coolers, sealed and sent to the contracted laboratory for benzo(a)pyrene (Method EPA 8270) and mercury (Method SW-846 7471A) analysis.

3.2 RESULTS

The laboratory data confirmed the presence of benzo(a)pyrene and mercury in low concentrations in many of the samples. A total of 81 soil samples were collected from the 27 soil borings and analyzed in the laboratory for benzo(a)pyrene and mercury. These samples underwent Level IV data validation procedures in accordance with USEPA Region III protocols to ensure that the generated laboratory data is valid and accurate. The summary of detected concentrations in subsurface soils is presented in Table AD-3 (Appendix A) and the validation reports are provided in Appendix D.

Benzo(a)pyrene concentrations in soils ranged from non-detect to 940 µg/kg at soil boring SB-321 (2 to 3 feet bgs). The majority of the samples exhibited benzo(a)pyrene concentrations below 100 µg/kg. The nineteen detections of benzo(a)pyrene were scattered sporadically at various boring locations. The cleanup goal for benzo(a)pyrene was established at 400 µg/kg. Two samples that exceeded the cleanup goals are located within 20 feet of previously defined anomaly locations where soil borings SB-59 and SB-33 were installed.

The mercury concentrations in soils ranged from non-detect to a maximum of 0.84 mg/kg at soil boring SB-342 (5 to 6 feet bgs). Sixty seven soils detected mercury in low levels, when compared to maximum concentration but none greater than the cleanup goal (1.0 mg/kg). Soil boring SB-342 is located 25 feet from soil boring SB-33 where mercury was detected during a previous sampling event. In addition, soil boring SB-32 was the other mercury detected location from previous round of sampling. The soil boring sample locations are indicated on Figure 3-2. The removal limits did not change significantly based on the additional data collected in the fall of 2007. The removal limits associated with soil boring SB-59 will remain centered around soil boring SB-59 and extend to the northeast to soil boring SB-321.

Map Document: (K:\GProject\middle_river\Maps\GPS SOIL BORING LOC\Final RAP figures\Block D ProBorings.mxd) 4/17/2008 -- 10:01:45 AM

DARK HEAD COVE ROAD

WILSON POINT ROAD

MARTIN STATE AIRPORT

PARKING LOT NO. 6

BLOCK 'D'

BLOCK 'E'

BLOCK 'F'

DARK HEAD COVE

SB-242

SB-61

SB-60

SB-244

SB-32

SB-32A

SB-335

SB-334

SB-331

SB-330

SB-329

SB-332

SB-333

SB-245

SB-327

SB-328

SB-246

SB-66

SB-241

SB-323

SB-324

SB-322

SB-319

SB-321

SB-320

SB-318

SB-325

SB-326

SB-59

SB-240

SB-67

SB-243

SB-64

SB-33

MW40A

SB-63

MW39A

SB-33A

SB-342

SB-341

SB-344

SB-248

SB-337

SB-340

SB-336

SB-339

SB-343

SB-338

SB-247

SB-249

MW-35A

SB-239

SB-62

SB-65

MW38A

FIGURE 3-1

SAMPLING LOCATIONS

LEGEND

- GROUNDWATER MONITORING WELL
- PREVIOUS SOIL SAMPLING LOCATION
- FALL 2007 SOIL SAMPLING LOCATION
- TAX BLOCK
- REC LOCATION (APPROXIMATE)

Lockheed Martin Middle River Complex
Middle River, Maryland

0 25 50 100 Feet

N

DATE MODIFIED: 1/31/08

CREATED BY: LR

Tetra Tech, Inc.

Map Document: (K:\GProject\middle_river\Maps\GPS SOIL BORING LOC\Final RAP figures\Block D ProBorings 3D.mxd) 3/6/2008

DARK HEAD COVE ROAD

WILSON POINT ROAD

MARTIN STATE AIRPORT

PARKING LOT NO. 6

SB-242

SB-61

SB-60

SB-32
MERCURY 1.7 mg/kg (05')

SB-32A

SB-244

SB-335

SB-334

SB-331

SB-330

SB-329

SB-332

SB-333

SB-245

SB-327

SB-328

SB-246

SB-66

SB-321-0203
BENZO(A)PYRENE
940 ug/kg

SB-241

SB-323

SB-324

SB-322

SB-319

SB-321

SB-320

SB-318

SB-325

SB-326

SB-59
BENZO(A)PYRENE 750 ug/kg (05')
BENZO(A)PYRENE 670 ug/kg (10')
BENZO(A)PYRENE 770 ug/kg (15')

SB-240

SB-67

SB-63

SB-64

SB-243

MW40A

MW39A

SB-33
MERCURY 3.3 mg/kg (05')
BENZO(A)PYRENE 570 ug/kg (05')

SB-33A

SB-342

SB-341

SB-344

SB-248

SB-337

SB-340

SB-336

SB-339

SB-343

SB-338

SB-247

SB-249

SB-337-0506
700 ug/kg

BLOCK 'D'

SB-239

SB-62

MW-35A

SB-65

DARK HEAD COVE

BLOCK 'E'

BLOCK 'F'

MW38A

FIGURE 3-2

COC EXCEEDANCES OF CLEANUP GOALS (INCLUDING FALL 2007 DATA)

LEGEND

- GROUNDWATER MONITORING WELL
- PREVIOUS SOIL SAMPLING LOCATION
- FALL 2007 SOIL SAMPLE LOCATION
- TAX BLOCK

CLEANUP GOAL FOR MERCURY IS 1.0 mg/kg
CLEANUP GOAL FOR BENZO(A)PYRENE IS 400 ug/kg

Lockheed Martin Middle River Complex
Middle River, Maryland

0 25 50 100 Feet

N

DATE MODIFIED: 3/6/08

CREATED BY: LR

Tetra Tech, Inc.

Section 4
Exposure Assessment

4.1 INTRODUCTION

The exposure assessment presents the current and future land use as defined by the VCP land use definitions, media of concern, and CSM, which includes potentially exposed populations based on future land use and potential exposure pathways.

4.2 CURRENT AND FUTURE LAND USE

The VCP requires applicants to choose a land use and restriction category based on the planned future use of the property. A No Further Requirements Determination or Certificate of Completion issued for a property is contingent on future use of the property as defined by the VCP.

Currently, Block D is entirely paved in asphalt and is alternatively known as Parking Lot No. 6. It is characterized by deteriorating asphalt and is occasionally leased for temporary vehicle storage. It is considered to be "Tier 3 Industrial." The VCP defines this land use category as follows:

> *Industrial property to be used by workers over the age of 18, adult workers and construction workers, and other potential expected users. Industrial purposes allow access to the property at a frequency and duration consistent with a typical business day.*

This RAP is evaluating Block D in terms of what would be required to achieve a "Tier 1 Residential Unrestricted" land use and restriction category. The VCP defines this land use and restriction category as follows:

Property usage that allows exposure and access by all populations including infant, children, elderly, and infirmed populations. The "A (Unrestricted)" classification indicates that no LUCs are imposed on the property. Tier 1A properties typically include single-family and multi-family dwellings.

The Tier 1A (Residential Unrestricted) future land use and restriction category is based on the results of the HHRA for Block D, which evaluated potential future residential development.

4.3 MEDIA OF CONCERN

The medium of concern at Block D is surface and subsurface soil. Groundwater was also investigated at Block D; however, groundwater is being addressed separately on a MRC-wide basis rather than on a tax block-specific basis.

4.4 CONCEPTUAL SITE MODEL

The CSM identifies the potential exposure populations at a site, based on current and future use. The CSM also identifies the potential exposure pathways and presents the rationale used to determine whether an exposure pathway is complete. The CSM is the framework for conducting the HHRA.

An HHRA for Block D was conducted as part of the Site Characterization Report (Tetra Tech, May 2006). The CSM in the HHRA postulates human activities that result in exposure to contaminants in soils. The CSM includes individuals who either live at Block D (residents), work at Block D (commercial or industrial workers), develop Block D (construction workers), or visit Block D (recreational users and commercial/industrial establishment visitors) and engage in activities that result in exposure via incidental ingestion of soil, skin contact resulting in dermal absorption of COPCs in soil, and inhalation of dusts and vapors from soil.

Section 5
Cleanup Criteria

5.1 CLEANUP CRITERIA

Development of cleanup goals must be conducted to satisfy the requirements of the VCP and be consistent with the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) Part 400.430 as implemented through the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The VCP defines a need for remedial action at sites with a cancer risk of 1×10^{-5} or a hazard index of 1.0.

The results of the risk assessment presented in the Site Characterization Report (Tetra Tech, May 2006) provide the information necessary to focus cleanup goal development. If the cancer risk for the current or future land use is greater than 1×10^{-5} or greater than a hazard index of 1.0, then cleanup goals must be developed for the intended future use of the site. Cleanup goals are only being developed for COCs, those chemicals that are the principal contributors to risk. A COC is defined as a chemical detected at a concentration may result in a cancer risk greater than 1×10^{-5} or a hazard quotient greater than 1.0. Results of a site-specific risk assessment determine which COPCs are the COCs. This determination of COCs was based on a Block D-wide approach rather than evaluation of results from individual soil borings.

Soil sampling locations with COC concentrations greater than the remedial action levels to attain the residential cleanup standards for soil and greater than background would be identified for removal. Site-specific background concentrations are only applicable to metals. If the site-specific background concentration for a metal is greater than the MDE residential cleanup standard for soil, the site-specific metal background concentration is the applicable cleanup goal. Generally, soil remediation will be designed to attain cleanup criteria for the COCs as well as attain target risk levels for a site. Verification of post-removal conditions will be conducted to

demonstrate that post-response action risks are less than a cancer risk of 1 x 10^{-5} and a hazard index of 1.0.

5.2 RISK ASSESSMENT SUMMARY

The HHRA was conducted for a range of soil exposure scenarios including residential, commercial, and industrial usage. The assessment indicated that only future residential exposures to soil exceeded MDE's threshold level for cancer risk (1 x 10^{-5}) and the target hazad index of 1.0. The COCs identified in this assessment are arsenic, vanadium, mercury, and carcinogenic PAHs in soil.

5.3 CLEANUP GOALS

A cleanup goal was identified for benzo(a)pyrene to satisfy a VCP Tier 1A (Residential Unrestricted) future land use and restriction category based on potential future single-family residential development. The MDE residential soil cleanup standard for benzo(a)pyrene is 330 micrograms per kilogram (µg/kg). However, benzo(a)pyrene is being used to represent all carcinogenic PAHs. Benzo(a)pyrene is co-located with all the carcinogenic PAHs; therefore, its removal is considered representative of the removal of other carcinogenic PAHs that may be contributing significantly to risk. The site data will be used in concert with the site-specific incremental lifetime cancer risks and hazard indices at individual sampling locations to define a site-specific remedial action level for benzo[a]pyrene to achieve a target risk level of 1 x 10^{-5} and a target hazard index of 1.0.

The MDE identifies a residential soil cleanup standard for arsenic and vanadium of 2 mg/kg and 55 mg/kg, respectively. However, because arsenic and vanadium are naturally occurring, it is appropriate to consider background reference concentrations. A site-wide approach was used to identify a background reference concentration for arsenic at the MRC in Comment Response Document No. 2 of the Site Characterization Report (Tetra Tech, December 2006). The Block D-wide average concentration for arsenic, as represented by the 95 percent upper confidence limit of the mean (UCL), must be less than 6 mg/kg with no individual soil concentration exceeding 12 mg/kg. Similarly, the Block-B-wide average concentration for vanadium must be less than 55

mg/kg with no individual soil concentration exceeding 91 mg/kg. This approach provides conditions where no arsenic or vanadium "hot spots" remain within Block D while attaining protection of human health through exposure to these metals in soil at Block D.

The MDE identifies a residential soil cleanup standard for mercury of 0.1 mg/kg. However, the MDE's Average Typical Concentration (ATC), based on background data collected in the state of Maryland, provides the basis for determining the need for remediation. A block-wide approach for determining if there is a need for remediation was defined in Comment Response Document No. 2 of the Site Characterization Report (Tetra Tech, December 2006). The Block-D wide average concentration, as represented by the UCL, must be less than 0.5 mg/kg.

Cleanup goals are summarized in Table 5-1. Attainment of the cleanup goals at Block D will result in a cancer risk less than 1×10^{-5} and a hazard index less than 1.0.

5.4 ATTAINMENT OF CLEANUP GOALS

To attain cleanup goals, soil with benzo(a)pyrene concentrations greater than 400 mg/kg and mercury concentrations greater than 1 mg/kg will be removed. In addition, it must be demonstrated that after soil with mercury concentrations greater than 1 mg/kg is removed, the post-response action UCL mercury concentration is less than 0.5 mg/kg. Moreover, the post-response action risk at each soil boring should be less than a cancer risk of 1×10^{-5} and the hazard index of 1.0.

Arsenic was identified as a COC based on the results of the HHRA. However, arsenic was considered to be present within background levels based on the analysis presented in Comment Response Document No. 2 of the Site Characterization Report (Tetra Tech, December 2006). Because arsenic concentrations are currently within background levels, risks associated with this metal would not be included in the post-response action risk calculations. The statistical summary of pre-response action data illustrating that arsenic is within background levels and that mercury is present at concentrations greater than the ATC is presented in Table 5-2 and summarized in the Appendix.

Vanadium was identified as a COC based on the results of the HHRA. However, vanadium was not considered to be present within background levels based on the analysis presented in Comment Response Document No. 2 of the Site Characterization Report (Tetra Tech, December 2006). Although vanadium concentrations exceed levels that render it a COC, it is present at those concentrations at a soil depth below the water table, thus mitigating direct exposure. Recognizing that there is no direct exposure to soil below the water table, the exposure concentrations of vanadium would be within background levels.

Table 5-3 illustrates which samples will be removed, illustrates which samples are eliminated from the evaluation because they are below the water table, and shows the pre- and post-response action risks associated with those soil borings. Soil in some surface soil locations that have no exceedances of MDE's cleanup standards are being removed because the corresponding subsurface soil sample has concentrations greater than MDE's cleanup standards. The pre-response action risks are based on values presented in the HHRA in the Site Characterization Report (Tetra Tech, May 2006). The post-response action risks for those samples that have been removed are defined as "zero risk." The post-response action risks in those borings that remain exclude risks associated with arsenic and vanadium because their concentrations would then be considered to be within background. Arsenic concentrations were less than their background concentrations prior to any proposed response action at the site. Vanadium concentrations were less than their background concentrations once samples from below the water table were excluded from the analysis. A statistical summary of post-response action data illustrating that mercury satisfies the ATC requirements is presented in Table 5-4 and the Appendix.

Table 5-1
Cleanup Criteria
Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland

Parameter	Criterion	Test Method
Benzo(a)pyrene	≤ 400 µg/kg	EPA SW-846 8270C
Mercury (1)	--	EPA SW-846 6020
- Individual soil sample result	≤ 1 mg/kg	
- Post-response action 95% UCL for Block D soil	≤ 0.5 mg/kg	

1 The cleanup goal for mercury is based on the MDE ATC standard and a statistical analysis of mercury data across Block D.

EPA United States Environmental Protection Agency.
mg/kg Milligrams per kilogram.
UCL Upper confidence limit.
µg/kg Micrograms per kilogram.

Table 5-2
Statistical Comparisons to Background
Block D
Pre-Response Action Concentrations
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland

COPC	Background Criteria		Pre-Response Action Concentrations	
	Maximum	UCL	Maximum	UCL
Surface Soil				
Mercury	--	0.5	ND	ND
Arsenic	12	6	5	2.8
Vanadium	91	55	NA	NA
Subsurface Soil				
Mercury	--	0.5	3.3	1.3
Arsenic	12	6	8	2.7
Vanadium	91	55	91	64
Vanadium (Excluded Samples)[1]	91	55	51	45

1 Samples SB-248-15 and SB-249-10 excluded from the analysis because they were below the water table.

Concentrations reported in mg/kg.
NA No Data Available
ND Not Detected

Table 5-3
Pre- and Post-Response Action Risks
Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland
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Surface Soil Boring	Residential Risks (Pre-Response Action) [1]		Residential Risks (Post-Response Action) [2]	
	Cancer	Noncancer	Cancer	Noncancer
SB-239	4.2E-06	NA	4.2E-06	NA
SB-240	2.8E-06	NA	2.8E-06	NA
SB-241	2.9E-06	NA	2.9E-06	NA
SB-242	3.2E-06	NA	3.2E-06	NA
SB-243	3.6E-06	NA	3.6E-06	NA
SB-32A	8.6E-07	0.14	0	0
SB-33A	3.0E-06	0.13	0	0
SB-59	5.0E-06	0.20	1.2E-07	0.12
SB-60	1.9E-06	0.17	1.6E-07	0.15
SB-61	1.0E-06	0.16	2.1E-07	0.15
SB-62	1.9E-06	0.16	1.6E-07	0.13
SB-63	3.0E-06	0.23	2.9E-07	0.19
SB-64	2.3E-06	0.20	2.1E-07	0.17
SB-65	1.6E-06	0.09	4.9E-08	0.07
SB-66	1.5E-05	0.41	4.1E-07	0.19
SB-67	3.4E-06	0.27	2.4E-07	0.22

Table 5-3
Pre- and Post-Response Action Risks
Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland
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Subsurface Soil Boring	Residential Risks (Pre-Response Action) (1)		Residential Risks (Post-Response Action) (2)	
	Cancer	Noncancer	Cancer	Noncancer
SB-239	9.5E-06	NA	9.5E-06	NA
SB-240	3.1E-06	NA	3.1E-06	NA
SB-241	2.4E-06	NA	2.4E-06	NA
SB-242	3.3E-06	NA	3.3E-06	NA
SB-243	3.1E-06	NA	3.1E-06	NA
SB-244	NA	NA	NA	NA
SB-245	NA	NA	NA	NA
SB-246	NA	NA	NA	NA
SB-247	1.2E-05	1.2	4.4E-07	0.16
SB-248	2.1E-05	1.8	6.3E-07	0.17
SB-249	2.1E-05	2.1	7.2E-07	0.26
SB-32	1.5E-05	0.65	0	0
SB-33	3.1E-05	1.1	0	0
SB-59	6.7E-05	0.35	0	0
SB-60	1.4E-05	0.41	9.6E-06	0.33
SB-61	1.5E-05	0.24	9.4E-06	0.16
SB-62	1.3E-05	0.22	8.4E-06	0.14
SB-63	1.1E-05	0.23	8.0E-06	0.18
SB-64	1.1E-05	0.24	8.7E-06	0.20
SB-65	1.5E-05	0.24	9.0E-06	0.15
SB-66	1.3E-05	0.22	8.3E-06	0.16
SB-67	1.5E-05	0.31	1.0E-05	0.23

1 Soil boring location risks as identified in the Site Characterization Report (Tetra Tech, May 2006).

2 Soil boring location risks excluding those attributable to arsenic and vanadium (less than Block D-specific background reference concentration of 12 and 91 mg/kg, respectively).

Table 5-4
Statistical Comparisons to Background
Block D
Post-Response Action Concentrations
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland

COPC	Background Criteria		Post-Response Action Concentrations	
	Maximum	UCL	Maximum	UCL
Surface Soil				
Mercury	--	0.5	ND	ND
Subsurface Soil				
Mercury	--	0.5	0.14	0.08

Concentrations reported in mg/kg.

Section 6
Selected Technologies and Land Use Controls

6.1 INTRODUCTION

The selected technologies and LUCs for the proposed response action are provided in this section as required by the VCP guidance document. The NCP, 40 CFR Part 400.430 as implemented through CERCLA, served as a guide for the process used to arrive at the selected technology (i.e., selected alternative). This section includes the identification, screening, and evaluation of potential technologies and process options; preliminary and detailed screening of technologies and process options; selection of representative process options; development and detailed analysis of alternatives; comparative analysis of alternatives; and description of the proposed alternative.

The basis for technology identification and screening began with a series of discussions that included the following:

- Development of response action objectives (RAOs)
- Identification of Applicable or Relevant and Appropriate Requirements (ARARs)
- Identification of COCs
- Development of cleanup goals
- Identification of general response actions (GRAs)
- Identification of volumes or areas of the media of concern

6.1.1 Response Action Objectives

The purpose of this section is to develop RAOs for Block D. Development of RAOs is an important step in the CERCLA process. The RAOs are medium-specific goals that define the objective of conducting response actions to protect human health and the environment. The RAOs specify the COCs, potential exposure routes and receptors, and acceptable contaminant levels for

the site. The development of RAOs takes into consideration ARARs and To Be Considered (TBC) criteria.

This RAP addresses soil contamination at Block D. The RAOs were developed to permit consideration of a range of treatment and containment alternatives to obtain a Certificate of Completion from the MDE under a Tier IA (Residential Unrestricted) future land use and restriction category.

The following RAO was developed for Block D:

- Prevent unacceptable human health risk associated with exposure to surface and subsurface soil containing benzo(a)pyrene and mercury at concentrations greater than the cleanup goals.

6.1.2 Applicable or Relevant and Appropriate Requirements and To Be Considered Criteria

ARARs consist of the following:

- Any standard, requirement, criterion, or limitation under federal environmental law.
- Any promulgated standard, requirement, criterion, or limitation under a State environmental or facility-siting law that is more stringent than the associated federal standard, requirement, criterion, or limitation.

TBC criteria are nonpromulgated, nonenforceable guidelines or criteria that may be useful for developing a response action or are necessary for determining what is protective of human health and/or the environment. Examples of TBC criteria include United States Environmental Protection Agency's (EPA's) Drinking Water Health Advisories, Reference Doses (RfDs), and Cancer Slope Factors (CSFs).

One of the primary concerns during the development of response action alternatives for hazardous waste sites is the degree of human health and environmental protection offered by a given remedy. Section 121 of CERCLA requires that primary consideration be given to response alternatives that attain or exceed ARARs. The purpose of this requirement is to make CERCLA response actions consistent with other pertinent federal and state environmental requirements.

The NCP identifies the following three categories of ARARs [40 CFR Section 300.400 (g)]:

- Chemical-Specific: Health-risk-based numerical values or methodologies that establish concentration or discharge limits for particular contaminants. Examples include Maximum Contaminant Levels (MCLs) and Clean Water Act (CWA) Ambient Water Quality Criteria (AWQC). Table 6-1 presents a list of federal and State of Maryland chemical-specific ARARs and TBC criteria. These ARARs and TBC criteria provide some medium-specific guidance on "acceptable" or "permissible" concentrations of contaminants.

- Location-Specific: Restrict actions or contaminant concentrations in certain environmentally sensitive areas. Examples of these areas regulated under various federal laws include floodplains, wetlands, and locations where endangered species or historically significant cultural resources are present. Table 6-2 presents a list of federal and State of Maryland location-specific ARARs and TBC criteria. These ARARs and TBC criteria place restrictions on concentrations of contaminants or the conduct of activities solely based on the site's particular characteristics or location.

- Action-Specific: Technology- or activity-based requirements, limitations on actions, or conditions involving special substances that control or restrict response action. Examples of action-specific ARARs include wastewater discharge standards and performance or design standards, controls, or restrictions on particular types of activities. Table 6-3 presents a list of federal and State of Maryland action-specific ARARs and TBCs.

6.1.3 Chemicals Of Concern

The HHRA determined which compounds were the principal contributors to risk, also referred to as COCs. A COC is defined as a chemical that produces a cancer risk greater than 1×10^{-5} or a hazard quotient greater than 1.0. The determination of COCs was based on a Block D-wide approach rather than evaluation of results from individual soil borings. The COC determination is discussed in Section 5.

6.1.4 Cleanup Goals

Cleanup goals are chemical concentrations in environmental media that, when attained, should achieve RAOs. In general, cleanup goals are established with consideration given to the following:

- Protecting human receptors from adverse health effects
- Compliance with federal and State ARARs

Soil cleanup goals were determined for the COCs [benzo(a)pyrene and mercury] in Section 5.3, and attainment of the cleanup goals was discussed in Section 5.4.

6.1.5 General Response Actions and Action-Specific ARARs

GRAs are broadly defined response approaches that may be used (by themselves or in combination with one or more of the others) to attain RAOs. GRAs describe categories of actions that could be implemented to satisfy or address a component of an RAO for the site. Response action alternatives will then be composed using GRAs individually or in combination to meet the RAOs. The response action alternatives, composed of GRAs, will be capable of achieving the RAOs for contaminated soil at Block D.

The following GRAs were considered for soil at Block D:

- No Action
- Limited Action: LUCs
- Containment
- Removal
- In-Situ Treatment
- Ex-Situ Treatment
- Disposal

6.1.6 Estimated Volume of Contaminated Soil

Preliminary surface areas and volumes of soil that would need to be managed to allow for future land use as VCP Tier 1A (Residential Unrestricted) were estimated as described in Section 8. It is estimated that a total volume of approximately 800 in-place cubic yards (cy) of contaminated soil with a surface area of approximately 7,000 square feet (sf) contain concentrations of COCs greater than the cleanup goals.

6.2 SCREENING OF TECHNOLOGIES AND PROCESS OPTIONS

This section identifies, screens, and evaluates the potential technologies and process options that may be applicable to develop the response action alternatives for soil at Block D. The primary objective of this phase of the RAP is to develop an appropriate range of technologies and process options that will be used for developing the response action alternatives.

Technology screening evaluation is performed in this section with the completion of the following analytical steps:

- Identification and preliminary screening of technologies and process options;
- Detailed screening of technologies and process options that pass the preliminary screening step;
- Evaluation and selection of representative process options;

In this section, a variety of technologies and process options are identified under each GRA (discussed in Section 6.1.5) and screened. The selection of technologies and process options for initial screening is based on the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (EPA, October 1988). The screening is first conducted at a preliminary level to focus on relevant technologies and process options. Then the screening is conducted at a more detailed level based on certain evaluation criteria. Finally, process options are selected to represent the technologies that have passed the screening and detailed evaluation.

The evaluation criteria for detailed screening of technologies and process options that have been retained after the preliminary screening are effectiveness, implementability, and cost. The following are descriptions of these evaluation criteria:

- Effectiveness
    - Protection of human health and environment; reduction in toxicity, mobility, or volume; and permanence of solution.
    - Ability of the technology to address the estimated areas or volumes of contaminated media.
    - Ability of the technology to meet the cleanup goals identified in the RAOs.
    - Technical reliability (innovative versus proven) with respect to contaminants and site conditions.

- Implementability

    - Overall technical feasibility at the site.
    - Availability of vendors, mobile units, storage and disposal services, etc.
    - Administrative feasibility.
    - Special long-term maintenance and operation requirements.

- Cost
    - Capital cost.
    - Operation and maintenance (O&M) costs.

Technologies and process options will be identified for the soil response action in the following sections.

Section 6.3 discusses the development of the response action alternatives developed from the process options retained in this section and provides a description of the conceptual design for these alternatives. This section also presents an evaluation of each response action alternative with respect to the criteria of the NCP of 40 CFR Part 300. These criteria and their relative importance are also discussed in this section.

Section 6.4 compares the analyses that were presented for each of the response action alternatives. The criteria for comparison are identical to those used for the detailed analysis of individual alternatives.

6.2.1 Preliminary Screening of Technologies and Process Options

This section identifies and screens technologies and process options for soil at a preliminary stage based on implementation with respect to site conditions and COCs. Table 6-4 summarizes the preliminary screening of technologies and process options applicable to soil. This table presents the GRAs, identifies the technologies and process options, and provides a brief description of each process option followed by screening comments. The technologies and process options that pass the initial screening step are retained for detailed screening in Section 6.2.2.

The technologies and process options for the soil response action that will be retained for detailed screening are shown below.

General Response Action	Response Action Technology	Process Option
No Action	None	Not Applicable
Removal	Excavation	Mechanical
Disposal	Off-Site	Hazardous/Non-Hazardous Waste Landfill

6.2.2 Detailed Screening of Soil Treatment Technologies and Process Options

This section identifies and develops the representative process options, through a detailed screening procedure, which will be used in the formulation of response action alternatives to accomplish the RAOs and meet the cleanup goals identified for soil in Section 5.

6.2.2.1 No Action

No Action consists of maintaining status quo at Block D. As required under CERCLA regulations, the No Action alternative is carried through to provide a baseline for comparison of alternatives and their effectiveness in mitigating risks posed by site contaminants.

6.2.2.2 Removal

The technology considered under this GRA is excavation.

Excavation

A variety of equipment such as front-end loaders, hydraulic excavators, backhoes, and other mechanical equipment could be used to perform the excavation. The type of equipment selected must take into consideration several factors, such as the type of material to be removed, the load-bearing capacity of the ground surrounding the removal area, the depth and areal extent of removal, the required rate of removal, and the elevation of the groundwater table. Excavation is a preferred technology for the removal of well-consolidated material such as soil with significant load-bearing capacity (i.e., greater than 1,500 pounds per square foot).

Excavation logistics must take into account the available space for stormwater management, equipment decontamination, operating the equipment, loading, unloading, and stockpiling the

excavated material, location of the site, etc. After excavation is completed, the location is filled and graded with clean fill material or treated soils.

Effectiveness

Shallow excavation is a well-proven and effective method of removing soil with COC concentrations greater than the cleanup goals from a site. Properly designed excavation would remove the soil with COC concentrations greater than the cleanup goals, and the remaining soil would not pose an unacceptable risk to human health or the environment.

Implementability

Excavation of soil with COC concentrations greater than the cleanup goals at Block D would be implementable. Excavation equipment is readily available. This technology is well proven and a common solution in the construction/remediation industry. During excavation, site-specific health and safety procedures and Occupational Safety and Health Administration (OSHA) regulations would be complied with to ensure that the exposure of the workers to COCs is minimized.

The excavation at Block D would extend to approximately 15 feet bgs. The excavation would be cut-back or stepped, supported by trench boxes or personnel would not be permitted to enter the excavation. Existing asphalt parking surfaces, etc. would have to be removed prior to excavation.

Cost

Cost of excavation at Block D on a unit volume basis would be low to moderate.

Conclusion

Excavation is retained in combination with other process options for the development of response action alternatives.

6.2.2.3 Disposal

The technology considered under this GRA is off-site landfilling.

Off-Site Landfilling

Off-site landfilling would consist of transporting the excavated soil for burial at a permitted off-site treatment, storage, and disposal facility (TSDF). Excavated soil characterized as Resource Conservation and Recovery Act (RCRA) non-hazardous waste could be disposed in a RCRA Subtitle D solid waste landfill. Excavated soil characterized as RCRA hazardous waste would have to be disposed in a RCRA Subtitle C TSDF.

Effectiveness

Off-site landfilling does not permanently or irreversibly reduce contaminant toxicity or mobility. However, although CERCLA preference for treatment relegates landfilling to a less preferable option, this technology can be an effective disposal option for contaminated soil and can be used in conjunction with treatment alternatives. Off-site landfills are only permitted to operate if they meet certain requirements of design and operation governing foundations, liners, leak detection, leachate collection and treatment, daily cover, post-closure inspections and monitoring, etc., which ensure the effectiveness of these facilities. The requirements of a RCRA hazardous (Subtitle C) TSDF are typically more stringent than those of a RCRA non-hazardous (Subtitle D) solid waste landfill.

Implementability

Off-site landfilling would be easily implementable. Facilities and services are available. Disposal at a RCRA Subtitle D landfill may require certain pre-treatment, mainly the removal of free liquids but, because soil would only be excavated to a depth of 15 feet bgs or no deeper than to the depth of the zone of saturation, associated water should be minimal and this requirement should be easy to meet. In addition, a waste profile would have to be prepared, indicating the contaminant concentrations and their leachability potential. Disposal of any soil containing mercury with Toxicity Characteristic Leaching Procedure (TCLP) levels exceeding hazardous criteria would require pre-treatment to meet Land Disposal Restrictions (LDRs) prior to landfilling. If treatment achieves Universal Treatment Standards (UTSs), then disposal of the treated soil in a RCRA Subtitle D landfill (i.e., non-hazardous) would be permissible. If not, the treated soil would need to disposed in a RCRA Subtitle C (i.e., hazardous) TSDF.

Cost

Cost of off-site landfilling would be low to moderate depending on volume and distance to the disposal facility.

Conclusion

Off-site landfilling is retained in combination with other process options for the development of response action alternatives.

6.2.3 Selection of Representative Process Options

The following GRA, technologies, and process options, under the GRAs as noted, are retained for the development of response action alternatives:

- No Action
- Removal: Excavation
- Disposal: Off-Site RCRA Non-Hazardous (Subtitle D) Landfill, and Off-Site RCRA Hazardous (Subtitle C) TSDF

The next step is to select representative process options from each technology to assemble an adequate variety of alternatives and evaluate the alternatives in sufficient detail to aid in the final selection process. All process options listed above are retained for the formulation of alternatives because the processes are sufficiently varied in their functions.

6.3 DEVELOPMENT AND DETAILED ANALYSIS OF ALTERNATIVES

This section discusses the development of the soil response action alternatives from the process options retained above and provides a description of the conceptual designs for the alternatives. This section also presents an evaluation of each response action alternative with respect to the criteria of the NCP of 40 CFR Part 300. The criteria and the relative importance of these criteria are also discussed in this section.

6.3.1 Development of Alternatives

The technologies and process options retained after detailed screening in Section 6.2.3 were assembled into the following alternatives:

S-1. No Action:

This alternative is required by the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (EPA, 1988) as a baseline for comparison to other alternatives.

S-2. Excavation to Allow Unrestricted Residential Site Use and Off-Site Treatment and Disposal:

This alternative would remove soil with COC concentrations greater than the cleanup goals to the extent necessary to allow unrestricted residential use of Block D. This would require excavation of the soil with COC concentrations greater than the cleanup goals identified in Section 5.3.

It is assumed that all excavated soil would be disposed at an off-site permitted RCRA Subtitle D landfill. If any excavated material fails TCLP testing, the material would be disposed at an off-site permitted RCRA Subtitle C TSDF. The excavated areas would then be backfilled with certified clean imported fill material and Block D would be restored to pre-response action conditions. Because the soil remaining on site would no longer contain concentrations of COCs that could be harmful to hypothetical future residential receptors, soil-related LUCs would not be required.

6.3.2 Description and Detailed Analysis of Alternatives

This section presents a description of the conceptual design of each alternative, followed by the detailed analysis using the nine criteria of the NCP under 40 CFR Part 300. The evaluation criteria are discussed below.

6.3.2.1 Evaluation Criteria

In accordance with the NCP (40 CFR Part 300.430), the following nine criteria are used for the evaluation of response action alternatives:

- Overall Protection of Human Health and the Environment
- Compliance with ARARs
- Long-Term Effectiveness and Permanence
- Reduction of Toxicity, Mobility, or Volume through Treatment
- Short-Term Effectiveness
- Implementability
- Cost
- State Acceptance
- Community Acceptance

Overall Protection of Human Health and the Environment

Alternatives must be assessed for adequate protection of human health and environment, in the short and long term, from unacceptable risks posed by hazardous substances or contaminants present at Block D by eliminating, reducing, or controlling exposure to levels exceeding response action goals. Overall protection draws on the assessments of other evaluation criteria, especially long-term effectiveness and permanence, short-term effectiveness, and compliance with ARARs.

Compliance with ARARs

Alternatives must be assessed to determine whether they attain ARARs under federal environmental laws and State environmental or facility siting laws. If one or more regulations that are applicable cannot be complied with, a waiver must be invoked. Grounds for invoking a waiver would depend on the following circumstances:

- The alternative will attain a standard of performance that is equivalent to that required under the otherwise applicable standard, requirement, or limitation through use of another method or approach.

- A State requirement has not been consistently applied or the State has not demonstrated the intention to consistently apply the promulgated requirement in similar circumstances at other response actions within the State.

Long-Term Effectiveness and Permanence

Alternatives must be assessed for the long-term effectiveness and permanence they offer, along with a degree of certainty that the alternative will be successful. Factors that should be considered, as appropriate, include the magnitude of residual risk (i.e., risks posed by untreated

waste or treatment residuals) and adequacy and reliability of controls (i.e., controls needed to manage untreated waste or treatment residuals).

Reduction of Toxicity, Mobility, or Volume through Treatment

The degree to which the alternative employs recycling or treatment that reduces the toxicity, mobility, or volume of the waste must be assessed, including how treatment is used to address the principal threats posed by the site.

Short-Term Effectiveness

The short-term impacts of the alternative must be assessed considering the following:

- Short-term risks that might be posed to the community during implementation.
- Potential impacts on workers during the response action and the effectiveness and reliability of protective measures.
- Potential environmental impacts of the response action and the effectiveness and reliability of mitigation measures during implementation.

Time until protection is achieved.

Implementability

The ease or difficulty of implementing the alternatives must be assessed by considering technical feasibility, administrative feasibility, and availability of services and materials.

Cost

Capital costs must include both direct and indirect costs. Annual O&M costs must be provided. A net present worth (NPW) value of the capital and O&M costs must also be provided. Typically, the cost estimate accuracy range is plus 50 percent to minus 30 percent. Because there are no costs associated with the first alternative (No Action), a cost comparison of the two alternatives will not be performed.

State Acceptance

The MDE will review the proposed RAP, and will inform Lockheed Martin in writing, on or before the end of a 75-day review period, whether the RAP has been approved or rejected. If the proposed RAP is rejected, MDE will state the modifications necessary to receive approval. The

75-day MDE review period will begin after a notice of the proposed RAP is published in a local newspaper and a sign is posted at the property indicating notice of intent to conduct the RAP.

Community Acceptance

The public will be afforded the opportunity to review and provide commentary on the proposed RAP. The MDE will receive written comments from the public for 30 days after publication of the newspaper notice and posting of the sign at the property or 5 days after the public informational meeting, whichever is later. In addition, a public informational meeting will be held within 40 days after publication of the newspaper notice.

Relative Importance of Criteria

Among the nine criteria, the threshold criteria are considered to be:

- Overall Protection of Human Health and the Environment
- Compliance with ARARs

The threshold criteria must be satisfied for an alternative to be eligible for selection.

Among the remaining criteria, the following five are considered to be the primary balancing criteria:

- Long-Term Effectiveness and Permanence
- Reduction of Toxicity, Mobility, or Volume
- Short-Term Effectiveness
- Implementability
- Cost (not applicable to Block D)

The balancing criteria are used to weigh the relative merits of alternatives.

The remaining two of the nine criteria, State acceptance and community acceptance, are considered to be modifying criteria that must be considered during response action selection. These last two criteria can only be evaluated after the MDE and community have reviewed the proposed RAP. Therefore, this RAP addresses only seven of the nine criteria. The remaining two criteria will be addressed through the RAP review, comment, and approval process.

6.3.2.2 Selection of Response Action

The selection of a remedy is a two-step process. The first step consists of identification of a preferred alternative and presentation of the alternative in a proposed RAP submitted to MDE and the community for review and comment. The preferred alternative must meet the following criteria:

- Protection of human health and the environment.
- Compliance with ARARs.
- Cost effectiveness in protecting human health and environment and in complying with ARARs.
- Utilization of permanent solutions and alternate treatment technologies or resource recovery technologies to the maximum extent practicable.

The second step consists of the review of the comments and consultation with the MDE to determine whether or not the preferred alternative continues to be the most appropriate response action for the site.

6.3.3 Detailed Analysis of Alternatives

6.3.3.1 Alternative S-1: No Action

Description of Alternative S-1

This alternative is required by the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (EPA, 1988) as a baseline for comparison to other alternatives.

Detailed Analysis of Alternative S-1

Overall Protection of Human Health and Environment

Alternative S-1 would not be protective of human health and the environment. Concentrations of benzo(a)pyrene and mercury would remain in the soil at levels that exceed the established site-specific cleanup goal for human health. Therefore, the RAOs for Block D would not be achieved.

Compliance with ARARs

Alternative S-1 would not achieve human health site-specific cleanup goals.

Long-Term Effectiveness and Permanence

Alternative S-1 would not be effective in the long term because soil COCs would remain on site and pose potential human health risks. Although concentrations of soil COCs might gradually decrease to acceptable levels over a long duration of time because of natural processes, monitoring would not be conducted to verify this.

Reduction of Toxicity, Mobility, and Volume through Treatment

Alternative S-1 does not employ any treatment.

Short-Term Effectiveness

There are no relevant issues under Alternative S-1 because no action would occur.

Implementability

There are no implementability concerns for Alternative S-1 because no action would be implemented.

Cost

There are no costs associated with Alternative S-1.

6.3.3.2 Alternative S-2: Excavation to Allow Unrestricted Residential Site Use and Off-Site Treatment and Disposal

Description of Alternative S-2

Alternative S-2 is illustrated on Figure 8-1 and would consist of two major components: (1) excavation to allow unrestricted residential site use and (2) off-site treatment and disposal.

Component 1: Excavation to Allow Unrestricted Site Use

Figure 8-1 shows the areas of Block D that would be excavated to meet the cleanup goals. As part of site preparation, a material handling pad, decontamination zones, and haul routes would be

constructed to allow equipment to access the areas to be excavated and these areas would be cleared, if required. Excavation of soil to a depth of 15 feet would be conducted using a bulldozer, front-end loader, or similar equipment.

Post-removal/confirmation samples would be collected from the sidewalls and base of the excavation and analyzed for benzo(a)pyrene and mercury.

Following excavation and after post-removal/confirmation sample results confirm that soil with concentrations greater than the cleanup goals has been removed, the excavated areas would be backfilled with certified clean material, graded to original contours, and restored to pre-response action conditions.

Component 2: Off-Site Treatment and Disposal

The following are the expected actions for the excavated soil:

- Excavated material characterized as RCRA non-hazardous waste would be transported to a permitted RCRA Subtitle D facility for direct landfilling.
- Excavated soil that fails TCLP testing would be characterized as RCRA hazardous waste and would be transported to a permitted RCRA Subtitle C TSDF for treatment to meet TCLP limits followed by direct landfilling.

The volumes estimated for disposal at the various facilities would need to be verified based on sampling and analysis of stockpiled soil, followed by profiling as necessary for each facility.

Detailed Analysis of Alternative S-2

Overall Protection of Human Health and Environment

Alternative S-2 would be protective of human health and the environment. The removal of soil with COC concentrations greater than the cleanup goals will reduce potential risk for any future development. Block D would be suitable for revegetation and potential use as a natural and recreational corridor. All of the RAOs for Block D would be achieved.

Compliance with ARARs

Alternative S-2 would achieve the human health site-specific cleanup goal established in Section 5. Location-specific and action-specific ARARs would be complied with in substance, in particular, the following:

- RCRA regulations including Identification and Listing of Hazardous Wastes and LDRs
- OSHA regulations
- Maryland Hazardous Waste Management System Regulations
- Maryland Regulation of Water Supply, Sewage Disposal, and Solid Waste
- Maryland General Permit for Construction Activity
- Maryland OCP

Long-Term Effectiveness and Permanence

Alternative S-2 would be effective in the long term because the COCs that present an unacceptable risk to residential human receptors would be removed from Block D and deposited in a suitable landfill outside the site, resulting in residual levels that would no longer pose an unacceptable risk to these receptors.

Reduction of Toxicity, Mobility, and Volume through Treatment

Alternative S-2 would permanently and irreversibly reduce the mobility of the contaminants to the environment by depositing them in a RCRA-permitted landfill where their exposure to the environment would be adequately controlled. However, unless the excavated material is treated prior to landfilling, Alternative S-2 would not reduce the toxicity of the contaminated soil.

Short-Term Effectiveness

Alternative S-2 would be effective in the short term. Dust suppression and control measures would be implemented to minimize the emission of contaminated soil particulates during onsite response action activities. Erosion control measures would minimize the migration of COCs into nearby streams. Transportation of the contaminated soil to an off-site landfill would be conducted in suitable containers and by reputable transporters. In the unlikely event of a traffic accident releasing contaminated soil to the environment, an immediate hazard to the community would not be posed because of the non-volatile nature and relatively low solubility of the COCs present in the soil. However, should such an event occur, measures to prevent washing away of the soil by storm events would be warranted. Workers on site would be adequately protected if suitable

health and safety procedures are followed. The approximate timeframe for implementation of this alternative is 3 weeks.

Implementability

Alternative S-2 is implementable. Excavation equipment considered under this alternative are typical in the construction industry and are readily available from several local sources. Time to coordinate with stakeholders and obtain necessary permits can easily be built into the schedule. Suitable landfills are available for treatment and/or direct disposal of the excavated soil and have been identified at nearby locations.

Cost

The capital cost for Alternative S-2 is $275,000. There are no annual O&M costs associated with Alternative S-2. The NPW value of the capital and O&M costs is $275,000.

6.4 COMPARATIVE ANALYSIS OF ALTERNATIVES

This section compares the analyses presented for each of the response action alternatives in Section 6.3. The criteria for comparison are identical to those used for the detailed analysis of individual alternatives.

6.4.1 Soil

The following response action alternatives for soil are being compared in this section:

- Alternative S-1: No Action
- Alternative S-2: Excavation to Allow Unrestricted Residential Site Use and Off-Site Treatment and Disposal

6.4.1.1 Overall Protection of Health and the Environment

Alternative S-1 would not be protective. Alternative S-2 would be protective.

6.4.1.2 Compliance with ARARs and TBCs

There are no chemical-specific ARARs for Block D soil, only chemical-specific TBCs that are the cleanup goals developed in Section 5. Alternative S-1 would not comply with the chemical-specific TBCs and the location-specific ARARs. Action-specific ARARs do not apply to Alternative S-1. Alternative S-2 would comply with the chemical-specific TBCs and location- and action-specific ARARs.

6.4.1.3 Long-Term Effectiveness and Permanence

Alternative S-1 would not be effective in the long term and offers no permanent solution. Alternative S-2 would be effective in the long term because it offers a remedy that removes the benzo(a)pyrene and mercury from Block D without the need for LUCs to prevent residential and commercial/industrial development and recreational use.

6.4.1.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Alternatives S-1 and S-2 do not employ any treatment.

6.4.1.5 Short-Term Effectiveness

Alternative S-1 would not present short-term risks to workers, the community, and the environment because no actions would be taken. Short-term risks to the community, workers, and the environment associated with Alternative S-2 could be adequately controlled.

Alternative S-1 would not achieve the soil RAOs. The approximate timeframe for implementation and attainment of RAOs would be 3 weeks for Alternative S-2.

6.4.1.6 Implementability

There is no action to be implemented for Alternative S-1. Alternative S-2 would be easy to implement because no on-site treatment or long-term maintenance would be required.

6.4.1.7 Cost

There are no costs associated with Alternative S-1. The capital and NPW cost for Alternative S-2 is $275,000.

6.4.2 Summary of Comparative Analysis of Alternatives

Table 6-5 summarizes the comparative analysis of the two soil response action alternatives.

6.5 PROPOSED ALTERNATIVE

The proposed alternative is Alternative S-2. This alternative would remove soil with COC concentrations greater than the cleanup goals to the extent necessary to allow unrestricted residential use of Block D. This would require excavation of the soil with COC concentrations greater than the cleanup goals identified in Section 5. Figure 8-1 shows the areas of Block D that would be excavated to meet the cleanup goals. As part of site preparation, temporary haul routes would be constructed to allow equipment to access the areas to be excavated and these areas would be cleared using a bulldozer or similar equipment and mulched. Excavation of soil would be conducted using a bulldozer, front-end loader, hydraulic excavators, backhoe, or similar equipment.

Post-removal/confirmation samples would be collected from the sidewalls and base of the excavation and analyzed for benzo(a)pyrene and mercury.

Following excavation and after post-removal/confirmation sample results confirm that soil with COC concentrations greater than the cleanup goals has been removed, the excavated areas would be backfilled with clean material, graded to original contours, and restored to pre-response action conditions.

It is assumed that all excavated soil would be disposed at an off-site permitted RCRA Subtitle D landfill. If any excavated material fails TCLP testing, the material would be disposed at an off-site permitted RCRA Subtitle C TSDF. Because the soil remaining on site would no longer contain concentrations of COCs that could be harmful to hypothetical future residential receptors, soil-related LUCs would not be required.

Table 6-1

Chemical-Specific ARARs
Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Federal				
Cancer Slope Factors (CSFs)	NA	To Be Considered	CSFs are guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	CSFs would be considered for development of human health protection PRGs for soil at this site.
Reference Doses (RfDs)	NA	To Be Considered	RfDs are guidance values used to evaluate the potential non-carcinogenic hazard caused by exposure to contaminants.	RfDs would be considered for development of human health protection PRGs for soil at this site.
State				
Cleanup Standards for Soil and Groundwater	Maryland Environmental Article 7-508/7-208	Applicable	This document presents the approach and supporting documentation used to develop numeric cleanup standards for hazardous substances in the soil and groundwater for the State of Maryland.	These standards maybe considered for use in determining cleanup standards in the absence of a site-specific risk assessment.

ARARs Applicable or Relevant and Appropriate Requirements.
CSFs Cancer slope factors.
NA Not applicable.
PRGs Preliminary remediation goals.
RfDs Reference doses.

Table 6-2

Location-Specific ARARs
Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Federal				
Endangered Species Act Regulations	50 CFR Parts 81, 225, and 402	Potentially Applicable	This act requires federal agencies to take action to avoid jeopardizing the continued existence of federally listed endangered or threatened species.	If a site investigation or remediation could potentially affect an endangered species or their habitat, these regulations would apply (There have been no endangered species or their habitat identified at the MRC).
Historic Sites Act Regulations	36 CFR Part 62	Potentially Applicable	Requires federal agencies to consider to existence and location of landmarks on the National Registry of Natural Landmarks to avoid undesirable impacts on such landmarks.	The existence of National Landmarks would be identified prior to remedial activities on site including remedial investigations (There have been no National Landmarks identified at the MRC).
State				
Nongame and Endangered Species Conservation Act	Annotated Code of Maryland 10-2A-01; COMAR 08.03.08 and 08.02.12.	Potentially Applicable	Requires State agencies to use their authority to maintain and enhance nongame wildlife and endangered species populations.	If a site investigation or remediation could potentially affect an endangered species or their habitat, these regulations would apply (There have been no endangered species or their habitat identified at the MRC).
Division of Historical and Cultural Programs	Annotated Code of Maryland 5A	Potentially Applicable	The Maryland Historic Trust formed in 1961 to preserve, protect, and enhance districts, sites, buildings, structures, and objects significant in the prehistory, history, upland and underwater archeology, architecture, engineering, and culture of the State.	The existence of Maryland historic sites would be identified prior to remedial activities on site including remedial investigations (There have been no historic sites identified at the MRC).

ARARs Applicable or Relevant and Appropriate Requirements.
CFR Code of Federal Regulations.
COMAR Code of Maryland Regulations.
MRC Middle River Complex.

Table 6-3

Action-Specific ARARs
Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland
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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Federal				
RCRA Regulations, Identification and Listing of Hazardous Wastes	40 CFR Part 261	Potentially Applicable	Defines the listed and characteristic hazardous wastes subject to RCRA. Appendix II contains the TCLP.	These regulations would apply when determining whether or not a solid waste is hazardous, either by being listed or by exhibiting a hazardous characteristic, as described in the regulations.
CAA Regulations, NAAQSs	40 CFR Part 50	Potentially Applicable	Establishes primary (health-based) and secondary (welfare-based) air quality standards for carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur oxides emitted from a major source of air emissions. The NAAQSs form the basis for all regulations promulgated under the CAA. However, the NAAQSs themselves are non-enforceable and are not ARARs themselves.	Site remediation activities must comply with NAAQSs. The principal application of these standards is during response action activities resulting in exposures through dust and vapors. In general, emissions from CERCLA activities are not expected to qualify as a major source and are therefore not expected to be applicable requirements. However, the requirements may be determined to be relevant and appropriate for non-major sources with significantly similar emissions.
RCRA Regulations, LDRs	40 CFR Part 268	Potentially Applicable	This regulation prohibits the land disposal of untreated hazardous wastes and provides criteria for the treatment of hazardous waste prior to land disposal.	Response actions that involve excavating, treating, and redepositing hazardous soil would comply with LDRs. However, consolidation of contaminated soil within Block B for the purposes of reducing the size of the contaminated area may not constitute land disposal.
OSHA Regulations, General Industry Standards	29 CFR Part 1910	Applicable	Requires establishment of programs to assure worker health and safety at hazardous waste sites, including employee training requirements.	These regulations would apply to all response activities.
OSHA Regulations, Occupational Health and Safety Regulations	29 CFR Part 1910, Subpart Z	Potentially Applicable	Establishes permissible exposure limits for workplace exposure to a specific listing of chemicals.	Standards are applicable for worker exposure to OSHA hazardous chemicals during response action activities.

Table 6-3

Action-Specific ARARs
Block D
Soil Response Action Plan
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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
OSHA Regulations, Recordkeeping, Reporting, and Related Regulations	29 CFR Part 1904	Potentially Applicable	Provides recordkeeping and reporting requirements applicable to response action activities.	These requirements apply to all site contractors and subcontractors and must be followed during all site work.
OSHA Regulations, Health and Safety Standards	29 CFR Part 1926	Potentially Applicable	Specifies the type of safety training, equipment, and procedures to be used during the site investigation and response action.	All phases of the response action would be executed in compliance with this regulation.
RCRA Regulations, Contingency Plan and Emergency Procedures	40 CFR 264, Subpart D	Potentially Relevant and Appropriate	Outlines requirements for emergency procedures to be followed in case of an emergency.	The administrative requirements established in this rule would be met for response actions involving the management of hazardous waste.
RCRA Regulations, Preparedness and Prevention	40 CFR Part 264, Subpart C	Potentially Relevant and Appropriate	Outlines requirements for safety equipment and spill control for hazardous waste facilities. Facilities must be designed, maintained, constructed, and operated to minimize the possibility of an unplanned release that could threaten human health or the environment.	Safety and communication equipment would be incorporated into all aspects of the response action process, and local authorities would be familiarized with site operations.
RCRA Regulations, Standards for Owners and Operators of Hazardous Waste TSDFs.	40 CFR Part 264	Potentially Relevant and Appropriate	Establishes minimum national standards defining the acceptable management of hazardous wastes for owners and operators of facilities that treat, store, or dispose of hazardous wastes.	If response actions involving management of RCRA wastes at an off-site TSDF or if RCRA wastes are managed on site, the requirements of this rule would be followed.
RCRA Regulations, Use and Management of Containers	40 CFR Part 264, Subpart I	Potentially Relevant and Appropriate	Sets standards for the storage of containers of hazardous waste.	This requirement would apply if a response action alternative involves the storage of a hazardous waste (i.e., contaminated soil) in containers prior to treatment or disposal.
Migratory Bird Treaty Act	16 USC 703-711	Potentially Applicable	Protects migratory birds and their nests.	Proposed response action shall not kill migratory birds or destroy their nests and eggs.

Table 6-3

Action-Specific ARARs
Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland
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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
State				
Maryland Hazardous Waste Management System	Title 26, Subtitle 13 of the COMAR	Potentially Applicable	Requires hazardous waste generators to ship their hazardous waste to a facility permitted to accept it or, with the appropriate permits, treat it themselves. Requires use of a certified hauler to ship hazardous waste off site, and shipment must be accompanied by a manifest. Requires compliance with regulations on the storage of the waste and specifies procedures to prevent the occurrence of circumstances that would threaten human health or the environment.	These regulations would apply if waste on site was deemed hazardous and needed to be stored, transported, or disposed of properly.
Maryland Regulation of Water Supply, Sewage Disposal, and Solid Waste	Title 26, Subtitle 4 of the COMAR	Potentially Applicable	Sets the requirements for construction and operation for solid waste disposal facilities.	These requirements would apply if on-site waste was deemed a non-hazardous solid waste and needed to be stored, transported, or disposed of properly.
Maryland General Permit for Construction Activity	Title 26, Subtitle 17 of the COMAR	Potentially Relevant and Appropriate	Establishes requirements for stormwater management and erosion and sediment control at construction sites.	Response actions involving excavation would require submittal of an erosion and sediment control plan and a stormwater management plan.

ARARs	Applicable or Relevant and Appropriate Requirements.
CAA	Clean Air Act.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act.
CFR	Code of Federal Regulations.
COMAR	Code of Maryland Regulations.
LDRs	Land Disposal Restrictions.
MDE	Maryland Department of the Environment.
NAAQSs	National Ambient Air Quality Standards.
OSHA	Occupational Safety and Health Act.
RCRA	Resource Conservation and Recovery Act.
TCLP	Toxicity Characteristic Leaching Procedure.
TSDF	Treatment, Storage, and Disposal Facility.
USC	United States Code.

Table 6-4

Preliminary Screening of Technologies and Process Options, Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland
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General Response Action	Response Action Technology	Process Option	Description	Screening Comment
No Action	None	Not applicable	No activities conducted at Block D to address contamination. Biodegradation of mercury would not occur through natural attenuation processes.	Required by the CERCLA. Retain for baseline comparison to other technologies.
Limited Action	LUCs	Engineered Controls: Physical Barriers/ Security Guards	Fencing, markers, warning signs, and monitoring to restrict site access.	Eliminate. This technology would leave soil contaminants in place leaving portions of Block D unsuitable for residential use. Does not meet the RAO of unrestricted site use.
		Administrative Controls: Deed or Site Use Restrictions	Administrative action using property deeds or other land use prohibitions to restrict future site activities. Five-year reviews would be conducted to evaluate if additional response actions would be required.	Eliminate. This technology would leave soil contaminants in place leaving portions of Block D unsuitable for residential use. Does not meet the RAO of unrestricted site use.
	Monitoring	Sampling and Analysis	Sampling and analysis of groundwater to evaluate if additional response actions would be warranted.	Addressed in Groundwater Response Action Plan.
Containment	Cover/Barrier	Soil Cover/Multi-Media Cap	Use of semipermeable or low permeability barriers to minimize direct exposure to contaminants and potential migration to groundwater.	Eliminate. This technology would leave soil contaminants in place leaving portions of Block D unsuitable for residential use. Does not meet the RAO of unrestricted site use.
	Erosion Control	Rip-Rap Cover/Vegetation	Use of gravel/cobbles or dense plant growth to minimize migration of wastes/contaminated soils.	Eliminate. Block D is relatively flat and erosion is not a concern. However, revegetation is retained to allow future site use as a green space.
Removal	Excavation	Mechanical	Means for removal of contaminated soils by backhoe, bulldozer, loader, etc.	Retain for removal of contaminated soil.
In-Situ Treatment	Thermal	Vitrification	Use of high-temperature melting to fuse inorganic contaminants into a glass matrix within vadose zone or the use of moderate temperature heating to volatilize contaminants and remove them from the vadose zone.	Eliminate. This technology presents implementability concerns due to the shallow groundwater table and high moisture content of the soil.

Table 6-4

Preliminary Screening of Technologies and Process Options, Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland

General Response Action	Response Action Technology	Process Option	Description	Screening Comment
In-Situ Treatment (Continued)	Thermal (Continued)	Radio-Frequency Heating	Use of radio-frequency energy to heat soil and cause volatilization of contaminants	Eliminate. Limited thickness and shallow depth of contaminated soil renders this technology difficult to implement with limited, commercially available equipment. Not applicable for treatment of mercury.
		Electrical Heating	Use of an electrical blanket or electrical heating elements within slotted pipes to volatilize contaminants	Eliminate. The shallow depth to groundwater renders this technology difficult to implement. Not applicable for treatment of mercury.
	Physical/ Chemical	Soil Flushing/ Chemical Extraction	Use of water/solvents to remove contaminants from the vadose zone by flushing and collecting the contaminated wastewater in the saturated zone followed by above-ground pump and treat.	Eliminate. The result of this technology would be the migration of COCs from soil to groundwater. Therefore, the implementation of this technology could contaminate "clean" groundwater or contaminate the groundwater with contaminants not compatible with existing groundwater contaminants.
		Dynamic Underground Stripping	Steam injection at the periphery of the contaminated area resulting in the vaporization of volatile compounds bound to soil and the movement of contaminants to a centrally located extraction well.	Eliminate. Difficult to implement due to the shallow groundwater table. Not applicable for treatment of mercury.
		Soil Vapor Extraction	Use of vacuum and possibly air sparging to volatilize contaminants.	Eliminate. Not applicable for treatment of mercury.
		Chemical Fixation/ Solidification	Mixing of chemical agents in the vadose zone to chemically bind, solidify, and reduce contaminant mobility.	Eliminate. COCs would remain at the site. Not suitable for unrestricted residential use of the site.
		Electrokinetic Separation	Use of electrodes with the application of direct current-based electrical fields to induce the migration of metallic contaminants from soil towards electrodes or to induce electrochemical reactions to destroy selected organic contaminants.	Eliminate. Shallow depth to groundwater would minimize the available resistivity required for application of this technology.
	Biological	Biodegradation	Nutrients and amendments are added to surface soil	Eliminate. Not effective for mercury contamination.

Table 6-4

Preliminary Screening of Technologies and Process Options, Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland
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General Response Action	Response Action Technology	Process Option	Description	Screening Comment
			to promote biodegradation of organic compounds.	
In-Situ Treatment (Continued)	Biological (Continued)	Phytoremediation	Use of selected plants cultivated in contaminated soil to lead to uptake of metallic contaminants or enhancement of biodegradation of organic contaminants by indigenous microorganisms in the root zone.	Eliminate. This innovative technology has limited demonstrated effectiveness for areas with high levels of organic contaminants. Has potential in reducing lower level organic contamination left in place, however not applicable to achieve identified cleanup goals.
Ex-Situ Treatment	Physical/ Chemical	Soil Washing/ Chemical Extraction	Use of solubilization and chemical (oxidation/reduction/neutralization) processes to remove contaminants from the solid phase and convert them into more concentrated forms or less toxic forms in liquid phase.	Eliminate. When different classes of contaminants are present, such as metals and organic compounds, a series of extraction operations using different solvents, pH adjustment, etc. may be required. By-products from the process would consist of spent solvent streams containing the wastes, requiring further treatment/disposal and recovery/recycle of the extractants.
		Chemical Fixation/ Solidification	Mixing of chemical agents to bind, solidify, and reduce contaminant mobility.	Eliminate. Not suitable for use on site to return treated soil to the excavated area because the treated matrix would be unsuitable for unrestricted residential use of the site (COCs would remain on site).
Ex-situ Treatment (Continued)	Biological	On-Site Landfarming	Tilling of contaminated soils and wastes in layers of surface soil within a treatment bed to aerate and biodegrade organic contaminants.	Eliminate. Not effective for mercury.
	Thermal	Off-Site Incineration	Use of high temperatures to pyrolize or oxidize organic contaminants into less toxic gases.	Eliminate. Not effective for destruction of mercury.
		Off-Site Thermal Desorption	Use of moderate temperatures to volatilize contaminants and remove them from the solid phase into the gaseous phase.	Eliminate. This technology would not be effective for the removed mercury contamination.

Table 6-4

Preliminary Screening of Technologies and Process Options, Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland
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General Response Action	Response Action Technology	Process Option	Description	Screening Comment
Ex-situ Treatment (Continued)	Solids Processing	Size Reduction	Crushing/grinding/shredding of wastes as a preliminary process to aid in downstream treatment.	Eliminate crushing because it applies to rock that would typically not be further treated. Eliminate grinding and shredding as pretreatment step for vegetative material (tree stumps) because trees, etc. are not present at Block D in contaminated areas.
		Screening	Removal/segregation of material based on size as a preliminary process to aid in downstream treatment.	Eliminate. Removal of oversized material that is typically not contaminated is not required.
Disposal	Off-Site	Hazardous/ Non-Hazardous Waste Landfilling	Disposal of excavated wastes and treatment residuals in a permitted RCRA Subtitle C or D facility.	Retain landfilling to be used in conjunction with other response action technologies.
	On-Site	Consolidation	Excavation and relocation of contaminated soil to minimize space and closure requirements.	Eliminate. Would trigger on-site issues that are unacceptable to regulatory agencies (COCs still present on site – not suitable for unrestricted residential use of the site).
		Beneficial Reuse	Reuse of treated soil as fill material.	Eliminate. Soil treatment technologies not retained, eliminating need for disposition of treatment residuals.

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act.
COCs Chemicals of concern.
LUCs Land use controls.
RCRA Resource Conservation and Recovery Act.
RAO Response action objective.
SVOCs Semivolatile organic compounds.
VOCs Volatile organic compounds.

Table 6-5

Summary of Comparative Analysis of Alternatives
Block D, Soil Response Action Plan
Lockheed Middle River Complex, Middle River, Maryland

Evaluation Criteria	Alternative S-1: No Action	Alternative S-2: Excavation to Allow Unrestricted Residential Site Use and Off-Site Treatment and Disposal
Overall Protection of Human Health and Environment	Not protective	Protective
Chemical-Specific ARARs	Would not comply	Would comply
Location-Specific ARARs	Would not comply	Would comply
Action-Specific ARARs	Not applicable	Would comply
Long-Term Effectiveness and Permanence	Not effective	Effective
Reduction of Contaminant Toxicity, Mobility, or Volume through Treatment	None	None
Short-Term Effectiveness	No relevant issues to address	Would be effective. Minimum potential for short-term risks. Three weeks to attain soil RAOs.
Implementability	Nothing to implement	Easy to implement
Costs: Capital NPW of O&M NPW	 $0 $0 $0	 $275,00 -0- $275.00

ARARs Applicable or Relevant and Appropriate Requirements.
O&M Operation and maintenance.
RAO Response action objective.
NPW Net present worth.

Section 7
Evaluation Criteria for the Selected Technology

7.1 EVALUATION CRITERIA

The proposed response action will remove and dispose off site soil with COC [i.e. benzo(a)pyrene and mercury] concentrations greater than the cleanup goals. Following removal of this material, the exposed soil on the excavation base and sidewalls will be visually examined for free product, sheen, staining, or other evidence suggesting that residual contamination is present. Additional removal may be performed based on the visual examination. Following completion of removal and visual examination activities, the base and sidewalls of the removal area will be sampled to confirm that all soil with COC concentrations greater than the cleanup goals has been removed. Additional removal and sampling will be performed until it is confirmed that soil with COC concentrations greater than the cleanup goals has been removed. A complete description of the post-removal/confirmation sampling and analysis plan is presented in Section 8.3. Cleanup goals are presented in Section 5.

7.2 CONTINGENCY MEASURES

Considering the limited extent of soil with COC concentrations greater than the cleanup goals and the nature of the proposed response action (i.e., removal), the development of contingency measures to address COC impacts at Block D is not warranted.

Section 8
Proposed Response Actions

8.1 INTRODUCTION

The response action for Block D will address soil with COC concentrations greater than the cleanup goals. The soil response action proposed in this RAP will address removal of soil with COC concentrations greater than the cleanup goals within Block D. The proposed response action for soil in Block D is described in this section. A description of the proposed response action for groundwater at the MRC is described in the Groundwater Response Action Plan provided under separate cover. A response action for groundwater beneath Block D is not required.

8.2 RESPONSE ACTION PLAN DESCRIPTION

The proposed soil response action is to remove soil with COC concentrations greater than the cleanup goals to obtain a Certificate of Completion under a Tier IA (Residential Unrestricted) future property use based on potential future single-family residential development. The major components of the proposed response action, performance criteria, and sequence are described below.

8.2.1 Summary of Major Components

The major components of the response action necessary to achieve a Certificate of Completion are as follows:

- Removal of soil with COC concentrations greater than cleanup goals. Remove soil associated with soil boring SB-32 to a depth of 5-feet bgs (Area B on Figure 8-1). Remove soil associated with soil borings SB-33 and SB-337 to a depth of 6-feet bgs (Area C on Figure 8-1). Remove soil associated with soil boring SB-59 and SB-321 to depths of 15-feet bgs and 3-ft bgs, respectively (Area A on Figure 8-1). The base dimension of the removal

area will extend 10 feet minimum beyond the sample locations with COC concentrations that exceed the cleanup goal as indicated on Figure 8-1. The aerial extent of removal is approximately 7,000 sf and the removed soil quantity is approximately 800 cy. The soil boring sample and removal limits are indicated on Figure 8-1. The depth of removal will extend to the proposed depth or to the depth of the zone of saturation, whichever is less.

- Post-removal/confirmation sampling and analysis – Sampling and analysis of the exposed soil on the base and sidewalls of the removal areas will be performed to confirm that soil with contaminant concentrations greater than the cleanup criteria provided in Table 5-1 is removed. For removal areas where the proposed removal depth cannot be achieved due to the depth of the zone of saturation, post-excavation sampling and analysis of the exposed soil on the base of the removal areas will be performed to obtain data for informational purposes only. Post-removal/confirmation sampling and analysis procedures are presented in Section 8.3.

- Characterization, transport, and off-site disposal of removed soil – Stockpiled soil will be characterized for the purposes of waste disposal, transported to an off-site non-hazardous waste disposal facility, and disposed. Disposal at an off-site permitted non-hazardous waste disposal facility is assumed based on review of the constituent concentrations provided in Tables AD-1, AD-2, and AD-3 (Appendix A). The disposal quantity is approximately 1,100 tons based on the removal limits indicated on Figure 8-1.

- Backfilling and regrading – The removal areas will be backfilled and the final surface graded to match existing grades. The fill material will be certified clean material similar in grain size to removed soils and obtained from an off-site borrow source.

- Restoration - The disturbed areas will either be revegetated or paved. All areas disturbed as a result of response action activities will be permanently stabilized.

8.2.2 Performance Criteria

The performance criteria for the response action are presented below.

Soil Removal

Soil within Block D that is identified as having COC concentrations greater than the cleanup goals will be removed to the proposed depths. The removal limits presented in the RAP were determined based on review of existing soil boring sample results provided in Tables AD-1, AD-2, and AD-3 (Appendix A). The removal limits presented in the RAP will be refined based on the results of additional soil sampling described in Section 3. The final limits of removal will be determined after completion of post-removal/confirmation sampling. The removal limits will extend to the indicated depths or to the depth of the zone of saturation, whichever is less.

Sediments accumulated in erosion and sediment control devices (see Section 8.4) prior to confirmation that soil with COC concentrations greater than the cleanup goals has been removed will be disposed off site along with the removed soils.

Post-Removal/Confirmation Sampling

Post-removal/confirmation samples will be collected from the excavation base and sidewalls of the removal areas prior to backfilling to confirm that soils with contaminant concentrations greater than the cleanup criteria provided in Table 5-1 have been removed. Additional removal may be required based on the results of the post-removal/confirmation sampling. For removal areas where the proposed removal depth cannot be achieved due to the depth of the zone of saturation, post-removal samples will be collected from the exposed soil on the base of the removal areas to obtain data for informational purposes only. Post-removal/confirmation sampling and analysis procedures are provided in Section 8.3.

Temporary Storage

Soil from the removal areas will be stockpiled and secured within the Block D boundary on a materials handling pad that will consist of a minimum 8-mil-thick polyethylene geomembrane overlain by a drainage layer. Water from the materials handling pad will drain into the excavation of origin. The stockpiled soil will be completely covered with a minimum 8-mil-thick polyethylene geomembrane during inactive periods to prevent movement of soil to the surrounding area. The geomembrane cover will be secured daily using sandbags and rope or other suitable means. The stockpiled soil will be temporarily stored on site until waste characterization has been completed.

Waste Characterization

Removed soil will be sampled from the stockpile for waste disposal characterization at a minimum frequency of one sample per 500 cy. Composite samples consisting of three grab samples will be collected from the stockpile. The sampling frequency may be increased depending on the volume

of the removed soil and waste disposal facility requirements. Samples will be analyzed for TCLP and parameters required by the waste disposal facility.

Disposal

Removed soil will be transported for off-site disposal after waste characterization has been completed and the waste disposal facility has approved acceptance of the waste. Removed soil will be disposed at an off-site non-hazardous waste disposal facility.

Dewatering

Dewatering of the removal areas may be required to facilitate backfilling. Water that has accumulated in the removal areas will be collected and conveyed through a sediment removal device (i.e. filter). Solids trapped in the filter will be transported to an off-site non-hazardous waste disposal facility. Permits required for the proposed response action are described in Section 9.2.2. Water will be contained, characterized as required following removal of sediment, and disposed at an off-site permitted TSDF if required or discharged to a NPDES permitted outfall or to a stabilized area..

Backfilling

The removal areas will be backfilled after completion of post-removal/confirmation sampling and excavation dewatering. Backfill soil will be certified clean soil similar in grain size to removed soils and obtained from an off-site borrow source. The off-site borrow source material will be evaluated in accordance with the procedures described in the MDE document titled Facts About…VCP – Clean Imported Fill Material[2]. The off-site borrow source will be identified and environmental site assessment documentation obtained if available. The documentation will be reviewed by an environmental professional to determine the borrow source's suitability for use. If the borrow source is judged acceptable, soil samples will be obtained and analyzed for the target compounds using the method and at the sampling frequency recommended in the MDE document based on the location, history, and size (i.e., area and volume) of the borrow source area.

[2] Document available at http://www.mde.state.md.us/assets/document/Clean Imported Fill Material.pdf

Constituents detected in the samples will be evaluated for risk using the residential cleanup standards provided in MDE's Cleanup Standards for Soil and Groundwater (August 2001).

Backfill material will be compacted to a minimum of 90 percent of the maximum dry density as determined by the Standard Proctor. Additional compactive effort may be required dependent on future use of the area.

Restoration

The top 4 inches of backfill in areas to be restored using vegetation will be medium-textured loam suitable for establishment of vegetation (i.e., topsoil). The backfilled and regraded areas along with other areas disturbed during response action implementation will be restored/stabilized using permanent stabilization practices. Vegetative restoration will consist of surface preparation, fertilizing, seeding, and mulching. Vegetative restoration procedures are presented in detail in Section 8.4.2. Pavement disturbed by response action activities may be restored to pre-response action conditions based on future use of the area.

Stormwater Management and Erosion and Sediment Control

Erosion and sediment control will be performed in accordance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control (MDE, 1994). Erosion and sediment control measures are described in Section 8.4. A stormwater management plan will be prepared in accordance with the Maryland Stormwater Design Manual (MDE, October 2000). Before removal activities begin, erosion and sediment controls will be established to prevent impacts to downgradient areas. During removal, backfilling, and regrading activities and until disturbed areas are stabilized, the erosion and sediment controls will be regularly inspected and maintained.

Stabilized Construction Entrance

Ingress to and egress from the removal area(s) will be controlled using a stabilized layer of aggregate that is underlain with a geotextile (i.e., a stabilized construction entrance).

Decontamination Pad

A temporary decontamination pad will be established to clean equipment used to remove and transport contaminated soils. The pad will be sized to accommodate all the equipment to be used during response action implementation and will be constructed in a manner that contains all the contaminated materials removed from equipment and the liquids used to clean the equipment. Contaminated materials removed from the equipment and solids removed from the wash water will be disposed off site along with the removed soils. Wash water will be contained, characterized as required following removal of sediment, and disposed at an off-site permitted TSDF if required or discharged to a NPDES permitted outfall or to a stabilized area.

8.2.3 Sequence

The field duration, excluding items 1 through 3 below, required to perform the proposed response action is estimated to be approximately 3 weeks. The generalized sequence of response action activities is presented below. The sequence of response action activities is subject to change based on the Contractor's work plan.

1. Obtain permits, notifications, and approvals as identified in Section 9 prior to mobilization.
2. Hold a pre-response action implementation meeting on site with the Contractor.
3. Locate and mark existing site utilities. Notify Miss Utility of Maryland (1-800-257-7777; www.missutility.net) at least 48 hours, but no more than 10 working days, prior to the day excavation will commence. Inspect the site prior to response action implementation to verify existing site conditions.
4. Install perimeter controls for the stabilized construction entrance and construct the stabilized construction entrance. Install the remaining perimeter erosion and sediment controls.
5. Install support features including but not limited to decontamination pad and storage area(s), etc.
6. Protect or remove existing utilities within or in close proximity to the removal limits.
7. Remove soil from the indicated limits. Collect post-removal/confirmation samples from the removal area to determine the need for additional removal.

8. Following post-removal/confirmation that soils with contaminant concentrations greater than the cleanup criteria provided in Table 5-1 have been removed or the depth of the zone of saturation has been reached, restore the area by dewatering removal areas if necessary, backfilling, regrading, and establishing permanent stabilization for all disturbed areas.

9. Remove decontamination pad, material storage area, etc. Following support feature removal, stabilize areas with permanent vegetation or paving.

10. Following permanent stabilization of all disturbed areas, remove all remaining perimeter controls and immediately stabilize all areas disturbed by the placement and removal of perimeter controls.

8.3 POST-REMOVAL/CONFIRMATION SAMPLING AND ANALYSIS

The purpose of post-removal/confirmation sampling and analysis is to obtain sufficient data to confirm that soil with COC concentrations greater than the cleanup goals has been removed. The post-removal/confirmation sampling and analysis plan is summarized below.

8.3.1 Sampling and Sample Evaluation

The response action implementation includes the removal and off-site disposal of soil with COC concentrations greater than the cleanup goals. The removal areas are shown on Figure 8-1. Following removal of this material, the exposed surfaces of the excavation (i.e., base and sidewalls) will be visually examined for evidence of remaining contamination (e.g., free-product, sheen, staining). Additional excavation may be performed based on the visual examination. The exposed surfaces of the removal area will then be sampled to determine if all the soils with contaminant concentrations greater than the cleanup criteria provided in Table 5-1 have been removed. The purpose of the excavation base and sidewall samples will be to determine whether the depth and lateral extent of removal is sufficient or if the removal depth and lateral extent need to be increased to remove soils with contaminant concentrations greater than the cleanup criteria. For removal areas where the proposed removal depth cannot be achieved due to the depth of the zone of saturation, post-excavation sampling and analysis of the exposed soil on the base of the removal areas will be performed to obtain data for informational purposes only.

Post-removal/confirmation samples will be collected, packaged, and shipped to a fixed-base laboratory. The fixed-base laboratory will analyze the samples for the constituents and per the

methods indicated on Table 5-1. Post-removal/confirmation samples for soil that is not subsequently removed and disposed off-site will also be analyzed for VOCs, SVOCs, PCBs, and metals at a minimum frequency of 1 for every 5 samples (i.e., 20 percent). Post-removal/confirmation sampling results will be reviewed and the need for additional removal evaluated. If additional removal is required, additional post-removal/confirmation samples will be collected from the new exposed surfaces using the following criteria:

- If additional removal is required from the excavation base only, additional post-removal/ confirmation samples will be collected from the new exposed excavation base only (i.e., no sidewall samples).
- If additional removal is required from the excavation sidewalls only, additional post-removal/confirmation samples will be collected from the new excavation sidewalls and the new exposed excavation base.
- If additional removal is required from the excavation base and sidewalls, additional post-removal/confirmation samples will be collected from the new excavation sidewalls and the new exposed excavation base.

Analytical results from the fixed-base laboratory for post-removal/confirmation samples that represent exposed surfaces of the excavation that will remain (i.e., no further removal will be performed) will be validated using EPA's Contract Laboratory Program protocol, EPA Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (EPA, 1993), and EPA Region III Modifications to National Functional Guidelines for Organic Data Review, Multi-Media, Multi-Concentration (EPA, 1994) in conjunction with method-specific criteria. Analytical results from the fixed-base laboratory for samples representing soil that is subsequently removed and disposed off-site will not be validated.

8.3.2 Sampling Locations

Samples will be collected from the excavation base and sidewalls of each removal area. The excavation base of each removal area will be divided into areas of no more than 625 sf (i.e., 25-foot by 25-foot area). One post-removal/confirmation base sample will be collected from each 625-sf area. The post-removal/confirmation base sample will be a composite sample created from soil collected at four randomly determined grab locations. A minimum of four post-removal/confirmation sidewall samples will be collected from each removal area having

excavation sidewall lengths less than 50 feet. Additional sidewall samples will be collected at a frequency of one sidewall sample for every 50 feet of exposed sidewall. Post-removal/confirmation samples collected from excavation sidewalls will also be composite samples created from soil collected at two randomly determined grab locations.

8.4 EROSION AND SEDIMENT CONTROL

Erosion and sediment control measures will be implemented to minimize and/or eliminate erosion and sedimentation during the response action. The construction, implementation, and maintenance of the erosion and sediment control devices will be in accordance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control (MDE, 1994). The number provided below with each control measure, if any, references the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control (MDE, 1994). The erosion and sediment control devices can be modified based on construction equipment and techniques presented in the Contractor's work plan.

The erosion and sediment control measures include the following:

- Silt Fence (E15.0) - Placed along the downslope sides of each removal area to provide a temporary sediment barrier consisting of geotextile filter fabric.

- Stabilized Construction Entrance (17.0) – Placed as a controlled site entrance to reduce the amount of sediment transported by construction vehicles onto public roads. Loose dirt will be removed from the tires of construction vehicles as they traverse the stabilized construction entrance.

- Dust Control – Utilized to prevent surface and air movement of dust from exposed soil surfaces and to reduce the amount of airborne substances that may present health hazards, traffic safety problems, or harm plant/animal life.

- Permanent Seeding (20.0) – Utilized to establish perennial vegetation on disturbed areas by planting seeds of native grasses.

- Mulching (20.0) – Utilized to prevent erosion by protecting the soil surface from raindrop impact and to reduce the velocity of overland flow.

8.4.1 Inspection and Maintenance

In general, all erosion and sediment control measures will be checked daily and after each runoff-producing rainfall event. Any required repairs will be made immediately. The following items will be checked:

- The stabilized construction entrance will be maintained in a condition that will minimize tracking sediment onto public roads.
- Silt fence will be checked for undermining or deterioration of the fabric. Sediment will be removed when the level of sediment causes bulging or reaches one-half of the fabric height.
- Seeded areas will be checked regularly to ensure that a good stand of vegetation is maintained, and will be fertilized and reseeded as needed.
- The fuel and lubricant materials storage area will be checked to ensure that stored containers are not leaking and that the lining system is functioning properly.

Erosion and sediment control devices will be inspected and maintained during the response action and until the disturbed areas are permanently stabilized. Damaged erosion and sediment control devices will be repaired immediately. The Contractor will maintain a logbook of all erosion and sediment control device inspections and maintenance. The logbook will be available at the site at all times for inspection by duly authorized officials. Post-response action maintenance will consist of performing periodic inspections of the disturbed areas and repair of disturbed areas until the areas are permanently stabilized.

8.4.2 Restoration

All areas disturbed by response action implementation activities (i.e., removal and support facility areas) will be restored/stabilized using permanent stabilization practices. Activities to establish permanent stabilization (i.e., preparing the area for seeding and seed application) will be implemented as soon as possible following the establishing of final grades. The establishment of permanent stabilization includes seed bed preparation, seeding, and mulching. The seed mixture was selected from the list of Maryland standard seed mixtures in Section 20.0 of the Maryland Standards and Specifications for Soil Erosion and Sediment Control (MDE, 1994). The seed was selected based on the applicable hardiness zone, level of maintenance, and erosion resistance. The

permanent seed mixture is based on Mixture 5 in Table 25 (page G-20-18) of the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control. Mixture 5 is suited for Plant Hardiness Zone 7a, in which the site is located. The permanent seed mixture consists of perennial ryegrass (*Lolium perenne*) seeded at a rate of 20 pounds of pure live seed (PLS) per acre, flatpea (*Lathyrus sylvestris*) seeded at a rate of 20 pounds PLS per acre. In the event that disturbed areas are brought to final grade outside of the optimal growing season for the permanent seed mixture, the disturbed areas will be temporarily stabilized using a temporary seed mixture. Erosion and sediment control devices will remain in place until permanent stabilization is established over the disturbed areas.

8.5 MISCELLANEOUS RESPONSE ACTION REQUIREMENTS

8.5.1 Utilities

Above- and below-ground utilities are known to exist on and near Block D. A 24-inch-diameter culvert, a 5-feet by 5-feet box culvert, fire water, and natural gas lines are present in Block D. Known utilities are indicated on the MRC utility map included as Appendix J of the Site Characterization Report (Tetra Tech, May 2006). The Contractor will verify, locate, and stake all utility locations within the limits of the site and adequately protect or remove the utilities before any earth-disturbing activities.

8.5.2 Groundwater Monitoring Wells

Groundwater monitoring wells MW35A, MW39A, and MW40A with a flush-mounted protective casings exist within Block D. The monitoring wells will be protected during response action implementation. Groundwater monitoring well locations within and near Block D are shown on Figure 2-2.

8.5.3 Dust Control

During construction, the Contractor will be required, as necessary, to control the generation of dust to comply with OSHA and National Institute of Occupational Safety and Health (NIOSH)

requirements. Systems used for dust control could include a sprinkler systems, water trucks, etc. The Contractor will identify the methods of dust control within the Contractor's work plan.

8.5.4 Spill Mitigation Response Procedures

Potential non-stormwater discharges during response action activities include wash water resulting from decontamination efforts associated with field equipment and vehicles, fuel, lubricant, and hydraulic fluid spills from vehicle fueling, lubrication, and maintenance, and spills of fertilizers and small quantities of laboratory chemicals used in sample collection, and other flammable substances.

All decontamination wash water will be collected in a lined decontamination and equipment wash pad area. All waters generated from decontamination and/or other washing activities will be collected, solids removed, characterized, and transported to an approved off-site permitted TSDF. All vehicle fueling, lubrication, and maintenance will be performed utilizing drip pans to contain any spills that may occur or within the decontamination pad to contain spills. Containers of detergents and vehicle maintenance fluids (e.g., oil, grease, antifreeze, hydraulic fluid, etc.) will be stored within an enclosed, lined, diked area along with the equipment fuel, which will be stored in tanks. This area referred to as the materials storage area, will be bermed and lined with a minimum 60-mil-thick polyethylene geomembrane and will be sized to contain 110 percent of the volume stored within the area. A small sump or low point in the geomembrane will be designed to serve as a collection and monitoring point for any leaks or spills from the containers stored within the materials storage area. When not in use, chemicals, paints, and other flammable substances will be stored in a flammable storage cabinet located within the Contractor’s equipment trailer.

Good housekeeping procedures will be followed to reduce risks associated with these materials. These procedures include, but are not limited to, keeping materials in their original containers whenever possible, maintaining original labels and Material Safety Data Sheets (MSDSs), and using proper disposal methods for surplus materials. Accidental spills that may occur will be contained as appropriate for the spilled medium (liquid or solid) and collected and containerized immediately after discovery of the spill. Containerized material will be characterized for off-site transportation and disposal. The following spill mitigation equipment should be available on site during response action activities:

- Drip pans
- Oil-dry or similar compound
- Absorbent socks
- Shovels
- 55-Gallon drums or storage tank (for containerization)
- Labels for contents identification

Following spill cleanup, the cause of the spill will be investigated and material storage and handling procedures will be reviewed and revised where appropriate.

8.6 REPORTING REQUIREMENTS

Analytical reports and documentation generated as a result of the approved RAP and as necessary to obtain a Certificate of Completion will be included in the Notification of Completion Report. The Notification of Completion Report will be submitted to MDE within 90 days after completion of response action activities. The reports and documentation are described below.

Analytical reports of post-removal confirmation sample and backfill material data deliverables submitted to MDE will be in hardcopy format and electronic data deliverable (EDD) format. The EDD will be provided in Microsoft Excel® format to facilitate efficient and time-sensitive evaluation by MDE.

Removal activities for each discrete removal area will be documented on removal logs. The removal logs will include documentation such as identification and location of the removal area (e.g., associated soil boring sample number), contractor's name, removal date(s), backfill date(s), removal equipment used, removal area dimensions at both the ground surface and base of excavation, removal depth(s), lithology, groundwater elevation, direct-reading instrument and field screening results if applicable, visual observations, olfactory observations if any, and photographs. The final removal area limits at ground surface will be surveyed by a professional land surveyor registered in the State of Maryland. Post-removal/confirmation sampling field documentation including grab sample locations will be documented on a separate Soil Sample Log Sheet.

Waste profiles, waste characterization results, TSDF pre-approval or approval documentation, shipment manifests, delivery tickets or certificates, and treatment and disposal certificates will be provided for all contaminated media removed from Block D.

8.6.1 Recordkeeping

Lockheed Martin will maintain complete records of the response action for a minimum of 5 years.

Table 8-1

Backfill Material Acceptance Criteria
Block D, Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland

Parameter	Criteria	Test Method
USCS Classification	GW, GP, GM, SW, SP, and SM	ASTM D 2487
Atterberg Limits	--	ASTM D 4318
- Liquid Limit	35 maximum	
- Plasticity Index	12 maximum	
Amount finer than the No. 200 U.S. Standard Sieve	25 percent maximum	ASTM D 1140
Maximum Particle Size	1 inch maximum	ASTM D 422

1 Backfill material will be evaluated for constituents as described in Section 8.2.2 paragraph titled "Backfilling."

ASTM American Society for Testing and Materials International.
USCS Unified Soil Classification System.

Map Document: (K:\GProject\middle_river\Maps\GPS SOIL BORING LOC\Final RAP figures\Block D Removal Limits.mxd) 4/16/2008 -- 10:11:17 AM

DARK HEAD COVE ROAD

PARKING LOT NO. 6

WILSON POINT ROAD

MARTIN STATE AIRPORT

Area A
(196 cubic yards)

Area B
(136 cubic yards)

Area C
(374 cubic yards)

SB-241 SB-323 SB-322 SB-324 SB-321 SB-319 SB-320 SB-318 SB-325 SB-326

SB-321-0203
BENZO(A)PYRENE
940 ug/kg

SB-59
BENZO(A)PYRENE 750 ug/kg (05')
BENZO(A)PYRENE 670 ug/kg (10')
BENZO(A)PYRENE 770 ug/kg (15')

SB-60 SB-244 SB-347 SB-335 SB-331 SB-245 SB-330 SB-329 SB-327 SB-332 SB-328 SB-333 SB-246 SB-32

SB-32
MERCURY 1.7 mg/kg (05')

SB-33
MERCURY 3.3 mg/kg (05')
BENZO(A)PYRENE 570 ug/kg (05')

SB-242 SB-61 SB-66 SB-64 SB-240 SB-243 SB-67 SB-63

MW40A MW39A MW-35A MW38A

SB-33 SB-342 SB-341 SB-33A SB-344 SB-248 SB-337 SB-340 SB-336 SB-339 SB-343 SB-338 SB-247 SB-249

SB-337-0506
BENZO(A)PYRENE
700 ug/kg

SB-239 SB-62 SB-65

DARK HEAD COVE

BLOCK 'D'

BLOCK 'E'

BLOCK 'F'

NOTE:
Depth of removal indicated is based on bottom of sampling interval where contaminant concentrations exceed the cleanup criteria. Actual depth of removal will extend to this depth or to the depth of the zone of saturation, whichever is less. Post-removal/confirmation sampling and analysis of the exposed soil on the base and sidewalls of the removal area(s) will be performed.

FIGURE 8-1

REMOVAL LIMITS

LEGEND

- GROUNDWATER MONITORING WELL
- PREVIOUS SOIL SAMPLE LOCATION
- FALL 2007 SOIL SAMPLE LOCATION
- 5 FT
- 6 FT
- 15 FT
- TAX BLOCK

CLEANUP GOAL FOR MERCURY IS 1.0 mg/kg
CLEANUP GOAL FOR BENZO(A)PYRENE IS 400 ug/kg

Lockheed Martin Middle River Complex
Middle River, Maryland

0 25 50 100 Feet

N

DATE MODIFIED: 3/5/08

CREATED BY: LR

Tetra Tech, Inc.

Section 9
Permits, Notifications, and Contingencies

9.1 INTRODUCTION

This section describes the permits required for the proposed response action and the required notifications and contingencies if unexpected conditions are encountered during implementation of the RAP.

9.2 PERMITS

Lockheed Martin will meet all local, State, and federal permitting requirements for the response action described in Section 8. Based on a review of requirements of MDE and Baltimore County, permitting requirements for the response action are related to earth-moving activities, excavation and dewatering.

9.2.1 Earth-Moving Activities

This section describes permits related to earth-moving activities including grading, erosion and sediment control, and stormwater management.

Although the proposed response action will not result in a planned disturbance of 1 acre or more, a Notice of Intent form will be submitted to MDE to obtain coverage under the General Permit for Construction Activity for stormwater discharges. Conditions of the General Permit include compliance with approved erosion and sediment control and stormwater management plans. The erosion and sediment control plan will be submitted to the Baltimore County Soil Conservation District for review and approval, and the stormwater management plan will be submitted to the

Baltimore County Department of Environmental Protection and Resource Management (DEPRM) for review and approval, as discussed below. As a condition of erosion and sediment control plan approval, Lockheed Martin will certify that a "responsible person" trained in techniques and standards of erosion and sediment controls will be on site during construction. After Block D has been finally stabilized and all stormwater discharges from construction sites that are authorized by this permit are eliminated, a Notice of Termination form will be submitted to MDE.

Miss Utility for Maryland will be notified (1-800-257-7777, www.missutility.net) at least 48 hours, but not more than 10 working days, before excavation begins.

A Baltimore County grading permit is required for any land disturbance and any grading activities that disturb greater than 5,000 sf or more than 100 cy of fill material. As a condition of grading permit issuance, a stormwater management plan will be submitted to the Baltimore County DEPRM for review and approval by DEPRM and the Baltimore County Soil Conservation District. The stormwater management plan will be prepared in accordance with the 2000 Maryland Stormwater Design Manual, Volumes I and II (MDE, October 2000). As an additional condition of grading permit issuance, a grading plan will be submitted to the Baltimore County DEPRM for review and approval, and an erosion and sediment control plan will be submitted to the Soil Conservation District for review and approval. The erosion and sediment control plan will be prepared in accordance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control (MDE, 1994). The approved plans will be included with the grading permit application.

A Baltimore County stormwater management permit is required because stormwater management devices and practices are required. The approved stormwater management plan will be included with the stormwater management permit application.

9.2.2 Excavation Dewatering

Water resulting from excavation dewatering will be managed in one of the following ways:

- Contained, characterized as required, and disposed at an off-site permitted TSDF

- Filtered and subsequently discharged to surface water (regulated by MDE and EPA)
- Filtered and subsequently discharged to the local sanitary sewer system (regulated by Baltimore County)

The industrial surface water discharge permit is a combined state and federal permit under NPDES. A completed application will be submitted to MDE if required. MDE develops discharge limits based on the information provided in the permit application and issues the permit considering public comments, if any.

A wastewater discharge permit is required to discharge industrial wastewater to the local sanitary sewer system. A completed application for discharge to the Baltimore County sanitary sewer system will be submitted to the Engineering and Regulation Division of the Bureau of Utilities if required. There are specific limits set by the treatment plant for certain pollutants. Discharge limits for these and other pollutants may be set on a case-by-case basis. The discharge permit is issued by the Baltimore County Department of Public Works and Development Management.

9.3 NOTIFICATIONS

MDE will be notified immediately of any previously undiscovered contamination, changes in the RAP schedule, previously undiscovered storage tanks and other oil-related issues, and citations from regulatory entities related to health and safety practices.

9.4 CONTINGENCIES

If soil with COC concentrations greater than the cleanup goals is discovered outside the planned limits of soil removal, based on the results of post-removal/confirmation sampling and analysis, it will be addressed as discussed in Section 8.3.

Section 10
Implementation Schedule

The response action proposed in this RAP for Block D is anticipated to take approximately four months to complete. The response actions for the six properties that have RAPs submitted to MDE for review (Blocks B, D, E, F, G, and H) will be executed in sequence. Lockheed Martin is committed to commence work within 30 days of approval of the RAPs and the entire project is expected to take approximately twelve months to complete. Upon approval of the RAPs, Lockheed Martin will provide a more detailed schedule for the entire project and then provide the MDE with an updated schedule each month for tracking purposes. Lockheed Martin reserves the right to stage or execute each block in sequential order to minimize site disruption and costs. A draft schedule for the Block D is presented below:

Deliverable/Milestone	Completion Date
Soil RAP Submittal to MDE	On or about April 22, 2008
Soil RAP Approval	On or about July 8, 2008
Submit Permits/Notifications	Within 30 days of approval
Mobilization/Site Preparation	In conjunction with other blocks over a 6 to 12 month timeframe
Soil Removal and Sampling	2 months after commencing work
Demobilization	Within 30 days of soil removal
Reporting	Within 60 days of demobilization

Section 11
Administrative Requirements

11.1 INTRODUCTION

MDE's VCP stipulates several administrative requirements with which the applicant must comply. The administrative requirements include a written agreement, zoning certification, performance bond or other form of security, and health and safety plan requirements. These administrative requirements are described below.

11.2 WRITTEN AGREEMENT

A written agreement is provided with this RAP in compliance with Section 7-508 of the Environment Article, Annotated Code of Maryland. The written agreement stipulates that if the RAP is approved, the applicant agrees, subject to the withdrawal provisions set forth in Section 7-512 of the Environment Article, to comply with the provisions of the RAP. The written agreement is provided in Appendix E.

11.3 ZONING CERTIFICATION

A zoning certification is provided with this RAP in compliance with Section 7-508 of the Environment Article, Annotated Code of Maryland. Section 7-508 requires that RAPs include a certified written statement that the property meets all applicable county and municipal zoning requirements. The zoning certification is provided in Appendix E.

11.4 PERFORMANCE BOND OR OTHER SECURITY

Lockheed Martin will post a performance bond with MDE within ten days of RAP approval. The bond amount ($35,000) will be adequate to secure and stabilize the property if the RAP is not completed.

11.5 HEALTH AND SAFETY PLAN

A project-specific Health and Safety Plan (HASP) will be prepared and submitted to MDE prior to implementation of the MDE-approved RAP. The HASP will address each planned response action activity that is performed by workers engaged in hazardous waste site activities. The project-specific HASP will reference applicable regulations that may apply to response action activities. At a minimum, the HASP will contain the required elements specified in 29 CFR Parts 1910.120 and 1926.65, as well as other regulatory and Lockheed Martin requirements that apply to the nature of the activities that will be performed. At a minimum, the project-specific HASP will address the following (29 CFR Part 1910 citation in parentheses):

- Health and safety personnel requirements and responsibilities [29 CFR Part 1910.120(b)(4)(iv)]
- Pertinent site information [29 CFR Part 1910.120(b)(4)(iv)]
- Scope of work [29 CFR Part 1910.120(b)(4)(iv)]
- A safety and health risk or hazard analysis for each planned site activity [29 CFR Part 1910.120(b)(4)(iv)]
- Training requirements [29 CFR Part 1910.120(e)]
- Personal protective equipment (PPE) requirements for each planned site activity [29 CFR Part 1910.120(c)(5)]
- Medical surveillance requirements [29 CFR Part 1910.120(h)(1)(i)]
- Air monitoring and sampling requirements
- Site control measures [29 CFR Part 1910.120(d)]

- Decontamination procedures [29 CFR Part 1910.120(k)(1)]
- An Emergency Response Plan [29 CFR Part 1910.120(l)(1)]
- Confined-space entry procedures (29 CFR Part 1910.146)
- Spill containment [29 CFR Part 1910.120(j)(1)(viii)]
- Recordkeeping [29 CFR Part 1910.120(f)(8)]

The HASP will present information to adequately address appropriate hazard recognition and evaluation and control for the potential hazards that may be anticipated for the specific planned activities.

The project-specific HASP is recognized as a dynamic document that is subject to review and possible revision, as appropriate. Potential factors that could warrant the revision of a HASP include a change in the scope of work or as a result of evaluating data collected throughout implementation of the response action.

Implementation of the appropriate portions of the project-specific HASP will be accomplished by the Site Safety Officer (SSO) (with assistance from project management, as appropriate) assigned to the response action. The SSO will be on site during all intrusive activities. Specific health and safety program implementation elements are summarized below.

11.5.1 Training and Medical Surveillance

All personnel who participate in on-site work where there is a potential for exposure to hazardous waste-related safety or health hazards will be current participants in health and safety training and medical surveillance programs. These programs are in accordance with regulatory requirements. In general, the employee training and medical requirements specified in the OSHA hazardous waste regulations are regarded as minimum requirements.

At a minimum, employees who will or may participate in any on-site activities that may involve potential exposures to hazardous waste-related safety or health hazards will first have to satisfy the following health and safety training requirements:

- 40-Hour introductory hazardous waste general worker training [29 CFR Part 1910.120(e)(3)(i)].

- On their first assignment, an additional 24 hours of activity under the direction of a trained, experienced supervisor [29 CFR Part 1910.120(e)(3)(i)].

- Individuals who will be in a supervisory position must also complete an additional 8 hours of management/supervisory health and safety training [29 CFR Part 1910.120(e)(4)].

- 8 Hours of annual health and safety refresher training for all general workers and supervisors [29 CFR Part 1910.120(e)(8)].

- Project-specific training prior to the onset of any on-site intrusive activities.

Additional health and safety training requirements may also be specified in the project-specific HASP depending on the nature of the planned activities (e.g., confined space entry training, fall protection training, excavation safety training, etc.).

11.5.2 On-Site Health and Safety Functions

The SSO will be responsible for ensuring that all health and safety requirements specified in the HASP are adequately performed and documented. This commonly includes activities such as the following:

- Conducting and documenting on-site health and safety training.

- Implementing a project-specific hazard communication program (e.g., chemical inventory, MSDSs, chemical container labeling, etc.).

- Implementing other project-specific health and safety programs that may be relevant based on the response action scope of work and the nature of planned activities (e.g., hearing conservation program, confined space entry program, respiratory protection program, etc.).

- Performing and documenting equipment inspections for equipment that is intended to be used on site.

- Calibration and use of air monitoring devices (e.g., organic vapor meters, particulate meters, etc.) and air sampling devices.

- Ensuring that specified PPE is appropriately used.

- Overseeing personnel and equipment decontamination activities.
- Coordinating with appropriate on- and off-site contacts and agencies and managing the emergency response plan, when/as appropriate.

- Other duties as specified in the HASP.

Section 12
References

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APPENDIX A - SUMMARY OF DETECTED CONCENTRATIONS IN SOIL

TABLE AD-1

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-239-SS[12]	SB-239-SS[6]	SB-240-SS[12]	SB-240-SS[6]	SB-241-SS[12]	SB-241-SS[6]	SB-242-SS[12]	SB-242-SS[6]
LABORATORY ID:	9615044002	9615044001	9615044005	9615044004	9615042008	9615042007	9615039002	9615039001
SAMPLE DATE:	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005
LOCATION:	SB-239	SB-239	SB-240	SB-240	SB-241	SB-241	SB-242	SB-242
INORGANICS (mg/kg)								
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	NA
GASOLINE RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg)								
ACENAPHTHENE	205	--	--	--	43 J	48 J	--	--
ACENAPHTHYLENE	187	69 J	68 J	52 J	--	--	34 J	--
ANTHRACENE	136 J	--	28 J	165	47 J	37 J	--	--
BENZO(A)ANTHRACENE	157 J	49 J	44 J	43 J	65 J	76 J	63 J	91 J
BENZO(A)PYRENE	229	79 J	67 J	58 J	60 J	70 J	52 J	79 J
BENZO(B)FLUORANTHENE	151 J	43 J	51 J	48 J	54 J	56 J	--	70 J
BENZO(G,H,I)PERYLENE	263	83 J	78 J	63 J	51 J	57 J	43 J	52 J
BENZO(K)FLUORANTHENE	176	61 J	--	52 J	47 J	64 J	--	72 J
CHRYSENE	187	55 J	55 J	48 J	62 J	83 J	76 J	101 J
DIBENZO(A,H)ANTHRACENE	60 J	34 J	--	--	--	--	--	--
FLUORANTHENE	307	54 J	52 J	347	131 J	149 J	139 J	180
FLUORENE	192	--	--	80 J	55 J	--	--	--
INDENO(1,2,3-CD)PYRENE	187	67 J	59 J	46 J	47 J	52 J	35 J	42 J
NAPHTHALENE	49 J	--	--	--	70 J	88 J	62 J	384
PHENANTHRENE	539	--	90 J	186	218	126 J	252	158 J
PYRENE	383	105 J	109 J	267	105 J	123 J	167	163

TABLE AD-1

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 2 OF 7

SAMPLE ID:	SB-239-SS[12]	SB-239-SS[6]	SB-240-SS[12]	SB-240-SS[6]	SB-241-SS[12]	SB-241-SS[6]	SB-242-SS[12]	SB-242-SS[6]
LABORATORY ID:	9615044002	9615044001	9615044005	9615044004	9615042008	9615042007	9615039002	9615039001
SAMPLE DATE:	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005
LOCATION:	SB-239	SB-239	SB-240	SB-240	SB-241	SB-241	SB-242	SB-242
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
1,2,4-TRIMETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-TRIMETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA

TABLE AD-1

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 3 OF 7

SAMPLE ID:	SB-243-SS[12]	SB-243-SS[6]	SB-32A-SS	SB-33A-SS	SB-59-SS	SB-60-SS	SB-61-SS	SB-62-SS
LABORATORY ID:	9615041004	9615041003	04092803-01	04092018-16	04092414-03	04092803-02	04092803-05	04092414-07
SAMPLE DATE:	6/7/2005	6/7/2005	9/24/2004	9/17/2004	9/23/2004	9/24/2004	9/24/2004	9/23/2004
LOCATION:	SB-243	SB-243	SB-32A	SB-33A	SB-59	SB-60	SB-61	SB-62
INORGANICS (mg/kg)								
ANTIMONY	NA	NA	--	--	--	--	--	--
ARSENIC	NA	NA	--	1 L	1.7	0.62 K	--	0.62
BERYLLIUM	NA	NA	--	--	--	--	--	--
CHROMIUM	NA	NA	14 J	7.1 K	9.4 J	13 J	18 J	13 J
COPPER	NA	NA	15 J	34 L	4.8	20 J	7.5 J	4.1
LEAD	NA	NA	13 K	12 L	5.1	22 K	23 K	23
NICKEL	NA	NA	14 K	25	5.6	16 K	8.1 K	10
SELENIUM	NA	NA	2.5	--	--	--	--	3.5
ZINC	NA	NA	--	--	--	29 L	38 L	34 J
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS	NA	NA	1800000	--	21000	660000 K	16000	12000
GASOLINE RANGE ORGANICS	NA	NA	1100	3200	1400	590	400	--
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg)								
ACENAPHTHENE	--	--	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	98 J	--	NA	NA	NA	NA	NA	NA
ANTHRACENE	41 J	25 J	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	96 J	68 J	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	132 J	68 J	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	108 J	47 J	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	118 J	58 J	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	97 J	65 J	NA	NA	NA	NA	NA	NA
CHRYSENE	143 J	69 J	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	--	--	NA	NA	NA	NA	NA	NA
FLUORANTHENE	183	140 J	NA	NA	NA	NA	NA	NA
FLUORENE	--	--	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	94 J	46 J	NA	NA	NA	NA	NA	NA
NAPHTHALENE	40 J	37 J	NA	NA	NA	NA	NA	NA
PHENANTHRENE	80 J	49 J	NA	NA	NA	NA	NA	NA
PYRENE	287	133 J	NA	NA	NA	NA	NA	NA

TABLE AD-1

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-243-SS[12]	SB-243-SS[6]	SB-32A-SS	SB-33A-SS	SB-59-SS	SB-60-SS	SB-61-SS	SB-62-SS
LABORATORY ID:	9615041004	9615041003	04092803-01	04092018-16	04092414-03	04092803-02	04092803-05	04092414-07
SAMPLE DATE:	6/7/2005	6/7/2005	9/24/2004	9/17/2004	9/23/2004	9/24/2004	9/24/2004	9/23/2004
LOCATION:	SB-243	SB-243	SB-32A	SB-33A	SB-59	SB-60	SB-61	SB-62
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
2-METHYLNAPHTHALENE	NA	NA	--	--	--	--	--	--
ACENAPHTHENE	NA	NA	--	--	--	--	--	--
ACENAPHTHYLENE	NA	NA	--	--	--	--	--	950 J
ANTHRACENE	NA	NA	--	--	--	--	--	--
BENZO(A)ANTHRACENE	NA	NA	--	--	--	430 J	--	2300 J
BENZO(A)PYRENE	NA	NA	--	--	--	--	--	5200
BENZO(B)FLUORANTHENE	NA	NA	--	--	--	--	--	3000 J
BENZO(G,H,I)PERYLENE	NA	NA	--	--	--	--	--	5400
BENZO(K)FLUORANTHENE	NA	NA	--	--	--	--	--	4600
CHRYSENE	NA	NA	--	--	--	650 J	--	3400 J
DIBENZO(A,H)ANTHRACENE	NA	NA	--	--	--	--	--	1400 J
FLUORANTHENE	NA	NA	--	--	--	980 J	--	2100 J
FLUORENE	NA	NA	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	NA	NA	--	--	--	--	--	3900
NAPHTHALENE	NA	NA	--	--	--	--	--	--
PHENANTHRENE	NA	NA	--	--	--	610 J	--	410 J
PYRENE	NA	NA	--	--	--	1800 J	510 J	6200
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
1,2,4-TRIMETHYLBENZENE	NA	NA	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	NA	NA	--	--	--	--	--	--
ETHYLBENZENE	NA	NA	--	--	--	--	--	--
M+P-XYLENES	NA	NA	--	10 J	--	--	--	--
METHYLENE CHLORIDE	NA	NA	--	8 J	7 J	--	--	8 J
NAPHTHALENE	NA	NA	--	--	--	--	--	--
O-XYLENE	NA	NA	--	--	--	--	--	--

TABLE AD-1

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 5 OF 7

SAMPLE ID:	SB-63-SS	SB-64-SS	SB-65-SS	SB-66-SS	SB-67-SS
LABORATORY ID:	04092803-10	04092803-08	04092018-17	04092414-11	04092803-13
SAMPLE DATE:	9/24/2004	9/24/2004	9/17/2004	9/23/2004	9/27/2004
LOCATION:	SB-63	SB-64	SB-65	SB-66	SB-67
INORGANICS (mg/kg)					
ANTIMONY	--	--	--	--	3 J
ARSENIC	0.94 K	0.73 K	0.54 L	4.9	1.1
BERYLLIUM	3.5	3.5	--	--	4.6
CHROMIUM	25 J	18 J	3.1 K	36 J	21 J
COPPER	12 J	9.7 J	--	22	9.8 J
LEAD	36 K	75 K	2.8 L	14	56 K
NICKEL	13 K	15 K	9.6	8.6	15 K
SELENIUM	--	3.5	--	--	4.4
ZINC	71 L	55 L	--	--	71
PETROLEUM HYDROCARBONS (ug/kg)					
DIESEL RANGE ORGANICS	110000	330000	--	--	--
GASOLINE RANGE ORGANICS	--	--	250	4800	--
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg)					
ACENAPHTHENE	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA

TABLE AD-1

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-63-SS	SB-64-SS	SB-65-SS	SB-66-SS	SB-67-SS
LABORATORY ID:	04092803-10	04092803-08	04092018-17	04092414-11	04092803-13
SAMPLE DATE:	9/24/2004	9/24/2004	9/17/2004	9/23/2004	9/27/2004
LOCATION:	SB-63	SB-64	SB-65	SB-66	SB-67
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)					
2-METHYLNAPHTHALENE	--	--	--	990 J	--
ACENAPHTHENE	--	--	--	--	470 J
ACENAPHTHYLENE	--	450 J	--	--	1600 J
ANTHRACENE	--	--	--	--	1300 J
BENZO(A)ANTHRACENE	--	1300 J	--	--	5700 J
BENZO(A)PYRENE	--	1600 J	--	--	5800 J
BENZO(B)FLUORANTHENE	--	1400 J	--	--	5300 J
BENZO(G,H,I)PERYLENE	--	1900 J	--	--	6900 J
BENZO(K)FLUORANTHENE	--	1500 J	--	--	4400 J
CHRYSENE	530 J	1700 J	--	640 J	7300 J
DIBENZO(A,H)ANTHRACENE	--	--	--	--	2000 J
FLUORANTHENE	--	2100 J	--	730 J	8700
FLUORENE	--	--	--	610 J	1100 J
INDENO(1,2,3-CD)PYRENE	--	1200 J	--	--	4400 J
NAPHTHALENE	--	--	--	690 J	--
PHENANTHRENE	--	--	--	1700 J	9000
PYRENE	740 J	3600 J	--	1200 J	20000 J
VOLATILE ORGANIC COMPOUNDS (ug/kg)					
1,2,4-TRIMETHYLBENZENE	--	--	--	33	--
1,3,5-TRIMETHYLBENZENE	--	--	--	23	--
ETHYLBENZENE	--	--	--	8	--
M+P-XYLENES	--	--	--	10 J	--
METHYLENE CHLORIDE	--	--	7 J	10 J	--
NAPHTHALENE	--	--	--	260	--
O-XYLENE	--	--	--	23	--

TABLE AD-1

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

1 Highlighted values indicate positive detection in exceedance of cleanup goals.
2 Shaded values indicate surface soil sample (0- to 1-ft bgs) collected from degraded asphalt pavement covering Parking Lot No. 6. It is likely that these surface soil samples were collected from soil cores driven through the asphalt, producing cross-contamination of the samples and false positives for polycyclic aromatic hydrocarbons in soils at a depth of 1-foot (Tetra Tech, May 2006).

µg/kg - Micrograms per kilogram.
MDE - Maryland Department of the Environment.
mg/kg - Milligrams per kilogram.
NA - Not applicable.
NC - No criterion.
SB - Soil boring.
S.U. - Standard Units.
-- - Not detected.

B - Analyte was detected but is considered to be a laboratory contaminant.
J - Positive value is considered estimated as a result of technical noncompliance.
K - Positive value is considered biased high as a result of techical noncompliance.
L - Positive value is considered biased low as a result of technical noncompliance.

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-239-SS[18]	SB-240-SS[18]	SB-241-SS[18]	SB-242-SS[18]	SB-243-SS[18]	SB-244-05	SB-244-10	SB-244-15
LABORATORY ID:	9615044003	9615044006	9615042009	9615039003	9615041005	9615042001	9615042002	9615042003
SAMPLE DATE:	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005
LOCATION:	SB-239	SB-240	SB-241	SB-242	SB-243	SB-244	SB-244	SB-244
INORGANICS (mg/kg)								
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS (mg/kg)								
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg)								
ACENAPHTHENE	32 J	--	68 J	--	--	NA	NA	NA
ACENAPHTHYLENE	375	94 J	--	--	60 J	NA	NA	NA
ANTHRACENE	102 J	--	59 J	--	--	NA	NA	NA
BENZO(A)ANTHRACENE	217	71 J	59 J	--	50 J	NA	NA	NA
BENZO(A)PYRENE	368	130 J	73 J	--	75 J	NA	NA	NA
BENZO(B)FLUORANTHENE	237	81 J	53 J	--	45 J	NA	NA	NA
BENZO(G,H,I)PERYLENE	448	120 J	60 J	--	80 J	NA	NA	NA
BENZO(K)FLUORANTHENE	245	111 J	67 J	--	55 J	NA	NA	NA
CHRYSENE	264	94 J	64 J	--	63 J	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	90 J	20 J	44 J	--	--	NA	NA	NA

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-239-SS[18]	SB-240-SS[18]	SB-241-SS[18]	SB-242-SS[18]	SB-243-SS[18]	SB-244-05	SB-244-10	SB-244-15
LABORATORY ID:	9615044003	9615044006	9615042009	9615039003	9615041005	9615042001	9615042002	9615042003
SAMPLE DATE:	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005
LOCATION:	SB-239	SB-240	SB-241	SB-242	SB-243	SB-244	SB-244	SB-244
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg) (Continued)								
FLUORANTHENE	303	86 J	153 J	--	71 J	NA	NA	NA
FLUORENE	28 J	--	84 J	--	--	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	312	89 J	65 J	--	58 J	NA	NA	NA
NAPHTHALENE	34 J	--	51 J	--	39 J	NA	NA	NA
PHENANTHRENE	115 J	34 J	305	--	53 J	NA	NA	NA
PYRENE	534	212	134 J	--	128 J	NA	NA	NA
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
ACETONE	NA	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-245-05	SB-245-10	SB-245-15	SB-246-05	SB-246-10	SB-246-15	SB-247-05	SB-247-10
LABORATORY ID:	9615042004	9615042005	9615042006	9615041006	9615041007	9615041008	9615039010	9615041001
SAMPLE DATE:	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005
LOCATION:	SB-245	SB-245	SB-245	SB-246	SB-246	SB-246	SB-247	SB-247
INORGANICS (mg/kg)								
ANTIMONY	NA	NA	NA	NA	NA	NA	0.7	1
ARSENIC	NA	NA	NA	NA	NA	NA	4	--
BARIUM	NA	NA	NA	NA	NA	NA	30	24
BERYLLIUM	NA	NA	NA	NA	NA	NA	2.5	1.3
CADMIUM	NA	NA	NA	NA	NA	NA	0.2	0.4
CHROMIUM	NA	NA	NA	NA	NA	NA	22.1	20.4
COBALT	NA	NA	NA	NA	NA	NA	10.7	6.2
COPPER	NA	NA	NA	NA	NA	NA	21	34
LEAD	NA	NA	NA	NA	NA	NA	18	7
MERCURY	NA	NA	NA	NA	NA	NA	0.1 K	--
MOLYBDENUM	NA	NA	NA	NA	NA	NA	--	--
NICKEL	NA	NA	NA	NA	NA	NA	30	12
SELENIUM	NA	NA	NA	NA	NA	NA	2	4
THALLIUM	NA	NA	NA	NA	NA	NA	--	--
VANADIUM	NA	NA	NA	NA	NA	NA	33	28.4
ZINC	NA	NA	NA	NA	NA	NA	57	83
MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS (mg/kg)								
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg)								
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-245-05	SB-245-10	SB-245-15	SB-246-05	SB-246-10	SB-246-15	SB-247-05	SB-247-10
LABORATORY ID:	9615042004	9615042005	9615042006	9615041006	9615041007	9615041008	9615039010	9615041001
SAMPLE DATE:	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005
LOCATION:	SB-245	SB-245	SB-245	SB-246	SB-246	SB-246	SB-247	SB-247
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg) (Continued)								
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
ACETONE	NA	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-247-15	SB-248-05	SB-248-10	SB-248-15	SB-249-05	SB-249-10	SB-249-15	SB-32-05
LABORATORY ID:	9615041002	9615039004	9615039005	9615039006	9615039007	9615039008	9615039009	03112414-42
SAMPLE DATE:	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	11/21/2003
LOCATION:	SB-247	SB-248	SB-248	SB-248	SB-249	SB-249	SB-249	SB-32
INORGANICS (mg/kg)								
ANTIMONY	NA	0.8	--	0.4	0.4	--	NA	--
ARSENIC	NA	6	8	2 B	3 B	7	NA	2.5 L
BARIUM	NA	31	13	5	42	17	NA	NA
BERYLLIUM	NA	1.8	2.5	2.2	2.7	2.7	NA	--
CADMIUM	NA	0.1	0.1	0.09	0.3	0.2	NA	--
CHROMIUM	NA	24.6	37.2	28.2	18	49.3	NA	18 J
COBALT	NA	11.4	30.1	8.5	19.6	3.4	NA	NA
COPPER	NA	21	16	36	20	7	NA	33
LEAD	NA	9	6	3	13	18	NA	68
MERCURY	NA	0.06 K	--	--	0.4 K	--	NA	1.7
MOLYBDENUM	NA	0.6 B	0.5 B	0.6 B	--	0.9 B	NA	NA
NICKEL	NA	13	52	36	37	12	NA	22
SELENIUM	NA	5	4	5	4	5	NA	--
THALLIUM	NA	--	--	0.8 B	--	--	NA	--
VANADIUM	NA	40.3	51	61.4	24.5	90.5	NA	NA
ZINC	NA	65	39	30	137	10	NA	140
MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	74
MISCELLANEOUS (mg/kg)								
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	43000
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg)								
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-247-15	SB-248-05	SB-248-10	SB-248-15	SB-249-05	SB-249-10	SB-249-15	SB-32-05
LABORATORY ID:	9615041002	9615039004	9615039005	9615039006	9615039007	9615039008	9615039009	03112414-42
SAMPLE DATE:	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	6/7/2005	11/21/2003
LOCATION:	SB-247	SB-248	SB-248	SB-248	SB-249	SB-249	SB-249	SB-32
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg) (Continued)								
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	110 J
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	84 J
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	190 J
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	170 J
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	170 J
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	--
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	180 J
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	--
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	--
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	200 J
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	--
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	--
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	--
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	430 J
FLUORENE	NA	NA	NA	NA	NA	NA	NA	83 J
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	79 J
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	95 J
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	380 J
PHENOL	NA	NA	NA	NA	NA	NA	NA	--
PYRENE	NA	NA	NA	NA	NA	NA	NA	450
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	13 J
ACETONE	NA	NA	NA	NA	NA	NA	NA	77 J
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA	12 J

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-33-05	SB-59-05	SB-59-10	SB-59-15	SB-60-05	SB-60-10	SB-61-05	SB-61-10
LABORATORY ID:	03112414-45	04092414-04	04092414-05	04092414-06	04092803-03	04092803-04	04092803-06	04092803-07
SAMPLE DATE:	11/21/2003	9/23/2004	9/23/2004	9/23/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004
LOCATION:	SB-33	SB-59	SB-59	SB-59	SB-60	SB-60	SB-61	SB-61
INORGANICS (mg/kg)								
ANTIMONY	--	--	--	--	--	--	--	--
ARSENIC	4.9 L	3.9	2.5	2.8	1 K	2.4	1.8	--
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	--	--	--	--	--	--	--	--
CADMIUM	--	--	--	--	--	--	--	--
CHROMIUM	23 J	30 J	14 J	27 J	60 J	120 J	19 J	12 J
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	54	8.3	8.1	15	15 J	21 J	8.7 J	4 J
LEAD	120	9.5	6.4	11	11 K	24 K	6.3 K	--
MERCURY	3.3	--	--	--	--	0.14	--	--
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	23	8	7.4	15	21 K	10 K	--	3.7 K
SELENIUM	--	--	--	--	--	--	--	--
THALLIUM	--	--	--	--	--	--	--	--
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	180	--	--	50 J	58 L	110	--	--
MISCELLANEOUS (%)								
PERCENT SOLIDS	73	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS (mg/kg)								
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS	--	12000	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg)								
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-33-05	SB-59-05	SB-59-10	SB-59-15	SB-60-05	SB-60-10	SB-61-05	SB-61-10
LABORATORY ID:	03112414-45	04092414-04	04092414-05	04092414-06	04092803-03	04092803-04	04092803-06	04092803-07
SAMPLE DATE:	11/21/2003	9/23/2004	9/23/2004	9/23/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004
LOCATION:	SB-33	SB-59	SB-59	SB-59	SB-60	SB-60	SB-61	SB-61
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg) (Continued)								
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
ACENAPHTHENE	110 J	--	--	--	--	--	--	--
ANTHRACENE	260 J	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	640	480 J	490 J	520 J	--	--	--	--
BENZO(A)PYRENE	570	750 J	670 J	770 J	--	--	--	--
BENZO(B)FLUORANTHENE	560	--	480 J	460 J	--	--	--	--
BENZO(G,H,I)PERYLENE	220 J	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	580	--	560 J	690 J	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--	41 J
CARBAZOLE	120 J	--	--	--	--	--	--	--
CHRYSENE	610	760 J	690 J	770 J	--	--	--	--
DIBENZOFURAN	65 J	--	--	--	--	--	--	--
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--
FLUORANTHENE	1000	730 J	670 J	740 J	--	45 J	--	--
FLUORENE	150 J	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--	--	--	--	--	--
NAPHTHALENE	--	--	--	--	--	--	--	--
PHENANTHRENE	910	--	--	--	--	--	--	--
PHENOL	--	--	--	--	--	--	--	--
PYRENE	1000	1700 J	1500 J	1800 J	--	--	--	--
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
2-BUTANONE	6 J	--	--	--	--	--	--	--
ACETONE	59 J	--	--	--	--	--	--	--
METHYLENE CHLORIDE	11 J	6 J	11 J	9 J	--	--	--	--

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-62-05	SB-62-10	SB-62-15	SB-63-05	SB-63-10	SB-64-05	SB-65-05	SB-65-10
LABORATORY ID:	04092414-08	04092414-09	04092414-10	04092803-11	04092803-12	04092803-09	04092018-18	04092018-19
SAMPLE DATE:	9/23/2004	9/23/2004	9/23/2004	9/24/2004	9/24/2004	9/24/2004	9/17/2004	9/17/2004
LOCATION:	SB-62	SB-62	SB-62	SB-63	SB-63	SB-64	SB-65	SB-65
INORGANICS (mg/kg)								
ANTIMONY	--	--	--	--	--	--	--	--
ARSENIC	1.7	--	0.71	1.2 K	--	0.79 K	2 L	--
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	--	--	--	--	--	--	--	--
CADMIUM	--	--	--	--	--	--	--	--
CHROMIUM	16 J	3.6 J	6.4 J	22 J	22 J	26 J	35	16
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	11	--	3	13 J	13 J	22 J	23 L	17 L
LEAD	7.8	--	--	9 K	4.5 K	13 K	6.5 L	3 L
MERCURY	--	--	--	--	--	0.14	--	--
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	11	--	--	16 K	15 K	18 K	23	14
SELENIUM	--	--	--	--	--	--	--	--
THALLIUM	--	--	--	--	--	--	--	--
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	38 J	--	--	36 L	--	--	--	--
MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS (mg/kg)								
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS	--	--	--	--	--	--	--	12000
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg)								
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-62-05	SB-62-10	SB-62-15	SB-63-05	SB-63-10	SB-64-05	SB-65-05	SB-65-10
LABORATORY ID:	04092414-08	04092414-09	04092414-10	04092803-11	04092803-12	04092803-09	04092018-18	04092018-19
SAMPLE DATE:	9/23/2004	9/23/2004	9/23/2004	9/24/2004	9/24/2004	9/24/2004	9/17/2004	9/17/2004
LOCATION:	SB-62	SB-62	SB-62	SB-63	SB-63	SB-64	SB-65	SB-65
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg) (Continued)								
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
ACENAPHTHENE	--	--	--	--	--	--	--	--
ANTHRACENE	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	--	--	--	110 J	--	--	--	--
BENZO(A)PYRENE	--	--	--	120 J	--	--	--	--
BENZO(B)FLUORANTHENE	--	--	--	84 J	--	--	--	--
BENZO(G,H,I)PERYLENE	--	--	--	110 J	--	--	--	--
BENZO(K)FLUORANTHENE	--	--	--	140 J	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--	--
CARBAZOLE	--	--	--	--	--	--	--	--
CHRYSENE	--	--	--	150 J	--	--	--	--
DIBENZOFURAN	--	--	--	--	--	--	--	--
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	76 J	--	--	--	--
FLUORANTHENE	--	--	--	150 J	--	--	--	--
FLUORENE	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--	79 J	--	--	--	--
NAPHTHALENE	--	--	--	--	--	--	--	--
PHENANTHRENE	--	--	--	49 J	--	--	--	--
PHENOL	--	--	520	--	--	--	--	--
PYRENE	45 J	--	--	250 J	--	--	--	--
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
2-BUTANONE	--	--	--	--	--	--	--	--
ACETONE	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	--	10 J	9 J	--	--	--	8 J	8 J

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-65-15	SB-65-20	SB-66-05	SB-66-10	SB-67-05	SB-67-10	SB-67-15	SB-67-20
LABORATORY ID:	04092018-20	04092018-21	04092414-12	04092414-13	04092803-14	04092803-15	04092803-16	04092803-17
SAMPLE DATE:	9/17/2004	9/17/2004	9/23/2004	9/23/2004	9/27/2004	9/27/2004	9/27/2004	9/27/2004
LOCATION:	SB-65	SB-65	SB-66	SB-66	SB-67	SB-67	SB-67	SB-67
INORGANICS (mg/kg)								
ANTIMONY	--	--	--	--	--	--	--	--
ARSENIC	--	--	1.4	1.5	1.2 K	1.2 K	2.5	1.2 K
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	--	--	--	--	--	--	--	--
CADMIUM	--	--	--	--	--	--	--	--
CHROMIUM	--	--	22 J	11 J	41 J	13 J	14 J	19 J
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	5 L	3.4 L	23	7.7	9.1 J	31 J	11 J	9.7 J
LEAD	--	--	7.8	6.3	4.3 K	11 K	6.5 K	7.5 K
MERCURY	--	--	--	--	--	--	--	--
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	6.6	3.5 K	--	7.7	--	27 K	10 K	4.3 K
SELENIUM	--	--	4	--	--	--	--	--
THALLIUM	--	--	--	--	--	--	--	--
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	--	--	--	35 J	--	50 L	--	--
MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS (mg/kg)								
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS	--	--	--	--	17000	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg)								
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-65-15	SB-65-20	SB-66-05	SB-66-10	SB-67-05	SB-67-10	SB-67-15	SB-67-20
LABORATORY ID:	04092018-20	04092018-21	04092414-12	04092414-13	04092803-14	04092803-15	04092803-16	04092803-17
SAMPLE DATE:	9/17/2004	9/17/2004	9/23/2004	9/23/2004	9/27/2004	9/27/2004	9/27/2004	9/27/2004
LOCATION:	SB-65	SB-65	SB-66	SB-66	SB-67	SB-67	SB-67	SB-67
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg) (Continued)								
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
ACENAPHTHENE	--	--	--	--	--	--	--	--
ANTHRACENE	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	--	--	--	--	--	--	--	430 J
BENZO(B)FLUORANTHENE	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--	--
CARBAZOLE	--	--	--	--	--	--	--	--
CHRYSENE	--	--	--	--	--	--	--	510 J
DIBENZOFURAN	--	--	--	--	--	--	--	--
DI-N-BUTYL PHTHALATE	--	--	61 J	76 J	--	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--
FLUORANTHENE	--	--	--	--	--	--	--	510 J
FLUORENE	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--	--	--	--	--	--
NAPHTHALENE	--	--	--	--	--	--	--	--
PHENANTHRENE	--	--	--	--	--	--	--	--
PHENOL	--	--	--	--	--	--	--	--
PYRENE	--	--	--	--	--	--	--	790 J
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
2-BUTANONE	--	--	--	--	--	--	--	--
ACETONE	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	8 J	9 J	10 J	8 J	--	--	--	--

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	**SB-67-25**
LABORATORY ID:	**04092803-18**
SAMPLE DATE:	**9/27/2004**
LOCATION:	**SB-67**
INORGANICS (mg/kg)	
ANTIMONY	--
ARSENIC	--
BARIUM	NA
BERYLLIUM	--
CADMIUM	--
CHROMIUM	16 J
COBALT	NA
COPPER	4.9 J
LEAD	--
MERCURY	--
MOLYBDENUM	NA
NICKEL	7.6 K
SELENIUM	--
THALLIUM	--
VANADIUM	NA
ZINC	--
MISCELLANEOUS (%)	
PERCENT SOLIDS	NA
MISCELLANEOUS (mg/kg)	
TOTAL ORGANIC CARBON	NA
PETROLEUM HYDROCARBONS (ug/kg)	
DIESEL RANGE ORGANICS	--
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg)	
ACENAPHTHENE	NA
ACENAPHTHYLENE	NA
ANTHRACENE	NA
BENZO(A)ANTHRACENE	NA
BENZO(A)PYRENE	NA
BENZO(B)FLUORANTHENE	NA
BENZO(G,H,I)PERYLENE	NA
BENZO(K)FLUORANTHENE	NA
CHRYSENE	NA
DIBENZO(A,H)ANTHRACENE	NA

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	**SB-67-25**
LABORATORY ID:	**04092803-18**
SAMPLE DATE:	**9/27/2004**
LOCATION:	**SB-67**
POLYCYCLIC AROMATIC HYDROCARBONS (ug/kg) (Continued)	
FLUORANTHENE	NA
FLUORENE	NA
INDENO(1,2,3-CD)PYRENE	NA
NAPHTHALENE	NA
PHENANTHRENE	NA
PYRENE	NA
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)	
ACENAPHTHENE	--
ANTHRACENE	--
BENZO(A)ANTHRACENE	--
BENZO(A)PYRENE	--
BENZO(B)FLUORANTHENE	--
BENZO(G,H,I)PERYLENE	--
BENZO(K)FLUORANTHENE	--
BIS(2-ETHYLHEXYL)PHTHALATE	--
CARBAZOLE	--
CHRYSENE	--
DIBENZOFURAN	--
DI-N-BUTYL PHTHALATE	--
DI-N-OCTYL PHTHALATE	--
FLUORANTHENE	--
FLUORENE	--
INDENO(1,2,3-CD)PYRENE	--
NAPHTHALENE	--
PHENANTHRENE	--
PHENOL	--
PYRENE	--
VOLATILE ORGANIC COMPOUNDS (ug/kg)	
2-BUTANONE	--
ACETONE	--
METHYLENE CHLORIDE	--

TABLE AD-2

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL
BLOCK D, SOIL RESPONSE ACTION PLAN
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

1 Highlighted values indicate positive detection in exceedance of cleanup goals

µg/kg - Micrograms per kilogram.
MDE - Maryland Department of the Environment
mg/kg - Milligrams per kilogram.
NA - Not applicable.
NC - No criterion.
SB - Soil boring.
S.U. - Standard Units.
-- - Not detected.

B - Analyte was detected but is considered to be a laboratory contaminant
J - Positive value is considered estimated as a result of technical noncompliance
K - Positive value is considered biased high as a result of techical noncompliance
L - Positive value is considered biased low as a result of technical noncompliance

TABLE AD-3
SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL - FALL 2007 RESULTS
BLOCK D
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-318-0203	SB-318-0506	SB-318-0809	SB-319-0203	SB-319-0506	SB-319-0809	SB-320-0203	SB-322-0809	SB-323-0203	SB-323-0506	SB-323-0809	SB-324-0203
LABORATORY ID:	A7K010295001	A7K010295002	A7K010295003	A7K010295004	A7K010295005	A7K010295006	A7K010295007	A7K010295015	A7K010295016	A7K010295017	A7K010295018	A7K010295019
SAMPLE DATE:	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007
LOCATION:	SB-318	SB-318	SB-318	SB-319	SB-319	SB-319	SB-320	SB-322	SB-323	SB-323	SB-323	SB-324
DEPTH RANGE:	2-3	5-6	8-9	2-3	5-6	8-9	2-3	8-9	2-3	5-6	8-9	2-3
MISCELLANEOUS (%)												
PERCENT SOLIDS	85.3	88.6	85.2	89.3	87.9	85.1	88.4	86.5	89.6	86.6	83.1	89.6
SEMIVOLATILE SOIL (ug/kg)												
BENZO(A)PYRENE	--	--	--	15 J	--	--	--	--	--	--	--	--
INORGANICS (mg/kg)												
MERCURY	--	0.029 L	0.055 L	0.043 L	0.024 L	0.026 L	0.028 L	--	--	--	0.057 L	0.036 L

SAMPLE ID:	SB-320-0506	SB-320-0809	SB-321-0203	SB-321-0506	SB-321-0809	SB-322-0203	SB-322-0506	SB-325-0203	SB-325-0506	SB-325-0809	SB-326-0203	SB-326-0506
LABORATORY ID:	A7K010295008	A7K010295009	A7K010295010	A7K010295011	A7K010295012	A7K010295013	A7K010295014	A7K010295022	A7K010295023	A7K010295024	A7K010295025	A7K010295026
SAMPLE DATE:	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007	10/31/2007
LOCATION:	SB-320	SB-320	SB-321	SB-321	SB-321	SB-322	SB-322	SB-325	SB-325	SB-325	SB-326	SB-326
DEPTH RANGE:	5-6	8-9	2-3	5-6	8-9	2-3	5-6	2-3	5-6	8-9	2-3	5-6
MISCELLANEOUS (%)												
PERCENT SOLIDS	88.9	86.9	89.2	85.4	85	85.5	86.8	88.2	89.2	84.6	88	88.8
SEMIVOLATILE SOIL (ug/kg)												
BENZO(A)PYRENE	--	--	940	--	--	13 J	--	72 J	--	--	25 J	--
INORGANICS (mg/kg)												
MERCURY	--	0.035 L	0.06 L	--	--	--	0.035 L	0.057 L	--	--	0.093 L	0.021 L

TABLE AD-3
SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL - FALL 2007 RESULTS
BLOCK D
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-324-0506	SB-324-0809	SB-327-0506	SB-327-0809	SB-328-0203	SB-328-0506	SB-328-0809	SB-329-0203	SB-329-0506	SB-332-0203	SB-332-0506	SB-332-0809
LABORATORY ID:	A7K010295020	A7K010295021	A7K020316002	A7K020316003	A7K020316004	A7K020316005	A7K020316006	A7K020316007	A7K020316008	A7K020316016	A7K020316017	A7K020316018
SAMPLE DATE:	10/31/2007	10/31/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007
LOCATION:	SB-324	SB-324	SB-327	SB-327	SB-328	SB-328	SB-328	SB-329	SB-329	SB-332	SB-332	SB-332
DEPTH RANGE:	5-6	8-9	5-6	8-9	2-3	5-6	8-9	2-3	5-6	2-3	5-6	8-9
MISCELLANEOUS (%)												
PERCENT SOLIDS	87.5	87	85.9	84.6	86.9	82.6	84.2	82.1	80.1	86.1	80.8	82.3
SEMIVOLATILE SOIL (ug/kg)												
BENZO(A)PYRENE	--	--	--	--	170 J	--	35 J	27 J	--	38 J	--	64 J
INORGANICS (mg/kg)												
MERCURY	0.031 L	0.034 L	0.029 B	0.02 B	0.33	0.023 B	0.025 B	0.031 B	0.041 B	0.064 B	0.034 B	0.035 B

SAMPLE ID:	SB-326-0809	SB-327-0203	SB-329-0809	SB-330-0203	SB-330-0506	SB-330-0809	SB-331-0203	SB-331-0506	SB-331-0809	SB-334-0506	SB-334-0809	SB-335-0203
LABORATORY ID:	A7K010295027	A7K020316001	A7K020316009	A7K020316010	A7K020316011	A7K020316012	A7K020316013	A7K020316014	A7K020316015	A7K020319005	A7K020319006	A7K020319007
SAMPLE DATE:	10/31/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007
LOCATION:	SB-326	SB-327	SB-329	SB-330	SB-330	SB-330	SB-331	SB-331	SB-331	SB-334	SB-334	SB-335
DEPTH RANGE:	8-9	2-3	8-9	2-3	5-6	8-9	2-3	5-6	8-9	5-6	8-9	2-3
MISCELLANEOUS (%)												
PERCENT SOLIDS	84.2	82.8	84.1	82.4	80.1	86.7	86.1	84.9	82.7	80.7	78.4	83.5
SEMIVOLATILE SOIL (ug/kg)												
BENZO(A)PYRENE	110 J	130 J	--	110 J	110 J	--	20 J	--	--	64 J	30 J	20 J
INORGANICS (mg/kg)												
MERCURY	0.064 L	0.27	0.025 B	0.041 B	0.1 B	0.035 B	0.059 B	0.035 B	0.04 B	0.07 B	0.061 B	0.3

TABLE AD-3
SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL - FALL 2007 RESULTS
BLOCK D
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-333-0203	SB-333-0506	SB-333-0809	SB-334-0203	SB-336-0809	SB-337-0203	SB-337-0506	SB-337-0809	SB-338-0203	SB-338-0506	SB-338-0809	SB-341-0506
LABORATORY ID:	A7K020319001	A7K020319002	A7K020319003	A7K020319004	A7K020319012	A7K020319013	A7K020319014	A7K020319015	A7K020319016	A7K020319017	A7K020319018	A7K020321008
SAMPLE DATE:	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007
LOCATION:	SB-333	SB-333	SB-333	SB-334	SB-336	SB-337	SB-337	SB-337	SB-338	SB-338	SB-338	SB-341
DEPTH RANGE:	2-3	5-6	8-9	2-3	8-9	2-3	5-6	8-9	2-3	5-6	8-9	5-6
MISCELLANEOUS (%)												
PERCENT SOLIDS	81	86.4	86.6	86.3	81.7	84.8	80.3	79.4	82.4	81.7	81.8	77.8
SEMIVOLATILE SOIL (ug/kg)												
BENZO(A)PYRENE	--	--	--	88 J	24 J	13 J	700 J	--	40 J	50 J	--	25 J
INORGANICS (mg/kg)												
MERCURY	0.062 B	0.036 B	0.025 B	0.38	0.35	0.4	0.093 B	0.82	0.42	0.042 B	0.055 B	0.29 L

SAMPLE ID:	SB-335-0506	SB-335-0809	SB-336-0203	SB-336-0506	SB-339-0203	SB-339-0506	SB-339-0809	SB-340-0203	SB-340-0506	SB-340-0809	SB-341-0203	SB-343-0809
LABORATORY ID:	A7K020319008	A7K020319009	A7K020319010	A7K020319011	A7K020321001	A7K020321002	A7K020321003	A7K020321004	A7K020321005	A7K020321006	A7K020321007	A7K020321015
SAMPLE DATE:	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007
LOCATION:	SB-335	SB-335	SB-336	SB-336	SB-339	SB-339	SB-339	SB-340	SB-340	SB-340	SB-341	SB-343
DEPTH RANGE:	5-6	8-9	2-3	5-6	2-3	5-6	8-9	2-3	5-6	8-9	2-3	8-9
MISCELLANEOUS (%)												
PERCENT SOLIDS	82.6	83.2	87.3	79.2	88.4	80.2	86.7	87.3	82.3	77.7	85.3	79.4
SEMIVOLATILE SOIL (ug/kg)												
BENZO(A)PYRENE	13 J	--	--	--	14 J	--	--	110 J	30 J	--	23 J	--
INORGANICS (mg/kg)												
MERCURY	0.06 B	0.027 B	0.066 B	0.04 B	0.13 B	0.22 J	0.025 B	0.11 B	0.39 L	0.042 B	0.073 B	0.034 B

TABLE AD-3
SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL - FALL 2007 RESULTS
BLOCK D
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

SAMPLE ID:	SB-341-0809	SB-342-0203	SB-342-0506	SB-342-0809	SB-343-0203	SB-343-0506
LABORATORY ID:	A7K020321009	A7K020321010	A7K020321011	A7K020321012	A7K020321013	A7K020321014
SAMPLE DATE:	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007	11/1/2007
LOCATION:	SB-341	SB-342	SB-342	SB-342	SB-343	SB-343
DEPTH RANGE:	8-9	2-3	5-6	8-9	2-3	5-6
MISCELLANEOUS (%)						
PERCENT SOLIDS	66.1	84.1	73.7	62.5	79.6	75.4
SEMIVOLATILE SOIL (ug/kg)						
BENZO(A)PYRENE	38 J	78 J	17 J	--	11 J	--
INORGANICS (mg/kg)						
MERCURY	0.31 L	0.19 J	0.84 L	0.043 B	0.15 B	0.19 J

SAMPLE ID:	SB-344-0203	SB-344-0506	SB-344-0809
LABORATORY ID:	A7K020321016	A7K020321017	A7K020321018
SAMPLE DATE:	11/1/2007	11/1/2007	11/1/2007
LOCATION:	SB-344	SB-344	SB-344
DEPTH RANGE:	2-3	5-6	8-9
MISCELLANEOUS (%)			
PERCENT SOLIDS	81.3	80.1	73.4
SEMIVOLATILE SOIL (ug/kg)			
BENZO(A)PYRENE	--	--	--
INORGANICS (mg/kg)			
MERCURY	0.14 B	0.034 B	0.052 B

µg/kg - Micrograms per kilogram.
MDE - Maryland Department of the Environment.
mg/kg - Milligrams per kilogram.
NA - Not applicable.
NC - No criterion.
SB - Soil boring.
S.U. - Standard Units.
-- - Not detected.

1 Highlighted values indicate positive detection in exceedance of cleanup goals.
B - Analyte was detected but is considered to be a laboratory contaminant.
J - Positive value is considered estimated as a result of technical noncompliance.
K - Positive value is considered biased high as a result of techical noncompliance.
L - Positive value is considered biased low as a result of technical noncompliance.

APPENDIX B - STATISTICAL SUMMARY OF PRE- AND POST-REMOVAL ACTION DATA

Appendix B

Statistical Summary of Pre- and Post-Removal Data
Block D
Lockheed Martin Middle River Complex
Middle River, Maryland

Arsenic was identified as a chemical of concern (COC) in surface and subsurface soil and vanadium, mercury, and carcinogenic PAHs were identified as COCs in subsurface soil.

Arsenic is considered to be present within site-specific background concentrations in surface and subsurface soil. For arsenic, Lockheed Martin, Inc. and the Maryland Department of the Environment (MDE) agreed that no sample can remain on site with a concentration greater than 12 milligrams per kilogram (mg/kg) and the 95 percent upper confidence limit of the mean (UCL) concentration must be less than 6 mg/kg to be considered background. These criteria are attained under current conditions in surface soil and subsurface soil (Tables B-1 and B-2).

For vanadium, Lockheed Martin, Inc. and the MDE agreed that no sample can remain on site with a concentration greater than 91 mg/kg and the UCL concentration must be less than 55 mg/kg to be considered background. The subsurface soil data do not meet these criteria. However, two samples with elevated vanadium concentrations are located below the water table, thus mitigating direct exposure. Exclusion of samples SB-248-15 and SB-249-10 from this analysis results in statistics that meet the background criteria (Table B-2).

For mercury, the criteria being used for remediation is the average typical concentration (ATC). The post-excavation UCL concentration for mercury must be less than the ATC of 0.5 mg/kg. This criterion is already attained in surface soil; no mercury was detected in the surface soil (Table B-1). However, the UCL mercury concentration in subsurface soil is 1.3 mg/kg (Table B-2).

To attain a UCL concentration less than the cleanup level, the most contaminated soil samples are identified for removal. Iteratively, the highest concentration is virtually removed and replaced with a "post-remediation" concentration, such as a detection limit; then, the UCL is recalculated. If the UCL is less than the cleanup level, there is attainment; otherwise, the next highest concentrations are virtually removed until there is attainment. The maximum concentration remaining provides the basis for defining the remedial action level.

To attain this cleanup criterion for mercury, sample locations with concentrations greater than 1 mg/kg need to be removed. In the subsurface soil, where the UCL is greater than the cleanup level, samples SB-32 (1.7 mg/kg mercury) and SB-33 (3.3 mg/kg mercury) needed to be removed to achieve a UCL mercury concentration less than 0.5 mg/kg. Removal of samples SB-32 and SB-33 concurrently resulted in the removal of the surface soil samples associated with these locations. These samples are shaded in the attached

tables (Tables B-3 and B-4). The maximum mercury concentration remaining following the virtual removal is 0.4 mg/kg. Therefore, it was decided that 1 mg/kg would be considered the remedial action level for the block.

To demonstrate that target UCL concentrations are attained for arsenic, vanadium, and mercury, replacement values must be included in the samples that are targeted for excavation. The contract required detection limit identified in the laboratory data were used as the replacement values. For arsenic, vanadium, and mercury, these values are 0.5 mg/kg, 0.1 mg/kg, and 0.002 mg/kg, respectively (Tables B-5 and B-6).

The UCLs were calculated using EPA's ProUCL software. The output of the software and the data used for the calculations are attached (Tables B-7 through B-15).

In addition, soil sample boring locations must be less than the target incremental lifetime cancer risk of 1×10^{-5} and the target hazard index of 1.0. Because arsenic and vanadium meet the background requirements, risks associated with exposure to arsenic and vanadium are removed from the total risk at each boring. In the surface soil, no risks exceed the MDE target risk levels. In the subsurface soil, the cancer risks at SB-33 and SB-59 exceed 1×10^{-5}; no hazard index exceeds 1.0 at any subsurface soil location. SB-33 is already slated for removal because of mercury being present at a concentration greater than 1.0 mg/kg. SB-59 is slated for removal because of risks associated with carcinogenic PAHs. The maximum benzo[a]pyrene concentration remaining following the virtual removal of soil is 368 ug/kg. Using benzo[a]pyrene to represent risks associated with carcinogenic PAHs, soil with benzo[a]pyrene concentrations greater than 400 ug/kg should be excavated (Table B-16 and B-17).

APPENDIX B

TABLE B-1
SUMMARY OF PRE- AND POST-REMOVAL ANALYSIS
BLOCK D
SURFACE SOIL
LOCKHEED MARTIN MIDDLE RIVER COMPLEX
MIDDLE RIVER, MARYLAND

Metal	Pre-Removal			Post-Removal			Individual Soil Sample Result	Post-Response Action UCL
	Maximum	UCL	Basis of UCL	Maximum	UCL	Basis of UCL		
Arsenic	4.9	2	Approximate Gamma	4.9	1.9	Approximate Gamma	< 12 mg/kg	< 6 mg/kg
Vanadium	NA	NA	--	NA	NA	--	< 91 mg/kg	< 55 mg/kg
Mercury	ND	ND	--	ND	ND	--	--	< 0.5 mg/kg

1 All concentrations in milligrams per kilogram (mg/kg).

UCL - Upper confidence limit of the mean

APPENDIX B

TABLE B-2
SUMMARY OF PRE- AND POST-REMOVAL ANALYSIS
BLOCK D
SUBSURFACE SOIL
LOCKHEED MARTIN MIDDLE RIVER COMPLEX
MIDDLE RIVER, MARYLAND

Metal	Pre-Removal			Post-Removal			Individual Soil Sample Result	Post-Response Action UCL
	Maximum	UCL	Basis of UCL	Maximum	UCL	Basis of UCL		
Arsenic	8	2.7	Approximate Gamma	8	2.1	Approximate Gamma	< 12 mg/kg	< 6 mg/kg
Vanadium	91	64	Student's t UCL	--	--	--	< 91 mg/kg	< 55 mg/kg
Vanadium*	51	45	Student's t UCL	51	45	Student's t UCL	< 91 mg/kg	< 55 mg/kg
Mercury	3.3	1.3	99% Chebyshev (Mean, SD)	0.4	0.2	99% Chebyshev (Mean, SD)	--	< 0.5 mg/kg

1 All concentrations in milligrams per kilogram (mg/kg).
* Samples SB-248-15 and SB-249-10 were excluded from the analysis because they were below the water table.

UCL - Upper confidence limit of the mean

APPENDIX B

TABLE B-3
PRE-RESPONSE ACTION COC CONCENTRATIONS
BLOCK D
SURFACE SOIL
LOCKHEED MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

Soil Boring	Arsenic		Vanadium		Mercury	
SB-239 PAVEMENT	NA		NA		NA	
SB-239-SS[12]	NA		NA		NA	
SB-239-SS[6]	NA		NA		NA	
SB-240-SS[12]	NA		NA		NA	
SB-240-SS[6]	NA		NA		NA	
SB-241-SS[12]	NA		NA		NA	
SB-241-SS[6]	NA		NA		NA	
SB-242-SS[12]	NA		NA		NA	
SB-242-SS[6]	NA		NA		NA	
SB-243-SS[12]	NA		NA		NA	
SB-243-SS[6]	NA		NA		NA	
SB-32A-SS	0.48	U			0.1	U
SB-33A-SS	1	L			0.1	U
SB-59-SS	1.7				0.1	U
SB-60-SS	0.62	K			0.11	U
SB-61-SS	0.56	U			0.11	U
SB-62-SS	0.62				0.1	U
SB-63-SS	0.94	K			0.13	U
SB-64-SS	0.73	K			0.12	U
SB-65-SS	0.54	L			0.11	U
SB-66-SS	4.9				0.11	U
SB-67-SS	1.1				0.11	U

1 All concentrations are in milligrams per kilogram (mg/kg).
2 Highlighted samples are those targeted for removal.

COC - Chemical of concern.
SB - Soil boring
B - Analyte was detected but is considered to be a laboratory contaminant.
U - Not detected.
L - Concentration is biased low.
K - Concentration is biased high.

APPENDIX B

TABLE B-4
PRE-RESPONSE ACTION COC CONCENTRATIONS
BLOCK D
SUBSURFACE SOIL
LOCKHEED MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

Soil Boring	Arsenic		Vanadium		Mercury	
MRC-MW40(1214)	NA		NA		NA	
SB-239-SS[18]	NA		NA		NA	
SB-240-SS[18]	NA		NA		NA	
SB-241-SS[18]	NA		NA		NA	
SB-242-SS[18]	NA		NA		NA	
SB-243-SS[18]	NA		NA		NA	
SB-244-05	NA		NA		NA	
SB-244-10	NA		NA		NA	
SB-244-15	NA		NA		NA	
SB-245-05	NA		NA		NA	
SB-245-10	NA		NA		NA	
SB-245-15	NA		NA		NA	
SB-246-05	NA		NA		NA	
SB-246-10	NA		NA		NA	
SB-246-15	NA		NA		NA	
SB-247-05	4		33		0.1	K
SB-247-10	0.8	U	28.4		0.002	U
SB-247-15	NA		NA		NA	
SB-248-05	6		40.3		0.06	K
SB-248-10	8		51		0.002	U
SB-248-15	2	B	61.4		0.002	U
SB-249-05	3	B	24.5		0.4	K
SB-249-10	7		90.5		0.002	U
SB-249-15	NA		NA		NA	
SB-32-05	2.5	L			1.7	
SB-33-05	4.9	L			3.3	
SB-59-05	3.9				0.11	U
SB-59-10	2.5				0.11	U
SB-59-15	2.8				0.1	U
SB-60-05	1	K			0.12	U
SB-60-10	2.4				0.14	
SB-61-05	1.8				0.13	U
SB-61-10	0.51	U			0.1	U
SB-62-05	1.7				0.1	U
SB-62-10	0.53	U			0.11	U
SB-62-15	0.71				0.11	U
SB-63-05	1.2	K			0.12	U
SB-63-10	0.65	U			0.12	U
SB-64-05	0.79	K			0.14	
SB-65-05	2	L			0.12	U
SB-65-10	0.58	UL			0.12	U
SB-65-15	0.57	UL			0.11	U
SB-65-20	0.57	U			0.11	U
SB-66-05	1.4				0.11	U
SB-66-10	1.5				0.12	U
SB-67-05	1.2	K			0.14	U
SB-67-10	1.2	K			0.11	U
SB-67-15	2.5				0.12	U
SB-67-20	1.2	K			0.11	U
SB-67-25	0.52	U			0.1	U

1 All concentrations are in milligrams per kilogram (mg/kg).
2 Highlighted samples are those targeted for removal.
3 Bolded samples are below water table.

COC - Chemical of concern.
SB - Soil boring
B - Analyte was detected but is considered to be a laboratory contaminant.
U - Not detected.
L - Concentration is biased low.
K - Concentration is biased high.

APPENDIX B

TABLE B-5
POST-RESPONSE ACTION COC CONCENTRATIONS
BLOCK D
SURFACE SOIL
LOCKHEED MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

Soil Boring	Arsenic		Vanadium		Mercury	
SB-239 PAVEMENT	NA		NA		NA	
SB-239-SS[12]	NA		NA		NA	
SB-239-SS[6]	NA		NA		NA	
SB-240-SS[12]	NA		NA		NA	
SB-240-SS[6]	NA		NA		NA	
SB-241-SS[12]	NA		NA		NA	
SB-241-SS[6]	NA		NA		NA	
SB-242-SS[12]	NA		NA		NA	
SB-242-SS[6]	NA		NA		NA	
SB-243-SS[12]	NA		NA		NA	
SB-243-SS[6]	NA		NA		NA	
SB-32A-SS	0.5	U			0.002	U
SB-33A-SS	0.5	U			0.002	U
SB-59-SS	1.7				0.1	U
SB-60-SS	0.62	K			0.11	U
SB-61-SS	0.56	U			0.11	U
SB-62-SS	0.62				0.1	U
SB-63-SS	0.94	K			0.13	U
SB-64-SS	0.73	K			0.12	U
SB-65-SS	0.54	L			0.11	U
SB-66-SS	4.9				0.11	U
SB-67-SS	1.1				0.11	U

1 All concentrations are in milligrams per kilogram (mg/kg).

2 Concentrations of excavated samples are replaced with the following detection limits:

Arsenic 0.5 U mg/kg
Vanadium 0.1 U mg/kg
Mercury 0.002U mg/kg

3 Highlighted samples are those targeted for removal.

COC - Chemical of concern.
SB - Soil boring
B - Analyte was detected but is considered to be a laboratory contaminant.
U - Not detected.
L - Concentration is biased low.
K - Concentration is biased high.

APPENDIX B

TABLE B-6
POST-RESPONSE ACTION COC CONCENTRATIONS
BLOCK D
SUBSURFACE SOIL
LOCKHEED MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

Soil Boring	Arsenic		Vanadium		Mercury	
MRC-MW40(1214)	NA		NA		NA	
SB-239-SS[18]	NA		NA		NA	
SB-240-SS[18]	NA		NA		NA	
SB-241-SS[18]	NA		NA		NA	
SB-242-SS[18]	NA		NA		NA	
SB-243-SS[18]	NA		NA		NA	
SB-244-05	NA		NA		NA	
SB-244-10	NA		NA		NA	
SB-244-15	NA		NA		NA	
SB-245-05	NA		NA		NA	
SB-245-10	NA		NA		NA	
SB-245-15	NA		NA		NA	
SB-246-05	NA		NA		NA	
SB-246-10	NA		NA		NA	
SB-246-15	NA		NA		NA	
SB-247-05	4		33		0.1	K
SB-247-10	0.8	U	28.4		0.002	U
SB-247-15	NA		NA		NA	
SB-248-05	6		40.3		0.06	K
SB-248-10	8		51		0.002	U
SB-249-05	3	B	24.5		0.4	K
SB-249-15	NA		NA		NA	
SB-32-05	0.5	U			0.002	U
SB-33-05	0.5	U			0.002	U
SB-59-05	0.5	U			0.002	U
SB-59-10	2.5				0.11	U
SB-59-15	2.8				0.1	U
SB-60-05	1	K			0.12	U
SB-60-10	2.4				0.14	
SB-61-05	1.8				0.13	U
SB-61-10	0.51	U			0.1	U
SB-62-05	1.7				0.1	U
SB-62-10	0.53	U			0.11	U
SB-62-15	0.71				0.11	U
SB-63-05	1.2	K			0.12	U
SB-63-10	0.65	U			0.12	U
SB-64-05	0.79	K			0.14	
SB-65-05	2	L			0.12	U
SB-65-10	0.58	UL			0.12	U
SB-65-15	0.57	UL			0.11	U
SB-65-20	0.57	U			0.11	U
SB-66-05	1.4				0.11	U
SB-66-10	1.5				0.12	U
SB-67-05	1.2	K			0.14	U
SB-67-10	1.2	K			0.11	U
SB-67-15	2.5				0.12	U
SB-67-20	1.2	K			0.11	U
SB-67-25	0.52	U			0.1	U

1 All concentrations are in milligrams per kilogram (mg/kg).
2 Concentrations of excavated samples are replaced with the following detection limits:

Arsenic	0.5 U mg/kg
Vanadium	0.1 U mg/kg
Mercury	0.002U mg/kg

3 Highlighted samples are those targeted for removal.

COC - Chemical of concern.
SB - Soil boring
B - Analyte was detected but is considered to be a laboratory contaminant.
U - Not detected.
L - Concentration is biased low.
K - Concentration is biased high.

APPENDIX B

TABLE B-7
PRO-UCL PRE-REMOVAL ARSENIC CONCENTRATION
BLOCK D
SURFACE SOIL

Data File:	SURF AS V HG BLOCK D APPENDIX.xls	Variable:	Arsenic (PRE SURF)
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	11	Shapiro-Wilk Test Statistic	0.629561
Number of Unique Samples	10	Shapiro-Wilk 5% Critical Value	0.85
Minimum	0.24	Data not normal at 5% significance level	
Maximum	4.9		
Mean	1.151818	95% UCL (Assuming Normal Distribution)	
Median	0.73	Student's-t UCL	1.867044
Standard Deviation	1.308792		
Variance	1.712936	Gamma Distribution Test	
Coefficient of Variation	1.136283	A-D Test Statistic	0.628209
Skewness	2.768613	A-D 5% Critical Value	0.74204
		K-S Test Statistic	0.232129
Gamma Statistics		K-S 5% Critical Value	0.259642
k hat	1.524227	Data follow approximate gamma distribution	
k star (bias corrected)	1.169135	at 5% significance level	
Theta hat	0.755674		
Theta star	0.985189	95% UCLs (Assuming Gamma Distribution)	
nu hat	33.53299	Approximate Gamma UCL	1.953568
nu star	25.72096	Adjusted Gamma UCL	2.13773
Approx.Chi Square Value (.05)	15.165		
Adjusted Level of Significance	0.02783	Lognormal Distribution Test	
Adjusted Chi Square Value	13.85857	Shapiro-Wilk Test Statistic	0.942458
		Shapiro-Wilk 5% Critical Value	0.85
Log-transformed Statistics		Data are lognormal at 5% significance level	
Minimum of log data	-1.427116		
Maximum of log data	1.589235	95% UCLs (Assuming Lognormal Distribution	
Mean of log data	-0.22125	95% H-UCL	2.288882
Standard Deviation of log data	0.829129	95% Chebyshev (MVUE) UCL	2.327684
Variance of log data	0.687455	97.5% Chebyshev (MVUE) UCL	2.864472
		99% Chebyshev (MVUE) UCL	3.918888
		95% Non-parametric UCLs	
		CLT UCL	1.800903
		Adj-CLT UCL (Adjusted for skewness)	2.152885
		Mod-t UCL (Adjusted for skewness)	1.921946
		Jackknife UCL	1.867044
		Standard Bootstrap UCL	1.764793
		Bootstrap-t UCL	3.436542
RECOMMENDATION		Hall's Bootstrap UCL	4.77698
Assuming gamma distribution (0.05)		Percentile Bootstrap UCL	1.891818
		BCA Bootstrap UCL	2.167273
Use Approximate Gamma UCL		95% Chebyshev (Mean, Sd) UCL	2.871908
		97.5% Chebyshev (Mean, Sd) UCL	3.616192
		99% Chebyshev (Mean, Sd) UCL	5.078194

APPENDIX B

TABLE B-8
PRO-UCL PRE-REMOVAL ARSENIC CONCENTRATION
BLOCK D
SUBSURFACE SOIL

Data File:	SURF AS V HG BLOCK D APPENDIX.xls	Variable:	Arsenic (PRE SUB)
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	33	Shapiro-Wilk Test Statistic	0.804512
Number of Unique Samples	25	Shapiro-Wilk 5% Critical Value	0.931
Minimum	0.255	Data not normal at 5% significance level	
Maximum	8		
Mean	2.032273	95% UCL (Assuming Normal Distribution)	
Median	1.4	Student's-t UCL	2.618471
Standard Deviation	1.988002		
Variance	3.952152	Gamma Distribution Test	
Coefficient of Variation	0.978216	A-D Test Statistic	0.511956
Skewness	1.629238	A-D 5% Critical Value	0.771079
		K-S Test Statistic	0.103631
Gamma Statistics		K-S 5% Critical Value	0.156999
k hat	1.217042	Data follow approximate gamma distribution	
k star (bias corrected)	1.126604	at 5% significance level	
Theta hat	1.669846		
Theta star	1.803893	95% UCLs (Assuming Gamma Distribution)	
nu hat	80.32475	Approximate Gamma UCL	2.722875
nu star	74.35583	Adjusted Gamma UCL	2.764674
Approx.Chi Square Value (.05)	55.49698		
Adjusted Level of Significance	0.0419	Lognormal Distribution Test	
Adjusted Chi Square Value	54.65792	Shapiro-Wilk Test Statistic	0.934615
		Shapiro-Wilk 5% Critical Value	0.931
Log-transformed Statistics		Data are lognormal at 5% significance level	
Minimum of log data	-1.366492		
Maximum of log data	2.079442	95% UCLs (Assuming Lognormal Distribution	
Mean of log data	0.245073	95% H-UCL	3.400914
Standard Deviation of log data	1.031861	95% Chebyshev (MVUE) UCL	4.059433
Variance of log data	1.064736	97.5% Chebyshev (MVUE) UCL	4.896479
		99% Chebyshev (MVUE) UCL	6.540693
		95% Non-parametric UCLs	
		CLT UCL	2.601502
		Adj-CLT UCL (Adjusted for skewness)	2.706376
		Mod-t UCL (Adjusted for skewness)	2.634829
		Jackknife UCL	2.618471
		Standard Bootstrap UCL	2.572089
		Bootstrap-t UCL	2.777868
RECOMMENDATION		Hall's Bootstrap UCL	2.703146
Assuming gamma distribution (0.05)		Percentile Bootstrap UCL	2.599091
		BCA Bootstrap UCL	2.712576
Use Approximate Gamma UCL		95% Chebyshev (Mean, Sd) UCL	3.540743
		97.5% Chebyshev (Mean, Sd) UCL	4.193459
		99% Chebyshev (Mean, Sd) UCL	5.475593

APPENDIX B

TABLE B-9
PRO-UCL PRE-REMOVAL VANADIUM CONCENTRATION
BLOCK D
SUBSURFACE SOIL

Data File:	SURF AS V HG BLOCK D APPENDIX.xls	Variable:	Vanadium (PRE SUB ALL)
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	7	Shapiro-Wilk Test Statistic	0.897433
Number of Unique Samples	7	Shapiro-Wilk 5% Critical Value	0.803
Minimum	24.5	Data are normal at 5% significance level	
Maximum	90.5		
Mean	47.01429	95% UCL (Assuming Normal Distribution)	
Median	40.3	Student's-t UCL	63.99882
Standard Deviation	23.12541		
Variance	534.7848	Gamma Distribution Test	
Coefficient of Variation	0.491881	A-D Test Statistic	0.236766
Skewness	1.214203	A-D 5% Critical Value	0.709771
		K-S Test Statistic	0.165489
Gamma Statistics		K-S 5% Critical Value	0.312899
k hat	5.458992	Data follow approximate gamma distribution	
k star (bias corrected)	3.214662	at 5% significance level	
Theta hat	8.612265		
Theta star	14.62495	95% UCLs (Assuming Gamma Distribution)	
nu hat	76.42588	Approximate Gamma UCL	69.10918
nu star	45.00527	Adjusted Gamma UCL	78.09713
Approx.Chi Square Value (.05)	30.61663		
Adjusted Level of Significance	0.0159	Lognormal Distribution Test	
Adjusted Chi Square Value	27.09306	Shapiro-Wilk Test Statistic	0.966862
		Shapiro-Wilk 5% Critical Value	0.803
Log-transformed Statistics		Data are lognormal at 5% significance level	
Minimum of log data	3.198673		
Maximum of log data	4.50535	95% UCLs (Assuming Lognormal Distribution	
Mean of log data	3.756072	95% H-UCL	74.54028
Standard Deviation of log data	0.460497	95% Chebyshev (MVUE) UCL	82.4658
Variance of log data	0.212058	97.5% Chebyshev (MVUE) UCL	97.89714
		99% Chebyshev (MVUE) UCL	128.209
		95% Non-parametric UCLs	
		CLT UCL	61.39127
		Adj-CLT UCL (Adjusted for skewness)	65.67738
		Mod-t UCL (Adjusted for skewness)	64.66736
		Jackknife UCL	63.99882
		Standard Bootstrap UCL	60.66457
		Bootstrap-t UCL	72.42712
RECOMMENDATION		Hall's Bootstrap UCL	90.24173
Data are normal (0.05)		Percentile Bootstrap UCL	60.54286
		BCA Bootstrap UCL	62.95714
Use Student's-t UCL		95% Chebyshev (Mean, Sd) UCL	85.11361
		97.5% Chebyshev (Mean, Sd) UCL	101.5992
		99% Chebyshev (Mean, Sd) UCL	133.982

APPENDIX B

TABLE B-10
PRO-UCL PRE-REMOVAL VANADIUM CONCENTRATION
WITHOUT SATURATED SOIL SAMPLES
BLOCK D
SUBSURFACE SOIL

Data File:	SURF AS V HG BLOCK D APPENDIX.xls	Variable:	Vanadium (PRE SUB MINUS 2)
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	5	Shapiro-Wilk Test Statistic	0.951549
Number of Unique Samples	5	Shapiro-Wilk 5% Critical Value	0.762
Minimum	24.5	Data are normal at 5% significance level	
Maximum	51		
Mean	35.44	95% UCL (Assuming Normal Distribution)	
Median	33	Student's-t UCL	45.44983
Standard Deviation	10.49919		
Variance	110.233	Gamma Distribution Test	
Coefficient of Variation	0.296253	A-D Test Statistic	0.208763
Skewness	0.795382	A-D 5% Critical Value	0.678802
		K-S Test Statistic	0.173517
Gamma Statistics		K-S 5% Critical Value	0.357403
k hat	14.91761	Data follow approximate gamma distribution	
k star (bias corrected)	6.100377	at 5% significance level	
Theta hat	2.375716		
Theta star	5.809477	95% UCLs (Assuming Gamma Distribution)	
nu hat	149.1761	Approximate Gamma UCL	49.08992
nu star	61.00377	Adjusted Gamma UCL	57.15482
Approx.Chi Square Value (.05)	44.04109		
Adjusted Level of Significance	0.0086	Lognormal Distribution Test	
Adjusted Chi Square Value	37.82662	Shapiro-Wilk Test Statistic	0.979528
		Shapiro-Wilk 5% Critical Value	0.762
Log-transformed Statistics		Data are lognormal at 5% significance level	
Minimum of log data	3.198673		
Maximum of log data	3.931826	95% UCLs (Assuming Lognormal Distribution	
Mean of log data	3.533949	95% H-UCL	50.34732
Standard Deviation of log data	0.288821	95% Chebyshev (MVUE) UCL	55.29694
Variance of log data	0.083418	97.5% Chebyshev (MVUE) UCL	63.89991
		99% Chebyshev (MVUE) UCL	80.79878
		95% Non-parametric UCLs	
		CLT UCL	43.16321
		Adj-CLT UCL (Adjusted for skewness)	44.94782
		Mod-t UCL (Adjusted for skewness)	45.72819
		Jackknife UCL	45.44983
		Standard Bootstrap UCL	42.31588
		Bootstrap-t UCL	52.86822
RECOMMENDATION		Hall's Bootstrap UCL	66.2128
Data are normal (0.05)		Percentile Bootstrap UCL	42.2
		BCA Bootstrap UCL	42.88
Use Student's-t UCL		95% Chebyshev (Mean, Sd) UCL	55.90669
		97.5% Chebyshev (Mean, Sd) UCL	64.76264
		99% Chebyshev (Mean, Sd) UCL	82.15845

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TABLE B-11
PRO-UCL PRE-REMOVAL MERCURY CONCENTRATION
BLOCK D
SUBSURFACE SOIL

Data File:	SURF AS V HG BLOCK D APPENDIX.xls			Variable:	Mercury (PRE SUB)		
Raw Statistics				Normal Distribution Test			
Number of Valid Samples			33	Shapiro-Wilk Test Statistic			0.325313
Number of Unique Samples			11	Shapiro-Wilk 5% Critical Value			0.931
Minimum			0.001	Data not normal at 5% significance level			
Maximum			3.3				
Mean			0.21497	95% UCL (Assuming Normal Distribution)			
Median			0.055	Student's-t UCL			0.399552
Standard Deviation			0.625983				
Variance			0.391855	Gamma Distribution Test			
Coefficient of Variation			2.91196	A-D Test Statistic			5.28126
Skewness			4.408944	A-D 5% Critical Value			0.823811
				K-S Test Statistic			0.359346
Gamma Statistics				K-S 5% Critical Value			0.163174
k hat			0.442317	Data does not follow a gamma distribution			
k star (bias corrected)			0.422308	at 5% significance level			
Theta hat			0.486008				
Theta star			0.509035	95% UCLs (Assuming Gamma Distribution)			
nu hat			29.19291	Approximate Gamma UCL			0.356039
nu star			27.87234	Adjusted Gamma UCL			0.365655
Approx.Chi Square Value (.05)			16.82882				
Adjusted Level of Significance			0.0419	Lognormal Distribution Test			
Adjusted Chi Square Value			16.38623	Shapiro-Wilk Test Statistic			0.726289
				Shapiro-Wilk 5% Critical Value			0.931
Log-transformed Statistics				Data not lognormal at 5% significance level			
Minimum of log data			-6.907755				
Maximum of log data			1.193922	95% UCLs (Assuming Lognormal Distribution			
Mean of log data			-3.00134	95% H-UCL			0.671866
Standard Deviation of log data			1.755861	95% Chebyshev (MVUE) UCL			0.578475
Variance of log data			3.083049	97.5% Chebyshev (MVUE) UCL			0.73839
				99% Chebyshev (MVUE) UCL			1.052513
				95% Non-parametric UCLs			
				CLT UCL			0.394209
				Adj-CLT UCL (Adjusted for skewness)			0.483573
				Mod-t UCL (Adjusted for skewness)			0.413491
				Jackknife UCL			0.399552
				Standard Bootstrap UCL			0.392007
				Bootstrap-t UCL			1.658757
RECOMMENDATION				Hall's Bootstrap UCL			1.459157
Data are Non-parametric (0.05)				Percentile Bootstrap UCL			0.414182
				BCA Bootstrap UCL			0.513091
Use 99% Chebyshev (Mean, Sd) UCL				95% Chebyshev (Mean, Sd) UCL			0.689958
				97.5% Chebyshev (Mean, Sd) UCL			0.895485
				99% Chebyshev (Mean, Sd) UCL			1.299204

APPENDIX B

TABLE B-12
PRO-UCL POST-REMOVAL ARSENIC CONCENTRATION
BLOCK D
SURFACE SOIL

Data File:	SURF AS V HG BLOCK D APPENDIX.xls	Variable:	Arsenic (POST SURF)
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	11	Shapiro-Wilk Test Statistic	0.623134
Number of Unique Samples	9	Shapiro-Wilk 5% Critical Value	0.85
Minimum	0.25	Data not normal at 5% significance level	
Maximum	4.9		
Mean	1.084545	95% UCL (Assuming Normal Distribution)	
Median	0.62	Student's-t UCL	1.814695
Standard Deviation	1.336102		
Variance	1.785167	Gamma Distribution Test	
Coefficient of Variation	1.231946	A-D Test Statistic	0.65653
Skewness	2.75094	A-D 5% Critical Value	0.745603
		K-S Test Statistic	0.196641
Gamma Statistics		K-S 5% Critical Value	0.260677
k hat	1.319013	Data follow approximate gamma distribution	
k star (bias corrected)	1.019888	at 5% significance level	
Theta hat	0.82224		
Theta star	1.063396	95% UCLs (Assuming Gamma Distribution)	
nu hat	29.01828	Approximate Gamma UCL	1.92104
nu star	22.43754	Adjusted Gamma UCL	2.118515
Approx.Chi Square Value (.05)	12.66737		
Adjusted Level of Significance	0.02783	Lognormal Distribution Test	
Adjusted Chi Square Value	11.4866	Shapiro-Wilk Test Statistic	0.921532
		Shapiro-Wilk 5% Critical Value	0.85
Log-transformed Statistics		Data are lognormal at 5% significance level	
Minimum of log data	-1.386294		
Maximum of log data	1.589235	95% UCLs (Assuming Lognormal Distribution	
Mean of log data	-0.343566	95% H-UCL	2.318673
Standard Deviation of log data	0.890032	95% Chebyshev (MVUE) UCL	2.244686
Variance of log data	0.792157	97.5% Chebyshev (MVUE) UCL	2.780493
		99% Chebyshev (MVUE) UCL	3.83298
		95% Non-parametric UCLs	
		CLT UCL	1.747174
		Adj-CLT UCL (Adjusted for skewness)	2.104207
		Mod-t UCL (Adjusted for skewness)	1.870385
		Jackknife UCL	1.814695
		Standard Bootstrap UCL	1.71237
		Bootstrap-t UCL	3.469588
RECOMMENDATION		Hall's Bootstrap UCL	4.609915
Assuming gamma distribution (0.05)		Percentile Bootstrap UCL	1.782727
		BCA Bootstrap UCL	2.170909
Use Approximate Gamma UCL		95% Chebyshev (Mean, Sd) UCL	2.840527
		97.5% Chebyshev (Mean, Sd) UCL	3.600341
		99% Chebyshev (Mean, Sd) UCL	5.09285

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TABLE B-13
PRO-UCL POST-REMOVAL ARSENIC CONCENTRATION
BLOCK D
SUBSURFACE SOIL

Data File:	SURF AS V HG BLOCK D APPENDIX.xls	Variable:	Arsenic (POST SUB)
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	31	Shapiro-Wilk Test Statistic	0.729291
Number of Unique Samples	23	Shapiro-Wilk 5% Critical Value	0.929
Minimum	0.25	Data not normal at 5% significance level	
Maximum	8		
Mean	1.565	95% UCL (Assuming Normal Distribution)	
Median	1.2	Student's-t UCL	2.097534
Standard Deviation	1.746947		
Variance	3.051825	Gamma Distribution Test	
Coefficient of Variation	1.11626	A-D Test Statistic	0.910258
Skewness	2.323333	A-D 5% Critical Value	0.772697
		K-S Test Statistic	0.158891
Gamma Statistics		K-S 5% Critical Value	0.162002
k hat	1.120267	Data follow approximate gamma distribution	
k star (bias corrected)	1.03336	at 5% significance level	
Theta hat	1.396988		
Theta star	1.514477	95% UCLs (Assuming Gamma Distribution)	
nu hat	69.45658	Approximate Gamma UCL	2.149192
nu star	64.06831	Adjusted Gamma UCL	2.187954
Approx.Chi Square Value (.05)	46.6533		
Adjusted Level of Significance	0.0413	Lognormal Distribution Test	
Adjusted Chi Square Value	45.82679	Shapiro-Wilk Test Statistic	0.906973
		Shapiro-Wilk 5% Critical Value	0.929
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-1.386294		
Maximum of log data	2.079442	95% UCLs (Assuming Lognormal Distribution	
Mean of log data	-0.060771	95% H-UCL	2.60131
Standard Deviation of log data	1.044037	95% Chebyshev (MVUE) UCL	3.082728
Variance of log data	1.090014	97.5% Chebyshev (MVUE) UCL	3.73236
		99% Chebyshev (MVUE) UCL	5.008434
		95% Non-parametric UCLs	
		CLT UCL	2.081091
		Adj-CLT UCL (Adjusted for skewness)	2.220988
		Mod-t UCL (Adjusted for skewness)	2.119355
		Jackknife UCL	2.097534
		Standard Bootstrap UCL	2.056864
		Bootstrap-t UCL	2.38737
RECOMMENDATION		Hall's Bootstrap UCL	2.701501
Assuming gamma distribution (0.05)		Percentile Bootstrap UCL	2.081774
		BCA Bootstrap UCL	2.216129
Use Approximate Gamma UCL		95% Chebyshev (Mean, Sd) UCL	2.932653
		97.5% Chebyshev (Mean, Sd) UCL	3.524437
		99% Chebyshev (Mean, Sd) UCL	4.686883

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TABLE B-14
PRO-UCL POST-REMOVAL VANADIUM CONCENTRATION
BLOCK D
SUBSURFACE SOIL

Data File:	SURF AS V HG BLOCK D APPENDIX.xls	Variable:	Vanadium (POST SUB)
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	5	Shapiro-Wilk Test Statistic	0.951549
Number of Unique Samples	5	Shapiro-Wilk 5% Critical Value	0.762
Minimum	24.5	Data are normal at 5% significance level	
Maximum	51		
Mean	35.44	95% UCL (Assuming Normal Distribution)	
Median	33	Student's-t UCL	45.44983
Standard Deviation	10.49919		
Variance	110.233	Gamma Distribution Test	
Coefficient of Variation	0.296253	A-D Test Statistic	0.208763
Skewness	0.795382	A-D 5% Critical Value	0.678802
		K-S Test Statistic	0.173517
Gamma Statistics		K-S 5% Critical Value	0.357403
k hat	14.91761	Data follow approximate gamma distribution	
k star (bias corrected)	6.100377	at 5% significance level	
Theta hat	2.375716		
Theta star	5.809477	95% UCLs (Assuming Gamma Distribution)	
nu hat	149.1761	Approximate Gamma UCL	49.08992
nu star	61.00377	Adjusted Gamma UCL	57.15482
Approx.Chi Square Value (.05)	44.04109		
Adjusted Level of Significance	0.0086	Lognormal Distribution Test	
Adjusted Chi Square Value	37.82662	Shapiro-Wilk Test Statistic	0.979528
		Shapiro-Wilk 5% Critical Value	0.762
Log-transformed Statistics		Data are lognormal at 5% significance level	
Minimum of log data	3.198673		
Maximum of log data	3.931826	95% UCLs (Assuming Lognormal Distribution	
Mean of log data	3.533949	95% H-UCL	50.34732
Standard Deviation of log data	0.288821	95% Chebyshev (MVUE) UCL	55.29694
Variance of log data	0.083418	97.5% Chebyshev (MVUE) UCL	63.89991
		99% Chebyshev (MVUE) UCL	80.79878
		95% Non-parametric UCLs	
		CLT UCL	43.16321
		Adj-CLT UCL (Adjusted for skewness)	44.94782
		Mod-t UCL (Adjusted for skewness)	45.72819
		Jackknife UCL	45.44983
		Standard Bootstrap UCL	41.6998
		Bootstrap-t UCL	52.86822
RECOMMENDATION		Hall's Bootstrap UCL	66.2128
Data are normal (0.05)		Percentile Bootstrap UCL	43.12
		BCA Bootstrap UCL	43.12
Use Student's-t UCL		95% Chebyshev (Mean, Sd) UCL	55.90669
		97.5% Chebyshev (Mean, Sd) UCL	64.76264
		99% Chebyshev (Mean, Sd) UCL	82.15845

APPENDIX B

TABLE B-15
PRO-UCL POST REMOVAL MERCURY CONCENTRATION
BLOCK D
SUBSURFACE SOIL

Data File:	SURF AS V HG BLOCK D APPENDIX.xls	Variable:	Mercury (POST SUB)
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	31	Shapiro-Wilk Test Statistic	0.553107
Number of Unique Samples	9	Shapiro-Wilk 5% Critical Value	0.929
Minimum	0.001	Data not normal at 5% significance level	
Maximum	0.4		
Mean	0.065806	95% UCL (Assuming Normal Distribution)	
Median	0.055	Student's-t UCL	0.087151
Standard Deviation	0.07002		
Variance	0.004903	Gamma Distribution Test	
Coefficient of Variation	1.064032	A-D Test Statistic	4.31477
Skewness	3.818898	A-D 5% Critical Value	0.780987
		K-S Test Statistic	0.385164
Gamma Statistics		K-S 5% Critical Value	0.163107
k hat	0.888753	Data does not follow a gamma distribution	
k star (bias corrected)	0.82425	at 5% significance level	
Theta hat	0.074044		
Theta star	0.079838	95% UCLs (Assuming Gamma Distribution)	
nu hat	55.10267	Approximate Gamma UCL	0.094236
nu star	51.10349	Adjusted Gamma UCL	0.096167
Approx.Chi Square Value (.05)	35.68652		
Adjusted Level of Significance	0.0413	Lognormal Distribution Test	
Adjusted Chi Square Value	34.96971	Shapiro-Wilk Test Statistic	0.637793
		Shapiro-Wilk 5% Critical Value	0.929
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.907755		
Maximum of log data	-0.916291	95% UCLs (Assuming Lognormal Distribution	
Mean of log data	-3.379874	95% H-UCL	0.336437
Standard Deviation of log data	1.626761	95% Chebyshev (MVUE) UCL	0.309406
Variance of log data	2.646351	97.5% Chebyshev (MVUE) UCL	0.392686
		99% Chebyshev (MVUE) UCL	0.556272
		95% Non-parametric UCLs	
		CLT UCL	0.086492
		Adj-CLT UCL (Adjusted for skewness)	0.095709
		Mod-t UCL (Adjusted for skewness)	0.088589
		Jackknife UCL	0.087151
		Standard Bootstrap UCL	0.0875
		Bootstrap-t UCL	0.109004
RECOMMENDATION		Hall's Bootstrap UCL	0.179744
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.088355
		BCA Bootstrap UCL	0.099129
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.120624
		97.5% Chebyshev (Mean, Sd) UCL	0.144344
		99% Chebyshev (Mean, Sd) UCL	0.190936

APPENDIX B

TABLE B-16
PRE- AND POST-RESPONSE ACTION RISKS
BLOCK D
SURFACE SOIL

Surface Soil Boring	Residential Risks (Pre-Response Action) [1]		Residential Risks (Pre-Response Minus Background) [2]		Residential Risks (Post-Response Action) [3]		B[a]P Concentration (ug/kg)[4]
	Cancer	Noncancer	Cancer	Noncancer	Cancer	Noncancer	
SB-239	4.20E-06	NA	4.20E-06	NA	4.20E-06	NA	154
SB-240	2.80E-06	NA	2.80E-06	NA	2.80E-06	NA	63
SB-241	2.90E-06	NA	2.90E-06	NA	2.90E-06	NA	70
SB-242	3.20E-06	NA	3.20E-06	NA	3.20E-06	NA	79
SB-243	3.60E-06	NA	3.60E-06	NA	3.60E-06	NA	100
SB-32A	8.60E-07	0.14	1.70E-07	0.13	0	0	NA
SB-33A	3.00E-06	0.13	9.10E-08	0.086	0	0	NA
SB-59	5.00E-06	0.2	1.20E-07	0.12	1.20E-07	0.12	NA
SB-60	1.90E-06	0.17	1.60E-07	0.15	1.60E-07	0.15	NA
SB-61	1.00E-06	0.16	2.10E-07	0.15	2.10E-07	0.15	NA
SB-62	1.90E-06	0.16	1.60E-07	0.13	1.60E-07	0.13	NA
SB-63	3.00E-06	0.23	2.90E-07	0.19	2.90E-07	0.19	NA
SB-64	2.30E-06	0.2	2.10E-07	0.17	2.10E-07	0.17	NA
SB-65	1.60E-06	0.09	4.90E-08	0.07	4.90E-08	0.07	NA
SB-66	1.50E-05	0.41	4.10E-07	0.19	4.10E-07	0.19	NA
SB-67	3.40E-06	0.27	2.40E-07	0.22	2.40E-07	0.22	NA

1 Soil boring location risks as identified in the Site Characterization Report (Tetra Tech, May 2006).

2 Soil boring location risks as identified in the Site Characterization Report (Tetra Tech, May 2006) minus risks associated with arsenic and vanadium.

3 Soil boring location risks excluding those attributable to arsenic and vanadium (less than Block D-specific background reference concentration of 12 and 91 mg/kg, respectively).

4 Concentration used to calculate risk in the Site Characterization Rerpot (Tetra Tech, May 2006)

APPENDIX B

TABLE B-17
PRE- AND POST-RESPONSE ACTION RISKS
BLOCK D
SUBSURFACE SOIL

Subsurface Soil Boring	Residential Risks (Pre-Response Action) [1]		Residential Risks (Pre-Response Minus Background) [2]		Residential Risks (Post-Response Action) [3]		B[a]P Concentration (ug/kg)[4]
	Cancer	Noncancer	Cancer	Noncancer	Cancer	Noncancer	
SB-239	9.50E-06	NA	9.50E-06	NA	9.50E-06	NA	368
SB-240	3.10E-06	NA	3.10E-06	NA	3.10E-06	NA	130
SB-241	2.40E-06	NA	2.40E-06	NA	2.40E-06	NA	73
SB-242	3.30E-06	NA	3.30E-06	NA	3.30E-06	NA	ND
SB-243	3.10E-06	NA	3.10E-06	NA	3.10E-06	NA	75
SB-244	NA	NA	NA	NA	NA	NA	NA
SB-245	NA	NA	NA	NA	NA	NA	NA
SB-246	NA	NA	NA	NA	NA	NA	NA
SB-247	1.20E-05	1.2	4.40E-07	0.16	4.40E-07	0.16	NA
SB-248	2.10E-05	1.8	6.30E-07	0.17	6.30E-07	0.17	NA
SB-249	2.10E-05	2.1	7.20E-07	0.26	7.20E-07	0.26	NA
SB-32	1.50E-05	0.65	8.00E-06	0.54	0	0	170
SB-33	3.10E-05	1.1	1.70E-05	0.89	0	0	570
SB-59	6.70E-05	0.35	5.60E-05	0.17	0	0	730
SB-60	1.40E-05	0.41	9.60E-06	0.33	9.60E-06	0.33	ND
SB-61	1.50E-05	0.24	9.40E-06	0.16	9.40E-06	0.16	ND
SB-62	1.30E-05	0.22	8.40E-06	0.14	8.40E-06	0.14	ND
SB-63	1.10E-05	0.23	8.00E-06	0.18	8.00E-06	0.18	173
SB-64	1.10E-05	0.24	8.70E-06	0.2	8.70E-06	0.2	ND
SB-65	1.50E-05	0.24	9.00E-06	0.15	9.00E-06	0.15	ND
SB-66	1.30E-05	0.22	8.30E-06	0.16	8.30E-06	0.16	ND
SB-67	1.50E-05	0.31	1.00E-05	0.23	1.00E-05	0.23	ND

1 Soil boring location risks as identified in the Site Characterization Report (Tetra Tech, May 2006).

2 Soil boring location risks as identified in the Site Characterization Report (Tetra Tech, May 2006) minus risks associated with arsenic and vanadium.

3 Soil boring location risks excluding those attributable to arsenic and vanadium (less than Block D-specific background reference concentration of 12 and 91 mg/kg, respectively).

4 Concentration used to calculate risk in the Site Characterization Rerpot (Tetra Tech, May 2006)

APPENDIX C – FIELD DOCUMENTATION AND BORING LOGS

TAX

BLOCK D

2007- SOIL BORINGS

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112C00698
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE SIMCO

BORING No.: SB-318
DATE: 10/31/07
GEOLOGIST: CHARLIE WARWICK
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0-0.5						ASPHALT/FILL							
0.5-2.0					MOIST	BROWN	SILTY, SANDY,	CL					
					CLAY, V. FINE SAND, SOME FINE GRAVEL								
2.0-4.0					SAME	AS	ABOVE	CL					
					MOIST	BROWN,	SILTY, CLAYEY,						
4.0-6.0					SAND, V. FINE - FINE GRAINED			SC					
					SOME FINE GRAVEL								
6.0-8.0					SAME AS ABOVE								
					WET @ 7.0'								
8.0-9.0					WET,	BROWN,	SILTY, SANDY	CL					
					CLAY, V. FINE SAND.								

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112L00499
DRILLING COMPANY: BL MYERS
DRILLING RIG: PROBE (SIMCO)
BORING No.: SB-319
DATE: 10/31/07
GEOLOGIST: C. WARNE
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0.0'-0.75'						ASPHALT / FILL						
	0.75'-2.0'				MOIST	BROWN	SILTY, SANDY CLAY, V. FINE SAND	CL					
	2.0'-4.0'				SAME AS ABOVE INCREASED SAND CONTENT WITH DEPTH			SL					
	4.0'-6.0'				MOIST, BROWN, SILTY, CLAYEY SAND, V. FINE TO FINE GRAINED			SC					
	6.0'-8.0'				SAME AS ABOVE. WET @ 7.0'			SC					
	8.0'-9.0'				WET, BROWN, SILTY, CLAYEY SAND, V. FINE - FINE GRAINED, SOME FINE GRAVEL			SC					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: _____

Drilling Area Background (ppm): _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112C00998
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (GEOPROBE)

BORING No.: SB-320
DATE: 10/31/07
GEOLOGIST: C. WARING
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0	0.5					ASPHALT / FILL							
0.5	2.0				MOIST,	BROWN,	SILTY, SANDY, CLAY, V. FINE - FINE SAND	CL					
2.0	4.0				SAME	AS	ABOVE	CL					
					SAND	↑	WITH DEPTH						
4.0	6.0				MOIST	BROWN,	SILTY, CLAYEY, SAND. V. FINE - FINE GRAINED	SC					
					SOME	FINE	GRAVEL						
6.0	8.0				SAME	AS	ABOVE	SC					
					WET	@	7.0						
8.0	9.0				WET,	BROWN,	SILTY, CLAYEY SAND. V. FINE - FINE GRAINED	SC					
					SOME		GRAVEL						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: _____

Drilling Area Background (ppm): _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MW
PROJECT NUMBER: 112L00998
DRILLING COMPANY: B. L. MYERS
DRILLING RIG: PROBE (SIMCO)

BORING No.: SB-521
DATE: 10/31/07
GEOLOGIST: C. WARNER
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0.0-0.5						ASPHALT / GRAVEL FILL						
	0.5-2.0						MOIST, BROWN, SILTY, SANDY	CL					
							CLAY, V. FINE - FINE SAND.						
	2.0-4.0						SAME AS ABOVE						
							INCREASED SAND CONTENT	CL					
							WITH DEPTH						
	4.0-5.0						SAME AS ABOVE	CL					
	5.0-6.0						MOIST BROWN SILTY SAND.	SM					
							V. FINE - FINE. SOME CLAY						
	6.0-8.0						MOIST BROWN SILTY, CLAYEY,						
							SAND, V. FINE - FINE GRAINED	SC					
	8.0-9.0						WET, BROWN, SILTY, CLAYEY,						
							SAND, V. FINE - FINE GRAINED	SC					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: _____

Drilling Area Background (ppm): _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112COOY8
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (SIMULTEQ)

BORING No.: SB-322
DATE: 10/31/07
GEOLOGIST: C. WARNER
DRILLER: TACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0	0.5				ASPHALT / GRAVEL FILL								
0.5	2.0				MOIST BROWN SILTY, SANDY			CL					
					CLAY. V. FINE - FINE SAND.								
2.0	4.0				SAME AS ABOVE.								
					INCREASED SAND CONTENT			CL					
					WITH DEPTH, SOME GRAVEL								
4.0	6.0				SAME AS ABOVE			CL					
6.0	8.0				MOIST, BROWN, SILTY, CLAYEY,								
					SAND, V.F. - FINE GRAINED			SC	SOME GRAVEL				
[illegible]													
[illegible]													
8.0	9.0				WET BROWN, SILTY CLAYEY								
					SAND. V. FINE - FINE GRAINED			SC					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: _____

Drilling Area Background (ppm): _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LML MR
PROJECT NUMBER: 112G00548
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (SIMCO)

BORING No.: SB-323
DATE: 10/31/04
GEOLOGIST: C. WARING
DRILLER: ZALM

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0.0-0.5						ASPHALT / GRAVEL FILL						
	0.5-2.0						MOIST BROWN, SILTY, SANDY, CLAY. SAND IS V. FINE GRAINED	CL					
	2.0-4.0						SAME AS ABOVE	CL					
							SOME FINE GRAVEL						
	4.0-6.0						SAME AS ABOVE	CL					
	6.0-8.0						WET, BROWN, SILTY, SANDY, CLAY, SAND IS V. FINE - FINE GRAIN	CL					
	8.0-9.0						SAME AS ABOVE	CL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: _____

Drilling Area Background (ppm): _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112L00598
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (SMCO)
BORING No.: SB-324
DATE: 10/31/07
GEOLOGIST: L. WARING
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0-0.5'							ASPHALT/FILL						
0.5-2.0'					MOIST	BROWN	SILTY, SANDY CLAY, VI FINE SAND	CL					
2.0-4.0'					MOIST	BROWN	SILTY, CLAYEY SAND, VFINE - FINE GRAINED SOME FINE GRAVEL	SC					
4.0-6.0'					SAME AS ABOVE			SC					
6.0-8.0'					SAME AS ABOVE								
					WET @ 7.0'			SC					
8.0-9.0'					SAME AS ABOVE			SC					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112L00998
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (SIMCO)
BORING No.: SB-325
DATE: 10/31/07
GEOLOGIST: C. WARNER
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0-0.5							ASPHALT / GRAVEL FILL						
0.5-2.0							MOIST, BROWN, SILTY, SANDY,						
							CLAY, FINE SAND, SOME FINE GRAVEL	CL					
							MOIST BROWN, SILTY						
2.0-4.0							CLAYEY, SAND,	SL					
							V. FINE - FINE GRAINED						
							SOME FINE GRAVEL						
4.0-6.0							SAME AS ABOVE	SL					
6.0-8.0							SAME AS ABOVE	SL					
							WET @ 7.0'						
8.0-9.0							SAME AS ABOVE	SL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: _____

Drilling Area Background (ppm): _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LML MR
PROJECT NUMBER: 112C00994
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (SIMCO)

BORING No.: SB-326
DATE: 10/31/07
GEOLOGIST: C. WARD
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0-1.0						ASPHALT / GRAVEL FILL							
1.0-2.0					MOIST, BROWN, SILTY, SANDY								
					CLAY. SAND IS V. FINE,			CL	SOME FINE GRAVEL				
2.0-3.0					SAME AS ABOVE								
3.0-4.0					MOIST	BROWN	SILTY						
					SAND, V. FINE - FINE GRAINED.			SM					
					SOME FINE GRAVEL								
5.0-6.0					SAME AS ABOVE			SM					
6.0-8.0					SAME AS ABOVE			SM					
					WET @ 7.0'								
8.0-9.0					SAME AS ABOVE			SM					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): [ ]

Remarks: _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112G00948
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (SIMCO)
BORING No.: SB-327
DATE: 10/31/07
GEOLOGIST: C. WARWICK
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0-0.5'					ASPHALT / FILL								
0.5-2.0'					MOIST, BROWN, SILTY, SANDY,								
					CLAY. V. FINE SAND. MED PLASTICITY			CL					
2.0-4.0'					SAME AS ABOVE								
4.0-5.0					SAME AS ABOVE								
5.0-6.0					MOIST, GRAY-BROWN, SILTY CLAY			CL					
					MED PLASTICITY								
6.0-8.0					MOIST, REDDISH BROWN SILTY								
					CLAY. MED PLASTICITY								
8.0-9.0					SAME AS ABOVE								

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LML MR
PROJECT NUMBER: 112CW0998
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (GEOPROBE)
BORING No.: SB-32B
DATE: 10/31/07
GEOLOGIST: L. WARNER
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0.0-0.5'						ASPHALT / FILL						
										0.0			
	0.5-2.0				MOIST		REDDISH-BROWN SILTY						
					CLAY.		MED PLASTICITY	CL					
	2.0-4.0						SAME AS ABOVE	CL					
	4.0-6.0						SAME AS ABOVE	CL					
	6.0-8.0				SAME		AS ABOVE	CL					
	8.0-9.0				SAME		AS ABOVE	CL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LML NR
PROJECT NUMBER: 112G00998
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE SIMCO
BORING No.: SB-324
DATE: 10/31/07
GEOLOGIST: C. WARING
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0.0-1.0				ASPHALT / GRAVEL FILL								
	1.0-2.0				MOIST, REDDISH-BROWN, SILTY,					0.0			
					CLAY. MED PLASTICITY.			CL					
	2.0-4.0				SAME AS ABOVE			CL					
	4.0-6.0				SAME AS ABOVE			CL					
	6.0-8.0				SAME AS ABOVE			CL					
					SAME AS ABOVE			CL					
	8.0-9.0									N			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC NTC
PROJECT NUMBER: 112G00998
DRILLING COMPANY: BILL MYERS
DRILLING RIG: PROBE (SMALL)

BORING No.: SB-330
DATE: 10/31/07
GEOLOGIST: C. WARWICK
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0.0-0.5						ASPHALT / GRAVEL FILL						
	0.5-2.0						MOIST BROWN SILTY CLAY, MED PLASTICITY	CL					
	2.0-4.0						SAME AS ABOVE	CL					
	4.0-6.0						SAME AS ABOVE	CL					
	6.0-8.0						SAME AS ABOVE	CL					
	8.0-9.0						MOIST REDDISH-BROWN SILTY CLAY, MED. PLASTICITY	CL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): [ ]

Remarks: _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112IC00998
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (SMALL)

BORING No.: SB-33
DATE: 10/01/07
GEOLOGIST: C. WARING
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0-0.5						ASPHALT / GRAVEL FILL							
0.5-2.0					MOIST,	BROWN,	SILTY, CLAYEY, SAND, V. FINE GRAINED	SC					
2.0-4.0					MOIST	REDDISH-BROWN	SILTY CLAY, MED PLASTICITY SOME GRAVEL	CL					
4.0-6.0					SAME	AS	ABOVE	CL					
6.0-8.0					SAME	AS	ABOVE	CL					
8.0-9.0					SAME	AS	ABOVE	CL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MOR
PROJECT NUMBER: 112G00998
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (GEOPROBE)

BORING No.: SB-332
DATE: 11/1/07
GEOLOGIST: C. WARNER
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0.0-1.0						ASPHALT / GRAVEL FILL						
	1.0-7.0				MOIST	REDDISH-BROWN	SILTY CLAY. MED PLASTICITY	CL					
	7.0-4.0				MOIST	DK BROWN	SILTY, SANDY CLAY. VF SAND.	CL					
	4.0-5.0				SAME	AS	ABOVE	CL					
	5.0-6.0				MOIST,	BROWN	SILTY CLAY. MED PLASTICITY	CL					
	6.0-8.0				MOIST	REDDISH-BROWN/GRAY	SILTY CLAY. MED PLASTICITY	CL					
	8.0-9.0				SAME	AS	ABOVE						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112IC00998
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (GEO)

BORING No.: SB-333
DATE: 11/1/07
GEOLOGIST: C. WARNER
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0	-0.5						ASPHALT / GRAVEL FILL						
0.5	-8.0				MOIST	REDDISH-BROWN	SILTY CLAY, MED PLASTICITY	CL					
8.0	-9.0				SAME AS ABOVE			CL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112G00956
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (SIMCO)

BORING No.: SB-334
DATE: 11/1/07
GEOLOGIST: C. WARWO
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0-1.0							ASPHALT / FILL						
1.0-2.0					MOIST	REDDISH-BROWN	SILTY						
					CLAY,	SOME FINE SANDS		CL					
2.0-4.0					SAME AS	ABOVE		CL					
4.0-6.0					SAME AS	ABOVE		CL					
1													
6.0-8.0					MOIST	REDDISH-BROWN							
					SILTY	CLAY, MED PLASTICITY		CL					
8.0-9.0					SAME AS	ABOVE		CL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112ICODCAB
DRILLING COMPANY: BILL MYERS
DRILLING RIG: PROBE (SIMCO)

BORING No.: SB-335
DATE: 11/1/07
GEOLOGIST: C. WARLND
DRILLER: TECH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0-1.5					ASPHALT/ GRAVEL FILL								
1.5-2.0					MOIST	REDDISH-BROWN	SILTY						
					CLAY. MED. PLASTICITY			CL					
2.0-4.0					SAME AS ABOVE			CL					
4.0-5.0					SAME AS ABOVE			CL					
5.0-6.0					MOIST	BROWN	SILTY SAND						
					CLAY.	VI FINE	SAND	CL					
6.0-7.0					SAME AS ABOVE			CL					
7.0-8.0					MOIST	REDDISH-BROWN	SILTY						
					CLAY.	MED	PLASTICITY	CL					
8.0-9.0					SAME AS	ABOVE		CL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MIR
PROJECT NUMBER: 112IC00998
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (GEMCO)

BORING No.: SB-336
DATE: 11/1/07
GEOLOGIST: C. WAEHNO
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0-0.5							ASPHALT/FILL						
0.5-1.5					MOIST	BROWN	SILTY FINE SAND	SM					
1.5-2.0					MOIST	RED-BROWN	SILTY CLAY	CL					
2.0-4.0						SAME	AS ABOVE	CL					
4.0-6.0					SAME	AS	ABOVE	CL					
6.0-8.0					SAME	AS	ABOVE	CL					
8.0-9.0					SAME	AS	ABOVE	CL					
					INCREASED	SAND							
					CONTENT								

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MB
PROJECT NUMBER: 112IC EDSER
DRILLING COMPANY: BILL MYERS
DRILLING RIG: PROBE (SIMCO)

BORING No.: SB-337
DATE: 11/1/07
GEOLOGIST: C. WARING
DRILLER: ZACH

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0.0-1.0						ASPHALT / GRAVEL FILL						
					MOIST								
	1.0-2.0				BROWN, SAND & GRAVEL								
					SAND IS FINE GRAINED								
					MOIST		REDDISH-BROWN SILTY						
	2.0-4.0						CLAY, MED PLASTICITY	CL					
	4.0-6.0				SAME		AS ABOVE	CL					
	6.0-8.0				MOIST		DK BROWN SILTY	CL					
					CLAY,								
	8.0-9.0				SAME		AS ABOVE						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112IC00904
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (GEMCO)

BORING No.: SB-338
DATE: 11/1/07
GEOLOGIST: C. WARWOOD
DRILLER: PAUL FRENES

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
OD	0-0.5				ASPHALT / GRAVEL FILL								
	0.5-2.0				MOIST	BROWN/RED	SILTY, SANDY,						
					CLAY.		MED PLASTICITY.	CL					
	2.0-4.0				SAME AS ABOVE			CL					
	4.0-6.0					SAME AS ABOVE		CL					
	6.0-8.0					SAME AS ABOVE		CL					
	8.0-9.0					SAME AS ABOVE		CL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC - MR
PROJECT NUMBER: 112IC00958
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (SIMCO)

BORING No.: SB-339
DATE: 11/1/07
GEOLOGIST: C. WARING
DRILLER: PAUL F.

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0.0-1.0						ASPHALT / FILL						
	1.0-2.0				MOIST,		BROWN SILTY SAND						
							V. FINE - FINE GRAINED	SM					
	2.0-4.0				MOIST		REDDISH-BROWN SILTY						
					CLAY.		MED PLASTICITY	CL					
	4.0-6.0						SAME AS ABOVE	CL					
	6.0-8.0				MOIST,		DK BROWN, SILTY	CL					
					CLAY.								
					MOIST		REDDISH-BROWN						
	8.0-9.0				SILTY		CLAY.	CL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112-1C00998
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE SIMILO
BORING No.: SB-34D
DATE: 11/9/07
GEOLOGIST: CWARWICK
DRILLER: PAUL

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0.0-0.5						ASPHALT / FILL						
	0.5-7.0					MOIST	BROWN SILTY SAND AND GRAVEL						
	7.0-4.0					MOIST	RED/BROWN SILTY CLAY, MED. PLASTICITY	CL					
	4.0-6.0						SAME AS ABOVE	CL					
	6.0-8.0						SAME AS ABOVE	CL					
	8.0-9.0						SAME AS ABOVE	CL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112IC00998
DRILLING COMPANY: BILL MYERS
DRILLING RIG: PROBE (SIMCO)

BORING No.: SB-341
DATE: 11/1/07
GEOLOGIST: C. WARREN
DRILLER: PAUL F

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0.0-1.0							ASPHALT / FILL						
1.0-2.0							MOIST BROWN SAND & GRAVEL. FINE GRAINED.						
2.0-4.0					MOIST		REDDISH-BROWN SILTY CLAY. MED PLASTICITY.	CL					
4.0-6.0							SAME AS ABOVE	CL					
6.0-8.0							SAME AS ABOVE	CL					
8.0-9.0							SAME AS ABOVE	CL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ______ No ______ Well I.D. #: ______

Tetra Tech NUS, Inc.

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BORING LOG

PROJECT NAME: LME MR
PROJECT NUMBER: 112C00999
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (SIMCO)
BORING No.: SB-342
DATE: 11/1/07
GEOLOGIST: C. WARING
DRILLER: PAUL F

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0-2.0							ASPHALT/GRAVEL FILL						
							MOIST RED/BROWN SILTY						
2.0-4.0							CLAY MED PLASTICITY	CL					
4.0-5.0							SAME AS ABOVE	CL					
4													
5.0-6.0							MOIST DK BROWN SILTY						
							SANDY CLAY. VI FINE-FINE	CL					
6.0-8.0							SAME AS ABOVE	CL					
8.0-9.0							SAME AS ABOVE	CL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112IC00998
DRILLING COMPANY: B.L. MYERS
DRILLING RIG: PROBE (GIMCO)

BORING No.: SB-343
DATE: 11/6/07
GEOLOGIST: C. WARLND
DRILLER: RAUL F.

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0.0-1.0						ASPHALT/FILL						
	1.0-2.0				MOIST	BROWN	SILTY, SANDY, CLAY. MED PLASTICITY	CL					
	2.0-4.0				MOIST	RED/BROWN	SILTY CLAY. MED PLASTICITY	CL					
	4.0-6.0						SAME AS ABOVE	CL					
	6.0-8.0						SAME AS ABOVE	CL					
	8.0-9.0						SAME AS ABOVE	CL					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: LMC MR
PROJECT NUMBER: 112IC00498
DRILLING COMPANY: BL. MYERS
DRILLING RIG: PROBE (SIMCO)

BORING No.: SB-344
DATE: 11/1/07
GEOLOGIST: C. WARIND
DRILLER: PAUL F.

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0.0-1.0						ASPHALT/GRAVEL FILL							
1.0-2.0					MOIST	BROWN	SILTY SAND & GRAVEL.						
2.0-4.0					BROWN/REDDISH-BROWN		SILTY, SANDY, CLAY.	CL					
4.0-6.0					SAME AS ABOVE			CL					
6.0-8.0					MOIST	DK BROWN	SILTY CLAY.	CL					
8.0-9.0													

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112IC00998

Sample ID No.: SB-318
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
10/31/07	0830	0203		
Method:	0832	0506		
	0834	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: LMC MR
Project No.: 112100948

Sample ID No.: SB-319
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
10/31/07	0845	0203		
Method:	0847	0506		
	0849	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg + benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112IC00998

Sample ID No.: SB-320
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
10/31/07	0755	0203		
Method:	0857	0506		
	0859	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a)pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112IC00998

Sample ID No.: SB-321
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date: 10/31/07	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	0910	0203		
Method:	0917	0506		
	0914	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.:

Sample ID No.: SB-32
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date: 10/31/07	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	0925	0203		
Method:	0927	0506		
	0929	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112IC00998

Sample ID No.: SB-323
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date: 10/31/07	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	0940	0703		
Method:	0947	0506		
	0941	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CMC MR
Project No.:

Sample ID No.: SB - 324
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[✓] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date: 10/31/07	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	1005	0203		
Method:	1007	0506		MS/SD
	1009	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
0506	

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CMC MR
Project No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: SB-325
Sample Location:
Sampled By: CW
C.O.C. No.:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
10/31/07	1045	0203		
Method:	1047	0502		
	1049	0803		
Monitor Readings (Range in ppm):	[redacted]	[redacted]		

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.:

Sample ID No.: SB-32C
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date: 10/31/07	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:	1107	0203		
	1109	0506		
	1111	0809		
Monitor Readings (Range in ppm):	[redacted]	[redacted]		

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

18TH US AIR BOSTON 5:55
19TH US 5:45PM

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name:	LMC MR	Sample ID No.:	SB-327
Project No.:	112.IC.00448	Sample Location:	
		Sampled By:	CW
		C.O.C. No.:	

[] Surface Soil
[✓] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date:			
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 10/01/07	~~1525~~ 0740	0203		
Method:	~~1527~~ 0742	0506		
	~~1529~~ 0744	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CMC MR
Project No.: 112IC00998

Sample ID No.: SB-328
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date: 10/31/07	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	0755	0203		
Method:	0757	0506		
	0759	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: LMC MR
Project No.: 112100998

Sample ID No.: SB-32
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[✓] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
10/31/07	0815	0203		
Method:	0817	0506		
	0819	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a)pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: ~~Parker~~ LMC MR
Project No.: 112C00048

Sample ID No.: SB-330
Sample Location:
Sampled By:
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
10/31/07	0835	0203		(MS/SD)
Method:	0837	0506		
	0839	0504		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
0203	

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112 ic 00998

Sample ID No.: SB-331
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	0850	0203		
Method:	0857	0506		
	0854	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg + benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112L00998

Sample ID No.: SB-332
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	0905	0203		
Method:	0907	0506		
	0909	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) Pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC ME
Project No.: 112100948

Sample ID No.: SB-333
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	0915	0203		
Method:	0917	0506		
	0919	0809		
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a)Pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC NR
Project No.: 112102998

Sample ID No.: SB-334
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	0935	0203		
Method:	0937	0506		
	0939	0809		
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a)pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC NR
Project No.: 112IL00995

Sample ID No.: SB-335
Sample Location:
Sampled By: GW
C.O.C. No.:

[] Surface Soil
[✓] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	0955	0203		
Method:	0957	0506		
	0959	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112IC00498

Sample ID No.: SB-336
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	1210	0203		
Method:	1212	0506		
	1214	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC, MR
Project No.: 112IC00998

Sample ID No.: SB-337
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	1220	0203		
Method:	M22	0506		(MS/SD)
	1224	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
0506	

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112100958

Sample ID No.: SB-338
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	1250	0203		
Method:	1252	0806		
	1254	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg benzo(a)pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112100998

Sample ID No.: SB-339
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	1240	0703		
Method:	1242	0506		
	1244	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg benzo(a)pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112100998

Sample ID No.: SB-340
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	1250	0203		
Method:	1252	0506		
	1254	0708		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg benzo(a)pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112100958

Sample ID No.: SB-341
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	1300	0203		
Method:	1302	0506		
	1304	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, benzo(a) pyrene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112L00998

Sample ID No.: SB-342
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	1315	0203		
Method:	1317	0506		
	1319	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Hg, bedrock pieces			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112100998

Sample ID No.: SB313
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	1535	0205		
Method:	1537	0506		
	1539	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
MS, benzo(k)fluoranthene			

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: LMC MR
Project No.: 112L00998

Sample ID No.: SB-344
Sample Location:
Sampled By: CW
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	1400	0203		
Method:	1402	0501		
	1404	0809		
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD 0203

Duplicate ID No.:

Signature(s):

APPENDIX D – DATA VALIDATION REPORTS

Data will appear on CD only

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **M. MARTIN** **DATE:** **DECEMBER 17, 2007**

FROM: **ROBERT JUPIN** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – BENZO(a)PYRENE**
LOCKHEED MIDDLE RIVER COMPLEX
SAMPLE DELIVERY GROUP (SDG): 7K01295

SAMPLES: 27/Soil/

SB-318-0203	SB-318-0506	SB-318-0809	SB-319-0203	SB-319-0506
SB-319-0809	SB-320-0203	SB-320-0506	SB-320-0809	SB-321-0203
SB-321-0506	SB-321-0809	SB-322-0203	SB-322-0506	SB-322-0809
SB-323-0203	SB-323-0506	SB-323-0809	SB-324-0203	SB-324-0506
SB-324-0809	SB-325-0203	SB-325-0506	SB-325-0809	SB-326-0203
SB-326-0506	SB-326-0809			

Overview

The sample set for SDG 7K01295 Lockheed MRC, consists of twenty-seven (27) soil environmental samples.

All soil samples were analyzed for benzo(a)pyrene. The samples were collected by TetraTech NUS on October 31, 2007 and analyzed by Test America Laboratories, Inc. Analyses were conducted using SW-846 Method 8270C.

The findings in this report are based upon a general review of all available data including: data completeness, GC/MS tuning, holding times, initial/continuing calibrations, laboratory method/preparation and field quality control blank results, surrogate spike/internal standard recoveries, laboratory control sample (LCS)/blank spike results, matrix spike/matrix spike duplicate results, analyte quantitation, and detection limits. Areas of concern are listed below.

Major Problems

- None.

Minor Problems

- Positive results reported below the detection limit have been qualified as estimated, "J".

Notes

The matrix spike sample was not spiked for benzo(a)pyrene therefore, no evaluation of the matrix spike could be performed.

Executive Summary

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (9/94) as modified by Region III.

Tetra Tech NUS
Robert J. Jupin
Risk Assessment Specialist/Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

J - Positive result is considered estimated, "J", as a result of technical noncompliances.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can be any number of issues; e.g. poor chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00998

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-318-0203	nsample	SB-318-0506	nsample	SB-318-0809
samp_date	10/31/2007	samp_date	10/31/2007	samp_date	10/31/2007
lab_id	A7K010295001	lab_id	A7K010295002	lab_id	A7K010295003
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85.0	Pct_Solids	89.0	Pct_Solids	85.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	390	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	370	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	390	U	

PROJ_NO: 00998

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-319-0203	nsample	SB-319-0506	nsample	SB-319-0809
samp_date	10/31/2007	samp_date	10/31/2007	samp_date	10/31/2007
lab_id	A7K010295004	lab_id	A7K010295005	lab_id	A7K010295006
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89.0	Pct_Solids	88.0	Pct_Solids	85.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	15	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	380	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	390	U	

PROJ_NO: 00998

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-320-0203
samp_date	10/31/2007
lab_id	A7K010295007
qc_type	NM
units	UG/KG
Pct_Solids	88.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	370	U	

nsample	SB-320-0506
samp_date	10/31/2007
lab_id	A7K010295008
qc_type	NM
units	UG/KG
Pct_Solids	89.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	370	U	

nsample	SB-320-0809
samp_date	10/31/2007
lab_id	A7K010295009
qc_type	NM
units	UG/KG
Pct_Solids	87.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	380	U	

PROJ_NO: 00998

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-321-0203
samp_date	10/31/2007
lab_id	A7K010295010
qc_type	NM
units	UG/KG
Pct_Solids	89.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	940		

nsample	SB-321-0506
samp_date	10/31/2007
lab_id	A7K010295011
qc_type	NM
units	UG/KG
Pct_Solids	85.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	390	U	

nsample	SB-321-0809
samp_date	10/31/2007
lab_id	A7K010295012
qc_type	NM
units	UG/KG
Pct_Solids	85.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	390	U	

PROJ_NO: 00998

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-322-0203
samp_date	10/31/2007
lab_id	A7K010295013
qc_type	NM
units	UG/KG
Pct_Solids	85.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	13	J	P

nsample	SB-322-0506
samp_date	10/31/2007
lab_id	A7K010295014
qc_type	NM
units	UG/KG
Pct_Solids	87.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	380	U	

nsample	SB-322-0809
samp_date	10/31/2007
lab_id	A7K010295015
qc_type	NM
units	UG/KG
Pct_Solids	86.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	380	U	

PROJ_NO: 00998

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-323-0203	nsample	SB-323-0506	nsample	SB-323-0809
samp_date	10/31/2007	samp_date	10/31/2007	samp_date	10/31/2007
lab_id	A7K010295016	lab_id	A7K010295017	lab_id	A7K010295018
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90.0	Pct_Solids	87.0	Pct_Solids	83.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	370	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	380	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	400	U	

PROJ_NO: 00998

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-324-0203
samp_date	10/31/2007
lab_id	A7K010295019
qc_type	NM
units	UG/KG
Pct_Solids	90.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	370	U	

nsample	SB-324-0506
samp_date	10/31/2007
lab_id	A7K010295020
qc_type	NM
units	UG/KG
Pct_Solids	87.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	380	U	

nsample	SB-324-0809
samp_date	10/31/2007
lab_id	A7K010295021
qc_type	NM
units	UG/KG
Pct_Solids	87.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	380	U	

PROJ_NO: 00998

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-325-0203
samp_date	10/31/2007
lab_id	A7K010295022
qc_type	NM
units	UG/KG
Pct_Solids	88.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	72	J	P

nsample	SB-325-0506
samp_date	10/31/2007
lab_id	A7K010295023
qc_type	NM
units	UG/KG
Pct_Solids	89.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	370	U	

nsample	SB-325-0809
samp_date	10/31/2007
lab_id	A7K010295024
qc_type	NM
units	UG/KG
Pct_Solids	85.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	390	U	

PROJ_NO: 00998

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-326-0203
samp_date	10/31/2007
lab_id	A7K010295025
qc_type	NM
units	UG/KG
Pct_Solids	88.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	25	J	P

nsample	SB-326-0506
samp_date	10/31/2007
lab_id	A7K010295026
qc_type	NM
units	UG/KG
Pct_Solids	89.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	370	U	

nsample	SB-326-0809
samp_date	10/31/2007
lab_id	A7K010295027
qc_type	NM
units	UG/KG
Pct_Solids	84.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	110	J	P

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Tetra Tech NUS, Inc

Client Sample ID: SB-318-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-001 **Work Order #...:** KACNQ1AD **Matrix.....:** SO
Date Sampled...: 10/31/07 08:30 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 15 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	61	(24 - 112)
2-Fluorobiphenyl	63	(34 - 110)
Terphenyl-d14	82	(41 - 119)
Phenol-d5	66	(28 - 110)
2-Fluorophenol	65	(26 - 110)
2,4,6-Tribromophenol	80	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-318-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-002 **Work Order #...:** KACRW1AD **Matrix.....:** SO
Date Sampled...: 10/31/07 08:32 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 11 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	370	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	62	(24 - 112)
2-Fluorobiphenyl	65	(34 - 110)
Terphenyl-d14	80	(41 - 119)
Phenol-d5	70	(28 - 110)
2-Fluorophenol	66	(26 - 110)
2,4,6-Tribromophenol	72	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-318-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-003 **Work Order #...:** KACRX1AD **Matrix.....:** SO
Date Sampled...: 10/31/07 08:34 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 15 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	59	(24 - 112)
2-Fluorobiphenyl	60	(34 - 110)
Terphenyl-d14	80	(41 - 119)
Phenol-d5	65	(28 - 110)
2-Fluorophenol	63	(26 - 110)
2,4,6-Tribromophenol	74	(10 - 118)

NOTE(S):
Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-319-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-004 **Work Order #...:** KACR01AD **Matrix.....:** SO
Date Sampled...: 10/31/07 08:45 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 11 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**15 J**	**370**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	54	(24 - 112)
2-Fluorobiphenyl	53	(34 - 110)
Terphenyl-d14	70	(41 - 119)
Phenol-d5	60	(28 - 110)
2-Fluorophenol	58	(26 - 110)
2,4,6-Tribromophenol	64	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-319-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-005 **Work Order #...:** KACR11AD **Matrix.....:** SO
Date Sampled...: 10/31/07 08:47 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 12 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	50	(24 - 112)
2-Fluorobiphenyl	56	(34 - 110)
Terphenyl-d14	77	(41 - 119)
Phenol-d5	61	(28 - 110)
2-Fluorophenol	54	(26 - 110)
2,4,6-Tribromophenol	75	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-319-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-006 **Work Order #...:** KACR21AD **Matrix.....:** SO
Date Sampled...: 10/31/07 08:49 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 15 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	64	(24 - 112)
2-Fluorobiphenyl	63	(34 - 110)
Terphenyl-d14	81	(41 - 119)
Phenol-d5	68	(28 - 110)
2-Fluorophenol	68	(26 - 110)
2,4,6-Tribromophenol	79	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-320-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-007 **Work Order #...:** KACR31AD **Matrix.....:** SO
Date Sampled...: 10/31/07 08:55 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 12 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	370	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	38	(24 - 112)
2-Fluorobiphenyl	48	(34 - 110)
Terphenyl-d14	64	(41 - 119)
Phenol-d5	50	(28 - 110)
2-Fluorophenol	40	(26 - 110)
2,4,6-Tribromophenol	41	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-320-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-008 **Work Order #...:** KACR41AD **Matrix.....:** SO
Date Sampled...: 10/31/07 08:57 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 11 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	370	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	60	(24 - 112)
2-Fluorobiphenyl	61	(34 - 110)
Terphenyl-d14	79	(41 - 119)
Phenol-d5	66	(28 - 110)
2-Fluorophenol	64	(26 - 110)
2,4,6-Tribromophenol	72	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-320-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-009 **Work Order #...:** KACR51AD **Matrix.....:** SO
Date Sampled...: 10/31/07 08:59 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 13 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	62	(24 - 112)
2-Fluorobiphenyl	62	(34 - 110)
Terphenyl-d14	79	(41 - 119)
Phenol-d5	66	(28 - 110)
2-Fluorophenol	64	(26 - 110)
2,4,6-Tribromophenol	73	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-321-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-010 **Work Order #...:** KACR71AD **Matrix.....:** SO
Date Sampled...: 10/31/07 09:10 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 11 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**940**	**370**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	55	(24 - 112)
2-Fluorobiphenyl	58	(34 - 110)
Terphenyl-d14	73	(41 - 119)
Phenol-d5	60	(28 - 110)
2-Fluorophenol	58	(26 - 110)
2,4,6-Tribromophenol	70	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-321-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-011 **Work Order #...:** KACR81AD **Matrix.....:** SO
Date Sampled...: 10/31/07 09:12 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 15 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	61	(24 - 112)
2-Fluorobiphenyl	63	(34 - 110)
Terphenyl-d14	77	(41 - 119)
Phenol-d5	69	(28 - 110)
2-Fluorophenol	67	(26 - 110)
2,4,6-Tribromophenol	74	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-321-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-012 **Work Order #...:** KACR91AD **Matrix.....:** SO
Date Sampled...: 10/31/07 09:14 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 15 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	60	(24 - 112)
2-Fluorobiphenyl	61	(34 - 110)
Terphenyl-d14	79	(41 - 119)
Phenol-d5	63	(28 - 110)
2-Fluorophenol	62	(26 - 110)
2,4,6-Tribromophenol	78	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-322-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-013 **Work Order #...:** KACTC1AD **Matrix.....:** SO
Date Sampled...: 10/31/07 09:25 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 15 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**13 J**	**390**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	30	(24 - 112)
2-Fluorobiphenyl	50	(34 - 110)
Terphenyl-d14	74	(41 - 119)
Phenol-d5	51	(28 - 110)
2-Fluorophenol	36	(26 - 110)
2,4,6-Tribromophenol	68	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-322-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-014 **Work Order #...:** KACTD1AD **Matrix.....:** SO
Date Sampled...: 10/31/07 09:27 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 13 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	58	(24 - 112)
2-Fluorobiphenyl	68	(34 - 110)
Terphenyl-d14	85	(41 - 119)
Phenol-d5	69	(28 - 110)
2-Fluorophenol	63	(26 - 110)
2,4,6-Tribromophenol	66	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-322-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-015 **Work Order #...:** KACTE1AD **Matrix.....:** SO
Date Sampled...: 10/31/07 09:29 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 14 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	63	(24 - 112)
2-Fluorobiphenyl	70	(34 - 110)
Terphenyl-d14	82	(41 - 119)
Phenol-d5	74	(28 - 110)
2-Fluorophenol	73	(26 - 110)
2,4,6-Tribromophenol	68	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-323-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-016 **Work Order #...:** KACTF1AD **Matrix.....:** SO
Date Sampled...: 10/31/07 09:40 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 10 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	370	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	37	(24 - 112)
2-Fluorobiphenyl	53	(34 - 110)
Terphenyl-d14	73	(41 - 119)
Phenol-d5	55	(28 - 110)
2-Fluorophenol	42	(26 - 110)
2,4,6-Tribromophenol	43	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-323-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-017 **Work Order #...:** KACTG1AD **Matrix.....:** SO
Date Sampled...: 10/31/07 09:42 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 13 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	39	(24 - 112)
2-Fluorobiphenyl	55	(34 - 110)
Terphenyl-d14	73	(41 - 119)
Phenol-d5	54	(28 - 110)
2-Fluorophenol	44	(26 - 110)
2,4,6-Tribromophenol	62	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-323-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-018 **Work Order #...:** KACTP1AD **Matrix.....:** SO
Date Sampled...: 10/31/07 09:44 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	400	ug/kg	1.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	56	(24 - 112)
2-Fluorobiphenyl	61	(34 - 110)
Terphenyl-d14	77	(41 - 119)
Phenol-d5	64	(28 - 110)
2-Fluorophenol	61	(26 - 110)
2,4,6-Tribromophenol	62	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-324-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-019 **Work Order #...:** KACTR1AD **Matrix.....:** SO
Date Sampled...: 10/31/07 10:05 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 10 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	370	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	49	(24 - 112)
2-Fluorobiphenyl	59	(34 - 110)
Terphenyl-d14	75	(41 - 119)
Phenol-d5	59	(28 - 110)
2-Fluorophenol	55	(26 - 110)
2,4,6-Tribromophenol	62	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-324-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-020 **Work Order #...:** KACTT1AF **Matrix.....:** SO
Date Sampled...: 10/31/07 10:07 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306048
Dilution Factor: 1
% Moisture.....: 13 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	58	(24 - 112)
2-Fluorobiphenyl	61	(34 - 110)
Terphenyl-d14	79	(41 - 119)
Phenol-d5	61	(28 - 110)
2-Fluorophenol	59	(26 - 110)
2,4,6-Tribromophenol	69	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-324-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-021 **Work Order #...:** KACTW1AD **Matrix.....:** SO
Date Sampled...: 10/31/07 10:09 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306049
Dilution Factor: 1
% Moisture.....: 13 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	65	(24 - 112)
2-Fluorobiphenyl	64	(34 - 110)
Terphenyl-d14	82	(41 - 119)
Phenol-d5	67	(28 - 110)
2-Fluorophenol	68	(26 - 110)
2,4,6-Tribromophenol	76	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-325-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-022 **Work Order #...:** KACTX1AD **Matrix.....:** SO
Date Sampled...: 10/31/07 10:45 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306049
Dilution Factor: 1
% Moisture.....: 12 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**72 J**	**370**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	66	(24 - 112)
2-Fluorobiphenyl	66	(34 - 110)
Terphenyl-d14	79	(41 - 119)
Phenol-d5	70	(28 - 110)
2-Fluorophenol	68	(26 - 110)
2,4,6-Tribromophenol	73	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-325-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-023 **Work Order #...:** KACT01AD **Matrix.....:** SO
Date Sampled...: 10/31/07 10:47 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306049
Dilution Factor: 1
% Moisture.....: 11 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	370	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	53	(24 - 112)
2-Fluorobiphenyl	57	(34 - 110)
Terphenyl-d14	76	(41 - 119)
Phenol-d5	60	(28 - 110)
2-Fluorophenol	57	(26 - 110)
2,4,6-Tribromophenol	64	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-325-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-024 **Work Order #...:** KACT11AD **Matrix.....:** SO
Date Sampled...: 10/31/07 10:49 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306049
Dilution Factor: 1
% Moisture.....: 15 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	60	(24 - 112)
2-Fluorobiphenyl	61	(34 - 110)
Terphenyl-d14	80	(41 - 119)
Phenol-d5	63	(28 - 110)
2-Fluorophenol	63	(26 - 110)
2,4,6-Tribromophenol	71	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-326-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-025 **Work Order #...:** KACT21AD **Matrix.....:** SO
Date Sampled...: 10/31/07 11:07 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306049
Dilution Factor: 1
% Moisture.....: 12 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**25 J**	**370**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	66	(24 - 112)
2-Fluorobiphenyl	65	(34 - 110)
Terphenyl-d14	82	(41 - 119)
Phenol-d5	71	(28 - 110)
2-Fluorophenol	69	(26 - 110)
2,4,6-Tribromophenol	73	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-326-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-026 **Work Order #...:** KACT31AD **Matrix.....:** SO
Date Sampled...: 10/31/07 11:09 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306049
Dilution Factor: 1
% Moisture.....: 11 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	370	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	58	(24 - 112)
2-Fluorobiphenyl	60	(34 - 110)
Terphenyl-d14	84	(41 - 119)
Phenol-d5	64	(28 - 110)
2-Fluorophenol	62	(26 - 110)
2,4,6-Tribromophenol	76	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-326-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K010295-027 **Work Order #...:** KACT51AD **Matrix.....:** SO
Date Sampled...: 10/31/07 11:11 **Date Received..:** 11/01/07
Prep Date.....: 11/02/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7306049
Dilution Factor: 1
% Moisture.....: 16 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**110 J**	**390**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	57	(24 - 112)
2-Fluorobiphenyl	56	(34 - 110)
Terphenyl-d14	76	(41 - 119)
Phenol-d5	61	(28 - 110)
2-Fluorophenol	61	(26 - 110)
2,4,6-Tribromophenol	71	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

APPENDIX C

SUPPORT DOCUMENTATION

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 112IC00998

LMC MR

Lot #: A7K010295
SDG #: 7K01295

Michael Martin

Tetra Tech NUS Inc
20251 Century Blvd
Suite 200
Germantown, MD 20874

TESTAMERICA LABORATORIES, INC.

Patrick J. O'Meara
Project Manager

November 21, 2007

4101 Shuffel Street, N.W. North Canton, OH 44720 tel 330.497.9396 fax 330.497.0772 www.testamericainc.com

HOLDTIME

SDG 7K01295

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-323-0506	A7K010295017	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-318-0809	A7K010295003	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-319-0203	A7K010295004	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-319-0506	A7K010295005	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-319-0809	A7K010295006	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-320-0203	A7K010295007	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-320-0809	A7K010295009	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-321-0506	A7K010295011	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-321-0809	A7K010295012	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-322-0203	A7K010295013	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-322-0506	A7K010295014	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-318-0506	A7K010295002	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-323-0203	A7K010295016	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-320-0506	A7K010295008	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-323-0809	A7K010295018	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-324-0203	A7K010295019	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-324-0506	A7K010295020	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-324-0809	A7K010295021	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-325-0203	A7K010295022	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-325-0506	A7K010295023	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-325-0809	A7K010295024	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-326-0203	A7K010295025	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-326-0506	A7K010295026	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-326-0809	A7K010295027	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-318-0203	A7K010295001	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-322-0809	A7K010295015	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-321-0203	A7K010295010	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
PCS	%	SB-324-0203	A7K010295019	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-326-0506	A7K010295026	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-326-0809	A7K010295027	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-326-0203	A7K010295025	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-325-0809	A7K010295024	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-325-0506	A7K010295023	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCS	%	SB-325-0203	A7K010295022	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-324-0506	A7K010295020	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-318-0203	A7K010295001	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-323-0809	A7K010295018	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-323-0506	A7K010295017	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-323-0203	A7K010295016	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-322-0809	A7K010295015	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-322-0506	A7K010295014	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-318-0809	A7K010295003	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-324-0809	A7K010295021	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-318-0506	A7K010295002	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-322-0203	A7K010295013	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-319-0203	A7K010295004	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-319-0506	A7K010295005	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-319-0809	A7K010295006	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-320-0203	A7K010295007	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-320-0506	A7K010295008	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-320-0809	A7K010295009	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCS	%	SB-321-0203	A7K010295010	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-321-0506	A7K010295011	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-321-0809	A7K010295012	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
OS	%	SB-318-0809	A7K010295003	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-321-0809	A7K010295012	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-321-0506	A7K010295011	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-321-0203	A7K010295010	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-320-0809	A7K010295009	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-320-0506	A7K010295008	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-320-0203	A7K010295007	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-319-0809	A7K010295006	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-318-0203	A7K010295001	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-319-0203	A7K010295004	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-326-0809	A7K010295027	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-318-0506	A7K010295002	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-322-0203	A7K010295013	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-319-0506	A7K010295005	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-325-0203	A7K010295022	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	SB-326-0203	A7K010295025	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-322-0506	A7K010295014	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	%	SB-325-0506	A7K010295023	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-326-0506	A7K010295026	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-324-0809	A7K010295021	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-324-0506	A7K010295020	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-324-0203	A7K010295019	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	%	SB-323-0809	A7K010295018	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	%	SB-323-0506	A7K010295017	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	%	SB-323-0203	A7K010295016	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	%	SB-322-0809	A7K010295015	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	%	SB-325-0809	A7K010295024	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-323-0506	A7K010295017	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	UG/KG	SB-323-0809	A7K010295018	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	UG/KG	SB-324-0203	A7K010295019	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	UG/KG	SB-324-0506	A7K010295020	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-324-0809	A7K010295021	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-325-0203	A7K010295022	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	SB-325-0506	A7K010295023	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-325-0809	A7K010295024	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-326-0203	A7K010295025	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-323-0203	A7K010295016	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	UG/KG	SB-326-0809	A7K010295027	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-320-0506	A7K010295008	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-326-0506	A7K010295026	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-322-0809	A7K010295015	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	UG/KG	SB-322-0506	A7K010295014	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	UG/KG	SB-322-0203	A7K010295013	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-321-0809	A7K010295012	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-321-0506	A7K010295011	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-318-0203	A7K010295001	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-320-0809	A7K010295009	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-320-0203	A7K010295007	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-319-0809	A7K010295006	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-319-0506	A7K010295005	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-319-0203	A7K010295004	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	SB-318-0809	A7K010295003	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-318-0506	A7K010295002	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-321-0203	A7K010295010	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6

[redacted]

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRA TECH	M. MARTIN	10/31/07	322994
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of 3
20251 CENTURY BLVD #200	301 - 528-3022		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
GERMANTOWN / MD / 20874	S. HADLEY	K. IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LMC MR	COURIER		
Contract/Purchase Order/Quote No.			
112ICV098			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Analysis: H_2	* 8270	Special Instructions/ Conditions of Receipt
SB-318-0203	10/31/07	0830				X	2						X	X	* benzo(a)Pyrene
318-0506		0832													
318-0809		0834													
319-0203		0845													
319-0506		0847													
319-0809		0849													
320-0203		0855													
320-0506		0857													
320-0809		0859													
321-0203		0910													
321-0506	↓	0912													
SB-321-0809	10/31/07	0914				X	2						X	X	* benzo (a) pyrene

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Roison B ☑ Unknown

Sample Disposal

☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STND

QC Requirements (Specify)

	Relinquished By	Date	Time	Received By	Date	Time
1.	[signature]	10/31/07	1510	[signature]	10-31-07	1510
2.	[signature]	10-31-07	1638	[signature]	11-1-07	9:45
3.						

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRA TECH	M. MARTIN	10/31/07	322989
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 2 of 3
20251 CENTURY BLVD #200	301-528-3022		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
GERMANTOWN / MD / 20874	S. HADLEY	K. IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LML MR	COURIER		
Contract/Purchase Order/Quote No.			
12I-00998			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Analysis: Hg	LL Benzo *	Special Instructions/ Conditions of Receipt
SB-322-0203	10/31/07	0925				X	2						X	X	* benzo(a) pyrene
322-0506		0927													
322-0809		0929													
323-0203		0940													
323-0506		0942													
323-0809		0944													
324-0203		1005													
324-0506		1007													
324-0506 MS/SD		1007				X									
SB-324-0809	10/31/07	1009				X	2						X	X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal

☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STND

QC Requirements (Specify)

	Date	Time
1. Relinquished By	10/31/07	1510
2. Relinquished By	10-31-07	1630
3. Relinquished By		

	Date	Time
1. Received By	10-31-07	1516
2. Received By	11-1-07	9:45
3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client: TETRA TECH	Project Manager: M. MARTIN	Date: 10/31/07	Chain of Custody Number: 322995
Address: 20251 CENTURY BLVD #200	Telephone Number (Area Code)/Fax Number: 301-528-3022	Lab Number:	Page 3 of 3
City: GERMANTOWN / State: MD / Zip Code: 20874	Site Contact: S. HADLEY	Lab Contact: K. IVES	
Project Name and Location (State): LMC MR	Carrier/Waybill Number: COURIER		
Contract/Purchase Order/Quote No.: 112IC00998			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: Hg	8270 *	Special Instructions/ Conditions of Receipt
SB-325-0203	10/31/07	1045				X	2						X	X	*benzo(a)Pyrene
325-0506		1047													
325-0809		1049													
326-0203		1107													
326-0506		1109													
SB 326-0809		1111				X	X						X	X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal: ☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STND

QC Requirements (Specify):

	Date	Time
1. Relinquished By	10/31/07	1510
2. Relinquished By	10/31/07	1630
3. Relinquished By		

	Date	Time
1. Received By	10/31/07	1510
2. Received By	11-1-07	9:45
3. Received By		

Comments:

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

CASE NARRATIVE

7K01295

The following report contains the analytical results for twenty-seven solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc. from the LMC MR Site, project number 112IC00998. The samples were received November 01, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID's: A7K010295.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Dev Murali, John Poremba, and Michael Martin on November 20, 2007. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 3.8°C.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica North Canton (formerly STL North Canton) conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton (formerly STL North Canton) requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica North Canton (formerly STL North Canton)Certifications and Approvals:

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), OhioVAP (#CL0024), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit,

SW846 8270C SURROGATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN SDG No: 7K01295

Lot #: A7K010295

Extraction: XXA13QL01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	SRG05	SRG06	TOT OUT
01	SB-318-0203	61	63	82	66	65	80	00
02	SB-318-0506	62	65	80	70	66	72	00
03	SB-318-0809	59	60	80	65	63	74	00
04	SB-319-0203	54	53	70	60	58	64	00
05	SB-319-0506	50	56	77	61	54	75	00
06	SB-319-0809	64	63	81	68	68	79	00
07	SB-320-0203	38	48	64	50	40	41	00
08	SB-320-0506	60	61	79	66	64	72	00
09	SB-320-0809	62	62	79	66	64	73	00
10	SB-321-0203	55	58	73	60	58	70	00
11	SB-321-0506	61	63	77	69	67	74	00
12	SB-321-0809	60	61	79	63	62	78	00
13	SB-322-0203	30	50	74	51	36	68	00
14	SB-322-0506	58	68	85	69	63	66	00
15	SB-322-0809	63	70	82	74	73	68	00
16	SB-323-0203	37	53	73	55	42	43	00
17	SB-323-0506	39	55	73	54	44	62	00
18	SB-323-0809	56	61	77	64	61	62	00
19	SB-324-0203	49	59	75	59	55	62	00
20	SB-324-0506	58	61	79	61	59	69	00
21	SB-324-0809	65	64	82	67	68	76	00
22	SB-325-0203	66	66	79	70	68	73	00
23	SB-325-0506	53	57	76	60	57	64	00
24	SB-325-0809	60	61	80	63	63	71	00
25	SB-326-0203	66	65	82	71	69	73	00
26	SB-326-0506	58	60	84	64	62	76	00
27	SB-326-0809	57	56	76	61	61	71	00

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

SW846 8270C SURROGATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN SDG No: 7K01295

Lot #: A7K010295

Extraction: XXA13QL01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	SRG05	SRG06	TOT OUT
01	METHOD BLK. KADNN1AA	73	71	80	70	71	59	00
02	METHOD BLK. KADNP1AA	65	63	83	62	64	58	00
03	LCS KADNN1AC	74	72	78	72	74	73	00
04	LCS KADNP1AC	73	69	84	70	69	71	00
05	SB-324-0506 D	54	63	77	66	57	73	00
06	SB-324-0809 D	66	65	80	69	70	77	00
07	SB-324-0506 S	50	62	79	62	51	73	00
08	SB-324-0809 S	61	62	75	65	66	71	00

SURROGATES		QC LIMITS
SRG01	= Nitrobenzene-d5	(24-112)
SRG02	= 2-Fluorobiphenyl	(34-110)
SRG03	= Terphenyl-d14	(41-119)
SRG04	= Phenol-d5	(28-110)
SRG05	= 2-Fluorophenol	(26-110)
SRG06	= 2,4,6-Tribromophenol	(10-118)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

SW846 8270C METHOD BLANK SUMMARY

BLANK WORKORDER NO.
KADNN1AA

Lab Name: TestAmerica Laboratories, Inc.

Lab Code: TALCAN SDG Number:7K01295

Lab File ID: KADNN1AA. Lot Number: A7K010295

Date Analyzed: 11/05/07 Time Analyzed: 14:33

Matrix: SOLID Date Extracted:11/02/07

GC Column: DB-5.625 ID: .18 Extraction Method: 3550B

Instrument ID: AG2 Level:(low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SB-318-0203	KACNQ1AD	KACNQ1AD.	11/06/07	13:25
02	SB-318-0506	KACRW1AD	KACRW1AD.	11/06/07	13:42
03	SB-318-0809	KACRX1AD	KACRX1AD.	11/06/07	13:59
04	SB-319-0203	KACR01AD	KACR01AD.	11/06/07	14:16
05	SB-319-0506	KACR11AD	KACR11AD.	11/06/07	14:34
06	SB-319-0809	KACR21AD	KACR21AD.	11/06/07	14:51
07	SB-320-0203	KACR31AD	KACR31AD.	11/06/07	15:08
08	SB-320-0506	KACR41AD	KACR41AD.	11/06/07	15:25
09	SB-320-0809	KACR51AD	KACR51AD.	11/06/07	15:42
10	SB-321-0203	KACR71AD	KACR71AD.	11/06/07	15:59
11	SB-321-0506	KACR81AD	KACR81AD.	11/06/07	16:17
12	SB-321-0809	KACR91AD	KACR91AD.	11/06/07	16:34
13	SB-322-0203	KACTC1AD	KACTC1AD.	11/06/07	16:51
14	SB-322-0506	KACTD1AD	KACTD1AD.	11/07/07	16:36
15	SB-322-0809	KACTE1AD	KACTE1AD.	11/07/07	16:53
16	SB-323-0203	KACTF1AD	KACTF1AD.	11/07/07	17:10
17	SB-323-0506	KACTG1AD	KACTG1AD.	11/07/07	17:28
18	SB-323-0809	KACTP1AD	KACTP1AD.	11/07/07	17:45
19	SB-324-0203	KACTR1AD	KACTR1AD.	11/07/07	18:02
20	SB-324-0506	KACTT1AF	KACTT1AF.	11/06/07	10:50
21	SB-324-0506	KACTT1AK S	KACTT1AK.	11/06/07	11:07
22	SB-324-0506	KACTT1AL D	KACTT1AL.	11/06/07	11:25
23	CHECK SAMPLE	KADNN1AC C	KADNN1AC.	11/05/07	14:50
24					
25					
26					
27					
28					
29					
30					

COMMENTS:

FORM IV

SW846 8270C METHOD BLANK SUMMARY

BLANK WORKORDER NO.: KADNP1AA

Lab Name: TestAmerica Laboratories, Inc.

Lab Code: TALCAN

SDG Number:7K01295

Lab File ID: KADNP1AA.

Lot Number: A7K010295

Date Analyzed: 11/05/07

Time Analyzed: 13:58

Matrix: SOLID

Date Extracted:11/02/07

GC Column: DB-5.625 ID: .18

Extraction Method: 3550B

Instrument ID: AG2

Level:(low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SB-324-0809	KACTW1AD	KACTW1AD.	11/06/07	09:59
02	SB-324-0809	KACTW1AE S	KACTW1AE.	11/06/07	10:16
03	SB-324-0809	KACTW1AF D	KACTW1AF.	11/06/07	10:33
04	SB-325-0203	KACTX1AD	KACTX1AD.	11/06/07	11:42
05	SB-325-0506	KACT01AD	KACT01AD.	11/06/07	11:59
06	SB-325-0809	KACT11AD	KACT11AD.	11/06/07	12:16
07	SB-326-0203	KACT21AD	KACT21AD.	11/06/07	12:33
08	SB-326-0506	KACT31AD	KACT31AD.	11/06/07	12:51
09	SB-326-0809	KACT51AD	KACT51AD.	11/06/07	13:08
10	CHECK SAMPLE	KADNP1AC C	KADNP1AC.	11/05/07	14:16
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

COMMENTS:

FORM IV

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K01295

Lab File ID: 2DF1105 DFTPP Injection Date: 11/05/07

Instrument ID: A4AG2 DFTPP Injection Time: 0947

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	44.2
68	Less than 2.0% of mass 69	0.7 (1.6)1
69	Mass 69 relative abundance	48.0
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	54.7
197	Less than 1.0% of mass 198	0.5
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	23.4
365	Greater than 1.0% of mass 198	3.1
441	Present, but less than mass 443	8.5
442	Greater than 40.0% of mass 198	59.6
443	17.0 - 23.0% of mass 442	11.2 (18.7)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD006	L6	2SMH1105	11/05/07	0957
02	SSTD009	L9	2SHHH1105	11/05/07	1123
03	SSTD008	L8	2SHH1105	11/05/07	1140
04	SSTD007	L7	2SH1105	11/05/07	1158
05	SSTD005	L5	2SMM1105	11/05/07	1215
06	SSTD004	L4	2SM1105	11/05/07	1232
07	SSTD003	L3	2SML1105	11/05/07	1249
08	SSTD002	L2	2SL1105	11/05/07	1307
09	SSTD001	L1	2SLL1105	11/05/07	1324
10	KADNPBLK	KADNP1AA	KADNP1AA	11/05/07	1358
11	KADNPCHK	KADNP1AC	KADNP1AC	11/05/07	1416
12	KADNNBLK	KADNN1AA	KADNN1AA	11/05/07	1433
13	KADNNCHK	KADNN1AC	KADNN1AC	11/05/07	1450
14					
15					
16					
17					
18					
19					
20					
21					
22					

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K01295

Lab File ID: 2DF1106 DFTPP Injection Date: 11/06/07

Instrument ID: A4AG2 DFTPP Injection Time: 0849

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	48.2
68	Less than 2.0% of mass 69	0.7 (1.4)1
69	Mass 69 relative abundance	51.9
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	57.1
197	Less than 1.0% of mass 198	0.5
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.5
275	10.0 - 30.0% of mass 198	23.6
365	Greater than 1.0% of mass 198	2.9
441	Present, but less than mass 443	8.1
442	Greater than 40.0% of mass 198	55.5
443	17.0 - 23.0% of mass 442	10.4 (18.7)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD006	L6	2SMH1106	11/06/07	0859
02	SB-324-0809	KACTW1AD	KACTW1AD	11/06/07	0959
03	SB-324-0809	KACTW1AE	KACTW1AE	11/06/07	1016
04	SB-324-0809	KACTW1AF	KACTW1AF	11/06/07	1033
05	SB-324-0506	KACTT1AF	KACTT1AF	11/06/07	1050
06	SB-324-0506	KACTT1AK	KACTT1AK	11/06/07	1107
07	SB-324-0506	KACTT1AL	KACTT1AL	11/06/07	1125
08	SB-325-0203	KACTX1AD	KACTX1AD	11/06/07	1142
09	SB-325-0506	KACT01AD	KACT01AD	11/06/07	1159
10	SB-325-0809	KACT11AD	KACT11AD	11/06/07	1216
11	SB-326-0203	KACT21AD	KACT21AD	11/06/07	1233
12	SB-326-0506	KACT31AD	KACT31AD	11/06/07	1251
13	SB-326-0809	KACT51AD	KACT51AD	11/06/07	1308
14	SB-318-0203	KACNQ1AD	KACNQ1AD	11/06/07	1325
15	SB-318-0506	KACRW1AD	KACRW1AD	11/06/07	1342
16	SB-318-0809	KACRX1AD	KACRX1AD	11/06/07	1359
17	SB-319-0203	KACR01AD	KACR01AD	11/06/07	1416
18	SB-319-0506	KACR11AD	KACR11AD	11/06/07	1434
19	SB-319-0809	KACR21AD	KACR21AD	11/06/07	1451
20	SB-320-0203	KACR31AD	KACR31AD	11/06/07	1508
21	SB-320-0506	KACR41AD	KACR41AD	11/06/07	1525
22	SB-320-0809	KACR51AD	KACR51AD	11/06/07	1542

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K01295

Lab File ID: 2DF1106 DFTPP Injection Date: 11/06/07

Instrument ID: A4AG2 DFTPP Injection Time: 0849

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	48.2
68	Less than 2.0% of mass 69	0.7 (1.4)1
69	Mass 69 relative abundance	51.9
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	57.1
197	Less than 1.0% of mass 198	0.5
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.5
275	10.0 - 30.0% of mass 198	23.6
365	Greater than 1.0% of mass 198	2.9
441	Present, but less than mass 443	8.1
442	Greater than 40.0% of mass 198	55.5
443	17.0 - 23.0% of mass 442	10.4 (18.7)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SB-321-0203	KACR71AD	KACR71AD	11/06/07	1559
02	SB-321-0506	KACR81AD	KACR81AD	11/06/07	1617
03	SB-321-0809	KACR91AD	KACR91AD	11/06/07	1634
04	SB-322-0203	KACTC1AD	KACTC1AD	11/06/07	1651
05					
06					
07					
08					
09					
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11					
12					
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5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K01295

Lab File ID: 2DF1107 DFTPP Injection Date: 11/07/07

Instrument ID: A4AG2 DFTPP Injection Time: 1148

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	38.2
68	Less than 2.0% of mass 69	0.5 (1.4)1
69	Mass 69 relative abundance	37.2
70	Less than 2.0% of mass 69	0.0 (0.1)1
127	40.0 - 60.0% of mass 198	51.9
197	Less than 1.0% of mass 198	0.3
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	20.4
365	Greater than 1.0% of mass 198	3.1
441	Present, but less than mass 443	8.9
442	Greater than 40.0% of mass 198	59.8
443	17.0 - 23.0% of mass 442	11.6 (19.4)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD009	L9	2SHHH1107	11/07/07	1159
02	SSTD008	L8	2SHH1107	11/07/07	1219
03	SSTD007	L7	2SH1107	11/07/07	1236
04	SSTD006	L6	2SMH1107	11/07/07	1253
05	SSTD005	L5	2SMM1107	11/07/07	1310
06	SSTD004	L4	2SM1107	11/07/07	1327
07	SSTD003	L3	2SML1107	11/07/07	1344
08	SSTD002	L2	2SL1107	11/07/07	1402
09	SSTD001	L1	2SLL1107	11/07/07	1419
10	SB-322-0506	KACTD1AD	KACTD1AD	11/07/07	1636
11	SB-322-0809	KACTE1AD	KACTE1AD	11/07/07	1653
12	SB-323-0203	KACTF1AD	KACTF1AD	11/07/07	1710
13	SB-323-0506	KACTG1AD	KACTG1AD	11/07/07	1728
14	SB-323-0809	KACTP1AD	KACTP1AD	11/07/07	1745
15	SB-324-0203	KACTR1AD	KACTR1AD	11/07/07	1802
16					
17					
18					
19					
20					
21					
22					

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 29-OCT-2007 07:15
End Cal Date : 05-NOV-2007 13:24
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\cansvr11\dd\chem\MSS\a4ag2.i\71105A.b\8270p.m
Last Edit : 06-Nov-2007 16:03 ulmanm
Curve Type : Average

Compound	0.05000 Level 1	0.25000 Level 2	0.50000 Level 3	1.000 Level 4	2.500 Level 5	5.000 Level 6	RRF	% RSD	
	7.500 Level 7	10.000 Level 8	12.500 Level 9						
144 Hexachlorophene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
145 Hexachlorophene product	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
146 Benzo(a)pyrene	1.21464	0.96398	0.95300	1.00739	1.09224	1.10916			
	1.10220	1.15866	1.25172				1.09478	9.590	
148 3-Methylcholanthrene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
149 Indeno(1,2,3-cd)pyrene	1.20141	1.02134	1.06461	1.12356	1.21521	1.25116			
	1.21794	1.26961	1.37799				1.19365	9.150	
150 Dibenz(a,h)anthracene	1.03478	0.79796	0.89446	0.93982	1.03397	1.06209			
	1.04159	1.09738	1.17761				1.00885	11.294	
151 Benzo(g,h,i)perylene	1.10608	0.84783	0.93013	0.95486	1.03470	1.05191			
	1.01714	1.05695	1.14098				1.01562	8.973	
199 3-Picoline	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
200 N,N-Dimethylacetamide	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
201 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
202 Diphenyl	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4ag2.i Injection Date: 05-NOV-2007 13:41
Lab File ID: ICVTCL.D Init. Cal. Date(s): 29-OCT-2007 05-NOV-2007
Analysis Type: Init. Cal. Times: 07:15 13:24
Lab Sample ID: ICVTCL Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4ag2.i\71105A.b\8270p.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
146 Benzo(a)pyrene	1.09478	1.04089	1.04089	0.010	4.92168	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.19365	1.15486	1.15486	0.010	3.24975	50.00000	Averaged
150 Dibenz(a,h)anthracene	1.00885	0.98074	0.98074	0.010	2.78601	50.00000	Averaged
151 Benzo(g,h,i)perylene	1.01562	0.96572	0.96572	0.010	4.91297	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.33131	0.32777	0.32777	0.010	1.06956	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.22194	1.19186	1.19186	0.010	2.46128	50.00000	Averaged
$ 156 Terphenyl-d14	0.83047	0.78854	0.78854	0.010	5.04856	50.00000	Averaged
$ 157 Phenol-d5	1.62166	1.51479	1.51479	0.010	6.58985	50.00000	Averaged
$ 158 2-Fluorophenol	1.24780	1.13598	1.13598	0.010	8.96116	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	0.13274	0.12540	0.12540	0.010	5.53515	50.00000	Averaged
$ 186 2-Chlorophenol-d4	1.35010	1.27036	1.27036	0.010	5.90575	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.82284	0.81089	0.81089	0.010	1.45221	50.00000	Averaged
M 195 Cresols, total	2.54505	2.39509	2.39509	0.010	5.89217	50.00000	Averaged
101 Diphenylamine	0.50989	0.50238	0.50238	0.010	1.47309	50.00000	Averaged

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4ag2.i Injection Date: 05-NOV-2007 13:41
Lab File ID: ICVTCL.D Init. Cal. Date(s): 29-OCT-2007 05-NOV-2007
Analysis Type: Init. Cal. Times: 07:15 13:24
Lab Sample ID: ICVTCL Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4ag2.i\71105A.b\8270p.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
146 Benzo(a)pyrene	1.09478	1.04089	1.04089	0.010	4.92168	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.19365	1.15486	1.15486	0.010	3.24975	50.00000	Averaged
150 Dibenz(a,h)anthracene	1.00885	0.98074	0.98074	0.010	2.78601	50.00000	Averaged
151 Benzo(g,h,i)perylene	1.01562	0.96572	0.96572	0.010	4.91297	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.33131	0.32777	0.32777	0.010	1.06956	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.22194	1.19186	1.19186	0.010	2.46128	50.00000	Averaged
$ 156 Terphenyl-d14	0.83047	0.78854	0.78854	0.010	5.04856	50.00000	Averaged
$ 157 Phenol-d5	1.62166	1.51479	1.51479	0.010	6.58985	50.00000	Averaged
$ 158 2-Fluorophenol	1.24780	1.13598	1.13598	0.010	8.96116	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	0.13274	0.12540	0.12540	0.010	5.53515	50.00000	Averaged
$ 186 2-Chlorophenol-d4	1.35010	1.27036	1.27036	0.010	5.90575	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.82284	0.81089	0.81089	0.010	1.45221	50.00000	Averaged
M 195 Cresols, total	2.54505	2.39509	2.39509	0.010	5.89217	50.00000	Averaged
101 Diphenylamine	0.50989	0.50238	0.50238	0.010	1.47309	50.00000	Averaged

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4ag2.i Injection Date: 06-NOV-2007 08:59
Lab File ID: 2SMH1106.D Init. Cal. Date(s): 29-OCT-2007 05-NOV-2007
Analysis Type: Init. Cal. Times: 07:15 13:24
Lab Sample ID: L6 Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4ag2.i\71106A.b\8270p.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
146 Benzo(a)pyrene	1.09478	1.09884	1.09884	0.010	-0.37077	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.19365	1.22780	1.22780	0.010	-2.86134	50.00000	Averaged
150 Dibenz(a,h)anthracene	1.00885	1.03668	1.03668	0.010	-2.75891	50.00000	Averaged
151 Benzo(g,h,i)perylene	1.01562	1.02901	1.02901	0.010	-1.31853	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.33131	0.34711	0.34711	0.010	-4.76786	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.22194	1.21241	1.21241	0.010	0.78007	50.00000	Averaged
$ 156 Terphenyl-d14	0.83047	0.84437	0.84437	0.010	-1.67418	50.00000	Averaged
$ 157 Phenol-d5	1.62166	1.56739	1.56739	0.010	3.34613	50.00000	Averaged
$ 158 2-Fluorophenol	1.24780	1.20474	1.20474	0.010	3.45093	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	0.13274	0.14074	0.14074	0.010	-6.02641	50.00000	Averaged
$ 186 2-Chlorophenol-d4	1.35010	1.31133	1.31133	0.010	2.87128	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.82284	0.83189	0.83189	0.010	-1.09918	50.00000	Averaged
M 195 Cresols, total	2.54505	2.50986	2.50986	0.010	1.38240	50.00000	Averaged
101 Diphenylamine	0.50989	0.50556	0.50556	0.010	0.84930	50.00000	Averaged

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 07-NOV-2007 11:59
End Cal Date : 07-NOV-2007 14:19
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\cansvr11\dd\chem\MSS\a4ag2.i\71107A.b\8270p.m
Last Edit : 07-Nov-2007 14:31 a4ag2.i
Curve Type : Average

Compound	0.05000 Level 1	0.25000 Level 2	0.50000 Level 3	1.000 Level 4	2.500 Level 5	5.000 Level 6	RRF	% RSD	
	7.500 Level 7	10.000 Level 8	12.500 Level 9						
144 Hexachlorophene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
145 Hexachlorophene product	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
146 Benzo(a)pyrene	1.12709	0.92086	0.96568	1.02348	1.07196	1.06275			
	1.07289	1.09888	1.18295				1.05850	7.544	
148 3-Methylcholanthrene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
149 Indeno(1,2,3-cd)pyrene	1.23077	0.98850	1.08192	1.14428	1.20665	1.16724			
	1.19635	1.20080	1.31012				1.16963	7.864	
150 Dibenz(a,h)anthracene	0.99378	0.86680	0.94317	1.00032	1.04639	1.00367			
	1.02339	1.04945	1.12755				1.00606	7.211	
151 Benzo(g,h,i)perylene	1.04615	0.85886	0.89442	0.96318	1.01733	0.99154			
	1.02388	1.03995	1.13772				0.99700	8.390	
199 3-Picoline	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
200 N,N-Dimethylacetamide	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
201 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
202 Diphenyl	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4ag2.i Injection Date: 07-NOV-2007 14:36
Lab File ID: ICVTCL.D Init. Cal. Date(s): 07-NOV-2007 07-NOV-2007
Analysis Type: Init. Cal. Times: 11:59 14:19
Lab Sample ID: ICVTCL Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4ag2.i\71107A.b\8270p.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
146 Benzo(a)pyrene	1.05850	1.09538	1.09538	0.010	-3.48344	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.16963	1.20303	1.20303	0.010	-2.85586	50.00000	Averaged
150 Dibenz(a,h)anthracene	1.00606	1.03201	1.03201	0.010	-2.58005	50.00000	Averaged
151 Benzo(g,h,i)perylene	0.99700	1.01699	1.01699	0.010	-2.00495	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.29450	0.28547	0.28547	0.010	3.06601	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.16297	1.21704	1.21704	0.010	-4.64986	50.00000	Averaged
$ 156 Terphenyl-d14	0.78703	0.80152	0.80152	0.010	-1.84010	50.00000	Averaged
$ 157 Phenol-d5	1.61714	1.61786	1.61786	0.010	-0.04441	50.00000	Averaged
$ 158 2-Fluorophenol	1.20781	1.17679	1.17679	0.010	2.56802	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	0.13939	0.14179	0.14179	0.010	-1.72207	50.00000	Averaged
$ 186 2-Chlorophenol-d4	1.38420	1.38057	1.38057	0.010	0.26209	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.85089	0.87003	0.87003	0.010	-2.24927	50.00000	Averaged
M 195 Cresols, total	2.72897	2.70834	2.70834	0.010	0.75613	50.00000	Averaged
101 Diphenylamine	0.52756	0.53734	0.53734	0.010	-1.85319	50.00000	Averaged

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K01295

Lab File ID (Standard): 2SMH1105 Date Analyzed: 11/05/07

Instrument ID: A4AG2 Time Analyzed: 0957

		IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
	12 HOUR STD	308259	3.59	1374860	4.49	682197	5.75
	UPPER LIMIT	616518	4.09	2749720	4.99	1364394	6.25
	LOWER LIMIT	154130	3.09	687430	3.99	341099	5.25
	EPA SAMPLE NO.						
01	KADNPBLK	355499	3.59	1468418	4.48	691198	5.75
02	KADNPCHK	355393	3.59	1539160	4.48	748861	5.75
03	KADNNBLK	360048	3.58	1510087	4.48	730315	5.75
04	KADNNCHK	340061	3.59	1499279	4.48	725126	5.75
05							
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20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8C
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K01295

Lab File ID (Standard): 2SMH1105 Date Analyzed: 11/05/07

Instrument ID: A4AG2 Time Analyzed: 0957

		IS4 (PHN) AREA #	RT	IS5 (CRY) AREA #	RT	IS6 (PRY) AREA #	RT
	12 HOUR STD	1152446	6.85	1034789	8.82	974511	10.30
	UPPER LIMIT	2304892	7.35	2069578	9.32	1949022	10.80
	LOWER LIMIT	576223	6.35	517395	8.32	487256	9.80
	EPA SAMPLE NO.						
01	KADNPBLK	1187459	6.84	1027147	8.81	970028	10.28
02	KADNPCHK	1242911	6.85	1114713	8.81	1037380	10.28
03	KADNNBLK	1228566	6.84	1066999	8.81	1005284	10.28
04	KADNNCHK	1221948	6.85	1122722	8.81	1025807	10.28
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K01295

Lab File ID (Standard): 2SMH1106 Date Analyzed: 11/06/07

Instrument ID: A4AG2 Time Analyzed: 0859

		IS1 (DCB) AREA #	RT	IS2 (NPT) AREA #	RT	IS3 (ANT) AREA #	RT
	12 HOUR STD	258823	3.57	1083669	4.47	547329	5.74
	UPPER LIMIT	517646	4.07	2167338	4.97	1094658	6.24
	LOWER LIMIT	129412	3.07	541835	3.97	273665	5.24
	EPA SAMPLE NO.						
01	SB-324-0809	290102	3.57	1275365	4.47	650686	5.74
02	SB-324-0809	268361	3.57	1245216	4.47	634059	5.74
03	SB-324-0809	273186	3.57	1251386	4.47	638066	5.74
04	SB-324-0506	302164	3.57	1299025	4.47	671094	5.74
05	SB-324-0506	270815	3.57	1248981	4.47	647822	5.74
06	SB-324-0506	296314	3.57	1357556	4.47	708032	5.74
07	SB-325-0203	328685	3.57	1466482	4.47	754431	5.74
08	SB-325-0506	305236	3.57	1331647	4.47	682565	5.74
09	SB-325-0809	295435	3.57	1303686	4.47	679159	5.74
10	SB-326-0203	301992	3.57	1373311	4.47	727824	5.74
11	SB-326-0506	314198	3.57	1401849	4.47	710316	5.74
12	SB-326-0809	317818	3.57	1417333	4.47	746300	5.74
13	SB-318-0203	291916	3.57	1301667	4.47	680102	5.74
14	SB-318-0506	312015	3.57	1391405	4.47	742389	5.74
15	SB-318-0809	305741	3.57	1395211	4.47	741549	5.74
16	SB-319-0203	299719	3.57	1400562	4.47	734576	5.74
17	SB-319-0506	280221	3.57	1320266	4.47	713946	5.74
18	SB-319-0809	305321	3.57	1368341	4.47	719930	5.74
19	SB-320-0203	292920	3.57	1354021	4.47	728584	5.74
20	SB-320-0506	302587	3.57	1411285	4.47	737251	5.74
21	SB-320-0809	311775	3.57	1388706	4.47	716385	5.74
22	SB-321-0203	284012	3.57	1310035	4.47	681898	5.74

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K01295

Lab File ID (Standard): 2SMH1106 Date Analyzed: 11/06/07

Instrument ID: A4AG2 Time Analyzed: 0859

		IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
	12 HOUR STD	936091	6.83	860347	8.80	791138	10.26
	UPPER LIMIT	1872182	7.33	1720694	9.30	1582276	10.76
	LOWER LIMIT	468046	6.33	430174	8.30	395569	9.76
	EPA SAMPLE NO.						
01	SB-324-0809	1140233	6.83	995556	8.80	948177	10.25
02	SB-324-0809	1103420	6.83	1018374	8.80	984396	10.25
03	SB-324-0809	1104641	6.83	1003886	8.80	952814	10.25
04	SB-324-0506	1156925	6.83	1003219	8.79	988123	10.25
05	SB-324-0506	1108581	6.83	1021519	8.80	971699	10.25
06	SB-324-0506	1201916	6.83	1111271	8.79	1023661	10.25
07	SB-325-0203	1264820	6.83	1167594	8.80	1114819	10.25
08	SB-325-0506	1137725	6.83	990580	8.80	978766	10.25
09	SB-325-0809	1158696	6.83	1005454	8.79	996401	10.25
10	SB-326-0203	1257326	6.83	1127740	8.80	1075667	10.26
11	SB-326-0506	1208680	6.83	1073666	8.79	1039614	10.25
12	SB-326-0809	1255640	6.83	1130514	8.80	1117989	10.26
13	SB-318-0203	1201302	6.83	1076783	8.80	1030695	10.25
14	SB-318-0506	1290318	6.83	1105213	8.80	1069608	10.26
15	SB-318-0809	1258744	6.83	1122641	8.80	1103941	10.26
16	SB-319-0203	1266551	6.83	1150574	8.80	1137970	10.26
17	SB-319-0506	1233558	6.83	1112081	8.80	1077984	10.26
18	SB-319-0809	1242677	6.83	1079209	8.80	1039319	10.26
19	SB-320-0203	1247440	6.83	1072937	8.80	1057029	10.25
20	SB-320-0506	1243696	6.83	1108474	8.80	1089218	10.26
21	SB-320-0809	1168156	6.83	1061346	8.80	1058484	10.26
22	SB-321-0203	1194231	6.83	1141809	8.80	1112477	10.27

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8B
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K01295

Lab File ID (Standard): 2SMH1106 Date Analyzed: 11/06/07

Instrument ID: A4AG2 Time Analyzed: 0859

		IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
	12 HOUR STD	258823	3.57	1083669	4.47	547329	5.74
	UPPER LIMIT	517646	4.07	2167338	4.97	1094658	6.24
	LOWER LIMIT	129412	3.07	541835	3.97	273665	5.24
	EPA SAMPLE NO.						
01	SB-321-0506	303045	3.57	1386383	4.47	722684	5.74
02	SB-321-0809	303427	3.57	1348935	4.47	703689	5.74
03	SB-322-0203	266653	3.57	1230143	4.47	672239	5.74
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

FORM VIII SV-1 1/87 Rev.

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K01295

Lab File ID (Standard): 2SMH1106 Date Analyzed: 11/06/07

Instrument ID: A4AG2 Time Analyzed: 0859

		IS4 (PHN) AREA #	RT	IS5 (CRY) AREA #	RT	IS6 (PRY) AREA #	RT
	12 HOUR STD	936091	6.83	860347	8.80	791138	10.26
	UPPER LIMIT	1872182	7.33	1720694	9.30	1582276	10.76
	LOWER LIMIT	468046	6.33	430174	8.30	395569	9.76
	EPA SAMPLE NO.						
01	SB-321-0506	1270263	6.83	1128211	8.80	1094624	10.26
02	SB-321-0809	1242950	6.83	1119411	8.80	1059521	10.26
03	SB-322-0203	1121030	6.83	1055573	8.80	1072664	10.26
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K01295

Lab File ID (Standard): 2SMH1107 Date Analyzed: 11/07/07

Instrument ID: A4AG2 Time Analyzed: 1253

		IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
	12 HOUR STD	412269	3.61	1912554	4.51	1013623	5.78
	UPPER LIMIT	824538	4.11	3825108	5.01	2027246	6.28
	LOWER LIMIT	206135	3.11	956277	4.01	506812	5.28
	EPA SAMPLE NO.						
01	SB-322-0506	424235	3.61	2013116	4.51	1083805	5.78
02	SB-322-0809	380094	3.61	1804560	4.51	987579	5.77
03	SB-323-0203	497626	3.61	2309793	4.51	1290213	5.78
04	SB-323-0506	394029	3.61	1860662	4.51	1043197	5.78
05	SB-323-0809	443052	3.61	2110833	4.51	1159496	5.78
06	SB-324-0203	390251	3.61	1823954	4.51	961890	5.78
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K01295

Lab File ID (Standard): 2SMH1107 Date Analyzed: 11/07/07

Instrument ID: A4AG2 Time Analyzed: 1253

		IS4 (PHN) AREA #	RT	IS5 (CRY) AREA #	RT	IS6 (PRY) AREA #	RT
	12 HOUR STD	1697953	6.87	1655396	8.83	1649714	10.32
	UPPER LIMIT	3395906	7.37	3310792	9.33	3299428	10.82
	LOWER LIMIT	848977	6.37	827698	8.33	824857	9.82
	EPA SAMPLE NO.						
01	SB-322-0506	1823021	6.87	1745048	8.83	1688085	10.32
02	SB-322-0809	1685659	6.87	1629857	8.83	1561691	10.32
03	SB-323-0203	2190103	6.87	2071594	8.83	1925900	10.32
04	SB-323-0506	1831873	6.87	1747578	8.83	1710761	10.32
05	SB-323-0809	1901181	6.87	1781782	8.83	1761565	10.32
06	SB-324-0203	1649700	6.87	1615810	8.83	1522157	10.32
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

SAMPLE CALC **SAMPLE ID: SB-319-0203** **COMPOUND: BAP**

IS AREA	DILUTION	COMPOUND OF INTEREST AREA	IS AMOUNT (NG)	Final Extract Volume (UL)	AVE RRF	PERCENT SOLIDS	AMOUNT INJECTED (UL)	CONCENTRATION PPB
1137970	1	62292	2	2000	1.0948	0.89	0.5	14.97

Sample Amount (g)
30.03

Tetra Tech NUS, Inc

Client Sample ID: SB-319-0203

GC/MS Semivolatiles

Lot-Sample #...:	A7K010295-004	**Work Order #...:**	KACR01AD	**Matrix.....:**	SO
Date Sampled...:	10/31/07 08:45	**Date Received..:**	11/01/07		
Prep Date.....:	11/02/07	**Analysis Date..:**	11/06/07		
Prep Batch #...:	7306048				
Dilution Factor:	1	**Initial Wgt/Vol:**	30.03 g	**Final Wgt/Vol..:**	2 mL
% Moisture.....:	11	**Method.....:**	SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzo(a)pyrene	**15 J**	**370**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	54	(24 - 112)
2-Fluorobiphenyl	53	(34 - 110)
Terphenyl-d14	70	(41 - 119)
Phenol-d5	60	(28 - 110)
2-Fluorophenol	58	(26 - 110)
2,4,6-Tribromophenol	64	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

STL North Canton

Semivolatile REPORT SW-846 Method 8270

Data file : \\cansvr11\dd\chem\MSS\a4ag2.i\71106A.b\KACR01AD.D
Lab Smp Id: KACR01AD Client Smp ID: SB-319-0203
Inj Date : 06-NOV-2007 14:16
Operator : 046900 Inst ID: a4ag2.i
Smp Info : KACR01AD,71106A.b,8270P,BAP.SUB
Misc Info :
Comment :
Method : \\cansvr11\dd\chem\MSS\a4ag2.i\71106A.b\8270p.m
Meth Date : 07-Nov-2007 07:53 hulat Quant Type: ISTD
Cal Date : 05-NOV-2007 11:23 Cal File: 1SHHH1105.D
Als bottle: 20
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: BAP.SUB
Target Version: 4.14
Processing Host: CANPMSSV04

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	0.50000	Volume injected (uL)
Ws	30.030	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	FINAL (ug/kg)	
* 1 1,4-Dichlorobenzene-d4	152	3.572	3.571	(1.000)	299719	2.00000		(Q)
* 2 Naphthalene-d8	136	4.466	4.471	(1.000)	1400562	2.00000		
* 3 Acenaphthene-d10	164	5.736	5.742	(1.000)	734576	2.00000		
* 4 Phenanthrene-d10	188	6.830	6.830	(1.000)	1266551	2.00000		
* 5 Chrysene-d12	240	8.795	8.801	(1.000)	1150574	2.00000		
* 6 Perylene-d12	264	10.259	10.259	(1.000)	1137970	2.00000		
146 Benzo(a)pyrene	252	10.189	10.195	(0.993)	62292	0.10000	13.320	
$ 154 Nitrobenzene-d5	82	3.948	3.954	(0.884)	625278	2.69506	358.98	
$ 155 2-Fluorobiphenyl	172	5.224	5.230	(0.911)	1198642	2.67075	355.74	
$ 156 Terphenyl-d14	244	7.977	7.977	(0.907)	1681569	3.51971	468.82	
$ 157 Phenol-d5	99	3.283	3.271	(0.919)	1095946	4.50968	600.69	
$ 158 2-Fluorophenol	112	2.707	2.689	(0.758)	812143	4.34315	578.51	
$ 159 2,4,6-Tribromophenol	330	6.313	6.312	(1.100)	234230	4.80424	639.92	
$ 186 2-Chlorophenol-d4	132	3.419	3.419	(0.957)	892164	4.40956	587.35	
$ 187 1,2-Dichlorobenzene-d4	152	3.683	3.683	(1.031)	339087	2.74986	366.28	

QC Flag Legend

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **M. MARTIN** **DATE:** **JANUARY 15, 2008**

FROM: **MATTHEW D. KRAUS** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – MERCURY**
LOCKHEED MIDDLE RIVER
SDG – 7K01295

SAMPLES: 27/Solid/

SB-318-0203	SB-318-0506	SB-318-0809
SB-319-0203	SB-319-0506	SB-319-0809
SB-320-0203	SB-320-0506	SB-320-0809
SB-321-0203	SB-321-0506	SB-321-0809
SB-322-0203	SB-322-0506	SB-322-0809
SB-323-0203	SB-323-0506	SB-323-0809
SB-324-0203	SB-324-0506	SB-324-0809
SB-325-0203	SB-325-0506	SB-325-0809
SB-326-0203	SB-326-0506	SB-326-0809

Overview

The sample set for Lockheed Middle River, SDG 7K01295, consists of twenty-seven soil environmental samples which were all analyzed for mercury and percent solids. The samples were collected on October 31, 2007 and analyzed by TestAmerica Laboratories, Inc. All of the samples were analyzed for mercury in accordance with SW 846 method 7471A and cold vapor atomic absorption (CVAA) methodologies.

Summary

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, initial/continuing calibrations, laboratory method blank results, matrix spike/matrix spike duplicate recoveries, compound quantitation and detection limits. Areas of concern are listed below.

Major Problems

- None.

Minor Problems

- The contract required detection limit (CRDL) standard percent recovery (%R) was less than the lower quality control limit but greater than 50% affecting all samples. Positive results reported for mercury less than 2X the CRDL and not previously qualified due to laboratory blank contamination were qualified as biased low, "L". Mercury results reported as non-detected were qualified as biased low, "UL".

Executive Summary

Laboratory Performance: Mercury results were qualified due to calibration noncompliance.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "Region III Modifications to National Functional Guidelines for Inorganic Data Validation", April 1993. The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Matthew D. Kraus
Environmental Chemist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key

U	-	Value is considered non-detected as reported by the laboratory.
J	-	Positive result is considered estimated, "J", as a result of technical noncompliance.
UJ	-	Non-detected result is considered estimated, "UJ", as a result of technical noncompliance.
K	-	Positive result is considered biased high, "K", as a result of technical noncompliance.
L	-	Positive result is considered biased low, "L", as a result of technical noncompliance.
UL	-	Non-detected result is considered biased low, "UJ", as a result of technical noncompliance.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination

B = Field Blank Contamination

C = Calibration Noncompliance (e.g. %RSDs, %Ds, ICVs, CCVs, RRFs, etc.)

C01 = GC/MS Tuning Noncompliance

D = MS/MSD Recovery Noncompliance

E = LCS/LCSD Recovery Noncompliance

F = Laboratory Duplicate Imprecision

G = Field Duplicate Imprecision

H = Holding Time Exceedance

I = ICP Serial Dilution Noncompliance

J = GFAA PDS – GFAA MSA's r <0.995 / ICP PDS Recovery Noncompliance

K = IPC Interference – included ICS %R Noncompliance

L = Instrument Calibration Range Exceedance

M = Sample Preservation Noncompliance

N = Internal Standard Noncompliance

N01 = Internal Standard Recovery Noncompliance Dioxins

N02 = Recovery Standard Noncompliance Dioxins

N03 = Clean-up Standard Noncompliance Dioxins

O = Poor Instrument Performance (e.g. base-line drifting)

P = Uncertainty near detection limit (< 2 x IDL for inorganics and < CRDL for organics)

Q = Other problems (can encompass a number of issues; e.g. chromatography, interferences, etc.)

R = Surrogate Recovery Noncompliance

S = Pesticide/PCB Resolution

T = % Breakdown Noncompliance for DDT and Endrin

U = % Difference between columns/detectors > 25% for positive results determined via GC/HPLC

V = Non-linear calibrations; correlation coefficient r < 0.995

W = EMPC result

X = Signal to noise response drop

Y = Percent solids <30%

Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00885

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: M

nsample	SB-318-0203	nsample	SB-318-0506	nsample	SB-318-0809
samp_date	10/31/2007	samp_date	10/31/2007	samp_date	10/31/2007
lab_id	A7K010295001	lab_id	A7K010295002	lab_id	A7K010295003
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	85.0	Pct_Solids	89.0	Pct_Solids	85.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.02	UL	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.029	L	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.055	L	C

PROJ_NO: 00885

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: M

nsample	SB-319-0203	nsample	SB-319-0506	nsample	SB-319-0809
samp_date	10/31/2007	samp_date	10/31/2007	samp_date	10/31/2007
lab_id	A7K010295004	lab_id	A7K010295005	lab_id	A7K010295006
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	89.0	Pct_Solids	88.0	Pct_Solids	85.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.043	L	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.024	L	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.026	L	C

PROJ_NO: 00885

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: M

nsample	SB-320-0203	nsample	SB-320-0506	nsample	SB-320-0809
samp_date	10/31/2007	samp_date	10/31/2007	samp_date	10/31/2007
lab_id	A7K010295007	lab_id	A7K010295008	lab_id	A7K010295009
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	88.0	Pct_Solids	89.0	Pct_Solids	87.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.028	L	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.019	UL	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.035	L	C

PROJ_NO: 00885

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: M

nsample	SB-321-0203	nsample	SB-321-0506	nsample	SB-321-0809
samp_date	10/31/2007	samp_date	10/31/2007	samp_date	10/31/2007
lab_id	A7K010295010	lab_id	A7K010295011	lab_id	A7K010295012
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	89.0	Pct_Solids	85.0	Pct_Solids	85.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.06	L	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.02	UL	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.02	UL	C

PROJ_NO: 00885

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: M

nsample	SB-322-0203	nsample	SB-322-0506	nsample	SB-322-0809
samp_date	10/31/2007	samp_date	10/31/2007	samp_date	10/31/2007
lab_id	A7K010295013	lab_id	A7K010295014	lab_id	A7K010295015
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	85.0	Pct_Solids	87.0	Pct_Solids	86.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.019	UL	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.035	L	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.019	UL	C

PROJ_NO: 00885

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: M

nsample	SB-323-0203	nsample	SB-323-0506	nsample	SB-323-0809
samp_date	10/31/2007	samp_date	10/31/2007	samp_date	10/31/2007
lab_id	A7K010295016	lab_id	A7K010295017	lab_id	A7K010295018
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	90.0	Pct_Solids	87.0	Pct_Solids	83.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.019	UL	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.019	UL	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.057	L	C

PROJ_NO: 00885

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: M

nsample	SB-324-0203
samp_date	10/31/2007
lab_id	A7K010295019
qc_type	NM
units	MG/KG
Pct_Solids	90.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.036	L	C

nsample	SB-324-0506
samp_date	10/31/2007
lab_id	A7K010295020
qc_type	NM
units	MG/KG
Pct_Solids	87.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.031	L	C

nsample	SB-324-0809
samp_date	10/31/2007
lab_id	A7K010295021
qc_type	NM
units	MG/KG
Pct_Solids	87.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.034	L	C

PROJ_NO: 00885

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: M

nsample	SB-325-0203	nsample	SB-325-0506	nsample	SB-325-0809
samp_date	10/31/2007	samp_date	10/31/2007	samp_date	10/31/2007
lab_id	A7K010295022	lab_id	A7K010295023	lab_id	A7K010295024
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	88.0	Pct_Solids	89.0	Pct_Solids	85.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.057	L	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.019	UL	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.02	UL	C

PROJ_NO: 00885

SDG: 7K01295 MEDIA: SOIL DATA FRACTION: M

nsample	SB-326-0203	nsample	SB-326-0506	nsample	SB-326-0809
samp_date	10/31/2007	samp_date	10/31/2007	samp_date	10/31/2007
lab_id	A7K010295025	lab_id	A7K010295026	lab_id	A7K010295027
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	88.0	Pct_Solids	89.0	Pct_Solids	84.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.093	L	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.021	L	C

Parameter	Result	Val Qual	Qual Code
MERCURY	0.064	L	C

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACNQ **Client ID:** SB-318-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306045

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 14.744

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.020	U	1	CVAA	11/2/2007	15:16

Comments: Lot #: A7K010295 Sample #: 1

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACRW **Client ID:** SB-318-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306045

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 11.439

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.029	B	1	CVAA	11/2/2007	15:26

Comments: Lot #: A7K010295 Sample #: 2

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACRX **Client ID:** SB-318-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306045

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 14.753

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.055	B	1	CVAA	11/2/2007	15:27

Comments: Lot #: A7K010295 Sample #: 3

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACR0 **Client ID:** SB-319-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306045

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 10.748

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.043	B	1	CVAA	11/2/2007	15:19

Comments: Lot #: A7K010295 Sample #: 4

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACR1 **Client ID:** SB-319-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306045

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 12.142

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.024	B	1	CVAA	11/2/2007	15:23

Comments: Lot #: A7K010295 Sample #: 5

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACR2 **Client ID:** SB-319-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306045

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 14.907

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.026	B	1	CVAA	11/2/2007	15:24

Comments: Lot #: A7K010295 Sample #: 6

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACR3 **Client ID:** SB-320-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306045

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 11.56

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.028	B	1	CVAA	11/2/2007	15:25

Comments: Lot #: A7K010295 Sample #: 7

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACR4 **Client ID:** SB-320-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 11.132

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.019	U	1	CVAA	11/2/2007	15:31

Comments: Lot #: A7K010295 Sample #: 8

5.21.0

E Serial dilution percent difference not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACR5 **Client ID:** SB-320-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 13.137

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.035	B	1	CVAA	11/2/2007	15:32

Comments: Lot #: A7K010295 Sample #: 9

5.21.0

E Serial dilution percent difference not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACR7 **Client ID:** SB-321-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 10.842

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.060	B	1	CVAA	11/2/2007	15:33

Comments: Lot #: A7K010295 Sample #: 10

5.21.0

E Serial dilution percent difference not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACR8 **Client ID:** SB-321-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 14.595

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.020	U	1	CVAA	11/2/2007	15:37

Comments: Lot #: A7K010295 Sample #: 11

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACR9 **Client ID:** SB-321-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 15.016

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.020	U	1	CVAA	11/2/2007	15:38

Comments: Lot #: A7K010295 Sample #: 12

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACTC **Client ID:** SB-322-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 14.527

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.019	U	1	CVAA	11/2/2007	15:45

Comments: Lot #: A7K010295 Sample #: 13

5.21.0

E Serial dilution percent difference not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACTD **Client ID:** SB-322-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 13.152

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.035	B	1	CVAA	11/2/2007	15:46

Comments: Lot #: A7K010295 Sample #: 14

5.21.0

E Serial dilution percent difference not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACTE **Client ID:** SB-322-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 13.534

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.019	U	1	CVAA	11/2/2007	15:47

Comments: Lot #: A7K010295 Sample #: 15

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACTF **Client ID:** SB-323-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 10.356

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.019	U	1	CVAA	11/2/2007	15:51

Comments: Lot #: A7K010295 Sample #: 16

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACTG **Client ID:** SB-323-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 13.376

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.019	U	1	CVAA	11/2/2007	15:52

Comments: Lot #: A7K010295 Sample #: 17

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACTP **Client ID:** SB-323-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 16.899

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.057	B	1	CVAA	11/2/2007	15:53

Comments: Lot #: A7K010295 Sample #: 18

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACTR **Client ID:** SB-324-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 10.359

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.036	B	1	CVAA	11/2/2007	15:54

Comments: Lot #: A7K010295 Sample #: 19

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACTT **Client ID:** SB-324-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 12.501

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.031	B	1	CVAA	11/2/2007	15:55

Comments: Lot #: A7K010295 Sample #: 20

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACTW **Client ID:** SB-324-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 13.05

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.034	B	1	CVAA	11/2/2007	15:59

Comments: Lot #: A7K010295 Sample #: 21

5.21.0

E Serial dilution percent difference not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACTX **Client ID:** SB-325-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 11.831

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.057	B	1	CVAA	11/2/2007	16:00

Comments: Lot #: A7K010295 Sample #: 22

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACT0 **Client ID:** SB-325-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 10.795

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.019	U	1	CVAA	11/2/2007	15:39

Comments: Lot #: A7K010295 Sample #: 23

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACT1 **Client ID:** SB-325-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 15.441

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.020	U	1	CVAA	11/2/2007	15:40

Comments: Lot #: A7K010295 Sample #: 24

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACT2 **Client ID:** SB-326-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 11.962

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.093	B	1	CVAA	11/2/2007	15:41

Comments: Lot #: A7K010295 Sample #: 25

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACT3 **Client ID:** SB-326-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 11.18

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.021	B	1	CVAA	11/2/2007	15:42

Comments: Lot #: A7K010295 Sample #: 26

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KACT5 **Client ID:** SB-326-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 15.794

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.064	B	1	CVAA	11/2/2007	15:44

Comments: Lot #: A7K010295 Sample #: 27

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Tetra Tech NUS, Inc

Client Sample ID: SB-318-0203

General Chemistry

Lot-Sample #...: A7K010295-001 **Work Order #...:** KACNQ **Matrix.....:** SO
Date Sampled...: 10/31/07 08:30 **Date Received..:** 11/01/07
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	85.3	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-318-0506

General Chemistry

Lot-Sample #...: A7K010295-002 Work Order #...: KACRW Matrix.....: SO
Date Sampled...: 10/31/07 08:32 Date Received..: 11/01/07
% Moisture.....: 11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	88.6	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-318-0809

General Chemistry

Lot-Sample #...: A7K010295-003 Work Order #...: KACRX Matrix.....: SO
Date Sampled...: 10/31/07 08:34 Date Received..: 11/01/07
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	85.2	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-319-0203

General Chemistry

Lot-Sample #...: A7K010295-004 **Work Order #...:** KACR0 **Matrix.....:** SO
Date Sampled...: 10/31/07 08:45 **Date Received..:** 11/01/07
% Moisture.....: 11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	89.3	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-319-0506

General Chemistry

Lot-Sample #...: A7K010295-005 **Work Order #...:** KACR1 **Matrix.....:** SO
Date Sampled...: 10/31/07 08:47 **Date Received..:** 11/01/07
% Moisture.....: 12

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	87.9	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-319-0809

General Chemistry

Lot-Sample #...: A7K010295-006 **Work Order #...:** KACR2 **Matrix.....:** SO
Date Sampled...: 10/31/07 08:49 **Date Received..:** 11/01/07
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	85.1	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-320-0203

General Chemistry

Lot-Sample #...: A7K010295-007 Work Order #...: KACR3 Matrix.....: SO
Date Sampled...: 10/31/07 08:55 Date Received..: 11/01/07
% Moisture.....: 12

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	88.4	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-320-0506

General Chemistry

Lot-Sample #...: A7K010295-008 **Work Order #...:** KACR4 **Matrix.....:** SO
Date Sampled...: 10/31/07 08:57 **Date Received..:** 11/01/07
% Moisture.....: 11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	88.9	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-320-0809

General Chemistry

Lot-Sample #...: A7K010295-009 **Work Order #...:** KACR5 **Matrix.....:** SO
Date Sampled...: 10/31/07 08:59 **Date Received..:** 11/01/07
% Moisture.....: 13

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	86.9	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-321-0203

General Chemistry

Lot-Sample #...: A7K010295-010 Work Order #...: KACR7 Matrix.....: SO
Date Sampled...: 10/31/07 09:10 Date Received..: 11/01/07
% Moisture.....: 11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	89.2	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-321-0506

General Chemistry

Lot-Sample #...: A7K010295-011 **Work Order #...:** KACR8 **Matrix.....:** SO
Date Sampled...: 10/31/07 09:12 **Date Received..:** 11/01/07
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	85.4	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-321-0809

General Chemistry

Lot-Sample #...: A7K010295-012 **Work Order #...:** KACR9 **Matrix.....:** SO
Date Sampled...: 10/31/07 09:14 **Date Received..:** 11/01/07
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	85.0	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-322-0203

General Chemistry

Lot-Sample #...: A7K010295-013 Work Order #...: KACTC Matrix.....: SO
Date Sampled...: 10/31/07 09:25 Date Received..: 11/01/07
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	85.5	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-322-0506

General Chemistry

Lot-Sample #...: A7K010295-014 Work Order #...: KACTD Matrix.....: SO
Date Sampled...: 10/31/07 09:27 Date Received..: 11/01/07
% Moisture.....: 13

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	86.8	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-322-0809

General Chemistry

Lot-Sample #...: A7K010295-015 **Work Order #...:** KACTE **Matrix.....:** SO
Date Sampled...: 10/31/07 09:29 **Date Received..:** 11/01/07
% Moisture.....: 14

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	86.5	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-323-0203

General Chemistry

Lot-Sample #...: A7K010295-016 Work Order #...: KACTF Matrix.....: SO
Date Sampled...: 10/31/07 09:40 Date Received..: 11/01/07
% Moisture.....: 10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	89.6	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-323-0506

General Chemistry

Lot-Sample #...: A7K010295-017 **Work Order #...:** KACTG **Matrix.....:** SO
Date Sampled...: 10/31/07 09:42 **Date Received..:** 11/01/07
% Moisture.....: 13

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	86.6	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-323-0809

General Chemistry

Lot-Sample #...: A7K010295-018 Work Order #...: KACTP Matrix.....: SO
Date Sampled...: 10/31/07 09:44 Date Received..: 11/01/07
% Moisture.....: 17

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	83.1	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-324-0203

General Chemistry

Lot-Sample #...: A7K010295-019 Work Order #...: KACTR Matrix.....: SO
Date Sampled...: 10/31/07 10:05 Date Received..: 11/01/07
% Moisture.....: 10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	89.6	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-324-0506

General Chemistry

Lot-Sample #...: A7K010295-020 **Work Order #...:** KACTT **Matrix.....:** SO
Date Sampled...: 10/31/07 10:07 **Date Received..:** 11/01/07
% Moisture.....: 13

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	87.5	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-324-0809

General Chemistry

Lot-Sample #...: A7K010295-021 **Work Order #...:** KACTW **Matrix.....:** SO
Date Sampled...: 10/31/07 10:09 **Date Received..:** 11/01/07
% Moisture.....: 13

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	87.0	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312090
		Dilution Factor: 1				

Tetra Tech NUS, Inc

Client Sample ID: SB-325-0203

General Chemistry

Lot-Sample #...: A7K010295-022 Work Order #...: KACTX Matrix.....: SO
Date Sampled...: 10/31/07 10:45 Date Received..: 11/01/07
% Moisture.....: 12

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	88.2	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312090

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-325-0506

General Chemistry

Lot-Sample #...: A7K010295-023 Work Order #...: KACT0 Matrix.....: SO
Date Sampled...: 10/31/07 10:47 Date Received..: 11/01/07
% Moisture.....: 11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	89.2	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312090

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-325-0809

General Chemistry

Lot-Sample #...: A7K010295-024 Work Order #...: KACT1 Matrix.....: SO
Date Sampled...: 10/31/07 10:49 Date Received..: 11/01/07
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	84.6	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312090

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-326-0203

General Chemistry

Lot-Sample #...: A7K010295-025 Work Order #...: KACT2 Matrix.....: SO
Date Sampled...: 10/31/07 11:07 Date Received..: 11/01/07
% Moisture.....: 12

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	88.0	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312090

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-326-0506

General Chemistry

Lot-Sample #...: A7K010295-026 Work Order #...: KACT3 Matrix.....: SO
Date Sampled...: 10/31/07 11:09 Date Received..: 11/01/07
% Moisture.....: 11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	88.8	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312090

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-326-0809

General Chemistry

Lot-Sample #...: A7K010295-027 Work Order #...: KACT5 Matrix.....: SO
Date Sampled...: 10/31/07 11:11 Date Received..: 11/01/07
% Moisture.....: 16

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	84.2	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312090

Dilution Factor: 1

APPENDIX C

SUPPORT DOCUMENTATION

HOLDTIME

SDG 7K01295

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-323-0506	A7K010295017	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-318-0809	A7K010295003	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-319-0203	A7K010295004	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-319-0506	A7K010295005	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-319-0809	A7K010295006	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-320-0203	A7K010295007	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-320-0809	A7K010295009	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-321-0506	A7K010295011	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-321-0809	A7K010295012	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-322-0203	A7K010295013	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-322-0506	A7K010295014	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-318-0506	A7K010295002	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-323-0203	A7K010295016	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-320-0506	A7K010295008	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-323-0809	A7K010295018	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-324-0203	A7K010295019	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-324-0506	A7K010295020	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-324-0809	A7K010295021	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-325-0203	A7K010295022	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-325-0506	A7K010295023	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-325-0809	A7K010295024	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-326-0203	A7K010295025	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-326-0506	A7K010295026	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-326-0809	A7K010295027	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-318-0203	A7K010295001	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-322-0809	A7K010295015	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
HG	MG/KG	SB-321-0203	A7K010295010	NM	10/31/2007	11/2/2007	11/2/2007	2	0	2
PCS	%	SB-324-0203	A7K010295019	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-326-0506	A7K010295026	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-326-0809	A7K010295027	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-326-0203	A7K010295025	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-325-0809	A7K010295024	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-325-0506	A7K010295023	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCS	%	SB-325-0203	A7K010295022	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-324-0506	A7K010295020	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-318-0203	A7K010295001	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-323-0809	A7K010295018	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-323-0506	A7K010295017	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-323-0203	A7K010295016	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-322-0809	A7K010295015	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-322-0506	A7K010295014	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-318-0809	A7K010295003	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-324-0809	A7K010295021	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-318-0506	A7K010295002	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-322-0203	A7K010295013	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-319-0203	A7K010295004	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-319-0506	A7K010295005	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-319-0809	A7K010295006	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-320-0203	A7K010295007	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-320-0506	A7K010295008	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-320-0809	A7K010295009	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCS	%	SB-321-0203	A7K010295010	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-321-0506	A7K010295011	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
PCS	%	SB-321-0809	A7K010295012	NM	10/31/2007	11/7/2007	11/8/2007	7	1	8
OS	%	SB-318-0809	A7K010295003	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-321-0809	A7K010295012	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-321-0506	A7K010295011	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-321-0203	A7K010295010	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-320-0809	A7K010295009	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-320-0506	A7K010295008	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-320-0203	A7K010295007	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-319-0809	A7K010295006	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-318-0203	A7K010295001	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-319-0203	A7K010295004	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-326-0809	A7K010295027	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-318-0506	A7K010295002	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-322-0203	A7K010295013	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-319-0506	A7K010295005	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-325-0203	A7K010295022	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	SB-326-0203	A7K010295025	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-322-0506	A7K010295014	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	%	SB-325-0506	A7K010295023	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-326-0506	A7K010295026	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-324-0809	A7K010295021	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-324-0506	A7K010295020	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	%	SB-324-0203	A7K010295019	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	%	SB-323-0809	A7K010295018	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	%	SB-323-0506	A7K010295017	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	%	SB-323-0203	A7K010295016	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	%	SB-322-0809	A7K010295015	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	%	SB-325-0809	A7K010295024	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-323-0506	A7K010295017	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	UG/KG	SB-323-0809	A7K010295018	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	UG/KG	SB-324-0203	A7K010295019	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	UG/KG	SB-324-0506	A7K010295020	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-324-0809	A7K010295021	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-325-0203	A7K010295022	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	SB-325-0506	A7K010295023	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-325-0809	A7K010295024	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-326-0203	A7K010295025	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-323-0203	A7K010295016	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	UG/KG	SB-326-0809	A7K010295027	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-320-0506	A7K010295008	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-326-0506	A7K010295026	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-322-0809	A7K010295015	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	UG/KG	SB-322-0506	A7K010295014	NM	10/31/2007	11/2/2007	11/7/2007	2	5	7
OS	UG/KG	SB-322-0203	A7K010295013	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-321-0809	A7K010295012	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-321-0506	A7K010295011	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-318-0203	A7K010295001	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-320-0809	A7K010295009	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-320-0203	A7K010295007	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-319-0809	A7K010295006	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-319-0506	A7K010295005	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-319-0203	A7K010295004	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	SB-318-0809	A7K010295003	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-318-0506	A7K010295002	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6
OS	UG/KG	SB-321-0203	A7K010295010	NM	10/31/2007	11/2/2007	11/6/2007	2	4	6

Chain of Custody Record

SEVERN TRENT STL

Severn Trent Laboratories, Inc.

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STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRA TECH	M. MARTIN	10/31/07	322994
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 3**
20251 CENTURY BLVD #200	301 - 528 - 3022		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
GERMANTOWN / MD / 20874	S. HADLEY	K. IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LMC MR	COURIER		
Contract/Purchase Order/Quote No.			
112IC00798			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: H2	LL 8270 *	Special Instructions/ Conditions of Receipt
SB-318-0203	10/31/07	0830				X	2						X	X	* benzo(a)pyrene
318-0506		0832													
318-0809		0834													
319-0203		0845													
319-0506		0847													
319-0809		0849													
320-0203		0855													
320-0506		0857													
320-0809		0859													
321-0203		0910													
321-0506		0912													
SB-321-0809	10/31/07	0914				X	2						X	X	* benzo (a) pyrene

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal

☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STND

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	10/31/07	1510	1. Received By	10-31-07	1510
2. Relinquished By	10-31-07	1630	2. Received By	11-1-07	9:45
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica North Canton

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRA TECH	M. MARTIN	10/31/07	322989
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 2 of 3
20251 CENTURY BLVD #200	301-528-3022		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
GERMANTOWN / MD / 20874	S. HADLEY	K. IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LML MR	COURIER		
Contract/Purchase Order/Quote No.			
112I00998			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: Hg	LL BETA *	Special Instructions/ Conditions of Receipt
SB-322-0203	10/31/07	0925				X	2						X	X	* benzo(a) pyrene
322-0506		0927													
322-0809		0929													
323-0203		0940													
323-0506		0942													
323-0809		0944													
324-0203		1005													
324-0506		1009													
324-0506 MS/SD		1009				X									
SB-324-0809	10/31/07	1009				X	2						X	X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal

☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STND

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	10/31/07	1510	1. Received By	10-31-07	1511
2. Relinquished By	10-31-07	1630	2. Received By	11-1-07	9:45
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica North Canton

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Chain of Custody Record

SEVERN TRENT STL

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRA TECH	M. MARTIN	10/31/07	322995
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 3 of 3**
20251 CENTURY BLVD #200	301-528-3022		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
GERMANTOWN / MD / 20874	S. HADLEY	K. IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LMC MR	COURIER		
Contract/Purchase Order/Quote No.			
112IC0099B			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: Hg	8270 *	Special Instructions/ Conditions of Receipt
SB-325-0203	10/31/07	1045				X	2						X	2	
325-0506		1047													*benzo(a)pyrene
325-0809		1049													
326-0203		1107													
326-0506		1109													
SB 326-0809		1111				X	X						X	Y	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal

☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STND

QC Requirements (Specify)

	Date	Time
1. Relinquished By	10/31/07	1510
2. Relinquished By	10/31/07	1630
3. Relinquished By		
1. Received By	10/31/07	1510
2. Received By	11-1-07	9:45
3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica North Canton

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: ATL010295

Client Tetra Tech Project LMLMR Quote # 77083

Cooler Received on 11-1-07 Opened on 11-1-07 By Lisa Arms (Signature)

FedEx ☒ Client Drop Off ☐ UPS ☐ DHL ☐ FAS ☐ TestAmerica Courier ☐

Stetson ☐ US Cargo ☐ Other _____

TestAmerica Cooler # NO # Foam Box ☐ Client Cooler ☐ Other _____

1. Were custody seals on the outside of the cooler? Yes ☒ No ☐ If YES, Quantity 1 Intact? Yes ☒ No ☐ NA ☐
   Were custody seals on the outside of cooler signed and dated? Yes ☒ No ☐ NA ☐
   Were custody seals on the bottles? Yes ☐ No ☒
   If YES, are there any exceptions _____
2. Shipper's packing slip attached to this form? Yes ☒ No ☐
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☐ None ☐ Other _____
6. Cooler temperature upon receipt 3.8 °C (see back of form for multiple coolers/temps)

METHOD: IR ☒ Other ☐ _____

COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐

7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Could all bottle labels and/or tags be reconciled with the COC? Yes ☒ No ☐
9. Were samples at the correct pH upon receipt? Yes ☐ No ☐ NA ☒
10. Were correct bottles used for the tests indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☒
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
13. Was a Trip Blank present in the cooler? Yes ☐ No ☒ Were VOAs on the COC? Yes ☐ No ☒

Contacted PM _____ Date _____ by _____ via Voice Mail ☐ Verbal ☐ Other ☐

Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot #071707-HNO3 - Sulfuric Acid Lot # 092006-H2SO4; Sodium Hydroxide Lot # 122805 -NaOH; Hydrochloric Acid Lot # 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot # 050205-CH3COO2ZN/NaOH*

What time was preservative added to sample(s)? _____

Sample(s) _____ were received with bubble > 6 mm in diameter (Notify PM)

Client ID	pH	Date	Initials

CASE NARRATIVE

7K01295

The following report contains the analytical results for twenty-seven solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc. from the LMC MR Site, project number 112IC00998. The samples were received November 01, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID's: A7K010295.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Dev Murali, John Poremba, and Michael Martin on November 20, 2007. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 3.8°C.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica North Canton (formerly STL North Canton) conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton (formerly STL North Canton) requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

ANALYTICAL METHODS SUMMARY

7K01295

PARAMETER	ANALYTICAL METHOD
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Total Residue as Percent Solids	MCAWW 160.3 MOD

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

7K01295 : A7K010295

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KACNQ	001	SB-318-0203	10/31/07	08:30
KACRW	002	SB-318-0506	10/31/07	08:32
KACRX	003	SB-318-0809	10/31/07	08:34
KACR0	004	SB-319-0203	10/31/07	08:45
KACR1	005	SB-319-0506	10/31/07	08:47
KACR2	006	SB-319-0809	10/31/07	08:49
KACR3	007	SB-320-0203	10/31/07	08:55
KACR4	008	SB-320-0506	10/31/07	08:57
KACR5	009	SB-320-0809	10/31/07	08:59
KACR7	010	SB-321-0203	10/31/07	09:10
KACR8	011	SB-321-0506	10/31/07	09:12
KACR9	012	SB-321-0809	10/31/07	09:14
KACTC	013	SB-322-0203	10/31/07	09:25
KACTD	014	SB-322-0506	10/31/07	09:27
KACTE	015	SB-322-0809	10/31/07	09:29
KACTF	016	SB-323-0203	10/31/07	09:40
KACTG	017	SB-323-0506	10/31/07	09:42
KACTP	018	SB-323-0809	10/31/07	09:44
KACTR	019	SB-324-0203	10/31/07	10:05
KACTT	020	SB-324-0506	10/31/07	10:07
KACTW	021	SB-324-0809	10/31/07	10:09
KACTX	022	SB-325-0203	10/31/07	10:45
KACT0	023	SB-325-0506	10/31/07	10:47
KACT1	024	SB-325-0809	10/31/07	10:49
KACT2	025	SB-326-0203	10/31/07	11:07
KACT3	026	SB-326-0506	10/31/07	11:09
KACT5	027	SB-326-0809	10/31/07	11:11

NOTE(S):

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

Test America North Canton

Metals Data Reporting Form

Initial Calibration Verification Standard

Instrument: CVAA **Units:** ug/L

Chart Number: hg11102a.prn **Acceptable Range:** 90% - 110%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck5ICV 11/2/2007 11:04 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Mercury	253.7	2.5	2.44	**97.4**								

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: CVAA **Units:** ug/L

Chart Number: hg11102a.prn **Acceptable Range:** 80% - 120%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck2CCV 11/2/2007 11:07 AM Found	% Rec	Ck2CCV 11/2/2007 11:15 AM Found	% Rec	Ck2CCV 11/2/2007 11:19 AM Found	% Rec	Ck2CCV 11/2/2007 11:33 AM Found	% Rec	Ck2CCV 11/2/2007 11:48 AM Found	% Rec
Mercury	253.7	5.0	4.97	**99.5**	5.15	**102.9**	5.11	**102.3**	5.26	**105.2**	5.24	**104.8**

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: CVAA **Units:** ug/L

Chart Number: hg11102a.prn **Acceptable Range:** 80% - 120%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck2CCV 11/2/2007 12:02 PM Found	% Rec	Ck2CCV 11/2/2007 12:16 PM Found	% Rec	Ck2CCV 11/2/2007 12:32 PM Found	% Rec	Ck2CCV 11/2/2007 12:46 PM Found	% Rec	Ck2CCV 11/2/2007 1:01 PM Found	% Rec
Mercury	253.7	5.0	5.26	**105.3**	5.18	**103.5**	5.22	**104.3**	5.21	**104.3**	5.33	**106.6**

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: CVAA **Units:** ug/L

Chart Number: hg11102a.prn **Acceptable Range:** 80% - 120%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck2CCV 11/2/2007 1:12 PM Found	% Rec	Ck2CCV 11/2/2007 1:19 PM Found	% Rec	Ck2CCV 11/2/2007 1:33 PM Found	% Rec	Ck2CCV 11/2/2007 1:48 PM Found	% Rec	Ck2CCV 11/2/2007 2:02 PM Found	% Rec
Mercury	253.7	5.0	5.28	**105.6**	5.08	**101.5**	5.11	**102.3**	5.02	**100.5**	5.07	**101.4**

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: CVAA **Units:** ug/L

Chart Number: hg11102a.prn **Acceptable Range:** 80% - 120%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck2CCV 11/2/2007 2:16 PM Found	% Rec	Ck2CCV 11/2/2007 2:30 PM Found	% Rec	Ck2CCV 11/2/2007 2:38 PM Found	% Rec	Ck2CCV 11/2/2007 2:53 PM Found	% Rec	Ck2CCV 11/2/2007 3:06 PM Found	% Rec
Mercury	253.7	5.0	5.02	**100.4**	5.07	**101.3**	5.07	**101.4**	5.06	**101.3**	5.11	**102.2**

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: CVAA **Units:** ug/L

Chart Number: hg11102a.prn **Acceptable Range:** 80% - 120%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck2CCV 11/2/2007 3:20 PM Found	% Rec	Ck2CCV 11/2/2007 3:34 PM Found	% Rec	Ck2CCV 11/2/2007 3:48 PM Found	% Rec	Ck2CCV 11/2/2007 4:02 PM Found	% Rec	Found	% Rec
Mercury	253.7	5.0	5.03	**100.5**	5.15	**102.9**	5.03	**100.6**	5.05	**100.9**		

Test America North Canton

Metals Data Reporting Form

Contract Required Detection Limit Standard

Instrument: CVAA **Units:** ug/L

Chart Number: hg11102a.prn **Acceptable Range:** 50% - 150%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck3CRA\MRL 11/2/2007 11:06 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Mercury	253.7	0.2	0.12	**58.9**								

Test America North Canton

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11102a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck4ICB 11/2/2007 11:05 AM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Mercury	253.7	0.6	0.1	U								

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11102a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck1CCB 11/2/2007 11:08 AM Found	Q	Ck1CCB 11/2/2007 11:17 AM Found	Q	Ck1CCB 11/2/2007 11:21 AM Found	Q	Ck1CCB 11/2/2007 11:35 AM Found	Q	Ck1CCB 11/2/2007 11:49 AM Found	Q
Mercury	253.7	0.6	**-0.1**	**B**	0.1	U	0.1	U	0.1	U	0.1	U

5.21.0

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11102a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck1CCB 11/2/2007 12:03 PM Found	Q	Ck1CCB 11/2/2007 12:18 PM Found	Q	Ck1CCB 11/2/2007 12:33 PM Found	Q	Ck1CCB 11/2/2007 12:47 PM Found	Q	Ck1CCB 11/2/2007 1:02 PM Found	Q
Mercury	253.7	0.6	0.1	U	**-0.1**	**B**	0.1	U	0.1	U	0.1	U

U Result is less than the IDL

B Result is between IDL and RL

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11102a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck1CCB 11/2/2007 1:13 PM Found	Q	Ck1CCB 11/2/2007 1:20 PM Found	Q	Ck1CCB 11/2/2007 1:34 PM Found	Q	Ck1CCB 11/2/2007 1:49 PM Found	Q	Ck1CCB 11/2/2007 2:03 PM Found	Q
Mercury	253.7	0.6	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

U Result is less than the IDL

B Result is between IDL and RL

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11102a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck1CCB 11/2/2007 2:17 PM		Ck1CCB 11/2/2007 2:31 PM		Ck1CCB 11/2/2007 2:39 PM		Ck1CCB 11/2/2007 2:54 PM		Ck1CCB 11/2/2007 3:07 PM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Mercury	253.7	0.6	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11102a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck1CCB 11/2/2007 3:22 PM Found	Q	Ck1CCB 11/2/2007 3:36 PM Found	Q	Ck1CCB 11/2/2007 3:49 PM Found	Q	Ck1CCB 11/2/2007 4:03 PM Found	Q	Found	Q
Mercury	253.7	0.6	0.1	U	0.1	U	0.1	U	0.1	U		

5.21.0

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

Test America North Canton

Metals Data Reporting Form

Preparation Blank Results

Lab Sample ID: KADNJB

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306045

Weight: 0.6 **Volume:** 100 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.017	0.10	0.017	U	1	CVAA	11/2/2007	15:13

Comments: Lot #: A7K010295

U Result is less than the IDL

B Result is between IDL and RL

Test America North Canton

Metals Data Reporting Form

Preparation Blank Results

Lab Sample ID: KADNLB

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.017	0.10	0.017	U	1	CVAA	11/2/2007	15:28

Comments: Lot #: A7K010295

U Result is less than the IDL

B Result is between IDL and RL

Test America North Canton

Metals Data Reporting Form

Matrix Spike Sample Results

Spike Sample ID: KACNQS

Original Sample ID: KACNQ **Client ID:** SB-318-0203S

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306045

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 14.744

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Mercury	253.7	0.020	U	0.20		0.1955	104.2	1	1	CVAA	11/2/2007	15:16	11/2/2007	15:18

Comments: Lot #: A7K010295 Sample #: 1

5.21.0

N Spike recovery failed
NC Percent recovery was not calculated
* Duplicate analysis RPD was not within limits
E Serial dilution percent difference not within limits
U Result is less than the IDL

Form 5A Equivalent

Test America North Canton

Metals Data Reporting Form

Matrix Spike Sample Results

Spike Sample ID: KACTTS

Original Sample ID: KACTT **Client ID:** SB-324-0506S

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 12.501

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Mercury	253.7	0.031	B	0.21		0.1905	94.0	1	1	CVAA	11/2/2007	15:55	11/2/2007	15:58

Comments: Lot #: A7K010295 Sample #: 20

5.21.0

N Spike recovery failed
NC Percent recovery was not calculated
* Duplicate analysis RPD was not within limits
E Serial dilution percent difference not within limits
U Result is less than the IDL

Form 5A Equivalent

Test America North Canton

Metals Data Reporting Form

Duplicate Sample Results

Lab Sample ID: KACNQX **Client ID:** SB-318-0203X

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306045

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 14.744

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.020	U	1	CVAA	11/2/2007	15:17

Comments: Lot #: A7K010295 Sample #: 1

U Result is less than the IDL

Test America North Canton

Metals Data Reporting Form

Duplicate Sample Results

Lab Sample ID: KACTTX **Client ID:** SB-324-0506X

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 12.501

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.019	U	1	CVAA	11/2/2007	15:56

Comments: Lot #: A7K010295 Sample #: 20

U Result is less than the IDL

Test America North Canton

Metals Data Reporting Form

Sample Duplicate RPD Report

Duplicate Sample ID: KACNQX

Original Sample ID: KACNQ **Client ID:** SB-318-0203X

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306045

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 14.744

Element	WL/ Mass	OS Conc	Q	Dupe Conc	Q	% RPD	OS DF	Dupe DF	Instr	OS Anal Date	OS Anal Time	Dupe Anal Date	Dupe Anal Time
Mercury	253.7	0.020	U	0.020	U		1	1	CVAA	11/2/2007	15:16	11/2/2007	15:17

* Duplicate analysis RPD was not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 6 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Duplicate RPD Report

Duplicate Sample ID: KACTTX

Original Sample ID: KACTT **Client ID:** SB-324-0506X

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** 12.501

Element	WL/ Mass	OS Conc	Q	Dupe Conc	Q	% RPD	OS DF	Dupe DF	Instr	OS Anal Date	OS Anal Time	Dupe Anal Date	Dupe Anal Time
Mercury	253.7	0.031	B	0.019	U	0.0	1	1	CVAA	11/2/2007	15:55	11/2/2007	15:56

* Duplicate analysis RPD was not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 6 Equivalent

Test America North Canton

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: KADNJC

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306045

Weight: 0.6 **Volume:** 100 **Percent Moisture:** NA

Element	WL/ Mass	Spike Level	Conc	Percent Recovery	Q	Range	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.83	0.86	103.2		81-116	1	CVAA	11/2/2007	15:14

Comments: Lot #: A7K010295

N Spike recovery failed

NC Percent recovery was not calculated

Test America North Canton

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: KADNLC

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/2/2007 **Prep Batch:** 7306046

Weight: 0.6 **Volume:** 100 **Percent Moisture:** NA

Element	WL/ Mass	Spike Level	Conc	Percent Recovery	Q	Range	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.83	0.84	100.5		81-116	1	CVAA	11/2/2007	15:29

Comments: Lot #: A7K010295

N Spike recovery failed

NC Percent recovery was not calculated

Test America North Canton

Metals Data Reporting Form

Instrument Detection Limits

Instrument: CVAA **Units:** ppb

Element	Wavelength	Reporting Limit	IDL	Date of IDL
Mercury	253.700	0.6	0.10	2/1/2007

Batch Number: **7306045**

TestAmerica Laboratories, Inc.
Metals Prep Log/ Batch Summary

Prepared By: Lisa McGall (e-Signature)

Prep Date: 11/02/07
Due Date: 11/15/07

Lot	Work Order			ICP Weight	ICPMS Weight	Hg Weight
A7K020000 Solid	KADNJ	B	Due Date: SDG:			0.6 g
A7K020000 Solid	KADNJ	C	Due Date: SDG:			0.6 g
A7K010295 Solid	KACNQ Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACNQ Total	S	Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACNQ Total	X	Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACRW Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACRX Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACR0 Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACR1 Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACR2 Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACR3 Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g

LEVEL 2

BLANK AND CHECK STANDARD ON BATCH	X
MS/MSD AND PDS ON BATCH	X
CORRECT SPIKES ADDED	X
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG	X

Comments:

B-BLANK; C-CHECK SAMPLE; L-CHECK SAMPLE DUPLICATE; P-SERIAL DILUTION; S-MATRIX SPIKE SAMPLE; D-MATRIX SPIKE DUPLICATE SAMPLE

Matrix Spike Information:
KACNQ Hg

Check Sample Information:
KADNJ Hg

Prep Method(s): SW846 7471A

Batch Number: **7306046**

TestAmerica Laboratories, Inc.
Metals Prep Log/ Batch Summary

Prepared By:
Lisa McGall
(e-Signature)

Prep Date: 11/02/07
Due Date: 11/15/07

Lot	Work Order			ICP Weight	ICPMS Weight	Hg Weight
A7K020000 Solid	KADNL	B	Due Date: SDG:			0.6 g
A7K020000 Solid	KADNL	C	Due Date: SDG:			0.6 g
A7K010295 Solid	KACR4 Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACR5 Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACR7 Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACR8 Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACR9 Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACTC Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACTD Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACTE Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACTF Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACTG Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACTP Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACTR Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACTT Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACTT Total	S	Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACTT Total	X	Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACTW Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACTX Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACT0 Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACT1 Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACT2 Total		Due Date: 11/15/07 SDG: 7K01295			0.6 g

Batch Number: **7306046**

TestAmerica Laboratories, Inc.
Metals Prep Log/ Batch Summary

Prepared By: Lisa McGall (e-Signature)

Prep Date: 11/02/07
Due Date: 11/15/07

Lot	Work Order		ICP Weight	ICPMS Weight	Hg Weight
A7K010295 Solid	KACT3 Total	Due Date: 11/15/07 SDG: 7K01295			0.6 g
A7K010295 Solid	KACT5 Total	Due Date: 11/15/07 SDG: 7K01295			0.6 g

LEVEL 2

BLANK AND CHECK STANDARD ON BATCH	X
MS/MSD AND PDS ON BATCH	X
CORRECT SPIKES ADDED	X
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG	X

Comments:

B-BLANK; C-CHECK SAMPLE; L-CHECK SAMPLE DUPLICATE; P-SERIAL DILUTION; S-MATRIX SPIKE SAMPLE; D-MATRIX SPIKE DUPLICATE SAMPLE

Matrix Spike Information:
KACTT Hg

Check Sample Information:
KADNL Hg

Prep Method(s): SW846 7471A

```
:       Instrument Upload                                    Run Log - Page  1 :
:       Started Mon Nov  5 07:30:45 2007 by LISTM                              :
:       Data File: UPL$CAN_DATA_ROOT:<LHG>HG11102A.PRN;1                       :
```

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
1	STD1REP1	1	02-NOV-2007	10:57:09			H1
2	STD2REP1	1	02-NOV-2007	10:58:18			H1
3	STD3REP1	1	02-NOV-2007	10:59:25			H1
4	STD4REP1	1	02-NOV-2007	11:00:31			H1
5	STD5REP1	1	02-NOV-2007	11:01:37			H1
6	STD6REP1	1	02-NOV-2007	11:02:55			H1
7	CK5ICV	1	02-NOV-2007	11:04:05			H1
8	CK4ICB	1	02-NOV-2007	11:05:10			H1
9	CK3CRA\MRL	1	02-NOV-2007	11:06:15			H1
10	CK2CCV	1	02-NOV-2007	11:07:20			H1
11	CK1CCB	1	02-NOV-2007	11:08:26			H1
12	KADLTB	1	02-NOV-2007	11:09:30	7306013	A7K020000	H1
13	KADLTC	1	02-NOV-2007	11:10:34	7306013	A7K020000	H1
14	KAAQK	1	02-NOV-2007	11:11:42	7306013	A7K010182	H1
15	KAAQKS	1	02-NOV-2007	11:13:08	7306013	A7K010182	H1
16	KAAQKD	1	02-NOV-2007	11:14:13	7306013	A7K010182	H1
17	CK2CCV	1	02-NOV-2007	11:15:47			H1
18	CK1CCB	1	02-NOV-2007	11:17:02			H1
19	CK2CCV	1	02-NOV-2007	11:19:55			H1
20	CK1CCB	1	02-NOV-2007	11:21:01			H1
21	J9939B	1	02-NOV-2007	11:22:06	7305026	A7K010000	H1
22	J9939C	1	02-NOV-2007	11:23:22	7305026	A7K010000	H1
23	J99J5	1	02-NOV-2007	11:24:28	7305026	A7J310330	H1
24	J99J7	1	02-NOV-2007	11:25:47	7305026	A7J310330	H1
25	J99J9	1	02-NOV-2007	11:27:02	7305026	A7J310330	H1
26	J99K4	1	02-NOV-2007	11:28:12	7305026	A7J310330	H1
27	J99K8	1	02-NOV-2007	11:29:17	7305026	A7J310330	H1
28	J99K9	1	02-NOV-2007	11:30:36	7305026	A7J310330	H1
29	J99KE	1	02-NOV-2007	11:31:46	7305026	A7J310330	H1
30	J99KH	1	02-NOV-2007	11:32:50	7305026	A7J310330	H1
31	CK2CCV	1	02-NOV-2007	11:33:58			H1
32	CK1CCB	1	02-NOV-2007	11:35:32			H1
33	J99KHS	1	02-NOV-2007	11:36:38	7305026	A7J310330	H1
34	J99KHD	1	02-NOV-2007	11:37:46	7305026	A7J310330	H1
35	J99KP	1	02-NOV-2007	11:39:05	7305026	A7J310330	H1
36	J99KV	1	02-NOV-2007	11:40:11	7305026	A7J310330	H1
37	J99KX	1	02-NOV-2007	11:41:29	7305026	A7J310330	H1
38	J99L1	1	02-NOV-2007	11:42:37	7305026	A7J310330	H1
39	J99L3	1	02-NOV-2007	11:43:54	7305026	A7J310330	H1
40	J99LC	1	02-NOV-2007	11:45:10	7305026	A7J310330	H1
41	J99LE	1	02-NOV-2007	11:46:15	7305026	A7J310330	H1
42	J99LF	1	02-NOV-2007	11:47:34	7305026	A7J310330	H1
43	CK2CCV	1	02-NOV-2007	11:48:40			H1
44	CK1CCB	1	02-NOV-2007	11:49:48			H1

(continued)

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument	
45	J99LG	1	02-NOV-2007	11:51:03	7305026	A7J310330	H1	
46	J99LK	1	02-NOV-2007	11:52:33	7305026	A7J310330	H1	
47	J99LV	1	02-NOV-2007	11:53:42	7305026	A7J310330	H1	
48	J99LX	1	02-NOV-2007	11:54:57	7305026	A7J310330	H1	
49	J993VB	1	02-NOV-2007	11:56:02	7305020	A7K010000	H1	
50	J993VC	1	02-NOV-2007	11:57:08	7305020	A7K010000	H1	
51	J99JQ	1	02-NOV-2007	11:58:14	7305020	A7J310330	H1	
52	J99JQS	1	02-NOV-2007	11:59:21	7305020	A7J310330	H1	
53	J99JQD	1	02-NOV-2007	12:00:31	7305020	A7J310330	H1	
54	J9935B	1	02-NOV-2007	12:01:39	7305024	A7K010000	H1	
55	CK2CCV	1	02-NOV-2007	12:02:44			H1	
56	CK1CCB	1	02-NOV-2007	12:03:48			H1	
57	J9935C	1	02-NOV-2007	12:04:58	7305024	A7K010000	H1	
58	J98D7	1	02-NOV-2007	12:06:16	7305024	7J31216	H1	
59	J98E1	1	02-NOV-2007	12:07:32	7305024	7J31216	H1	
60	J98E2	1	02-NOV-2007	12:08:38	7305024	7J31216	H1	
61	J98E4	1	02-NOV-2007	12:09:44	7305024	7J31216	H1	dilution at 14:23
62	J98E6	1	02-NOV-2007	12:10:50	7305024	7J31216	H1	rerun at 14:24
63	J98E8	1	02-NOV-2007	12:12:07	7305024	7J31216	H1	
64	J98E9	1	02-NOV-2007	12:13:14	7305024	7J31216	H1	
65	J98EX	1	02-NOV-2007	12:14:24	7305024	7J31216	H1	
66	J98F2	1	02-NOV-2007	12:15:31	7305024	7J31216	H1	dilution at 14:26
67	CK2CCV	1	02-NOV-2007	12:16:37			H1	
68	CK1CCB	1	02-NOV-2007	12:18:05			H1	
69	J98F6	1	02-NOV-2007	12:19:12	7305024	7J31216	H1	
70	J98F7	1	02-NOV-2007	12:20:18	7305024	7J31216	H1	
71	J98F9	1	02-NOV-2007	12:21:40	7305024	7J31216	H1	
72	J98F9X	1	02-NOV-2007	12:23:16	7305024	7J31216	H1	
73	J98F9S	1	02-NOV-2007	12:24:21	7305024	7J31216	H1	
74	J98FC	1	02-NOV-2007	12:25:27	7305024	7J31216	H1	dilution at 14:24
75	J98FF	1	02-NOV-2007	12:26:43	7305024	7J31216	H1	rerun at 14:22
76	J98FG	1	02-NOV-2007	12:28:01	7305024	7J31216	H1	
77	J98FK	1	02-NOV-2007	12:29:28	7305024	7J31216	H1	
78	J98FM	1	02-NOV-2007	12:30:45	7305024	7J31216	H1	dilution at 14:25
79	CK2CCV	1	02-NOV-2007	12:32:10			H1	
80	CK1CCB	1	02-NOV-2007	12:33:16			H1	
81	J98FP	1	02-NOV-2007	12:34:22	7305024	7J31216	H1	
82	J98FV	1	02-NOV-2007	12:35:38	7305024	7J31216	H1	
83	J98FX	1	02-NOV-2007	12:36:45	7305024	7J31216	H1	
84	J9933B	1	02-NOV-2007	12:37:51	7305023	A7K010000	H1	
85	J9933C	1	02-NOV-2007	12:38:57	7305023	A7K010000	H1	
86	J98M1	1	02-NOV-2007	12:40:03	7305023	7J31231	H1	
87	J98M2	1	02-NOV-2007	12:41:21	7305023	7J31231	H1	
88	J98M3	1	02-NOV-2007	12:42:29	7305023	7J31231	H1	

(continued)

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument	
89	J98M4	1	02-NOV-2007	12:43:39	7305023	7J31231	H1	
90	J98M7	1	02-NOV-2007	12:44:45	7305023	7J31231	H1	
91	CK2CCV	1	02-NOV-2007	12:46:12			H1	
92	CK1CCB	1	02-NOV-2007	12:47:39			H1	
93	J98MR	1	02-NOV-2007	12:48:46	7305023	7J31231	H1	
94	J98N0	1	02-NOV-2007	12:49:54	7305023	7J31231	H1	
95	J98NA	1	02-NOV-2007	12:51:20	7305023	7J31231	H1	
96	J98NC	1	02-NOV-2007	12:52:47	7305023	7J31231	H1	
97	J98ND	1	02-NOV-2007	12:54:03	7305023	7J31231	H1	
98	J98NF	1	02-NOV-2007	12:55:23	7305023	7J31231	H1	
99	J98NG	1	02-NOV-2007	12:56:33	7305023	7J31231	H1	dilution at 14:28
100	J98NH	1	02-NOV-2007	12:58:00	7305023	7J31231	H1	
101	J98NL	1	02-NOV-2007	12:59:16	7305023	7J31231	H1	
102	J98NM	1	02-NOV-2007	13:00:26	7305023	7J31231	H1	
103	CK2CCV	1	02-NOV-2007	13:01:34			H1	
104	CK1CCB	1	02-NOV-2007	13:02:38			H1	
105	J98NN	1	02-NOV-2007	13:03:55	7305023	7J31231	H1	
106	J98NP	1	02-NOV-2007	13:05:22	7305023	7J31231	H1	
107	J98NT	1	02-NOV-2007	13:06:59	7305023	7J31231	H1	
108	J98NV	1	02-NOV-2007	13:08:06	7305023	7J31231	H1	
109	J98NVX	1	02-NOV-2007	13:09:13	7305023	7J31231	H1	dilution at 14:29
110	J98NVS	1	02-NOV-2007	13:10:23	7305023	7J31231	H1	
111	J98NW	1	02-NOV-2007	13:11:32	7305023	7J31231	H1	
112	CK2CCV	1	02-NOV-2007	13:12:39			H1	
113	CK1CCB	1	02-NOV-2007	13:13:55			H1	
114	CK2CCV	1	02-NOV-2007	13:19:25			H1	
115	CK1CCB	1	02-NOV-2007	13:20:34			H1	
116	J993XB	1	02-NOV-2007	13:21:38	7305021	A7K010000	H1	
117	J993XC	1	02-NOV-2007	13:22:43	7305021	A7K010000	H1	
118	J98J0	1	02-NOV-2007	13:23:49	7305021	7J31226	H1	dilution at 16:01
119	J98J0X	1	02-NOV-2007	13:24:53	7305021	7J31226	H1	16:05
120	J98J0S	1	02-NOV-2007	13:25:58	7305021	7J31226	H1	16:09
121	J9931B	1	02-NOV-2007	13:27:05	7305022	A7K010000	H1	
122	J9931C	1	02-NOV-2007	13:28:10	7305022	A7K010000	H1	
123	J98J9	1	02-NOV-2007	13:29:31	7305022	7J31226	H1	dilution at 16:07
124	J98KC	1	02-NOV-2007	13:30:58	7305022	7J31226	H1	
125	J98KF	1	02-NOV-2007	13:32:26	7305022	7J31226	H1	
126	CK2CCV	1	02-NOV-2007	13:33:41			H1	
127	CK1CCB	1	02-NOV-2007	13:34:57			H1	
128	J98KG	1	02-NOV-2007	13:36:15	7305022	7J31226	H1	dilution at 16:09
129	J98KN	1	02-NOV-2007	13:37:23	7305022	7J31226	H1	dilution at 16:11
130	J98KP	1	02-NOV-2007	13:38:33	7305022	7J31226	H1	
131	J98KV	1	02-NOV-2007	13:39:42	7305022	7J31226	H1	
132	J98L2	1	02-NOV-2007	13:40:47	7305022	7J31226	H1	

(continued)

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
133	J98L4	1	02-NOV-2007	13:42:23	7305022	7J31226	H1
134	J98L7	1	02-NOV-2007	13:43:31	7305022	7J31226	H1
135	J98LK	1	02-NOV-2007	13:44:56	7305022	7J31226	H1
136	J98LN	1	02-NOV-2007	13:46:02	7305022	7J31226	H1
137	J98LP	1	02-NOV-2007	13:47:07	7305022	7J31226	H1
138	CK2CCV	1	02-NOV-2007	13:48:26			H1
139	CK1CCB	1	02-NOV-2007	13:49:32			H1
140	J98LQ	1	02-NOV-2007	13:50:40	7305022	7J31226	H1
141	J98LX	1	02-NOV-2007	13:51:46	7305022	7J31226	H1
142	J98MA	1	02-NOV-2007	13:53:05	7305022	7J31226	H1
143	J98MD	1	02-NOV-2007	13:54:11	7305022	7J31226	H1
144	J98ME	1	02-NOV-2007	13:55:17	7305022	7J31226	H1
145	J98MF	1	02-NOV-2007	13:56:22	7305022	7J31226	H1
146	J98MFX	1	02-NOV-2007	13:57:27	7305022	7J31226	H1
147	J98MFS	1	02-NOV-2007	13:58:43	7305022	7J31226	H1
148	J98MG	1	02-NOV-2007	13:59:49	7305022	7J31226	H1
149	KADMMB	1	02-NOV-2007	14:00:57	7306025	A7K020000	H1
150	CK2CCV	1	02-NOV-2007	14:02:13			H1
151	CK1CCB	1	02-NOV-2007	14:03:21			H1
152	KADMMC	1	02-NOV-2007	14:04:26	7306025	A7K020000	H1
153	KAAR8	1	02-NOV-2007	14:05:31	7306025	A7K010185	H1
154	KAATG	1	02-NOV-2007	14:06:37	7306025	A7K010185	H1
155	KAATGS	1	02-NOV-2007	14:07:46	7306025	A7K010185	H1
156	KAATGD	1	02-NOV-2007	14:08:52	7306025	A7K010185	H1
157	KAATK	1	02-NOV-2007	14:10:29	7306025	A7K010185	H1
158	KAATN	1	02-NOV-2007	14:11:47	7306025	A7K010185	H1
159	KAATP	1	02-NOV-2007	14:13:06	7306025	A7K010185	H1
160	KAATR	1	02-NOV-2007	14:14:13	7306025	A7K010185	H1
161	KAATT	1	02-NOV-2007	14:15:19	7306025	A7K010185	H1
162	CK2CCV	1	02-NOV-2007	14:16:25			H1
163	CK1CCB	1	02-NOV-2007	14:17:32			H1
164	KAATV	1	02-NOV-2007	14:18:37	7306025	A7K010185	H1
165	KAC5T	1	02-NOV-2007	14:19:52	7306025	A7K010341	H1
166	J98E6	1	02-NOV-2007	14:21:00	7305024	7J31216	H1
167	J98FF	1	02-NOV-2007	14:22:17	7305024	7J31216	H1
168	J98E4	20	02-NOV-2007	14:23:28	7305024	7J31216	H1
169	J98FC	20	02-NOV-2007	14:24:33	7305024	7J31216	H1
170	J98FM	10	02-NOV-2007	14:25:42	7305024	7J31216	H1
171	J98F2	5	02-NOV-2007	14:26:58	7305024	7J31216	H1
172	J98NG	2	02-NOV-2007	14:28:15	7305023	7J31231	H1
173	J98NVX	2	02-NOV-2007	14:29:26	7305023	7J31231	H1
174	CK2CCV	1	02-NOV-2007	14:30:35			H1
175	CK1CCB	1	02-NOV-2007	14:31:44			H1
176	CK2CCV	1	02-NOV-2007	14:38:42			H1

dilution at 16:08
16:12
16:13

(continued)

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
177	CK1CCB	1	02-NOV-2007	14:39:47			H1
178	J924RB	1	02-NOV-2007	14:41:04	7302034	A7J290000	H1
179	J924RC	1	02-NOV-2007	14:42:13	7302034	A7J290000	H1
180	J90M9	1	02-NOV-2007	14:43:28	7302034	7J26310	H1
181	J90N0	1	02-NOV-2007	14:44:36	7302034	7J26310	H1
182	J90N1	1	02-NOV-2007	14:46:01	7302034	7J26310	H1
183	J90N3	1	02-NOV-2007	14:47:05	7302034	7J26310	H1
184	J90N4	1	02-NOV-2007	14:48:10	7302034	7J26310	H1
185	J90N6	1	02-NOV-2007	14:49:28	7302034	7J26310	H1
186	J90N7	1	02-NOV-2007	14:50:44	7302034	7J26310	H1
187	J90N7X	1	02-NOV-2007	14:51:55	7302034	7J26310	H1
188	CK2CCV	1	02-NOV-2007	14:53:00			H1
189	CK1CCB	1	02-NOV-2007	14:54:06			H1
190	J90N7S	1	02-NOV-2007	14:55:11	7302034	7J26310	H1
191	J90ND	1	02-NOV-2007	14:56:41	7302034	7J26310	H1
192	J90NE	1	02-NOV-2007	14:57:47	7302034	7J26310	H1
193	J90NF	1	02-NOV-2007	14:58:53	7302034	7J26310	H1
194	J90NH	1	02-NOV-2007	14:59:58	7302034	7J26310	H1
195	J90NJ	1	02-NOV-2007	15:01:13	7302034	7J26310	H1
196	J90NK	1	02-NOV-2007	15:02:23	7302034	7J26310	H1
197	J90NL	1	02-NOV-2007	15:03:29	7302034	7J26310	H1
198	J90NN	1	02-NOV-2007	15:04:37	7302034	7J26310	H1
199	J90NP	1	02-NOV-2007	15:05:44	7302034	7J26310	H1
200	CK2CCV	1	02-NOV-2007	15:06:52			H1
201	CK1CCB	1	02-NOV-2007	15:07:58			H1
202	J90NQ	1	02-NOV-2007	15:09:06	7302034	7J26310	H1
203	J90NV	1	02-NOV-2007	15:10:17	7302034	7J26310	H1
204	J90NW	1	02-NOV-2007	15:11:26	7302034	7J26310	H1
205	J90PH	1	02-NOV-2007	15:12:31	7302034	7J26310	H1
206	KADNJB	1	02-NOV-2007	15:13:47	7306045	A7K020000	H1
207	KADNJC	1	02-NOV-2007	15:14:54	7306045	A7K020000	H1
208	KACNQ	1	02-NOV-2007	15:16:10	7306045	7K01295	H1
209	KACNQX	1	02-NOV-2007	15:17:17	7306045	7K01295	H1
210	KACNQS	1	02-NOV-2007	15:18:37	7306045	7K01295	H1
211	KACR0	1	02-NOV-2007	15:19:42	7306045	7K01295	H1
212	CK2CCV	1	02-NOV-2007	15:20:59			H1
213	CK1CCB	1	02-NOV-2007	15:22:04			H1
214	KACR1	1	02-NOV-2007	15:23:10	7306045	7K01295	H1
215	KACR2	1	02-NOV-2007	15:24:26	7306045	7K01295	H1
216	KACR3	1	02-NOV-2007	15:25:32	7306045	7K01295	H1
217	KACRW	1	02-NOV-2007	15:26:37	7306045	7K01295	H1
218	KACRX	1	02-NOV-2007	15:27:42	7306045	7K01295	H1
219	KADNLB	1	02-NOV-2007	15:28:47	7306046	A7K020000	H1
220	KADNLC	1	02-NOV-2007	15:29:57	7306046	A7K020000	H1

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: Instrument Upload Run Log - Page 6 :
: Started Mon Nov 5 07:30:46 2007 by LISTM :
: Data File: UPL$CAN_DATA_ROOT:<LHG>HG111102A.PRN;1 :

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
221	KACR4	1	02-NOV-2007	15:31:14	7306046	7K01295	H1
222	KACR5	1	02-NOV-2007	15:32:25	7306046	7K01295	H1
223	KACR7	1	02-NOV-2007	15:33:51	7306046	7K01295	H1
224	CK2CCV	1	02-NOV-2007	15:34:59			H1
225	CK1CCB	1	02-NOV-2007	15:36:15			H1
226	KACR8	1	02-NOV-2007	15:37:22	7306046	7K01295	H1
227	KACR9	1	02-NOV-2007	15:38:27	7306046	7K01295	H1
228	KACT0	1	02-NOV-2007	15:39:33	7306046	7K01295	H1
229	KACT1	1	02-NOV-2007	15:40:44	7306046	7K01295	H1
230	KACT2	1	02-NOV-2007	15:41:51	7306046	7K01295	H1
231	KACT3	1	02-NOV-2007	15:42:58	7306046	7K01295	H1
232	KACT5	1	02-NOV-2007	15:44:04	7306046	7K01295	H1
233	KACTC	1	02-NOV-2007	15:45:09	7306046	7K01295	H1
234	KACTD	1	02-NOV-2007	15:46:14	7306046	7K01295	H1
235	KACTE	1	02-NOV-2007	15:47:30	7306046	7K01295	H1
236	CK2CCV	1	02-NOV-2007	15:48:37			H1
237	CK1CCB	1	02-NOV-2007	15:49:53			H1
238	KACTF	1	02-NOV-2007	15:51:00	7306046	7K01295	H1
239	KACTG	1	02-NOV-2007	15:52:06	7306046	7K01295	H1
240	KACTP	1	02-NOV-2007	15:53:16	7306046	7K01295	H1
241	KACTR	1	02-NOV-2007	15:54:35	7306046	7K01295	H1
242	KACTT	1	02-NOV-2007	15:55:43	7306046	7K01295	H1
243	KACTTX	1	02-NOV-2007	15:56:49	7306046	7K01295	H1
244	KACTTS	1	02-NOV-2007	15:58:06	7306046	7K01295	H1
245	KACTW	1	02-NOV-2007	15:59:14	7306046	7K01295	H1
246	KACTX	1	02-NOV-2007	16:00:21	7306046	7K01295	H1
247	J98J0	2	02-NOV-2007	16:01:28	7305021	7J31226	H1
248	CK2CCV	1	02-NOV-2007	16:02:36			H1
249	CK1CCB	1	02-NOV-2007	16:03:51			H1
250	J98J0X	2	02-NOV-2007	16:05:06	7305021	7J31226	H1
251	J98J0S	2	02-NOV-2007	16:06:13	7305021	7J31226	H1
252	J98J9	2	02-NOV-2007	16:07:21	7305022	7J31226	H1
253	J98LX	2	02-NOV-2007	16:08:38	7305022	7J31226	H1
254	J98KG	5	02-NOV-2007	16:09:46	7305022	7J31226	H1
255	J98KN	5	02-NOV-2007	16:11:22	7305022	7J31226	H1
256	J98MA	5	02-NOV-2007	16:12:43	7305022	7J31226	H1
257	J98MD	5	02-NOV-2007	16:13:50	7305022	7J31226	H1
258	CRA	1	02-NOV-2007	16:14:58			H1
259	CK2CCV	1	02-NOV-2007	16:16:05			H1
260	CK1CCB	1	02-NOV-2007	16:17:13			H1

End of Report

METHOD BLANK REPORT

General Chemistry

Client Lot #...: 7K01295 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids		Work Order #: KARA81AA		MB Lot-Sample #:	A7K080000-089	
	ND	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312089
		Dilution Factor: 1				
Percent Solids		Work Order #: KARA91AA		MB Lot-Sample #:	A7K080000-090	
	ND	10.0	%	MCAWW 160.3 MOD	11/07-11/08/07	7312090
		Dilution Factor: 1				

NOTE(S):

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

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A7K010295 **Work Order #...:** KACTR-SMP KACTR-DUP **Matrix.....:** SO

Date Sampled...: 10/31/07 10:05 **Date Received..:** 11/01/07

% Moisture.....: 10

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #: A7K010295-019		
	89.6	89.3	%	0.37	(0-20)	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A7K010295 **Work Order #...:** KACTT-SMP KACTT-DUP **Matrix.....:** SO

Date Sampled...: 10/31/07 10:07 **Date Received..:** 11/01/07

% Moisture.....: 13

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #: A7K010295-020		
	87.5	88.9	%	1.6	(0-20)	MCAWW 160.3 MOD	11/07-11/08/07	7312089

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A7K010295 **Work Order #...:** KACT5-SMP KACT5-DUP **Matrix.....:** SO

Date Sampled...: 10/31/07 11:11 **Date Received..:** 11/01/07

% Moisture.....: 16

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #: A7K010295-027		
	84.2	84.6	%	0.42	(0-20)	MCAWW 160.3 MOD	11/07-11/08/07	7312090

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A7K010295 **Work Order #...:** KAE86-SMP KAE86-DUP **Matrix.....:** SOLID

Date Sampled...: 11/01/07 09:30 **Date Received..:** 11/02/07

% Moisture.....: 20

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #: A7K020253-001		
	79.8	80.0	%	0.23	(0-20)	MCAWW 160.3 MOD	11/07-11/08/07	7312090

Dilution Factor: 1

SRV: KACT2 = SB-326-0203 [Hg] = 0.093 mg/Kg as reported by the laboratory.

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: KACR7 Seq: 222 15:33:51 02 Nov 2007 HG
SOLID
Hg .3216 ppb .0000 % .3216

*** Check Standard: 2 Ck2CCV Seq: 223 15:34:59 02 Nov 2007 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		102.9	5.145	5.000	ppb	.0000 %

*** Check Standard: 1 Ck1CCB Seq: 224 15:36:15 02 Nov 2007 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.0346	.2000	ppb	.0000 %

*** Sample ID: KACR8 Seq: 225 15:37:22 02 Nov 2007 HG
SOLID
Hg .0516 ppb .0000 % .0516

*** Sample ID: KACR9 Seq: 226 15:38:27 02 Nov 2007 HG
SOLID
Hg .0599 ppb .0000 % .0599

*** Sample ID: KACT0 Seq: 227 15:39:33 02 Nov 2007 HG
SOLID
Hg -.0171 ppb .0000 % -.0171

*** Sample ID: KACT1 Seq: 228 15:40:44 02 Nov 2007 HG
SOLID
Hg .0567 ppb .0000 % .0567

*** Sample ID: KACT2 Seq: 229 15:41:51 02 Nov 2007 HG
SOLID
Hg .4936 ppb .0000 % .4936

*** Sample ID: KACT3 Seq: 230 15:42:58 02 Nov 2007 HG
SOLID
Hg .1094 ppb .0000 % .1094

*** Sample ID: KACT5 Seq: 231 15:44:04 02 Nov 2007 HG
SOLID
Hg .3229 ppb .0000 % .3229

*** Sample ID: KACTC Seq: 232 15:45:09 02 Nov 2007 HG
SOLID
Hg .0620 ppb .0000 % .0620

*** Sample ID: KACTD Seq: 233 15:46:14 02 Nov 2007 HG
SOLID
Hg .1847 ppb .0000 % .1847

$$\left(\frac{0.4936\ \mu g}{L} \cdot \frac{0.1\ L}{0.6\ g} \cdot \frac{1000\ g}{1\ Kg} \cdot \frac{1\ mg}{1000\ \mu g}\right) / (0.88) = 0.093\ mg/kg$$

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **M. MARTIN** **DATE:** **DECEMBER 17, 2007**

FROM: **ROBERT JUPIN** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – BENZO(a)PYRENE**
LOCKHEED MIDDLE RIVER COMPLEX
SAMPLE DELIVERY GROUP (SDG): 7K02316

SAMPLES: 18/Soil/

SB-327-0203	SB-327-0506	SB-327-0809	SB-328-0203	SB-328-0506
SB-328-0809	SB-329-0203	SB-329-0506	SB-329-0809	SB-330-0203
SB-330-0506	SB-330-0809	SB-331-0203	SB-331-0506	SB-331-0809
SB-332-0203	SB-332-0506	SB-332-0809		

Overview

The sample set for SDG 7K02316, Lockheed MRC, consists of eighteen (18) soil environmental samples.

All soil samples were analyzed for benzo(a)pyrene. The samples were collected by TetraTech NUS on November 1, 2007 and analyzed by Test America Laboratories, Inc. Analyses were conducted using SW-846 Method 8270C.

The findings in this report are based upon a general review of all available data including: data completeness, GC/MS tuning, holding times, initial/continuing calibrations, laboratory method/preparation and field quality control blank results, surrogate spike/internal standard recoveries, laboratory control sample (LCS)/blank spike results, matrix spike/matrix spike duplicate results, analyte quantitation, and detection limits. Areas of concern are listed below.

Major Problems

- None.

Minor Problems

- Positive results reported below the detection limit have been qualified as estimated, "J".

Notes

The matrix spike sample was not spiked for benzo(a)pyrene therefore, no evaluation of the matrix spike could be performed.

Executive Summary

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (9/94) as modified by Region III.

Tetra Tech NUS
Robert J. Jupin
Risk Assessment Specialist/Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

J - Positive result is considered estimated, "J", as a result of technical noncompliances.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can be any number of issues; e.g. poor chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00998

SDG: 7K02316 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-327-0203	nsample	SB-327-0506	nsample	SB-327-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020316001	lab_id	A7K020316002	lab_id	A7K020316003
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	83.0	Pct_Solids	86.0	Pct_Solids	85.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	130	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	380	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	390	U	

PROJ_NO: 00998

SDG: 7K02316 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-328-0203
samp_date	11/1/2007
lab_id	A7K020316004
qc_type	NM
units	UG/KG
Pct_Solids	87.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	170	J	P

nsample	SB-328-0506
samp_date	11/1/2007
lab_id	A7K020316005
qc_type	NM
units	UG/KG
Pct_Solids	83.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	400	U	

nsample	SB-328-0809
samp_date	11/1/2007
lab_id	A7K020316006
qc_type	NM
units	UG/KG
Pct_Solids	84.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	35	J	P

PROJ_NO: 00998

SDG: 7K02316 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-329-0203
samp_date	11/1/2007
lab_id	A7K020316007
qc_type	NM
units	UG/KG
Pct_Solids	82.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	27	J	P

nsample	SB-329-0506
samp_date	11/1/2007
lab_id	A7K020316008
qc_type	NM
units	UG/KG
Pct_Solids	80.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	410	U	

nsample	SB-329-0809
samp_date	11/1/2007
lab_id	A7K020316009
qc_type	NM
units	UG/KG
Pct_Solids	84.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	390	U	

PROJ_NO: 00998

SDG: 7K02316 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-330-0203
samp_date	11/1/2007
lab_id	A7K020316010
qc_type	NM
units	UG/KG
Pct_Solids	82.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	110	J	P

nsample	SB-330-0506
samp_date	11/1/2007
lab_id	A7K020316011
qc_type	NM
units	UG/KG
Pct_Solids	80.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	110	J	P

nsample	SB-330-0809
samp_date	11/1/2007
lab_id	A7K020316012
qc_type	NM
units	UG/KG
Pct_Solids	87.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	380	U	

PROJ_NO: 00998

SDG: 7K02316 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-331-0203
samp_date	11/1/2007
lab_id	A7K020316013
qc_type	NM
units	UG/KG
Pct_Solids	86.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	20	J	P

nsample	SB-331-0506
samp_date	11/1/2007
lab_id	A7K020316014
qc_type	NM
units	UG/KG
Pct_Solids	85.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	390	U	

nsample	SB-331-0809
samp_date	11/1/2007
lab_id	A7K020316015
qc_type	NM
units	UG/KG
Pct_Solids	83.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	400	U	

PROJ_NO: 00998

SDG: 7K02316 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-332-0203	nsample	SB-332-0506	nsample	SB-332-0809RE
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020316016	lab_id	A7K020316017	lab_id	A7K020316018
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	86.0	Pct_Solids	81.0	Pct_Solids	82.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	38	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	410	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	64	J	P

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Tetra Tech NUS, Inc

Client Sample ID: SB-327-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-001 **Work Order #...:** KAFP61AD **Matrix.....:** SO
Date Sampled...: 11/01/07 07:40 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/09/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**130 J**	**400**	**ug/kg**	**1.6**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	71	(24 - 112)
2-Fluorobiphenyl	71	(34 - 110)
Terphenyl-d14	91	(41 - 119)
Phenol-d5	74	(28 - 110)
2-Fluorophenol	73	(26 - 110)
2,4,6-Tribromophenol	70	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-327-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-002 **Work Order #...:** KAFQC1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 07:42 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 14 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	60	(24 - 112)
2-Fluorobiphenyl	68	(34 - 110)
Terphenyl-d14	98	(41 - 119)
Phenol-d5	76	(28 - 110)
2-Fluorophenol	76	(26 - 110)
2,4,6-Tribromophenol	47	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-327-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-003 **Work Order #...:** KAFQE1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 07:44 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 15 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	57	(24 - 112)
2-Fluorobiphenyl	58	(34 - 110)
Terphenyl-d14	81	(41 - 119)
Phenol-d5	63	(28 - 110)
2-Fluorophenol	64	(26 - 110)
2,4,6-Tribromophenol	48	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-328-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-004 **Work Order #...:** KAFQF1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 07:55 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/09/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 13 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**170 J**	**380**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	48	(24 - 112)
2-Fluorobiphenyl	61	(34 - 110)
Terphenyl-d14	89	(41 - 119)
Phenol-d5	65	(28 - 110)
2-Fluorophenol	60	(26 - 110)
2,4,6-Tribromophenol	68	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-328-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-005 **Work Order #...:** KAFQH1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 07:57 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	400	ug/kg	1.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	57	(24 - 112)
2-Fluorobiphenyl	70	(34 - 110)
Terphenyl-d14	92	(41 - 119)
Phenol-d5	71	(28 - 110)
2-Fluorophenol	72	(26 - 110)
2,4,6-Tribromophenol	65	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-328-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-006 **Work Order #...:** KAFQJ1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 07:59 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 16 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**35 J**	**390**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	61	(24 - 112)
2-Fluorobiphenyl	59	(34 - 110)
Terphenyl-d14	87	(41 - 119)
Phenol-d5	63	(28 - 110)
2-Fluorophenol	61	(26 - 110)
2,4,6-Tribromophenol	29	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-329-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-007 **Work Order #...:** KAFQK1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 08:15 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 18 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**27 J**	**400**	**ug/kg**	**1.6**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	65	(24 - 112)
2-Fluorobiphenyl	65	(34 - 110)
Terphenyl-d14	94	(41 - 119)
Phenol-d5	70	(28 - 110)
2-Fluorophenol	69	(26 - 110)
2,4,6-Tribromophenol	69	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-329-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-008 **Work Order #...:** KAFQN1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 08:17 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 20 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	410	ug/kg	1.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	36	(24 - 112)
2-Fluorobiphenyl	58	(34 - 110)
Terphenyl-d14	92	(41 - 119)
Phenol-d5	65	(28 - 110)
2-Fluorophenol	64	(26 - 110)
2,4,6-Tribromophenol	66	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-329-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-009 **Work Order #...:** KAFQR1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 08:19 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 16 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	66	(24 - 112)
2-Fluorobiphenyl	66	(34 - 110)
Terphenyl-d14	97	(41 - 119)
Phenol-d5	72	(28 - 110)
2-Fluorophenol	72	(26 - 110)
2,4,6-Tribromophenol	62	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-330-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-010 **Work Order #...:** KAFQV1AF **Matrix.....:** SO
Date Sampled...: 11/01/07 08:35 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 18 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**110 J**	**400**	**ug/kg**	**1.6**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	66	(24 - 112)
2-Fluorobiphenyl	68	(34 - 110)
Terphenyl-d14	88	(41 - 119)
Phenol-d5	76	(28 - 110)
2-Fluorophenol	74	(26 - 110)
2,4,6-Tribromophenol	69	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-330-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-011 **Work Order #...:** KAFQW1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 08:37 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 20 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**110 J**	**410**	**ug/kg**	**1.6**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	58	(24 - 112)
2-Fluorobiphenyl	61	(34 - 110)
Terphenyl-d14	88	(41 - 119)
Phenol-d5	65	(28 - 110)
2-Fluorophenol	63	(26 - 110)
2,4,6-Tribromophenol	65	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-330-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-012 **Work Order #...:** KAFQ01AD **Matrix.....:** SO
Date Sampled...: 11/01/07 08:39 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 13 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	69	(24 - 112)
2-Fluorobiphenyl	69	(34 - 110)
Terphenyl-d14	96	(41 - 119)
Phenol-d5	72	(28 - 110)
2-Fluorophenol	73	(26 - 110)
2,4,6-Tribromophenol	45	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-331-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-013 **Work Order #...:** KAFQ11AD **Matrix.....:** SO
Date Sampled...: 11/01/07 08:50 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 14 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**20 J**	**380**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	47	(24 - 112)
2-Fluorobiphenyl	66	(34 - 110)
Terphenyl-d14	92	(41 - 119)
Phenol-d5	72	(28 - 110)
2-Fluorophenol	71	(26 - 110)
2,4,6-Tribromophenol	66	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-331-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-014 **Work Order #...:** KAFQ31AD **Matrix.....:** SO
Date Sampled...: 11/01/07 08:52 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 15 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	51	(24 - 112)
2-Fluorobiphenyl	64	(34 - 110)
Terphenyl-d14	97	(41 - 119)
Phenol-d5	72	(28 - 110)
2-Fluorophenol	73	(26 - 110)
2,4,6-Tribromophenol	60	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-331-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-015 **Work Order #...:** KAFQ41AD **Matrix.....:** SO
Date Sampled...: 11/01/07 08:54 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	400	ug/kg	1.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	63	(24 - 112)
2-Fluorobiphenyl	64	(34 - 110)
Terphenyl-d14	94	(41 - 119)
Phenol-d5	69	(28 - 110)
2-Fluorophenol	71	(26 - 110)
2,4,6-Tribromophenol	61	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-332-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-016 **Work Order #...:** KAFQ51AD **Matrix.....:** SO
Date Sampled...: 11/01/07 09:05 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 14 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**38 J**	**380**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	67	(24 - 112)
2-Fluorobiphenyl	67	(34 - 110)
Terphenyl-d14	88	(41 - 119)
Phenol-d5	70	(28 - 110)
2-Fluorophenol	69	(26 - 110)
2,4,6-Tribromophenol	76	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-332-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-017 **Work Order #...:** KAFQ61AD **Matrix.....:** SO
Date Sampled...: 11/01/07 09:07 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307083
Dilution Factor: 1
% Moisture.....: 19 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	410	ug/kg	1.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	43	(24 - 112)
2-Fluorobiphenyl	70	(34 - 110)
Terphenyl-d14	100	(41 - 119)
Phenol-d5	75	(28 - 110)
2-Fluorophenol	75	(26 - 110)
2,4,6-Tribromophenol	74	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-332-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020316-018 **Work Order #...:** KAFQ72AD **Matrix.....:** SO
Date Sampled...: 11/01/07 09:09 **Date Received..:** 11/02/07
Prep Date.....: 11/11/07 **Analysis Date..:** 11/13/07
Prep Batch #...: 7314068
Dilution Factor: 1
% Moisture.....: 18 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**64 J**	**400**	**ug/kg**	**1.6**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	72	(24 - 112)
2-Fluorobiphenyl	70	(34 - 110)
Terphenyl-d14	92	(41 - 119)
Phenol-d5	72	(28 - 110)
2-Fluorophenol	72	(26 - 110)
2,4,6-Tribromophenol	60	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

APPENDIX C

SUPPORT DOCUMENTATION

HOLDTIME

SDG 7K02316

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-331-0203	A7K020316013	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-327-0809	A7K020316003	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-328-0203	A7K020316004	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-328-0809	A7K020316006	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-329-0506	A7K020316008	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-329-0809	A7K020316009	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-330-0203	A7K020316010	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-327-0506	A7K020316002	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-330-0809	A7K020316012	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-328-0506	A7K020316005	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-331-0506	A7K020316014	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-331-0809	A7K020316015	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-332-0203	A7K020316016	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-332-0506	A7K020316017	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-332-0809	A7K020316018	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-327-0203	A7K020316001	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-330-0506	A7K020316011	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-329-0203	A7K020316007	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
PCS	%	SB-330-0809	A7K020316012	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-332-0506	A7K020316017	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-332-0809	A7K020316018	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-332-0203	A7K020316016	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-331-0809	A7K020316015	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-331-0203	A7K020316013	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-327-0203	A7K020316001	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-330-0506	A7K020316011	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-330-0203	A7K020316010	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-327-0809	A7K020316003	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-331-0506	A7K020316014	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-327-0506	A7K020316002	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-329-0809	A7K020316009	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-328-0203	A7K020316004	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-328-0506	A7K020316005	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCS	%	SB-328-0809	A7K020316006	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-329-0203	A7K020316007	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-329-0506	A7K020316008	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
OS	%	SB-332-0809RE	A7K020316018	NM	11/1/2007	11/11/2007	11/13/2007	10	2	12
OS	%	SB-329-0506	A7K020316008	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-327-0506	A7K020316002	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-327-0809	A7K020316003	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-328-0203	A7K020316004	NM	11/1/2007	11/4/2007	11/9/2007	3	5	8
OS	%	SB-328-0506	A7K020316005	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-328-0809	A7K020316006	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-329-0203	A7K020316007	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-327-0203	A7K020316001	NM	11/1/2007	11/4/2007	11/9/2007	3	5	8
OS	%	SB-332-0506	A7K020316017	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-330-0203	A7K020316010	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-330-0506	A7K020316011	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-330-0809	A7K020316012	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-331-0203	A7K020316013	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-331-0506	A7K020316014	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	SB-331-0809	A7K020316015	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-332-0203	A7K020316016	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-329-0809	A7K020316009	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-330-0809	A7K020316012	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-331-0203	A7K020316013	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-331-0506	A7K020316014	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-331-0809	A7K020316015	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-332-0203	A7K020316016	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-330-0506	A7K020316011	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-332-0809RE	A7K020316018	NM	11/1/2007	11/11/2007	11/13/2007	10	2	12
OS	UG/KG	SB-328-0506	A7K020316005	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-332-0506	A7K020316017	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-330-0203	A7K020316010	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-329-0809	A7K020316009	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-329-0506	A7K020316008	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-327-0203	A7K020316001	NM	11/1/2007	11/4/2007	11/9/2007	3	5	8
OS	UG/KG	SB-328-0809	A7K020316006	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-328-0203	A7K020316004	NM	11/1/2007	11/4/2007	11/9/2007	3	5	8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	SB-327-0809	A7K020316003	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-327-0506	A7K020316002	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-329-0203	A7K020316007	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRA TECH	M. MARTIN	11/1/07	323000
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of
20251 CENTURY BLVD #200	301-528-3027		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
GERMANTOWN / MD / 20874	S. HADLEY	K. IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LMC MR	COURIER		
Contract/Purchase Order/Quote No.			
112IC00998			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Analysis: 8270 SIM	Hg	Special Instructions/ Conditions of Receipt
SB-327-0203	11/1/07	0740				X	2						X	X	* LEAD(A) PAYMENT
327-0506		0742													
327-0809		0744													
328-0203		0755													
328-0506		0757													
328-0809		0759													
329-0203		0815													
329-0506		0817													
329-0809		0819					2								
330-0203 (MS/SD)		0835					4								MS/SD
330-0506		0837					2								
SB-330-0809	11/1/07	0839				X	2						X	X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time
1. Relinquished By	11/1/07	1600
2. Relinquished By	11-1-07	17:05
3. Relinquished By		

	Date	Time
1. Received By	11-1-07	1600
2. Received By	11/2/07	0945
3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica North Canton

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Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRA TECH	M. MARTIN	11/1/07	322997
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 2 of
20251 CENTURY BLVD #200	301-528-3022		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
GERMANTOWN / MD / 20874	S. HADLEY	K. IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LMC MR			
Contract/Purchase Order/Quote No.			
112IC-00998			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis: 8270D *	Hg	Special Instructions/ Conditions of Receipt
SB-331-0203	11/1/07	0850				X	2		-				X	X	* benzo(a)pyrene
331-0506		0852													
331-0809		0854													
332-0203		0905													
332-0506		0907													
332-0809		0909													
333-0203		0915													
333-0506		0917													
333-0809		0919													
334-0203		0935													
334-0506		0937													
SB-334-0809	11/1/07	0939				X	2						X	X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal

☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STND

QC Requirements (Specify)

	Date	Time
1. Relinquished By	11/1/07	1600
2. Relinquished By	11-1-07	17:05
3. Relinquished By		

	Date	Time
1. Received By	11/1/07	1600
2. Received By	11/2/07	0945
3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 112IC00998

LMC MR

Lot #: A7K020316
SDG #: 7K02316

Michael Martin

Tetra Tech NUS Inc
20251 Century Blvd
Suite 200
Germantown, MD 20874

TESTAMERICA LABORATORIES, INC.

Patrick J. O'Meara
Project Manager

November 23, 2007

CASE NARRATIVE

7K02316

The following report contains the analytical results for eighteen solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc. from the LMC MR Site, project number 112IC00998. The samples were received November 02, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID's: A7K020316.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Dev Murali, John Poremba, and Michael Martin on November 20, 2007. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 0.1 and 0.6°C.

See TestAmerica's Cooler Receipt Form for additional information.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for SB-330-0506 had RPD's outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica North Canton (formerly STL North Canton) conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton (formerly STL North Canton) requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica North Canton (formerly STL North Canton)Certifications and Approvals:

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), OhioVAP (#CL0024), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit,

ANALYTICAL METHODS SUMMARY

7K02316

PARAMETER	ANALYTICAL METHOD
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Total Residue as Percent Solids	MCAWW 160.3 MOD

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

7K02316 : A7K020316

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KAFP6	001	SB-327-0203	11/01/07	07:40
KAFQC	002	SB-327-0506	11/01/07	07:42
KAFQE	003	SB-327-0809	11/01/07	07:44
KAFQF	004	SB-328-0203	11/01/07	07:55
KAFQH	005	SB-328-0506	11/01/07	07:57
KAFQJ	006	SB-328-0809	11/01/07	07:59
KAFQK	007	SB-329-0203	11/01/07	08:15
KAFQN	008	SB-329-0506	11/01/07	08:17
KAFQR	009	SB-329-0809	11/01/07	08:19
KAFQV	010	SB-330-0203	11/01/07	08:35
KAFQW	011	SB-330-0506	11/01/07	08:37
KAFQ0	012	SB-330-0809	11/01/07	08:39
KAFQ1	013	SB-331-0203	11/01/07	08:50
KAFQ3	014	SB-331-0506	11/01/07	08:52
KAFQ4	015	SB-331-0809	11/01/07	08:54
KAFQ5	016	SB-332-0203	11/01/07	09:05
KAFQ6	017	SB-332-0506	11/01/07	09:07
KAFQ7	018	SB-332-0809	11/01/07	09:09

NOTE(S):

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

SW846 8270C SURROGATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN SDG No: 7K02316

Lot #: A7K020316

Extraction: XXA11QL01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	SRG05	SRG06	TOT OUT
01	SB-327-0203	71	71	91	74	73	70	00
02	SB-327-0506	60	68	98	76	76	47	00
03	SB-327-0809	57	58	81	63	64	48	00
04	SB-328-0203	48	61	89	65	60	68	00
05	SB-328-0506	57	70	92	71	72	65	00
06	SB-328-0809	61	59	87	63	61	29	00
07	SB-329-0203	65	65	94	70	69	69	00
08	SB-329-0506	36	58	92	65	64	66	00
09	SB-329-0809	66	66	97	72	72	62	00
10	SB-330-0203	66	68	88	76	74	69	00
11	SB-330-0506	58	61	88	65	63	65	00
12	SB-330-0809	69	69	96	72	73	45	00
13	SB-331-0203	47	66	92	72	71	66	00
14	SB-331-0506	51	64	97	72	73	60	00
15	SB-331-0809	63	64	94	69	71	61	00
16	SB-332-0203	67	67	88	70	69	76	00
17	SB-332-0506	43	70	100	75	75	74	00
18	METHOD BLK. KAGR01AA	71	75	93	74	76	56	00
19	LCS KAGR01AC	66	69	83	69	69	65	00
20	SB-330-0506 D	70	69	86	73	70	68	00
21	SB-330-0506 S	67	66	78	71	69	52	00

SURROGATES		QC LIMITS
SRG01	= Nitrobenzene-d5	(24-112)
SRG02	= 2-Fluorobiphenyl	(34-110)
SRG03	= Terphenyl-d14	(41-119)
SRG04	= Phenol-d5	(28-110)
SRG05	= 2-Fluorophenol	(26-110)
SRG06	= 2,4,6-Tribromophenol	(10-118)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

SW846 8270C SURROGATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN SDG No: 7K02316

Lot #: A7K020316

Extraction: XXA13QL01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	SRG05	SRG06	TOT OUT
01	SB-332-0809 RE-1	72	70	92	72	72	60	00
02	INTRA-LAB QC	75 D	71 D	100D	67 D	77 D	57 D	00
03	METHOD BLK. KA1JQ1AA	64	60	88	61	61	58	00
04	LCS KA1JQ1AC	80	79	90	81	80	82	00
05	LAB MS/MSD D	75 D	81 D	94 D	77 D	76 D	84 D	00
06	LAB MS/MSD S	73 D	80 D	97 D	79 D	73 D	59 D	00

SURROGATES		QC LIMITS
SRG01	= Nitrobenzene-d5	(24-112)
SRG02	= 2-Fluorobiphenyl	(34-110)
SRG03	= Terphenyl-d14	(41-119)
SRG04	= Phenol-d5	(28-110)
SRG05	= 2-Fluorophenol	(26-110)
SRG06	= 2,4,6-Tribromophenol	(10-118)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

SW846 8270C METHOD BLANK SUMMARY

BLANK WORKORDER NO.: KAGR01AA

Lab Name: TestAmerica Laboratories, Inc.

Lab Code: TALCAN

SDG Number: 7K02316

Lab File ID: KAGR01AA.

Lot Number: A7K020316

Date Analyzed: 11/07/07

Time Analyzed: 11:24

Matrix: SOLID

Date Extracted: 11/04/07

GC Column: DB .625 ID: .32

Extraction Method: 3540C

Instrument ID: HP9

Level: (low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SB-327-0203	KAFP61AD	KAFP61AD.	11/09/07	00:12
02	SB-327-0506	KAFQC1AD	KAFQC1AD.	11/07/07	16:31
03	SB-327-0809	KAFQE1AD	KAFQE1AD.	11/07/07	16:51
04	SB-328-0203	KAFQF1AD	KAFQF1AD.	11/09/07	00:32
05	SB-328-0506	KAFQH1AD	KAFQH1AD.	11/07/07	17:11
06	SB-328-0809	KAFQJ1AD	KAFQJ1AD.	11/08/07	22:55
07	SB-329-0203	KAFQK1AD	KAFQK1AD.	11/08/07	23:14
08	SB-329-0506	KAFQN1AD	KAFQN1AD.	11/07/07	17:31
09	SB-329-0809	KAFQR1AD	KAFQR1AD.	11/07/07	17:51
10	SB-330-0203	KAFQV1AF	KAFQV1AF.	11/08/07	23:34
11	SB-330-0506	KAFQW1AD	KAFQW1AD.	11/08/07	21:37
12	SB-330-0506	KAFQW1AL S	KAFQW1AL.	11/08/07	21:56
13	SB-330-0506	KAFQW1AM D	KAFQW1AM.	11/08/07	22:16
14	SB-330-0809	KAFQ01AD	KAFQ01AD.	11/07/07	18:51
15	SB-331-0203	KAFQ11AD	KAFQ11AD.	11/08/07	22:35
16	SB-331-0506	KAFQ31AD	KAFQ31AD.	11/07/07	18:11
17	SB-331-0809	KAFQ41AD	KAFQ41AD.	11/07/07	18:31
18	SB-332-0203	KAFQ51AD	KAFQ51AD.	11/08/07	23:53
19	SB-332-0506	KAFQ61AD	KAFQ61AD.	11/07/07	19:10
20	CHECK SAMPLE	KAGR01AC C	KAGR01AC.	11/07/07	11:44
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

COMMENTS:

FORM IV

SW846 8270C METHOD BLANK SUMMARY

BLANK WORKORDER NO.: KA1JQ1AA

Lab Name: TestAmerica Laboratories, Inc.

Lab Code: TALCAN

SDG Number: 7K02316

Lab File ID: KA1JQ1AA.

Lot Number: A7K020316

Date Analyzed: 11/13/07

Time Analyzed: 13:02

Matrix: SOLID

Date Extracted: 11/11/07

GC Column: DB .625 ID: .32

Extraction Method: 3550B

Instrument ID: HP9

Level: (low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SB-332-0809	KAFQ72AD	KAFQ72AD.	11/13/07	15:38
02	INTRA-LAB QC	KA0N11AJ	KA0N11AJ.	11/13/07	16:56
03	LAB MS/MSD	KA0N11AK S	KA0N11AK.	11/13/07	17:15
04	LAB MS/MSD	KA0N11AL D	KA0N11AL.	11/13/07	17:35
05	CHECK SAMPLE	KA1JQ1AC C	KA1JQ1AC.	11/13/07	13:21
06					
07					
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29					
30					

COMMENTS:

FORM IV

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02316

Lab File ID: 9DF1106 DFTPP Injection Date: 11/06/07

Instrument ID: A4HP9 DFTPP Injection Time: 0850

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	44.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	59.4
70	Less than 2.0% of mass 69	0.3 (0.4)1
127	40.0 - 60.0% of mass 198	50.6
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	23.9
365	Greater than 1.0% of mass 198	3.0
441	Present, but less than mass 443	14.6
442	Greater than 40.0% of mass 198	82.4
443	17.0 - 23.0% of mass 442	16.3 (19.8)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD006	L6	9SMH1106	11/06/07	0909
02	SSTD005	L5	9SMM1106	11/06/07	0929
03	SSTD004	L4	9SM1106	11/06/07	0949
04	SSTD003	L3	9SML1106	11/06/07	1009
05	SSTD002	L2	9SL1106	11/06/07	1029
06	SSTD001	L1	9SLL1106	11/06/07	1049
07	SSTD007	L7	9SH1106	11/06/07	1109
08	SSTD008	L8	9SHH1106	11/06/07	1129
09	SSTD009	L9	9HHH1106	11/06/07	1149
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5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02316

Lab File ID: 9DF1107 DFTPP Injection Date: 11/07/07

Instrument ID: A4HP9 DFTPP Injection Time: 0907

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	45.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	60.4
70	Less than 2.0% of mass 69	0.2 (0.4)1
127	40.0 - 60.0% of mass 198	50.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	24.0
365	Greater than 1.0% of mass 198	2.5
441	Present, but less than mass 443	14.5
442	Greater than 40.0% of mass 198	82.7
443	17.0 - 23.0% of mass 442	15.9 (19.3)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD006	L6	9SMH1107	11/07/07	0923
02	KAGR0BLK	KAGR01AA	KAGR01AA	11/07/07	1124
03	KAGR0CHK	KAGR01AC	KAGR01AC	11/07/07	1144
04	SB-327-0506	KAFQC1AD	KAFQC1AD	11/07/07	1631
05	SB-327-0809	KAFQE1AD	KAFQE1AD	11/07/07	1651
06	SB-328-0506	KAFQH1AD	KAFQH1AD	11/07/07	1711
07	SB-329-0506	KAFQN1AD	KAFQN1AD	11/07/07	1731
08	SB-329-0809	KAFQR1AD	KAFQR1AD	11/07/07	1751
09	SB-331-0506	KAFQ31AD	KAFQ31AD	11/07/07	1811
10	SB-331-0809	KAFQ41AD	KAFQ41AD	11/07/07	1831
11	SB-330-0809	KAFQ01AD	KAFQ01AD	11/07/07	1851
12	SB-332-0506	KAFQ61AD	KAFQ61AD	11/07/07	1910
13					
14					
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17					
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19					
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22					

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02316

Lab File ID: 9DF1108 DFTPP Injection Date: 11/08/07

Instrument ID: A4HP9 DFTPP Injection Time: 1250

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	49.8
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	64.8
70	Less than 2.0% of mass 69	0.4 (0.6)1
127	40.0 - 60.0% of mass 198	54.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	19.9
365	Greater than 1.0% of mass 198	2.3
441	Present, but less than mass 443	10.6
442	Greater than 40.0% of mass 198	57.6
443	17.0 - 23.0% of mass 442	10.8 (18.7)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD006	L6	9SMH1108	11/08/07	1307
02	SSTD005	L5	9SMM1108	11/08/07	1328
03	SSTD004	L4	9SM1108	11/08/07	1347
04	SSTD003	L3	9SML1108	11/08/07	1407
05	SSTD002	L2	9SL1108	11/08/07	1426
06	SSTD001	L1	9SLL1108	11/08/07	1446
07	SSTD007	L7	9SH1108	11/08/07	1505
08	SSTD008	L8	9SHH1108	11/08/07	1525
09	SSTD009	L9	9HHH1108	11/08/07	1544
10	SB-330-0506	KAFQW1AD	KAFQW1AD	11/08/07	2137
11	SB-330-0506	KAFQW1AL	KAFQW1AL	11/08/07	2156
12	SB-330-0506	KAFQW1AM	KAFQW1AM	11/08/07	2216
13	SB-331-0203	KAFQ11AD	KAFQ11AD	11/08/07	2235
14	SB-328-0809	KAFQJ1AD	KAFQJ1AD	11/08/07	2255
15	SB-329-0203	KAFQK1AD	KAFQK1AD	11/08/07	2314
16	SB-330-0203	KAFQV1AF	KAFQV1AF	11/08/07	2334
17	SB-332-0203	KAFQ51AD	KAFQ51AD	11/08/07	2353
18	SB-327-0203	KAFP61AD	KAFP61AD	11/09/07	0012
19	SB-328-0203	KAFQF1AD	KAFQF1AD	11/09/07	0032
20					
21					
22					

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02316

Lab File ID: 9DF1113 DFTPP Injection Date: 11/13/07

Instrument ID: A4HP9 DFTPP Injection Time: 0928

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	56.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	65.7
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	53.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.5
275	10.0 - 30.0% of mass 198	20.6
365	Greater than 1.0% of mass 198	2.4
441	Present, but less than mass 443	11.7
442	Greater than 40.0% of mass 198	62.9
443	17.0 - 23.0% of mass 442	11.8 (18.8)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD006	L6	9SMH1113	11/13/07	0944
02	KA1JQBLK	KA1JQ1AA	KA1JQ1AA	11/13/07	1302
03	KA1JQCHK	KA1JQ1AC	KA1JQ1AC	11/13/07	1321
04	SB-332-0809	KAFQ72AD	KAFQ72AD	11/13/07	1538
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STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 06-NOV-2007 09:09
End Cal Date : 06-NOV-2007 14:48
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\cansvr11\dd\chem\MSS\a4hp9.i\71106a.b\8270p.m
Last Edit : 06-Nov-2007 15:06 ulmanm
Curve Type : Average

Compound	0.05000 Level 1	0.25000 Level 2	0.50000 Level 3	1.000 Level 4	2.500 Level 5	5.000 Level 6	RRF	% RSD	
	7.500 Level 7	10.000 Level 8	12.500 Level 9						
144 Hexachlorophene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
145 Hexachlorophene product	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
146 Benzo(a)pyrene	0.99497	0.87573	0.90999	0.96974	1.06146	1.06044			
	1.08392	1.11882	1.23167				1.03408	10.609	
148 3-Methylcholanthrene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
149 Indeno(1,2,3-cd)pyrene	1.20823	0.99606	1.02729	1.10920	1.20372	1.22598			
	1.24240	1.31199	1.43086				1.19508	11.375	
150 Dibenz(a,h)anthracene	0.96906	0.84338	0.84252	0.91320	1.00801	1.03859			
	1.08376	1.14701	1.27358				1.01323	14.013	
151 Benzo(g,h,i)perylene	0.98720	0.86156	0.85815	0.92880	1.00737	0.99483			
	1.01604	1.04900	1.14784				0.98342	9.281	
230 2-Chloroacetophenone	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
199 3-Picoline	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
200 N,N-Dimethylacetamide	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
201 Quinoline	+++++	0.54965	0.54424	0.55087	0.58367	0.58090			
	0.56417	0.56563	0.58677				0.56574	2.941	<-

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4hp9.i Injection Date: 06-NOV-2007 12:09
Lab File ID: 9TCLICV.D Init. Cal. Date(s): 06-NOV-2007 06-NOV-2007
Analysis Type: Init. Cal. Times: 09:09 14:48
Lab Sample ID: L6 Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4hp9.i\71106a.b\8270p.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
142 Benzo(k)fluoranthene	1.16663	1.17548	1.17548	0.010	-0.75847	50.00000	Averaged
146 Benzo(a)pyrene	1.03408	1.01466	1.01466	0.010	1.87854	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.19508	1.15352	1.15352	0.010	3.47809	50.00000	Averaged
150 Dibenz(a,h)anthracene	1.01323	0.99711	0.99711	0.010	1.59127	50.00000	Averaged
151 Benzo(g,h,i)perylene	0.98342	0.91916	0.91916	0.010	6.53434	50.00000	Averaged
198 1,4-Dioxane	0.87288	0.85045	0.85045	0.010	2.57010	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.49921	0.47439	0.47439	0.010	4.97192	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.20990	1.19596	1.19596	0.010	1.15212	50.00000	Averaged
$ 156 Terphenyl-d14	0.77528	0.75870	0.75870	0.010	2.13850	50.00000	Averaged
$ 157 Phenol-d5	2.31018	2.30589	2.30589	0.010	0.18540	50.00000	Averaged
$ 158 2-Fluorophenol	1.57695	1.57500	1.57500	0.010	0.12358	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	5.00000	5.04489	0.13785	0.010	-0.89785	0.000e+000	Quadratic
$ 186 2-Chlorophenol-d4	1.35200	1.30727	1.30727	0.010	3.30851	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.84679	0.80984	0.80984	0.010	4.36381	50.00000	Averaged
M 195 Cresols, total	3.32856	3.17396	3.17396	0.010	4.64453	50.00000	Averaged
101 Diphenylamine	0.54271	0.53812	0.53812	0.010	0.84537	50.00000	Averaged

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4hp9.i Injection Date: 07-NOV-2007 09:23
Lab File ID: 9SMH1107.D Init. Cal. Date(s): 06-NOV-2007 06-NOV-2007
Analysis Type: SOIL Init. Cal. Times: 09:09 14:48
Lab Sample ID: L6 Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4hp9.i\71107a.b\8270p.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
142 Benzo(k)fluoranthene	1.16663	1.19664	1.19664	0.010	-2.57202	50.00000	Averaged
146 Benzo(a)pyrene	1.03408	1.04433	1.04433	0.010	-0.99083	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.19508	1.19065	1.19065	0.010	0.37124	50.00000	Averaged
150 Dibenz(a,h)anthracene	1.01323	1.01951	1.01951	0.010	-0.61934	50.00000	Averaged
151 Benzo(g,h,i)perylene	0.98342	0.97705	0.97705	0.010	0.64748	50.00000	Averaged
198 1,4-Dioxane	0.87288	0.86150	0.86150	0.010	1.30406	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.49921	0.50157	0.50157	0.010	-0.47254	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.20990	1.25551	1.25551	0.010	3.76930	50.00000	Averaged
$ 156 Terphenyl-d14	0.77528	0.77212	0.77212	0.010	0.40714	50.00000	Averaged
$ 157 Phenol-d5	2.31018	2.37356	2.37356	0.010	-2.74349	50.00000	Averaged
$ 158 2-Fluorophenol	1.57695	1.60089	1.60089	0.010	-1.51835	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	5.00000	5.29920	0.14561	0.010	-5.98398	0.000e+000	Quadratic
$ 186 2-Chlorophenol-d4	1.35200	1.38306	1.38306	0.010	-2.29745	50.00000	Averaged
$ 187 1,2 Dichlorobenzene-d4	0.84679	0.84839	0.84839	0.010	-0.18863	50.00000	Averaged
M 195 Cresols, total	3.32856	3.37516	3.37516	0.010	-1.40000	50.00000	Averaged
101 Diphenylamine	0.54271	0.54454	0.54454	0.010	-0.33774	50.00000	Averaged

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 08-NOV-2007 13:07
End Cal Date : 08-NOV-2007 15:44
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\cansvr11\dd\chem\MSS\a4hp9.i\71108a.b\8270p.m
Last Edit : 08-Nov-2007 16:01 ulmanm
Curve Type : Average

Compound	0.05000 Level 1	0.25000 Level 2	0.50000 Level 3	1.000 Level 4	2.500 Level 5	5.000 Level 6	RRF	% RSD	
	7.500 Level 7	10.000 Level 8	12.500 Level 9						
144 Hexachlorophene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
145 Hexachlorophene product	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
146 Benzo(a)pyrene	1.03946	0.86651	0.89762	0.95736	1.08521	1.07938			
	1.07650	1.11340	1.26177				1.04191	11.590	
148 3-Methylcholanthrene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
149 Indeno(1,2,3-cd)pyrene	0.98368	0.88804	0.94221	1.00088	1.11924	1.11935			
	1.12525	1.16620	1.31050				1.07282	12.180	
150 Dibenz(a,h)anthracene	0.87608	0.75481	0.77754	0.83199	0.94914	0.98116			
	0.98031	1.03004	1.16453				0.92729	14.108	
151 Benzo(g,h,i)perylene	0.93710	0.75273	0.77118	0.84701	0.92968	0.92532			
	0.91766	0.94176	1.05075				0.89702	10.330	
230 2-Chloroacetophenone	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
199 3-Picoline	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
200 N,N-Dimethylacetamide	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
201 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4hp9.i Injection Date: 08-NOV-2007 16:03
Lab File ID: 9TCLICV.D Init. Cal. Date(s): 08-NOV-2007 08-NOV-2007
Analysis Type: Init. Cal. Times: 13:07 15:44
Lab Sample ID: L6 Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4hp9.i\71108a.b\8270p.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
142 Benzo(k)fluoranthene	1.20212	1.16046	1.16046	0.010	3.46485	50.00000	Averaged
146 Benzo(a)pyrene	1.04191	1.02733	1.02733	0.010	1.39969	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.07282	1.07518	1.07518	0.010	-0.22066	50.00000	Averaged
150 Dibenz(a,h)anthracene	0.92729	0.92864	0.92864	0.010	-0.14624	50.00000	Averaged
151 Benzo(g,h,i)perylene	0.89702	0.86848	0.86848	0.010	3.18206	50.00000	Averaged
198 1,4-Dioxane	0.82381	0.77443	0.77443	0.010	5.99397	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.47283	0.47103	0.47103	0.010	0.38127	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.19146	1.17027	1.17027	0.010	1.77896	50.00000	Averaged
$ 156 Terphenyl-d14	0.76216	0.76688	0.76688	0.010	-0.61893	50.00000	Averaged
$ 157 Phenol-d5	2.21691	2.16299	2.16299	0.010	2.43224	50.00000	Averaged
$ 158 2-Fluorophenol	1.54244	1.50262	1.50262	0.010	2.58188	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	0.11457	0.11180	0.11180	0.010	2.42283	50.00000	Averaged
$ 186 2-Chlorophenol-d4	1.34907	1.30714	1.30714	0.010	3.10772	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.84990	0.82090	0.82090	0.010	3.41302	50.00000	Averaged
M 195 Cresols, total	3.27447	3.26759	3.26759	0.010	0.21010	50.00000	Averaged
101 Diphenylamine	0.53924	0.53288	0.53288	0.010	1.18020	50.00000	Averaged

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4hp9.i Injection Date: 13-NOV-2007 09:44
Lab File ID: 9SMH1113.D Init. Cal. Date(s): 08-NOV-2007 09-NOV-2007
Analysis Type: Init. Cal. Times: 13:07 12:43
Lab Sample ID: L6 Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4hp9.i\71113a.b\8270p.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
142 Benzo(k)fluoranthene	1.20212	1.15738	1.15738	0.010	3.72162	50.00000	Averaged
146 Benzo(a)pyrene	1.04191	1.05002	1.05002	0.010	-0.77792	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.07282	1.14231	1.14231	0.010	-6.47803	50.00000	Averaged
150 Dibenz(a,h)anthracene	0.92729	0.97770	0.97770	0.010	-5.43649	50.00000	Averaged
151 Benzo(g,h,i)perylene	0.89702	0.94888	0.94888	0.010	-5.78125	50.00000	Averaged
198 1,4-Dioxane	0.82381	0.79135	0.79135	0.010	3.94010	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.47283	0.49459	0.49459	0.010	-4.60170	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.19146	1.23048	1.23048	0.010	-3.27471	50.00000	Averaged
$ 156 Terphenyl-d14	0.76216	0.81453	0.81453	0.010	-6.87029	50.00000	Averaged
$ 157 Phenol-d5	2.21691	2.21119	2.21119	0.010	0.25819	50.00000	Averaged
$ 158 2-Fluorophenol	1.54244	1.53003	1.53003	0.010	0.80494	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	0.11457	0.13010	0.13010	0.010	-13.54991	50.00000	Averaged
$ 186 2-Chlorophenol-d4	1.34907	1.37736	1.37736	0.010	-2.09734	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.84990	0.81733	0.81733	0.010	3.83228	50.00000	Averaged
M 195 Cresols, total	3.27447	3.27940	3.27940	0.010	-0.15067	50.00000	Averaged
101 Diphenylamine	0.53924	0.55193	0.55193	0.010	-2.35300	50.00000	Averaged

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02316

Lab File ID (Standard): 9SMH1107 Date Analyzed: 11/07/07

Instrument ID: A4HP9 Time Analyzed: 0923

		IS1 (DCB) AREA #	RT	IS2 (NPT) AREA #	RT	IS3 (ANT) AREA #	RT
	12 HOUR STD	235995	3.83	1003422	4.79	529412	6.09
	UPPER LIMIT	471990	4.33	2006844	5.29	1058824	6.59
	LOWER LIMIT	117998	3.33	501711	4.29	264706	5.59
	EPA SAMPLE NO.						
01	KAGR0BLK	266331	3.82	1140559	4.79	602541	6.08
02	KAGR0CHK	252255	3.82	1086847	4.79	574760	6.09
03	SB-327-0506	278992	3.83	1186041	4.79	631255	6.09
04	SB-327-0809	283701	3.83	1235703	4.79	647685	6.09
05	SB-328-0506	298871	3.82	1263316	4.79	644616	6.08
06	SB-329-0506	238109	3.82	1009382	4.79	546646	6.09
07	SB-329-0809	246060	3.83	1016241	4.79	549106	6.09
08	SB-331-0506	244057	3.83	1015119	4.79	565669	6.09
09	SB-331-0809	242231	3.82	1019688	4.79	555231	6.09
10	SB-330-0809	250690	3.82	1037968	4.79	549913	6.09
11	SB-332-0506	215924	3.83	923315	4.79	512772	6.09
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02316

Lab File ID (Standard): 9SMH1107 Date Analyzed: 11/07/07

Instrument ID: A4HP9 Time Analyzed: 0923

		IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
	12 HOUR STD	844927	7.18	857427	9.14	799362	10.56
	UPPER LIMIT	1689854	7.68	1714854	9.64	1598724	11.06
	LOWER LIMIT	422464	6.68	428714	8.64	399681	10.06
	EPA SAMPLE NO.						
01	KAGR0BLK	978278	7.17	913777	9.14	896776	10.56
02	KAGR0CHK	923989	7.18	904331	9.15	876641	10.56
03	SB-327-0506	1025753	7.17	967894	9.14	1001002	10.55
04	SB-327-0809	1062520	7.18	1017071	9.14	1038192	10.56
05	SB-328-0506	1091920	7.17	1049601	9.14	1068471	10.56
06	SB-329-0506	925320	7.18	912956	9.14	929569	10.56
07	SB-329-0809	940466	7.18	912986	9.15	915751	10.57
08	SB-331-0506	955525	7.18	928415	9.14	956854	10.56
09	SB-331-0809	916622	7.18	900681	9.14	914241	10.56
10	SB-330-0809	917988	7.18	904658	9.13	887049	10.55
11	SB-332-0506	893135	7.18	877500	9.14	869153	10.56
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22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8B
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02316

Lab File ID (Standard): 9SMH1108 Date Analyzed: 11/08/07

Instrument ID: A4HP9 Time Analyzed: 1307

		IS1 (DCB) AREA #	RT	IS2 (NPT) AREA #	RT	IS3 (ANT) AREA #	RT
	12 HOUR STD	199705	3.87	850125	4.83	445145	6.13
	UPPER LIMIT	399410	4.37	1700250	5.33	890290	6.63
	LOWER LIMIT	99853	3.37	425063	4.33	222573	5.63
	EPA SAMPLE NO.						
01	SB-330-0506	260748	3.86	1106154	4.83	578576	6.12
02	SB-330-0506	212024	3.87	927270	4.83	501072	6.13
03	SB-330-0506	200371	3.87	870677	4.83	460598	6.13
04	SB-331-0203	209125	3.87	905464	4.83	484737	6.13
05	SB-328-0809	217350	3.87	916394	4.83	467453	6.13
06	SB-329-0203	200414	3.87	875589	4.83	475828	6.13
07	SB-330-0203	179167	3.87	836221	4.83	461506	6.13
08	SB-332-0203	193734	3.86	826592	4.83	444641	6.13
09	SB-327-0203	207824	3.87	902758	4.83	484887	6.13
10	SB-328-0203	186942	3.87	849141	4.83	493144	6.14
11							
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22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02316

Lab File ID (Standard): 9SMH1108 Date Analyzed: 11/08/07

Instrument ID: A4HP9 Time Analyzed: 1307

		IS4 (PHN) AREA #	RT	IS5 (CRY) AREA #	RT	IS6 (PRY) AREA #	RT
	12 HOUR STD	689306	7.22	685710	9.21	608870	10.65
	UPPER LIMIT	1378612	7.72	1371420	9.71	1217740	11.15
	LOWER LIMIT	344653	6.72	342855	8.71	304435	10.15
	EPA SAMPLE NO.						
01	SB-330-0506	910812	7.21	845458	9.18	805393	10.63
02	SB-330-0506	783875	7.22	755969	9.19	702596	10.63
03	SB-330-0506	767309	7.22	746034	9.19	679099	10.65
04	SB-331-0203	810687	7.22	737454	9.19	718367	10.63
05	SB-328-0809	756228	7.22	712841	9.18	678202	10.63
06	SB-329-0203	802664	7.22	737984	9.19	714025	10.63
07	SB-330-0203	788653	7.22	729933	9.19	704171	10.64
08	SB-332-0203	745507	7.22	694395	9.19	659648	10.65
09	SB-327-0203	790652	7.22	775302	9.19	743145	10.65
10	SB-328-0203	821373	7.23	774160	9.19	711728	10.66
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02316

Lab File ID (Standard): 9SMH1113 Date Analyzed: 11/13/07

Instrument ID: A4HP9 Time Analyzed: 0944

		IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
	12 HOUR STD	197142	3.80	820675	4.76	422665	6.05
	UPPER LIMIT	394284	4.30	1641350	5.26	845330	6.55
	LOWER LIMIT	98571	3.30	410338	4.26	211333	5.55
	EPA SAMPLE NO.						
01	KA1JQBLK	225109	3.79	965000	4.75	494122	6.05
02	KA1JQCHK	195880	3.79	885030	4.75	464476	6.05
03	SB-332-0809	188018	3.79	811608	4.75	427970	6.05
04							
05							
06							
07							
08							
09							
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13							
14							
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16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02316

Lab File ID (Standard): 9SMH1113 Date Analyzed: 11/13/07

Instrument ID: A4HP9 Time Analyzed: 0944

		IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
	12 HOUR STD	665685	7.14	643737	9.12	612898	10.52
	UPPER LIMIT	1331370	7.64	1287474	9.62	1225796	11.02
	LOWER LIMIT	332843	6.64	321869	8.62	306449	10.02
	EPA SAMPLE NO.						
01	KA1JQBLK	783458	7.14	731686	9.11	732097	10.50
02	KA1JQCHK	730893	7.14	705478	9.11	672609	10.50
03	SB-332-0809	682492	7.14	691554	9.11	664945	10.50
04							
05							
06							
07							
08							
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17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

SAMPLE CALC **SAMPLE ID: SB-327-0203** **COMPOUND: BAP**

IS AREA	DILUTION	COMPOUND OF INTEREST AREA	IS AMOUNT (NG)	Final Extract Volume (UL)	AVE RRF	PERCENT SOLIDS	AMOUNT INJECTED (UL)	CONCENTRATION PPB
743145	1	317885	2	2000	1.0419	0.83	0.5	131.42

Sample Amount (g)
30.11

Tetra Tech NUS, Inc

Client Sample ID: SB-327-0203

GC/MS Semivolatiles

Lot-Sample #...:	A7K020316-001	**Work Order #...:**	KAFP61AD	**Matrix.....:**	SO
Date Sampled...:	11/01/07 07:40	**Date Received..:**	11/02/07		
Prep Date.....:	11/04/07	**Analysis Date..:**	11/09/07		
Prep Batch #...:	7307083				
Dilution Factor:	1	**Initial Wgt/Vol:**	30.11 g	**Final Wgt/Vol..:**	2 mL
% Moisture.....:	17	**Method.....:**	SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzo(a)pyrene	**130 J**	**400**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	71	(24 - 112)
2-Fluorobiphenyl	71	(34 - 110)
Terphenyl-d14	91	(41 - 119)
Phenol-d5	74	(28 - 110)
2-Fluorophenol	73	(26 - 110)
2,4,6-Tribromophenol	70	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

STL North Canton

Semivolatile REPORT SW-846 Method 8270

Data file : \\cansvr11\dd\chem\MSS\a4hp9.i\71108a.b\KAFP61AD.D
Lab Smp Id: kafp61ad Client Smp ID: SB-327-0203
Inj Date : 09-NOV-2007 00:12
Operator : 001574 Inst ID: a4hp9.i
Smp Info : kafp61ad,71108a.b,8270p,1-bap.sub
Misc Info :
Comment :
Method : \\cansvr11\dd\chem\MSS\a4hp9.i\71108a.b\8270p.m
Meth Date : 09-Nov-2007 10:52 ulmanm Quant Type: ISTD
Cal Date : 08-NOV-2007 13:07 Cal File: 9SMH1108.D
Als bottle: 36
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 1-bap.sub
Target Version: 4.14
Processing Host: CANSVR11

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws *) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	0.50000	Volume injected (uL)
Ws	30.110	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	FINAL (ug/kg)	
* 1 1,4-Dichlorobenzene-d4	152	3.866	3.866	(1.000)	207824	2.00000		(Q)
* 2 Naphthalene-d8	136	4.833	4.827	(1.000)	902758	2.00000		
* 3 Acenaphthene-d10	164	6.131	6.125	(1.000)	484887	2.00000		
* 4 Phenanthrene-d10	188	7.221	7.215	(1.000)	790652	2.00000		
* 5 Chrysene-d12	240	9.192	9.208	(1.000)	775302	2.00000		(H)
* 6 Perylene-d12	264	10.650	10.650	(1.000)	743145	2.00000		
146 Benzo(a)pyrene	252	10.581	10.586	(0.993)	317885	0.82110	109.08	
$ 154 Nitrobenzene-d5	82	4.283	4.282	(0.886)	760856	3.56496	473.59	
$ 155 2-Fluorobiphenyl	172	5.613	5.612	(0.915)	1020023	3.53117	469.10	
$ 156 Terphenyl-d14	244	8.364	8.364	(0.910)	1346835	4.55854	605.58	
$ 157 Phenol-d5	99	3.556	3.540	(0.920)	1271376	5.51899	733.18	
$ 158 2-Fluorophenol	112	2.883	2.856	(0.746)	877422	5.47437	727.25	
$ 159 2,4,6-Tribromophenol	330	6.708	6.702	(1.094)	146716	5.28180	701.67	
$ 186 2-Chlorophenol-d4	132	3.700	3.695	(0.957)	772502	5.51061	732.06	
$ 187 1,2-Dichlorobenzene-d4	152	3.989	3.988	(1.032)	237477	2.68897	357.22	

QC Flag Legend

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **M.MARTIN** **DATE:** **DECEMBER 13, 2007**

FROM: **TERRI L. SOLOMON** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – MERCURY, PERCENT SOLIDS**
LOCKHEED MARTIN MIDDLE RIVER
SAMPLE DELIVERY GROUP (SDG) – 7K02316

SAMPLES: 18/Soils/

SB-327-0203	SB-327-0506	SB-327-0809
SB-328-0203	SB-328-0506	SB-328-0809
SB-329-0203	SB-329-0506	SB-329-0809
SB-330-0203	SB-330-0506	SB-330-0809
SB-331-0203	SB-331-0506	SB-331-0809
SB-332-0203	SB-322-0506	SB-332-0809

Overview

The sample set for Lockheed Martin Middle River, SDG 7K02316, consists of eighteen (18) soil environmental samples. No field duplicate pairs were included within this SDG.

All samples were analyzed for mercury and percent solids. The samples were collected by Tetra Tech NUS on November 1, 2007 and analyzed by Test America. Mercury analyses were conducted using SW-846 method 7471A. Percent solid analyses were conducted using MCAWW method 160.3 MOD.

The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, initial and continuing calibration verification results, laboratory method / preparation blank results, matrix spike recoveries, laboratory duplicate results, detection limits and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems – None.

Minor Problems

- The contract required detection limit (CRDL) percent recovery for mercury was > 120% quality control limit affecting all samples. No validation actions were required as all sample results were either > 2X CRDL or were qualified for blank contamination.

- The following contaminant was detected in the laboratory method/preparation blanks at the following maximum concentration:

Analyte	Maximum Concentration	Action Level
Mercury[1]	0.019 mg/kg	0.095 mg/kg

[1] Maximum concentration present in a soil preparation blank.

An action level of 5X the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the blank action level reported for mercury were qualified "B" as a result of laboratory blank contamination.

Notes – None.

Executive Summary

Laboratory Performance: Mercury was present in the laboratory preparation blank.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to Region III modifications to the "National Functional Guidelines for Inorganic Data Validation", April 1993.

The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Terri L. Solomon
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS-GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O - Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DOT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient r < 0.995
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00998

SDG: 7K02316 MEDIA: SOIL DATA FRACTION: M

nsample	SB-327-0203	nsample	SB-327-0506	nsample	SB-327-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020316001	lab_id	A7K020316002	lab_id	A7K020316003
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	83.0	Pct_Solids	86.0	Pct_Solids	85.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.27		

Parameter	Result	Val Qual	Qual Code
MERCURY	0.029	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.02	B	A

PROJ_NO: 00998

SDG: 7K02316 MEDIA: SOIL DATA FRACTION: M

nsample	SB-328-0203	nsample	SB-328-0506	nsample	SB-328-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020316004	lab_id	A7K020316005	lab_id	A7K020316006
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	87.0	Pct_Solids	83.0	Pct_Solids	84.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.33		

Parameter	Result	Val Qual	Qual Code
MERCURY	0.023	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.025	B	A

PROJ_NO: 00998

SDG: 7K02316 MEDIA: SOIL DATA FRACTION: M

nsample	SB-329-0203
samp_date	11/1/2007
lab_id	A7K020316007
qc_type	NM
units	MG/KG
Pct_Solids	82.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.031	B	A

nsample	SB-329-0506
samp_date	11/1/2007
lab_id	A7K020316008
qc_type	NM
units	MG/KG
Pct_Solids	80.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.041	B	A

nsample	SB-329-0809
samp_date	11/1/2007
lab_id	A7K020316009
qc_type	NM
units	MG/KG
Pct_Solids	84.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.025	B	A

PROJ_NO: 00998

SDG: 7K02316 MEDIA: SOIL DATA FRACTION: M

nsample	SB-330-0203	nsample	SB-330-0506	nsample	SB-330-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020316010	lab_id	A7K020316011	lab_id	A7K020316012
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	82.0	Pct_Solids	80.0	Pct_Solids	87.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.041	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.1	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.035	B	A

PROJ_NO: 00998

SDG: 7K02316 MEDIA: SOIL DATA FRACTION: M

nsample	SB-331-0203
samp_date	11/1/2007
lab_id	A7K020316013
qc_type	NM
units	MG/KG
Pct_Solids	86.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.059	B	A

nsample	SB-331-0506
samp_date	11/1/2007
lab_id	A7K020316014
qc_type	NM
units	MG/KG
Pct_Solids	85.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.035	B	A

nsample	SB-331-0809
samp_date	11/1/2007
lab_id	A7K020316015
qc_type	NM
units	MG/KG
Pct_Solids	83.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.04	B	A

PROJ_NO: 00998

SDG: 7K02316 MEDIA: SOIL DATA FRACTION: M

nsample	SB-332-0203
samp_date	11/1/2007
lab_id	A7K020316016
qc_type	NM
units	MG/KG
Pct_Solids	86.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.064	B	A

nsample	SB-332-0506
samp_date	11/1/2007
lab_id	A7K020316017
qc_type	NM
units	MG/KG
Pct_Solids	81.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.034	B	A

nsample	SB-332-0809
samp_date	11/1/2007
lab_id	A7K020316018
qc_type	NM
units	MG/KG
Pct_Solids	82.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.035	B	A

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFP6 **Client ID:** SB-327-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 17.209

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.27		1	CVAA	11/6/2007	15:21

Comments: Lot #: A7K020316 Sample #: 1

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQC **Client ID:** SB-327-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 14.077

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.029	B	1	CVAA	11/6/2007	15:27

Comments: Lot #: A7K020316 Sample #: 2

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQE **Client ID:** SB-327-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 15.384

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.020	B	1	CVAA	11/6/2007	15:25

Comments: Lot #: A7K020316 Sample #: 3

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQF **Client ID:** SB-328-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 13.142

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.33		1	CVAA	11/6/2007	12:48

Comments: Lot #: A7K020316 Sample #: 4

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQH **Client ID:** SB-328-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 17.375

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.023	B	1	CVAA	11/6/2007	12:51

Comments: Lot #: A7K020316 Sample #: 5

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQJ **Client ID:** SB-328-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 15.771

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.025	B	1	CVAA	11/6/2007	12:54

Comments: Lot #: A7K020316 Sample #: 6

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQK **Client ID:** SB-329-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 17.934

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.031	B	1	CVAA	11/6/2007	12:52

Comments: Lot #: A7K020316 Sample #: 7

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQN **Client ID:** SB-329-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 19.932

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.12	0.041	B	1	CVAA	11/6/2007	12:47

Comments: Lot #: A7K020316 Sample #: 8

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQR **Client ID:** SB-329-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 15.867

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.025	B	1	CVAA	11/6/2007	15:24

Comments: Lot #: A7K020316 Sample #: 9

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQV **Client ID:** SB-330-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 17.591

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.041	B	1	CVAA	11/6/2007	12:44

Comments: Lot #: A7K020316 Sample #: 10

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQW **Client ID:** SB-330-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 19.878

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.12	0.10	B	1	CVAA	11/6/2007	12:36

Comments: Lot #: A7K020316 Sample #: 11

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQ0 **Client ID:** SB-330-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 13.329

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.035	B	1	CVAA	11/6/2007	12:45

Comments: Lot #: A7K020316 Sample #: 12

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQ1 **Client ID:** SB-331-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 13.884

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.059	B	1	CVAA	11/6/2007	12:39

Comments: Lot #: A7K020316 Sample #: 13

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQ3 **Client ID:** SB-331-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 15.128

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.035	B	1	CVAA	11/6/2007	12:50

Comments: Lot #: A7K020316 Sample #: 14

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQ4 **Client ID:** SB-331-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 17.346

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.040	B	1	CVAA	11/6/2007	12:43

Comments: Lot #: A7K020316 Sample #: 15

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQ5 **Client ID:** SB-332-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 13.91

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.064	B	1	CVAA	11/6/2007	12:49

Comments: Lot #: A7K020316 Sample #: 16

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQ6 **Client ID:** SB-332-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 19.169

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.12	0.034	B	1	CVAA	11/6/2007	15:22

Comments: Lot #: A7K020316 Sample #: 17

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFQ7 **Client ID:** SB-332-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 17.657

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.035	B	1	CVAA	11/6/2007	15:23

Comments: Lot #: A7K020316 Sample #: 18

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Tetra Tech NUS, Inc

Client Sample ID: SB-327-0203

General Chemistry

Lot-Sample #...: A7K020316-001 **Work Order #...:** KAFP6 **Matrix.....:** SO
Date Sampled...: 11/01/07 07:40 **Date Received..:** 11/02/07
% Moisture.....: 17

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	82.8	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-327-0506

General Chemistry

Lot-Sample #...: A7K020316-002 **Work Order #...:** KAFQC **Matrix.....:** SO
Date Sampled...: 11/01/07 07:42 **Date Received..:** 11/02/07
% Moisture.....: 14

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	85.9	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-327-0809

General Chemistry

Lot-Sample #...: A7K020316-003 Work Order #...: KAFQE Matrix.....: SO
Date Sampled...: 11/01/07 07:44 Date Received..: 11/02/07
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	84.6	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-328-0203

General Chemistry

Lot-Sample #...: A7K020316-004 **Work Order #...:** KAFQF **Matrix.....:** SO
Date Sampled...: 11/01/07 07:55 **Date Received..:** 11/02/07
% Moisture.....: 13

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	86.9	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-328-0506

General Chemistry

Lot-Sample #...: A7K020316-005 Work Order #...: KAFQH Matrix.....: SO
Date Sampled...: 11/01/07 07:57 Date Received..: 11/02/07
% Moisture.....: 17

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	82.6	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-328-0809

General Chemistry

Lot-Sample #...: A7K020316-006 **Work Order #...:** KAFQJ **Matrix.....:** SO
Date Sampled...: 11/01/07 07:59 **Date Received..:** 11/02/07
% Moisture.....: 16

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	84.2	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-329-0203

General Chemistry

Lot-Sample #...: A7K020316-007 **Work Order #...:** KAFQK **Matrix.....:** SO
Date Sampled...: 11/01/07 08:15 **Date Received..:** 11/02/07
% Moisture.....: 18

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	82.1	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-329-0506

General Chemistry

Lot-Sample #...: A7K020316-008 Work Order #...: KAFQN Matrix.....: SO
Date Sampled...: 11/01/07 08:17 Date Received..: 11/02/07
% Moisture.....: 20

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	80.1	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-329-0809

General Chemistry

Lot-Sample #...: A7K020316-009 **Work Order #...:** KAFQR **Matrix.....:** SO
Date Sampled...: 11/01/07 08:19 **Date Received..:** 11/02/07
% Moisture.....: 16

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	84.1	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-330-0203

General Chemistry

Lot-Sample #...: A7K020316-010 Work Order #...: KAFQV Matrix.....: SO
Date Sampled...: 11/01/07 08:35 Date Received..: 11/02/07
% Moisture.....: 18

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	82.4	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-330-0506

General Chemistry

Lot-Sample #...: A7K020316-011 **Work Order #...:** KAFQW **Matrix.....:** SO
Date Sampled...: 11/01/07 08:37 **Date Received..:** 11/02/07
% Moisture.....: 20

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	80.1	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-330-0809

General Chemistry

Lot-Sample #...: A7K020316-012 **Work Order #...:** KAFQ0 **Matrix.....:** SO
Date Sampled...: 11/01/07 08:39 **Date Received..:** 11/02/07
% Moisture.....: 13

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	86.7	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-331-0203

General Chemistry

Lot-Sample #...: A7K020316-013 **Work Order #...:** KAFQ1 **Matrix.....:** SO
Date Sampled...: 11/01/07 08:50 **Date Received..:** 11/02/07
% Moisture.....: 14

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	86.1	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-331-0506

General Chemistry

Lot-Sample #...: A7K020316-014 **Work Order #...:** KAFQ3 **Matrix.....:** SO
Date Sampled...: 11/01/07 08:52 **Date Received..:** 11/02/07
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	84.9	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-331-0809

General Chemistry

Lot-Sample #...: A7K020316-015 **Work Order #...:** KAFQ4 **Matrix.....:** SO
Date Sampled...: 11/01/07 08:54 **Date Received..:** 11/02/07
% Moisture.....: 17

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	82.7	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-332-0203

General Chemistry

Lot-Sample #...: A7K020316-016 **Work Order #...:** KAFQ5 **Matrix.....:** SO
Date Sampled...: 11/01/07 09:05 **Date Received..:** 11/02/07
% Moisture.....: 14

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	86.1	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-332-0506

General Chemistry

Lot-Sample #...: A7K020316-017 Work Order #...: KAFQ6 Matrix.....: SO
Date Sampled...: 11/01/07 09:07 Date Received..: 11/02/07
% Moisture.....: 19

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	80.8	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-332-0809

General Chemistry

Lot-Sample #...: A7K020316-018 **Work Order #...:** KAFQ7 **Matrix.....:** SO
Date Sampled...: 11/01/07 09:09 **Date Received..:** 11/02/07
% Moisture.....: 18

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	82.3	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

APPENDIX C
SUPPORT DOCUMENTATION

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 112IC00998

LMC MR

Lot #: A7K020316
SDG #: 7K02316

Michael Martin

Tetra Tech NUS Inc
20251 Century Blvd
Suite 200
Germantown, MD 20874

TESTAMERICA LABORATORIES, INC.

Patrick J. O'Meara
Project Manager

November 23, 2007

CASE NARRATIVE

7K02316

The following report contains the analytical results for eighteen solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc. from the LMC MR Site, project number 112IC00998. The samples were received November 02, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID's: A7K020316.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Dev Murali, John Poremba, and Michael Martin on November 20, 2007. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 0.1 and 0.6°C.

See TestAmerica's Cooler Receipt Form for additional information.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for SB-330-0506 had RPD's outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

ANALYTICAL METHODS SUMMARY

7K02316

PARAMETER	ANALYTICAL METHOD
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Total Residue as Percent Solids	MCAWW 160.3 MOD

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRA TECH	M. MARTIN	11/1/07	323000
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of
20251 CENTURY BLVD #200	301-528-3027		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
GERMANTOWN / MD / 20874	S. HADLEY	K. IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LMC MR	COURIER		
Contract/Purchase Order/Quote No.			
112IC00498			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis: 8270SIM	Hg	Special Instructions/ Conditions of Receipt
SB-327-0203 ✓	11/1/07	0740				X	2						X	X	* BENZO(A) PYRENE
327-0506 ✓		0742													
327-0809 ✓		0744													
328-0203 ✓		0755													
328-0506 ✓		0757													
328-0809 ✓		0759													
329-0203 ✓		0815													
329-0506 ✓		0817													
329-0809 ✓		0819					2								
330-0203 ✓ (MS/SD)		0835					4								
330-0506 ✓	✓	0837					2								MS/SD
SB-330-0809 ✓	11/1/07	0839				X	2						X	X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	11/1/07	1600	1. Received By	11-1-07	1600
2. Relinquished By	11-1-07	17:05	2. Received By	11/2/07	0945
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica North Canton

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Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRA TECH	M. MARTIN	11/1/07	322997
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 2 of
20251 CENTURY BLVD #200	301-528-3022		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
GERMANTOWN / MD / 20874	S. HADLEY	K. IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LMC MR			
Contract/Purchase Order/Quote No.			
112IC00998			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis: LL 8270 *	Hg	Special Instructions/ Conditions of Receipt
SB-331-0203 ✓	11/1/07	0850				X	2						X	X	* benzo(a)pyrene
331-0506 ✓		0852													
331-0809 ✓		0854													
332-0203 ✓		0905													
332-0506 ✓		0907													
332-0809 ✓		0909													
333-0203		0915													
333-0506		0917													
333-0809		0919													
334-0203		0935													
334-0506		0937													
SB-334-0809	11/1/07	0939				X	2						X	X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal

☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STND

QC Requirements (Specify)

	Date	Time
1. Relinquished By	11/1/07	1600
2. Relinquished By	11-1-07	17:05
3. Relinquished By		

	Date	Time
1. Received By	11-1-07	1600
2. Received By	11/2/07	0945
3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica North Canton

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HOLDTIME

SDG 7K02316

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-331-0203	A7K020316013	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-327-0809	A7K020316003	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-328-0203	A7K020316004	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-328-0809	A7K020316006	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-329-0506	A7K020316008	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-329-0809	A7K020316009	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-330-0203	A7K020316010	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-327-0506	A7K020316002	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-330-0809	A7K020316012	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-328-0506	A7K020316005	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-331-0506	A7K020316014	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-331-0809	A7K020316015	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-332-0203	A7K020316016	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-332-0506	A7K020316017	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-332-0809	A7K020316018	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-327-0203	A7K020316001	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-330-0506	A7K020316011	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-329-0203	A7K020316007	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
PCS	%	SB-330-0809	A7K020316012	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-332-0506	A7K020316017	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-332-0809	A7K020316018	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-332-0203	A7K020316016	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-331-0809	A7K020316015	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-331-0203	A7K020316013	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-327-0203	A7K020316001	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-330-0506	A7K020316011	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-330-0203	A7K020316010	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-327-0809	A7K020316003	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-331-0506	A7K020316014	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-327-0506	A7K020316002	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-329-0809	A7K020316009	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-328-0203	A7K020316004	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-328-0506	A7K020316005	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCS	%	SB-328-0809	A7K020316006	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-329-0203	A7K020316007	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-329-0506	A7K020316008	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
OS	%	SB-332-0809RE	A7K020316018	NM	11/1/2007	11/11/2007	11/13/2007	10	2	12
OS	%	SB-329-0506	A7K020316008	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-327-0506	A7K020316002	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-327-0809	A7K020316003	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-328-0203	A7K020316004	NM	11/1/2007	11/4/2007	11/9/2007	3	5	8
OS	%	SB-328-0506	A7K020316005	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-328-0809	A7K020316006	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-329-0203	A7K020316007	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-327-0203	A7K020316001	NM	11/1/2007	11/4/2007	11/9/2007	3	5	8
OS	%	SB-332-0506	A7K020316017	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-330-0203	A7K020316010	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-330-0506	A7K020316011	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-330-0809	A7K020316012	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-331-0203	A7K020316013	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-331-0506	A7K020316014	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6

Test America North Canton

Metals Data Reporting Form

Initial Calibration Verification Standard

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn **Acceptable Range:** 90% - 110%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck5ICV 11/6/2007 9:40 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Mercury	253.7	2.5	2.69	**107.4**								

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn **Acceptable Range:** 80% - 120%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck2CCV 11/6/2007 9:43 AM Found	% Rec	Ck2CCV 11/6/2007 11:30 AM Found	% Rec	Ck2CCV 11/6/2007 11:44 AM Found	% Rec	Ck2CCV 11/6/2007 11:59 AM Found	% Rec	Ck2CCV 11/6/2007 12:13 PM Found	% Rec
Mercury	253.7	5.0	5.22	**104.5**	4.99	**99.8**	5.03	**100.7**	5.05	**101.0**	4.99	**99.9**

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn **Acceptable Range:** 80% - 120%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck2CCV 11/6/2007 12:27 PM Found	% Rec	Ck2CCV 11/6/2007 12:41 PM Found	% Rec	Ck2CCV 11/6/2007 12:55 PM Found	% Rec	Ck2CCV 11/6/2007 1:09 PM Found	% Rec	Ck2CCV 11/6/2007 1:20 PM Found	% Rec
Mercury	253.7	5.0	4.88	**97.6**	4.78	**95.5**	4.86	**97.2**	2.53	**50.7**	4.32	**86.4**

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn **Acceptable Range:** 80% - 120%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck2CCV 11/6/2007 3:18 PM Found	% Rec	Ck2CCV 11/6/2007 3:33 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Mercury	253.7	5.0	4.84	**96.8**	4.96	**99.2**						

Test America North Canton

Metals Data Reporting Form

Contract Required Detection Limit Standard

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn **Acceptable Range:** 50% - 150%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck3CRA\MRL 11/6/2007 9:42 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Mercury	253.7	0.2	0.29	145.5								

Test America North Canton

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck4ICB 11/6/2007 9:41 AM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Mercury	253.7	0.6	0.1	U								

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck1CCB 11/6/2007 9:45 AM		Ck1CCB 11/6/2007 11:31 AM		Ck1CCB 11/6/2007 11:46 AM		Ck1CCB 11/6/2007 12:00 PM		Ck1CCB 11/6/2007 12:14 PM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Mercury	253.7	0.6	0.1	U	0.1	U	**0.1**	**B**	0.1	U	0.1	U

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck1CCB 11/6/2007 12:28 PM		Ck1CCB 11/6/2007 12:42 PM		Ck1CCB 11/6/2007 12:56 PM		Ck1CCB 11/6/2007 1:10 PM		Ck1CCB 11/6/2007 1:21 PM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Mercury	253.7	0.6	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck1CCB 11/6/2007 3:20 PM Found	Q	Ck1CCB 11/6/2007 3:34 PM Found	Q	Found	Q	Found	Q	Found	Q
Mercury	253.7	0.6	**0.1**	**B**	0.1	U						

5.21.0

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

Test America North Canton

Metals Data Reporting Form

Preparation Blank Results

Lab Sample ID: KAHVVB

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.017	0.10	0.019	B	1	CVAA	11/6/2007	12:33

Comments: Lot #: A7K020316

5.21.0

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

METHOD BLANK REPORT

General Chemistry

Client Lot #...: 7K02316 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids		Work Order #: KAMCF1AA		MB Lot-Sample #:	A7K060000-552	
	ND	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310552
		Dilution Factor: 1				

NOTE(S):

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

Test America North Canton

Metals Data Reporting Form

Matrix Spike Sample Results

Spike Sample ID: KAFQWS

Original Sample ID: KAFQW **Client ID:** SB-330-0506S

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 19.878

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Mercury	253.7	0.10	B	0.30		0.2080	95.0	1	1	CVAA	11/6/2007	12:36	11/6/2007	12:38

Comments: Lot #: A7K020316 Sample #: 11

5.21.0

N Spike recovery failed
NC Percent recovery was not calculated
* Duplicate analysis RPD was not within limits
E Serial dilution percent difference not within limits
U Result is less than the IDL

Form 5A Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Duplicate RPD Report

Duplicate Sample ID: KAFQWX

Original Sample ID: KAFQW **Client ID:** SB-330-0506X

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 19.878

Element	WL/ Mass	OS Conc	Q	Dupe Conc	Q	% RPD	OS DF	Dupe DF	Instr	OS Anal Date	OS Anal Time	Dupe Anal Date	Dupe Anal Time
Mercury	253.7	0.10	B	0.086	B	0.0	1	1	CVAA	11/6/2007	12:36	11/6/2007	12:37

* Duplicate analysis RPD was not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 6 Equivalent

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A7K020316 **Work Order #...:** KAFQV-SMP KAFQV-DUP **Matrix.....:** SO

Date Sampled...: 11/01/07 08:35 **Date Received..:** 11/02/07

% Moisture.....: 18

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #: A7K020316-010		
	82.4	83.5	%	1.4	(0-20)	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A7K020316 **Work Order #...:** KAFQW-SMP KAFQW-DUP **Matrix.....:** SO

Date Sampled...: 11/01/07 08:37 **Date Received..:** 11/02/07

% Moisture.....: 20

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #: A7K020316-011		
	80.1	79.7	%	0.51	(0-20)	MCAWW 160.3 MOD	11/06-11/07/07	7310552

Dilution Factor: 1

Test America North Canton

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: KAHVVC

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309032

Weight: 0.60 **Volume:** 100 **Percent Moisture:** NA

Element	WL/ Mass	Spike Level	Conc	Percent Recovery	Q	Range	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.83	0.82	98.0		81-116	1	CVAA	11/6/2007	12:35

Comments: Lot #: A7K020316

N Spike recovery failed

NC Percent recovery was not calculated

Test America North Canton

Metals Data Reporting Form

Instrument Detection Limits

Instrument: CVAA **Units:** ppb

Element	Wavelength	Reporting Limit	IDL	Date of IDL
Mercury	253.700	0.6	0.10	2/1/2007

Batch Number: **7309032**

TestAmerica Laboratories, Inc.
Metals Prep Log/ Batch Summary

Prepared By: Lisa McGall (e-Signature)

Prep Date: 11/05/07
Due Date: 11/16/07

Lot	Work Order			ICP Weight	ICPMS Weight	Hg Weight
A7K050000 Solid	KAHVV	B	Due Date: SDG:			0.60 g
A7K050000 Solid	KAHVV	C	Due Date: SDG:			0.60 g
A7K020316 Solid	KAFP6 Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQC Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQE Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQF Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQH Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQJ Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQK Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQN Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQR Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQV Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQW Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQW Total	S	Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQW Total	X	Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQ0 Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQ1 Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQ3 Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQ4 Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQ5 Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQ6 Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g
A7K020316 Solid	KAFQ7 Total		Due Date: 11/16/07 SDG: 7K02316			0.60 g

Batch Number: **7309032**

TestAmerica Laboratories, Inc.
Metals Prep Log/ Batch Summary

Prepared By:
Lisa McGall
(e-Signature)

Prep Date: 11/05/07
Due Date: 11/16/07

Lot	Work Order	ICP Weight	ICPMS Weight	Hg Weight
	LEVEL 2			
	BLANK AND CHECK STANDARD ON BATCH	X		
	MS/MSD AND PDS ON BATCH	X		
	CORRECT SPIKES ADDED	X		
	SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG	X		

Comments:

B-BLANK; C-CHECK SAMPLE; L-CHECK SAMPLE DUPLICATE; P-SERIAL DILUTION; S-MATRIX SPIKE SAMPLE; D-MATRIX SPIKE DUPLICATE SAMPLE

Matrix Spike Information:
KAFQW Hg

Check Sample Information:
KAHVV Hg

Prep Method(s): SW846 7471A

```
:       Instrument Upload                                    Run Log - Page  1 :
:       Started Tue Nov  6 17:05:17 2007 by TOTHR                              :
:       Data File: UPL$CAN_DATA_ROOT:<LHG>HG11106A.PRN;1                       :
```

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
1	STD1REP1	1	06-NOV-2007	09:05:22			H1
2	STD2REP1	1	06-NOV-2007	09:06:28			H1
3	STD3REP1	1	06-NOV-2007	09:07:43			H1
4	STD4REP1	1	06-NOV-2007	09:08:49			H1
5	STD1REP1	1	06-NOV-2007	09:25:46			H1
6	STD2REP1	1	06-NOV-2007	09:27:06			H1
7	STD3REP1	1	06-NOV-2007	09:28:41			H1
8	STD4REP1	1	06-NOV-2007	09:29:51			H1
9	STD1REP1	1	06-NOV-2007	09:33:08			H1
10	STD2REP1	1	06-NOV-2007	09:34:18			H1
11	STD3REP1	1	06-NOV-2007	09:35:36			H1
12	STD4REP1	1	06-NOV-2007	09:36:46			H1
13	STD5REP1	1	06-NOV-2007	09:37:54			H1
14	STD6REP1	1	06-NOV-2007	09:39:00			H1
15	CK5ICV	1	06-NOV-2007	09:40:12			H1
16	CK4ICB	1	06-NOV-2007	09:41:18			H1
17	CK3CRA\MRL	1	06-NOV-2007	09:42:36			H1
18	CK2CCV	1	06-NOV-2007	09:43:41			H1
19	CK1CCB	1	06-NOV-2007	09:45:06			H1
20	CK2CCV	1	06-NOV-2007	11:30:40			H1
21	CK1CCB	1	06-NOV-2007	11:31:45			H1
22	KAHVPB	1	06-NOV-2007	11:32:51	7309030	A7K050000	H1
23	KAHVPC	1	06-NOV-2007	11:34:05	7309030	A7K050000	H1
24	KAFR6	1	06-NOV-2007	11:35:19	7309030	7K02319	H1
25	KAFR6X	1	06-NOV-2007	11:36:37	7309030	7K02319	H1
26	KAFR6S	1	06-NOV-2007	11:37:41	7309030	7K02319	H1
27	KAFRV	1	06-NOV-2007	11:38:46	7309030	7K02319	H1
28	KAFR0	1	06-NOV-2007	11:39:51	7309030	7K02319	H1
29	KAFRQ	1	06-NOV-2007	11:40:58	7309030	7K02319	H1
30	KAFRT	1	06-NOV-2007	11:42:05	7309030	7K02319	H1
31	KAFRP	1	06-NOV-2007	11:43:14	7309030	7K02319	H1
32	CK2CCV	1	06-NOV-2007	11:44:42			H1
33	CK1CCB	1	06-NOV-2007	11:46:00			H1
34	KAFTC	1	06-NOV-2007	11:47:08	7309030	7K02319	H1
35	KAFTE	1	06-NOV-2007	11:48:13	7309030	7K02319	H1
36	KAFRL	1	06-NOV-2007	11:49:20	7309030	7K02319	H1
37	KAFR5	1	06-NOV-2007	11:50:29	7309030	7K02319	H1
38	KAFR4	1	06-NOV-2007	11:51:33	7309030	7K02319	H1
39	KAFR1	1	06-NOV-2007	11:52:48	7309030	7K02319	H1
40	KAFR9	1	06-NOV-2007	11:53:55	7309030	7K02319	H1
41	KAFRC	1	06-NOV-2007	11:55:00	7309030	7K02319	H1
42	KAFR2	1	06-NOV-2007	11:56:26	7309030	7K02319	H1
43	KAFTD	1	06-NOV-2007	11:57:53	7309030	7K02319	H1
44	CK2CCV	1	06-NOV-2007	11:59:00			H1

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#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
45	CK1CCB	1	06-NOV-2007	12:00:08			H1
46	KAFRR	1	06-NOV-2007	12:01:13	7309030	7K02319	H1
47	KAFRM	1	06-NOV-2007	12:02:21	7309030	7K02319	H1
48	KAHVRB	1	06-NOV-2007	12:03:26	7309031	A7K050000	H1
49	KAHVRC	1.4	06-NOV-2007	12:04:32	7309031	A7K050000	H1
50	KAFVW	1	06-NOV-2007	12:05:49	7309031	7K02321	H1
51	KAFVWX	1	06-NOV-2007	12:06:56	7309031	7K02321	H1
52	KAFVWS	1	06-NOV-2007	12:08:04	7309031	7K02321	H1
53	KAFV0	1	06-NOV-2007	12:09:13	7309031	7K02321	H1
54	KAFVA	1	06-NOV-2007	12:10:43	7309031	7K02321	H1
55	KAFT2	1	06-NOV-2007	12:12:02	7309031	7K02321	H1
56	CK2CCV	1	06-NOV-2007	12:13:13			H1
57	CK1CCB	1	06-NOV-2007	12:14:17			H1
58	KAFVF	1	06-NOV-2007	12:15:44	7309031	7K02321	H1
59	KAFT1	1	06-NOV-2007	12:16:51	7309031	7K02321	H1
60	KAFVK	1	06-NOV-2007	12:18:02	7309031	7K02321	H1
61	KAFT6	1	06-NOV-2007	12:19:22	7309031	7K02321	H1
62	KAFTG	1	06-NOV-2007	12:20:29	7309031	7K02321	H1
63	KAFVL	1	06-NOV-2007	12:21:34	7309031	7K02321	H1
64	KAFTX	1	06-NOV-2007	12:22:39	7309031	7K02321	H1
65	KAFT3	1	06-NOV-2007	12:23:47	7309031	7K02321	H1
66	KAFVR	1	06-NOV-2007	12:24:52	7309031	7K02321	H1
67	KAFV4	1	06-NOV-2007	12:26:13	7309031	7K02321	H1
68	CK2CCV	1	06-NOV-2007	12:27:18			H1
69	CK1CCB	1	06-NOV-2007	12:28:22			H1
70	KAFVT	1	06-NOV-2007	12:29:29	7309031	7K02321	H1
71	KAFT9	1	06-NOV-2007	12:30:34	7309031	7K02321	H1
72	KAFVE	1	06-NOV-2007	12:31:46	7309031	7K02321	H1
73	KAFTT	1	06-NOV-2007	12:32:52	7309031	7K02321	H1
74	KAHVVB	1	06-NOV-2007	12:33:58	7309032	A7K050000	H1
75	KAHVVC	1	06-NOV-2007	12:35:05	7309032	A7K050000	H1
76	KAFQW	1	06-NOV-2007	12:36:14	7309032	7K02316	H1
77	KAFQWX	1	06-NOV-2007	12:37:23	7309032	7K02316	H1
78	KAFQWS	1	06-NOV-2007	12:38:31	7309032	7K02316	H1
79	KAFQ1	1	06-NOV-2007	12:39:42	7309032	7K02316	H1
80	CK2CCV	1	06-NOV-2007	12:41:08			H1
81	CK1CCB	1	06-NOV-2007	12:42:18			H1
82	KAFQ4	1	06-NOV-2007	12:43:39	7309032	7K02316	H1
83	KAFQV	1	06-NOV-2007	12:44:50	7309032	7K02316	H1
84	KAFQ0	1	06-NOV-2007	12:45:56	7309032	7K02316	H1
85	KAFQN	1	06-NOV-2007	12:47:13	7309032	7K02316	H1
86	KAFQF	1	06-NOV-2007	12:48:26	7309032	7K02316	H1
87	KAFQ5	1	06-NOV-2007	12:49:36	7309032	7K02316	H1
88	KAFQ3	1	06-NOV-2007	12:50:44	7309032	7K02316	H1

(continued)

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
89	KAFQH	1	06-NOV-2007	12:51:52	7309032	7K02316	H1
90	KAFQK	1	06-NOV-2007	12:52:58	7309032	7K02316	H1
91	KAFQJ	1	06-NOV-2007	12:54:14	7309032	7K02316	H1
92	CK2CCV	1	06-NOV-2007	12:55:20			H1
93	CK1CCB	1	06-NOV-2007	12:56:27			H1
94	KAFP6	1	06-NOV-2007	12:57:45	7309032	7K02316	H1
95	KAFQ6	1	06-NOV-2007	12:58:54	7309032	7K02316	H1
96	KAFQ7	1	06-NOV-2007	13:00:10	7309032	7K02316	H1
97	KAFQR	1	06-NOV-2007	13:01:17	7309032	7K02316	H1
98	KAFQE	1	06-NOV-2007	13:02:24	7309032	7K02316	H1
99	KAFQC	1	06-NOV-2007	13:03:43	7309032	7K02316	H1
100	KAKF1B	1	06-NOV-2007	13:04:55	7310022	A7K060000	H1
101	KAKF1C	1	06-NOV-2007	13:06:21	7310022	A7K060000	H1
102	KAJRR	1	06-NOV-2007	13:07:37	7310022	A7K050176	H1
103	KAJRRS	1	06-NOV-2007	13:08:43	7310022	A7K050176	H1
104	CK2CCV	1	06-NOV-2007	13:09:49			H1
105	CK1CCB	1	06-NOV-2007	13:10:55			H1
106	KAJRRD	1	06-NOV-2007	13:12:04	7310022	A7K050176	H1
107	KAKF3B	1	06-NOV-2007	13:13:31	7310023	A7K060000	H1
108	KAKF3C	1	06-NOV-2007	13:14:49	7310023	A7K060000	H1
109	KAKF3L	1	06-NOV-2007	13:15:59	7310023	A7K060000	H1
110	KAJRW	1	06-NOV-2007	13:17:05	7310022	A7K050176	H1
111	J96HR	1	06-NOV-2007	13:18:27	7310023	A7J300288	H1
112	ZZZZZ	1	06-NOV-2007	13:19:35			H1
113	CK2CCV	1	06-NOV-2007	13:20:43			H1
114	CK1CCB	1	06-NOV-2007	13:21:58			H1
115	CK2CCV	1	06-NOV-2007	15:18:48			H1
116	CK1CCB	1	06-NOV-2007	15:20:02			H1
117	KAFP6	1	06-NOV-2007	15:21:13	7309032	7K02316	H1
118	KAFQ6	1	06-NOV-2007	15:22:19	7309032	7K02316	H1
119	KAFQ7	1	06-NOV-2007	15:23:26	7309032	7K02316	H1
120	KAFQR	1	06-NOV-2007	15:24:32	7309032	7K02316	H1
121	KAFQE	1	06-NOV-2007	15:25:58	7309032	7K02316	H1
122	KAFQC	1	06-NOV-2007	15:27:06	7309032	7K02316	H1
123	KAKF1B	1	06-NOV-2007	15:28:12	7310022	A7K060000	H1
124	KAKF1C	1	06-NOV-2007	15:29:19	7310022	A7K060000	H1
125	KAJRR	1	06-NOV-2007	15:30:47	7310022	A7K050176	H1
126	KAJRRS	1	06-NOV-2007	15:31:55	7310022	A7K050176	H1
127	CK2CCV	1	06-NOV-2007	15:33:01			H1
128	CK1CCB	1	06-NOV-2007	15:34:06			H1
129	KAJRRD	1	06-NOV-2007	15:35:12	7310022	A7K050176	H1
130	KAKF3B	1	06-NOV-2007	15:36:18	7310023	A7K060000	H1
131	KAKF3C	1	06-NOV-2007	15:37:25	7310023	A7K060000	H1
132	KAKF3L	1	06-NOV-2007	15:38:32	7310023	A7K060000	H1

(continued)

```
:       Instrument Upload                                    Run Log - Page  4 :
:       Started Tue Nov  6 17:05:18 2007 by TOTHR                              :
:       Data File: UPL$CAN_DATA_ROOT:<LHG>HG11106A.PRN;1                       :
```

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
133	KAJRW	1	06-NOV-2007	15:39:39	7310022	A7K050176	H1
134	J96HR	1	06-NOV-2007	15:40:50	7310023	A7J300288	H1
135	CK2CCV	1	06-NOV-2007	15:41:57			H1
136	CK1CCB	1	06-NOV-2007	15:43:03			H1
137	CK2CCV	1	06-NOV-2007	16:25:47			H1
138	CK1CCB	1	06-NOV-2007	16:26:52			H1
139	KAKF3C	1	06-NOV-2007	16:28:10	7310023	A7K060000	H1
140	CK2CCV	1	06-NOV-2007	16:29:26			H1
141	CK1CCB	1	06-NOV-2007	16:30:42			H1

```
---------------------------------- End of Report -----------------------------
```

*** Check Standard: 2 Ck2CCV Seq: 114 15:18:48 06 Nov 2007 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		96.83	4.841	5.000	ppb	.0000 %

*** Check Standard: 1 Ck1CCB Seq: 115 15:20:02 06 Nov 2007 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		.1022	.2000	ppb	.0000 %

*** Sample ID: KAFP6 Seq: 116 15:21:13 06 Nov 2007 HG

SOLID

Hg	1.346	ppb	.0000 %	1.346	Sample SB-327-0203

*** Sample ID: KAFQ6 Seq: 117 15:22:19 06 Nov 2007 HG

SOLID

Hg	.1657	ppb	.0000 %	.1657

*** Sample ID: KAFQ7 Seq: 118 15:23:26 06 Nov 2007 HG

SOLID

Hg	.1729	ppb	.0000 %	.1729

*** Sample ID: KAFQR Seq: 119 15:24:32 06 Nov 2007 HG

SOLID

Hg	.1264	ppb	.0000 %	.1264

*** Sample ID: KAFQE Seq: 120 15:25:58 06 Nov 2007 HG

SOLID

Hg	.1022	ppb	.0000 %	.1022

*** Sample ID: KAFQC Seq: 121 15:27:06 06 Nov 2007 HG

SOLID

Hg	.1481	ppb	.0000 %	.1481

SB-327-0203

Mercury rep result 0.27 mg/kg

$$\left(1.346\right)\left(\frac{100}{0.6}\right)\left(\frac{1}{\cancel{82.791}\ .82791}\right)\left(\frac{1}{1000}\right) = 0.271\ mg/kg$$

			TestAmerica, North Canton			
		Percent Total Solid/Percent Moisture Logsheet				
Analysis	TS			Batch	7310552	
Prep Date	11/6/2007	Time In	17:51	Analyst	NAP	
Anal date	11/7/2007	Time Out	8:00	RL	10	
Sample	Tare	Wet	Dry	Result TS	Result MS	comments
ID	wt	wt	wt	%	%	
BLK K	4.6622	4.5948	4.5833	2.25	ND	
KAFP6	4.6622	23.5777	20.3225	82.791	17.209	
KAFQC	4.6622	13.1269	11.9353	85.923	14.077	
KAFQE	4.6622	14.1860	12.7209	84.616	15.384	
KAFQF	4.6622	18.3998	16.5944	86.858	13.142	
KAFQJ	4.6622	13.6562	12.2378	84.229	15.771	
KAFQH	4.6622	16.6607	14.5760	82.625	17.375	
KAFQK	4.6622	21.1604	18.2016	82.066	17.934	
KAFQN	4.6622	19.5917	16.6159	80.068	19.932	
KAFQR	4.6622	12.5249	11.2773	84.133	15.867	
KAFQV	4.6622	15.6893	13.7495	82.409	17.591	
KAFQVX	4.6622	15.1091	13.3896	83.541	16.459	
KAFQW	4.6622	14.7678	12.7590	80.122	19.878	
KAFQWX	4.6622	17.3192	14.7516	79.714	20.286	
KAFQ0	4.6622	15.3333	13.9109	86.671	13.329	
KAFQ1	4.6622	12.7550	11.6314	86.116	13.884	
KAFQ3	4.6622	15.2892	13.6815	84.872	15.128	
KAFQ4	4.6622	14.3936	12.7056	82.654	17.346	
KAFQ5	4.6622	13.0665	11.8975	86.090	13.910	
KAFQ6	4.6622	16.3735	14.1286	80.831	19.169	
KAFQ7	4.6622	20.6337	17.8136	82.343	17.657	
	4.6622			100.000	0.000	
	4.6622			100.000	0.000	

-Sample SB-327-0203
percent solids
rep result 82.8

$\left(\frac{23.5777 - 20.3225}{23.5777 - 4.6622}\right)(100) = 82.79$

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **M. MARTIN** **DATE:** **DECEMBER 17, 2007**

FROM: **ROBERT JUPIN** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – BENZO(a)PYRENE**
LOCKHEED MIDDLE RIVER COMPLEX
SAMPLE DELIVERY GROUP (SDG): 7K02319

SAMPLES: 18/Soil/

SB-333-0203	SB-333-0506	SB-333-0809	SB-334-0203	SB-334-0506
SB-334-0809	SB-335-0203	SB-335-0506	SB-335-0809	SB-336-0203
SB-336-0506	SB-336-0809	SB-337-0203	SB-337-0506	SB-337-0809
SB-338-0203	SB-338-0506	SB-338-0809		

Overview

The sample set for SDG 7K02319 Lockheed MRC, consists of eighteen (18) soil environmental samples.

All soil samples were analyzed for benzo(a)pyrene. The samples were collected by TetraTech NUS on November 1, 2007 and analyzed by Test America Laboratories, Inc. Analyses were conducted using SW-846 Method 8270C.

The findings in this report are based upon a general review of all available data including: data completeness, GC/MS tuning, holding times, initial/continuing calibrations, laboratory method/preparation and field quality control blank results, surrogate spike/internal standard recoveries, laboratory control sample (LCS)/blank spike results, matrix spike/matrix spike duplicate results, analyte quantitation, and detection limits. Areas of concern are listed below.

Major Problems

- None.

Minor Problems

- Positive results reported below the detection limit have been qualified as estimated, "J".

Notes

The matrix spike sample was not spiked for benzo(a)pyrene therefore, no evaluation of the matrix spike could be performed.

Executive Summary

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (9/94) as modified by Region III.

Tetra Tech NUS
Robert J. Jupin
Risk Assessment Specialist/Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

J - Positive result is considered estimated, "J", as a result of technical noncompliances.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r \leq 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can be any number of issues; e.g. poor chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00998

SDG: 7K02319 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-333-0203	nsample	SB-333-0506	nsample	SB-333-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020319001	lab_id	A7K020319002	lab_id	A7K020319003
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	81.0	Pct_Solids	86.0	Pct_Solids	87.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	410	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	380	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	380	U	

PROJ_NO: 00998

SDG: 7K02319 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-334-0203	nsample	SB-334-0506	nsample	SB-334-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020319004	lab_id	A7K020319005	lab_id	A7K020319006
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	86.0	Pct_Solids	81.0	Pct_Solids	78.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	88	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	64	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	30	J	P

PROJ_NO: 00998

SDG: 7K02319 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-335-0203	nsample	SB-335-0506	nsample	SB-335-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020319007	lab_id	A7K020319008	lab_id	A7K020319009
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	83.0	Pct_Solids	83.0	Pct_Solids	83.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	20	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	13	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	400	U	

PROJ_NO: 00998

SDG: 7K02319 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-336-0203	nsample	SB-336-0506	nsample	SB-336-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020319010	lab_id	A7K020319011	lab_id	A7K020319012
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	87.0	Pct_Solids	79.0	Pct_Solids	82.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	380	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	420	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	24	J	P

PROJ_NO: 00998

SDG: 7K02319 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-337-0203	nsample	SB-337-0506DL	nsample	SB-337-0809DL
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020319013	lab_id	A7K020319014	lab_id	A7K020319015
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85.0	Pct_Solids	80.0	Pct_Solids	79.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	13	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	700	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	4200	U	

PROJ_NO: 00998

SDG: 7K02319 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-338-0203	nsample	SB-338-0506	nsample	SB-338-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020319016	lab_id	A7K020319017	lab_id	A7K020319018
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	82.0	Pct_Solids	82.0	Pct_Solids	82.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	40	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	50	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	400	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Tetra Tech NUS, Inc

Client Sample ID: SB-333-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-001 **Work Order #...:** KAFRC1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 09:15 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 19 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	410	ug/kg	1.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	54	(24 - 112)
2-Fluorobiphenyl	62	(34 - 110)
Terphenyl-d14	78	(41 - 119)
Phenol-d5	66	(28 - 110)
2-Fluorophenol	67	(26 - 110)
2,4,6-Tribromophenol	46	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-333-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-002 **Work Order #...:** KAFRL1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 09:17 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 14 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	46	(24 - 112)
2-Fluorobiphenyl	62	(34 - 110)
Terphenyl-d14	81	(41 - 119)
Phenol-d5	69	(28 - 110)
2-Fluorophenol	66	(26 - 110)
2,4,6-Tribromophenol	55	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-333-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-003 **Work Order #...:** KAFRM1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 09:19 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 13 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	61	(24 - 112)
2-Fluorobiphenyl	64	(34 - 110)
Terphenyl-d14	78	(41 - 119)
Phenol-d5	71	(28 - 110)
2-Fluorophenol	71	(26 - 110)
2,4,6-Tribromophenol	46	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-334-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-004 **Work Order #...:** KAFRP1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 09:35 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/14/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 14 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**88 J**	**380**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	50	(24 - 112)
2-Fluorobiphenyl	65	(34 - 110)
Terphenyl-d14	89	(41 - 119)
Phenol-d5	62	(28 - 110)
2-Fluorophenol	65	(26 - 110)
2,4,6-Tribromophenol	74	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-334-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-005 **Work Order #...:** KAFRQ1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 09:37 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 19 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**64 J**	**410**	**ug/kg**	**1.6**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	48	(24 - 112)
2-Fluorobiphenyl	64	(34 - 110)
Terphenyl-d14	79	(41 - 119)
Phenol-d5	69	(28 - 110)
2-Fluorophenol	64	(26 - 110)
2,4,6-Tribromophenol	61	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-334-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-006 **Work Order #...:** KAFRR1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 09:39 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/14/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 22 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**30 J**	**420**	**ug/kg**	**1.7**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	68	(24 - 112)
2-Fluorobiphenyl	79	(34 - 110)
Terphenyl-d14	87	(41 - 119)
Phenol-d5	74	(28 - 110)
2-Fluorophenol	77	(26 - 110)
2,4,6-Tribromophenol	89	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-335-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-007 **Work Order #...:** KAFRT1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 09:55 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**20 J**	**400**	**ug/kg**	**1.6**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	60	(24 - 112)
2-Fluorobiphenyl	65	(34 - 110)
Terphenyl-d14	77	(41 - 119)
Phenol-d5	70	(28 - 110)
2-Fluorophenol	69	(26 - 110)
2,4,6-Tribromophenol	49	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J *Estimated result. Result is less than RL.*

Tetra Tech NUS, Inc

Client Sample ID: SB-335-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-008 **Work Order #...:** KAFRV1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 09:57 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**13 J**	**400**	**ug/kg**	**1.6**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	58	(24 - 112)
2-Fluorobiphenyl	65	(34 - 110)
Terphenyl-d14	78	(41 - 119)
Phenol-d5	73	(28 - 110)
2-Fluorophenol	70	(26 - 110)
2,4,6-Tribromophenol	66	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-335-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-009 **Work Order #...:** KAFR01AD **Matrix.....:** SO
Date Sampled...: 11/01/07 09:59 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	400	ug/kg	1.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	58	(24 - 112)
2-Fluorobiphenyl	61	(34 - 110)
Terphenyl-d14	79	(41 - 119)
Phenol-d5	73	(28 - 110)
2-Fluorophenol	69	(26 - 110)
2,4,6-Tribromophenol	50	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-336-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-010 **Work Order #...:** KAFR11AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:10 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 13 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	46	(24 - 112)
2-Fluorobiphenyl	61	(34 - 110)
Terphenyl-d14	76	(41 - 119)
Phenol-d5	65	(28 - 110)
2-Fluorophenol	64	(26 - 110)
2,4,6-Tribromophenol	43	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-336-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-011 **Work Order #...:** KAFR21AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:12 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 21 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	420	ug/kg	1.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	61	(24 - 112)
2-Fluorobiphenyl	64	(34 - 110)
Terphenyl-d14	77	(41 - 119)
Phenol-d5	70	(28 - 110)
2-Fluorophenol	64	(26 - 110)
2,4,6-Tribromophenol	43	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-336-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-012 **Work Order #...:** KAFR41AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:14 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 18 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**24 J**	**400**	**ug/kg**	**1.6**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	63	(24 - 112)
2-Fluorobiphenyl	66	(34 - 110)
Terphenyl-d14	82	(41 - 119)
Phenol-d5	75	(28 - 110)
2-Fluorophenol	72	(26 - 110)
2,4,6-Tribromophenol	44	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-337-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-013 **Work Order #...:** KAFR51AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:20 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 15 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**13 J**	**390**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	50	(24 - 112)
2-Fluorobiphenyl	61	(34 - 110)
Terphenyl-d14	76	(41 - 119)
Phenol-d5	69	(28 - 110)
2-Fluorophenol	66	(26 - 110)
2,4,6-Tribromophenol	47	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-337-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-014 **Work Order #...:** KAFR61AF **Matrix.....:** SO
Date Sampled...: 11/01/07 12:22 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/14/07
Prep Batch #...: 7307084
Dilution Factor: 10
% Moisture.....: 20 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**700 J**	**4100**	**ug/kg**	**16**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	56 DIL	(24 - 112)
2-Fluorobiphenyl	73 DIL	(34 - 110)
Terphenyl-d14	102 DIL	(41 - 119)
Phenol-d5	76 DIL	(28 - 110)
2-Fluorophenol	74 DIL	(26 - 110)
2,4,6-Tribromophenol	70 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-337-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-015 **Work Order #...:** KAFR91AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:24 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/14/07
Prep Batch #...: 7307084
Dilution Factor: 10
% Moisture.....: 21 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	4200	ug/kg	16

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	54 DIL	(24 - 112)
2-Fluorobiphenyl	70 DIL	(34 - 110)
Terphenyl-d14	88 DIL	(41 - 119)
Phenol-d5	67 DIL	(28 - 110)
2-Fluorophenol	69 DIL	(26 - 110)
2,4,6-Tribromophenol	75 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-338-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-016 **Work Order #...:** KAFTC1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:30 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 18 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**40 J**	**400**	**ug/kg**	**1.6**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	56	(24 - 112)
2-Fluorobiphenyl	67	(34 - 110)
Terphenyl-d14	79	(41 - 119)
Phenol-d5	74	(28 - 110)
2-Fluorophenol	70	(26 - 110)
2,4,6-Tribromophenol	46	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-338-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-017 **Work Order #...:** KAFTD1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:32 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/14/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 18 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**50 J**	**400**	**ug/kg**	**1.6**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	60	(24 - 112)
2-Fluorobiphenyl	72	(34 - 110)
Terphenyl-d14	88	(41 - 119)
Phenol-d5	67	(28 - 110)
2-Fluorophenol	70	(26 - 110)
2,4,6-Tribromophenol	63	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-338-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020319-018 **Work Order #...:** KAFTE1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:34 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/07/07
Prep Batch #...: 7307084
Dilution Factor: 1
% Moisture.....: 18 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	400	ug/kg	1.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	48	(24 - 112)
2-Fluorobiphenyl	58	(34 - 110)
Terphenyl-d14	79	(41 - 119)
Phenol-d5	61	(28 - 110)
2-Fluorophenol	58	(26 - 110)
2,4,6-Tribromophenol	46	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

APPENDIX C

SUPPORT DOCUMENTATION

HOLDTIME

SDG 7K02319

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-337-0203	A7K020319013	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-333-0809	A7K020319003	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-334-0203	A7K020319004	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-334-0809	A7K020319006	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-335-0506	A7K020319008	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-335-0809	A7K020319009	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-336-0203	A7K020319010	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-333-0506	A7K020319002	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-336-0809	A7K020319012	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-334-0506	A7K020319005	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-337-0506	A7K020319014	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-337-0809	A7K020319015	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-338-0203	A7K020319016	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-338-0506	A7K020319017	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-338-0809	A7K020319018	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-333-0203	A7K020319001	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-336-0506	A7K020319011	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-335-0203	A7K020319007	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
PCS	%	SB-336-0809	A7K020319012	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-338-0506	A7K020319017	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-338-0809	A7K020319018	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-338-0203	A7K020319016	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-337-0809	A7K020319015	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-337-0203	A7K020319013	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-333-0203	A7K020319001	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-336-0506	A7K020319011	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-336-0203	A7K020319010	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-333-0809	A7K020319003	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-337-0506	A7K020319014	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-333-0506	A7K020319002	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-335-0809	A7K020319009	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-334-0203	A7K020319004	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-334-0506	A7K020319005	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCS	%	SB-334-0809	A7K020319006	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-335-0203	A7K020319007	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-335-0506	A7K020319008	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
OS	%	SB-338-0809	A7K020319018	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-335-0506	A7K020319008	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-333-0506	A7K020319002	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-333-0809	A7K020319003	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-334-0203	A7K020319004	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13
OS	%	SB-334-0506	A7K020319005	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-334-0809	A7K020319006	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13
OS	%	SB-335-0203	A7K020319007	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-333-0203	A7K020319001	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-338-0506	A7K020319017	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13
OS	%	SB-336-0203	A7K020319010	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-336-0506	A7K020319011	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-336-0809	A7K020319012	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-337-0203	A7K020319013	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-337-0506DL	A7K020319014	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	SB-337-0809DL	A7K020319015	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13
OS	%	SB-338-0203	A7K020319016	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-335-0809	A7K020319009	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-336-0809	A7K020319012	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-337-0203	A7K020319013	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-337-0506DL	A7K020319014	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13
OS	UG/KG	SB-337-0809DL	A7K020319015	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13
OS	UG/KG	SB-338-0203	A7K020319016	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-336-0506	A7K020319011	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-338-0809	A7K020319018	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-334-0506	A7K020319005	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-338-0506	A7K020319017	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13
OS	UG/KG	SB-336-0203	A7K020319010	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-335-0809	A7K020319009	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-335-0506	A7K020319008	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-333-0203	A7K020319001	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-334-0809	A7K020319006	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13
OS	UG/KG	SB-334-0203	A7K020319004	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	SB-333-0809	A7K020319003	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-333-0506	A7K020319002	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	UG/KG	SB-335-0203	A7K020319007	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6

Chain of Custody Record

STL-4124 (0901)

SEVERN TRENT STL
Severn Trent Laboratories, Inc.

Client: TETRA TECH	Project Manager: M. MARTIN	Date: 11/1/07	Chain of Custody Number: 322997
Address: 20251 CENTURY BLVD #200	Telephone Number (Area Code)/Fax Number: 301-528-3022	Lab Number:	Page 2 of
City: GERMANTOWN; State: MD; Zip Code: 20874	Site Contact: S. HADLEY	Lab Contact: K. IVES	
Project Name and Location (State): LMC MR	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: 112JC00998			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	LL 8270 *	Hg	Special Instructions/Conditions of Receipt
SB-331-0203	11/1/07	0850				X	2						X	X	* benzo(a)pyrene
331-0506		0852													
331-0809		0854													
332-0203		0905													
332-0506		0907													
332-0809		0909													
333-0203		0915													
333-0506		0917													
333-0809		0919													
334-0203		0935													
334-0506		0937													
SB-334-0809	11/1/07	0939				X	2						X	X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☑ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STND

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By [signature]	11/1/07	1600	1. Received By [signature]	11/1/07	1600
2. Relinquished By [signature]	11-1-07	17:05	2. Received By [signature]	11/2/07	0945
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRA TECH	M. MARTIN	11/1/07	322998
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 3 of
20251 CENTURY BLVD #200	301-528-3022		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
GERMANTOWN / MD / 20874	S. HUDLEY	K. IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LMC MR	COURIER		
Contract/Purchase Order/Quote No.			
112IC00998			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis: 8270*	Hg	Special Instructions/ Conditions of Receipt
SB-335-0203	11/1/07	0955				X	2						X	X	* benzo(a) pyrene
SB-335-0506		0957				X									
335-0809		0959				X									
336-0203		1210				X									
336-0506		1212				X									
336-0809		1214				X									
337-0203		1220				X	2								
337-0506 (MS/SD)		1222				X	4								MS/SD
337-0809		1224				X	2								
338-0203		1230				X									
338-0506		1232				X									
SB — 338-0809	11/1/07	1234				X							X	X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal

☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STND

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	11/1/07	1600	1. Received By	11-1-07	1600
2. Relinquished By	11-1-07	17:05	2. Received By	11/2/07	0945
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 112IC00998

LMC MR

Lot #: A7K020319
SDG #: 7K02319

Michael Martin

Tetra Tech NUS Inc
20251 Century Blvd
Suite 200
Germantown, MD 20874

TESTAMERICA LABORATORIES, INC.

Patrick J. O'Meara
Project Manager

November 23, 2007

CASE NARRATIVE

7K02319

The following report contains the analytical results for eighteen solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc. from the LMC MR Site, project number 112IC00998. The samples were received November 02, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID's: A7K020319.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Dev Murali, John Poremba, and Michael Martin on November 20, 2007. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 0.1 and 0.6°C.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for SB-337-0506 had RPD's and recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

Sample(s) SB-337-0506 had elevated reporting limits due to matrix interferences.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica North Canton (formerly STL North Canton) conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton (formerly STL North Canton) requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

SAMPLE SUMMARY

7K02319 : A7K020319

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KAFRC	001	SB-333-0203	11/01/07	09:15
KAFRL	002	SB-333-0506	11/01/07	09:17
KAFRM	003	SB-333-0809	11/01/07	09:19
KAFRP	004	SB-334-0203	11/01/07	09:35
KAFRQ	005	SB-334-0506	11/01/07	09:37
KAFRR	006	SB-334-0809	11/01/07	09:39
KAFRT	007	SB-335-0203	11/01/07	09:55
KAFRV	008	SB-335-0506	11/01/07	09:57
KAFR0	009	SB-335-0809	11/01/07	09:59
KAFR1	010	SB-336-0203	11/01/07	12:10
KAFR2	011	SB-336-0506	11/01/07	12:12
KAFR4	012	SB-336-0809	11/01/07	12:14
KAFR5	013	SB-337-0203	11/01/07	12:20
KAFR6	014	SB-337-0506	11/01/07	12:22
KAFR9	015	SB-337-0809	11/01/07	12:24
KAFTC	016	SB-338-0203	11/01/07	12:30
KAFTD	017	SB-338-0506	11/01/07	12:32
KAFTE	018	SB-338-0809	11/01/07	12:34

NOTE(S):

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

SW846 8270C SURROGATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN SDG No: 7K02319

Lot #: A7K020319

Extraction: XXA11QL01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	SRG05	SRG06	TOT OUT
01	SB-333-0203	54	62	78	66	67	46	00
02	SB-333-0506	46	62	81	69	66	55	00
03	SB-333-0809	61	64	78	71	71	46	00
04	SB-334-0203	50	65	89	62	65	74	00
05	SB-334-0506	48	64	79	69	64	61	00
06	SB-334-0809	68	79	87	74	77	89	00
07	SB-335-0203	60	65	77	70	69	49	00
08	SB-335-0506	58	65	78	73	70	66	00
09	SB-335-0809	58	61	79	73	69	50	00
10	SB-336-0203	46	61	76	65	64	43	00
11	SB-336-0506	61	64	77	70	64	43	00
12	SB-336-0809	63	66	82	75	72	44	00
13	SB-337-0203	50	61	76	69	66	47	00
14	SB-337-0506	56 D	73 D	102D	76 D	74 D	70 D	00
15	SB-337-0809	54 D	70 D	88 D	67 D	69 D	75 D	00
16	SB-338-0203	56	67	79	74	70	46	00
17	SB-338-0506	60	72	88	67	70	63	00
18	SB-338-0809	48	58	79	61	58	46	00
19	METHOD BLK. KAGR11AA	69	72	87	74	71	57	00
20	LCS KAGR11AC	69	69	79	75	70	57	00
21	SB-337-0506 D	66 D	75 D	94 D	73 D	72 D	69 D	00
22	SB-337-0506 S	59 D	72 D	94 D	70 D	71 D	59 D	00

SURROGATES		QC LIMITS
SRG01	= Nitrobenzene-d5	(24-112)
SRG02	= 2-Fluorobiphenyl	(34-110)
SRG03	= Terphenyl-d14	(41-119)
SRG04	= Phenol-d5	(28-110)
SRG05	= 2-Fluorophenol	(26-110)
SRG06	= 2,4,6-Tribromophenol	(10-118)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

SW846 8270C METHOD BLANK SUMMARY

BLANK WORKORDER NO.: KAGR11AA

Lab Name: TestAmerica Laboratories, Inc.

Lab Code: TALCAN | SDG Number: 7K02319

Lab File ID: KAGR11AA. | Lot Number: A7K020319

Date Analyzed: 11/07/07 | Time Analyzed: 14:53

Matrix: SOLID | Date Extracted: 11/04/07

GC Column: DB-5.625 ID: .18 | Extraction Method: 3540C

Instrument ID: AG2 | Level: (low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SB-333-0203	KAFRC1AD	KAFRC1AD.	11/07/07	15:27
02	SB-333-0506	KAFRL1AD	KAFRL1AD.	11/07/07	15:45
03	SB-333-0809	KAFRM1AD	KAFRM1AD.	11/07/07	16:02
04	SB-334-0203	KAFRP1AD	KAFRP1AD.	11/14/07	15:23
05	SB-334-0506	KAFRQ1AD	KAFRQ1AD.	11/07/07	20:19
06	SB-334-0809	KAFRR1AD	KAFRR1AD.	11/14/07	13:39
07	SB-335-0203	KAFRT1AD	KAFRT1AD.	11/07/07	20:54
08	SB-335-0506	KAFRV1AD	KAFRV1AD.	11/07/07	21:11
09	SB-335-0809	KAFR01AD	KAFR01AD.	11/07/07	21:28
10	SB-336-0203	KAFR11AD	KAFR11AD.	11/07/07	16:19
11	SB-336-0506	KAFR21AD	KAFR21AD.	11/07/07	20:36
12	SB-336-0809	KAFR41AD	KAFR41AD.	11/07/07	21:45
13	SB-337-0203	KAFR51AD	KAFR51AD.	11/07/07	22:02
14	SB-337-0506	KAFR61AF	KAFR61AF.	11/14/07	13:56
15	SB-337-0506	KAFR61AJ S	KAFR61AJ.	11/14/07	14:14
16	SB-337-0506	KAFR61AK D	KAFR61AK.	11/14/07	14:31
17	SB-337-0809	KAFR91AD	KAFR91AD.	11/14/07	14:48
18	SB-338-0203	KAFTC1AD	KAFTC1AD.	11/07/07	22:19
19	SB-338-0506	KAFTD1AD	KAFTD1AD.	11/14/07	15:06
20	SB-338-0809	KAFTE1AD	KAFTE1AD.	11/07/07	22:37
21	CHECK SAMPLE	KAGR11AC C	KAGR11AC.	11/07/07	15:10
22					
23					
24					
25					
26					
27					
28					
29					
30					

COMMENTS:

FORM IV

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02319

Lab File ID: 2DF1107 DFTPP Injection Date: 11/07/07

Instrument ID: A4AG2 DFTPP Injection Time: 1148

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	38.2
68	Less than 2.0% of mass 69	0.5 (1.4)1
69	Mass 69 relative abundance	37.2
70	Less than 2.0% of mass 69	0.0 (0.1)1
127	40.0 - 60.0% of mass 198	51.9
197	Less than 1.0% of mass 198	0.3
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	20.4
365	Greater than 1.0% of mass 198	3.1
441	Present, but less than mass 443	8.9
442	Greater than 40.0% of mass 198	59.8
443	17.0 - 23.0% of mass 442	11.6 (19.4)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD009	L9	2SHHH1107	11/07/07	1159
02	SSTD008	L8	2SHH1107	11/07/07	1219
03	SSTD007	L7	2SH1107	11/07/07	1236
04	SSTD006	L6	2SMH1107	11/07/07	1253
05	SSTD005	L5	2SMM1107	11/07/07	1310
06	SSTD004	L4	2SM1107	11/07/07	1327
07	SSTD003	L3	2SML1107	11/07/07	1344
08	SSTD002	L2	2SL1107	11/07/07	1402
09	SSTD001	L1	2SLL1107	11/07/07	1419
10	KAGR1BLK	KAGR11AA	KAGR11AA	11/07/07	1453
11	KAGR1CHK	KAGR11AC	KAGR11AC	11/07/07	1510
12	SB-333-0203	KAFRC1AD	KAFRC1AD	11/07/07	1527
13	SB-333-0306	KAFRL1AD	KAFRL1AD	11/07/07	1545
14	SB-333-0809	KAFRM1AD	KAFRM1AD	11/07/07	1602
15	SB-336-0203	KAFR11AD	KAFR11AD	11/07/07	1619
16	SB-334-0506	KAFRQ1AD	KAFRQ1AD	11/07/07	2019
17	SB-336-0506	KAFR21AD	KAFR21AD	11/07/07	2036
18	SB-335-0203	KAFRT1AD	KAFRT1AD	11/07/07	2054
19	SB-335-0506	KAFRV1AD	KAFRV1AD	11/07/07	2111
20	SB-335-0809	KAFR01AD	KAFR01AD	11/07/07	2128
21	SB-336-0809	KAFR41AD	KAFR41AD	11/07/07	2145
22	SB-337-0203	KAFR51AD	KAFR51AD	11/07/07	2202

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02319

Lab File ID: 2DF1107 DFTPP Injection Date: 11/07/07

Instrument ID: A4AG2 DFTPP Injection Time: 1148

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	38.2
68	Less than 2.0% of mass 69	0.5 (1.4)1
69	Mass 69 relative abundance	37.2
70	Less than 2.0% of mass 69	0.0 (0.1)1
127	40.0 - 60.0% of mass 198	51.9
197	Less than 1.0% of mass 198	0.3
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	20.4
365	Greater than 1.0% of mass 198	3.1
441	Present, but less than mass 443	8.9
442	Greater than 40.0% of mass 198	59.8
443	17.0 - 23.0% of mass 442	11.6 (19.4)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SB-338-0203	KAFTC1AD	KAFTC1AD	11/07/07	2219
02	SB-338-0809	KAFTE1AD	KAFTE1AD	11/07/07	2237
03					
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5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02319

Lab File ID: 2DF1112 DFTPP Injection Date: 11/12/07

Instrument ID: A4AG2 DFTPP Injection Time: 1404

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	35.5
68	Less than 2.0% of mass 69	0.2 (0.6)1
69	Mass 69 relative abundance	43.7
70	Less than 2.0% of mass 69	0.2 (0.4)1
127	40.0 - 60.0% of mass 198	48.9
197	Less than 1.0% of mass 198	0.1
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	27.3
365	Greater than 1.0% of mass 198	3.7
441	Present, but less than mass 443	10.6
442	Greater than 40.0% of mass 198	73.8
443	17.0 - 23.0% of mass 442	13.8 (18.8)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD009	L9	2SHHH1112	11/12/07	1415
02	SSTD008	L8	2SHH1112	11/12/07	1501
03	SSTD007	L7	2SH1112	11/12/07	1518
04	SSTD006	L6	2SMH1112	11/12/07	1535
05	SSTD005	L5	2SMM1112	11/12/07	1553
06	SSTD004	L4	2SM1112	11/12/07	1610
07	SSTD003	L3	2SML1112	11/12/07	1627
08	SSTD002	L2	2SL1112	11/12/07	1644
09	SSTD001	L1	2SLL1112	11/12/07	1702
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5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02319

Lab File ID: 2DF1114 DFTPP Injection Date: 11/14/07

Instrument ID: A4AG2 DFTPP Injection Time: 0851

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	31.6
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	38.3
70	Less than 2.0% of mass 69	0.2 (0.6)1
127	40.0 - 60.0% of mass 198	44.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.5
275	10.0 - 30.0% of mass 198	29.5
365	Greater than 1.0% of mass 198	3.3
441	Present, but less than mass 443	14.1
442	Greater than 40.0% of mass 198	98.0
443	17.0 - 23.0% of mass 442	18.9 (19.3)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD006	L6	2SMH1114	11/14/07	0902
02	SB-334-0809	KAFRR1AD	KAFRR1AD	11/14/07	1339
03	SB-337-0506	KAFR61AF	KAFR61AF	11/14/07	1356
04	SB-337-0506	KAFR61AJ	KAFR61AJ	11/14/07	1414
05	SB-337-0506	KAFR61AK	KAFR61AK	11/14/07	1431
06	SB-337-0809	KAFR91AD	KAFR91AD	11/14/07	1448
07	SB-338-0506	KAFTD1AD	KAFTD1AD	11/14/07	1506
08	SB-334-0203	KAFRP1AD	KAFRP1AD	11/14/07	1523
09					
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20					
21					
22					

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 07-NOV-2007 11:59
End Cal Date : 07-NOV-2007 14:19
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\cansvr11\dd\chem\MSS\a4ag2.i\71107A.b\8270p.m
Last Edit : 07-Nov-2007 14:31 a4ag2.i
Curve Type : Average

Compound	0.05000 Level 1	0.25000 Level 2	0.50000 Level 3	1.000 Level 4	2.500 Level 5	5.000 Level 6	RRF	% RSD	
	7.500 Level 7	10.000 Level 8	12.500 Level 9						
144 Hexachlorophene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
145 Hexachlorophene product	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
146 Benzo(a)pyrene	1.12709	0.92086	0.96568	1.02348	1.07196	1.06275			
	1.07289	1.09888	1.18295				1.05850	7.544	
148 3-Methylcholanthrene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
149 Indeno(1,2,3-cd)pyrene	1.23077	0.98850	1.08192	1.14428	1.20665	1.16724			
	1.19635	1.20080	1.31012				1.16963	7.864	
150 Dibenz(a,h)anthracene	0.99378	0.86680	0.94317	1.00032	1.04639	1.00367			
	1.02339	1.04945	1.12755				1.00606	7.211	
151 Benzo(g,h,i)perylene	1.04615	0.85886	0.89442	0.96318	1.01733	0.99154			
	1.02388	1.03995	1.13772				0.99700	8.390	
199 3-Picoline	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
200 N,N-Dimethylacetamide	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
201 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
202 Diphenyl	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4ag2.i Injection Date: 07-NOV-2007 14:36
Lab File ID: ICVTCL.D Init. Cal. Date(s): 07-NOV-2007 07-NOV-2007
Analysis Type: Init. Cal. Times: 11:59 14:19
Lab Sample ID: ICVTCL Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4ag2.i\71107A.b\8270p.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
146 Benzo(a)pyrene	1.05850	1.09538	1.09538	0.010	-3.48344	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.16963	1.20303	1.20303	0.010	-2.85586	50.00000	Averaged
150 Dibenz(a,h)anthracene	1.00606	1.03201	1.03201	0.010	-2.58005	50.00000	Averaged
151 Benzo(g,h,i)perylene	0.99700	1.01699	1.01699	0.010	-2.00495	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.29450	0.28547	0.28547	0.010	3.06601	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.16297	1.21704	1.21704	0.010	-4.64986	50.00000	Averaged
$ 156 Terphenyl-d14	0.78703	0.80152	0.80152	0.010	-1.84010	50.00000	Averaged
$ 157 Phenol-d5	1.61714	1.61786	1.61786	0.010	-0.04441	50.00000	Averaged
$ 158 2-Fluorophenol	1.20781	1.17679	1.17679	0.010	2.56802	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	0.13939	0.14179	0.14179	0.010	-1.72207	50.00000	Averaged
$ 186 2-Chlorophenol-d4	1.38420	1.38057	1.38057	0.010	0.26209	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.85089	0.87003	0.87003	0.010	-2.24927	50.00000	Averaged
M 195 Cresols, total	2.72897	2.70834	2.70834	0.010	0.75613	50.00000	Averaged
101 Diphenylamine	0.52756	0.53734	0.53734	0.010	-1.85319	50.00000	Averaged

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 07-NOV-2007 11:59
End Cal Date : 12-NOV-2007 19:37
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\cansvr11\dd\chem\MSS\a4ag2.i\71112A.b\8270p.m
Last Edit : 13-Nov-2007 06:38 a4ag2.i
Curve Type : Average

Compound	0.05000 Level 1	0.25000 Level 2	0.50000 Level 3	1.000 Level 4	2.500 Level 5	5.000 Level 6	RRF	% RSD	
	7.500 Level 7	10.000 Level 8	12.500 Level 9						
144 Hexachlorophene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
145 Hexachlorophene product	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
146 Benzo(a)pyrene	1.17715	0.94135	0.93744	0.98685	1.07030	1.08026			
	1.09511	1.13328	1.23079				1.07251	9.500	
148 3-Methylcholanthrene	+++++	0.40319	0.42096	0.44110	0.46358	0.50005			
	0.53622	0.54317	0.57989				0.48602	13.108	<-
149 Indeno(1,2,3-cd)pyrene	1.26282	1.03457	1.03636	1.12042	1.21208	1.22966			
	1.23431	1.28699	1.41555				1.20364	10.198	
150 Dibenz(a,h)anthracene	1.05002	0.88477	0.90175	0.95352	1.04251	1.06283			
	1.07346	1.12024	1.23056				1.03552	10.524	
151 Benzo(g,h,i)perylene	1.07657	0.89107	0.88191	0.92860	0.99012	1.00869			
	1.00682	1.06352	1.15222				0.99995	8.959	
199 3-Picoline	+++++	1.39493	1.38647	1.41909	1.33832	1.39547			
	1.35978	1.34281	1.38887				1.37822	2.055	<-
200 N,N-Dimethylacetamide	+++++	1.04866	0.95729	1.06025	1.01502	1.05575			
	1.05141	1.05913	1.06872				1.03953	3.547	<-
201 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
202 Diphenyl	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4ag2.i Injection Date: 12-NOV-2007 17:19
Lab File ID: ICVTCL.D Init. Cal. Date(s): 07-NOV-2007 12-NOV-2007
Analysis Type: Init. Cal. Times: 11:59 19:37
Lab Sample ID: ICVTCL Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4ag2.i\71112A.b\8270p.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
146 Benzo(a)pyrene	1.07251	1.07284	1.07284	0.010	-0.03088	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.20364	1.21565	1.21565	0.010	-0.99831	50.00000	Averaged
150 Dibenz(a,h)anthracene	1.03552	1.05140	1.05140	0.010	-1.53341	50.00000	Averaged
151 Benzo(g,h,i)perylene	0.99995	0.99014	0.99014	0.010	0.98055	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.33217	0.34278	0.34278	0.010	-3.19274	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.19234	1.25159	1.25159	0.010	-4.96893	50.00000	Averaged
$ 156 Terphenyl-d14	0.77436	0.85776	0.85776	0.010	-10.77064	50.00000	Averaged
$ 157 Phenol-d5	1.54993	1.50639	1.50639	0.010	2.80922	50.00000	Averaged
$ 158 2-Fluorophenol	1.16146	1.16288	1.16288	0.010	-0.12277	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	5.00000	5.00434	0.18016	0.010	-0.08678	0.000e+000	Quadratic
$ 186 2-Chlorophenol-d4	1.28549	1.27405	1.27405	0.010	0.88999	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.81881	0.80821	0.80821	0.010	1.29506	50.00000	Averaged
M 195 Cresols, total	2.49770	2.40133	2.40133	0.010	3.85869	50.00000	Averaged
101 Diphenylamine	0.49038	0.48872	0.48872	0.010	0.33948	50.00000	Averaged

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4ag2.i
Lab File ID: 2SMH1114.D
Analysis Type:
Lab Sample ID: L6
Method: \\cansvr11\dd\chem\MSS\a4ag2.i\71114A.b\8270p.m

Injection Date: 14-NOV-2007 09:02
Init. Cal. Date(s): 07-NOV-2007 12-NOV-2007
Init. Cal. Times: 11:59 19:37
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
146 Benzo(a)pyrene	1.07251	1.02575	1.02575	0.010	4.35952	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.20364	1.18344	1.18344	0.010	1.67785	50.00000	Averaged
150 Dibenz(a,h)anthracene	1.03552	1.01243	1.01243	0.010	2.22980	50.00000	Averaged
151 Benzo(g,h,i)perylene	0.99995	0.98626	0.98626	0.010	1.36853	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.33217	0.31873	0.31873	0.010	4.04665	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.19234	1.22377	1.22377	0.010	-2.63613	50.00000	Averaged
$ 156 Terphenyl-d14	0.77436	0.83861	0.83861	0.010	-8.29809	50.00000	Averaged
$ 157 Phenol-d5	1.54993	1.46871	1.46871	0.010	5.24058	50.00000	Averaged
$ 158 2-Fluorophenol	1.16146	1.12933	1.12933	0.010	2.76580	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	5.00000	5.28710	0.19149	0.010	-5.74208	0.000e+000	Quadratic
$ 186 2-Chlorophenol-d4	1.28549	1.28150	1.28150	0.010	0.31006	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.81881	0.84254	0.84254	0.010	-2.89865	50.00000	Averaged
M 195 Cresols, total	2.49770	2.49305	2.49305	0.010	0.18625	50.00000	Averaged
101 Diphenylamine	0.49038	0.49453	0.49453	0.010	-0.84599	50.00000	Averaged

8B
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02319

Lab File ID (Standard): 2SMH1107 Date Analyzed: 11/07/07

Instrument ID: A4AG2 Time Analyzed: 1253

		IS1 (DCB) AREA #	RT	IS2 (NPT) AREA #	RT	IS3 (ANT) AREA #	RT
	12 HOUR STD	412269	3.61	1912554	4.51	1013623	5.78
	UPPER LIMIT	824538	4.11	3825108	5.01	2027246	6.28
	LOWER LIMIT	206135	3.11	956277	4.01	506812	5.28
	EPA SAMPLE NO.						
01	KAGR1BLK	394466	3.61	1818689	4.51	998621	5.78
02	KAGR1CHK	395843	3.61	1863317	4.51	994288	5.78
03	SB-333-0203	428762	3.61	1973372	4.51	1087904	5.78
04	SB-333-0306	419898	3.61	1981771	4.51	1068701	5.78
05	SB-333-0809	381117	3.61	1811286	4.51	1006049	5.78
06	SB-336-0203	388787	3.61	1806353	4.51	1012191	5.77
07	SB-334-0506	353707	3.61	1680894	4.51	948314	5.78
08	SB-336-0506	415430	3.61	1965072	4.51	1091446	5.78
09	SB-335-0203	410412	3.61	1993203	4.51	1102053	5.78
10	SB-335-0506	349103	3.61	1732254	4.51	968277	5.78
11	SB-335-0809	345366	3.61	1701368	4.51	997861	5.78
12	SB-336-0809	366218	3.61	1751894	4.51	1040639	5.78
13	SB-337-0203	344316	3.61	1719568	4.51	990815	5.78
14	SB-338-0203	310040	3.61	1543044	4.51	880029	5.78
15	SB-338-0809	390349	3.61	1857912	4.51	1078935	5.78
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02319

Lab File ID (Standard): 2SMH1107 Date Analyzed: 11/07/07

Instrument ID: A4AG2 Time Analyzed: 1253

		IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
	12 HOUR STD	1697953	6.87	1655396	8.83	1649714	10.32
	UPPER LIMIT	3395906	7.37	3310792	9.33	3299428	10.82
	LOWER LIMIT	848977	6.37	827698	8.33	824857	9.82
	EPA SAMPLE NO.						
01	KAGR1BLK	1698695	6.87	1624225	8.83	1598890	10.32
02	KAGR1CHK	1694647	6.87	1670789	8.84	1639282	10.32
03	SB-333-0203	1831784	6.87	1730231	8.84	1720508	10.32
04	SB-333-0306	1811404	6.87	1734488	8.83	1681915	10.32
05	SB-333-0809	1722413	6.87	1641254	8.83	1614425	10.32
06	SB-336-0203	1768010	6.87	1715230	8.83	1687480	10.32
07	SB-334-0506	1566285	6.87	1452217	8.84	1415104	10.34
08	SB-336-0506	1906713	6.87	1779305	8.84	1720010	10.32
09	SB-335-0203	1895079	6.87	1736478	8.84	1702237	10.33
10	SB-335-0506	1618562	6.87	1478925	8.85	1415193	10.35
11	SB-335-0809	1772195	6.87	1677413	8.84	1595295	10.33
12	SB-336-0809	1802746	6.87	1723215	8.84	1640504	10.33
13	SB-337-0203	1744364	6.87	1654518	8.84	1578371	10.33
14	SB-338-0203	1558684	6.87	1444143	8.84	1371662	10.34
15	SB-338-0809	1870009	6.87	1726601	8.84	1636486	10.34
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8B
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02319

Lab File ID (Standard): 2SMH1114 Date Analyzed: 11/14/07

Instrument ID: A4AG2 Time Analyzed: 0902

		IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
	12 HOUR STD	385050	3.63	1724203	4.52	965296	5.80
	UPPER LIMIT	770100	4.13	3448406	5.02	1930592	6.30
	LOWER LIMIT	192525	3.13	862102	4.02	482648	5.30
	EPA SAMPLE NO.						
01	SB-334-0809	218311	3.62	962581	4.52	571204	5.79
02	SB-337-0506	324127	3.63	1463322	4.52	871920	5.80
03	SB-337-0506	362774	3.63	1630873	4.52	977235	5.80
04	SB-337-0506	407838	3.63	1750265	4.53	1031598	5.80
05	SB-337-0809	374081	3.63	1593087	4.52	907456	5.80
06	SB-338-0506	346798	3.63	1497298	4.52	865858	5.80
07	SB-334-0203	304952	3.63	1350696	4.53	789778	5.80
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8C
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02319

Lab File ID (Standard): 2SMH1114 Date Analyzed: 11/14/07

Instrument ID: A4AG2 Time Analyzed: 0902

		IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
	12 HOUR STD	1751202	6.88	1849318	8.85	1864648	10.34
	UPPER LIMIT	3502404	7.38	3698636	9.35	3729296	10.84
	LOWER LIMIT	875601	6.38	924659	8.35	932324	9.84
	EPA SAMPLE NO.						
01	SB-334-0809	1135026	6.88	1291663	8.86	1195813	10.40
02	SB-337-0506	1639493	6.88	1743035	8.85	1764202	10.35
03	SB-337-0506	1850560	6.88	1979097	8.84	2021257	10.35
04	SB-337-0506	1970678	6.88	2160808	8.85	2161723	10.35
05	SB-337-0809	1825820	6.88	2039935	8.84	2043025	10.35
06	SB-338-0506	1743170	6.88	1955631	8.85	1967652	10.35
07	SB-334-0203	1513261	6.88	1770858	8.85	1828404	10.36
08							
09							
10							
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17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

SAMPLE CALC **SAMPLE ID: SB-334-0203** **COMPOUND: BAP**

IS AREA	DILUTION	COMPOUND OF INTEREST AREA	IS AMOUNT (NG)	Final Extract Volume (UL)	AVE RRF	PERCENT SOLIDS	AMOUNT INJECTED (UL)	CONCENTRATION PPB
1828404	1	559984	2	2000	1.0725	0.86	0.5	88.55

Sample Amount (g)
30

Tetra Tech NUS, Inc

Client Sample ID: SB-334-0203

GC/MS Semivolatiles

Lot-Sample #...:	A7K020319-004	**Work Order #...:**	KAFRP1AD	**Matrix.....:**	SO
Date Sampled...:	11/01/07 09:35	**Date Received..:**	11/02/07		
Prep Date.....:	11/04/07	**Analysis Date..:**	11/14/07		
Prep Batch #...:	7307084				
Dilution Factor:	1	**Initial Wgt/Vol:**	30 g	**Final Wgt/Vol..:**	2 mL
% Moisture.....:	14	**Method.....:**	SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzo(a)pyrene	**88 J**	**380**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	50	(24 - 112)
2-Fluorobiphenyl	65	(34 - 110)
Terphenyl-d14	89	(41 - 119)
Phenol-d5	62	(28 - 110)
2-Fluorophenol	65	(26 - 110)
2,4,6-Tribromophenol	74	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

STL North Canton

Semivolatile REPORT SW-846 Method 8270

Data file : \\cansvr11\dd\chem\MSS\a4ag2.i\71114A.b\KAFRP1AD.D
Lab Smp Id: KAFRP1AD Client Smp ID: SB-334-0203
Inj Date : 14-NOV-2007 15:23
Operator : 046900 Inst ID: a4ag2.i
Smp Info : KAFRP1AD,71114A.b,8270P,BAP.SUB
Misc Info :
Comment :
Method : \\cansvr11\dd\chem\MSS\a4ag2.i\71114A.b\8270p.m
Meth Date : 15-Nov-2007 12:16 hulat Quant Type: ISTD
Cal Date : 12-NOV-2007 17:54 Cal File: 2AHH1112.D
Als bottle: 24
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: BAP.SUB
Target Version: 4.14
Processing Host: CANPMSSV04

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	0.50000	Volume injected (uL)
Ws	30.000	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	FINAL (ug/kg)	
* 1 1,4-Dichlorobenzene-d4	152	3.630	3.630	(1.000)	304952	2.00000		(Q)
* 2 Naphthalene-d8	136	4.525	4.524	(1.000)	1350696	2.00000		
* 3 Acenaphthene-d10	164	5.795	5.795	(1.000)	789778	2.00000		
* 4 Phenanthrene-d10	188	6.883	6.883	(1.000)	1513261	2.00000		
* 5 Chrysene-d12	240	8.848	8.848	(1.000)	1770858	2.00000		
* 6 Perylene-d12	264	10.359	10.342	(1.000)	1828404	2.00000		
146 Benzo(a)pyrene	252	10.289	10.277	(0.993)	559984	0.57113	76.150	
$ 154 Nitrobenzene-d5	82	4.007	4.007	(0.886)	556718	2.48168	330.89	
$ 155 2-Fluorobiphenyl	172	5.283	5.283	(0.912)	1539629	3.26995	435.99	
$ 156 Terphenyl-d14	244	8.024	8.018	(0.907)	3054032	4.45430	593.91	
$ 157 Phenol-d5	99	3.342	3.330	(0.921)	1102579	4.66547	622.06	
$ 158 2-Fluorophenol	112	2.766	2.754	(0.762)	863572	4.87634	650.18	
$ 159 2,4,6-Tribromophenol	330	6.366	6.365	(1.098)	400079	5.56163	741.55	
$ 186 2-Chlorophenol-d4	132	3.478	3.477	(0.958)	974415	4.97134	662.84	
$ 187 1,2-Dichlorobenzene-d4	152	3.742	3.742	(1.031)	298797	2.39327	319.10	

QC Flag Legend

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**M.MARTIN**	**DATE:**	**DECEMBER 13, 2007**
FROM:	**TERRI L. SOLOMON**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – MERCURY, PERCENT SOLIDS**
LOCKHEED MARTIN MIDDLE RIVER
SAMPLE DELIVERY GROUP (SDG) – 7K02319

SAMPLES: 18/Soils/

SB-333-0203	SB-333-0506	SB-333-0809
SB-334-0203	SB-334-0506	SB-334-0809
SB-335-0203	SB-335-0506	SB-335-0809
SB-336-0203	SB-336-0506	SB-336-0809
SB-337-0203	SB-337-0506	SB-337-0809
SB-338-0203	SB-338-0506	SB-338-0809

Overview

The sample set for Lockheed Martin Middle River, SDG 7K02319, consists of eighteen (18) soil environmental samples. No field duplicate pairs were included within this SDG.

All samples were analyzed for mercury and percent solids. The samples were collected by Tetra Tech NUS on November 1, 2007 and analyzed by Test America. Mercury analyses were conducted using SW-846 method 7471A. Percent solid analyses were conducted using EPA method 160.3 MOD.

The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, initial and continuing calibration verification results, laboratory method / preparation blank results, matrix spike recoveries, laboratory duplicate results, detection limits and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems – None.

Minor Problems

- The following contaminant was detected in the laboratory method/preparation blanks at the following maximum concentration:

Analyte	Maximum Concentration	Action Level
Mercury[1]	0.019 mg/kg	0.095 mg/kg

[1] Maximum concentration present in a soil preparation blank.

An action level of 5X the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the blank action level reported for mercury were qualified "B" as a result of laboratory blank contamination.

Notes.

The contract required detection limit (CRDL) percent recovery for mercury was > 120% quality control limit affecting all samples. No validation actions were required as all sample results were either > 2X CRDL or were qualified for blank contamination.

Executive Summary

Laboratory Performance: Mercury was present in the laboratory preparation blank.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to Region III modifications to the "National Functional Guidelines for Inorganic Data Validation", April 1993.

The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Terri L. Solomon
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS-GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O - Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DOT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient r < 0.995
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00998

SDG: 7K02319 MEDIA: SOIL DATA FRACTION: M

nsample	SB-333-0203	nsample	SB-333-0506	nsample	SB-333-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020319001	lab_id	A7K020319002	lab_id	A7K020319003
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	81.0	Pct_Solids	86.0	Pct_Solids	87.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.062	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.036	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.025	B	A

PROJ_NO: 00998

SDG: 7K02319 MEDIA: SOIL DATA FRACTION: M

nsample	SB-334-0203	nsample	SB-334-0506	nsample	SB-334-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020319004	lab_id	A7K020319005	lab_id	A7K020319006
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	86.0	Pct_Solids	81.0	Pct_Solids	78.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.38		

Parameter	Result	Val Qual	Qual Code
MERCURY	0.07	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.061	B	A

PROJ_NO: 00998

SDG: 7K02319 MEDIA: SOIL DATA FRACTION: M

nsample	SB-335-0203
samp_date	11/1/2007
lab_id	A7K020319007
qc_type	NM
units	MG/KG
Pct_Solids	83.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.3		

nsample	SB-335-0506
samp_date	11/1/2007
lab_id	A7K020319008
qc_type	NM
units	MG/KG
Pct_Solids	83.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.06	B	A

nsample	SB-335-0809
samp_date	11/1/2007
lab_id	A7K020319009
qc_type	NM
units	MG/KG
Pct_Solids	83.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.027	B	A

PROJ_NO: 00998

SDG: 7K02319 MEDIA: SOIL DATA FRACTION: M

nsample	SB-336-0203	nsample	SB-336-0506	nsample	SB-336-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020319010	lab_id	A7K020319011	lab_id	A7K020319012
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	87.0	Pct_Solids	79.0	Pct_Solids	82.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.066	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.04	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.35		

PROJ_NO: 00998

SDG: 7K02319 MEDIA: SOIL DATA FRACTION: M

nsample	SB-337-0203	nsample	SB-337-0506	nsample	SB-337-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020319013	lab_id	A7K020319014	lab_id	A7K020319015
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	85.0	Pct_Solids	80.0	Pct_Solids	79.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.4		

Parameter	Result	Val Qual	Qual Code
MERCURY	0.093	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.82		

PROJ_NO: 00998

SDG: 7K02319 MEDIA: SOIL DATA FRACTION: M

nsample	SB-338-0203	nsample	SB-338-0506	nsample	SB-338-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020319016	lab_id	A7K020319017	lab_id	A7K020319018
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	82.0	Pct_Solids	82.0	Pct_Solids	82.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.42		

Parameter	Result	Val Qual	Qual Code
MERCURY	0.042	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.055	B	A

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFRC **Client ID:** SB-333-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 18.967

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.12	0.062	B	1	CVAA	11/6/2007	11:55

Comments: Lot #: A7K020319 Sample #: 1

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFRL **Client ID:** SB-333-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 13.557

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.036	B	1	CVAA	11/6/2007	11:49

Comments: Lot #: A7K020319 Sample #: 2

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFRM **Client ID:** SB-333-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 13.441

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.025	B	1	CVAA	11/6/2007	12:02

Comments: Lot #: A7K020319 Sample #: 3

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFRP **Client ID:** SB-334-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 13.721

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.38		1	CVAA	11/6/2007	11:43

Comments: Lot #: A7K020319 Sample #: 4

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFRQ **Client ID:** SB-334-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 19.34

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.12	0.070	B	1	CVAA	11/6/2007	11:40

Comments: Lot #: A7K020319 Sample #: 5

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFRR **Client ID:** SB-334-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 21.601

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.13	0.061	B	1	CVAA	11/6/2007	12:01

Comments: Lot #: A7K020319 Sample #: 6

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFRT **Client ID:** SB-335-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 16.536

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.30		1	CVAA	11/6/2007	11:42

Comments: Lot #: A7K020319 Sample #: 7

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFRV **Client ID:** SB-335-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 17.362

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.060	B	1	CVAA	11/6/2007	11:38

Comments: Lot #: A7K020319 Sample #: 8

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFR0 **Client ID:** SB-335-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 16.786

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.027	B	1	CVAA	11/6/2007	11:39

Comments: Lot #: A7K020319 Sample #: 9

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFR1 **Client ID:** SB-336-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 12.695

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.066	B	1	CVAA	11/6/2007	11:52

Comments: Lot #: A7K020319 Sample #: 10

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFR2 **Client ID:** SB-336-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 20.755

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.13	0.040	B	1	CVAA	11/6/2007	11:56

Comments: Lot #: A7K020319 Sample #: 11

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFR4 **Client ID:** SB-336-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 18.321

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.35		1	CVAA	11/6/2007	11:51

Comments: Lot #: A7K020319 Sample #: 12

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFR5 **Client ID:** SB-337-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 15.165

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.40		1	CVAA	11/6/2007	11:50

Comments: Lot #: A7K020319 Sample #: 13

5.21.0

E Serial dilution percent difference not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFR6 **Client ID:** SB-337-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 19.654

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.12	0.093	B	1	CVAA	11/6/2007	11:35

Comments: Lot #: A7K020319 Sample #: 14

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFR9 **Client ID:** SB-337-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 20.561

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.13	0.82		1	CVAA	11/6/2007	11:53

Comments: Lot #: A7K020319 Sample #: 15

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFTC **Client ID:** SB-338-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 17.571

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.42		1	CVAA	11/6/2007	11:47

Comments: Lot #: A7K020319 Sample #: 16

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFTD **Client ID:** SB-338-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 18.302

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.042	B	1	CVAA	11/6/2007	11:57

Comments: Lot #: A7K020319 Sample #: 17

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFTE **Client ID:** SB-338-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 18.161

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.055	B	1	CVAA	11/6/2007	11:48

Comments: Lot #: A7K020319 Sample #: 18

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Tetra Tech NUS, Inc

Client Sample ID: SB-333-0203

General Chemistry

Lot-Sample #...: A7K020319-001 Work Order #...: KAFRC Matrix.....: SO
Date Sampled...: 11/01/07 09:15 Date Received..: 11/02/07
% Moisture.....: 19

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	81.0	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-333-0506

General Chemistry

Lot-Sample #...: A7K020319-002 Work Order #...: KAFRL Matrix.....: SO
Date Sampled...: 11/01/07 09:17 Date Received..: 11/02/07
% Moisture.....: 14

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	86.4	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-333-0809

General Chemistry

Lot-Sample #...: A7K020319-003 Work Order #...: KAFRM Matrix.....: SO
Date Sampled...: 11/01/07 09:19 Date Received..: 11/02/07
% Moisture.....: 13

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	86.6	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-334-0203

General Chemistry

Lot-Sample #...: A7K020319-004 Work Order #...: KAFRP Matrix.....: SO
Date Sampled...: 11/01/07 09:35 Date Received..: 11/02/07
% Moisture.....: 14

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	86.3	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-334-0506

General Chemistry

Lot-Sample #...: A7K020319-005 Work Order #...: KAFRQ Matrix.....: SO
Date Sampled...: 11/01/07 09:37 Date Received..: 11/02/07
% Moisture.....: 19

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	80.7	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-334-0809

General Chemistry

Lot-Sample #...: A7K020319-006 Work Order #...: KAFRR Matrix.....: SO
Date Sampled...: 11/01/07 09:39 Date Received..: 11/02/07
% Moisture.....: 22

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	78.4	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-335-0203

General Chemistry

Lot-Sample #...: A7K020319-007 **Work Order #...:** KAFRT **Matrix.....:** SO
Date Sampled...: 11/01/07 09:55 **Date Received..:** 11/02/07
% Moisture.....: 17

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	83.5	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-335-0506

General Chemistry

Lot-Sample #...: A7K020319-008 **Work Order #...:** KAFRV **Matrix.....:** SO
Date Sampled...: 11/01/07 09:57 **Date Received..:** 11/02/07
% Moisture.....: 17

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	82.6	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-335-0809

General Chemistry

Lot-Sample #...: A7K020319-009 Work Order #...: KAFR0 Matrix.....: SO
Date Sampled...: 11/01/07 09:59 Date Received..: 11/02/07
% Moisture.....: 17

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	83.2	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-336-0203

General Chemistry

Lot-Sample #...: A7K020319-010 **Work Order #...:** KAFR1 **Matrix.....:** SO
Date Sampled...: 11/01/07 12:10 **Date Received..:** 11/02/07
% Moisture.....: 13

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	87.3	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-336-0506

General Chemistry

Lot-Sample #...: A7K020319-011 **Work Order #...:** KAFR2 **Matrix.....:** SO
Date Sampled...: 11/01/07 12:12 **Date Received..:** 11/02/07
% Moisture.....: 21

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	79.2	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-336-0809

General Chemistry

Lot-Sample #...: A7K020319-012 Work Order #...: KAFR4 Matrix.....: SO
Date Sampled...: 11/01/07 12:14 Date Received..: 11/02/07
% Moisture.....: 18

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	81.7	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-337-0203

General Chemistry

Lot-Sample #...: A7K020319-013 **Work Order #...:** KAFR5 **Matrix.....:** SO
Date Sampled...: 11/01/07 12:20 **Date Received..:** 11/02/07
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	84.8	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-337-0506

General Chemistry

Lot-Sample #...: A7K020319-014 Work Order #...: KAFR6 Matrix.....: SO
Date Sampled...: 11/01/07 12:22 Date Received..: 11/02/07
% Moisture.....: 20

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	80.3	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-337-0809

General Chemistry

Lot-Sample #...: A7K020319-015 **Work Order #...:** KAFR9 **Matrix.....:** SO
Date Sampled...: 11/01/07 12:24 **Date Received..:** 11/02/07
% Moisture.....: 21

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	79.4	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-338-0203

General Chemistry

Lot-Sample #...: A7K020319-016 **Work Order #...:** KAFTC **Matrix.....:** SO
Date Sampled...: 11/01/07 12:30 **Date Received..:** 11/02/07
% Moisture.....: 18

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	82.4	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-338-0506

General Chemistry

Lot-Sample #...: A7K020319-017 **Work Order #...:** KAFTD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:32 **Date Received..:** 11/02/07
% Moisture.....: 18

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	81.7	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-338-0809

General Chemistry

Lot-Sample #...: A7K020319-018 Work Order #...: KAFTE Matrix.....: SO
Date Sampled...: 11/01/07 12:34 Date Received..: 11/02/07
% Moisture.....: 18

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	81.8	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

APPENDIX C
SUPPORT DOCUMENTATION

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 112IC00998

LMC MR

Lot #: A7K020319
SDG #: 7K02319

Michael Martin

Tetra Tech NUS Inc
20251 Century Blvd
Suite 200
Germantown, MD 20874

TESTAMERICA LABORATORIES, INC.

Patrick J. O'Meara
Project Manager

November 23, 2007

CASE NARRATIVE

7K02319

The following report contains the analytical results for eighteen solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc. from the LMC MR Site, project number 112IC00998. The samples were received November 02, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID's: A7K020319.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Dev Murali, John Poremba, and Michael Martin on November 20, 2007. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 0.1 and 0.6°C.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for SB-337-0506 had RPD's and recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

Sample(s) SB-337-0506 had elevated reporting limits due to matrix interferences.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

ANALYTICAL METHODS SUMMARY

7K02319

PARAMETER	ANALYTICAL METHOD
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Total Residue as Percent Solids	MCAWW 160.3 MOD

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

Chain of Custody Record

SEVERN TRENT STL
Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client: TETRA TECH	Project Manager: M. MARTIN	Date: 11/1/07	Chain of Custody Number: 322997
Address: 20251 CENTURY BLVD #200	Telephone Number (Area Code)/Fax Number: 301-528-3022	Lab Number:	Page 2 of
City: GERMANTOWN · State: MD · Zip Code: 20874	Site Contact: S. HADLEY · Lab Contact: K. IVES		
Project Name and Location (State): LMC MR	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: 112JC00998			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: LL 8270 *	Hg	Special Instructions/ Conditions of Receipt
SB-331-0203	11/1/07	0850				X		2						X	X	* benzo(a)pyrene
331-0506		0852														
331-0809		0854														
332-0203		0905														
332-0506		0907														
332-0809		0909														
333-0203		0915														
333-0506		0917														
333-0809		0919														
334-0203		0935														
334-0506		0937														
SB-334-0809	11/1/07	0939				X		2						X	X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STND

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: [signature]	11/1/07	1600	1. Received By: [signature]	11/1/07	1600
2. Relinquished By: [signature]	11-1-07	17:05	2. Received By: [signature]	11/2/07	0945
3. Relinquished By:			3. Received By:		

Comments:

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica North Canton

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client: TETRA TECH	Project Manager: M. MARTIN	Date: 11/1/07	Chain of Custody Number: 322998
Address: 20251 CENTURY BLVD #200	Telephone Number (Area Code)/Fax Number: 301-528-3022	Lab Number:	Page 3 of
City: GERMANTOWN / State: MD / Zip Code: 20874	Site Contact: S. HUDLEY	Lab Contact: K. IVES	
Project Name and Location (State): LMC MR	Carrier/Waybill Number: COURIER		
Contract/Purchase Order/Quote No.: 112IC00998			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: 8270*	Hg	Special Instructions/ Conditions of Receipt
SB-335-0203	11/1/07	0955				X	2						X	X	* benzo(a) pyrene
SB-335-0506		0957				X									
335-0809		0959				X									
336-0203		1210				X									
336-0506		1212				X									
336-0809		1214				X									
337-0203		1220				X	2								
337-0506 (MS/SD)		1222				X									MS/SD
337-0809		1224				X									
338-0203		1230				X									
338-0506		1232				X									
SB-338-0809	11/1/07	1234				X							X	X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STND

QC Requirements (Specify)

1. Relinquished By	Date: 11/1/07	Time: 1600	1. Received By	Date: 11-1-07	Time: 1600
2. Relinquished By	Date: 11-1-07	Time: 17:05	2. Received By	Date: 11/2/07	Time: 0945
3. Relinquished By	Date:	Time:	3. Received By	Date:	Time:

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

HOLDTIME

SDG 7K02319

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-337-0203	A7K020319013	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-333-0809	A7K020319003	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-334-0203	A7K020319004	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-334-0809	A7K020319006	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-335-0506	A7K020319008	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-335-0809	A7K020319009	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-336-0203	A7K020319010	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-333-0506	A7K020319002	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-336-0809	A7K020319012	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-334-0506	A7K020319005	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-337-0506	A7K020319014	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-337-0809	A7K020319015	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-338-0203	A7K020319016	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-338-0506	A7K020319017	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-338-0809	A7K020319018	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-333-0203	A7K020319001	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-336-0506	A7K020319011	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-335-0203	A7K020319007	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
PCS	%	SB-336-0809	A7K020319012	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-338-0506	A7K020319017	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-338-0809	A7K020319018	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-338-0203	A7K020319016	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-337-0809	A7K020319015	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-337-0203	A7K020319013	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-333-0203	A7K020319001	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-336-0506	A7K020319011	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-336-0203	A7K020319010	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-333-0809	A7K020319003	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-337-0506	A7K020319014	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-333-0506	A7K020319002	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-335-0809	A7K020319009	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-334-0203	A7K020319004	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-334-0506	A7K020319005	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCS	%	SB-334-0809	A7K020319006	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-335-0203	A7K020319007	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-335-0506	A7K020319008	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
OS	%	SB-338-0809	A7K020319018	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-335-0506	A7K020319008	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-333-0506	A7K020319002	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-333-0809	A7K020319003	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-334-0203	A7K020319004	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13
OS	%	SB-334-0506	A7K020319005	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-334-0809	A7K020319006	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13
OS	%	SB-335-0203	A7K020319007	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-333-0203	A7K020319001	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-338-0506	A7K020319017	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13
OS	%	SB-336-0203	A7K020319010	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-336-0506	A7K020319011	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-336-0809	A7K020319012	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-337-0203	A7K020319013	NM	11/1/2007	11/4/2007	11/7/2007	3	3	6
OS	%	SB-337-0506DL	A7K020319014	NM	11/1/2007	11/4/2007	11/14/2007	3	10	13

Test America North Canton

Metals Data Reporting Form

Initial Calibration Verification Standard

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn **Acceptable Range:** 90% - 110%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck5ICV 11/6/2007 9:40 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Mercury	253.7	2.5	2.69	**107.4**								

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn **Acceptable Range:** 80% - 120%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck2CCV 11/6/2007 9:43 AM Found	% Rec	Ck2CCV 11/6/2007 11:30 AM Found	% Rec	Ck2CCV 11/6/2007 11:44 AM Found	% Rec	Ck2CCV 11/6/2007 11:59 AM Found	% Rec	Ck2CCV 11/6/2007 12:13 PM Found	% Rec
Mercury	253.7	5.0	5.22	**104.5**	4.99	**99.8**	5.03	**100.7**	5.05	**101.0**	4.99	**99.9**

Test America North Canton

Metals Data Reporting Form

Contract Required Detection Limit Standard

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn **Acceptable Range:** 50% - 150%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck3CRA\MRL 11/6/2007 9:42 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Mercury	253.7	0.2	0.29	**145.5**								

5.21.0 *Form 2B Equivalent*

Test America North Canton

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck4ICB 11/6/2007 9:41 AM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Mercury	253.7	0.6	0.1	U								

5.21.0

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck1CCB 11/6/2007 9:45 AM Found	Q	Ck1CCB 11/6/2007 11:31 AM Found	Q	Ck1CCB 11/6/2007 11:46 AM Found	Q	Ck1CCB 11/6/2007 12:00 PM Found	Q	Ck1CCB 11/6/2007 12:14 PM Found	Q
Mercury	253.7	0.6	0.1	U	0.1	U	0.1	B	0.1	U	0.1	U

5.21.0

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

Test America North Canton

Metals Data Reporting Form

Preparation Blank Results

Lab Sample ID: KAHVPB

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.017	0.10	0.019	B	1	CVAA	11/6/2007	11:32

Comments: Lot #: A7K020319

5.21.0

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

METHOD BLANK REPORT

General Chemistry

Client Lot #...: 7K02319 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids		Work Order #: KAMA51AA		MB Lot-Sample #:	A7K060000-539	
	ND	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310539
		Dilution Factor: 1				

NOTE(S):

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

Test America North Canton

Metals Data Reporting Form

Matrix Spike Sample Results

Spike Sample ID: KAFR6S

Original Sample ID: KAFR6 **Client ID:** SB-337-0506S

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 19.654

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Mercury	253.7	0.093	B	0.25		0.2074	77.2	1	1	CVAA	11/6/2007	11:35	11/6/2007	11:37

Comments: Lot #: A7K020319 Sample #: 14

5.21.0

N Spike recovery failed
NC Percent recovery was not calculated
* Duplicate analysis RPD was not within limits
E Serial dilution percent difference not within limits
U Result is less than the IDL

Form 5A Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Duplicate RPD Report

Duplicate Sample ID: KAFR6X

Original Sample ID: KAFR6 **Client ID:** SB-337-0506X

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 19.654

Element	WL/ Mass	OS Conc	Q	Dupe Conc	Q	% RPD	OS DF	Dupe DF	Instr	OS Anal Date	OS Anal Time	Dupe Anal Date	Dupe Anal Time
Mercury	253.7	0.093	B	0.049	B	0.0	1	1	CVAA	11/6/2007	11:35	11/6/2007	11:36

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A7K020319 **Work Order #...:** KAFR4-SMP **Matrix.....:** SO
KAFR4-DUP
Date Sampled...: 11/01/07 12:14 **Date Received..:** 11/02/07
% Moisture.....: 18

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #: A7K020319-012		
	81.7	75.3	%	8.2	(0-20)	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A7K020319 **Work Order #...:** KAFR6-SMP KAFR6-DUP **Matrix.....:** SO

Date Sampled...: 11/01/07 12:22 **Date Received..:** 11/02/07

% Moisture.....: 20

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #: A7K020319-014		
	80.3	81.7	%	1.6	(0-20)	MCAWW 160.3 MOD	11/06-11/07/07	7310539

Dilution Factor: 1

Test America North Canton

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: KAHVPC

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/5/2007 **Prep Batch:** 7309030

Weight: 0.60 **Volume:** 100 **Percent Moisture:** NA

Element	WL/ Mass	Spike Level	Conc	Percent Recovery	Q	Range	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.83	0.80	96.2		81-116	1	CVAA	11/6/2007	11:34

Comments: Lot #: A7K020319

5.21.0

N Spike recovery failed

NC Percent recovery was not calculated

Form 7 Equivalent

Test America North Canton

Metals Data Reporting Form

Instrument Detection Limits

Instrument: CVAA **Units:** ppb

Element	Wavelength	Reporting Limit	IDL	Date of IDL
Mercury	253.700	0.6	0.10	2/1/2007

Batch Number: **7309030**

TestAmerica Laboratories, Inc.
Metals Prep Log/ Batch Summary

Prepared By:
Lisa McGall
(e-Signature)

Prep Date: 11/05/07
Due Date: 11/16/07

Lot	Work Order			ICP Weight	ICPMS Weight	Hg Weight
A7K050000 Solid	KAHVP	B	Due Date: SDG:			0.60 g
A7K050000 Solid	KAHVP	C	Due Date: SDG:			0.60 g
A7K020319 Solid	KAFRC Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFRL Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFRM Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFRP Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFRQ Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFRR Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFRT Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFRV Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFR0 Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFR1 Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFR2 Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFR4 Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFR5 Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFR6 Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFR6 Total	S	Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFR6 Total	X	Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFR9 Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFTC Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFTD Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g
A7K020319 Solid	KAFTE Total		Due Date: 11/16/07 SDG: 7K02319			0.60 g

Batch Number: **7309030**

TestAmerica Laboratories, Inc.
Metals Prep Log/ Batch Summary

Prepared By:
Lisa McGall
(e-Signature)

Prep Date: 11/05/07
Due Date: 11/16/07

Lot	Work Order	ICP Weight	ICPMS Weight	Hg Weight
	LEVEL 2			
	BLANK AND CHECK STANDARD ON BATCH	X		
	MS/MSD AND PDS ON BATCH	X		
	CORRECT SPIKES ADDED	X		
	SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG	X		

Comments:

B-BLANK; C-CHECK SAMPLE; L-CHECK SAMPLE DUPLICATE; P-SERIAL DILUTION; S-MATRIX SPIKE SAMPLE; D-MATRIX SPIKE DUPLICATE SAMPLE

Matrix Spike Information:
KAFR6 Hg

Check Sample Information:
KAHVP Hg

Prep Method(s): SW846 7471A

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
1	STD1REP1	1	06-NOV-2007	09:05:22			H1
2	STD2REP1	1	06-NOV-2007	09:06:28			H1
3	STD3REP1	1	06-NOV-2007	09:07:43			H1
4	STD4REP1	1	06-NOV-2007	09:08:49			H1
5	STD1REP1	1	06-NOV-2007	09:25:46			H1
6	STD2REP1	1	06-NOV-2007	09:27:06			H1
7	STD3REP1	1	06-NOV-2007	09:28:41			H1
8	STD4REP1	1	06-NOV-2007	09:29:51			H1
9	STD1REP1	1	06-NOV-2007	09:33:08			H1
10	STD2REP1	1	06-NOV-2007	09:34:18			H1
11	STD3REP1	1	06-NOV-2007	09:35:36			H1
12	STD4REP1	1	06-NOV-2007	09:36:46			H1
13	STD5REP1	1	06-NOV-2007	09:37:54			H1
14	STD6REP1	1	06-NOV-2007	09:39:00			H1
15	CK5ICV	1	06-NOV-2007	09:40:12			H1
16	CK4ICB	1	06-NOV-2007	09:41:18			H1
17	CK3CRA\MRL	1	06-NOV-2007	09:42:36			H1
18	CK2CCV	1	06-NOV-2007	09:43:41			H1
19	CK1CCB	1	06-NOV-2007	09:45:06			H1
20	CK2CCV	1	06-NOV-2007	11:30:40			H1
21	CK1CCB	1	06-NOV-2007	11:31:45			H1
22	KAHVPB	1	06-NOV-2007	11:32:51	7309030	A7K050000	H1
23	KAHVPC	1	06-NOV-2007	11:34:05	7309030	A7K050000	H1
24	KAFR6	1	06-NOV-2007	11:35:19	7309030	7K02319	H1
25	KAFR6X	1	06-NOV-2007	11:36:37	7309030	7K02319	H1
26	KAFR6S	1	06-NOV-2007	11:37:41	7309030	7K02319	H1
27	KAFRV	1	06-NOV-2007	11:38:46	7309030	7K02319	H1
28	KAFR0	1	06-NOV-2007	11:39:51	7309030	7K02319	H1
29	KAFRQ	1	06-NOV-2007	11:40:58	7309030	7K02319	H1
30	KAFRT	1	06-NOV-2007	11:42:05	7309030	7K02319	H1
31	KAFRP	1	06-NOV-2007	11:43:14	7309030	7K02319	H1
32	CK2CCV	1	06-NOV-2007	11:44:42			H1
33	CK1CCB	1	06-NOV-2007	11:46:00			H1
34	KAFTC	1	06-NOV-2007	11:47:08	7309030	7K02319	H1
35	KAFTE	1	06-NOV-2007	11:48:13	7309030	7K02319	H1
36	KAFRL	1	06-NOV-2007	11:49:20	7309030	7K02319	H1
37	KAFR5	1	06-NOV-2007	11:50:29	7309030	7K02319	H1
38	KAFR4	1	06-NOV-2007	11:51:33	7309030	7K02319	H1
39	KAFR1	1	06-NOV-2007	11:52:48	7309030	7K02319	H1
40	KAFR9	1	06-NOV-2007	11:53:55	7309030	7K02319	H1
41	KAFRC	1	06-NOV-2007	11:55:00	7309030	7K02319	H1
42	KAFR2	1	06-NOV-2007	11:56:26	7309030	7K02319	H1
43	KAFTD	1	06-NOV-2007	11:57:53	7309030	7K02319	H1
44	CK2CCV	1	06-NOV-2007	11:59:00			H1

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#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
45	CK1CCB	1	06-NOV-2007	12:00:08			H1
46	KAFRR	1	06-NOV-2007	12:01:13	7309030	7K02319	H1
47	KAFRM	1	06-NOV-2007	12:02:21	7309030	7K02319	H1
48	KAHVRB	1	06-NOV-2007	12:03:26	7309031	A7K050000	H1
49	KAHVRC	1.4	06-NOV-2007	12:04:32	7309031	A7K050000	H1
50	KAFVW	1	06-NOV-2007	12:05:49	7309031	7K02321	H1
51	KAFVWX	1	06-NOV-2007	12:06:56	7309031	7K02321	H1
52	KAFVWS	1	06-NOV-2007	12:08:04	7309031	7K02321	H1
53	KAFV0	1	06-NOV-2007	12:09:13	7309031	7K02321	H1
54	KAFVA	1	06-NOV-2007	12:10:43	7309031	7K02321	H1
55	KAFT2	1	06-NOV-2007	12:12:02	7309031	7K02321	H1
56	CK2CCV	1	06-NOV-2007	12:13:13			H1
57	CK1CCB	1	06-NOV-2007	12:14:17			H1
58	KAFVF	1	06-NOV-2007	12:15:44	7309031	7K02321	H1
59	KAFT1	1	06-NOV-2007	12:16:51	7309031	7K02321	H1
60	KAFVK	1	06-NOV-2007	12:18:02	7309031	7K02321	H1
61	KAFT6	1	06-NOV-2007	12:19:22	7309031	7K02321	H1
62	KAFTG	1	06-NOV-2007	12:20:29	7309031	7K02321	H1
63	KAFVL	1	06-NOV-2007	12:21:34	7309031	7K02321	H1
64	KAFTX	1	06-NOV-2007	12:22:39	7309031	7K02321	H1
65	KAFT3	1	06-NOV-2007	12:23:47	7309031	7K02321	H1
66	KAFVR	1	06-NOV-2007	12:24:52	7309031	7K02321	H1
67	KAFV4	1	06-NOV-2007	12:26:13	7309031	7K02321	H1
68	CK2CCV	1	06-NOV-2007	12:27:18			H1
69	CK1CCB	1	06-NOV-2007	12:28:22			H1
70	KAFVT	1	06-NOV-2007	12:29:29	7309031	7K02321	H1
71	KAFT9	1	06-NOV-2007	12:30:34	7309031	7K02321	H1
72	KAFVE	1	06-NOV-2007	12:31:46	7309031	7K02321	H1
73	KAFTT	1	06-NOV-2007	12:32:52	7309031	7K02321	H1
74	KAHVVB	1	06-NOV-2007	12:33:58	7309032	A7K050000	H1
75	KAHVVC	1	06-NOV-2007	12:35:05	7309032	A7K050000	H1
76	KAFQW	1	06-NOV-2007	12:36:14	7309032	7K02316	H1
77	KAFQWX	1	06-NOV-2007	12:37:23	7309032	7K02316	H1
78	KAFQWS	1	06-NOV-2007	12:38:31	7309032	7K02316	H1
79	KAFQ1	1	06-NOV-2007	12:39:42	7309032	7K02316	H1
80	CK2CCV	1	06-NOV-2007	12:41:08			H1
81	CK1CCB	1	06-NOV-2007	12:42:18			H1
82	KAFQ4	1	06-NOV-2007	12:43:39	7309032	7K02316	H1
83	KAFQV	1	06-NOV-2007	12:44:50	7309032	7K02316	H1
84	KAFQ0	1	06-NOV-2007	12:45:56	7309032	7K02316	H1
85	KAFQN	1	06-NOV-2007	12:47:13	7309032	7K02316	H1
86	KAFQF	1	06-NOV-2007	12:48:26	7309032	7K02316	H1
87	KAFQ5	1	06-NOV-2007	12:49:36	7309032	7K02316	H1
88	KAFQ3	1	06-NOV-2007	12:50:44	7309032	7K02316	H1

---------- (continued) ----------

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
89	KAFQH	1	06-NOV-2007	12:51:52	7309032	7K02316	H1
90	KAFQK	1	06-NOV-2007	12:52:58	7309032	7K02316	H1
91	KAFQJ	1	06-NOV-2007	12:54:14	7309032	7K02316	H1
92	CK2CCV	1	06-NOV-2007	12:55:20			H1
93	CK1CCB	1	06-NOV-2007	12:56:27			H1
94	KAFP6	1	06-NOV-2007	12:57:45	7309032	7K02316	H1
95	KAFQ6	1	06-NOV-2007	12:58:54	7309032	7K02316	H1
96	KAFQ7	1	06-NOV-2007	13:00:10	7309032	7K02316	H1
97	KAFQR	1	06-NOV-2007	13:01:17	7309032	7K02316	H1
98	KAFQE	1	06-NOV-2007	13:02:24	7309032	7K02316	H1
99	KAFQC	1	06-NOV-2007	13:03:43	7309032	7K02316	H1
100	KAKF1B	1	06-NOV-2007	13:04:55	7310022	A7K060000	H1
101	KAKF1C	1	06-NOV-2007	13:06:21	7310022	A7K060000	H1
102	KAJRR	1	06-NOV-2007	13:07:37	7310022	A7K050176	H1
103	KAJRRS	1	06-NOV-2007	13:08:43	7310022	A7K050176	H1
104	CK2CCV	1	06-NOV-2007	13:09:49			H1
105	CK1CCB	1	06-NOV-2007	13:10:55			H1
106	KAJRRD	1	06-NOV-2007	13:12:04	7310022	A7K050176	H1
107	KAKF3B	1	06-NOV-2007	13:13:31	7310023	A7K060000	H1
108	KAKF3C	1	06-NOV-2007	13:14:49	7310023	A7K060000	H1
109	KAKF3L	1	06-NOV-2007	13:15:59	7310023	A7K060000	H1
110	KAJRW	1	06-NOV-2007	13:17:05	7310022	A7K050176	H1
111	J96HR	1	06-NOV-2007	13:18:27	7310023	A7J300288	H1
112	ZZZZZ	1	06-NOV-2007	13:19:35			H1
113	CK2CCV	1	06-NOV-2007	13:20:43			H1
114	CK1CCB	1	06-NOV-2007	13:21:58			H1
115	CK2CCV	1	06-NOV-2007	15:18:48			H1
116	CK1CCB	1	06-NOV-2007	15:20:02			H1
117	KAFP6	1	06-NOV-2007	15:21:13	7309032	7K02316	H1
118	KAFQ6	1	06-NOV-2007	15:22:19	7309032	7K02316	H1
119	KAFQ7	1	06-NOV-2007	15:23:26	7309032	7K02316	H1
120	KAFQR	1	06-NOV-2007	15:24:32	7309032	7K02316	H1
121	KAFQE	1	06-NOV-2007	15:25:58	7309032	7K02316	H1
122	KAFQC	1	06-NOV-2007	15:27:06	7309032	7K02316	H1
123	KAKF1B	1	06-NOV-2007	15:28:12	7310022	A7K060000	H1
124	KAKF1C	1	06-NOV-2007	15:29:19	7310022	A7K060000	H1
125	KAJRR	1	06-NOV-2007	15:30:47	7310022	A7K050176	H1
126	KAJRRS	1	06-NOV-2007	15:31:55	7310022	A7K050176	H1
127	CK2CCV	1	06-NOV-2007	15:33:01			H1
128	CK1CCB	1	06-NOV-2007	15:34:06			H1
129	KAJRRD	1	06-NOV-2007	15:35:12	7310022	A7K050176	H1
130	KAKF3B	1	06-NOV-2007	15:36:18	7310023	A7K060000	H1
131	KAKF3C	1	06-NOV-2007	15:37:25	7310023	A7K060000	H1
132	KAKF3L	1	06-NOV-2007	15:38:32	7310023	A7K060000	H1

(continued)

```
--------------------------------------------------------------------------------
:       Instrument Upload                                    Run Log - Page  4 :
:       Started Tue Nov  6 17:05:18 2007 by TOTHR                              :
:       Data File: UPL$CAN_DATA_ROOT:<LHG>HG11106A.PRN;1                       :
--------------------------------------------------------------------------------
```

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
133	KAJRW	1	06-NOV-2007	15:39:39	7310022	A7K050176	H1
134	J96HR	1	06-NOV-2007	15:40:50	7310023	A7J300288	H1
135	CK2CCV	1	06-NOV-2007	15:41:57			H1
136	CK1CCB	1	06-NOV-2007	15:43:03			H1
137	CK2CCV	1	06-NOV-2007	16:25:47			H1
138	CK1CCB	1	06-NOV-2007	16:26:52			H1
139	KAKF3C	1	06-NOV-2007	16:28:10	7310023	A7K060000	H1
140	CK2CCV	1	06-NOV-2007	16:29:26			H1
141	CK1CCB	1	06-NOV-2007	16:30:42			H1

```
---------------------------------- End of Report ----------------------------
```

Line Conc. Units SD/RSD 1 2 3 4 5

*** Check Standard: 5 Ck5ICV Seq: 14 09:40:12 06 Nov 2007 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg 107.4 2.686 2.500 ppb .0000 %

*** Check Standard: 4 Ck4ICB Seq: 15 09:41:18 06 Nov 2007 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg 919900 .0920 .0000 ppb .0000 %

*** Check Standard: 3 Ck3CRA\MRL Seq: 16 09:42:36 06 Nov 2007 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg 145.4 .2909 .2000 ppb .0000 %

*** Check Standard: 2 Ck2CCV Seq: 17 09:43:41 06 Nov 2007 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg 104.5 5.224 5.000 ppb .0000 %

*** Check Standard: 1 Ck1CCB Seq: 18 09:45:06 06 Nov 2007 HG
Line Flag Found Range(+/-) Units SD/RSD
Hg .0860 .2000 ppb .0000 %

*** Check Standard: 2 Ck2CCV Seq: 19 11:30:40 06 Nov 2007 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg 99.80 4.990 5.000 ppb .0000 %

*** Check Standard: 1 Ck1CCB Seq: 20 11:31:45 06 Nov 2007 HG
Line Flag Found Range(+/-) Units SD/RSD
Hg .0501 .2000 ppb .0000 %

*** Sample ID: KAHVPB Seq: 21 11:32:51 06 Nov 2007 HG
7309030
Hg .1162 ppb .0000 % .1162

*** Sample ID: KAHVPC Seq: 22 11:34:05 06 Nov 2007 HG
SOLID
Hg 4.809 ppb .0000 % 4.809

*** Sample ID: KAFR6 Seq: 23 11:35:19 06 Nov 2007 HG
SOLID
Hg .4464 ppb .0000 % .4464

Sample SB-337-0506

*** Sample ID: KAFR6X Seq: 24 11:36:37 06 Nov 2007 HG
SOLID
Hg .2354 ppb .0000 % .2354

*** Sample ID: KAFR6S Seq: 25 11:37:41 06 Nov 2007 HG
SOLID
Hg 1.218 ppb .0000 % 1.218

Sample SB-337-0506
mercury rep result 0.093 mg/kg

$$\left(0.4464\right)\left(\frac{100\,ml}{1.6\,g}\right)\left(\frac{1}{0.80346}\right)\left(\frac{1}{1000}\right) = 0.093\ mg/kg$$

			TestAmerica, North Canton			
		Percent Total Solid/Percent Moisture Logsheet				
Analysis	TS			Batch	7310539	
Prep Date	11/6/2007	Time In	17:30	Analyst	NAP	
Anal date	11/7/2007	Time Out	8:00	RL	10	
Sample	Tare	Wet	Dry	Result TS	Result MS	comments
ID	wt	wt	wt	%	%	
BLK I	4.6622	4.7529	4.7365	3.02	ND	
KAFRC	4.6622	15.7462	13.6439	81.033	18.967	
KAFRL	4.6622	13.0868	11.9447	86.443	13.557	
KAFRM	4.6622	13.8128	12.5829	86.559	13.441	
KAFRP	4.6622	14.0873	12.7941	86.279	13.721	
KAFRQ	4.6622	23.5931	19.9318	80.660	19.340	
KAFRR	4.6622	23.8833	19.7314	78.399	21.601	
KAFRT	4.6622	16.0945	14.2041	83.464	16.536	
KAFRV	4.6622	20.3420	17.6197	82.638	17.362	
KAFR0	4.6622	14.0240	12.4525	83.214	16.786	
KAFR1	4.6622	13.8882	12.7170	87.305	12.695	
KAFR2	4.6622	15.7726	13.4666	79.245	20.755	
KAFR4	4.6622	13.6482	12.0019	81.679	18.321	
KAFR4X	4.6622	10.4136	8.9916	75.276	24.724	
KAFR5	4.6622	14.7846	13.2495	84.835	15.165	
KAFR6	4.6622	15.7347	13.5585	80.346	19.654	
KAFR6X	4.6622	19.5059	16.7853	81.672	18.328	
KAFR9	4.6622	17.1282	14.5651	79.439	20.561	
KAFTC	4.6622	16.1518	14.1330	82.429	17.571	
KAFTD	4.6622	17.3889	15.0596	81.698	18.302	
KAFTE	4.6622	12.1933	10.8256	81.839	18.161	
	4.6622			100.000	0.000	
	4.6622			100.000	0.000	

Sample SB-333-0203
rep result % solids
81.0

$$\left(\frac{15.7462 - 13.6439}{15.7462 - 4.6622}\right)(100) - 100$$

81.0

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **M. MARTIN** **DATE:** **DECEMBER 11, 2007**

FROM: **ROBERT JUPIN** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – BENZO(a)PYRENE**
LOCKHEED MIDDLE RIVER
SAMPLE DELIVERY GROUP (SDG): 7K02321

SAMPLES: 18/Soil/

SB-339-0203	SB-339-0506	SB-339-0809	SB-340-0203	SB-340-0506
SB-340-0809	SB-341-0203	SB-341-0506	SB-341-0809	SB-342-0203
SB-342-0506	SB-342-0809	SB-342-0203	SB-343-0506	SB-343-0809
SB-344-0203	SB-344-0506	SB-344-0809		

Overview

The sample set for SDG 7K02321 Lockheed Middle River, consists of eighteen (18) soil environmental samples.

All soil samples were analyzed for benzo(a)pyrene. The samples were collected by TetraTech NUS on November 1, 2007 and analyzed by Test America Laboratories, Inc. Analyses were conducted using SW-846 Method 8270C.

The findings in this report are based upon a general review of all available data including: data completeness, GC/MS tuning, holding times, initial/continuing calibrations, laboratory method/preparation and field quality control blank results, surrogate spike/internal standard recoveries, laboratory control sample (LCS)/blank spike results, matrix spike/matrix spike duplicate results, analyte quantitation, and detection limits. Areas of concern are listed below.

Major Problems

- None.

Minor Problems

- Positive results reported below the detection limit have been qualified as estimated, "J".

Notes

The matrix spike sample was not spiked for benzo(a)pyrene therefore, no evaluation of the matrix spike could be performed.

Executive Summary

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (9/94) as modified by Region III.

Tetra Tech NUS
Robert J. Jupin
Risk Assessment Specialist/Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

J - Positive result is considered estimated, "J", as a result of technical noncompliances.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can be any number of issues; e.g. poor chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00885

SDG: 7K02321 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-339-0203	nsample	SB-339-0506	nsample	SB-339-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020321001	lab_id	A7K020321002	lab_id	A7K020321003
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	88.0	Pct_Solids	80.0	Pct_Solids	87.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	14	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

PROJ_NO: 00885

SDG: 7K02321 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-340-0203	nsample	SB-340-0506	nsample	SB-340-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020321004	lab_id	A7K020321005	lab_id	A7K020321006
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	87.0	Pct_Solids	82.0	Pct_Solids	78.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	110	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	30	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.7	U	

PROJ_NO: 00885

SDG: 7K02321 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-341-0203	nsample	SB-341-0506	nsample	SB-341-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020321007	lab_id	A7K020321008	lab_id	A7K020321009
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85.0	Pct_Solids	78.0	Pct_Solids	66.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	23	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	25	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	38	J	P

PROJ_NO: 00885

SDG: 7K02321 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-342-0203	nsample	SB-342-0506	nsample	SB-342-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020321010	lab_id	A7K020321011	lab_id	A7K020321012
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	84.0	Pct_Solids	74.0	Pct_Solids	63.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	78	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	17	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	2.1	U	

PROJ_NO: 00885

SDG: 7K02321 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-343-0203	nsample	SB-343-0506	nsample	SB-343-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020321013	lab_id	A7K020321014	lab_id	A7K020321015
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	80.0	Pct_Solids	75.0	Pct_Solids	79.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	11	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.7	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

PROJ_NO: 00885

SDG: 7K02321 MEDIA: SOIL DATA FRACTION: OS

nsample	SB-344-0203	nsample	SB-344-0506	nsample	SB-344-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020321016	lab_id	A7K020321017	lab_id	A7K020321018
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	81.0	Pct_Solids	80.0	Pct_Solids	73.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.8	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Tetra Tech NUS, Inc

Client Sample ID: SB-339-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-001 **Work Order #...:** KAFTG1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:40 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 12 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**14 J**	**370**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	74	(24 - 112)
2-Fluorobiphenyl	59	(34 - 110)
Terphenyl-d14	84	(41 - 119)
Phenol-d5	75	(28 - 110)
2-Fluorophenol	71	(26 - 110)
2,4,6-Tribromophenol	37	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-339-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-002 **Work Order #...:** KAFTT1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:42 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/06/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 20 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	410	ug/kg	1.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	64	(24 - 112)
2-Fluorobiphenyl	55	(34 - 110)
Terphenyl-d14	89	(41 - 119)
Phenol-d5	60	(28 - 110)
2-Fluorophenol	62	(26 - 110)
2,4,6-Tribromophenol	27	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-339-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-003 **Work Order #...:** KAFTX1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:44 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 13 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	69	(24 - 112)
2-Fluorobiphenyl	52	(34 - 110)
Terphenyl-d14	86	(41 - 119)
Phenol-d5	74	(28 - 110)
2-Fluorophenol	69	(26 - 110)
2,4,6-Tribromophenol	36	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-340-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-004 **Work Order #...:** KAFT11AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:50 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 13 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**110 J**	**380**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	65	(24 - 112)
2-Fluorobiphenyl	52	(34 - 110)
Terphenyl-d14	77	(41 - 119)
Phenol-d5	69	(28 - 110)
2-Fluorophenol	65	(26 - 110)
2,4,6-Tribromophenol	38	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-340-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-005 **Work Order #...:** KAFT21AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:52 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 18 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**30 J**	**400**	**ug/kg**	**1.6**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	72	(24 - 112)
2-Fluorobiphenyl	56	(34 - 110)
Terphenyl-d14	83	(41 - 119)
Phenol-d5	74	(28 - 110)
2-Fluorophenol	69	(26 - 110)
2,4,6-Tribromophenol	48	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-340-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-006 **Work Order #...:** KAFT31AD **Matrix.....:** SO
Date Sampled...: 11/01/07 12:54 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/15/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 22 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	420	ug/kg	1.7

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	44	(24 - 112)
2-Fluorobiphenyl	60	(34 - 110)
Terphenyl-d14	81	(41 - 119)
Phenol-d5	67	(28 - 110)
2-Fluorophenol	64	(26 - 110)
2,4,6-Tribromophenol	47	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-341-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-007 **Work Order #...:** KAFT61AD **Matrix.....:** SO
Date Sampled...: 11/01/07 13:00 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 15 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**23 J**	**390**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	48	(24 - 112)
2-Fluorobiphenyl	60	(34 - 110)
Terphenyl-d14	86	(41 - 119)
Phenol-d5	73	(28 - 110)
2-Fluorophenol	67	(26 - 110)
2,4,6-Tribromophenol	41	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-341-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-008 **Work Order #...:** KAFT91AD **Matrix.....:** SO
Date Sampled...: 11/01/07 13:02 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/15/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 22 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**25 J**	**420**	**ug/kg**	**1.7**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	50	(24 - 112)
2-Fluorobiphenyl	59	(34 - 110)
Terphenyl-d14	76	(41 - 119)
Phenol-d5	67	(28 - 110)
2-Fluorophenol	63	(26 - 110)
2,4,6-Tribromophenol	50	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-341-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-009 **Work Order #...:** KAFVA1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 13:04 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 34 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**38 J**	**500**	**ug/kg**	**2.0**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	74	(24 - 112)
2-Fluorobiphenyl	57	(34 - 110)
Terphenyl-d14	86	(41 - 119)
Phenol-d5	76	(28 - 110)
2-Fluorophenol	69	(26 - 110)
2,4,6-Tribromophenol	38	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-342-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-010 **Work Order #...:** KAFVE1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 13:15 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 16 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**78 J**	**390**	**ug/kg**	**1.5**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	75	(24 - 112)
2-Fluorobiphenyl	62	(34 - 110)
Terphenyl-d14	84	(41 - 119)
Phenol-d5	76	(28 - 110)
2-Fluorophenol	71	(26 - 110)
2,4,6-Tribromophenol	34	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-342-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-011 **Work Order #...:** KAFVF1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 13:17 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 26 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**17 J**	**450**	**ug/kg**	**1.8**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	59	(24 - 112)
2-Fluorobiphenyl	55	(34 - 110)
Terphenyl-d14	81	(41 - 119)
Phenol-d5	77	(28 - 110)
2-Fluorophenol	68	(26 - 110)
2,4,6-Tribromophenol	43	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-342-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-012 **Work Order #...:** KAFVK1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 13:19 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 37 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	530	ug/kg	2.1

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	59	(24 - 112)
2-Fluorobiphenyl	48	(34 - 110)
Terphenyl-d14	76	(41 - 119)
Phenol-d5	68	(28 - 110)
2-Fluorophenol	62	(26 - 110)
2,4,6-Tribromophenol	41	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-343-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-013 **Work Order #...:** KAFVL1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 13:35 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/15/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 20 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	**11 J**	**410**	**ug/kg**	**1.6**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	37	(24 - 112)
2-Fluorobiphenyl	49	(34 - 110)
Terphenyl-d14	76	(41 - 119)
Phenol-d5	56	(28 - 110)
2-Fluorophenol	50	(26 - 110)
2,4,6-Tribromophenol	39	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-343-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-014 **Work Order #...:** KAFVR1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 13:37 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 25 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	440	ug/kg	1.7

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	63	(24 - 112)
2-Fluorobiphenyl	54	(34 - 110)
Terphenyl-d14	82	(41 - 119)
Phenol-d5	72	(28 - 110)
2-Fluorophenol	70	(26 - 110)
2,4,6-Tribromophenol	45	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-343-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-015 **Work Order #...:** KAFVT1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 13:39 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 21 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	420	ug/kg	1.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	45	(24 - 112)
2-Fluorobiphenyl	50	(34 - 110)
Terphenyl-d14	91	(41 - 119)
Phenol-d5	70	(28 - 110)
2-Fluorophenol	64	(26 - 110)
2,4,6-Tribromophenol	35	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-344-0203

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-016 **Work Order #...:** KAFVW1AD **Matrix.....:** SO
Date Sampled...: 11/01/07 14:00 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 19 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	410	ug/kg	1.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	55	(24 - 112)
2-Fluorobiphenyl	46	(34 - 110)
Terphenyl-d14	79	(41 - 119)
Phenol-d5	62	(28 - 110)
2-Fluorophenol	56	(26 - 110)
2,4,6-Tribromophenol	37	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-344-0506

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-017 **Work Order #...:** KAFV01AD **Matrix.....:** SO
Date Sampled...: 11/01/07 14:02 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/15/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 20 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	410	ug/kg	1.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	55	(24 - 112)
2-Fluorobiphenyl	56	(34 - 110)
Terphenyl-d14	82	(41 - 119)
Phenol-d5	66	(28 - 110)
2-Fluorophenol	58	(26 - 110)
2,4,6-Tribromophenol	49	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-344-0809

GC/MS Semivolatiles

Lot-Sample #...: A7K020321-018 **Work Order #...:** KAFV41AD **Matrix.....:** SO
Date Sampled...: 11/01/07 14:04 **Date Received..:** 11/02/07
Prep Date.....: 11/04/07 **Analysis Date..:** 11/08/07
Prep Batch #...: 7307085
Dilution Factor: 1
% Moisture.....: 27 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	450	ug/kg	1.8

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	64	(24 - 112)
2-Fluorobiphenyl	56	(34 - 110)
Terphenyl-d14	84	(41 - 119)
Phenol-d5	74	(28 - 110)
2-Fluorophenol	64	(26 - 110)
2,4,6-Tribromophenol	54	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

APPENDIX C

SUPPORT DOCUMENTATION

HOLDTIME

SDG 7K02321

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-343-0203	A7K020321013	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-339-0809	A7K020321003	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-340-0203	A7K020321004	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-340-0809	A7K020321006	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-341-0506	A7K020321008	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-341-0809	A7K020321009	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-342-0203	A7K020321010	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-339-0506	A7K020321002	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-342-0809	A7K020321012	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-340-0506	A7K020321005	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-343-0506	A7K020321014	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-343-0809	A7K020321015	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-344-0203	A7K020321016	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-344-0506	A7K020321017	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-344-0809	A7K020321018	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-339-0203	A7K020321001	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-342-0506	A7K020321011	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-341-0203	A7K020321007	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
PCS	%	SB-342-0809	A7K020321012	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-344-0506	A7K020321017	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-344-0809	A7K020321018	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-344-0203	A7K020321016	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-343-0809	A7K020321015	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-343-0203	A7K020321013	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-339-0203	A7K020321001	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-342-0506	A7K020321011	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-342-0203	A7K020321010	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-339-0809	A7K020321003	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-343-0506	A7K020321014	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-339-0506	A7K020321002	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-341-0809	A7K020321009	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-340-0203	A7K020321004	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-340-0506	A7K020321005	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCS	%	SB-340-0809	A7K020321006	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-341-0203	A7K020321007	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-341-0506	A7K020321008	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
OS	%	SB-344-0809	A7K020321018	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-341-0506	A7K020321008	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	%	SB-339-0506	A7K020321002	NM	11/1/2007	11/4/2007	11/6/2007	3	2	5
OS	%	SB-339-0809	A7K020321003	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-340-0203	A7K020321004	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-340-0506	A7K020321005	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-340-0809	A7K020321006	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	%	SB-341-0203	A7K020321007	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-339-0203	A7K020321001	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-344-0506	A7K020321017	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	%	SB-342-0203	A7K020321010	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-342-0506	A7K020321011	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-342-0809	A7K020321012	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-343-0203	A7K020321013	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	%	SB-343-0506	A7K020321014	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	SB-343-0809	A7K020321015	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-344-0203	A7K020321016	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-341-0809	A7K020321009	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-342-0809	A7K020321012	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-343-0203	A7K020321013	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	UG/KG	SB-343-0506	A7K020321014	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-343-0809	A7K020321015	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-344-0203	A7K020321016	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-342-0506	A7K020321011	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-344-0809	A7K020321018	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-340-0506	A7K020321005	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-344-0506	A7K020321017	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	UG/KG	SB-342-0203	A7K020321010	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-341-0809	A7K020321009	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-341-0506	A7K020321008	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	UG/KG	SB-339-0203	A7K020321001	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-340-0809	A7K020321006	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	UG/KG	SB-340-0203	A7K020321004	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	SB-339-0809	A7K020321003	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-339-0506	A7K020321002	NM	11/1/2007	11/4/2007	11/6/2007	3	2	5
OS	UG/KG	SB-341-0203	A7K020321007	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRA TECH	M. MARTIN	11/1/07	322996
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 4 of
20251 CENTURY BLVD #700	301-528-3022		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
GERMANTOWN / PA / 20874	S. HADLEY	K IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LMC MR	COURIER		
Contract/Purchase Order/Quote No.			
112IC00498			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: 8270 *	Hg	Special Instructions/ Conditions of Receipt
SB-339-0203	11/1/07	1240				X	2						X	X	* benzo(a) pyrene
339-0506		1242													
339-0809		1244													
340-0203		1250													
340-0506		1252													
340-0809		1254													
341-0203		1300													
341-0506		1302													
341-0809		1304													
342-0203		1315													
342-0506		1317													
SB-342-0809	11/1/07	1319				X	2						X	X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal

☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STND

QC Requirements (Specify)

	Date	Time
1. Relinquished By		
2. Relinquished By	11-1-07	17:05
3. Relinquished By		

	Date	Time
1. Received By	11-1-07	1600
2. Received By	11/2/07	0945
3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

SEVERN TRENT STL
Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRATECH	M. MARTIN	11/1/07	322999
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 5 of 5**
20251 CENTURY BLVD #200	301-528-3027		
City / State / Zip Code	**Site Contact**	**Lab Contact**	
GERMANTOWN / MD / 20874	S. HADLEY	K. IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LMC MR	COURIER		
Contract/Purchase Order/Quote No.			
112IC00998			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: 8270 *	Hg	Special Instructions/ Conditions of Receipt
SB-343-0203	11/1/07	1335				X	2						X	X	* benzo(a) pyrene
343-0506		1337					1								
343-0809		1339					2								
344-0203 (MS/SD)		1400					4								
344-0506		1402					2								
344-0809	11/1/07	1404				X	2						X	X	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STND

QC Requirements (Specify)

	Relinquished By	Date	Time	Received By	Date	Time
1.		11/1/07	1600		11-1-07	1600
2.		11-1-07	17:05		11/2/07	0945
3.						

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica North Canton

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CASE NARRATIVE

7K02321

The following report contains the analytical results for eighteen solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc. from the LMC MR Site, project number 112IC00998. The samples were received November 02, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID's: A7K020321.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Dev Murali, John Poremba, and Michael Martin on November 20, 2007. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 0.1 and 0.6°C.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

Due to an analyst error, an extra 50mls of DI water was added to the LCS associated with batch(es) 7309031 for the Mercury analysis. The final result was adjusted to accommodate the extra 50mls of DI water. The LCS passed acceptance criteria and the samples associated with the LCS were not affected by this anomaly.

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica North Canton (formerly STL North Canton) conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton (formerly STL North Canton) requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

SW846 8270C SURROGATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN SDG No: 7K02321

Lot #: A7K020321

Extraction: XXA11QL01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	SRG05	SRG06	TOT OUT
01	SB-339-0203	74	59	84	75	71	37	00
02	SB-339-0506	64	55	89	60	62	27	00
03	SB-339-0809	69	52	86	74	69	36	00
04	SB-340-0203	65	52	77	69	65	38	00
05	SB-340-0506	72	56	83	74	69	48	00
06	SB-340-0809	44	60	81	67	64	47	00
07	SB-341-0203	48	60	86	73	67	41	00
08	SB-341-0506	50	59	76	67	63	50	00
09	SB-341-0809	74	57	86	76	69	38	00
10	SB-342-0203	75	62	84	76	71	34	00
11	SB-342-0506	59	55	81	77	68	43	00
12	SB-342-0809	59	48	76	68	62	41	00
13	SB-343-0203	37	49	76	56	50	39	00
14	SB-343-0506	63	54	82	72	70	45	00
15	SB-343-0809	45	50	91	70	64	35	00
16	SB-344-0203	55	46	79	62	56	37	00
17	SB-344-0506	55	56	82	66	58	49	00
18	SB-344-0809	64	56	84	74	64	54	00
19	METHOD BLK. KAGR31AA	76	72	79	68	68	62	00
20	LCS KAGR31AC	66	71	89	65	68	78	00
21	SB-344-0203 D	79	63	86	82	73	40	00
22	SB-344-0203 S	72	57	84	77	70	47	00

SURROGATES		QC LIMITS
SRG01	= Nitrobenzene-d5	(24-112)
SRG02	= 2-Fluorobiphenyl	(34-110)
SRG03	= Terphenyl-d14	(41-119)
SRG04	= Phenol-d5	(28-110)
SRG05	= 2-Fluorophenol	(26-110)
SRG06	= 2,4,6-Tribromophenol	(10-118)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

SW846 8270C METHOD BLANK SUMMARY

BLANK WORKORDER NO.: KAGR31AA

Lab Name: TestAmerica Laboratories, Inc.

Lab Code: TALCAN

SDG Number:7K02321

Lab File ID: KAGR31AA.

Lot Number: A7K020321

Date Analyzed: 11/06/07

Time Analyzed: 13:02

Matrix: SOLID

Date Extracted:11/04/07

GC Column: DB 5.625 ID: .00

Extraction Method: 3540C

Instrument ID: HP8

Level:(low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SB-339-0203	KAFTG1AD	KAFTG1AD.	11/08/07	17:59
02	SB-339-0506	KAFTT1AD	KAFTT1AD.	11/06/07	23:17
03	SB-339-0809	KAFTX1AD	KAFTX1AD.	11/08/07	18:36
04	SB-340-0203	KAFT11AD	KAFT11AD.	11/08/07	19:32
05	SB-340-0506	KAFT21AD	KAFT21AD.	11/08/07	19:51
06	SB-340-0809	KAFT31AD	KAFT31AD.	11/15/07	14:12
07	SB-341-0203	KAFT61AD	KAFT61AD.	11/08/07	21:42
08	SB-341-0506	KAFT91AD	KAFT91AD.	11/15/07	13:53
09	SB-341-0809	KAFVA1AD	KAFVA1AD.	11/08/07	18:17
10	SB-342-0203	KAFVE1AD	KAFVE1AD.	11/08/07	22:01
11	SB-342-0506	KAFVF1AD	KAFVF1AD.	11/08/07	20:47
12	SB-342-0809	KAFVK1AD	KAFVK1AD.	11/08/07	20:28
13	SB-343-0203	KAFVL1AD	KAFVL1AD.	11/15/07	13:34
14	SB-343-0506	KAFVR1AD	KAFVR1AD.	11/08/07	22:38
15	SB-343-0809	KAFVT1AD	KAFVT1AD.	11/08/07	18:55
16	SB-344-0203	KAFVW1AD	KAFVW1AD.	11/08/07	17:03
17	SB-344-0203	KAFVW1AL S	KAFVW1AL.	11/08/07	17:21
18	SB-344-0203	KAFVW1AM D	KAFVW1AM.	11/08/07	17:40
19	SB-344-0506	KAFV01AD	KAFV01AD.	11/15/07	14:31
20	SB-344-0809	KAFV41AD	KAFV41AD.	11/08/07	21:05
21	CHECK SAMPLE	KAGR31AC C	KAGR31AC.	11/06/07	13:21
22					
23					
24					
25					
26					
27					
28					
29					
30					

COMMENTS:

FORM IV

5B
SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02321

Lab File ID: 8DF1106 DFTPP Injection Date: 11/06/07

Instrument ID: A4HP8 DFTPP Injection Time: 1122

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	34.6
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	44.5
70	Less than 2.0% of mass 69	0.3 (0.6)1
127	40.0 - 60.0% of mass 198	46.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	26.5
365	Greater than 1.0% of mass 198	3.4
441	Present, but less than mass 443	10.7
442	Greater than 40.0% of mass 198	70.1
443	17.0 - 23.0% of mass 442	13.6 (19.4)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD006	L6	8SMH1106	11/06/07	1205
02	KAGR3BLK	KAGR31AA	KAGR31AA	11/06/07	1302
03	KAGR3CHK	KAGR31AC	KAGR31AC	11/06/07	1321
04	SB-339-0506	KAFTT1AD	KAFTT1AD	11/06/07	2317
05					
06					
07					
08					
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17					
18					
19					
20					
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22					

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02321

Lab File ID: 8DF1108 DFTPP Injection Date: 11/08/07

Instrument ID: A4HP8 DFTPP Injection Time: 1551

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	36.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	64.5
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	51.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	23.8
365	Greater than 1.0% of mass 198	2.9
441	Present, but less than mass 443	9.7
442	Greater than 40.0% of mass 198	55.4
443	17.0 - 23.0% of mass 442	10.6 (19.1)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD006	L6	8SMH1108	11/08/07	1610
02	SB-344-0203	KAFVW1AD	KAFVW1AD	11/08/07	1703
03	SB-344-0203	KAFVW1AL	KAFVW1AL	11/08/07	1721
04	SB-344-0203	KAFVW1AM	KAFVW1AM	11/08/07	1740
05	SB-339-0203	KAFTG1AD	KAFTG1AD	11/08/07	1759
06	SB-341-0809	KAFVA1AD	KAFVA1AD	11/08/07	1817
07	SB-339-0809	KAFTX1AD	KAFTX1AD	11/08/07	1836
08	SB-343-0809	KAFVT1AD	KAFVT1AD	11/08/07	1855
09	SB-340-0203	KAFT11AD	KAFT11AD	11/08/07	1932
10	SB-340-0506	KAFT21AD	KAFT21AD	11/08/07	1951
11	SB-342-0809	KAFVK1AD	KAFVK1AD	11/08/07	2028
12	SB-342-0506	KAFVF1AD	KAFVF1AD	11/08/07	2047
13	SB-344-0809	KAFV41AD	KAFV41AD	11/08/07	2105
14	SB-341-0203	KAFT61AD	KAFT61AD	11/08/07	2142
15	SB-342-0203	KAFVE1AD	KAFVE1AD	11/08/07	2201
16	SB-343-0506	KAFVR1AD	KAFVR1AD	11/08/07	2238
17					
18					
19					
20					
21					
22					

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02321

Lab File ID: 8DF1115 DFTPP Injection Date: 11/15/07

Instrument ID: A4HP8 DFTPP Injection Time: 1119

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	37.8
68	Less than 2.0% of mass 69	0.1 (0.2)1
69	Mass 69 relative abundance	64.5
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	52.7
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	24.9
365	Greater than 1.0% of mass 198	3.7
441	Present, but less than mass 443	9.3
442	Greater than 40.0% of mass 198	57.5
443	17.0 - 23.0% of mass 442	10.9 (19.0)2

1-Value is % of mass 69 2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD006	L6	8SMH1115	11/15/07	1138
02	SB-343-0203	KAFVL1AD	KAFVL1AD	11/15/07	1334
03	SB-341-0506	KAFT91AD	KAFT91AD	11/15/07	1353
04	SB-340-0809	KAFT31AD	KAFT31AD	11/15/07	1412
05	SB-344-0506	KAFV01AD	KAFV01AD	11/15/07	1431
06					
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STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 31-OCT-2007 15:58
End Cal Date : 31-OCT-2007 18:33
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\cansvr11\dd\chem\MSS\a4hp8.i\71031a.b\8270P.m
Last Edit : 01-Nov-2007 08:44 gruberj
Curve Type : Average

Compound	0.05000 Level 1	0.25000 Level 2	0.50000 Level 3	1.000 Level 4	2.500 Level 5	5.000 Level 6	RRF	% RSD	
	7.500 Level 7	10.000 Level 8	12.500 Level 9						
144 Hexachlorophene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
145 Hexachlorophene product	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
146 Benzo(a)pyrene	1.00609	0.85680	0.92839	1.01385	1.07984	1.14780			
	1.21126	1.27667	+++++				1.06509	13.342	
148 3-Methylcholanthrene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
149 Indeno(1,2,3-cd)pyrene	1.05215	0.94193	1.02882	1.10916	1.16710	1.23713			
	1.28978	1.35821	1.49504				1.18659	14.808	
150 Dibenz(a,h)anthracene	0.91651	0.79502	0.83997	0.94796	0.97157	1.06074			
	1.12563	1.18816	1.32919				1.01942	16.918	
151 Benzo(g,h,i)perylene	1.06388	0.84710	0.86775	0.94119	0.96347	0.98910			
	1.03120	1.08506	1.18240				0.99679	10.714	
232 Bis(2-hydroxyphenyl)methane	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
233 Bis(4-hydroxyphenyl)methane	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
234 4-Chlorophenol	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
235 2,3-Dichlorophenol	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4hp8.i Injection Date: 31-OCT-2007 18:53
Lab File ID: ICVTCL.D Init. Cal. Date(s): 31-OCT-2007 31-OCT-2007
Analysis Type: Init. Cal. Times: 15:58 18:33
Lab Sample ID: icvtcl Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4hp8.i\71031a.b\8270P.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
142 Benzo(k)fluoranthene	1.31598	1.31479	1.31479	0.010	0.09048	50.00000	Averaged
146 Benzo(a)pyrene	1.06509	1.14284	1.14284	0.010	-7.30045	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.18659	1.23697	1.23697	0.010	-4.24562	50.00000	Averaged
150 Dibenz(a,h)anthracene	5.00000	5.03216	1.05822	0.010	-0.64321	0.000e+000	Quadratic
151 Benzo(g,h,i)perylene	0.99679	0.99112	0.99112	0.010	0.56931	50.00000	Averaged
198 1,4-Dioxane	0.59367	0.58021	0.58021	0.010	2.26632	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.44581	0.46280	0.46280	0.010	-3.81005	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.31614	1.32545	1.32545	0.010	-0.70694	50.00000	Averaged
$ 156 Terphenyl-d14	0.77529	0.80908	0.80908	0.010	-4.35732	50.00000	Averaged
$ 157 Phenol-d5	1.75954	1.73764	1.73764	0.010	1.24445	50.00000	Averaged
$ 158 2-Fluorophenol	1.21919	1.21403	1.21403	0.010	0.42366	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	5.00000	5.06941	0.15059	0.010	-1.38825	0.000e+000	Quadratic
$ 186 2-Chlorophenol-d4	1.22310	1.18894	1.18894	0.010	2.79346	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.82744	0.82746	0.82746	0.010	-0.00269	50.00000	Averaged
M 195 Cresols, total	2.80785	2.76041	2.76041	0.010	1.68951	50.00000	Averaged
101 Diphenylamine	5.00000	5.20967	0.50019	0.010	-4.19348	0.000e+000	Quadratic

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4hp8.i Injection Date: 06-NOV-2007 12:05
Lab File ID: 8SMH1106.D Init. Cal. Date(s): 31-OCT-2007 31-OCT-2007
Analysis Type: Init. Cal. Times: 15:58 18:33
Lab Sample ID: L6 Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4hp8.i\71106a.b\8270p.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
142 Benzo(k)fluoranthene	1.31598	1.23101	1.23101	0.010	6.45743	50.00000	Averaged
146 Benzo(a)pyrene	1.06509	1.15900	1.15900	0.010	-8.81757	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.18659	1.18830	1.18830	0.010	-0.14448	50.00000	Averaged
150 Dibenz(a,h)anthracene	5.00000	4.71922	0.98543	0.010	5.61566	0.000e+000	Quadratic
151 Benzo(g,h,i)perylene	0.99679	1.01919	1.01919	0.010	-2.24662	50.00000	Averaged
198 1,4-Dioxane	0.59367	0.67382	0.67382	0.010	-13.50109	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.44581	0.48665	0.48665	0.010	-9.15967	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.31614	1.51931	1.51931	0.010	-15.43641	50.00000	Averaged
$ 156 Terphenyl-d14	0.77529	0.79757	0.79757	0.010	-2.87284	50.00000	Averaged
$ 157 Phenol-d5	1.75954	1.87936	1.87936	0.010	-6.80992	50.00000	Averaged
$ 158 2-Fluorophenol	1.21919	1.35468	1.35468	0.010	-11.11320	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	5.00000	5.96692	0.18067	0.010	-19.33841	0.000e+000	Quadratic
$ 186 2-Chlorophenol-d4	1.22310	1.29540	1.29540	0.010	-5.91108	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.82744	0.86955	0.86955	0.010	-5.09001	50.00000	Averaged
M 195 Cresols, total	2.80785	2.74784	2.74784	0.010	2.13732	50.00000	Averaged
101 Diphenylamine	5.00000	5.27278	0.50701	0.010	-5.45557	0.000e+000	Quadratic

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4hp8.i Injection Date: 08-NOV-2007 16:10
Lab File ID: 8SMH1108.D Init. Cal. Date(s): 31-OCT-2007 31-OCT-2007
Analysis Type: Init. Cal. Times: 15:58 18:33
Lab Sample ID: L6 Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4hp8.i\71108a.b\8270p.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
142 Benzo(k)fluoranthene	1.31598	1.32589	1.32589	0.010	-0.75246	50.00000	Averaged
146 Benzo(a)pyrene	1.06509	1.13466	1.13466	0.010	-6.53241	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.18659	1.22876	1.22876	0.010	-3.55387	50.00000	Averaged
150 Dibenz(a,h)anthracene	5.00000	4.96633	1.04282	0.010	0.67336	0.000e+000	Quadratic
151 Benzo(g,h,i)perylene	0.99679	1.00914	1.00914	0.010	-1.23831	50.00000	Averaged
198 1,4-Dioxane	0.59367	0.71698	0.71698	0.010	-20.77175	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.44581	0.56448	0.56448	0.010	-26.61894	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.31614	1.25058	1.25058	0.010	4.98172	50.00000	Averaged
$ 156 Terphenyl-d14	0.77529	0.87311	0.87311	0.010	-12.61681	50.00000	Averaged
$ 157 Phenol-d5	1.75954	2.17221	2.17221	0.010	-23.45334	50.00000	Averaged
$ 158 2-Fluorophenol	1.21919	1.31111	1.31111	0.010	-7.53880	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	5.00000	4.23630	0.12369	0.010	15.27405	0.000e+000	Quadratic
$ 186 2-Chlorophenol-d4	1.22310	1.35067	1.35067	0.010	-10.42953	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.82744	0.84833	0.84833	0.010	-2.52466	50.00000	Averaged
M 195 Cresols, total	2.80785	3.36629	3.36629	0.010	-19.88869	50.00000	Averaged
101 Diphenylamine	5.00000	5.60838	0.54365	0.010	-12.16760	0.000e+000	Quadratic

TestAmerica North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 14-NOV-2007 10:57
End Cal Date : 14-NOV-2007 16:50
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\cansvr11\dd\chem\MSS\a4hp8.i\71114a.b\8270P.m
Last Edit : 14-Nov-2007 16:32 gruberj
Curve Type : Average

Compound	0.05000 Level 1	0.25000 Level 2	0.50000 Level 3	1.000 Level 4	2.500 Level 5	5.000 Level 6	7.500 Level 7	10.000 Level 8	12.500 Level 9	___ RRF	% RSD	
144 Hexachlorophene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
145 Hexachlorophene product	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
146 Benzo(a)pyrene	1.09885	0.79743	0.88096	0.92176	0.99771	1.05890	1.10149	1.14664	1.26679	1.03006	14.128	
148 3-Methylcholanthrene	+++++	0.37218	0.39801	0.43271	0.44455	0.46126	0.53065	0.52537	0.56451	0.46615	14.600	<-
149 Indeno(1,2,3-cd)pyrene	1.09459	0.90287	0.96285	1.02504	1.08869	1.19401	1.25623	1.29923	1.43755	1.14012	15.060	
150 Dibenz(a,h)anthracene	0.86958	0.71215	0.80399	0.87688	0.91584	1.01926	1.06088	1.11055	1.24167	0.95676	17.269	
151 Benzo(g,h,i)perylene	0.95394	0.84726	0.86146	0.87182	0.91964	0.99465	1.03233	1.03958	1.14428	0.96277	10.290	
232 Bis(2-hydroxyphenyl)methane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
233 Bis(4-hydroxyphenyl)methane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
234 4-Chlorophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
235 2,3-Dichlorophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-

TestAmerica North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4hp8.i Injection Date: 14-NOV-2007 13:56
Lab File ID: ICVTCL.D Init. Cal. Date(s): 14-NOV-2007 14-NOV-2007
Analysis Type: Init. Cal. Times: 10:57 16:50
Lab Sample ID: icvtcl Quant Type: ISTD
Method: \\cansvr11\dd\chem\MSS\a4hp8.i\71114a.b\8270P.m

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
142 Benzo(k)fluoranthene	1.25456	1.22304	1.22304	0.010	2.51232	50.00000	Averaged
146 Benzo(a)pyrene	1.03006	1.02669	1.02669	0.010	0.32663	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	5.00000	4.93151	1.15794	0.010	1.36988	0.000e+000	Quadratic
150 Dibenz(a,h)anthracene	5.00000	4.96280	0.98659	0.010	0.74393	0.000e+000	Quadratic
151 Benzo(g,h,i)perylene	0.96277	0.96683	0.96683	0.010	-0.42090	50.00000	Averaged
198 1,4-Dioxane	0.81508	0.83367	0.83367	0.010	-2.28001	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.53875	0.54926	0.54926	0.010	-1.95068	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.23392	1.18744	1.18744	0.010	3.76726	50.00000	Averaged
$ 156 Terphenyl-d14	0.84705	0.83577	0.83577	0.010	1.33094	50.00000	Averaged
$ 157 Phenol-d5	1.99385	2.00470	2.00470	0.010	-0.54461	50.00000	Averaged
$ 158 2-Fluorophenol	1.34569	1.39098	1.39098	0.010	-3.36594	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	5.00000	4.75781	0.13441	0.010	4.84374	0.000e+000	Quadratic
$ 186 2-Chlorophenol-d4	1.28758	1.30852	1.30852	0.010	-1.62581	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.81383	0.82698	0.82698	0.010	-1.61531	50.00000	Averaged
M 195 Cresols, total	3.11449	3.13080	3.13080	0.010	-0.52368	50.00000	Averaged
101 Diphenylamine	0.50613	0.49666	0.49666	0.010	1.87130	50.00000	Averaged

TestAmerica North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4hp8.i
Lab File ID: 8SMH1115.D
Analysis Type:
Lab Sample ID: L6
Method: \\cansvr11\dd\chem\MSS\a4hp8.i\71115a.b\8270p.m

Injection Date: 15-NOV-2007 11:38
Init. Cal. Date(s): 14-NOV-2007 14-NOV-2007
Init. Cal. Times: 10:57 16:50
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF5	CCAL RRF5	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
142 Benzo(k)fluoranthene	1.25456	1.24393	1.24393	0.010	0.84705	50.00000	Averaged
146 Benzo(a)pyrene	1.03006	1.08674	1.08674	0.010	-5.50217	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	5.00000	5.20122	1.22808	0.010	-4.02445	0.000e+000	Quadratic
150 Dibenz(a,h)anthracene	5.00000	5.20612	1.04050	0.010	-4.12240	0.000e+000	Quadratic
151 Benzo(g,h,i)perylene	0.96277	1.02591	1.02591	0.010	-6.55803	50.00000	Averaged
198 1,4-Dioxane	0.81508	0.82128	0.82128	0.010	-0.76069	50.00000	Averaged
$ 154 Nitrobenzene-d5	0.53875	0.58699	0.58699	0.010	-8.95354	50.00000	Averaged
$ 155 2-Fluorobiphenyl	1.23392	1.24705	1.24705	0.010	-1.06379	50.00000	Averaged
$ 156 Terphenyl-d14	0.84705	0.85581	0.85581	0.010	-1.03438	50.00000	Averaged
$ 157 Phenol-d5	1.99385	2.02235	2.02235	0.010	-1.42945	50.00000	Averaged
$ 158 2-Fluorophenol	1.34569	1.33425	1.33425	0.010	0.85017	50.00000	Averaged
$ 159 2,4,6-Tribromophenol	5.00000	4.97730	0.14131	0.010	0.45410	0.000e+000	Quadratic
$ 186 2-Chlorophenol-d4	1.28758	1.27791	1.27791	0.010	0.75110	50.00000	Averaged
$ 187 1,2-Dichlorobenzene-d4	0.81383	0.82568	0.82568	0.010	-1.45587	50.00000	Averaged
M 195 Cresols, total	3.11449	3.06737	3.06737	0.010	1.51292	50.00000	Averaged
101 Diphenylamine	0.50613	0.51500	0.51500	0.010	-1.75235	50.00000	Averaged

8B
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02321

Lab File ID (Standard): 8SMH1106 Date Analyzed: 11/06/07

Instrument ID: A4HP8 Time Analyzed: 1205

		IS1 (DCB) AREA #	RT	IS2 (NPT) AREA #	RT	IS3 (ANT) AREA #	RT
	12 HOUR STD	189787	3.44	791874	4.33	395805	5.60
	UPPER LIMIT	379574	3.94	1583748	4.83	791610	6.10
	LOWER LIMIT	94894	2.94	395937	3.83	197903	5.10
	EPA SAMPLE NO.						
01	KAGR3BLK	220284	3.43	805126	4.32	462841	5.59
02	KAGR3CHK	223776	3.43	899776	4.32	477980	5.59
03	SB-339-0506	136557	3.44	556480	4.33	355931	5.60
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8C
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02321

Lab File ID (Standard): 8SMH1106 Date Analyzed: 11/06/07

Instrument ID: A4HP8 Time Analyzed: 1205

		IS4 (PHN) AREA #	RT	IS5 (CRY) AREA #	RT	IS6 (PRY) AREA #	RT
	12 HOUR STD	823657	6.68	876294	8.71	713724	10.12
	UPPER LIMIT	1647314	7.18	1752588	9.21	1427448	10.62
	LOWER LIMIT	411829	6.18	438147	8.21	356862	9.62
	EPA SAMPLE NO.						
01	KAGR3BLK	921429	6.68	918824	8.67	791272	10.07
02	KAGR3CHK	911883	6.68	939765	8.66	753794	10.06
03	SB-339-0506	690037	6.68	684372	8.65	600274	10.05
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02321

Lab File ID (Standard): 8SMH1108 Date Analyzed: 11/08/07

Instrument ID: A4HP8 Time Analyzed: 1610

		IS1 (DCB) AREA #	RT	IS2 (NPT) AREA #	RT	IS3 (ANT) AREA #	RT
	12 HOUR STD	235141	3.36	1015837	4.25	567635	5.51
	UPPER LIMIT	470282	3.86	2031674	4.75	1135270	6.01
	LOWER LIMIT	117571	2.86	507919	3.75	283818	5.01
	EPA SAMPLE NO.						
01	SB-344-0203	175362	3.36	776924	4.25	414285	5.51
02	SB-344-0203	185107	3.36	816035	4.25	445719	5.52
03	SB-344-0203	175275	3.36	766290	4.25	413272	5.51
04	SB-339-0203	127595	3.35	557299	4.25	306828	5.51
05	SB-341-0809	170964	3.36	752294	4.25	413046	5.51
06	SB-339-0809	160849	3.36	720933	4.25	405982	5.51
07	SB-343-0809	129587	3.36	557488	4.25	307736	5.51
08	SB-340-0203	172843	3.36	751340	4.25	408553	5.51
09	SB-340-0506	155540	3.35	699923	4.25	375352	5.51
10	SB-342-0809	189648	3.36	865822	4.25	477064	5.51
11	SB-342-0506	205312	3.36	868999	4.25	478773	5.51
12	SB-344-0809	149163	3.36	661848	4.25	362897	5.51
13	SB-341-0203	130734	3.36	565105	4.25	320026	5.52
14	SB-342-0203	132383	3.36	580357	4.25	321172	5.52
15	SB-343-0506	160053	3.36	699591	4.25	394502	5.51
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8C
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02321

Lab File ID (Standard): 8SMH1108 Date Analyzed: 11/08/07

Instrument ID: A4HP8 Time Analyzed: 1610

		IS4 (PHN) AREA #	RT	IS5 (CRY) AREA #	RT	IS6 (PRY) AREA #	RT
	12 HOUR STD	978582	6.60	905755	8.58	720634	9.92
	UPPER LIMIT	1957164	7.10	1811510	9.08	1441268	10.42
	LOWER LIMIT	489291	6.10	452878	8.08	360317	9.42
	EPA SAMPLE NO.						
01	SB-344-0203	719437	6.60	636986	8.57	554479	9.91
02	SB-344-0203	789196	6.60	685385	8.56	590270	9.90
03	SB-344-0203	717213	6.59	627284	8.56	557157	9.90
04	SB-339-0203	524095	6.59	471536	8.56	439237	9.89
05	SB-341-0809	713751	6.60	616646	8.55	565283	9.89
06	SB-339-0809	712663	6.60	594606	8.56	554510	9.89
07	SB-343-0809	545784	6.60	475803	8.55	420044	9.89
08	SB-340-0203	709772	6.59	620195	8.56	564623	9.89
09	SB-340-0506	635492	6.60	565291	8.56	526704	9.90
10	SB-342-0809	806347	6.60	704371	8.56	634553	9.90
11	SB-342-0506	828653	6.60	802873	8.55	660603	9.90
12	SB-344-0809	622023	6.60	536350	8.55	498509	9.89
13	SB-341-0203	573177	6.60	532693	8.56	487671	9.91
14	SB-342-0203	566114	6.60	527559	8.56	496717	9.90
15	SB-343-0506	674147	6.60	611421	8.56	534378	9.90
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8B
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02321

Lab File ID (Standard): 8SMH1115 Date Analyzed: 11/15/07

Instrument ID: A4HP8 Time Analyzed: 1138

		IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
	12 HOUR STD	139959	3.57	567096	4.46	321108	5.73
	UPPER LIMIT	279918	4.07	1134192	4.96	642216	6.23
	LOWER LIMIT	69980	3.07	283548	3.96	160554	5.23
	EPA SAMPLE NO.						
01	SB-343-0203	122089	3.57	543927	4.46	319056	5.73
02	SB-341-0506	105186	3.57	493738	4.46	303192	5.73
03	SB-340-0809	120051	3.57	520456	4.46	286107	5.73
04	SB-344-0506	110508	3.57	492283	4.46	294128	5.73
05							
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17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

8C
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7K02321

Lab File ID (Standard): 8SMH1115 Date Analyzed: 11/15/07

Instrument ID: A4HP8 Time Analyzed: 1138

		IS4 (PHN) AREA #	RT	IS5 (CRY) AREA #	RT	IS6 (PRY) AREA #	RT
	12 HOUR STD	568868	6.81	548553	8.81	465454	10.31
	UPPER LIMIT	1137736	7.31	1097106	9.31	930908	10.81
	LOWER LIMIT	284434	6.31	274277	8.31	232727	9.81
	EPA SAMPLE NO.						
01	SB-343-0203	593249	6.81	510759	8.80	454759	10.30
02	SB-341-0506	569354	6.81	503388	8.80	465461	10.30
03	SB-340-0809	498501	6.82	431833	8.80	399542	10.29
04	SB-344-0506	553311	6.81	511865	8.81	474574	10.30
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

FORM VIII SV-2 1/87 Rev.

SAMPLE CALC **SAMPLE ID: SB-339-0203** **COMPOUND: BAP**

IS AREA	DILUTION	COMPOUND OF INTEREST AREA	IS AMOUNT (NG)	Final Extract Volume (UL)	AVE RRF	PERCENT SOLIDS	AMOUNT INJECTED (UL)	CONCENTRATION PPB
439237	1	21738	2	2000	1.0651	0.88	0.5	14.07

Sample Amount (g)
30.02

Tetra Tech NUS, Inc

Client Sample ID: SB-339-0203

GC/MS Semivolatiles

Lot-Sample #...:	A7K020321-001	**Work Order #...:**	KAFTG1AD	**Matrix.....:**	SO
Date Sampled...:	11/01/07 12:40	**Date Received..:**	11/02/07		
Prep Date.....:	11/04/07	**Analysis Date..:**	11/08/07		
Prep Batch #...:	7307085				
Dilution Factor:	1	**Initial Wgt/Vol:**	30.02 g	**Final Wgt/Vol..:**	2 mL
% Moisture.....:	12	**Method.....:**	SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzo(a)pyrene	**14 J**	**370**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	74	(24 - 112)
2-Fluorobiphenyl	59	(34 - 110)
Terphenyl-d14	84	(41 - 119)
Phenol-d5	75	(28 - 110)
2-Fluorophenol	71	(26 - 110)
2,4,6-Tribromophenol	37	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

STL North Canton

Semivolatile REPORT SW-846 Method 8270

Data file : \\cansvr11\dd\chem\MSS\a4hp8.i\71108a.b\KAFTG1AD.D
Lab Smp Id: kaftg1ad Client Smp ID: SB-339-0203
Inj Date : 08-NOV-2007 17:59
Operator : 001710 Inst ID: a4hp8.i
Smp Info : kaftg1ad,71108a.b,8270p,bap.sub
Misc Info :
Comment :
Method : \\cansvr11\dd\chem\MSS\a4hp8.i\71108a.b\8270P.m
Meth Date : 09-Nov-2007 13:17 gruberj Quant Type: ISTD
Cal Date : 31-OCT-2007 18:33 Cal File: 8SMH1031.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bap.sub
Target Version: 4.14
Processing Host: CANPMSSV01

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws *) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	0.50000	Volume injected (uL)
Ws	30.020	Weight of sample extracted (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	CONCENTRATIONS FINAL (ug/kg)	
* 1 1,4-Dichlorobenzene-d4	152	3.353	3.358	(1.000)	127595	2.00000		(Q)
* 2 Naphthalene-d8	136	4.248	4.247	(1.000)	557299	2.00000		
* 3 Acenaphthene-d10	164	5.512	5.512	(1.000)	306828	2.00000		
* 4 Phenanthrene-d10	188	6.594	6.599	(1.000)	524095	2.00000		
* 5 Chrysene-d12	240	8.556	8.580	(1.000)	471536	2.00000		
* 6 Perylene-d12	264	9.893	9.922	(1.000)	439237	2.00000		
146 Benzo(a)pyrene	252	9.835	9.869	(0.994)	21738	0.09293	12.383	
$ 154 Nitrobenzene-d5	82	3.733	3.737	(0.879)	462162	3.72036	495.72	
$ 155 2-Fluorobiphenyl	172	5.007	5.007	(0.908)	595916	2.95132	393.25	
$ 156 Terphenyl-d14	244	7.739	7.748	(0.904)	769059	4.20734	560.60	
$ 157 Phenol-d5	99	3.074	3.074	(0.917)	631912	5.62930	750.07	
$ 158 2-Fluorophenol	112	2.507	2.492	(0.748)	415457	5.34133	711.70	
$ 159 2,4,6-Tribromophenol	330	6.085	6.089	(1.104)	60864	2.80053	373.16	
$ 186 2-Chlorophenol-d4	132	3.204	3.204	(0.956)	400657	5.13459	684.16	
$ 187 1,2-Dichlorobenzene-d4	152	3.464	3.468	(1.033)	128519	2.43461	324.40	

QC Flag Legend

Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO: M. MARTIN **DATE:** JANUARY 15, 2008

FROM: MATTHEW D. KRAUS **COPIES:** DV FILE

SUBJECT: INORGANIC DATA VALIDATION – MERCURY
LOCKHEED MIDDLE RIVER
SDG – 7K02321

SAMPLES: 18/Solid/

SB-339-0203	SB-339-0506	SB-339-0809
SB-340-0203	SB-340-0506	SB-340-0809
SB-341-0203	SB-341-0506	SB-341-0809
SB-342-0203	SB-342-0506	SB-342-0809
SB-343-0203	SB-343-0506	SB-343-0809
SB-344-0203	SB-344-0506	SB-344-0809

Overview

The sample set for Lockheed Middle River, SDG 7K02321, consists of eighteen soil environmental samples which were all analyzed for mercury and percent solids. The samples were collected on November 1, 2007 and analyzed by TestAmerica Laboratories Inc. All of the samples were analyzed for mercury in accordance with SW 846 method 7471A and cold vapor atomic absorption (CVAA) methodologies.

Summary

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, initial/continuing calibrations, laboratory method blank results, matrix spike/matrix spike duplicate recoveries, compound quantitation and detection limits. Areas of concern are listed below.

Major Problems

- None.

Minor Problems

- The contract required detection limit (CRDL) standard percent recovery (%R) was greater than the upper quality control limit affecting all samples. Positive results reported for mercury less than 2X the CRDL and not previously qualified due to laboratory blank contamination were qualified as estimated, "J".

- Mercury was detected in the laboratory method/preparation blanks at the following maximum concentration:

Analyte	Maximum Concentration	Action Level
Mercury [1]	0.029 mg/kg	0.14 mg/kg

[1] Maximum concentration was detected in the laboratory method preparation blank affecting all samples.

An action level of 5X the maximum contaminate concentration was used to evaluate sample data for blank contamination. Sample aliquots, percent solids and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the blank action level were qualified due to laboratory blank contamination.

- The matrix spike (MS) percent recovery (%R) for mercury was less than the lower quality control limit (75%) but greater than 30% for the MS analysis of sample SB-344-0203 affecting all mercury results. Positive results reported for mercury which were not previously qualified due to laboratory blank contamination were qualified as estimated, "J", or were qualified as biased low, "L".

Executive Summary

Laboratory Performance: Mercury results were qualified due to calibration noncompliance and laboratory blank contamination.

Other Factors Affecting Data Quality: Mercury results were qualified due to matrix spike noncompliance.

The data for these analyses were reviewed with reference to the "Region III Modifications to National Functional Guidelines for Inorganic Data Validation", April 1993. The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Matthew D. Kraus
Environmental Chemist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key

U	-	Value is considered non-detected as reported by the laboratory.
J	-	Positive result is considered estimated, "J", as a result of technical noncompliance.
UJ	-	Non-detected result is considered estimated, "UJ", as a result of technical noncompliance.
K	-	Positive result is considered biased high, "K", as a result of technical noncompliance.
L	-	Positive result is considered biased low, "L", as a result of technical noncompliance.
UL	-	Non-detected result is considered biased low, "UJ", as a result of technical noncompliance.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00885

SDG: 7K02321 MEDIA: SOIL DATA FRACTION: M

nsample	SB-339-0203	nsample	SB-339-0506	nsample	SB-339-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020321001	lab_id	A7K020321002	lab_id	A7K020321003
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	88.0	Pct_Solids	80.0	Pct_Solids	87.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.13	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.22	J	CD

Parameter	Result	Val Qual	Qual Code
MERCURY	0.025	B	A

PROJ_NO: 00885

SDG: 7K02321 MEDIA: SOIL DATA FRACTION: M

nsample	SB-340-0203	nsample	SB-340-0506	nsample	SB-340-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020321004	lab_id	A7K020321005	lab_id	A7K020321006
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	87.0	Pct_Solids	82.0	Pct_Solids	78.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.11	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.39	L	D

Parameter	Result	Val Qual	Qual Code
MERCURY	0.042	B	A

PROJ_NO: 00885

SDG: 7K02321 MEDIA: SOIL DATA FRACTION: M

nsample	SB-341-0203	nsample	SB-341-0506	nsample	SB-341-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020321007	lab_id	A7K020321008	lab_id	A7K020321009
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	85.0	Pct_Solids	78.0	Pct_Solids	66.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.073	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.29	L	D

Parameter	Result	Val Qual	Qual Code
MERCURY	0.31	L	D

PROJ_NO: 00885

SDG: 7K02321 MEDIA: SOIL DATA FRACTION: M

nsample	SB-342-0203	nsample	SB-342-0506	nsample	SB-342-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020321010	lab_id	A7K020321011	lab_id	A7K020321012
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	84.0	Pct_Solids	74.0	Pct_Solids	63.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.19	J	CD

Parameter	Result	Val Qual	Qual Code
MERCURY	0.84	L	D

Parameter	Result	Val Qual	Qual Code
MERCURY	0.043	B	A

PROJ_NO: 00885

SDG: 7K02321 MEDIA: SOIL DATA FRACTION: M

nsample	SB-343-0203	nsample	SB-343-0506	nsample	SB-343-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020321013	lab_id	A7K020321014	lab_id	A7K020321015
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	80.0	Pct_Solids	75.0	Pct_Solids	79.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.15	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.19	J	CD

Parameter	Result	Val Qual	Qual Code
MERCURY	0.034	B	A

PROJ_NO: 00885

SDG: 7K02321 MEDIA: SOIL DATA FRACTION: M

nsample	SB-344-0203	nsample	SB-344-0506	nsample	SB-344-0809
samp_date	11/1/2007	samp_date	11/1/2007	samp_date	11/1/2007
lab_id	A7K020321016	lab_id	A7K020321017	lab_id	A7K020321018
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	81.0	Pct_Solids	80.0	Pct_Solids	73.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
MERCURY	0.14	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.034	B	A

Parameter	Result	Val Qual	Qual Code
MERCURY	0.052	B	A

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFTG **Client ID:** SB-339-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 11.644

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.13		1	CVAA	11/06/07	12:20

Comments: Lot #: A7K020321 Sample #: 1

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFTT **Client ID:** SB-339-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 19.791

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.12	0.22		1	CVAA	11/06/07	12:32

Comments: Lot #: A7K020321 Sample #: 2

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFTX **Client ID:** SB-339-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 13.271

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.12	0.025	B	1	CVAA	11/06/07	12:22

Comments: Lot #: A7K020321 Sample #: 3

5.21.0

E Serial dilution percent difference not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFT1 **Client ID:** SB-340-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 12.725

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.019	0.11	0.11	B	1	CVAA	11/06/07	12:16

Comments: Lot #: A7K020321 Sample #: 4

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFT2 **Client ID:** SB-340-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 17.659

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.39		1	CVAA	11/06/07	12:12

Comments: Lot #: A7K020321 Sample #: 5

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFT3 **Client ID:** SB-340-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 22.309

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.13	0.042	B	1	CVAA	11/06/07	12:23

Comments: Lot #: A7K020321 Sample #: 6

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFT6 **Client ID:** SB-341-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 14.701

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.073	B	1	CVAA	11/06/07	12:19

Comments: Lot #: A7K020321 Sample #: 7

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFT9 **Client ID:** SB-341-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 22.216

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.13	0.29		1	CVAA	11/06/07	12:30

Comments: Lot #: A7K020321 Sample #: 8

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFVA **Client ID:** SB-341-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 33.922

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.025	0.15	0.31		1	CVAA	11/06/07	12:10

Comments: Lot #: A7K020321 Sample #: 9

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFVE **Client ID:** SB-342-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 15.886

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.020	0.12	0.19		1	CVAA	11/06/07	12:31

Comments: Lot #: A7K020321 Sample #: 10

5.21.0

E Serial dilution percent difference not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFVF **Client ID:** SB-342-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 26.268

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.023	0.14	0.84		1	CVAA	11/06/07	12:15

Comments: Lot #: A7K020321 Sample #: 11

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFVK **Client ID:** SB-342-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 37.462

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	**253.7**	**0.027**	**0.16**	**0.043**	**B**	**1**	**CVAA**	**11/06/07**	**12:18**

Comments: Lot #: A7K020321 Sample #: 12

5.21.0

E Serial dilution percent difference not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFVL **Client ID:** SB-343-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 20.357

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.13	0.15		1	CVAA	11/06/07	12:21

Comments: Lot #: A7K020321 Sample #: 13

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFVR **Client ID:** SB-343-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 24.647

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.022	0.13	0.19		1	CVAA	11/06/07	12:24

Comments: Lot #: A7K020321 Sample #: 14

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFVT **Client ID:** SB-343-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 20.587

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.13	0.034	B	1	CVAA	11/06/07	12:29

Comments: Lot #: A7K020321 Sample #: 15

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFVW **Client ID:** SB-344-0203

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 18.712

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.12	0.14		1	CVAA	11/06/07	12:05

Comments: Lot #: A7K020321 Sample #: 16

5.21.0

E Serial dilution percent difference not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFV0 **Client ID:** SB-344-0506

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 19.932

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.12	0.034	B	1	CVAA	11/06/07	12:09

Comments: Lot #: A7K020321 Sample #: 17

5.21.0

E Serial dilution percent difference not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 1 Equivalent

Test America North Canton

Metals Data Reporting Form

Sample Results

Lab Sample ID: KAFV4 **Client ID:** SB-344-0809

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 26.616

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.023	0.14	0.052	B	1	CVAA	11/06/07	12:26

Comments: Lot #: A7K020321 Sample #: 18

5.21.0

E Serial dilution percent difference not within limits
U Result is less than the IDL
B Result is between IDL and RL

Form 1 Equivalent

Tetra Tech NUS, Inc

Client Sample ID: SB-339-0203

General Chemistry

Lot-Sample #...: A7K020321-001 **Work Order #...:** KAFTG **Matrix.....:** SO
Date Sampled...: 11/01/07 12:40 **Date Received..:** 11/02/07
% Moisture.....: 12

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	88.4	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-339-0506

General Chemistry

Lot-Sample #...: A7K020321-002 Work Order #...: KAFTT Matrix.....: SO
Date Sampled...: 11/01/07 12:42 Date Received..: 11/02/07
% Moisture.....: 20

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	80.2	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-339-0809

General Chemistry

Lot-Sample #...: A7K020321-003 **Work Order #...:** KAFTX **Matrix.....:** SO
Date Sampled...: 11/01/07 12:44 **Date Received..:** 11/02/07
% Moisture.....: 13

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	86.7	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-340-0203

General Chemistry

Lot-Sample #...: A7K020321-004 **Work Order #...:** KAFT1 **Matrix.....:** SO
Date Sampled...: 11/01/07 12:50 **Date Received..:** 11/02/07
% Moisture.....: 13

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	87.3	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-340-0506

General Chemistry

Lot-Sample #...: A7K020321-005 **Work Order #...:** KAFT2 **Matrix.....:** SO
Date Sampled...: 11/01/07 12:52 **Date Received..:** 11/02/07
% Moisture.....: 18

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	82.3	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-340-0809

General Chemistry

Lot-Sample #...: A7K020321-006 **Work Order #...:** KAFT3 **Matrix.....:** SO
Date Sampled...: 11/01/07 12:54 **Date Received..:** 11/02/07
% Moisture.....: 22

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	77.7	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-341-0203

General Chemistry

Lot-Sample #...: A7K020321-007 Work Order #...: KAFT6 Matrix.....: SO
Date Sampled...: 11/01/07 13:00 Date Received..: 11/02/07
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	85.3	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-341-0506

General Chemistry

Lot-Sample #...: A7K020321-008 Work Order #...: KAFT9 Matrix.....: SO
Date Sampled...: 11/01/07 13:02 Date Received..: 11/02/07
% Moisture.....: 22

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	77.8	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-341-0809

General Chemistry

Lot-Sample #...: A7K020321-009 Work Order #...: KAFVA Matrix.....: SO
Date Sampled...: 11/01/07 13:04 Date Received..: 11/02/07
% Moisture.....: 34

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	66.1	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-342-0203

General Chemistry

Lot-Sample #...: A7K020321-010 Work Order #...: KAFVE Matrix.....: SO
Date Sampled...: 11/01/07 13:15 Date Received..: 11/02/07
% Moisture.....: 16

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	84.1	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-342-0506

General Chemistry

Lot-Sample #...: A7K020321-011 Work Order #...: KAFVF Matrix.....: SO
Date Sampled...: 11/01/07 13:17 Date Received..: 11/02/07
% Moisture.....: 26

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	73.7	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-342-0809

General Chemistry

Lot-Sample #...: A7K020321-012 Work Order #...: KAFVK Matrix.....: SO
Date Sampled...: 11/01/07 13:19 Date Received..: 11/02/07
% Moisture.....: 37

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	62.5	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-343-0203

General Chemistry

Lot-Sample #...: A7K020321-013 **Work Order #...:** KAFVL **Matrix.....:** SO
Date Sampled...: 11/01/07 13:35 **Date Received..:** 11/02/07
% Moisture.....: 20

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	79.6	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-343-0506

General Chemistry

Lot-Sample #...: A7K020321-014 **Work Order #...:** KAFVR **Matrix.....:** SO
Date Sampled...: 11/01/07 13:37 **Date Received..:** 11/02/07
% Moisture.....: 25

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	75.4	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-343-0809

General Chemistry

Lot-Sample #...: A7K020321-015 **Work Order #...:** KAFVT **Matrix.....:** SO
Date Sampled...: 11/01/07 13:39 **Date Received..:** 11/02/07
% Moisture.....: 21

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	79.4	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-344-0203

General Chemistry

Lot-Sample #...: A7K020321-016 Work Order #...: KAFVW Matrix.....: SO
Date Sampled...: 11/01/07 14:00 Date Received..: 11/02/07
% Moisture.....: 19

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	81.3	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-344-0506

General Chemistry

Lot-Sample #...: A7K020321-017 Work Order #...: KAFV0 Matrix.....: SO
Date Sampled...: 11/01/07 14:02 Date Received..: 11/02/07
% Moisture.....: 20

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	80.1	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

Tetra Tech NUS, Inc

Client Sample ID: SB-344-0809

General Chemistry

Lot-Sample #...: A7K020321-018 **Work Order #...:** KAFV4 **Matrix.....:** SO
Date Sampled...: 11/01/07 14:04 **Date Received..:** 11/02/07
% Moisture.....: 27

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids	73.4	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

APPENDIX C

SUPPORT DOCUMENTATION

HOLDTIME

SDG 7K02321

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-343-0203	A7K020321013	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-339-0809	A7K020321003	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-340-0203	A7K020321004	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-340-0809	A7K020321006	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-341-0506	A7K020321008	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-341-0809	A7K020321009	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-342-0203	A7K020321010	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-339-0506	A7K020321002	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-342-0809	A7K020321012	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-340-0506	A7K020321005	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-343-0506	A7K020321014	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-343-0809	A7K020321015	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-344-0203	A7K020321016	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-344-0506	A7K020321017	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-344-0809	A7K020321018	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	SB-339-0203	A7K020321001	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-342-0506	A7K020321011	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
HG	MG/KG	SB-341-0203	A7K020321007	NM	11/1/2007	11/5/2007	11/6/2007	4	1	5
PCS	%	SB-342-0809	A7K020321012	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-344-0506	A7K020321017	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-344-0809	A7K020321018	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-344-0203	A7K020321016	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-343-0809	A7K020321015	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-343-0203	A7K020321013	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-339-0203	A7K020321001	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-342-0506	A7K020321011	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-342-0203	A7K020321010	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-339-0809	A7K020321003	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-343-0506	A7K020321014	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-339-0506	A7K020321002	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-341-0809	A7K020321009	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-340-0203	A7K020321004	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-340-0506	A7K020321005	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCS	%	SB-340-0809	A7K020321006	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-341-0203	A7K020321007	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
PCS	%	SB-341-0506	A7K020321008	NM	11/1/2007	11/6/2007	11/7/2007	5	1	6
OS	%	SB-344-0809	A7K020321018	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-341-0506	A7K020321008	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	%	SB-339-0506	A7K020321002	NM	11/1/2007	11/4/2007	11/6/2007	3	2	5
OS	%	SB-339-0809	A7K020321003	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-340-0203	A7K020321004	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-340-0506	A7K020321005	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-340-0809	A7K020321006	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	%	SB-341-0203	A7K020321007	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-339-0203	A7K020321001	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-344-0506	A7K020321017	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	%	SB-342-0203	A7K020321010	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-342-0506	A7K020321011	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-342-0809	A7K020321012	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-343-0203	A7K020321013	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	%	SB-343-0506	A7K020321014	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	SB-343-0809	A7K020321015	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-344-0203	A7K020321016	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	%	SB-341-0809	A7K020321009	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-342-0809	A7K020321012	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-343-0203	A7K020321013	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	UG/KG	SB-343-0506	A7K020321014	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-343-0809	A7K020321015	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-344-0203	A7K020321016	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-342-0506	A7K020321011	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-344-0809	A7K020321018	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-340-0506	A7K020321005	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-344-0506	A7K020321017	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	UG/KG	SB-342-0203	A7K020321010	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-341-0809	A7K020321009	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-341-0506	A7K020321008	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	UG/KG	SB-339-0203	A7K020321001	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-340-0809	A7K020321006	NM	11/1/2007	11/4/2007	11/15/2007	3	11	14
OS	UG/KG	SB-340-0203	A7K020321004	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	SB-339-0809	A7K020321003	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7
OS	UG/KG	SB-339-0506	A7K020321002	NM	11/1/2007	11/4/2007	11/6/2007	3	2	5
OS	UG/KG	SB-341-0203	A7K020321007	NM	11/1/2007	11/4/2007	11/8/2007	3	4	7

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRA TECH	M. MARTIN	11/1/07	322996
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 4 of
20251 CENTURY BLVD #700	301-528-3022		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
GERMANTOWN / PA / 20874	S. HADLEY	K IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LMC MR	COURIER		
Contract/Purchase Order/Quote No.			
112IC00198			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Analysis: 8270 *	Hg
SB-339-0203	11/1/07	1240				X	2						X	X
339-0506		1242												
339-0809		1244												
340-0203		1250												
340-0506		1252												
340-0809		1254												
341-0203		1300												
341-0506		1302												
341-0809		1304												
342-0203		1315												
342-0506		1317												
SB-342-0809	11/1/07	1319				X	2						X	X

Special Instructions/ Conditions of Receipt

* benzo(a) Pyrene

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal

☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STND

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By			1. Received By	11-1-07	1600
2. Relinquished By	11-1-07	17:05	2. Received By	11/2/07	0945
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica North Canton

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Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
TETRATECH	M. MARTIN	11/1/07	322999
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 5 of 5**
20251 CENTURY BLVD #200	301-528-3027		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
GERMANTOWN / MD / 20874	S. HADLEY	K. IVES	
Project Name and Location (State)	**Carrier/Waybill Number**		
LMC MR	COURIER		
Contract/Purchase Order/Quote No.			
112IC00998			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Analysis: 8270*	Hg	Special Instructions/ Conditions of Receipt
SB-343-0203	11/1/07	1335				X	2						X	X	* benzo(a) pyrene
343-0506		1337					1								
343-0809		1339					2								
344-0203 (MS/SD)		1400					4								
344-0506		1402					2								
344-0809	11/1/07	1404				X	2						X	X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STND

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	11/1/07	1600	1. Received By	11-1-07	1600
2. Relinquished By	11-1-07	17:05	2. Received By	11/2/07	0945
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica North Canton

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TestAmerica Cooler Receipt Form/Narrative — Lot Number: ATL020521

North Canton Facility

Client TetraTech Project _____ Quote # 47083

Cooler Received on 11-2-07 Opened on 11-2-07 By _____ (Signature)

FedEx ☑ Client Drop Off ☐ UPS ☐ DHL ☐ FAS ☐ TestAmerica Courier ☐

Stetson ☐ US Cargo ☐ Other _____

TestAmerica Cooler # Back-2 Foam Box ☐ Client Cooler ☐ Other _____

1. Were custody seals on the outside of the cooler? Yes ☑ No ☐ Intact? Yes ☑ No ☐ NA ☐
   If YES, Quantity 1
   Were custody seals on the outside of cooler signed and dated? Yes ☑ No ☐ NA ☐
   Were custody seals on the bottles? Yes ☐ No ☑
   If YES, are there any exceptions _____
2. Shipper's packing slip attached to this form? Yes ☑ No ☐
3. Did custody papers accompany the sample(s)? Yes ☑ No ☐ Relinquished by client? Yes ☑ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☑ No ☐
5. Packing material used: Bubble Wrap ☑ Foam ☐ None ☐ Other _____
6. Cooler temperature upon receipt _____ °C (see back of form for multiple coolers/temps)

METHOD: IR ☑ Other ☐ _____

COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐

7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Could all bottle labels and/or tags be reconciled with the COC? Yes ☑ No ☐
9. Were samples at the correct pH upon receipt? Yes ☐ No ☐ NA ☑
10. Were correct bottles used for the tests indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☑
12. Sufficient quantity received to perform indicated analyses? Yes ☑ No ☐
13. Was a Trip Blank present in the cooler? Yes ☐ No ☑ Were VOAs on the COC? Yes ☐ No ☑

Contacted PM _____ Date _____ by _____ via Voice Mail ☐ Verbal ☐ Other ☐

Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot #071707-HNO3 - Sulfuric Acid Lot # 092006-H2SO4; Sodium Hydroxide Lot # 122805 -NaOH; Hydrochloric Acid Lot # 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot # 050205-CH3COO2ZN/NaOH*

What time was preservative added to sample(s)? _____

Sample(s) _____ were received with bubble > 6 mm in diameter (Notify PM)

Client ID	pH	Date	Initials

ANALYTICAL METHODS SUMMARY

7K02321

PARAMETER	ANALYTICAL METHOD
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Total Residue as Percent Solids	MCAWW 160.3 MOD

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

7K02321 : A7K020321

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KAFTG	001	SB-339-0203	11/01/07	12:40
KAFTT	002	SB-339-0506	11/01/07	12:42
KAFTX	003	SB-339-0809	11/01/07	12:44
KAFT1	004	SB-340-0203	11/01/07	12:50
KAFT2	005	SB-340-0506	11/01/07	12:52
KAFT3	006	SB-340-0809	11/01/07	12:54
KAFT6	007	SB-341-0203	11/01/07	13:00
KAFT9	008	SB-341-0506	11/01/07	13:02
KAFVA	009	SB-341-0809	11/01/07	13:04
KAFVE	010	SB-342-0203	11/01/07	13:15
KAFVF	011	SB-342-0506	11/01/07	13:17
KAFVK	012	SB-342-0809	11/01/07	13:19
KAFVL	013	SB-343-0203	11/01/07	13:35
KAFVR	014	SB-343-0506	11/01/07	13:37
KAFVT	015	SB-343-0809	11/01/07	13:39
KAFVW	016	SB-344-0203	11/01/07	14:00
KAFV0	017	SB-344-0506	11/01/07	14:02
KAFV4	018	SB-344-0809	11/01/07	14:04

NOTE(S):

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

CASE NARRATIVE

7K02321

The following report contains the analytical results for eighteen solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc. from the LMC MR Site, project number 112IC00998. The samples were received November 02, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID's: A7K020321.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Dev Murali, John Poremba, and Michael Martin on November 20, 2007. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 0.1 and 0.6°C.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

Due to an analyst error, an extra 50mls of DI water was added to the LCS associated with batch(es) 7309031 for the Mercury analysis. The final result was adjusted to accommodate the extra 50mls of DI water. The LCS passed acceptance criteria and the samples associated with the LCS were not affected by this anomaly.

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica North Canton (formerly STL North Canton) conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton (formerly STL North Canton) requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

Test America North Canton

Metals Data Reporting Form

Initial Calibration Verification Standard

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn **Acceptable Range:** 90% - 110%

Standard Source: Ultra **Standard ID:** _____

Element	WL/ Mass	True Conc	Ck5ICV 11/06/07 9:40 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Mercury	253.7	2.5	2.69	**107.4**								

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn **Acceptable Range:** 80% - 120%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck2CCV 11/06/07 9:43 AM Found	% Rec	Ck2CCV 11/06/07 11:30 AM Found	% Rec	Ck2CCV 11/06/07 11:44 AM Found	% Rec	Ck2CCV 11/06/07 11:59 AM Found	% Rec	Ck2CCV 11/06/07 12:13 PM Found	% Rec
Mercury	253.7	5.0	5.22	**104.5**	4.99	**99.8**	5.03	**100.7**	5.05	**101.0**	4.99	**99.9**

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn **Acceptable Range:** 80% - 120%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck2CCV 11/06/07 12:27 PM Found	% Rec	Ck2CCV 11/06/07 12:41 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Mercury	253.7	5.0	4.88	**97.6**	4.78	**95.5**						

Test America North Canton

Metals Data Reporting Form

Contract Required Detection Limit Standard

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn **Acceptable Range:** 50% - 150%

Standard Source: Ultra **Standard ID:**

Element	WL/ Mass	True Conc	Ck3CRA\MRL 11/06/07 9:42 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Mercury	253.7	0.2	0.29	**145.5**								

MAXIMUM BLANK CONTAMINATION = PREP BLANK

Analyte	Sample	Maximum (mg/kg)	PB Initial (g)	PB Final (L)	PB (ug/L)	S.Initial (g)	S. Final (L)	Dilution Factor	% Solids	AL (mg/Kg)	Sample Result (mg/Kg)	Previous Qual	Blank Qual
Hg	SB-339-0203	0.029	0.6	0.1	0.174	0.6	0.1	1	88	0.16	0.13		B
	SB-339-0506	0.029	0.6	0.1	0.174	0.6	0.1	1	80	0.18	0.22		
	SB-339-0809	0.029	0.6	0.1	0.174	0.6	0.1	1	87	0.17	0.025		B
	SB-340-0203	0.029	0.6	0.1	0.174	0.6	0.1	1	87	0.17	0.11		B
	SB-340-0506	0.029	0.6	0.1	0.174	0.6	0.1	1	82	0.18	0.39		
	SB-340-0809	0.029	0.6	0.1	0.174	0.6	0.1	1	78	0.19	0.042		B
	SB-341-0203	0.029	0.6	0.1	0.174	0.6	0.1	1	85	0.17	0.073		B
	SB-341-0506	0.029	0.6	0.1	0.174	0.6	0.1	1	78	0.19	0.29		
	SB-341-0809	0.029	0.6	0.1	0.174	0.6	0.1	1	66	0.22	0.31		
	SB-342-0203	0.029	0.6	0.1	0.174	0.6	0.1	1	84	0.17	0.19		
	SB-342-0506	0.029	0.6	0.1	0.174	0.6	0.1	1	74	0.20	0.84		
	SB-342-0809	0.029	0.6	0.1	0.174	0.6	0.1	1	63	0.23	0.043		B
	SB-343-0203	0.029	0.6	0.1	0.174	0.6	0.1	1	80	0.18	0.15		B
	SB-343-0506	0.029	0.6	0.1	0.174	0.6	0.1	1	75	0.19	0.19		B
	SB-343-0809	0.029	0.6	0.1	0.174	0.6	0.1	1	79	0.18	0.034		B
	SB-344-0203	0.029	0.6	0.1	0.174	0.6	0.1	1	81	0.18	0.14		B
	SB-344-0506	0.029	0.6	0.1	0.174	0.6	0.1	1	80	0.18	0.034		B
	SB-344-0809	0.029	0.6	0.1	0.174	0.6	0.1	1	73	0.20	0.052		B

Test America North Canton

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck4ICB 11/06/07 9:41 AM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Mercury	253.7	0.6	0.1	U								

5.21.0

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck1CCB 11/06/07 9:45 AM		Ck1CCB 11/06/07 11:31 AM		Ck1CCB 11/06/07 11:46 AM		Ck1CCB 11/06/07 12:00 PM		Ck1CCB 11/06/07 12:14 PM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Mercury	253.7	0.6	0.1	U	0.1	U	**0.1**	**B**	0.1	U	0.1	U

U Result is less than the IDL

B Result is between IDL and RL

Test America North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: CVAA **Units:** ug/L

Chart Number: hg11106a.prn

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Ck1CCB 11/06/07 12:28 PM Found	Q	Ck1CCB 11/06/07 12:42 PM Found	Q	Found	Q	Found	Q	Found	Q
Mercury	253.7	0.6	0.1	U	0.1	U						

5.21.0

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

Test America North Canton

Metals Data Reporting Form

Preparation Blank Results

Lab Sample ID: KAHVRB

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.017	0.10	0.029	B	1	CVAA	11/06/07	12:03

Comments: Lot #: A7K020321

5.21.0

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

Test America North Canton

Metals Data Reporting Form

Matrix Spike Sample Results

Spike Sample ID: KAFVWS

Original Sample ID: KAFVW **Client ID:** SB-344-0203S

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 18.712

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Mercury	253.7	0.14		0.26		0.2050	56.5	1	1	CVAA	11/06/07	12:05	11/06/07	12:08

Comments: Lot #: A7K020321 Sample #: 16

5.21.0

N Spike recovery failed
NC Percent recovery was not calculated
* Duplicate analysis RPD was not within limits
E Serial dilution percent difference not within limits
U Result is less than the IDL

Form 5A Equivalent

Test America North Canton

Metals Data Reporting Form

Duplicate Sample Results

Lab Sample ID: KAFVWX **Client ID:** SB-344-0203X

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 18.712

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.021	0.12	0.14		1	CVAA	11/06/07	12:06

Comments: Lot #: A7K020321 Sample #: 16

U Result is less than the IDL

Test America North Canton

Metals Data Reporting Form

Sample Duplicate RPD Report

Duplicate Sample ID: KAFVWX

Original Sample ID: KAFVW **Client ID:** SB-344-0203X

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** 18.712

Element	WL/ Mass	OS Conc	Q	Dupe Conc	Q	% RPD	OS DF	Dupe DF	Instr	OS Anal Date	OS Anal Time	Dupe Anal Date	Dupe Anal Time
Mercury	253.7	0.14		0.14		0.0	1	1	CVAA	11/06/07	12:05	11/06/07	12:06

* Duplicate analysis RPD was not within limits

U Result is less than the IDL

B Result is between IDL and RL

Form 6 Equivalent

Test America North Canton

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: KAHVRC

Matrix: Soil **Units:** mg/kg **Prep Date:** 11/05/07 **Prep Batch:** 7309031

Weight: 0.60 **Volume:** 100 **Percent Moisture:** NA

Element	WL/ Mass	Spike Level	Conc	Percent Recovery	Q	Range	DF	Instr	Anal Date	Anal Time
Mercury	253.7	0.83	0.84	100.9		81-116	1.4	CVAA	11/06/07	12:04

Comments: Lot #: A7K020321

N Spike recovery failed

NC Percent recovery was not calculated

Test America North Canton

Metals Data Reporting Form

Instrument Detection Limits

Instrument: CVAA **Units:** ppb

Element	Wavelength	Reporting Limit	IDL	Date of IDL
Mercury	253.700	0.6	0.10	02/01/07

Batch Number: **7309031**

TestAmerica Laboratories, Inc.
Metals Prep Log/ Batch Summary

Prepared By:
Lisa McGall
(e-Signature)

Prep Date: 11/05/07
Due Date: 11/16/07

Lot	Work Order			ICP Weight	ICPMS Weight	Hg Weight
A7K050000 Solid	KAHVR	B	Due Date: SDG:			0.60 g
A7K050000 Solid	KAHVR	C	Due Date: SDG:			0.60 g
A7K020321 Solid	KAFTG Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFTT Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFTX Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFT1 Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFT2 Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFT3 Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFT6 Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFT9 Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFVA Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFVE Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFVF Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFVK Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFVL Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFVR Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFVT Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFVW Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFVW Total	S	Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFVW Total	X	Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFV0 Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g
A7K020321 Solid	KAFV4 Total		Due Date: 11/16/07 SDG: 7K02321			0.60 g

Batch Number: **7309031**

TestAmerica Laboratories, Inc.
Metals Prep Log/ Batch Summary

Prepared By:
Lisa McGall
(e-Signature)

Prep Date: 11/05/07
Due Date: 11/16/07

Lot	Work Order	ICP Weight	ICPMS Weight	Hg Weight
	LEVEL 2			
	BLANK AND CHECK STANDARD ON BATCH	X		
	MS/MSD AND PDS ON BATCH	X		
	CORRECT SPIKES ADDED	X		
	SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG	X		

Comments:

B-BLANK; C-CHECK SAMPLE; L-CHECK SAMPLE DUPLICATE; P-SERIAL DILUTION; S-MATRIX SPIKE SAMPLE; D-MATRIX SPIKE DUPLICATE SAMPLE

Matrix Spike Information:
KAFVW Hg

Check Sample Information:
KAHVR Hg

Prep Method(s): SW846 7471A

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:       Instrument Upload                                    Run Log - Page  1 :
:       Started Tue Nov  6 17:05:17 2007 by TOTHR                              :
:       Data File: UPL$CAN_DATA_ROOT:<LHG>HG111106A.PRN;1                      :
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#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
1	STD1REP1	1	06-NOV-2007	09:05:22			H1
2	STD2REP1	1	06-NOV-2007	09:06:28			H1
3	STD3REP1	1	06-NOV-2007	09:07:43			H1
4	STD4REP1	1	06-NOV-2007	09:08:49			H1
5	STD1REP1	1	06-NOV-2007	09:25:46			H1
6	STD2REP1	1	06-NOV-2007	09:27:06			H1
7	STD3REP1	1	06-NOV-2007	09:28:41			H1
8	STD4REP1	1	06-NOV-2007	09:29:51			H1
9	STD1REP1	1	06-NOV-2007	09:33:08			H1
10	STD2REP1	1	06-NOV-2007	09:34:18			H1
11	STD3REP1	1	06-NOV-2007	09:35:36			H1
12	STD4REP1	1	06-NOV-2007	09:36:46			H1
13	STD5REP1	1	06-NOV-2007	09:37:54			H1
14	STD6REP1	1	06-NOV-2007	09:39:00			H1
15	CK5ICV	1	06-NOV-2007	09:40:12			H1
16	CK4ICB	1	06-NOV-2007	09:41:18			H1
17	CK3CRA\MRL	1	06-NOV-2007	09:42:36			H1
18	CK2CCV	1	06-NOV-2007	09:43:41			H1
19	CK1CCB	1	06-NOV-2007	09:45:06			H1
20	CK2CCV	1	06-NOV-2007	11:30:40			H1
21	CK1CCB	1	06-NOV-2007	11:31:45			H1
22	KAHVPB	1	06-NOV-2007	11:32:51	7309030	A7K050000	H1
23	KAHVPC	1	06-NOV-2007	11:34:05	7309030	A7K050000	H1
24	KAFR6	1	06-NOV-2007	11:35:19	7309030	7K02319	H1
25	KAFR6X	1	06-NOV-2007	11:36:37	7309030	7K02319	H1
26	KAFR6S	1	06-NOV-2007	11:37:41	7309030	7K02319	H1
27	KAFRV	1	06-NOV-2007	11:38:46	7309030	7K02319	H1
28	KAFR0	1	06-NOV-2007	11:39:51	7309030	7K02319	H1
29	KAFRQ	1	06-NOV-2007	11:40:58	7309030	7K02319	H1
30	KAFRT	1	06-NOV-2007	11:42:05	7309030	7K02319	H1
31	KAFRP	1	06-NOV-2007	11:43:14	7309030	7K02319	H1
32	CK2CCV	1	06-NOV-2007	11:44:42			H1
33	CK1CCB	1	06-NOV-2007	11:46:00			H1
34	KAFTC	1	06-NOV-2007	11:47:08	7309030	7K02319	H1
35	KAFTE	1	06-NOV-2007	11:48:13	7309030	7K02319	H1
36	KAFRL	1	06-NOV-2007	11:49:20	7309030	7K02319	H1
37	KAFR5	1	06-NOV-2007	11:50:29	7309030	7K02319	H1
38	KAFR4	1	06-NOV-2007	11:51:33	7309030	7K02319	H1
39	KAFR1	1	06-NOV-2007	11:52:48	7309030	7K02319	H1
40	KAFR9	1	06-NOV-2007	11:53:55	7309030	7K02319	H1
41	KAFRC	1	06-NOV-2007	11:55:00	7309030	7K02319	H1
42	KAFR2	1	06-NOV-2007	11:56:26	7309030	7K02319	H1
43	KAFTD	1	06-NOV-2007	11:57:53	7309030	7K02319	H1
44	CK2CCV	1	06-NOV-2007	11:59:00			H1

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#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
45	CK1CCB	1	06-NOV-2007	12:00:08			H1
46	KAFRR	1	06-NOV-2007	12:01:13	7309030	7K02319	H1
47	KAFRM	1	06-NOV-2007	12:02:21	7309030	7K02319	H1
48	KAHVRB	1	06-NOV-2007	12:03:26	7309031	A7K050000	H1
49	KAHVRC	1.4	06-NOV-2007	12:04:32	7309031	A7K050000	H1
50	KAFVW	1	06-NOV-2007	12:05:49	7309031	7K02321	H1
51	KAFVWX	1	06-NOV-2007	12:06:56	7309031	7K02321	H1
52	KAFVWS	1	06-NOV-2007	12:08:04	7309031	7K02321	H1
53	KAFV0	1	06-NOV-2007	12:09:13	7309031	7K02321	H1
54	KAFVA	1	06-NOV-2007	12:10:43	7309031	7K02321	H1
55	KAFT2	1	06-NOV-2007	12:12:02	7309031	7K02321	H1
56	CK2CCV	1	06-NOV-2007	12:13:13			H1
57	CK1CCB	1	06-NOV-2007	12:14:17			H1
58	KAFVF	1	06-NOV-2007	12:15:44	7309031	7K02321	H1
59	KAFT1	1	06-NOV-2007	12:16:51	7309031	7K02321	H1
60	KAFVK	1	06-NOV-2007	12:18:02	7309031	7K02321	H1
61	KAFT6	1	06-NOV-2007	12:19:22	7309031	7K02321	H1
62	KAFTG	1	06-NOV-2007	12:20:29	7309031	7K02321	H1
63	KAFVL	1	06-NOV-2007	12:21:34	7309031	7K02321	H1
64	KAFTX	1	06-NOV-2007	12:22:39	7309031	7K02321	H1
65	KAFT3	1	06-NOV-2007	12:23:47	7309031	7K02321	H1
66	KAFVR	1	06-NOV-2007	12:24:52	7309031	7K02321	H1
67	KAFV4	1	06-NOV-2007	12:26:13	7309031	7K02321	H1
68	CK2CCV	1	06-NOV-2007	12:27:18			H1
69	CK1CCB	1	06-NOV-2007	12:28:22			H1
70	KAFVT	1	06-NOV-2007	12:29:29	7309031	7K02321	H1
71	KAFT9	1	06-NOV-2007	12:30:34	7309031	7K02321	H1
72	KAFVE	1	06-NOV-2007	12:31:46	7309031	7K02321	H1
73	KAFTT	1	06-NOV-2007	12:32:52	7309031	7K02321	H1
74	KAHVVB	1	06-NOV-2007	12:33:58	7309032	A7K050000	H1
75	KAHVVC	1	06-NOV-2007	12:35:05	7309032	A7K050000	H1
76	KAFQW	1	06-NOV-2007	12:36:14	7309032	7K02316	H1
77	KAFQWX	1	06-NOV-2007	12:37:23	7309032	7K02316	H1
78	KAFQWS	1	06-NOV-2007	12:38:31	7309032	7K02316	H1
79	KAFQ1	1	06-NOV-2007	12:39:42	7309032	7K02316	H1
80	CK2CCV	1	06-NOV-2007	12:41:08			H1
81	CK1CCB	1	06-NOV-2007	12:42:18			H1
82	KAFQ4	1	06-NOV-2007	12:43:39	7309032	7K02316	H1
83	KAFQV	1	06-NOV-2007	12:44:50	7309032	7K02316	H1
84	KAFQ0	1	06-NOV-2007	12:45:56	7309032	7K02316	H1
85	KAFQN	1	06-NOV-2007	12:47:13	7309032	7K02316	H1
86	KAFQF	1	06-NOV-2007	12:48:26	7309032	7K02316	H1
87	KAFQ5	1	06-NOV-2007	12:49:36	7309032	7K02316	H1
88	KAFQ3	1	06-NOV-2007	12:50:44	7309032	7K02316	H1

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#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
89	KAFQH	1	06-NOV-2007	12:51:52	7309032	7K02316	H1
90	KAFQK	1	06-NOV-2007	12:52:58	7309032	7K02316	H1
91	KAFQJ	1	06-NOV-2007	12:54:14	7309032	7K02316	H1
92	CK2CCV	1	06-NOV-2007	12:55:20			H1
93	CK1CCB	1	06-NOV-2007	12:56:27			H1
94	KAFP6	1	06-NOV-2007	12:57:45	7309032	7K02316	H1
95	KAFQ6	1	06-NOV-2007	12:58:54	7309032	7K02316	H1
96	KAFQ7	1	06-NOV-2007	13:00:10	7309032	7K02316	H1
97	KAFQR	1	06-NOV-2007	13:01:17	7309032	7K02316	H1
98	KAFQE	1	06-NOV-2007	13:02:24	7309032	7K02316	H1
99	KAFQC	1	06-NOV-2007	13:03:43	7309032	7K02316	H1
100	KAKF1B	1	06-NOV-2007	13:04:55	7310022	A7K060000	H1
101	KAKF1C	1	06-NOV-2007	13:06:21	7310022	A7K060000	H1
102	KAJRR	1	06-NOV-2007	13:07:37	7310022	A7K050176	H1
103	KAJRRS	1	06-NOV-2007	13:08:43	7310022	A7K050176	H1
104	CK2CCV	1	06-NOV-2007	13:09:49			H1
105	CK1CCB	1	06-NOV-2007	13:10:55			H1
106	KAJRRD	1	06-NOV-2007	13:12:04	7310022	A7K050176	H1
107	KAKF3B	1	06-NOV-2007	13:13:31	7310023	A7K060000	H1
108	KAKF3C	1	06-NOV-2007	13:14:49	7310023	A7K060000	H1
109	KAKF3L	1	06-NOV-2007	13:15:59	7310023	A7K060000	H1
110	KAJRW	1	06-NOV-2007	13:17:05	7310022	A7K050176	H1
111	J96HR	1	06-NOV-2007	13:18:27	7310023	A7J300288	H1
112	ZZZZZ	1	06-NOV-2007	13:19:35			H1
113	CK2CCV	1	06-NOV-2007	13:20:43			H1
114	CK1CCB	1	06-NOV-2007	13:21:58			H1
115	CK2CCV	1	06-NOV-2007	15:18:48			H1
116	CK1CCB	1	06-NOV-2007	15:20:02			H1
117	KAFP6	1	06-NOV-2007	15:21:13	7309032	7K02316	H1
118	KAFQ6	1	06-NOV-2007	15:22:19	7309032	7K02316	H1
119	KAFQ7	1	06-NOV-2007	15:23:26	7309032	7K02316	H1
120	KAFQR	1	06-NOV-2007	15:24:32	7309032	7K02316	H1
121	KAFQE	1	06-NOV-2007	15:25:58	7309032	7K02316	H1
122	KAFQC	1	06-NOV-2007	15:27:06	7309032	7K02316	H1
123	KAKF1B	1	06-NOV-2007	15:28:12	7310022	A7K060000	H1
124	KAKF1C	1	06-NOV-2007	15:29:19	7310022	A7K060000	H1
125	KAJRR	1	06-NOV-2007	15:30:47	7310022	A7K050176	H1
126	KAJRRS	1	06-NOV-2007	15:31:55	7310022	A7K050176	H1
127	CK2CCV	1	06-NOV-2007	15:33:01			H1
128	CK1CCB	1	06-NOV-2007	15:34:06			H1
129	KAJRRD	1	06-NOV-2007	15:35:12	7310022	A7K050176	H1
130	KAKF3B	1	06-NOV-2007	15:36:18	7310023	A7K060000	H1
131	KAKF3C	1	06-NOV-2007	15:37:25	7310023	A7K060000	H1
132	KAKF3L	1	06-NOV-2007	15:38:32	7310023	A7K060000	H1

(continued)

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:       Instrument Upload                                    Run Log - Page  4 :
:       Started Tue Nov  6 17:05:18 2007 by TOTHR                              :
:       Data File: UPL$CAN_DATA_ROOT:<LHG>HG111106A.PRN;1                      :
```

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
133	KAJRW	1	06-NOV-2007	15:39:39	7310022	A7K050176	H1
134	J96HR	1	06-NOV-2007	15:40:50	7310023	A7J300288	H1
135	CK2CCV	1	06-NOV-2007	15:41:57			H1
136	CK1CCB	1	06-NOV-2007	15:43:03			H1
137	CK2CCV	1	06-NOV-2007	16:25:47			H1
138	CK1CCB	1	06-NOV-2007	16:26:52			H1
139	KAKF3C	1	06-NOV-2007	16:28:10	7310023	A7K060000	H1
140	CK2CCV	1	06-NOV-2007	16:29:26			H1
141	CK1CCB	1	06-NOV-2007	16:30:42			H1

```
---------------------------------- End of Report ----------------------------
```

METHOD BLANK REPORT

General Chemistry

Client Lot #...: 7K02321 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids		Work Order #: KAME81AA		MB Lot-Sample #:	A7K060000-577	
	ND	10.0	%	MCAWW 160.3 MOD	11/06-11/07/07	7310577
		Dilution Factor: 1				

NOTE(S):

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

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A7K020321 **Work Order #...:** KAFVA-SMP KAFVA-DUP **Matrix.....:** SO

Date Sampled...: 11/01/07 13:04 **Date Received..:** 11/02/07

% Moisture.....: 34

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #: A7K020321-009		
	66.1	69.2	%	4.6	(0-20)	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A7K020321 **Work Order #...:** KAFVW-SMP **Matrix.....:** SO
KAFVW-DUP
Date Sampled...: 11/01/07 14:00 **Date Received..:** 11/02/07
% Moisture.....: 19

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #: A7K020321-016		
	81.3	82.0	%	0.89	(0-20)	MCAWW 160.3 MOD	11/06-11/07/07	7310577

Dilution Factor: 1

SRM: KAFVF = 58-342-0506 [Hg] = 0.84 mg/kg as reported by the lab.

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: KAFVWX				Seq: 50	12:06:56 06 Nov 2007 HG			
			SOLID					
Hg	.7010	ppb	.0000 %	.7010				
*** Sample ID: KAFVWS				Seq: 51	12:08:04 06 Nov 2007 HG			
			SOLID					
Hg	1.246	ppb	.0000 %	1.246				
*** Sample ID: KAFV0				Seq: 52	12:09:13 06 Nov 2007 HG			
			SOLID					
Hg	.1613	ppb	.0000 %	.1613				
*** Sample ID: KAFVA				Seq: 53	12:10:43 06 Nov 2007 HG			
			SOLID					
Hg	1.231	ppb	.0000 %	1.231				
*** Sample ID: KAFT2				Seq: 54	12:12:02 06 Nov 2007 HG			
			SOLID					
Hg	1.928	ppb	.0000 %	1.928				

*** Check Standard: 2 Ck2CCV Seq: 55 12:13:13 06 Nov 2007 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		99.89	4.994	5.000	ppb	.0000 %

*** Check Standard: 1 Ck1CCB Seq: 56 12:14:17 06 Nov 2007 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		.0710	.2000	ppb	.0000 %

*** Sample ID: KAFVF				Seq: 57	12:15:44 06 Nov 2007 HG			
			SOLID					
Hg	3.702	ppb	.0000 %	3.702				
*** Sample ID: KAFT1				Seq: 58	12:16:51 06 Nov 2007 HG			
			SOLID					
Hg	.5796	ppb	.0000 %	.5796				
*** Sample ID: KAFVK				Seq: 59	12:18:02 06 Nov 2007 HG			
			SOLID					
Hg	.1623	ppb	.0000 %	.1623				
*** Sample ID: KAFT6				Seq: 60	12:19:22 06 Nov 2007 HG			
			SOLID					
Hg	.3730	ppb	.0000 %	.3730				
*** Sample ID: KAFTG				Seq: 61	12:20:29 06 Nov 2007 HG			
			SOLID					
Hg	.7106	ppb	.0000 %	.7106				

$$\frac{3.702\ \mu g}{L} \cdot \frac{0.1\ L}{0.6\ g} \cdot \frac{1000\ g}{1\ Kg} \cdot \frac{X\ mg}{1000\ \mu g} = \frac{0.617\ mg}{Kg} / 0.74 = \boxed{0.83\ mg/kg}$$

APPENDIX E - ADMINISTRATIVE REQUIREMENTS

Written Agreement
Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland

WRITTEN AGREEMENT

If the Response Action Plan is approved by the Maryland Department of the Environment, Lockheed Martin Corporation agrees, subject to the withdrawal provisions of Section 7-512 of the Environment Article, to comply with the provisions of the Response Action Plan. Lockheed Martin Corporation understands that if Lockheed Martin Corporation fails to implement and complete the requirements of the approved plan and schedule, the Maryland Department of the Environment may reach an agreement with Lockheed Martin Corporation to revise the schedule of completion in the approved Response Action Plan or, if an agreement cannot be reached, the Department may withdraw approval of the plan.

Brad W. Owens
Printed Name

Director, Environmental Remediation
Title

Signature

4/14/08
Date

Zoning Certification
Block D
Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland

ZONING CERTIFICATION

Lockheed Martin Corporation hereby certifies that the property meets all applicable county and municipal zoning requirements.

Lockheed Martin Corporation acknowledges that there are significant penalties for falsifying any information required by the Maryland Department of the Environment under Title 7, Subtitle 5 of the Environment Article, Annotated Code of Maryland, and that certification is required to be included in a response action plan for the Voluntary Cleanup Program pursuant to Title 7, Subtitle 5 of the Environment Article, Annotated Code of Maryland.

Brad W. Owens
Printed Name

Director, Environmental Remediation
Title

Brad W.
Signature

4/14/08
Date