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US ARMY CORPS
OF ENGINEERS
New England District

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FINAL
HEALTH AND SAFETY PLAN

Interim Data Collection Remedial Investigation And Feasibility Study Centredale Manor Restoration Project Site North Providence, Rhode Island

SDMS DocID 35830

HEALTH AND SAFETY PLAN

Interim Data Collection
Remedial Investigation And Feasibility Study
Centredale Manor Restoration Project Site
North Providence, Rhode Island

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1.0 INTRODUCTION

This Health and Safety Plan (HASP) was developed to provide safe work practices and procedures for Battelle, Harding ESE, Inc. and team subcontractor personnel engaged in selected site activities to be conducted in support of soil and groundwater sampling at the Centredale Manor Site, located in North Providence, Rhode Island. This HASP is designed to be used in conjunction with the Battelle Safety and Industrial Hygiene Manual. The Battelle Safety and Industrial Hygiene Manual provides supporting information pertaining to procedures detailed in this HASP as well as the Battelle Standard Operating Procedures.

This HASP was developed in accordance with the requirements established by OSHA 29 CFR 1910.120 "Hazardous Waste Operations and Emergency Response" (HAZWOPER) and sections of 29 CFR 1926 "Safety and Health Regulations for Construction."

This HASP was also developed using information gathered from previous site visits and/or historical site background information regarding known or suspected chemical contaminants, and potential physical hazards associated with the proposed work and the history of the Site. This HASP will be modified, as necessary, if new information becomes available. Changes to the HASP will be made with the approval of the Regional Safety and Health Officer (RSHO). Requests for modifications to the HASP will be directed to the RSHO, who will determine whether or not to make changes. The RSHO will notify the Field Operations Leader (FOL), who will then notify all affected personnel of the changes.

1.1 Key Project Personnel and Organization

This section defines responsibility for site safety and health for Battelle and Harding ESE and team subcontractor personnel engaged in on-site activities. The specific project personnel (Project Manager and Field Operations Leader) assigned to these positions have primary responsibility for implementing on-site health and safety requirements and the RSHO and the Site Safety Officer (SSO) will be the primary points of contact for any questions.

1.1.1 Project Manager

Ms. Patricia White has overall project management (PM) responsibilities for the project. Those responsibilities, as they relate to safety and health, include provision for developing this HASP; the necessary resources to meet requirements of this HASP; coordinating staff assignments to ensure that personnel assigned to the project meet medical and training requirements; and the means and materials necessary to resolve any safety and health issues that are identified or that develop during field activities associated with this project.

1.1.2 Field Operations Leader

Mr. Mark Phaneuf is the FOL, and will be responsible for organizing, scheduling, and implementing all field activities. He is familiar with the project plans, and will be in charge of day-to-day field activities and direction of subcontractors at the site. Mr. Phaneuf will be in frequent communication with the PM, and will make recommendations for any additional activities, if warranted. He will also be responsible for the maintenance of field records and documentation through the completion of sample collection activities. Mr. Phaneuf will be the PM's on-site designate, vested with the authority to carry out day-to-day site operations.

1.1.3 Site Safety Officer

Mr. Mark Phaneuf has been designated by the PM as SSO for the field activities in support of the site investigation with concurrence of the RSHO, Mrs. Heather Kitchen. The qualifications of the SSO are as follows:

- Enrolled in the Harding ESE Health Monitoring Program;
- Shall be 40-hr Hazardous Waste Operations and Emergency Response (HAZWOPER) trained;
- Shall be 8-hr Site Supervisor trained;
- Current first aid/CPR (cardio-pulmonary resuscitation) certification;
- Thirty days or more hazardous waste field experience;
- At least 5 days Level D field experience to be an SSO at a Level D site;
- At least 5 days Level C field experience to be an SSO at a level C site;
- Familiar with Harding ESE policies;
- Familiar with all applicable monitoring equipment and capable of interpreting results; and
- Familiar with U.S. Department of Transportation (DOT) shipping requirements.

In addition, the person designated as SSO must be prepared to accept the following responsibilities:

- Become familiar with site history and prepare, oversee the preparation, or be intimately familiar with the site-specific HASP;
- Organize and implement site indoctrination meetings;
- Coordinate safety equipment requests with the field operations leader;
- Conduct initial reconnaissance, identify the Exclusion Zone, and identify and supervise construction and location of the decontamination area;
- Monitor compliance with the HASP;
- Assume the role of off-site coordinator during emergency response activities;
- Coordinate with the Health and Safety Department;
- Determine appropriate level of protection and answer questions regarding determination;
- Conduct and document on-site inspections of conditions as they relate to implementation of the HASP;
- Maintain the Site logbook and records; and
- Identify a Health and Safety Designee (HSD) as necessary.

The SSO will be the on-site representative of the RSHO for the duration of the project. The SSO is responsible for developing and implementing this HASP in accordance with the Battelle Health and Safety Program. The SSO will investigate and document all accidents, illnesses, and incidents occurring on-site. The SSO will also conduct safety briefings and site-specific training for on-site personnel. As necessary, the SSO will accompany all U.S. Environmental Protection Agency (USEPA), OSHA, or other governmental agency personnel visiting a site in response to health and safety issues. The SSO, in consultation with the RSHO, is responsible for updating and modifying this HASP as site or environmental conditions change. In the event that the SSO is not able to tend to his or her task, the RSHO or another qualified Harding ESE designee will be assigned SSO responsibilities.

1.1.4 Regional Safety and Health Officer

Mrs. Heather Kitchen is the Battelle RSHO. Mrs. Kitchen is responsible for the implementation and operation of the Battelle Health and Safety Program in the Eastern Region. Those responsibilities, as they relate to this HASP, are:

- Oversight of the development and implementation of this HASP;
- Development and presentation of training courses that meet the applicable Battelle health and safety program training requirements;
- Review of the policies and procedures and oversight of the administration of the Battelle Monitoring Program; and
- Review of all accident reports and responses as appropriate.

1.2 Site Information and Personnel Assignments

Site Name: Woonasquatucket River Centredale Manor Site

Address: 2074 Smith Street (Route 44), North Providence, Rhode Island

Site Contact: Cornell Rosiu **Phone Number:** 617-918-1345

EPA Contact: Cornell Rosiu **Phone Number:** 617-918-1345

Purpose of Site Work:
Perform fieldwork in an effort to evaluate and characterize soil and groundwater in support of the remedial investigation and feasibility study (RI/FS).

Proposed Dates of Work:
October 2002

Battelle/Harding ESE Personnel:	Discipline/Tasks Assigned:
Patricia White	Project Manager (PM)
Mark Phaneuf	Field Operations Manager (FOL)
Mark Phaneuf	Site Safety Officer (SSO)
Heather Kitchen	Regional Safety and Health Officer (RSHO)

2.0 EMERGENCY ACTION PLAN

2.1 Introduction

This section has been developed as part of preplanning to direct and guide field personnel in the event of an emergency. As needed, site activities will be coordinated with local fire protection and emergency services prior to commencement. In the event of on-site emergencies, site personnel will be evacuated to a safe place of refuge and the appropriate emergency response agencies will be notified. Since a majority of foreseeable emergency situations will require assistance from outside emergency responders, Harding ESE/team subcontractor personnel will not provide emergency response support beyond the capabilities of onsite response. The emergency response agencies listed in this plan are capable of providing the most effective response, and as such, will be designated as the primary responders. These agencies are located within a reasonable distance from the area of operations, which ensures adequate emergency response time. This Emergency Action Plan, therefore, conforms to the requirements of OSHA Standard 29 CFR 1910.38(a), and as designated in OSHA 29 CFR 1910.120(i)(1)(ii).

Harding ESE/team subcontractor personnel will, through necessary services, provide the following response measures:

- Incipient stage fire fighting support and prevention;
- Incipient spill control and containment measures and prevention;
- Removal of personnel from emergency situation;
- Initial medical support for injuries or illnesses requiring only first-aid level support; and
- Site control and security measures, as necessary.

2.2 Pre-Emergency Planning

Through the initial hazard/risk assessment effort, injuries resulting from exposure to physical hazards have been designated as the most probable emergencies that could be encountered during site activities.

To minimize and eliminate these potential emergency situations, pre-emergency planning activities associated with this project include the following (which are the responsibility of the SSO and/or the FOL):

- Coordinating with local Emergency Response personnel in order to ensure that Harding ESE emergency action activities are compatible with existing emergency response procedures.
- Establishing and maintaining information at the project staging area (support zone) for easy access in the event of an emergency. This information will include the following:
    - List of phone numbers for local emergency services;
    - Chemical Inventory (used on-site), with Material Safety Data Sheets;
    - On-site personnel medical records (Medical Data Sheets); and
    - A logbook or sign-in log sheet identifying personnel on site.

It will be the responsibility of the Harding ESE FOL to ensure specific information is available and present at the site, including:

- The chain of command for emergency action; and
- Potential hazards and control measures associated with planned activities at the site, and providing methods for early recognition and prevention when possible.

2.3 Emergency Recognition and Prevention

2.3.1 Recognition

Foreseeable emergency situations that may be encountered during site activities will generally be recognizable by visual observation. Visual observation is primarily relevant for physical hazards that may be associated with the proposed scope of work. However, visual observation will also play a role in detecting some chemical exposures. To adequately recognize exposures to site contaminants, site personnel must have a clear knowledge of the signs and symptoms of exposures associated with the site contaminants. This information is provided in Table 6-1 of this HASP. Potential site hazards, the activities that they have been associated with, and the recommended control methods are discussed in detail in Section 5.0 and 6.0 of this HASP. Additionally, early recognition of emergency situations will be supported by site surveys to eliminate situations considered predisposed to an emergency. The FOL/SSO will be responsible for performing site surveys and document them in the site Logbook. The above actions provide early recognition for potential emergency situations. However, should an incident occur, Harding ESE/Team Subcontractor personnel will withdraw and notify the appropriate response agencies listed in Table 2-1.

2.3.2 Prevention

Battelle and Harding ESE team personnel will minimize the potential for emergencies by following the Battelle Health and Safety Manual and complying with the HASP and applicable OSHA regulations.

2.4 Safe Distances and Places of Refuge

In the event that the site must be evacuated, all personnel will immediately stop activities and report to the designated safe place of refuge. Safe places of refuge will be identified prior to the commencement of site activities and will be conveyed to personnel as part of the safety meeting conducted each morning. Whenever possible, the safe place of refuge will also serve as the telephone communications point for that area. During an evacuation, personnel will remain at the refuge location until directed otherwise by the Harding ESE/Team Subcontractor FOL/ SSO. The FOL/ SSO will take a head count at this location to account for and to confirm the location of all site personnel. Emergency response personnel will be immediately notified of any unaccounted for personnel.

2.5 Evacuation Routes and Procedures

An evacuation will occur whenever the health, safety or welfare of site workers is compromised. Specific examples of conditions that may initiate an evacuation include but are not limited to the following: severe weather conditions; the occurrence of a fire or explosion; readings on monitoring instrumentation indicate levels of contamination that are greater than instituted action levels; or personnel show signs or symptoms of overexposure to potential site contaminants. In the event of an evacuation, personnel will proceed immediately to the designated place of refuge unless doing so would further jeopardize the welfare of workers. In such an event, personnel will proceed to an alternate location, designated by the SSO/FOL, and remain until further notification from the Harding ESE/Team Subcontractor FOL. Evacuation procedures will be discussed before the initiation of any work at the site. Evacuation routes from the site and safe places of refuge are dependent upon the location at which work is being performed and the circumstances under which an evacuation is required. Additionally, site location and meteorological conditions (i.e., wind speed and direction) may dictate evacuation routes. As a result, assembly points will be selected and communicated to the workers during morning safety meetings relative to the site location where work is being performed.

2.6 Decontamination Procedures/Emergency Medical Treatment

During an evacuation, decontamination procedures will be performed only if doing so does not further jeopardize the welfare of site workers. However, it is unlikely that an evacuation would occur which would require workers to evacuate the site without first performing decontamination procedures.

2.7 Emergency Alerting and Action/Response Procedures

Harding ESE personnel will be working within view or earshot of each other at each site. Because of the close proximity of personnel hand signals, voice commands and air horns will be sufficient to alert site personnel of an emergency. Two-way radios may also be used to communicate between site workers.

If an emergency occurs, the following steps are to be taken:

- Initiate an evacuation by hand signals, voice commands, air horn or two-way radios. Report to the designated refuge point.
- Describe to the FOL (who will serve as the Incident Coordinator) what has occurred and as many details as possible. Once all personnel are evacuated, appropriate response procedures will be enacted to control the situation.

In the event that site personnel cannot control the incident through offensive and defensive measures, the FOL/SSO will enact the emergency notification procedures to secure additional assistance in the following manner:

- Call 911 or other emergency contacts (Table 2-1) and report the emergency. Give the operator the location of the emergency, the type of emergency, the number of people injured, and a brief description of what occurred. Stay on the phone and follow the instructions given by the operator. The operator will then notify and dispatch the proper emergency response agencies.

2.8 PPE and Emergency Equipment

A first-aid kit, eye wash units and fire extinguishers (strategically placed) will be maintained on-site and shall be immediately available for use in the event of an emergency.

2.9 Emergency Contacts

Prior to performing work at any of the sites, all personnel will be thoroughly briefed on the emergency procedures that are to be followed in the event of an accident/incident. Table 2-1 provides a list of emergency contacts and their associated telephone numbers. This table must be posted on-site where it is readily available to all site personnel.

2.10 Emergency Route to Hospital

Directions to the Hospital:

Our Lady of Fatima / Saint Joseph's Hospital
200 High Service Avenue
North Providence, Rhode Island 02940

Telephone: (401) 456-3000
Emergency: (401) 456-3400

Exit Centredale Manor, turn right. Follow Route 44 east for approximately 0.1 miles towards Providence. Make a left onto Mineral Springs Avenue. Follow that for approximately 1.1 miles, turn right onto High Service Avenue. The hospital is approximately 0.5 miles down, on the right.

Driving time is approximately 5 minutes. Refer to Figure 2-1 for a map to the Hospital.

3.0 SITE BACKGROUND

3.1 Site Information

The Centredale Manor is a multi-unit apartment complex that houses elderly and handicapped adults. It is located at 2074 Smith Street (Route 44) in Centredale, a village of North Providence, Rhode Island. This building, as well as the adjacent apartment building known as "Brook Village", is located on the property of the former Metro-Atlantic Chemical Corporation, which occupied a mill complex on the property from the 1940s to the 1970s. The Woonasquatucket River follows the west boundary of the property and the remains of a raceway for the mill complex is on the eastern boundary of the property.

Historical records of Metro-Atlantic Chemical indicate that hexachlorophene was manufactured onsite and there were shipments of trichlorophenols to the site. The mill complex was destroyed by fire in the late 1970s, the apartment buildings were constructed in 1982. During construction of the apartment buildings, 400 drums and 6000 cubic yards of soil were removed from the site. Drum labels indicated that caustics, halogenated solvents, polychlorinated biphenyls (PCBs), and inks may have been contained in the drums.

Elevated levels of dioxin were discovered in fish in June 1996 by a study conducted by EPA Narragansett Laboratories and the Providence Urban Initiative program. Consequently, a study was conducted by the USEPA of the Woonasquatucket River (July 1998) which elevated concentrations of dioxin and PCBs in sediments in portions of the river and impoundments. Soil and sediment sampling was conducted in September 1998 and found dioxin present at concentrations above 1 part per billion (ppb) in portions of the river and in Allendale Pond, the first impoundment to the south of the site. Further sampling was conducted in February 1999 on the property of the Centredale Manor and also found elevated concentrations of dioxin in soils and sediment.

In addition, the former location of Allendale Pond is immediately downstream, and served as a settling basin for sediments, and therefore has the potential to act as a trap for contaminated sediments. The Allendale Dam was completely breached prior to 2002, leaving the former pond bottoms open to the air and posing a potential dust hazard.

3.2 Working Project Definitions

This section provides definitions of the project site.

3.2.1 Site

The site includes the Centredale Manor Site, the Woonasquatucket River and adjacent wetlands as far south as the Dyerville Dam. Areas where sampling activities are to occur may include Allendale, Lymansville, Dyerville, Greystone Mill, and Assapumpsett Ponds and connecting waterways as well as adjacent river bottoms, and riverbanks.

3.2.2 Facility

The facility is the former Metro Atlantic Chemical at 2074 Smith Street, North Providence, Rhode Island. It is currently occupied by the Centredale Manor and Brook Village apartment complexes and associated parking areas.

4.0 SCOPE OF WORK

The field activities scoped under this HASP includes the following:

- Mobilization/demobilization;
- Collection of surface and subsurface soil samples from upland areas;
- Collection of commercial use soil samples from one property at the southeast end of Lyman Mill Pond;
- Collection of water level measurements and groundwater samples from existing monitoring wells; and
- Characterization and disposal of Investigation Derived Waste (IDW).

Refer to the Site-Specific Work Plan and Field Sampling Plan (FSP) for more detailed information regarding all sampling activities.

5.0 TASKS/HAZARDS/ASSOCIATED CONTROL MEASURES SUMMARIZATION

Table 5-1 of this section serves as the basis of the site-specific HASP and identifies the contaminants and physical hazards that are associated with each of the proposed tasks that are to be performed at the site. Table 5-1 may be modified in the future should additional tasks occur at the site. Table 5-1 details the anticipated hazards, recommended control measures, air monitoring recommendations, required personal Protective Equipment (PPE), and decontamination measures for each site task. This table and the associated control measures may be revised if the scope of work, contaminants of concern, or other conditions change.

By using the table, site personnel can determine the hazards associated with each task, the hazards present at each area of the site, and the associated control measures necessary to minimize potential exposures or injuries related to those hazards. The table also assists field team members in determining which PPE and decontamination procedures to use, based on proper air monitoring techniques, historical data, and site-specific conditions.

As discussed earlier, this table and HASP are accompanied by the Battelle Safety and Industrial Hygiene Manual. This manual is designed to further explain supporting elements for site-specific operations as required by 29 CFR 1910.120. This manual will be available for review and should be referenced, as necessary.

6.0 HAZARD ASSESSMENT

The following section provides information regarding the chemical and physical hazards associated with the site inspection and the activities that are to be conducted as part of the scope of work. Table 6-1 provides information on the most common and significant substances likely to be present at the site, based on review of available data. Specifically, toxicological information, exposure limits, symptoms of exposure, and physical properties are discussed in the table. Section 6-1 provides a general list of the contaminants that are expected to be present at the site. Section 6-2 lists the physical hazards that are anticipated at the site or associated with site activities.

6.1 Chemical Hazards

The following contaminants are or may potentially be present in site soils and groundwater: dioxin, PCBs, volatile organic compounds, hexachlorophene, trichlorophenols, caustics, halogenated solvents, and inks. Site personnel may be exposed to these contaminants via ingestion, inhalation, and dermal absorption.

Dioxin is known to be present in sediment at concentrations above 1 ppb at some of the areas under investigation. This concentration warrants concern of dermal contact and inhalation/ingestion of soil particles. The SSO/FOL will be alert for dry conditions that could allow inhalation of dust from sampling areas and direct activities of affected field personnel as necessary. It is anticipated that the greatest potential for exposure to site contaminants is during intrusive activities (e.g., soil sampling); non-intrusive activities, such as locating sample stations with GPS, will be of lesser concern to worker health.

Hazards associated with this investigation include the potential for exposure to site contaminants via dermal contact and by inhalation of dust caused by disturbance of dry soil. A chemical hazard evaluation for the work activities is provided below.

6.1.1 Surface and Subsurface Soil Sampling

Soil-disturbing activities present the highest exposure potential of this investigation. Exposure concerns include inhalation of contaminant-laden particulates and/or volatile organic emissions caused by soil disturbance, and direct skin contact with contaminants. Real-time monitoring of airborne respirable dust (see Section 7.0) will be conducted in the Centredale Manor area to ensure that site-specific action levels are not exceeded. The physical hazards associated with these tasks are addresses in the Section 6.2 and associated task tables.

6.1.2 Groundwater Sampling

Hazards associated with ground water sampling primarily consist of dermal exposures to contaminated waters and the potential for the build up of volatile compounds in the well head. Depending on the nature of the wellhead (location, capped/vented, depth, width etc.) and various other factors the SSO may require monitoring of the area with a photoionization detector (PID) to determine the presence of volatiles and further determine the hazard potential of sample collection.

6.1.3 Sampling Equipment Decontamination

This task presents a low exposure potential. The primary concern for this task is dermal contact with contaminant-laden particulates as a result of decontamination activities. However, the potential for an inhalation or dermal hazard is unlikely due to the method of decontamination.

6.1.4 GPS Sample Location Survey

There is limited potential for exposure to chemicals of concern with this activity. The primary concern is dermal contact with contaminated particles. However, the potential for exposure is limited due to the non-intrusive nature of the work.

6.1.5 Mobilization/Demobilization

These tasks, which are defined in the FSP, present a low exposure potential. No exposure potential is anticipated during these activities. However, concern for potential exposure during these tasks may exist when conducting work in areas of known or suspected surface contamination. Personal protective clothing should be worn when the potential may exist for dermal exposure or potential contamination of work clothes.

6.2 Physical Hazards

The physical hazards that may be present during the performance of site activities are summarized below:

- Uneven or unstable terrain (slip, trip, and fall hazards);
- Contact with underground utilities (electric lines, gas lines, water lines, etc.);
- Strain/muscle pulls from heavy or awkward lifting;
- Pinch/compression points;
- Inclement weather;
- Ambient temperature extremes (heat or cold stress);
- Natural hazards (insect/animal bites or stings, poisonous plants);
- Other physical hazards associated with site activities/ongoing operations (proximity to vehicular traffic, etc.); and
- Heat stress.

These physical activities are discussed in Table 5-1 as applicable to each site task. Furthermore, many of these hazards are discussed in the Safety and Industrial Hygiene Manual and appropriate response to many of these hazards is discussed in Attachment A, First Aid and Emergency Care. Specific discussion on some of these hazards is presented below.

6.2.1 Contact with Underground or Overhead Utilities

Clearance of underground utilities must be coordinated through DIGSAFE (1-888-344-7233).

6.2.2 Heavy/Awkward Lifting

During any manual handling/lifting tasks, personnel are to lift with the force of the load supported by their legs and not their backs. The correct number of personnel must be used to lift or handle awkward/heavy equipment. These procedures are to be employed to attempt to avoid back strain.

6.2.3 Inclement Weather/Ambient Temperature Extremes

In the event of inclement weather (heavy rain, thunder and lightning, etc.), work will be terminated and will not commence until conditions become safe to do so.

Ambient temperature extremes (heat or cold stress) may exist during performance of this work depending on the project schedule. Work performed when temperatures are below 50°F may result in varying levels of cold stress (frost nip, hypothermia, frost bite, etc.) depending on factors such as temperature, wind speed, and humidity; physiological factors such as metabolic rate and moisture content of the skin; and other factors such as the use of protective clothing. Work performed when ambient temperatures exceed

70°F may result in varying levels of heat stress (heat rash, heat cramps, heat exhaustion, and/or heat stroke) depending on factors similar to those present for cold stress.

For more information concerning the effect and controls for cold and heat stress, see the First Aid and Emergency Care information in Attachment A. Staff will be made aware of symptoms of cold and heat stress during onsite safety meetings, as appropriate.

6.2.4 Natural Hazards

Given that proposed work will be conducted outdoors and sometimes in brush, marsh, and other natural areas, various animals, insects, or poisonous plants indigenous to the area may be encountered. During warm months (spring through early fall), tick-borne Lyme Disease may be a potential health hazard in the region. Specific information on Lyme Disease is included in Attachment B. In general, avoidance of areas of known insect infestation or poisonous plant growth will be the preferred exposure control. In addition, individuals with known allergic reactions to insect bites and poisonous plants should notify SSO prior to engaging in activities where these hazards may be encountered.

7.0 AIR MONITORING

Monitoring devices such as PIDs or Draeger Tubes will be used as appropriate at the site to detect and evaluate the presence of site contaminants and other potentially harmful agents. The specific type of monitoring and the associated instruments, frequency of use, and applicable action levels are dependent upon the specific scope of work and the contaminants of concern. As a result, specific air monitoring measures and requirements have been established in Table 5-1 of this site-specific HASP. The FSP contains information regarding direct reading instrumentation and general calibration procedures of various instruments.

Generally, the anticipated air monitoring program will be limited to screening for VOCs at source areas and in the breathing zone using PIDs or Draeger Tubes. Air sampling for airborne contaminant-laden particulates will be performed during investigative field efforts which might lead to soil/dust disturbance at the site, and as deemed additionally necessary by field personnel.

Dust monitoring will be performed in accordance with Attachment E.

7.1 Photoionization Detector (PID)

A PID with a 10.6 eV (or equivalent) lamp may be used to monitor potential source areas and to screen source areas and breathing zones of employees during sampling and other intrusive activities. The PID has been selected because it is capable of detecting organic gases and vapors and some inorganic gases and vapors. Prior to the commencement of any field activities, the background level of the site must be determined and noted. A daily background reading must be taken away from areas of potential contamination to obtain accurate results. These readings, any influencing conditions (i.e., weather, temperature, humidity), and the location will also be documented in the field logbook as a matter of reference.

7.2 Flame Ionization Detector (FID)

A flame ionization detector (FID) may also be used to screen source areas and the worker's breathing zone during sampling and other intrusive activities. The FID is capable of detecting volatile organic gases and vapors using a different operating principle and has been included as a backup instrument due to the different principle of operation relative to the PID.

Instrument calibration is the responsibility of the FOL. Instrument calibration procedures are discussed in the FSP.

8.0 TRAINING/MEDICAL SURVEILLANCE REQUIREMENTS

This section is included to specify health and safety training and medical surveillance requirements for both Harding ESE and team subcontractor personnel participating in site activities.

8.1 Introductory/Refresher/Supervisory Training

All personnel must complete 40 hours of introductory hazardous waste operations and emergency response(HAZWOPER) training prior to performing work at the site. Additionally, Harding ESE/Team personnel who have had introductory training more than 12 months prior to site work must have completed 8 hours of refresher training within the past 12 months before they can be cleared for site work. In addition, 8-hour supervisory training in accordance with 29 CFR 1910.120(e)(4) will be required for site supervisory personnel. At least two personnel on each shift shall be qualified to administer first aid and CPR.

Documentation of Harding ESE introductory, supervisory and refresher training as well as site-specific training will be maintained at the Harding ESE Wakefield office. Documentation of training for Battelle personnel shall be on file at the Battelle Duxbury Operations office. Copies of certificates or other official documentation will be used to fulfill this requirement. Team subcontractor personnel shall maintain appropriate copies of their training records at their respective office.

Harding ESE/Team subcontractor personnel will also conduct a brief Health & Safety meeting to discuss operations planned for that day. At the end of the workday, a short meeting will be held to discuss the operations completed and any problems encountered.

8.2 Site-Specific Training

Battelle and Harding ESE will provide site-specific training to all Harding ESE employees and team subcontractor personnel who will perform onsite work for this project. Site-specific training will also be provided to all personnel (EPA, etc.) who may enter the site to perform functions that may be directly related to site operations. Site-specific training will include:

- Names of designated personnel and alternates responsible for site safety and health;
- Safety, health, and other hazards present on-site;
- Use of personal protective equipment;
- Work practices to minimize risks from hazards;
- Safe use of engineering controls and equipment;
- Medical surveillance requirements;
- Signs and symptoms of overexposure;
- Contents of the Health and Safety Plan;
- Emergency response procedures (evacuation and assembly points);
- Spill response procedures;
- Respiratory Protection; and
- Lockout/Tagout.

Site-specific documentation will be verified through the use of Figure 8-1. All site personnel and visitors must sign this document upon receiving site-specific training.

8.3 Medical Surveillance

All Battelle, Harding ESE and Team Subcontractor personnel participating in project field activities will have had a physical examination meeting the requirements of a medical surveillance program (per paragraph (f) of OSHA 29 CFR 1910.120) and shall be medically qualified to perform hazardous waste operations using the appropriate level of respiratory protection as designated by the SSO.

Documentation for medical clearance will be maintained in the Harding ESE Wakefield office, and/or respective Team Subcontractor's office, and made available, as necessary.

Each field team member entering the exclusion zone(s) shall be required to complete and submit a copy of the Medical Data Sheet presented in Section 12. This shall be provided to the SSO, prior to participating in site activities. The purpose of this document is to provide site personnel and emergency responders with additional information that may be necessary in order to administer medical attention. These Medical Data Sheets shall be updated every twelve months based on medical authorization information.

8.4 Respiratory Protection

If the monitoring thresholds detailed in Table 5-1 are exceeded, respiratory protection must be used as indicated by Battelle's Respiratory Protection Program. This policy is included in Attachment C.

8.5 Hazard Communication

In 1986, OSHA began enforcing the Hazard Communication Standard (HCS) (29 CFR 1910.1200). This standard requires employers to make their associates aware of the hazards to which they may be exposed. This standard does not apply to exposures to hazardous waste. Therefore, on hazardous waste sites, the only chemicals covered by the HCS are those that Harding ESE or their subcontractors bring onto the site, such as for decontamination and sample preservation purposes. In 1987 when the Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120) was first promulgated, most of the components of the HCS were incorporated into the new standard. Because of this, the only components of the HCS that need to be addressed separately at a hazardous waste site are labeling and MSDSs, the rest of the standard has been included in 1910.120 or is part of the overall Battelle Health and Safety Program.

MSDSs for all chemicals brought to the site will be added to the MSDS section of the Health and Safety Plan and will be reviewed by all employees and subcontractors working at the site.

Battelle's policy has been to minimize chemical storage by purchasing small sized containers that are shipped directly to the site, so as to avoid the need to transfer bulk chemicals to smaller containers (note: sample jars may have been purchased with the preservative already added). The original label will be kept on all containers. If the chemical is transferred to a smaller container, the new container will be labeled with the name of the contents, manufacturer name, and appropriate hazard warnings (e.g., any combination of words, pictures, or symbols that conveys the chemical hazard; for example the word "flammable" with a picture of a flame).

8.6 Bloodborne Pathogen Exposure

Bloodborne Pathogen Exposure is discussed during Harding ESE safety training, although the OSHA Bloodborne Pathogens Standard does not apply to Harding ESE employees because these employees are not "reasonably anticipated" to come in contact with blood or other potentially infectious materials as a result of performing their job duties. Attachment D contains Battelle's Bloodborne Pathogens Exposure Control Program..

9.0 SPILL CONTAINMENT PROGRAM

9.1 Scope and Application

It is anticipated that quantities of bulk potentially hazardous materials (greater than 55-gallons) will be handled during some of the site activities conducted as part of the scope of work. Varying quantities of wastewater (decontamination) and IDW may be generated as part of the site activities. It is not anticipated, however, that spillage of these materials would constitute a significant danger to human health or the environment. Furthermore, it is possible that as the job progresses, that disposable PPE and other non-reusable items may be generated. IDW and other unwanted items generated during investigation activities will be containerized in 55-gallon drums. Samples will be collected and analyzed to characterize the material and determine appropriate disposal measures in accordance with the FSP. Once characterized, the waste can be removed from the staging area and disposed of in accordance with Federal, State and local regulations.

9.2 Potential Spill Areas

Potential spill areas will be monitored by visual inspection in an ongoing attempt to prevent and control further potential contamination of the environment. The areas vulnerable to this hazard include the central staging area and decontamination area.

9.2.1 Site Drums/Containers

All drums/containers used for containing soils and liquids will be sealed, labeled, and staged within a centralized area awaiting shipment or disposal.

9.3 Leak and Spill Detection

To establish an early detection of potential spills or leaks, a walk around of the day's investigation area will be conducted by the SSO at the beginning and end of the working day to visually determine that containers are not leaking. If a leak is detected, the first approach will be to transfer the container contents (using a hand pump) into a new container. Other provisions for the transfer of container contents will be made and the appropriate emergency contacts will be notified, if necessary. In most instances, leaks will be collected and contained using absorbents such as Oil-dry, vermiculite, or sand, which will be stored at the staging area in a marked drum. This material will also be containerized for disposal pending analyses. All inspections will be documented in the Project Logbook.

9.4 Personnel Training and Spill Prevention

All personnel will be instructed on the protocols for spill prevention, containment and collection of hazardous materials in the site-specific training. The FOL/SSO will serve as the Spill Response Coordinator for this operation should the need arise.

9.5 Spill Prevention and Containment Equipment

The following represents the minimum equipment which will be maintained at the staging area at all times for the purpose of supporting this Spill Prevention/Containment Program.

- Sand, clean fill, vermiculite, or other noncombustible absorbent (oil-dry);
- Drums (55-gallon U.S. DOT 17-E or 17-H);
- Portable storage tanks (if necessary);
- Non-sparking tools such as shovels, rakes, and brooms;
- Hand operated drum pump with hose; and

- Labels.

9.6 Spill Control Plan

This section describes the procedures the Harding ESE field crewmembers will employ upon the detection of a spill or leak.

1. Notify the SSO or FOL immediately upon the detection of a leak or spill.
2. Don personal protective equipment (PPE level must be specified by SSO prior to entry) stored at the staging area. Take immediate actions to stop the leak or spill by plugging or patching the drum. Spread the absorbent material in the area of the spill covering completely.
3. Transfer the material to a new container, collect and containerize the absorbent material. Label the new container appropriately. Await analyses for treatment or disposal options.
4. Solid spills will be recontainerized with 2-inches of top cover and will await test results for treatment or disposal options.

It is not anticipated that a spill will occur in which the field crews cannot handle. Should this occur notification of appropriate emergency response agencies will be carried out by the FOL or SSO.

10.0 SITE CONTROL

This section outlines the means by which the Harding ESE SSO will delineate work zones. Personnel will use these work zones in conjunction with decontamination procedures in order to prevent the spread of contaminants into previously unaffected areas of the site. It is anticipated that a three-zone approach will be used during work at this site. This three-zone approach will utilize an exclusion zone, a contamination reduction zone, and a support zone. It is also anticipated that this control measure will be used to control access to site work areas. Use of such controls will restrict the general public, minimize the potential for the spread of contaminants and protect individuals who are not cleared to enter work areas.

10.1 Exclusion Zone

The exclusion zone will be considered the area of the site where there is known or suspected contamination (river, pond, wetlands, etc.).

10.1.1 DIGSAFE Clearance

Rhode Island DIGSAFE will be notified of sampling activities prior to the initiation of field work and no subsurface soil samples will be collected until the locations of any underground utilities have been identified and marked.

10.2 Contamination Reduction Zone

The contamination reduction zone (CRZ) will be a buffer area between the exclusion zone and any area of the site where contamination is not suspected. The personnel and equipment decontamination will take place in this area at a central location to facilitate and support field activities. When applicable, this area will be delineated using barrier tape and/or cones to inform and direct personnel and will be located upwind from the exclusion zone.

10.3 Support Zone

The support zone for this project will include a staging area where site vehicles will be parked, equipment will be unloaded, and where food and drink containers will be maintained. In all cases, the support zones will be established at areas of the site where exposure to site contaminants would not be expected during normal working conditions or foreseeable emergencies.

10.4 Site Visitors

Site visitors for the purpose of this document are identified as representing the following groups of individuals:

- Personnel invited to observe or participate in operations by Harding ESE personnel;
- Regulatory personnel (EPA, RIDEM, OSHA, etc.); and
- Residents of properties at or adjacent to sampling areas.

Because some of the investigation areas are public property, and not controlled, only each sample location currently active will be considered secure. All persons who require site access into active sampling locations will be required to obtain permission from the FOL/SSO. Upon gaining access to the site, all site visitors who contact the field team and are interested in observing operations in progress will be escorted by a Harding ESE representative (arranged for in advance by the FOL) and shall be required to meet the following minimum requirements:

- All site visitors will be routed to the FOL, who will sign them into the field logbook. Information to be recorded in the logbook will include the individual's name (proper identification required), the entity which they represent, and the purpose of the visit.
- All site visitors not associated with the sampling team will be required to maintain a safe distance from the active sampling location as determined by the SSO.

Any and all visitors not meeting the requirements stipulated in this plan will not be permitted to enter the site operational zones during planned activities. All unauthorized visitors will be removed from the premises. Removal of unauthorized visitors will be accomplished with support from the FOL/SSO.

10.5 Site Security

Security of each active sampling location will be the responsibilities of Harding ESE/Team Subcontractor personnel as necessary. Harding ESE/Team Subcontractor personnel will retain control over active sampling locations. The first line of security consists of visual barriers (e.g., site security fence, safety cones, or barrier tape) that restrict the general public. The second line of security will take place at the work site referring interested parties to the FOL. The FOL will serve as a focal point for site personnel, and will serve as the final line of security and the primary enforcement contact.

10.6 Buddy System

Personnel engaged in on-site activities will practice the "buddy system" to ensure the safety of all personnel involved in this operation.

10.7 Material Safety Data Sheet (MSDS) Requirements

Battelle, Harding ESE and/or Team Subcontractor personnel will provide MSDSs for all chemicals brought onsite as well as the chemicals of concern at the site. The contents of these documents will be reviewed by the SSO with the user(s) of the chemical substances prior to any actual use or application of the substances on Site. A chemical inventory of all chemicals used on site will be developed and maintained for the duration of site activities. The MSDSs will then be maintained in a central location and will be available for anyone to review upon request.

10.8 Communication

If personnel are not working in proximity to one another during field activities, a supported means of communication between field crews may be necessary. As a result, two-way radio communication devices may be used by field personnel while at the site.

External communication will be accomplished by using cellular telephones.

11.0 CONFINED SPACE ENTRY

It is not anticipated, under the proposed scope of work, that permit-required confined space activities will be conducted. Therefore, personnel under the provisions of this HASP are not allowed, under any circumstances, to enter confined spaces. A confined space is defined as an area which has one or more of the following characteristics:

- Is large enough and so configured that an employee can bodily enter and perform assigned work.
- Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry).
- Is not designed for continuous employee occupancy.

A Permit-Required Confined Space is one that:

- Contains or has a potential to contain a hazardous atmosphere.
- Contains a material that as the potential to engulf an entrant.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized and serious safety or health hazard.

For further information on confined space, consult the SSO. If confined space operations are to be performed as part of the scope of work, detailed procedures and training requirements will have to be addressed.

12.0 MATERIALS AND DOCUMENTATION

Battelle shall ensure the following materials/documents are taken to the project site and used when required.

- A complete copy of this HASP;
- Incident Reports;
- Medical Data Sheets;
- Material Safety Data Sheets for all chemicals of concern and chemicals brought on-site, including decontamination solutions, fuels, sample preservatives, calibration gases, etc.; and
- Emergency Reference Forms.

12.1 Materials to be Available at the Site

The following documentation is to be available at the Site for quick reference purposes. In situations where posting of these documents is not feasible, these documents should be separated and immediately accessible.

Material Safety Data Sheets (MSDSs) – The MSDSs shall also be in a central area accessible to all site personnel. These documents should correspond with all of the substances employed on site. It is acceptable to have these documents within a central folder.

Site Clearance Sheet – This list is found within the training section of the HASP (See Figure 8-1). This list identifies all site personnel, dates of training (including site-specific training), and medical surveillance. This list indicates not only clearance but also status. If personnel do not meet these requirements, they do not enter the site while site personnel are engaged in activities.

Emergency Phone Numbers and Directions to the Hospital(s) - This list of numbers and the directions will be maintained at all phone communications points and in each site vehicle.

Medical Data Sheets/Cards – Medical Data Sheets will be filled out by all on-site personnel and filed in a central location. The Medical Data Sheet will accompany any injury or illness requiring medical attention to the medical facility.

Visitors

Visitors must furnish their own PPE. Visitors are required to sign the Visitor Log and comply with guidelines, rules, and procedures presented herein. If the visitor represents a regulatory agency concerned with site health and safety issues, the SSHO must immediately notify the DSHO.

VISITOR LOG

Name of Visitor (Please Print)	Company Name	Date of Visit	Signature

Health and Safety Meetings

Project personnel must receive initial health and safety orientation. Thereafter, a brief tailgate safety meeting is required as deemed necessary by the SSHO. Health and safety meetings will be held at least once every week or when risks and/or hazards change.

HEALTH AND SAFETY MEETING LOG

Date	Topics	Name of Attendee (Please Print)	Company Name

MEDICAL DATA SHEET

This Medical Data Sheet will be completed by all on-site personnel and kept in the Support Zone during site operations. It is not a substitute for the Medical Surveillance Program requirements consistent with the Battelle policies regarding Hazardous Waste Operations. This data sheet will accompany any personnel when medical assistance or transport to hospital facilities is required. If more space is required, use the back of this sheet.

Project: Centredale Manor Restoration Project Superfund Site, North Providence, Rhode Island

Name: _____

Address: _____

Home Telephone: _____-_____-_____.

Age: _____ Height: _____ Weight: _____

In case of emergency, contact: _____

Address: _____

Telephone:_____-_____-_____Do you wear contact lenses? Yes ( ) No ( )

Allergies: _____

List medication(s) taken regularly: _____

Particular sensitivities: _____

Previous/current medical conditions or exposures to hazardous chemicals:

_____

Name of Personal Physician: _____

Telephone: _____-_____-_____

13.0 HASP APPROVALS

By their signatures, the undersigned certify that this HASP will be used for the protection of the health and safety of all persons entering the Centredale Manor Restoration Project Site. Signatures also serve as certification of completion of the Hazard Assessments as required by 29CFR 1910.132.

Site Safety Officer — Date 10/14/02

Patricia Wade
Project Manager — Date 9/26/02

Donald W Cagle, CIH
Health and Safety Manager — Date 9/25/02

TABLES

Table 2-1. Emergency Reference Table.

Contact	Phone Number
North Providence Emergency Numbers: **Ambulance** **Police** **Fire** **Hospital Emergency Room**	 **911 (or 401-456-2119)** **911 (or 401-231-4533)** **911 (or 401-231-8500)** **401-456-3400**
Rhode Island Dig Safe	**800-225-4977**
Poison Control Center	**800-682-9211**
Chemtrec National Response Center	**800-424-9300**
Project Manager: Patricia White	**781-952-5279**
Field Operations Leader: Mark Phaneuf	**781-245-6606**
EPA Work Assignment Manager: Anna Krasko	**617-918-1232**
Health and Safety Manager: Heather Kitchen	**614-424-7233**
Battelle Program Manager: Karen Foster	**781-952-5370**
USACE Project Manager: Laureen Borochaner	**978-318-8802**

Table 5-1. Tasks/Hazards/Control Measures Compendium.

Task/Operation/Location	Anticipated Hazards	Recommended Control Measures	Air Monitoring	Personal Protective Equipment	Decontamination Procedures
Surface and Subsurface Soil Sampling	*Chemical Hazards:* 1) Various organic vapors and air/particulate borne contaminants at low to medium concentrations primarily consisting of dioxin, VOCs, SVOCs, metals, and PCBs. 2) Transfer of contamination into clean areas or onto persons. *Physical Hazards:* 1) Noise in excess of 85 dBA (not anticipated). 2) Contact with underground utilities (electric lines, gas lines, water lines, etc.) (not anticipated). 3) Strain/muscle pulls from heavy/awkward lifting. 4) Uneven or unstable terrain (slip, trip, and fall hazards). 5) Pinch/compression points. 6) Other physical hazards associated with ongoing operations (foot and vehicular traffic). 7) Natural hazards (insect/animal bites or stings, poisonous plants, etc.). 8) Ambient temperature extremes.	*Chemical Hazards:* 1) Use real-time monitoring instrumentation, action levels, and identified PPE to control exposures to potentially contaminated medias (e.g., air, water, soils, etc.). Exposure to dusty conditions will be controlled through the use of water suppression and personnel avoidance of visible dust plumes. A dust meter capable of monitoring airborne respirable dust shall be used when sampling activities in the Allendale Reach have the potential to cause soil or sediment disturbance and as deemed additionally necessary by field personnel. If sustained airborne respirable dust levels exceed 5 mg/m^3, sampling activities will be halted. ➢ Identify and physically barricade operational zones where potential contamination may exist to prevent incidental contact and transfer outside of the operational area. 2) Decontaminate all equipment and supplies between sampling locations as well as prior to leaving the site. *Physical Hazards:* 1) Excessive noise levels will be mitigated through the use of hearing protection. Any piece of equipment or operation that has the potential to generate excessive noise levels (i.e., you must raise your voice to speak to someone within two feet of where you are standing) will require hearing protection. 2) Prior to subsurface activities, clearance shall be obtained through DIGSAFE. The locations of all underground utilities will be identified and marked prior to all subsurface investigations. 3) Use multiple personnel and proper lifting techniques for heavy/awkward lifting. ➢ Use proper lifting techniques. 4) Preview work location for uneven/unstable terrain. Keep work area organized and free from clutter. 5) Use other equipment to remove hands from points of operation. 6) Traffic and equipment considerations are to include the following: ➢ Establish safe work zones and utilize safety cones and/or tape as necessary. ➢ All personnel working in high equipment traffic areas are required to wear reflective vests for high visibility. 7) Wear appropriate clothing and PPE. Avoid potential nesting areas and suspicious vegetation (poison ivy, poison oak, etc.). Refer to the Health and Safety Guidance Manual for additional information regarding ticks and Lyme's disease. 8) Wear appropriate clothing for the anticipated weather conditions while maintaining the required level of protection. Terminate or reschedule work if weather conditions are severe.	Elevated airborne concentrations impacting the field crews or downwind receptors are not anticipated. The following information is provided as a contingency action only. Direct reading instrument such as Photoionization detectors with a 10.6 eV source or flame ionization detectors will be used to detect volatile organic compounds, elemental decomposition products, and carrier substances, as applicable. These instruments will only be used as screening devices in the following manner: 1. Source monitoring with a PID/FID will be conducted at each new location or area, and at regular intervals to be determined by the SSO. Positive sustained results at a source will require the following actions: ➢ Monitor the breathing zone of at-risk and downwind employees. ➢ Any sustained reading above background in the breathing zone will require monitoring with Benzene 0.5/c and Vinyl Chloride 0.5/a Draeger tubes. If benzene is greater than or equal to 0.5 ppm, or if the PID is greater than or equal to 9 ppm, personnel will upgrade to Level C PPE. If Vinyl Chloride is greater than or equal to 0.5 ppm, Benzene is greater than or equal to 5 ppm, or PID reading is greater than or equal to 100 ppm, personnel will upgrade to Level B PPE. 2. Visible plumes of dust will trigger a halt in sampling activities and a reassessment of the situation.	All sampling activities are anticipated to proceed in a modified Level D protection. Level D respiratory protection and the following minimal personal protective equipment: ➢ Standard field dress (long pants and long or short sleeve shirts). Hats and sunblock will be used when necessary. ➢ Where potential for skin contact with materials contaminated with volatiles or semivolatiles, PE coated tyvek will be used. PE coated tyvek will also be used where potential for saturation of the work clothes exists, along with impermeable boots (covers) and nitrile gloves. ➢ Steel toe/shank safety boots; ➢ Disposable latex/nitrile gloves when sampling; ➢ Safety glasses; Area evacuation will be required if breathing zone readings are greater than described at left.	*Personnel Decontamination:* This function will take place at an area adjacent to the sampling operations. This decontamination procedure for Level D protection will consist of: ➢ Equipment drop; ➢ Soap/water wash and rinse of outer gloves and outer boots, as applicable; ➢ Soap/water wash and rinse of the outer splash suit, as applicable; and ➢ Wash hands and face, leave contamination reduction zone **Sampling Equipment Decontamination:** All equipment used in the exclusion zone requires decontamination between locations and prior to removal from the site. All site vehicles will be restricted from access to exclusion zones.

Table 5-1. Tasks/Hazards/Control Measures Compendium (continued)

Task/Operation/Location	Anticipated Hazards	Recommended Control Measures	Air Monitoring	Personal Protective Equipment	Decontamination Procedures
GPS Survey	*Chemical Hazards:* 1) Various contaminants, including VOCs, SVOCs, PCBs, Pesticides, and Metals at low to medium concentrations. *Physical Hazards:* 1) Uneven or unstable terrain (slip, trip, and fall hazards). 2) Natural hazards (insect/animal bites and stings, poisonous plants, etc.). 3) Ambient temperature extremes.	*Chemical Hazards:* 1) Use real-time monitoring instrumentation, action levels, and identified PPE to identify, quantify, and control exposures to potentially contaminated medias (e.g., air, water, soils). Exposure to dusty conditions will be controlled through the use of water suppression and personnel avoidance of visible dust plumes. (we will not be sampling in Allendale reach) 2) Restrict the cross use of equipment and supplies between sampling locations without first going through a suitable decontamination. *Physical Hazards:* 1) Preview work locations for unstable/uneven terrain. 2) Avoid insect/animal nesting areas (Do NOT use insect repellents during sampling activities). Report potential hazards to the SSO. 3) Wear appropriate clothing for the anticipated weather conditions while maintaining the required level of protection. If necessary, perform biological monitoring.	Elevated airborne concentrations impacting the field crews or downwind receptors are not anticipated. The following information is provided as a contingency action only. Direct reading instrument such as Photoionization detectors with a 10.6 eV source or flame ionization detectors will be used to detect volatile organic compounds, elemental decomposition products, and carrier substances, as applicable. These instruments will only be used as screening devices in the following manner: • Source monitoring with a PID/FID will be conducted at regular intervals to be determined by the SSO. Positive sustained results at a source will require the following actions: ➢ Monitor the breathing zone of at-risk and downwind employees. ➢ Any sustained reading above background in the breathing zone will require monitoring with Benzene 0.5/c and Vinyl Chloride 0.5/a Draeger tubes. If benzene is greater than or equal to 0.5 ppm, or if the PID is greater than or equal to 9 ppm, personnel will upgrade to Level C PPE. If Vinyl Chloride is greater than or equal to 0.5 ppm, Benzene is greater than or equal to 5 ppm, or PID reading is greater than or equal to 100 ppm, personnel will upgrade to Level B PPE. • Visible plumes of dust will trigger a halt in sampling activities and a reassessment of the situation.	All sampling activities are anticipated to proceed in a modified Level D protection. Level D respiratory protection and the following minimal personal protective equipment: ➢ Standard field dress (long pants and long or short sleeve shirts). ➢ Where potential for skin contact with contaminated materials exists, PE coated tyvek will be used. PE coated tyvek will also be used where potential for saturation of the work clothes exists, along with impermeable boots (covers) and nitrile gloves. ➢ Steel toe/shank safety boots; ➢ Disposable latex/nitrile gloves when sampling; ➢ Safety glasses ➢ Area evacuation will be required if breathing zone readings are greater than described at left.	*Personnel Decontamination:* Will consist of a water wash/rinse for non-disposable boots in areas of surficial contamination. This function will take place at an area adjacent to the sampling operations. **Equipment Decontamination:** All non-disposable sampling equipment that comes in contact with sampling media will undergo a soap/water wash and rinse utilizing a suitable potable water source until visibly clean. Sampling equipment may also be high pressure soap/water wash and rinse or steam cleaned. All chemical decontamination will proceed in accordance with the other site documents such as QA/QC, Work Plan, and/or the Sampling Analysis Plan.

Table 5-1. Tasks/Hazards/Control Measures Compendium (continued)

Task/Operation/Location	Anticipated Hazards	Recommended Control Measures	Hazard Monitoring	Personal Protective Equipment	Decontamination Procedures
Ground Water Sampling	***Chemical Hazards:*** 1) Dermal Contact with various Contaminants such as VOCs and Vinyl Chloride. 2) Inhalation potential if wellhead conditions are conducive to the buildup of vapor. ***Physical Hazards:*** 1) Uneven walking surfaces and obstacles.	***Chemical Hazards:*** 1) Wear protection where the potential exist for contaminated ground water to come in contact with skin. Levels of personal protective equipment may be elevated at any time the SSO deems necessary. 2) Monitor area around wellhead at the discretion of the SSO to determine if there are excessive airborne contaminant levels. ***Physical Hazards:*** 1) Visually scan area for slips, trips, and fall hazards.	1) The need for monitoring wellhead areas prior to sample collection will be performed at the discretion of the SSO.	Level D Minimum requirements – ➢ Standard field attire (long sleeve shirt; long pants); ➢ Safety shoes (steel toe/shank); ➢ Nitrile gloves; to be changed every 15 minutes ➢ Safety glasses and splash shield. Respiratory protection will be used if deemed necessary by the SSO.	All PPE and sampling equipment must be appropriately disposed if disposable. Equipment that is not disposable must be washed with soap and water. See following information.
Decontamination of sampling equipment.	***Chemical Hazards:*** 1) Dermal contact – Various organic compounds consisting of dioxin VOCs, SVOCs, PCBs, and metals. 2) Airborne particulate contaminants – Various organic vapors at low to medium concentrations primarily consisting of dioxin, VOCs, SVOCs, metals, and PCBs. ***Physical Hazards:*** 1) Strain/muscle pulls from heavy lifting..	1) Use protective equipment to minimize contact with site contaminants and hazardous decontamination fluids. ➢ Have a means by which the eyes and/or skin may be flushed (i.e., portable camp shower, emergency eyewash, etc.) readily accessible. ➢ Refer to MSDS for specific decontamination solvents and to determine appropriate PPE and safe handling procedures. 2) Use multiple persons where necessary for lifting and handling heavy pieces of equipment for decontamination purposes. 3) If necessary, provide stacking racks for air drying of decontaminated equipment to prevent unstable drying stacks of equipment from collapsing.	1) Use visual observation on all equipment and/or areas, which have been cleaned and dried to ensure they have been properly cleaned of potentially contaminated medias (e.g., air, water, soils).	*For sampling equipment including trowels, split bailers, etc.:* Level D Minimum requirements – ➢ Standard field attire (long and short sleeve shirt; long pants); ➢ Safety shoes (steel toe/shank); ➢ Nitrile gloves; ➢ Safety glasses or a splash shield. In the event of overspray of chemical decontamination fluids, use PVC Rain suits or PE or PVC coated Tyvek. Respiratory protection is not anticipated for these activities.	***Personnel Decontamination:*** This decontamination procedure for Level D protection will consist of: ➢ Soap/water wash and rinse of outer gloves. ➢ Soap/water wash and rinse of the outer splash suit, as applicable. ➢ Wash hands and face and leave contamination reduction zone.

Table 5-1. Tasks/Hazards/Control Measures Compendium (continued)

Task/Operation/Location	Anticipated Hazards	Recommended Control Measures	Air Monitoring	Personal Protective Equipment	Decontamination Procedures
Mobilization / Demobilization	*Chemical Hazards:* Exposure to potential site contaminants are not anticipated during this activity. However, chemicals brought on site in support of field activities are to be identified, logged, accompanied by an appropriate MSDS, properly stored, and evaluated for purposes of hazard communication. *Physical Hazards:* Potential physical hazards associated with this task may include: 1) Strain/muscle pulls from heavy/awkward lifting. 2) Pinch/compression points. 3) Uneven or unstable terrain (slip, trip, and fall hazards). 4) Natural hazards (insect/animal bites and stings, poisonous plants). 5) Other physical hazards associated with ongoing operations (foot and vehicular traffic).	*Chemical Hazards:* To eliminate potential chemical hazards associated with this task ensure the following: ➢ A chemical inventory list is generated and MSDSs are available for all chemicals brought on-site. ➢ Materials are stored in accordance with recommended practices and according to compatibility (see MSDS for storage and compatibility recommendations). *Physical Hazards:* 1) Use machinery or multiple personnel for heavy lifts. ➢ Use proper lifting techniques. 2) Use pinch bars or other equipment to keep hands from the point of operation. 3) Preview and prepare work locations where unstable/uneven terrain exists. 4) Avoid insect/animal nesting areas, use repellents. Report potential hazards to the SSO. Frequently inspect clothing and persons during and after activities in wooded areas for ticks and other vectors. 5) Set-up work area to reduce exposure to vehicle hazards. Use safety vests and safety cones as necessary.	Not required during mobilization / demobilization. Air monitoring will not be performed during these tasks given that these activities will not be performed in areas of known/suspect contamination.	Mobilization/demobilization activities are intended to initiate and proceed in Level D protection. Level D – (Minimum Requirements) ➢ Standard field attire (work shirt; long pants; or coveralls); ➢ Safety work boots (boots with steel toe/shank); ➢ Safety glasses; ➢ Hardhat (when overhead hazards exists, or identified as an operation requirement); ➢ Reflective vest for high traffic areas; ➢ Hearing protection for high noise areas, or as directed on an operation by operation scenario. As a general rule of thumb, if you need to raise your voice to be heard while engaged in conversation with someone who is within 2 feet of your position, you may be exposed to excessive noise levels. If this occurs, use hearing protection. **Note:** Additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task. The following strategically placed emergency equipment will be maintained during onsite activities: ➢ Fire Extinguishers ➢ First Aid Kit ➢ Emergency Eye Wash ➢ Cellular Phone	*Personnel Decontamination:* As potential site contaminants are not anticipated as part of this task, personal decontamination is not required. **Equipment Decontamination:** All equipment arriving/leaving the site will be inspected prior to permitting this equipment to enter or exit the site. The SSO will inspect the equipment and give the clearance to allow the equipment to pass. All equipment which fails the inspection will have to be decontaminated again to a level acceptable to the SSO prior to passage on or off site.

Table 6.1. Toxicological information, exposure limits and symptoms of exposure.

Material	Concentration	PEL/TLV	IDLH	Warning	Signs & Symptoms	IP (eV)
Aldrin (skin)		250 μg/m3	25 mg/m3	<1 mg/m3	Headache, dizziness, nausea, jerks of limbs	NA
Aluminum (dust)		5 mg/m3	NE	Dust	Coughing, spitting, pulmonary fibrosis	Dust
Aluminum alkyls or soluble salts		2 mg/m3	NE	Dust	Coughing, spitting, pulmonary fibrosis	Dust
Antimony compounds		500 μg/m3	50 mg/m3	Dust	Irritated nose, cough, headache, diarrhea	Dust
Arsenic, inorganic		10 μg/m3	5 mg/m3	Dust	Nasal ulcers, fever, bronchitis, melanosis, peripheral neuropathy	Dust
Barium (soluble) compounds		500 μg/m3	50 mg/m3	NA	Muscle spasms, slow pulse, bronchial irritation	NA
Barium sulfate (dust)		5 mg/m3	NE	Dust	Few symptoms, chronic baritosis	Dust
Benzaldehyde		NA	NA	NA	Contact dermititis, feeble anaesthetic, convulsions	NA
Benzo(a)pyrene		NA	NA	0.1 mg/m3	Eye irritation, difficulty breathing, skin irritation and burns.	NA
Beryllium		2 μg/m3	4 mg/m3	Dust	Respiratory symptoms, weakness, weight loss	Dust
Biphenyl		0.2 ppm	>100 mg/m3	0.01 ppm	Irritated eyes, nose, twitching, breathing difficulty	Dust
Bis(2-ethylhexyl)phthalate		NA	5000 mg/m3	5 mg/m3	Mild skin, eye, mucuous membrane irritation, gastric disturbance.	NA
Cadmium dust		5 μg/m3	9 mg/m3	Dust	Pulmonary edema, tight chest, chills	Dust
Chlordane (skin)		500 μg/m3	100 mg/m3	no odor	Blurred vision, delirium, twitches, stomach pain, diarrhea	NA
4-Chloroaniline		1 mg/m3	100 mg/m3	NA	Toxic if inhaled, swallowed, or absorved. Effects of contact may be delayed.	9.96
Chlorinated camphene (Toxaphene) (skin)		500 μg/m3	200 mg/m3	NA	Nausea, confusion, agitation	NA
Chromium compounds		500 μg/m3	250 mg/m3	Dust	Lung damage, skin sensitization	Dust
Chrysene		200 μg/m3	80 mg/m3	Dust	Eye irritation, dermatitis, bronchitis	7.75
Cobalt (metal) (dust & fumes)		20 μg/m3	20 mg/m3	>1 mg/m3	Coughing, respiratory sensitivity, pneumoconiosis, dyspnea	Dust
Copper (dust)		1 mg/m3	NE	Dust	Nasal perforation, metal taste	Dust
Cresol (skin)		5 ppm	250 ppm	0.001 ppm	Depression, dyspnea, weak pulse, skin & eye burning	9.00
DDT (skin)		1 mg/m3	500 mg/m3	2.9 mg/m3	Numb face, lips & tongue, tremors, apprehension, headache	NA
Dichloro propionic acid (Dalapon)		1 ppm	NE	428 ppm	Eye, nose & throat irritation, nausea	NA
Dieldrin (skin)		250 μg/m3	50 mg/m3	0.041 ppm	Headache, dizziness, vomiting, nausea, convulsions	NA
Dioxins		Contact H&S for limits			see polychlorinated dioxins	

Table 6.1. Toxicological information, exposure limits and symptoms of exposure (continued).

Material	Concentration	PEL/TLV	IDLH	Warning	Signs & Symptoms	IP (eV)
Endosulfan (skin)		100 μg/m3	NE	NA	Headaches, dizziness, nausea, convulsions	NA
Endrin (skin)		100 μg/m3	2 mg/m3	NA	Convulsions, stupor, headache, dizziness	NA
Heptachlor & epoxides (skin)		50 μg/m3	35 mg/m3	0.02 ppm	Tremors, convulsions	NA
Lead compounds		50 μg/m3	100 mg/m3	Dust	Fatigue, pallor, colic, insomnia	Dust
Lindane (skin)		500 μg/m3	50 mg/m3	21 mg/m3	Headache, nausea, clonic convulsions, difficult breathing	NA
Magnesium oxide		10 mg/m3	750 mg/m3	Dust	Flu-like fever, cough	Dust
Manganese (dust)		0.2 mg/m3	500 mg/m3	Dust	Dead face", dry throat, cough metal fume fever, pneumonia	Dust
Mercury and compounds (skin)		50 μg/m3	10 mg/m3	NA	Severe abdominal pain tremors, weakness, GI irritation, fatigue	10.40
Methoxychlor		5 mg/m3	5,000 mg/m3	NA	Twitches, convulsions	NA
Methylene chloride		25 ppm	2,300 ppm	160 ppm	Weakness, tingling & numbness, vertigo, nausea	11.35
Molybdenum compounds		5 mg/m3	1,000 mg/m3	Dust	Loss of appetite, incoordination, eye, nose & throat irritation	Dust
Naphthalene		10 ppm	250 ppm	38 ppb	Eye irritation, headache, confusion, excitement, nausea	8.12
Nickel (dust)		1 mg/m3	10 mg/m3	Dust	Skin sensitivity, chest pain, "asthma"	Dust
Nickel (soluble compounds)		100 μg/m3		Dust	Skin sensitivity, chest pain, "asthma"	Dust
Nitrophenol		NA	NA	NA	Headache, nausea, drowsiness, skin irritation, blue color in lips, ears, and fingernails.	NA
PAHs (Coal Tar/Pitch Volatiles)		NA	80 mg/m3	NA	Eye irritation, difficulty breathing, skin irritation and burns.	8.97
Pentachlorophenol (skin)		500 μg/m3	2.5 mg/m3	9.3 mg/m3	Irritated eyes, & nose, lost appetite, weakness, sweating, sneezing	NA
Phenanthrene		NA	NA	NA	Skin, eye, and mucous membrane irritation.	NA
Phenol (skin)		5 ppm	250 ppm	0.06 ppm	Skin corrosive, eye irritant, muscle aches, dark urine	8.50
Polychlorinated biphenyl (PCBs - skin)		500 μg/m3	5 mg/m3	Mist	Irritated eyes, chloracne	Mist
Polychlorinated dibenzodioxins (hex isomers)		1 μg/m3 (Company - internal)	Carc.	Dust	Chloracne, loss of feeling, fatigue	
Polychlorinated dibenzodioxins (other isomers)		10 pg/m3 (Tetra equivalent)	Carc.	Dust	Chloracne, loss of feeling, fatigue	Dust

Table 6.1. Toxicological information, exposure limits and symptoms of exposure (continued).

Material	Concentration	PEL/TLV	IDLH	Warning	Signs & Symptoms	IP (eV)
Polychlorinated dibenzofurans (hex isomers)		1 μg/m3 (Company - internal)	Carc.	Dust	Chloracne, loss of feeling, fatigue	Dust
Polynuclear aromatics		200 μg/m3	80 mg/m3	Dust	Confusion, nausea, eye irritant, headaches, stomach pain	Dust
Selenium compounds		200 μg/m3	1 mg/m3	Dust	Headache, chill, fever, garlic breath, disturbed vision	Dust
Silver (dust)		100 μg/m3	10 mg/m3	Dust	Blue-gray eyes & skin, gastrointestinal irritation	Dust
Silver (metal & soluble)		10 μg/m3			Blue-gray eyes & skin, gastrointestinal irritation	Dust
Tetrachloroethylene		25 ppm	150 ppm	47 ppm	Irritated eyes, nose, throat, flushed face & neck, dizziness	9.32
Thallium (skin)		100 μg/m3	15 mg/m3	NA	Nausea, diarrhea, stomach pain	NA
Trichloroethylene		50 ppm	1,000 ppm	82 ppm	Vertigo, visual disturbance, headache, drowsiness	9.45
Trichlorophenol		NE	NE	NA	Eye swelling, irritation of nose and throat	NA
Trimethyl benzene		25 ppm	NE	2.4 ppm	Eye, nose & throat irritation, pneumonia	NA
Vanadium (dust)		50 μg/m3	35 mg/m3	Dust	Green tongue, metal taste, coughing, throat irritation	Dust
Zinc (dusts)		5 mg/m3	NE	Dust	Sweet metal taste, dry throat, cough, tight chest, chills	Dust

IDLH: Concentration posing an Immediate Danger to Life or Health

IP: Ionization Potential

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

μg: microgram

mg: milligram

m3: cubic meter

FIGURES

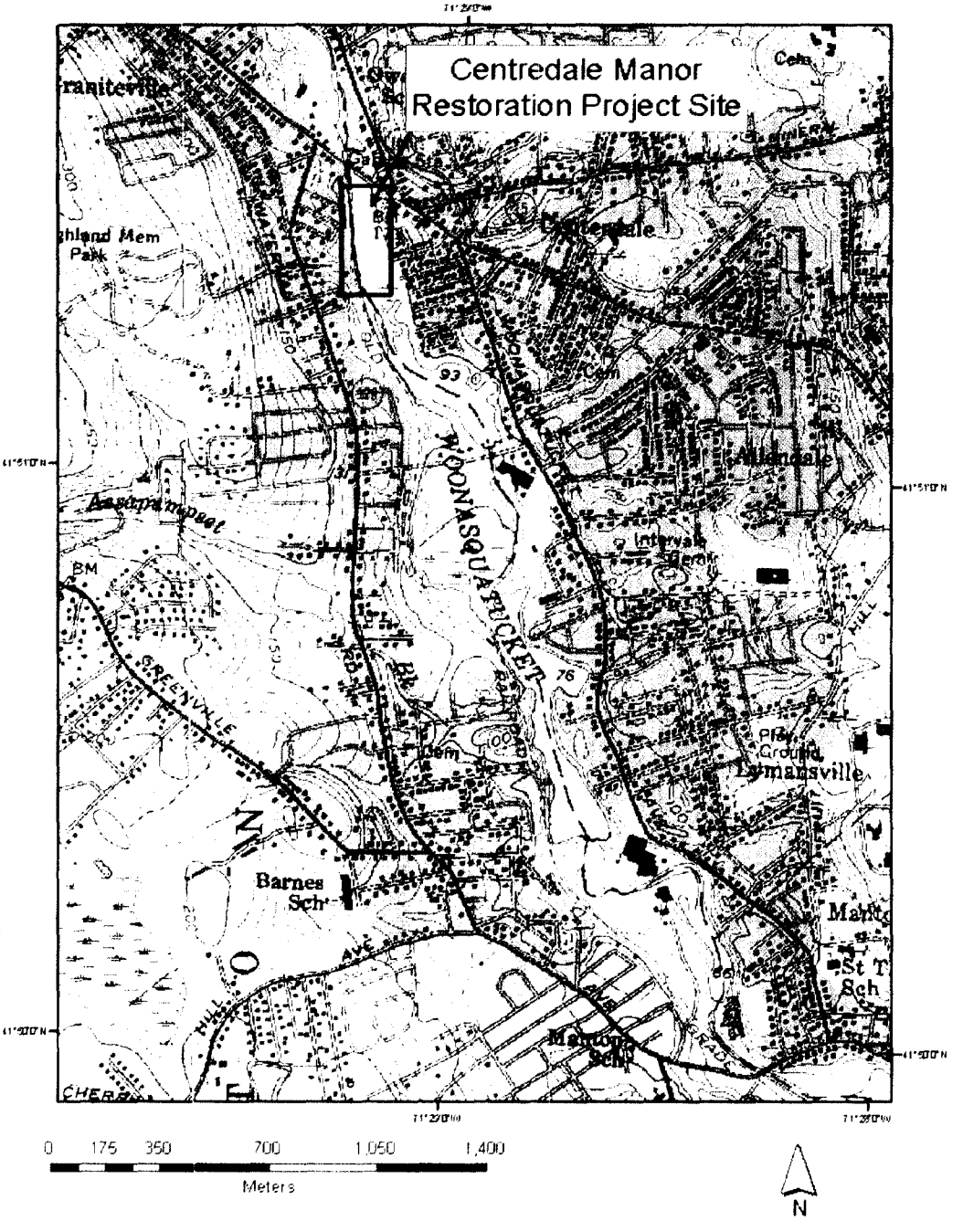
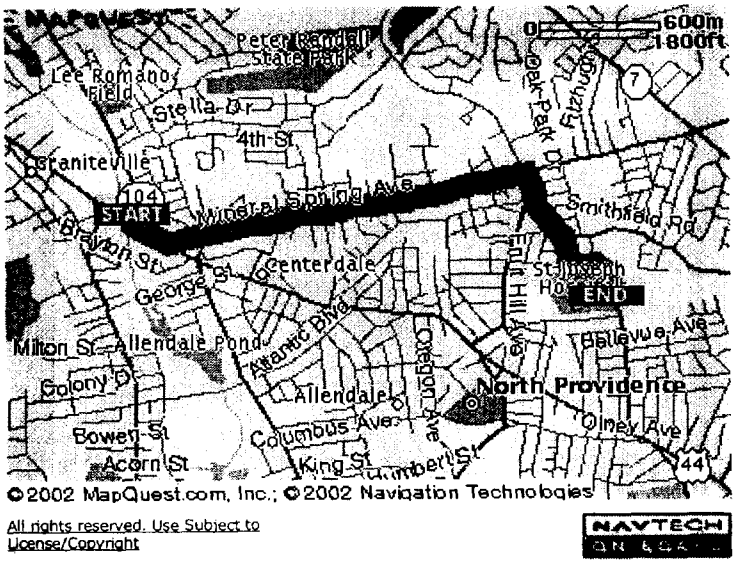


Figure 1-1. Site Location Map

FROM:	TO:
Centredale Manor Site 2074 Smith Street North Providence, RI 02911	St. Joseph's Hospital 200 High Service Avenue North Providence, RI 02904 (401) 456-3000 (401) 456-3400 Emergency
Proceed southeast on SMITH ST./US- 44E	0.13 mi
Turn SLIGHT LEFT onto MINERAL SPRING AVE/RI-15E	1.12 mi
Turn RIGHT onto SMITHFIELD RD.	0.25 mi
Turn SLIGHT RIGHT onto HIGH SERVICE AVE.	0.25 mi
Total estimated time: 7 minutes	Total distance: 1.75 mi



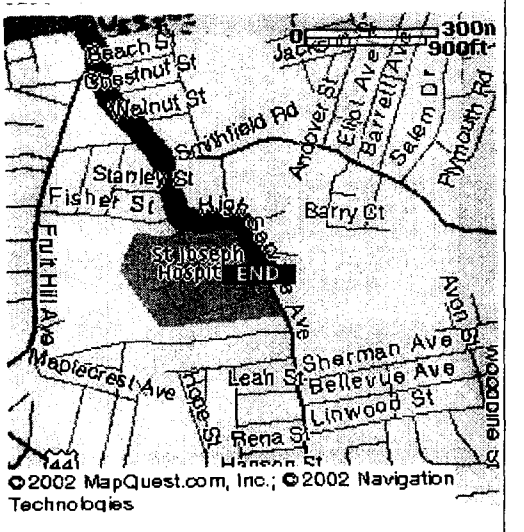


Figure 2-1. Hospital Map and Directions

Figure 8-1. Site Specific Training Documentation

My signature below indicates that I am aware of the potentially hazardous nature of performing site activities and that I have received site-specific training which included the elements presented below:

- Names of designated personnel and alternates responsible for site safety and health.
- Safety, health, and other hazards present on-site.
- Use of personal protective equipment.
- Work practices to minimize risks from hazards.
- Safe use of engineering controls and equipment.
- Medical surveillance requirements.
- Signs and symptoms of overexposure.
- Contents of the Health and Safety Plan.
- Emergency Response Procedures (evacuation and assembly points).
- Spill response procedures.
- Review of contents of relevant Material Safety Data Sheets.

I further state that I have been given the opportunity to ask questions and that all of my questions have been answered to my satisfaction.

Name (Print Clearly)	Signature	Date

ATTACHMENT A

First Aid and Emergency Care

FIRST AID AND EMERGENCY CARE

Most accidents occurring at a job site will require minimal first aid available through use of the first aid kit(s) at the work site or in the support facility. For more serious medical emergencies that may or may not require professional medical attention, the American National Red Cross (1988) has developed first-aid procedures that can be followed until professional medical attention is obtained. The following sections present a summary of these procedures.

HEAT EMERGENCIES

There are three forms of heat emergencies: heat stroke, heat exhaustion, and heat cramps. Of these three, heat stroke is the most serious because it is life-threatening.

Heat Stroke

Symptoms

- Hot, red skin
- Very small pupils
- Very high body temperature
- Skin may feel dry

First Aid

- Call for medical assistance.
- Move the victim to a cool (not cold) place immediately.
- Cool the victim quickly by immersing him/her in a cool (not cold) bath, wrapping wet sheets around the victim and fanning him/her, or spraying the victim with cool water.
- Monitor the victim for shock (page E-3) until medical assistance arrives.

Heat Exhaustion

Symptoms

- Cool, pale, and moist skin
- Heavy sweating
- Dilated pupils
- Headache
- Nausea
- Dizziness
- Vomiting
- Normal body temperature

First Aid

- Move the victim out of the heat.
- Have the victim lie down with feet elevated.
- Loosen or remove the victim's clothes.
- Cover the victim with wet towels or sheets or apply cold packs wrapped in cloth.
- Fan the victim.
- Have the victim drink one-half glass of water every 15 minutes if they are conscious and able to keep the fluid down.

Heat Cramps

Symptoms

- Muscular pains and spasms

First Aid

- Move the victim out of the heat.
- Have the victim drink one-half glass of water every 15 minutes for one hour.

COLD EMERGENCIES

Severe cold exposure can be an immediate danger to life and health. The two most serious forms of cold exposure are hypothermia and frostbite.

Hypothermia

Symptoms

- Shivering
- Dizziness
- Numbness
- Confusion
- Weakness

- Impaired judgment
- Impaired vision
- Drowsiness

Stages

- Shivering
- Apathy
- Loss of consciousness
- Decreasing pulse rate and breathing rate
- Death

First Aid

- Call for medical assistance.
- Move the victim to a warm place.
- Remove the victim's wet clothing, as applicable.
- Cover the victim with a dry blanket.
- Warm the victim slowly.
- Monitor the victim's breathing and heart rate.
- Give the victim warm broth or water - no alcohol or caffeine.

Frostbite

Symptoms

- Area is very cold to the touch and numb
- Slightly flushed skin
- Mild frostbite will appear on the edges of appendages as white or grayish-yellow with hardened skin
- Moderate frostbite will show a larger portion of the appendages as white or grayish-yellow and skin will have blistered
- Severe frostbite is grayish-blue and skin will be hard, cold, and numb. There is a danger of gangrene developing from severe frostbite

First Aid

- Move the victim to a warm place.
- Place the frostbitten areas in warm (not hot) water.
- Handle the frostbitten areas gently.
- Do not rub, massage, or apply unnecessary pressure to the frostbitten area.
- Place dry gauze between frostbitten toes or fingers.
- Bandage frostbitten areas loosely.

ANIMAL BITES

Infection from an animal bite can develop quickly: first aid should be administered immediately.

First Aid

- Control the bleeding.
- Gently wash the wound unless bleeding heavily.
- Cover the bite with a bandage.
- Have the victim see a trained medical person.

RABID ANIMAL BITES

Rabies can be found in the saliva of skunks, bats, raccoons, cattle, cats, dogs, foxes, squirrels, prairie dogs, rats, and mice.

First Aid

- Observe the animal for unusual behavior.
- Get the victim to medical care.
- Give a description of the animal and where it was last seen to the police and/or animal control so they can capture the animal for determination of rabies infection.
- Do NOT attempt to capture or restrain the animal yourself.

INSECT BITES AND STINGS

Insert bites and stings may be tolerated by some individuals more so than others. A past history of bite and sting tolerance is not indicative of continued tolerance. All bite and sting victims should be monitored for allergic reactions. The following is a summary of symptoms and first-aid response for an allergic reaction to a bite or sting.

Symptoms

- Pain

- Swelling of the bite or sting area, which may be accompanied by swelling of the throat
- Redness or discoloration of the bite or sting area
- Itching
- Hives
- Decreased awareness
- Breathing noisy or difficult

First Aid

- Remove the stinger with tweezers or scrape with a rigid item without squeezing it (which may release more venom).
- Wash the area of the bite or sting.
- Place a cold pack wrapped in cloth on the area.
- Keep the bite or sting below heart level.
- Get the victim to medical assistance if an allergic reaction is observed.

SNAKE BITES

Few people actually die from snake bites; however, quick response to a snake bite is imperative.

First Aid

- Call for medical assistance.
- Immobilize the bitten area.
- Keep the bitten area below the heart level.
- Keep the victim calm and still.
- Observe victim for symptoms of shock (page E-3).
- Give a description of the snake to the medical responder.
- Do not cut above the bite and aspirate the poison.
- Do not use a tourniquet.

SEVERE BLEEDING

First Aid

Stop external bleeding by:

- Applying direct pressure to the wound using a clean cloth.
- Apply cloths on top of the first one if bleeding persists; do not remove original cloth.
- If there is no fracture, raise the wound above the level of the heart.
- Apply pressure at the appropriate pressure point (squeezing the main artery against the bone in the forearm or against the pelvis in the groin) while continuing pressure on and elevation of the wound.
- Wrap the wound using subtle pressure to tighten the wrap.
- Check for a pulse on the injured limb to determine that the wrap is not too tight.
- Call for medical assistance.

INTERNAL BLEEDING

Internal bleeding may be as innocuous as a bruise to a condition that threatens life and health.

Symptoms

- Tender, bruised, swollen or rigid abdomen
- Fractured ribs or pelvis
- Vomiting small to large amounts of blood
- Injuries that have penetrated the body cavity
- Rectal or vaginal bleeding
- Difficulty breathing
- Pulse rate is abnormal
- Cool, moist skin
- Pallor

First Aid

- Treat small bruises by applying a cold pack to the injury.
- Obtain medical help immediately if more severe internal bleeding is suspected.
- Observe the victim's breathing and monitor his/her pulse.
- Keep the victim calm and still.
- Loosen the victim's clothing.
- Place the victim on his/her side if vomiting.
- Monitor the victim for symptoms of shock (below).

SHOCK

Shock can be caused by internal and external bleeding, insect bites or stings, snake bites, electrical shocks, severe injuries or burns, as well as other medical conditions. First aid and medical assistance is imperative for shock victims because shock is caused by a lack of sufficient blood supply to such vital organs as the heart, the lungs, and the brain.

Symptoms

- Confused behavior
- Either very slow or very fast pulse rate
- Either fast, shallow breathing or very slow breathing
- Weak and trembling limbs
- Cool, moist skin
- Pallor or bluish skin
- Pupils are dilated

First Aid

- Improve victim's circulation by lying them down with feet elevated if there are no leg fractures or suspected neck/head injuries. (Lay the victim flat if injuries are suspected.)
- If no injuries are suspected, a semireclining position may be used to alleviate breathing problems.
- If the victim is vomiting turn him/her onto their side.
- Keep the victim warm.
- Call for medical assistance.
- Monitor the victim's heart rate and breathing.

VICTIM NOT BREATHING

First Aid

- Tap or gently shake the victim to see if there is a response. Ask, "Are you okay?"
- Roll the victim onto his/her back and toward you.
- Tilt the head back while lifting the chin.
- Check for breathing for 3 to 5 seconds.
- Pinch the nose shut, seal your mouth over the victim's mouth and give two 1- to 1-1/2-second breaths while keeping the head tilted back.
- Check for a pulse.
- Call or send someone for help.
- Continue rescue breathing, if necessary, by breathing into the victim's mouth for 1 to 1-1/2 seconds every 5 seconds.
- Observe victim for a pulse approximately every minute.

VICTIM NOT BREATHING AND HAS NO PULSE

First Aid

- Roll the victim onto his/her back and toward you.
- Tilt the head back while lifting the chin.
- Check for breathing for 3 to 5 seconds.
- Pinch the nose shut, seal your mouth over the victim's mouth and give two 1- to 1-1/2-second breaths while keeping the head tilted back.
- Check for a pulse.
- Call or send someone for help.
- Locate the notch at the lower end of the breastbone.
- Place the heel of your hand two fingers-width up from the end of the notch.
- Place your other hand on top keeping the fingers of your hands off the chest.
- Position your shoulders directly over your hands.
- Using a steady, firm force, bending at the waist, compress the breastbone 1-1/2 to 2 inches for 15 counts in 10 seconds.
- Perform rescue breathing (2 quick breaths as above).
- Repeat this for a total of 4 cycles.
- Recheck pulse.
- Continue cardiopulmonary resuscitation (CPR) procedures as described above until medical assistance arrives.

BURNS

There are four types of burns: heat burns, chemical burns, electrical burns, and radiation burns. Each type has three categories of burns: first degree, second degree, and third degree.

First Degree Burn Symptoms

- Least severe
- Skin will be red or discolored
- Mild swelling
- Pain

Second Degree Burn Symptoms

- Burn extends deeper into the skin
- Skin is red or mottled
- Blistering
- May appear wet from skin fluid loss
- Painful

Third Degree Burn Symptoms

- Deepest burn; extends through all skin layers
- Skin appears white or charred
- Can look like second-degree burns
- Pain may be severe or, if nerve endings are destroyed, may not occur at all
- Can occur in patches with less severe burns

First Aid for Heat Burns

- Flush with cool running water if there are no blisters or charring. Apply moist dressings and bandage loosely.
- If blisters or charring are present, apply a dry dressing and bandage loosely. Do not use water.
- Call for medical assistance.

First Aid for Chemical Burns

- Flush the chemicals from the skin with lots of water.
- Continue flushing for 15 to 30 minutes.
- Remove any contaminated clothing or jewelry.
- Cover burns loosely with a dry bandage or dressing.
- Call for medical assistance.

First Aid for Electrical Burns

- Avoid contact with electrical source.
- Shut down the electrical source.
- Cover all burns with a loose dry dressing and bandage.
- Provide care for shock (page E-3) as needed.
- Call for medical assistance.

First Aid for Radiation Burns

- None.
- Decontaminate the victim.
- Obtain medical assistance immediately.

EYE INJURIES

Eye injuries should always be treated as a serious injury.

Symptoms

- Visible foreign object
- Redness
- Burning
- Pain
- Headache
- Tearing

First Aid

- Use care and be gentle when touching the eyes.
- Wash hands before caring for an eye injury, if possible.
- If an object is in the eye, lift the upper eyelid, have the victim look down and flush the eye with clean water or eye wash solution.
- If there are chemicals in the eye, flush the eye with clean water or eye wash solution from the nose outward for 15 to 30 minutes.
- For objects in the eye (whether removed through flushing or not) and for chemicals

in the eye, wrap a bandage loosely around both eyes.

- If the eye is cut or there is a penetrating object in the eye, place a cup over the injured eye and wrap both eyes loosely with a bandage. Do not attempt to remove the penetrating object.
- Obtain medical assistance for all (even minor) eye injuries.

NOSE INJURIES

Nose injuries can be indicative of more serious injuries to the head, back, or neck. Caution should be used to assess this type of injury. Nosebleeds are typically a less serious injury but can be severe enough to cause shock from loss of blood. Be sure to ask the victim how the nosebleed began.

First Aid

- Have the victim sit down.
- Have him/her lean forward with the chin resting on the chest.
- Pinch the nose.
- Keep the victim calm and quiet until the bleeding has stopped.

Symptoms of a More Serious Nose Injury

- Swelling and pain
- Pupils dilated unevenly
- Bloody or clear fluid draining from either the ears or the nose
- Loss of feeling and movement in appendages

First Aid for a More Serious Nose Injury

- Do not attempt to stop the flow of fluid from the nose.
- Keep the victim's head and neck stable.
- Keep the victim calm and quiet.
- Call for medical assistance.

FRACTURES

There are two types of fractures: simple (one internal fracture) and compound (two or more fractures often breaking the skin). The compound fracture is more serious because of the accompanying open wound. Fractures occurring in the body may be indicative of internal injuries.

Symptoms

- A grating sensation and/or a snapping sound when the appendage is moved
- Deformities
- Pain and tenderness
- Bruising and swelling
- Immobility of the injured part

Note: First aid for fractures, dislocation, sprains, and strains are similar for these injuries. The first aid for these injuries will be discussed after the symptoms.

DISLOCATIONS

Symptoms

- Deformity
- Swelling and tenderness
- Pain in the joint
- Loss of or limited movement

SPRAINS OR STRAINS

Sprains are the result of stretched or torn tendons or ligaments around the joints. Torn muscles are indicative of strains.

Symptoms

- Pain in the joint
- Sharp pain
- Tender to the touch
- Bruising and swelling
- Stiffness

First Aid for Fractures, Dislocations, Sprains, or Strains

- If the injury is to the head, neck, or back, stabilize the head and neck. Do not attempt to move the victim unless absolutely necessary. Obtain medical assistance immediately. Keep the victim calm and quiet.
- Determination of the precise injury is often difficult, so remember this rule of thumb: "When in doubt, splint."
- Splint only if it can be done without causing more pain and discomfort to the victim.
- The injury must be splinted in the position in which it is found. Do not attempt to straighten the injured part.
- Splint the injured area as well as the surrounding joints so that the entire limb is immobilized.
- Check for a pulse before and after splinting.
- Call for medical assistance.

ATTACHMENT B

Lyme Disease

LYME DISEASE

WHAT IS LYME DISEASE?

Lyme Disease is an illness caused by a corkscrew-shaped bacteria called a spirochete, that is transmitted to humans, dogs, horses, and other animals by the bite of an infected deer tick (ixodes dammini). While rarely life-threatening, if not treated, Lyme disease may lead to arthritis, neurological or cardiac problems, and possibly birth defects

WHERE IS LYME DISEASE FOUND?

Transmission of Lyme Disease has been documented in many parts of the world, including the United States. While sporadic cases have been reported in many states, the disease does tend to occur largely in specific geographic areas. There are three such areas in the USA: 1) Wooded coastal portions of New York, Pennsylvania, New Jersey, and New England; 2) Wisconsin and Minnesota; and 3) Wooded and coastal areas of Northern California and Southwest Oregon. It was first recognized in the U.S. in 1975 as the result of an investigation of a group of children with arthritis in Lyme, Connecticut.

HOW IS LYME DISEASE TRANSMITTED?

The bacteria that cause Lyme Disease are acquired by juvenile deer ticks (larvae) through feeding on an infected animal, usually a mouse. At a subsequent stage in development (nymph), the ticks cling to vegetation in brushy, wooded, or grassy areas and transfer by direct contact to the skin of passing animals and humans. The bite of the infected tick can then transmit the bacteria to the new host. ***This transmission of the infectious organism appears to require that the tick be attached for at least 24 hours.***

The immature deer tick is very small, and when attached to the skin, may not be immediately noticeable. During it's complex two-year life cycle, the tick can infect a variety of hosts including white-footed mice, deer, and other wild and domestic animals as well as humans. Lyme Disease is most commonly acquired in the summer months (June and July are peak), less often in early spring or late fall, and only rarely during the winter.

It is important to note that not all ticks carry Lyme Disease. The common dog tick, for example, does not transmit the infection. Even a deer tick bite does not necessarily mean that disease will follow, because not all members of the species are infected. ***Prompt removal of a tick will greatly decrease the risk of disease transmission.***

WHAT ARE THE SYMPTOMS OF LYME DISEASE?

Early Symptoms: The First symptom of Lyme Disease is usually, but not always, a skin rash called Erthema Migranes (EM). While the tick may have gone undetected, the rash occurs at the site of the bite. It begins as a small red area, 3 to 32 days after the bite, then gradually enlarges, often with partial clearing at the center, so that it resembles a doughnut. The expanding ring may exceed 6 inches in diameter and the individual may experience a burning, rather than an itching sensation at the site of the rash. Subsequent rings may appear inside the original ring so that the rash resembles a bulls-eye.

The rash may be accompanied by flu-like symptoms such as fever (100°-103°F), headache, stiff neck, sore and aching muscles and joints, nausea and vomiting, fatigue, sore throat, and swollen glands. There may be multiple rashes in other areas of the body that develop after the rash that occurs at the site of the bite. These symptoms may disappear on their own over a period of weeks. However, the rash may reoccur in about 50% of untreated people and more serious problems may develop later. Treatment with appropriate antibiotics clears up the rash within days and may prevent complications.

Late Symptoms: Three major organ systems (the joints, nervous system and heart), can be affected weeks to months after the initial tick bite, although symptoms usually appear within four to six weeks. A large number of people with Lyme Disease may develop symptoms during later stages without having had the early skin rash.

Arthritis in the large joints (primarily the knee, elbow, and wrist) occurs in more than 50% of untreated persons. The arthritis may move from joint to joint, and can become chronic. Nervous system complications occur in 10% to 20% of infected persons. These complications may include: Bell's Palsy (facial muscles droop); pain and weakness, usually in the shoulder and upper arms; and poor concentration, depression seizures, and temporary paralysis (resembling Cuillian-Barre disease. Heart symptoms occur in 6% to 10% of infected persons (slowing of heart rate, irregular heart beat, shortness of breath, chest pains). Electrical conduction in the heart may be affected and the heart muscle may become inflamed . Treatment with intravenous antibiotics can be helpful.

HOW IS LYME DISEASE DIAGNOSED?

The only positive proof of disease is culturing the bacteria from the tissue in the vicinity of the bite. Most often, diagnosis is based primarily on recognition of the typical symptoms of Lyme Disease, especially the characteristic early rash and on the history of possible tick exposure, such as outdoor activity in a high-risk area. Atypical cases or cases with only later stage complications can be difficult to diagnose. Lyme Disease titer testing has become commercially available, however, this test is high in sensitivity, but lacks specificity. As a result, the incidence of false positives is extremely high. There are may cross reactions of the test with other bacteria. Because of this, the Center for Disease Control (CDC) does not recommend the procedure for general patient screening. The CDC's recommendation is that the Lyme titer be reserved for patients whose symptoms suggest Lyme disease. In that circumstance, an acute serum should be collected and three weeks later, a convalescent serum should be collected. Because of variability in the testing, both samples should be done together at the laboratory in the same batch of specimens.

WHAT IS THE TREATMENT FOR LYME DISEASE?

Oral antibiotic treatment is beneficial early in the illness. Two commonly used medications in the setting are Tetracycline and Amoxicillin, although other antibiotics may be substituted. Prompt treatment of early Lyme Disease may prevent later and more serious complications. Treatment of joint and nervous system complications if often accomplished with antibiotics given intravenously or by injection.

HOW CAN LYME DISEASE BE PREVENTED?

The only known way to get Lyme Disease is from the bite of an infected tick. Knowing where these ticks are found, avoiding such areas, and promptly removing the tick are the primary

preventative measures. Persons living in or visiting high-risk areas should take the following precautions:

- Don't walk bare legged in woods, brush, or tall grass where ticks may be found.

- If you do need to walk in such areas, wear a long-sleeved shirt, long pants, high socks (with pants tucked into socks), and closed shoes or boots. Light colors will help you spot ticks on clothing.

- Apply a commercial tick repellent on clothing, shoes, and socks after reading label instructions carefully. Avoid applying high concentration products to the skin, particularly to children.

- Conduct daily "tick checks" on yourself, your children, companions, and on pets when you get in from the field. Shower, if possible. The ticks are often found on the thigh, flank, arms, underarms, and legs, and may be very small. Prompt removal of the tick will prevent infection.

- To remove an embedded tick, use tweezers to grip its body as close to the skin as possible and pull gently, but firmly until the tick lets go. If tweezers are unavailable, grasp the tick with a piece of tissue. Do not handle the tick with bare hands. Do not squeeze the tick. Apply antiseptic. Common tick removal methods, such as scorching with a match, using petroleum jelly or nail polish are not recommended because they may cause the tick to inject the spirochetes (that cause the disease) into your body.

If you find a tick you want identified, place it in a small vial with 70% alcohol or rubbing alcohol. Contact the Rhode Island Department of Health at 401-222-2231 for information on where the tick should be sent for analysis. Include the name and age of the person, kind of animal, or other source, the location acquired, and the date found.

- Know the symptoms of Lyme Disease. If you have been in an area where ticks are found, and you develop such symptoms, particularly the skin rash and/or "flu" symptoms, see a physician promptly for evaluation and treatment.

WHAT SHOULD YOU DO IF YOU FIND A TICK ON YOU WHILE AT A HARDING ESE SITE?

If you find a tick on you, and it has been on you less than 24 hours, you probably did not get infected and remember, it is only the deer tick (or the Black Legged tick in the western United States) that carries the disease. The dog tick (larger than the deer tick) has not been implicated.

If you were bitten by a deer tick and you either develop symptoms or are very concerned about being infected, go see a doctor and follow his/her recommendations. Fill out an accident report and turn it in to Cindy Sundquist (Portland) or your local Workers Compensation (WC) administrator. The claim and all bills should be submitted to your local WC insurance carrier. If, for some reason, the claim gets denied, contact Cindy Sundquist at 207-828-3309.

ATTACHMENT C

Respiratory Protection

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BATTELLE COLUMBUS OPERATIONS

Battelle Intranet Copy

ENVIRONMENT, SAFETY, AND HEALTH PROGRAM

SIH-PP-10

RESPIRATORY PROTECTION PROGRAM

REVISION 3

MARCH 2001

BATTELLE
505 King Avenue
Columbus, Ohio 43201

Battelle
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BATTELLE COLUMBUS OPERATIONS (BCO)

ENVIRONMENT, SAFETY, AND HEALTH PROGRAM

SIH-PP-10

RESPIRATORY PROTECTION PROGRAM

REVISION 3

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3/02/01	3/06/01	3/07/01
Date	Date	Date

March 2001

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REVISION RECORD FOR ES&H DOCUMENTS

Title Respiratory Protection Program No. SIH-PP-10

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RESPIRATORY PROTECTION PROGRAM

1.0 SCOPE

This program applies to all Battelle Columbus Operations (BCO), including regional offices and field operations.

2.0 PURPOSE

The purpose of this program is to provide guidance for assessment of work areas, to establish personnel responsibilities, to assure proper selection, usage and maintenance of respiratory protection equipment, and to establish a mechanism for the documentation of these activities in accordance with applicable regulatory requirements and accepted work practices.

3.0 REFERENCES

3.1 Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.134 Respiratory Protection.

3.2 NRC 10 CFR 20 Standards for Protection Against Radiation.

3.3 National Institute of Occupational Safety and Health (NIOSH) Guide to the Selection and Use of Particulate Respirators Certified Under 42 CFR 84.

3.4 NIOSH Guide to Industrial Respiratory Protection.

3.5 BCO Operating Guide 1340-2.1, Respiratory Protective Equipment.

4.0 RESPONSIBILITIES

4.1 Line Management and Supervision

4.1.1 Ensure that the applicable Market Sector ES&H Representative is informed of any planned use or expected need for respirators, or a change in process or conditions that may lead to a need for respiratory protection.

4.1.2 Ensure that staff under their supervision are qualified and trained prior to using respirators.

4.1.3 Implement and apply this procedure in accordance with the information received from the Market Sector ES&H Representative.

4.2 Market Sector ES&H Representatives

4.2.1 Administer and direct the Program for areas of assigned responsibilities and ensure that the Program is reviewed to meet current needs and kept current of regulatory requirements.

4.2.2 Ensure that the Program is being effectively implemented in areas of assigned responsibility. This should include workplace evaluations and consulting with staff who are required to use respiratory protection.

4.2.3 Evaluate staff exposures and work conditions, including random inspections of respiratory protection equipment use.

4.2.4 Document selection and use criteria for respirators and associated equipment (e.g., cartridges, sorbents, canisters) based on anticipated work conditions or activities.

4.2.5 Specify the appropriate respiratory protection equipment.

4.2.6 Ensure, in conjunction with management, that staff who are required to use respiratory protection equipment are properly trained and fitted with the equipment.

4.2.7 Maintain detailed and current knowledge of regulations, standards, requirements, equipment capabilities, and good practice affecting safe and effective use of respirators.

4.2.8 Maintain all records (except medical) required by this procedure or ensure that records are maintained for assigned areas of responsibility.

4.2.9 Ensure that breathing air requirements for supplied air respirators are met per OSHA 29 CFR 1910.134 (i).

4.3 Medical Director

4.3.1 Determines medical fitness for respirator use.

4.3.2 Maintains medical records in compliance with this program.

4.3.3 Supervises the Health Services staff and ensures that the staff is familiar with the provisions of this Program; provide guidance as appropriate for all people involved in the program.

4.3.4 Utilize the OSHA approved medical questionaire (29 CFR 1910.134, Appendix C) or comparable form.

4.4 Respirator Users

4.4.1 Use, clean, maintain, and store respiratory protective equipment as instructed to meet the program requirements.

4.4.2 Inform Health Services of any personal health problems that could be aggravated by the use of respiratory protection equipment.

4.4.3 Inform Health Services of any changes in health or physical characteristics (e.g. excessive weight changes, dentures, deformation resulting from accidents, pregnancy, etc.) that could affect the use of a respirator.

4.4.4 Notify your Market Sector ES&H Representative of any changes in respiratory usage, working environment, process, regulations, laboratory protocols, etc., so that the use of the respirator may be re-evaluated.

4.4.5 Provide input to Market Sector ES&H representatives or management or others involved in the implementation as to the program effectiveness and identify problems associated with the implementation.

5.0 GENERAL

5.1 Hazard Control - Where feasible, engineering and/or administrative controls shall be developed to reduce need for respiratory protection equipment.

5.2 Hazard Assessment

5.2.1 Each work place or work activity where Battelle employees are exposed to hazardous conditions shall be evaluated to determine the need for respiratory protection.

5.2.2 The Market Sector ES&H Representative or designee shall evaluate anticipated work conditions or activities to determine what respiratory protection is necessary to be used.

5.2.3 Identification of hazards should include, but is not limited to, consideration of the following items:

- Airborne contaminant(s) present
- Engineering or administrative controls in place
- Other potential hazards (e.g. oxygen deficient environment, confined space)

5.3 Respirator Selection

5.3.1 The Market Sector ES&H Representative or qualified designee shall become familiar with the types of respiratory protection available and the uses and limitations for which it is intended to be used.

5.3.2 Respirators selected and used shall be NIOSH certified per 29 CFR 1910.134(d)(1)(ii). Selection shall be based on a level of protection equal to or greater than the minimum required to protect the exposed employee(s) from the potential or observed hazards. Selection criteria that must be considered include:

- Fire fighting or in an emergency situation
- Presence of carcinogens
- Contaminant concentration greater than or less than the exposure limit
- Contaminant concentration greater than or less than the immediately dangerous to life and health (IDLH) level

- Oxygen deficient environment (also IDLH)
- Protection factors
- Adequate warning properties - taste, odor, irritation
- Physical state of contaminant (gas/vapor or particulate)
- Adverse health effects (in the event of break-through or leakage)
- Amount of time respirator will be worn
- Work activities/stress (physical activity, temperature/humidity)
- Fit test results (must select a different respirator if the one originally selected cannot be fit).

6.0 TRAINING

6.1 For the safe and effective use of respiratory protection equipment, it is essential that the user be properly instructed in its purpose, selection, use, and maintenance. Training must be provided by a qualified individual. Prior to being assigned a respirator, every respirator user must receive appropriate training in the following areas:

- Requirements of the respirator program, including responsibilities of associated personnel.
- Nature of the hazard(s)
- Engineering control methods
- Suitability, capabilities, and limitations of the particular respirator to be used
- Actual use instruction; recognizing and handling emergencies as appropriate
- How to fit the respirator properly, including positive and negative pressure user seal checks.
- Requirements for inspection, storage, maintenance, and cleaning of the respirator.

- The person must demonstrate competency by passing the given test with a score of 80% of greater.

6.2 Refresher training will be given annually.

6.3 Authorization to use respiratory protection equipment will be revoked by the Market Sector ES&H Representative if refresher training is not satisfactorily completed.

7.0 FITTING

7.1 The following requirements must be met prior to a staff member being fitted for respiratory protection: 1) medical approval; and 2) training completed.

7.2 Each type of respiratory protection equipment that uses a face piece - to - face seal shall be fit tested and approved for use. This includes self-contained breathing apparatus (SCBA) masks, airline respirator masks, and powered or non-powered air purifying respirators. Positive pressure facepieces will be tested in the negative pressure mode.

7.3 For air purifying respirators, a sufficient number of styles and sizes will be made available. The staff member will be allowed to examine each of the respirators available and choose one for his/her fit test.

7.4 Respirators that depend on a face piece seal will not be worn when conditions such as the following prevent an effective face piece seal:

- Facial hair in the seal area
- Eyeglass temples extending through the seal area
- Shape of the face, facial features or scars; dentures or other conditions that would preclude an accurate measurement of respirator fit
- Protective clothing in the seal area.

7.5 The user is responsible for maintaining a good face piece seal in accordance with instructions received during training and fit testing.

7.6 The fit will be re-tested at least annually for staff who remain active in the Respiratory Protection Program. The fit test will also be repeated as necessary for items that could affect the fit (e.g. excessive weight loss or gain, dentures or other appliances).

7.7 Fit testing is performed by a qualified individual in accordance with the applicable approved quantitative or qualitative fit test protocol.

7.8 The type of fit test administered will be documented.

8.0 MAINTENANCE, INSPECTION, AND CARE OF RESPIRATORS

8.1 The individual's respirator training and any supplementary Standard Operating Procedures (SOPs) or protocols governing respirator use will include instructions for the maintenance and care of respirators. The SOP or protocol can not be less restrictive than SIH-PP-010. Regular inspections shall be conducted by a qualified individual to assure respirators are properly used, cleaned, and stored. Items important to maintenance, care, use and inspection include:

- Inspection for defects (connection tightness, face piece condition, headbands, valves, and cartridges)
- Cleaning, disinfecting, and decontaminating before and after use
- Proper storage (in a protective container, face piece, exhalation and inhalation valves must be in normal position).

8.2 Repairs, including parts replacement, must be done only by a qualified individual using parts designed for the respiratorand authorized for use by the manufacturer. Users will make no repairs or modifications to any component, unless specifically instructed to do so by a qualified individual.

8.3 The Supervisor, in conjunction with the Market Sector ES&H Representative is responsible to determine a respirator replacement schedule for respirator cartridges/canisters and shall perform periodic inspections to verify that any cartridges/canisters.

8.4 Information concerning respirator cartridge/canister replacement intervals will be provided to staff during classroom training and may be found in Appendix B. The useful life of cartridges and canisters vary under user conditions. Conditions of use include, but are not limited to, length of time the respirator is worn, ambient temperature in area of use, humidity in area of use, and anticipated air volume based on the physical exertion of the wearer. Once this information is determined the wearer shall be placed on a schedule to replace the cartridge(s) at 60% of the maximum life expectancy for the selected cartridge. At a minimum, cartridges/canisters will be replaced:

- If the projected 60% maximum use limitation is exceeded;
- If breakthrough is detected;
- When the ESLI (end-of-service life indicator) shows the cartridge is expired or spent;

- When instructed based on exposure potential;
- When there is noticeably increased breathing resistance;
- If the cartridges/canisters have become damaged.

9.0 MEDICAL LIMITATIONS AND SURVEILLANCE

9.1 Medical approval is required for those who need to wear respiratory protection equipment. Staff will not be permitted to wear respirators in BCO operations without a current medical statement approving such use.

9.2 A Medical Evaluator will determine an individual's physical fitness for respirator wear. The intervals for examinations are established by the BCO Health Services. *Regardless of the frequency of examination, Health Services (or appropriate medical personnel) staff will evaluate staff files prior to annual refitting.* Depending upon the medical condition of the individual, the Medical Evaluator shall determine the extent of the medical testing necessary to approve respirator usage.

9.3 The Medical Evaluator will do one of the following:

- Approve the individual for unrestricted use
- Approve the individual for restricted use and describe the restriction(s)
- Deny use of a respirator to the individual.

10.0 VOLUNTARY USE

10.1 Voluntary use of a filtering face piece is permissible if the individual's Market Sector ES&H Representative approves the use in writing. Voluntary use is not allowed for any other type of respiratory protection nor if it is expected that an overexposure could occur. It is only allowed where the use is requested by the employee for comfort. The request will be made to the Market Sector ES&H Representative who will determine the appropriateness of using a filtering face piece. In general, use may be approved for infrequent tasks that could involve exposure to nuisance dusts. It will not be approved for routine use (e.g., greater than one week) or for exposure to toxic substances. When approved, BCO will provide the filtering face piece to be used.

10.2 The Market Sector ES&H Representative will ensure that the employee requesting the filtering face piece has received medical clearance to wear the respirator, read

and understands the instructions provided by the manufacturer on use and limitations of the respirator, and the contents of Appendix C.

10.3 The filtering face piece chosen will be NIOSH approved. Employees will be instructed to not wear the filtering face piece for any tasks other than that specifically approved. Also, they will be informed that they are to discontinue use of the filtering face piece if they experience any adverse health effects or difficulty breathing while wearing the filtering face piece. If this occurs, they must report to Health Services immediately.

11.0 USE OF RESPIRATORY PROTECTION BY NON-BATTELLE STAFF

11.1 OSHA (29 CFR 1910.134) requires that respirator wearers have been (1) medically evaluated to determine medical fitness for respirator use; (2) properly trained in use, care, and limitations; and (3) properly fit tested.

11.2 Normally, non-staff are expected to bring their own respirator obtained through their employers' respirator program.

11.3 If non-staff require a respirator, one can be issued upon verification of their physician's approval, training, and fit-test status.

12.0 ATMOSPHERE SUPPLYING RESPIRATORS

12.1 Self-Contained Breathing Apparatus (SCBA)

SCBA's are available in areas where a need for such equipment has been recognized. The SCBA units are maintained and ready for emergency use. In addition, SCBA's may be rented or purchased for specific projects.

Only individuals specifically trained to use SCBA equipment may do so.

12.1.2 Inspection and maintenance of those located in general areas at King Avenue and West Jefferson are the responsibility of Emergency Management. Those purchased for specific projects are the responsibility of the divisions to which they belong. Regional Offices and field operations are responsible for inspection of their own SCBA's.

12.1.3 At a minimum, SCBA's must be inspected monthly and after each use. Annually, they must be flow-checked per manufacturer instructions by an authorized technician. Monthly and annual inspections must be documented and the records retained in the appropriate files.

12.1.4 The Market Sector ES&H Representative must approve of the use of SCBA's for specific projects.

12.2 Air-Line Respirators

12.2.1 Airline respirators use a stationary source of compressed air delivered through a high-pressure hose to the respirator face piece. The air supply for airline respirators must meet the requirements for Grade D or higher quality, as set forth by the Compressed Gas Association Commodity Specification for Air (CGA-7.1). Documentation supporting this will be maintained.

12.2.2 The Market Sector ES&H Representative must approve the purchase and use of any breathing air systems to ensure they meet the requirements for breathing air. Breathing air compressors must be equipped with appropriate filtration and monitoring devices (e.g., carbon monoxide and temperature alarms).

13.0 REGIONAL OFFICES AND FIELD OPERATIONS

13.1 The Market Sector ES&H Representative may delegate the authority to a Battelle Representative to conduct fit tests and manage other aspects of the respiratory protection program. The Market Sector ES&H Representative will directly evaluate all off-site requests for performing fit tests and managing an off-site respiratory protection program. The Market Sector ES&H Representative will verify and document the qualifications of an individual or individuals to conduct fit tests and to assume any other respiratory program responsibilities.

13.2 The Market Sector ES&H Representative will inspect the program annually to ensure its effective functioning. The regional office and field operations Representative's responsibilities will be reevaluated annually by the Market Sector ES&H Representative. Their authority to conduct fit tests and/or manage the respiratory protection program may be revoked at any time at the discretion of the Market Sector ES&H Representative.

14.0 RECORD KEEPING

14.1 Each Market Sector ES&H Representative, Manager/Supervisor, or designee, shall verify that each employee who is required to wear respiratory protection has received and understood the required training specified in Section 6.0.

14.2 Records shall be maintained which indicate that training has been completed and the employee has demonstrated competency in the use of respiratory protection.

14.3 The records shall verify that each affected employee has received and understood the required training through a written certification that contains the name of each employee trained, the date(s) of training, and that identifies the subject of the certification.

14.4 Health Services will keep all required records of physicals, including copies from regional offices and field operations.

14.5 Those who are responsible for accomplishing fit testing will maintain all fit test records.

APPENDIX A

DEFINITIONS

DEFINITIONS

Administrative controls – a control used to limit the exposure to workers based on limiting the length of time the worker is permitted to be exposed to a contaminant. The worker would then be required to work the remainder of the shift in an area where exposure potential is low, thus limiting the workers exposure to well below the contaminants permissible exposure limit for the shift.

Authorized Technician - Certified by the manufacturer, a qualified vendor, or a previously certified technician by training and/or experience to perform repairs on respiratory protection equipment or to operate specialized equipment used in compliance with a respiratory protection program.

Engineering Controls – Local or General exhaust ventilation controls

Exposure Limit - Permissible exposure limit (PEL) as defined by OSHA is an employee's exposure to any substance listed in Tables Z-1, Z-2 and Z-3 in any 8-hour work shift of a 40-hour work week, shall not exceed the 8-hour time weighted average (TWA) limit given for that substance in the table. Exposure limits may also be expressed in terms of *ceiling concentrations.* The American Conference of Governmental Industrial Hygienists (ACGIH) establishes recommended exposure limits referred to as '*Threshold Limit Values'* (TLV). The National Institute for Occupational Safety and Health (NIOSH) also establishes *'recommended Exposure Limits'* (REL).

IDLH - Immediately Dangerous to Life or Health - An atmospheric concentration of any toxic, corrosive or asphyxiant substance that poses an immediate threat to life or would cause irreversible or delayed adverse health effects or would interfere with an individual's ability to escape from a dangerous atmosphere. (also see 29 CFR 1910.134 (g)(3))

Oxygen Deficient Atmosphere - Oxygen deficient atmosphere means an atmosphere with an oxygen content below 19.5% by volume.

Protection Factor (PF) - The number assigned to indicate the capability of a respirator to afford a certain degree of protection in terms of fit and filter/cartridge penetration. (Various agencies may assign PFs.)

Qualitative Fit Test - (QLFT) - An assessment of the adequacy of respirator fit by determining whether or not an individual wearing the respirator can detect the odor, taste, or irritation of a contaminant introduced into the vicinity of the wearer's head.

Quantitative Fit Test - (QNFT) - An assessment of the adequacy of respirator fit by numerically measuring concentrations of a challenge agent inside and outside the face piece. The ratio of the two measurements Is an index of leakage of the seal between the respirator face piece and the wearer's face.

Qualified Individual - A person(s) qualified by appropriate training and/or experience to be responsible for the management and administration of this program, conducting the required periodic evaluations of its effectiveness, and properly trained to make repairs to respiratory equipment based upon the persons level of training.

Qualified User - An individual who satisfies the requirements in this procedure to use respiratory protection. In addition, for radiation use, has sufficient allotment of DAC-HOURS remaining in the tracking period to perform anticipated entries without exceeding administrative guidelines.

Respirator - Respiratory Protection Equipment - any device certified by NIOSH/MSHA that is designed to protect the wearer from inhalation of harmful contaminates. Disposable filtering face piece and air-pressurized suits (bubble suits; not those that are incidentally pressurized when worn over an air-supplying respirator) are specifically included even when used for nontoxic nuisance contaminants. Excluded are underwater breathing apparatus (SCUBA) and surgical masks. (*Note:* Surgical masks *cannot* be used as a substitute where respiratory protection is needed.)

APPENDIX B

Determination of Respirator Cartridge Service Life

Respirator Cartridge Service Life Determination

Organic vapor cartridge life expectancy will vary based on ambient relative humidity, flow rate through the cartridge, temperature, and concentration of the contaminant that is being removed from the air stream. The National Institute for Occupational Safety and Health (NIOSH) tests organic cartridges for air purifying respirators. The NIOSH test protocol requires that the organic cartridge be subjected to a flow rate of 64 linear feet per minute (lfm) at existing room temperature and relative humidity. The protocol also tests the cartridge is tested at 32 lfm and 25% and 85% relative humidity. Through each of these tests the organic cartridge is subjected to 1000 ppm carbon tetrachloride and must withstand this concentration for 50 minutes with less than 5 PPM penetration. NIOSH does not test cartridges under varying conditions of use.

Methods for Determination of Useful Cartridge Life for Varying Conditions of use:

This is a compilation of methods that you may use to determine the useful life of organic cartridge respirators. Select a method that is conservative, reproducible and is going to suit the needs of the workers. Where information is available from the manufacturer concerning service life for variable conditions use it.

Manufacturers Suggested Respirator Change Schedules

Cartridge life estimation is available through some manufacturers web pages. The following Internet addresses will help you find information for two manufacturers:

3M

www.3m.com/occsafety

Then click on: Establishing a Chemical Cartridge Change Schedule

MSA

www.msanet.com/safetyproducts/cartlife/index.html

OSHA

See: http://www.osha-slc.gov/SLTC/respiratory_advisor/math_model/yoon-nelson_model/descriptive_data/descriptive_data.html

Or

See: http://www.osha-slc.gov/SLTC/respiratory_advisor/mainpage.html

Others

Check the web page of your particular manufacturer.

Rule of Thumb Method

In chapter 36 of the AIHA publication "The Occupational Environment - Its Evaluation and Control" a "Rule of Thumb" is presented for estimating organic vapor cartridge service life. The suggested Rule of Thumb is:

- If the chemical's boiling point is > 70 °C and the concentration is less than 200 PPM you can expect a service life of 8 hours at a normal work rate.
- Service life is inversely proportional to work rate.
- Reducing concentration by a factor of 10 will increase service life by a factor of 5 ().
- Humidity above 85% will reduce service life by 50%

APPENDIX C

Information for Employees Using Respirators When Not Required Under the Respirator Standard

Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, of if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

ATTACHMENT D

Bloodborne Pathogens

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BATTELLE COLUMBUS OPERATIONS

Battelle Intranet Copy

ENVIRONMENT, SAFETY AND HEALTH PROGRAM

SIH-PP-07

REVISION 2

BLOODBORNE PATHOGEN EXPOSURE CONTROL PROGRAM

APRIL 2001

BATTELLE
505 King Avenue
Columbus, Ohio 43201

Battelle
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REVISION RECORD FOR ES&H DOCUMENTS

Title Bloodborne Pathogen Exposure Control Program

No. SIH-PP-07

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APPROVAL PAGE

Prepared By:

Signature on File _____ _____
Joe R. Kirk — Date
Project Manager

This program, SIH-PP-07 Bloodborne Pathogen Exposure Control Program, has been reviewed and approved by the following.

Approved By:

Signature on File _____ 3/26/01
Eddie R. Swindall — Date
BCO ES&H Operations Committee Chair

Signature on File _____ 3/27/01
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C. Douglas Winemiller — Date
BCO ES&H Coordinator

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Frank C. Hood — Date
Vice President, BCO ESH&Q

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Appendix A. Definitions A-1

1.0 Scope

This program applies to all Battelle Columbus Operations (BCO), including regional offices and field operations.

2.0 Purpose

The purpose of this program is to provide guidance to supervisors, Health Services, and Market Sector Environment, Safety, and Health (ES&H) Representatives to ensure appropriate protection of employees who are potentially exposed to human blood and/or human body fluids according to the Occupational Safety and Health Administration (OSHA) regulations and BCO requirements. This program does not fully address the requirements for hepatitis B virus (HBV) and human immunodeficiency virus (HIV) research and production facilities. If research or work of this nature is undertaken, additional requirements of 29 CFR 1910.1030(e) and Center for Disease Control-National Institute of Health (CDC-NIH) 93-8395 shall be developed and implemented by the line management and the assigned market sector ES&H Representative.

3.0 References

3.1 U.S. Department of Labor, Occupational Safety and Health Administrations (OSHA), Bloodborne Pathogen Standard, 29 CFR 1910.1030.

3.2 NIOSH, (1988). Publication No. 88-119 for Protecting the Safety and Health of Health Care Workers. U.S. Department of Health and Human Services, Centers for Disease Control.

3.3 NIOSH, (1989). Publication No. 89-108. A Curriculum Guide for Public-Safety and Emergency Response Workers (Prevention of Transmission of Human Immunodeficiency Virus and Hepatitis B Virus). U.S. Department of Health and Human Services, Centers for Disease.

3.4 U.S. Department of Health and Human Services, Center for Disease Control, CDC-NIH, 4th Edition, Biosafety in Microbiological and Biomedical Laboratories, HHS Publication No. (CDC) 93-8395.

3.5 State of Ohio Environmental Protection Agency (Ohio EPA), Infectious Waste Regulations, Ohio Administrative Codes (OAC) 3745-27, Division of Solid and Hazardous Waste Management.

3.6 Ohio EPA, Guidance Document for Large Generators of Infectious Waste, EPA 1613 (Rev. 5/94).

3.7 BCO document SIH-PP-02, 02/95 (Rev. 0), Accident/Incident Reporting and Investigation Program.

3.8 BCO Operating Guide section 1340-4.1, Bloodborne Pathogens (12/97).

4.0 General

4.1 Establishment of an Exposure Control Plan and Responsibilities

4.1.1 This BCO program represents the minimum requirements which affected market sector managers and their ES&H Representatives are expected to implement and operate. Market sectors are required to supplement this program as necessary for their application to eliminate or minimize employee exposure to potential bloodborne pathogens (BBP) in the workplace.

4.1.2 This program plan shall be reviewed at least annually and whenever necessary to reflect new or modified tasks and procedures which affect occupational exposure. The review and update of this plan shall also:

4.1.2.1 Reflect changes in technology that eliminate or reduce bloodborne pathogens;

4.1.2.2 Annually document the consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure; and

4.1.2.3 Document the solicitation of input from non-managerial employees who are potentially exposed to injuries from contaminated sharps in the identification, evaluation, and selection of effective engineering and work practice controls.

4.2 Exposure Determination

4.2.1 Each market sector that has employees with occupational exposures or potential exposures to bloodborne pathogens, shall prepare a written exposure determination. This exposure determination shall be reviewed at least annually and contain the following:

4.2.1.1 A list of all job classifications in which all employees in those job classifications have occupational exposure. Examples: physicians, nurses, medical technicians, and other specifically identified staff performing tasks involving venipuncture, intravenous therapy, injections, blood-handling and/or analysis, and other potentially infectious materials; and

4.2.1.2 A list of job classifications in which some employees have occupational exposure because of certain duties. Examples: first responders, first aid/CPR providers, emergency care providers, laboratory work or research with human fluids.

4.3 Physical Examinations

4.3.1 Pre-placement and yearly physical examinations may be required for staff (those listed in *Sections 4.2.1.1* and *4.2.1.2*, above) whose work exposes them to the

potential risk of HIV, HBV and other BBP infections. These examinations will provide the staff member with a physical assessment performed by Health Services or approved licensed contract physician or health professional and with an opportunity for counseling on worker health concerns.

4.4 Precautions for Staff Members and Prevention Measures

4.4.1 *All blood and other potentially infectious materials will be considered infectious* regardless of the source. Universal precautions will be observed at Battelle to prevent contact with blood and other potentially infectious materials (see definitions section).

4.4.2 Engineering and work practice controls shall be used to eliminate or minimize employee exposure. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be used.

4.4.2.1 Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed. Shearing or breaking of contaminated needles is prohibited.

4.4.2.2 Immediately or as soon as possible after use, contaminated reusable sharps shall be placed in appropriate containers until properly reprocessed. These containers shall be puncture resistant, labeled, leak proof on the sides and bottom, and designed so employees are not required to reach by hand into the containers where these sharps have been placed.

4.4.2.3 Certified biological safety cabinets (Class I, II, or III) or other appropriate combinations of personal protection or physical containment devices, such as special protective clothing, respirators, centrifuge safety cups, sealed centrifuge rotors, and containment caging for animals, shall be used for all activities with other potentially infectious materials that pose a threat of exposure to droplets, splashes, spills, or aerosols.

4.4.3 All spills shall be immediately contained, posted and cleaned up by appropriate professional staff or others properly trained and equipped to work with potentially concentrated infectious materials.

4.4.4 Washing Facilities

4.4.4.1 Appropriate facilities for washing shall be made readily available to all staff working with blood or other potentially infectious materials. After removing gloves, staff will thoroughly wash hands and any other potentially contaminated skin immediately or as soon as feasible with soap and water.

4.4.5 Personal Protective Equipment

4.4.5.1 BCO will provide personal protective equipment (PPE) for use by staff members at no cost to the employee.

4.4.5.2 Health Services and applicable BCO laboratories will be evaluated by the appropriate Market Sector ES&H Representative to identify the potential for exposures and determine appropriate engineering and work practice controls, and PPE requirements. Appropriate protective clothing such as, but not limited to, gowns, aprons, lab coats, clinic jackets, or similar outer garments shall be worn in occupational exposure situations. The type and characteristics will depend upon the task and degree of exposure anticipated.

4.4.5.3 Any PPE garment penetrated by blood shall be removed immediately or as soon as feasible and placed in a designated container for storage, washing, decontamination, or disposal.

4.4.5.4 Gloves must be worn whenever it can reasonably be expected that staff members will have hand contact with blood or other potentially infectious materials, broken skin, or mucous membranes.

4.4.5.5 Disposable gloves shall not be washed or decontaminated for re-use. During use, the gloves must be replaced as soon as practical after they become contaminated or as soon as feasible after they are torn or punctured, or whenever their ability to function as a barrier has been compromised.

4.4.6 Handling Regulated Waste

4.4.6.1 Sharps containers (puncture resistant) shall be used for contaminated sharps capable of penetrating the skin including, but not limited to needles, scalpels, pipettes, broken glass, capillary tubes. Sharps containers shall be easily accessible and as close as feasible to work area.

4.4.6.2 Biohazard bags or containers with biohazard labels shall be used for disposal of regulated waste.

4.4.6.3 All regulated waste will be disposed of according to state and federal infectious waste regulations. Contact the Market Sector ES&H Representative for disposal information and requirements.

4.4.7 Cleaning

4.4.7.1 All contaminated work surfaces will be decontaminated with an appropriate disinfectant solution such as diluted bleach, (10 percent volume/volume household bleach concentration 9.0 parts water to 1.0 part bleach) after a procedure has been completed and immediately or as soon as feasible after spilling blood or any other potentially infectious materials. In addition, all work surfaces will be cleaned at the end of the work shift if they have become contaminated since the last cleaning.

4.4.7.2 Broken glassware ***shall not*** be picked up by hand. For example, use a broom and dustpan, and put the shards directly in a sharps container.

4.5 Hepatitis B Vaccine. All employees identified as having the potential for exposure to blood or other potentially infectious materials will be offered the hepatitis B vaccine at *no charge.*

4.5.1 Staff members may be requested to submit to antibody testing to determine whether they have sufficient immunity without the vaccine.

4.5.2 Staff members who decline the hepatitis B vaccine are required to sign a *Hepatitis B Vaccination Declination Form* (ES&H-26, or equivalent). Employees who initially decline the vaccine, but later wish to be vaccinated may do so at no charge.

4.5.3 All vaccine shall be administered by Health Services or approved contract physician or service.

5.0 Medical/Management Post Exposure Review

5.1 Post-Exposure Evaluation and Follow Up

5.1.1 Every exposure incident must be reported immediately to Health Services and the applicable Market Sector ES&H Representative. Medical permission must be obtained from the exposed employee by Health Services to draw blood for testing purposes. The source individual will be identified and his or her status obtained, if possible. A medical evaluation will be conducted (Reference 29 CFR 1910.1030 BBP Standard, (f)(3)). Within 15 days of this evaluation, the medical staff or other designated health care provider will provide the exposed staff member a written opinion of the staff member's status.

5.1.2 When performing work in the field or off-site and an exposure has occurred, the following information shall be provided to the approved medical facility:

5.1.2.1 A copy of the federal regulation 1910.1030 with emphasis on paragraph (f),

5.1.2.2 A description of the employees duties at the time of the incident.

5.1.2.3 How the exposure occurred and the route of entry. (i.e., skin or mucous membrane).

5.1.3 The source individual will be requested to have a blood test. If the consent of the source individual is obtained then the sample will be tested for HIV and HBV infectivity. If consent is not obtained then this fact shall be documented. If the source patient is already known to be infected with HIV or HBV no further testing is required. The physician or medical facility to which the exposed employee is referred for this incident and the exposed employee shall be given the results of the source individual's blood test with that individual's consent (or refusal).

5.1.4 At the discretion of Health Services or approved medical facility, post exposure prophylaxis, as recommended by the U.S. Public Health Service, will be provided. Counseling and evaluation of reported illness (es) will occur when medically indicated.

5.1.5 In the event of hepatitis B exposure, the hepatitis B vaccine (if not previously administered) and hepatitis B immune globulin will be offered and administered within 7 days (with the employee's consent).

5.1.6 Counseling through the *BCO Employee Assistance Program* will be made available to any individual who has had an exposure.

5.1.7 The employee's supervisor will be requested to complete an *Accident/Incident Analysis* form (Reference SIH-PP-02) and forward it to the assigned Market Sector ES&H Representative.

5.1.8 A complete review of the circumstances leading up to the exposure shall take place including, but not limited, to the following:

5.1.8.1 What the employee was doing when the exposure occurred.

5.1.8.2 A review of the personal protective equipment worn during the incident and revision of requirements if indicated.

5.1.8.3 A review of training received by the exposed employee and revision of training if indicated by this review.

5.1.8.4 A review of existing procedures and controls.

6.0 Training

6.1 **Staff subject to potential exposure** will be trained prior to their initial assignment and annually thereafter.

6.2 **Training** will include:

6.2.1 OSHA standard for bloodborne pathogens

6.2.2 Epidemiology and symptomatology of bloodborne diseases

6.2.3 Modes of transmission of bloodborne pathogens

6.2.4 Battelle's *Bloodborne Pathogen Exposure Control Program*

6.2.5 Project specific training shall include:

6.2.5.1 Tasks or activities that might cause exposure to blood or other potentially infectious materials

6.2.5.2 Safe Work Plans, Work Instructions, or procedures which include control methods such as the following: use of personal protective equipment, laboratory hoods/enclosures, signs and labels, etc., associated with specific tasks, decontamination and disposal techniques, and incident response.

6.2.5.3 Post-exposure evaluation and follow up

6.2.5.4 Hepatitis B vaccine program

6.2.5.5 An opportunity for questions and answers.

6.2.6 Project specific training shall be documented by the project manager or designee.

7.0 Record Keeping

7.1 Training records shall include:

7.1.1 Dates of sessions.

7.1.2 Contents or summary of sessions.

7.1.3 Names, job titles, and payroll (badge) numbers of all attendees.

7.1.4 Names and qualifications of persons conducting training.

7.2 Training records shall be maintained by Market Sector ES&H Representatives or Training Database Coordinators.

7.2.1 Maintain training records for three years from the date that training occurred.

7.2.2 Training records shall be provided upon request for copying to employees, employee representatives, director and Assistant Secretary of Labor in accordance with 29 CFR 1910.20 and 1910.1030.

7.3 Medical Records shall be maintained by BCO Health Services or an approved medical facility and shall include:

7.3.1 Name and social security number

7.3.2 Copy of staff member's hepatitis vaccination status and any medical records relating to the employee's ability to receive the vaccination.

7.3.3 A copy of all results of examinations, medical testing, and follow-up procedures.

7.3.4 Copies of healthcare professional's written opinion required by 5.1.1.

7.3.5 Copy of information provided to the healthcare professional or health services.

7.4. A Sharps Injury Log shall be established and maintained for the recording of percutaneous injuries from contaminated sharps. The information in the Sharps Injury Log shall be recorded and maintained in such manner as to protect the confidentiality of the injured employee. The Sharps Injury Log shall be maintained by BCO Health Services for King Avenue and West Jefferson locations and by the location manager at regional offices and field operations. The Sharps Injury Log shall contain, at a minimum:

7.4.1 The type and brand of device involved in the incident,

7.4.2 The laboratory or work area where the exposure incident occurred, and

7.4.3 An explanation of how the incident occurred.

7.5 Confidentiality/Strictly Private

7.5.1 Confidentiality/strictly private status of medical records is to be maintained. Written consent must be obtained from the employee prior to the release of any medical records, except those required by law, e.g., subpoenaed to court.

7.6 Maintenance of Records

7.6.1 BCO Health Services or an approved medical facility shall maintain medical records for at least the duration of employment plus 30 years.

7.6.2 The Sharps Injury Log shall be retained for a period of 5 years following the end of the year to which the log relates.

Hepatitis B Vaccination Declination Form (Mandatory)

I understand that due to my occupational exposure to blood or other potentially infectious materials, I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to me. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future, I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Signature _____ Date _____

ES&H-26

APPENDIX A

DEFINITIONS

APPENDIX A
DEFINITIONS

A-1. *Approved Medical Facility.* A medical facility and its staff which have been reviewed and approved for use by the BCO Health Services organization for facilities in Columbus, Ohio, or reviewed and approved by the off-site location manager and Division market sector ES&H Representative for off-sites and field operations. A copy of the documents describing the review should be sent to BCO Health Services for concurrence and filing.

A-2. *Blood.* Human blood, human blood components, and products made from human blood.

A-3. *Bloodborne Pathogens.* Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

A-4. *Clinical Laboratory.* A workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.

A-5. *Contaminated.* The presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

A-6. *Contaminated Laundry.* Laundry which has been soiled with blood or other potentially infectious materials or may contain sharps.

A-7. *Contaminated Sharps.* Any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

A-8. *Decontamination.* The use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

A-9. *Engineering Controls.* Controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the workplace.

A-10. *Exposure Incident.* A specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

A-11. *Hand-Washing Facilities.* A facility providing an adequate supply of running potable water, soap and single use towels or hot air drying machines.

A-12. *Licensed Healthcare Professional.* A person whose legally permitted scope of practice allows him or her to independently perform the activities required by paragraph (f)

1910.1030, BBP Standard, Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up.

A-13. *N*eedleless Systems. A device that does not use needles for:

(1) The collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established;

(2) The administration of medication or fluids; or

(3) Any other procedures involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

A-14. *HBV*. Means hepatitis B virus.

A-15. *HIV*. Means human immunodeficiency virus.

A-16. *Occupational Exposure*. Reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

A-17. Other potentially infectious materials:

(1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, and any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;

(2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); or

(3) HIV- or HBV-containing cell or tissue cultures, organ cultures, and HIV- or HBV containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

A-18. *Parenteral*. Piercing mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts, and abrasions.

A-19. *Personal Protective Equipment*. Specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.

A-20. *Regulated Waste*. Liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a

liquid or semi-liquid state if compressed: items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

A-21. *Research Laboratory.* A laboratory producing or using research- laboratory-scale amounts of HIV or HBV. Research laboratories may produce high concentrations of HIV or HBV but not in the volume found in production facilities.

A-22. *Sharps With Engineered Sharps Injury Protections.* A nonneedle sharp or a needle device used for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids, with a built-in safety feature or mechanism that effectively reduces the risk of an exposure incident.

A-23. *Source Individual.* Any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to, hospital and clinic patients; clients in institutions for the developmentally disabled; trauma victims; clients of drug and alcohol treatment facilities; residents of hospices and nursing homes; human remains; and individuals who donate sell blood or blood components.

A-24. *Sterilize.* The use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.

A-25. *Universal Precautions.* An approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious For HIV, HBV and other bloodborne pathogens.

A-26. *Work Practice Controls.* Controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

ATTACHMENT E

HASP Addendum – Dioxin Hazards

HEALTH AND SAFETY PLAN ADDENDUM FOR THE CENTERDALE SITE
DIOXIN HAZARDS

THIS HEALTH AND SAFETY ADDENDUM WAS CREATED FOR USE IN CONJUCTION WITH THE HARDING ESE HASP, ISSUED ON MAY 4, 2001. THIS DOCUMENT HAS BEEN REVIEWED AND AUTHORIZED FOR USE IN CONJUNCTION WITH THIS HASP ISSUED ON SEPTEMBER 26, 2002 AS IT APPLIES TO THE CURRENT SCOPE OF WORK (SURFACE SOIL, SUBSURFACE SOIL, AND GROUNDWATER SAMPLING).

THIS DOCUMENT IS INTENDED TO COVER THE HAZARDS OF DIOXIN, PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIREMENTS, AND LEVEL OF PROTECTION UPGRADE INFORMATION.

CONTROLS, PPE, ETC. FOR ALL OTHER SITE CONTAMINANTS ARE COVERED UNDER THE CURRENT HASP.

Harding ESE, Inc.

IDENTIFIED/SUSPECTED SITE CONTAMINANTS

Contaminant Name (Synonyms)	Appearance & Physical Form (Pure substance)	OSHA PEL/ ACGIH TLV	STEL	IDLH	Routes of Entry	Potential Health Effects (Acute & Chronic)	PID Ionization Potential
Dioxin (2,3,7, 8-Tetrachlorodibenzo-p-Dioxin (TCDD))	Colorless to white, crystalline solid.	10 pg/m^3 as TCDD (NRC)		Ca	Inhalation Ingestion Absorption Contact	Irrit eyes; allergic derm; chloriacne; porphyria; GI dist; possible reproductive, terato effects; one dioxin, 2,3,7,8-tetrachlorodibenzo-p-Dioxin (TCDD) is listed as a known human carcinogen with the National Toxicology Program (listed in the January 2001 addendum to the Ninth Report on Carcinogens).	Unknown

Note:
ACGIH = American Conference of Governmental Industrial Hygienists
STEL = Short Term Exposure Limit (STEL)
IDLH = Immediately Dangerous to Life and Health
OSHA = Occupational Safety and Health Administration
PEL = Permissible Exposure Limit
TLV = Threshold Limit Value
ppm = parts per million
NRC = National Research Council
NIOSH = National Institute of Occupational Safety and Health
ND = Not Determined
NA = Not Applicable
NE - Not Established
mg/m^3 = milligrams per cubic meter
Ca/carc = Carcinogen

Abbreviations in table taken from the NIOSH *Pocket Guide to Chemical Hazards*

NOTES:
Based on the information provided on 5/31/01 from Drew Sutton regarding the concentration of dioxin in the soil, incidental skin contact with soil/sediment would not increase the exposure potential to dioxin as long as proper decon and personal hygiene practices are followed. If performing the sampling activities causes large amounts of soil/dust to become attached to clothing, Harding ESE shall don Tyvek or an equivalent coverall and follow appropriate decon procedures.

Information obtained from the EPA, FDA, and other Government agencies regarding Dioxin:
Dioxins are a group of chemical compounds that share certain similar chemical structures and characteristics. Several hundred of these toxic compounds exist and are members of three closely related families. 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) is one of the most toxic of the dioxins. Dioxins are created into the air from combustion processes such as commercial or municipal waste incineration and from burning fuels (wood, coal, or oil). Small amounts of dioxins can also be formed during forest fires, chlorine bleaching of pulp and paper, chemical manufacturing and processing, and other industrial processes.

TCDD is listed in the January 2001 addendum to the *Ninth Report on Carcinogens as a Known Human Carcinogen.* TCDD is not believed to be mutagenic. One health effect from exposure to dioxin is chloracne, which is a skin disease with acne-like lesions that occur mainly on the face and upper body. Other effects of exposure include skin rashes, skin discoloration, excessive body hair, and possibly mild damage.

Dioxins are widespread environmental contaminants and they bioaccumulate throughout the food chain. Apparently food is a major source of human exposure.

TCDD is almost insoluble in water, and slightly soluble some solvents including methanol.

Harding ESE, Inc.

LEVELS OF PROTECTION

TASK (Describe)	Anticipated LOP		Upgrade LOP			
	LOP	Sustained Airborne Levels	LOP	Sustained Airborne Levels	LOP	Sustained Airborne Levels
Task: Sediment and Floodplain Soil and Invertebrate Sampling	D	0 – 0.11 mg/m^3 respirable dust	Stop Work and Characterize Ambient Air	>0.11 mg/m^3 respirable dust		

NOTES:

Based on historical site analytical data, Harding ESE used standard Industrial Hygiene calculations to determine that dioxin at a concentration of 22,600 nanograms per kilogram (ng/kg) results in a respirable dust exposure limit of 0.11 mg/m^3. In other words, the airborne respirable dust level would need to reach 0.11 mg/m^3 in order for the airborne concentration of dioxin to reach its exposure limit of 10 pg/m^3. Harding ESE added the maximum concentration of other non-volatile compounds (those compounds with low vapor pressures that travel through the air with soil particles) detected on site to the calculation and determinded that the combined dust exposure level would still be 0.11 mg/m^3. Please keep in mind that this calculation results in a "worse case" exposure level since not all compounds would be detected at their maximum concentration together.

Airborne dust can be reduced through the use of engineering controls (e.g., water spray).

If respirable dust levels exceed 0.11 mg/m^3, sampling must be performed to determine if airborne dioxin is present.

THE DEFINITION OF "SUSTAINED": THE AIRBORNE BREATHING ZONE CONCENTRATION REMAINS CONSTANT FOR 1 MINUTE.

Chemical Hazards:

Air Monitoring

EQUIPMENT REQUIRED TO MONITOR SITE DUST LEVELS

Air monitoring equipment to be used on site for dust monitoring includes:

- Total dust Meter (RAM-1, Mini-RAM or equivalent) capable of monitoring airborne respirable dust

FREQUENCY

- Continuous dust monitoring shall be performed during all activities that have the potential to disturb site soil/dust.

- The Project Manager shall review laboratory analytical data as it arrives to determine if detected dioxin (and other non-volatile compounds) levels are greater than the level used in the Industrial Hygiene calculations (22,600 ng/kg). If lab data shows that dioxin (or other non-volatile compounds) levels are increasing, site work will cease and the HASP updated based on that new lab data.

AIR MONITORING TECHNIQUES

- Air monitoring shall be conducted on the employee(s) who have the potential for the highest exposure to the contaminant(s). Monitoring shall be performed in such a way that personal exposures to the contaminants may be calculated. Airborne levels of contaminants shall be noted periodically in the field log book, and every reading shall be recorded on an appropriate personal monitoring form. If only representative employees will be monitored, the names of other employees represented by the monitoring shall be noted in the field log book and on the personal monitoring forms. Integrated, full-shift monitoring requiring laboratory analysis shall not be relied on as the sole means of exposure assessment for any work area or task where conditions may change rapidly.

- There is a potential for inhalation of dust particles that contains dioxin and other non-volatile compounds. The maximum level of dioxins and other non-volatile compounds detected on site are listed below. Using standard Industrial Hygiene calculations, Harding ESE determined what the airborne concentration of respirable dust would need to be in order to reach the exposure limit for each substance. This concentration is listed in the last column in the table below.

- Chemical resistant boot covers (rubber) and steel toe inner boots;
- Safety glasses with side shields;
- Splash goggles will be the minimum eye protection worn when handling concentrated acids or caustics;
- Additional PPE as required by the Company H&S Program.

Certification of PPE Hazard Assessment

I certify that the hazard assessment performed on in June 4, 2001 regarding personal protective equipment for Harding ESE's Sediment and Floodplain Soil and Invertebrate Sampling work at Centerdale Site (based on the information provided by Drew Sutton) by Annette McLean in accordance with 29 CFR 1910.132 and Company Personal Protective Equipment Program. The results of the hazard assessment are incorporated in the PPE requirements noted above.

(signature on file) _____
Signature of Project Manager

Engineering Control

- Measures shall be taken on site to reduce airborne dust levels when visible airborne dust becomes present. Water or other appropriate dust suppressant materials shall be applied to work and traffic areas as appropriate to reduce the amount of dust generated.

PCB Aroclor/Pesticide SOIL QA/QC SUMMARY
QC Batch 01-499

PROJECT: USACE NAE Delivery Order #01 Centredale

PARAMETER: PCB Aroclor and Chlorinated Pesticides

LABORATORY: Battelle, Duxbury, MA

MATRIX: Soils

SAMPLE CUSTODY: Soil samples arrived at Battelle Duxbury on July 21, 2001. Samples were received in good condition and the cooler temperature upon receipt was 0.7 °C. Note that one sample was received that was not listed on the COC form – sample RWR-FP-5002-0000-01. The laboratory sample custodian added this sample ID to the comment section of the COC.

QA/QC MEASUREMENT PERFORMANCE CRITERIA:

	Reference Method	Blank	Surrogate Recovery	LCS/MS Recovery	SRM % Diff.	MS/MSD Replicate Relative Precision	Achieved RL (ng/g dry)	Project Goals * (ng/g dry)
PCB/ PEST	L-9 Battelle SOP 5-128	<QL[a]	40-125% Recovery	40-120% Recovery [b]	≤30% PD [c]	≤30% RPD [b,d]	Aroclor: 14.2 to 26.9 Pest: 1.14 to 2.15 Technical Chlordane: ~183 Toxaphene: 28.4 to 53.8	Aroclor: 12.6 to 447 Pest: 0.00903 to 1260 Technical Chlordane: 1260 Toxaphene: NA

[a] Or analyte concentrations in associated samples >10× blank values.
[b] For 90% of analytes; Analyte concentration in MS/MSD must be >5× background to be used for data quality assessment
[c] From a range of certified values; using surrogate corrected data; certified values in SRM must be >3× the detection limit to be used for data quality assessment
[d] Sample duplicate – detected values must be >3× the detection limit to be used for data quality assessment
* Project detection limit goals vary by analyte – see Worksheet #9b in the project QAPP (Battelle, 2001) for detection limit goals by analyte.

METHOD: Soil samples were prepared and analyzed for PCB Aroclor, chlorinated pesticides, and SVOCs (as PAHs) following methods described in Battelle's Quality Assurance Project Plan (Battelle, 2001). Briefly,

Sample Preparation – Soil samples were extracted for PCB Aroclors, chlorinated pesticides and SVOCs (PAHs) following Battelle Duxbury SOP 5-192. Briefly, approximately 20 g of wet soil material was weighed into an extraction vessel and spiked with the surrogate internal standard (SIS) compounds. Next, the sample was extracted three times with 100 mL dichloromethane (DCM) using shaker techniques. The combined extract was dried over sodium sulfate, concentrated to approximately 2 to 3 mL using Kuderna-Danish and nitrogen evaporation techniques. Sample extracts were treated with activated copper to remove elemental sulfur. The extract was then processed through an alumina cleanup column (10-g F20, 2% deactivated alumina) followed by size-exclusion high-performance liquid chromatography (HPLC). The post-HPLC extract was concentrated under nitrogen to approximately 1 mL, fortified with recovery internal standard (RIS) compounds that are used for quantification, and split for SVOC (PAHs) and chlorinated pesticides/PCB Aroclors analyses by GC/MS

METHOD (cont):

and GC/ECD, respectively. The extract for GC/ECD analysis was solvent exchanged into hexane prior to analysis.

Note that the initial GC/ECD analysis of the soil samples proved problematic (degraded GC performance) and was thought to be sample related. Samples were re-extracted for GC/ECD (and GC/MS) analysis.

GC/ECD Analysis – PCB Aroclors and chlorinated pesticides were analyzed by GC/ECD (Hewlett Packard 5890 Series 2 GC) using a 60-m DB5 column and hydrogen as the carrier gas. A minimum of a five-point calibration curve was used for pesticide analysis ranging from approximately 0.008 to 0.3 µg/mL. A single point calibration at approximately 2 µg/mL was used for Technical Chlordane and PCB Aroclors analysis. And a single point calibration at approximately 4 µg/mL was used for Toxaphene analysis

Total Aroclor was determined as the mixture of two major Aroclor formulations. Field samples contained Aroclor 1254 and Aroclor 1268. Aroclor 1254 was the predominant aroclor formulation, and contributed 80% or more of the total Aroclorin all samples. Samples may also contain trace levels of Aroclor 1260 relative to Aroclor 1254 values. Only Aroclors 1254 and 1268 are reported.

GC/ECD Calibration Issues – One continuing calibration run at the beginning of the analytical sequence failed continuing calibration criteria for four pesticides (g-BHC 27%, heptachlor 32%, 4,4'-DDT 34%, and methoxychlor 27%). However, this standard did not bracket any authentic study samples and sample data should not be impacted. All other continuing calibrations analyzed in the analytical sequence met continuing calibration criteria.

Matrix Interferences –Samples could not be quantified for *gamma*-Chlordane due to matrix interferences.

HOLDING TIMES:

Samples were prepared for analysis in one analytical batch. Samples were extracted and analyzed within holding times (extracted within 70-d of collection and analyzed within 27 days of extraction). Samples were held frozen and in the dark until extraction.

Batch	Extraction Date	Analysis Date
01-499	09/24/2001	10/18 – 24/2001

DETECTION LIMITS:

PCB Aroclor and chlorinated pesticide results are reported relative to the sample-specific reporting limits (also referred to as QL in the QAPP) for that compound. The sample-specific RL is based on the low calibration standard and adjusted for sample specific processing factors and volumes, as follow:

RL = (Concentration in Low Std. × final extract volume × dilution factors)/ Sample size

Where,
Concentration in Low Std. = approximately 0.008 µg/mL for pesticides and PCB congeners; 1 µg/mL Technical Chlordane; 0.1 µg/mL for Aroclor; and 0.2 µg/mL for Technical Chlordane**
Final Extract Volume = 1,100 µL
Dilution Factor = 1.667
Sample Size = approximately 20-g wet (3 to 13-g dry)

** Note that a mid-level, single point calibration was analyzed for Technical Chlordane

DETECTION LIMITS (cont):

(2 µg/mL), PCB Aroclor (2 µg/mL) and Toxaphene (4 µg/mL). However, the RL was based on the low range of the calibration curve, which was not analyzed with the samples. A full curve (for Technical Chlordane and Aroclor) had been analyzed within 2-months of the samples, thereby demonstrating that the instrument is sensitive at a lower level. Calculation of RLs is consistent with the methods specified in the QAPP (see Worksheet #9a).

Achieved RLs for several pesticides did not meet the project detection limit goals, and were generally 3 to 15 times higher than the project detection limit goal. Achieved RLs for PCB Aroclor and Technical Chlordane either met or well below the project detection limit goals. No project detection limit goals were provided for Toxaphene. As noted in the QAPP, the project detection limit goals are provided for perspective rather than as a requirement for the analytical methods. If detection limits cannot be achieved, this will be addressed in the uncertainty discussions in the risk assessment.

BLANKS:

A laboratory procedural blank (PB) were prepared with the analytical batch. Blanks are analyzed to ensure that the sample extraction and analysis methods were free of contamination.

01-499 – PCB Aroclors and chlorinated pesticides were undetected in the laboratory blank.

LABORATORY CONTROL SAMPLE

Two laboratory control samples (LCS) were prepared with the analytical batch. One LCS sample was fortified with PCB congeners and chlorinated pesticides. The other LCS was fortified with PCB Aroclor 1016 and 1260. The percent recoveries of PCB Aroclor and chlorinated pesticides were calculated to measure data quality in terms of accuracy.

01-499 – Representative PCB and pesticide compounds were recovered within the control limits specified in QAPP.

Recoveries ranged from:

	Pesticides	PCB Aroclor
ZJ50LCS#1	62 – 97%	not spiked
ZJ51LCS#2	not spiked	66 – 82%

MATRIX SPIKES:

One matrix spike (MS)/matrix spike duplicate (MSD) sample set was prepared with the batch to measure data quality in terms of accuracy and precision. The MS and MSD were fortified with chlorinated pesticides to monitor data quality in terms of accuracy and precision.

01-499 – With the exception of three pesticides, representative compounds were recovered within the control limits specified in QAPP. Exceptions included Endosulfan II (203% in the MS and 189% in the MSD), *gamma*-Chlordane (345% in MS and 815% in the MSD), and Methoxychlor (324% in MS and 308% in MSD).

Recoveries ranged from:

	Pesticides	PCB Aroclor
MS	9 – 345%	not spiked*
MSD	55 – 815%	not spiked*
RPDs	2.1 – 177%	not applicable

*PCB Aroclor only spiked into the LCS, per the QAPP (Battelle, 2001)

PCB Aroclor/Pesticide SOIL QA/QC SUMMARY
QC Batch 01-499

MATRIX SPIKES (cont):

Corrective Action – Most QC exceedences corresponded to pesticides that were present in the MS/MSD at levels that were not above five times background concentrations, and as a result should not be used to assess data quality. The over recovery of Endosulfan II, *gamma*-Chlordane and Methoxychlor in the MS and MSD is likely a result of interferences from co-eluting PCB Aroclor and Technical chlordane peaks.

SURROGATES:

Four PCB surrogate compounds were added to each sample prior to extraction, including PCBs 14, 34, 104, and 112. Recovery data for PCBs 34 and 112 were calculated to measure data quality in terms of accuracy (extraction efficiency). Recovery data for the other two PCB surrogate compounds are not reported, as these are used as alternative surrogates in cases of interferences.

01-499 – PCB surrogates were recovered within the control limits specified in the QAPP for all samples with the following exceptions:

ZJ49PB: 12% PCB34 and 14% PCB112	W5529-1: 143% PCB112
ZJ54SRM: 37% PCB34	W5532-1: 136% PCB34

Correction Action – The under-recovery of both PCB surrogate compounds in the procedural blank was likely due to sample loss during concentration. The over-recovery of PCB surrogate compounds in samples W5529-1 and W5532-1 is likely due to matrix interferences resulting from the high PCB concentrations in the sample. Samples will not be re-extracted.

REPLICATES:

A laboratory duplicate was prepared with the batch. The RPD between laboratory replicate analyses for PCB Aroclor and chlorinated pesticides was calculated to measure data quality in terms of precision.

01-499 – All RPDs exceeded the control limits specified in QAPP, ranging from 130.5 to 156.8%.

Corrective Action – The sample duplicate wet weight recorded in the sample preparation records is anonymously low. The sample weight recorded for the sample duplicate was approximately five-fold lower relative to all other samples (4.32 g vs. 20-g). Had a sample size more typical of the batch been used to determine sample concentrations for the duplicate, then RPDs between the sample replicates would have met the control limits specified in the QAPP. Results for the laboratory duplicate should be considered suspect and not used for data evaluation.

Field replicates – precision between field replicates was poor, with RPDs for most detected compounds being >40%.

SRM: A standard reference material (SRM, NIST 1944) was prepared with the analytical batch. The percent difference (PD) between detected concentrations and certified values (lower and upper range) was calculated to measure data quality in terms of accuracy. *Note* – if the detected value fell within the certified range, then the PD is 0.0%. Also note that the SRM is certified for only two of the target compounds, including 4,4'-DDT and *alpha*-Chlordane.

01-499 – SRM PDs were within the control limits for *alpha*-Chlordane (19.2% PD), but exceeded the control limit for 4,4'-DDT (35.7% PD).

Corrective Action – Note that recovery of 4,4'-DDT in the LCS and MS/MSD was within QC limits specified by the QAPP, suggesting that the method is in control. Further, 4,4'-DDT has historically been over-recovered in NIST SRM 1944 at Battelle, resulting in a slightly elevated PD value. The over-recovery is believed to be due to a co-eluting congener or matrix interference with 4,4'-DDT. This QC exceedence is flagged on the final report table.

REFERENCES:

Battelle 2001. *Centredale Manor Restoration Project Superfund Site Baseline Risk Assessment, Initial Project Planning and Support.* Tasks 19-22 QAPP prepared under contract to USACE NAE. Delivery Order #59. May 23, 2001. 509pp + apps.

Soil and QC Results

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	1.54	ng/g - dry wt	U		1.54
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	192.62	ng/g - dry wt	U		192.62
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	38.52	ng/g - dry wt	U		38.52
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	19.26	ng/g - dry wt	U		19.26
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	19.26	ng/g - dry wt	U		19.26
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	19.26	ng/g - dry wt	U		19.26
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	19.26	ng/g - dry wt	U		19.26
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	19.26	ng/g - dry wt	U		19.26
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	19.26	ng/g - dry wt	U		19.26
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	19.26	ng/g - dry wt	U		19.26
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	19.26	ng/g - dry wt	U		19.26
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	154.09	ng/g - dry wt	U		154.09
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	12	%RECOVERY	&		
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/18/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	14	%RECOVERY	&		
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	91	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	91	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	86	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	67	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	68	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	74	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	76	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	75	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	91	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	84	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	93	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	91	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	97	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	62	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	85	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	67	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	68	%RECOVERY			

SAMPLE_NO	LAB_ID	CRDL_CRQL	DF	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB		1.667	NA		9.52	G_DRY				T
NA	ZJ49PB			NA		9.52	G_DRY				T
NA	ZJ49PB			NA		9.52	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	70	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	64	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	71	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	66	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/23/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	88	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	39	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	23	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	54	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	107	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	102	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	9	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	80	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	84	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	21	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	82	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	203	%RECOVERY	&		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	25	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	66	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	68	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	96	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	97	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	345	%RECOVERY	&		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	113	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	94	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	324	%RECOVERY	&		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	109	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/19/01	09/24/01	10/19/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	55	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	66	%RECOVERY			

SAMPLE_NO	LAB_ID	CRDL_CRQL	DF	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1			NA		NA	G_DRY				T
NA	ZJ50LCS#1			NA		NA	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS			47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS			47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	61	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	113	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	101	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	115	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	146	%RECOVERY	-		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	82	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	89	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	69	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	114	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	189	%RECOVERY	&		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	55	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	60	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	64	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	93	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	95	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	815	%RECOVERY	&		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	97	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	85	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	308	%RECOVERY	&		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	107	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/19/01	09/24/01	10/19/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	55	%RECOVERY			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/19/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	35.7	%DIFFERENCE	&		
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/19/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	19.2	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/19/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	37	%RECOVERY	&		
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/19/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	41	%RECOVERY			
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	11.87	ng/g - dry wt			5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	36.33	ng/g - dry wt			5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	14.45	ng/g - dry wt			5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	16.73	ng/g - dry wt			5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	13.13	ng/g - dry wt			5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	10.30	ng/g - dry wt			5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26

SAMPLE_NO	LAB_ID	CRDL_CRQL	DF	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD			47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD			47.81		10.57	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM			1.25		1.89	G_DRY				T
NA	ZJ54SRM			1.25		1.89	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	11.87	J		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	36.33	J		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	14.45	J		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	16.73	J		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	13.13	J		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	10.30	J		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	5.26	ng/g - dry wt	U		5.26
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	473.36	ng/g - dry wt	J		657.24
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	131.45	ng/g - dry wt	U		131.45
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	65.72	ng/g - dry wt	U		65.72
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	65.72	ng/g - dry wt	U		65.72
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	65.72	ng/g - dry wt	U		65.72
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	65.72	ng/g - dry wt	U		65.72
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	65.72	ng/g - dry wt	U		65.72
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	746.14	ng/g - dry wt			65.72
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	65.72	ng/g - dry wt	U		65.72
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	113.10	ng/g - dry wt			65.72
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	859.24	ng/g - dry wt			525.79
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	87	%RECOVERY			
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/21/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	76	%RECOVERY			
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	4.64	ng/g - dry wt			1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	5.19	ng/g - dry wt			1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	2.69	ng/g - dry wt			1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	16.70	ng/g - dry wt			1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	4.30	ng/g - dry wt			1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	4.09	ng/g - dry wt			1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	1.39	ng/g - dry wt	U		1.39
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	347.23	ng/g - dry wt			173.48
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	34.70	ng/g - dry wt	U		34.70
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	17.35	ng/g - dry wt	U		17.35
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	17.35	ng/g - dry wt	U		17.35
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	17.35	ng/g - dry wt	U		17.35
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	17.35	ng/g - dry wt	U		17.35
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	17.35	ng/g - dry wt	U		17.35
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	207.34	ng/g - dry wt			17.35
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	17.35	ng/g - dry wt	U		17.35
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	43.56	ng/g - dry wt			17.35
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	250.90	ng/g - dry wt			138.79

SAMPLE_NO	LAB_ID	CRDL_CRQL	DF	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	5.26	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	473.36	J		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	131.45	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	65.72	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	65.72	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	65.72	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	65.72	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	65.72	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	746.14	J		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	65.72	U		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	113.10	J		T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY	859.24	J		T
LPX-FP-4004-0000-01	W5531DUP-1			35.38		2.79	G_DRY	87			T
LPX-FP-4004-0000-01	W5531DUP-1			35.38		2.79	G_DRY	76			T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	4.64	J		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	5.19	J		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	2.69	J		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	16.70	J		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	4.30	J		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	UJ		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	4.09	J		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	UJ		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	1.39	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	347.23			T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	34.70	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	17.35	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	17.35	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	17.35	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	17.35	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	17.35	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	207.34			T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	17.35	U		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	43.56			T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	250.90			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	102	%RECOVERY			
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	56	%RECOVERY			
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	1.44	ng/g - dry wt			1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	5.05	ng/g - dry wt			1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	3.04	ng/g - dry wt			1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	1.14	ng/g - dry wt	U		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	1.14	ng/g - dry wt	U		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	2.84	ng/g - dry wt			1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	1.14	ng/g - dry wt	U		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	1.14	ng/g - dry wt	U		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	2.20	ng/g - dry wt			1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	1.14	ng/g - dry wt	U		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	1.14	ng/g - dry wt	U		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	1.37	ng/g - dry wt			1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	1.14	ng/g - dry wt	U		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	1.14	ng/g - dry wt	U		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	1.14	ng/g - dry wt	U		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	1.14	ng/g - dry wt	U		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	1.14	ng/g - dry wt	U		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	1.14	ng/g - dry wt	U		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	0.39	ng/g - dry wt	J		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	1.14	ng/g - dry wt	U		1.14
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	79.63	ng/g - dry wt	J		142.26
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	28.45	ng/g - dry wt	U		28.45
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	14.23	ng/g - dry wt	U		14.23
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	14.23	ng/g - dry wt	U		14.23
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	14.23	ng/g - dry wt	U		14.23
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	14.23	ng/g - dry wt	U		14.23
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	14.23	ng/g - dry wt	U		14.23
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	120.02	ng/g - dry wt			14.23
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	14.23	ng/g - dry wt	U		14.23
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	22.49	ng/g - dry wt			14.23
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	142.52	ng/g - dry wt			113.81
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	69	%RECOVERY			
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	60	%RECOVERY			
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	11.54	ng/g - dry wt			1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	6.36	ng/g - dry wt			1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	9.39	ng/g - dry wt			1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	25.07	ng/g - dry wt			1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	12.36	ng/g - dry wt			1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	9.02	ng/g - dry wt			1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29

SAMPLE_NO	LAB_ID	CRDL_CRQL	DF	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
RWR-FP-5002-0000-01	W5530-1			48.08		10.57	G_DRY	102			T
RWR-FP-5002-0000-01	W5530-1			48.08		10.57	G_DRY	56			T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.44			T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	5.05			T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	3.04			T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.14	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.14	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	2.84			T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.14	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.14	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	2.20			T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.14	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.14	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.37			T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.14	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.14	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.14	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.14	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.14	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.14	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	0.39	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	1.14	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	79.63	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	28.45	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	14.23	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	14.23	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	14.23	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	14.23	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	14.23	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	120.02			T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	14.23	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	22.49			T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	142.52			T
LPX-FP-4004-0000-01	W5531-1			35.45		12.89	G_DRY	69			T
LPX-FP-4004-0000-01	W5531-1			35.45		12.89	G_DRY	60			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	11.54			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	6.36			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	9.39			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	1.29	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	1.29	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	25.07			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	1.29	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	1.29	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	12.36			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	1.29	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	1.29	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	9.02			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	1.29	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	1.29	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	1.29	U		T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	0.53	ng/g - dry wt	J		1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	525.84	ng/g - dry wt			160.99
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	32.20	ng/g - dry wt	U		32.20
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	16.10	ng/g - dry wt	U		16.10
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	16.10	ng/g - dry wt	U		16.10
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	16.10	ng/g - dry wt	U		16.10
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	16.10	ng/g - dry wt	U		16.10
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	16.10	ng/g - dry wt	U		16.10
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	629.78	ng/g - dry wt			16.10
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	16.10	ng/g - dry wt	U		16.10
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	36.78	ng/g - dry wt			16.10
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	666.57	ng/g - dry wt			128.79
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	91	%RECOVERY			
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	60	%RECOVERY			
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	13.15	ng/g - dry wt			1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	31.59	ng/g - dry wt			1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	43.13	ng/g - dry wt			1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	1.36	ng/g - dry wt	U		1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	1.36	ng/g - dry wt	U		1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	22.23	ng/g - dry wt			1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	1.36	ng/g - dry wt	U		1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	1.36	ng/g - dry wt	U		1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	5.40	ng/g - dry wt			1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	1.36	ng/g - dry wt	U		1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	1.36	ng/g - dry wt	U		1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	1.71	ng/g - dry wt			1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	1.36	ng/g - dry wt	U		1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	1.36	ng/g - dry wt	U		1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	1.36	ng/g - dry wt	U		1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	1.36	ng/g - dry wt	U		1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	1.36	ng/g - dry wt	U		1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	1.36	ng/g - dry wt	U		1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	2.07	ng/g - dry wt			1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	1.36	ng/g - dry wt	U		1.36
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	455.84	ng/g - dry wt			170.58
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	34.12	ng/g - dry wt	U		34.12
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	17.06	ng/g - dry wt	U		17.06
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	17.06	ng/g - dry wt	U		17.06
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	17.06	ng/g - dry wt	U		17.06
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	17.06	ng/g - dry wt	U		17.06
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	17.06	ng/g - dry wt	U		17.06
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	85.28	ng/g - dry wt			17.06
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	17.06	ng/g - dry wt	U		17.06
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	23.44	ng/g - dry wt			17.06
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	108.73	ng/g - dry wt	J		136.46
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	79	%RECOVERY			

SAMPLE_NO	LAB_ID	CRDL_CRQL	DF	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	1.29	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	1.29	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	0.53	J		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	1.29	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	1.29	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	525.84			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	32.20	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	16.10	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	16.10	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	16.10	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	16.10	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	16.10	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	629.78			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	16.10	U		T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	36.78			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	666.57			T
CMS-FP-4003-0000-01	W5527-1			44.69		11.39	G_DRY	91			T
CMS-FP-4003-0000-01	W5527-1			44.69		11.39	G_DRY	60			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	13.15			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	31.59			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	43.13			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	1.36	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	1.36	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	22.23			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	1.36	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	1.36	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	5.40			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	1.36	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	1.36	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	1.71			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	1.36	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	1.36	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	1.36	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	1.36	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	1.36	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	2.07			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	1.36	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	455.84			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	34.12	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	17.06	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	17.06	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	17.06	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	17.06	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	17.06	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	85.28			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	17.06	U		T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	23.44			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	108.73	J		T
LPX-FP-4007-0000-01	W5528-1			44.98		10.75	G_DRY	79			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/21/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	78	%RECOVERY			
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	6.07	ng/g - dry wt			1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	13.77	ng/g - dry wt			1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	8.31	ng/g - dry wt			1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	1.23	ng/g - dry wt	J		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	1.49	ng/g - dry wt	U		1.49
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	86.55	ng/g - dry wt	J		185.97
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	37.19	ng/g - dry wt	U		37.19
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	18.60	ng/g - dry wt	U		18.60
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	18.60	ng/g - dry wt	U		18.60
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	18.60	ng/g - dry wt	U		18.60
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	18.60	ng/g - dry wt	U		18.60
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	18.60	ng/g - dry wt	U		18.60
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	253.05	ng/g - dry wt			18.60
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	18.60	ng/g - dry wt	U		18.60
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	25.07	ng/g - dry wt			18.60
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	278.11	ng/g - dry wt			148.78
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	92	%RECOVERY			
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/19/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	143	%RECOVERY	&		
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	6.78	ng/g - dry wt			1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	19.96	ng/g - dry wt			1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	18.27	ng/g - dry wt			1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	1.55	ng/g - dry wt	U		1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	1.55	ng/g - dry wt	U		1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	10.76	ng/g - dry wt			1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	1.55	ng/g - dry wt	U		1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	1.55	ng/g - dry wt	U		1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	7.19	ng/g - dry wt			1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	1.55	ng/g - dry wt	U		1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	1.55	ng/g - dry wt	U		1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	12.69	ng/g - dry wt			1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	1.55	ng/g - dry wt	U		1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	1.55	ng/g - dry wt	U		1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	1.55	ng/g - dry wt	U		1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	1.55	ng/g - dry wt	U		1.55

SAMPLE_NO	LAB_ID	CRDL_CRQL	DF	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
LPX-FP-4007-0000-01	W5528-1			44.98		10.75	G_DRY	78			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	6.07	J		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	13.77	J		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	8.31	J		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.23	J		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	1.49	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	86.55	J		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	37.19	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	18.60	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	18.60	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	18.60	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	18.60	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	18.60	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	253.05	J		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	18.60	U		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	25.07	J		T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	278.11	J		T
LPX-FP-4006-0000-01	W5529-1			49.31		9.86	G_DRY	92			T
LPX-FP-4006-0000-01	W5529-1			49.31		9.86	G_DRY	143	&		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	6.78	J		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	19.96	J		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	18.27	J		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	1.55	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	1.55	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	10.76	J		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	1.55	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	1.55	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	7.19	J		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	1.55	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	1.55	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	12.69	J		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	1.55	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	1.55	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	1.55	U		T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	1.55	ng/g - dry wt	U		1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	1.55	ng/g - dry wt	U		1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	0.74	ng/g - dry wt	J		1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	1.55	ng/g - dry wt	U		1.55
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	361.99	ng/g - dry wt			193.84
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	38.77	ng/g - dry wt	U		38.77
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	19.38	ng/g - dry wt	U		19.38
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	19.38	ng/g - dry wt	U		19.38
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	19.38	ng/g - dry wt	U		19.38
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	19.38	ng/g - dry wt	U		19.38
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	19.38	ng/g - dry wt	U		19.38
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	639.23	ng/g - dry wt			19.38
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	19.38	ng/g - dry wt	U		19.38
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	139.53	ng/g - dry wt			19.38
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	778.76	ng/g - dry wt			155.07
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	136	%RECOVERY	&		
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/20/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	44	%RECOVERY			
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	10.05	ng/g - dry wt			1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	5.61	ng/g - dry wt			1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	29.96	ng/g - dry wt			1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	28.57	ng/g - dry wt			1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	10.55	ng/g - dry wt			1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	6.77	ng/g - dry wt			1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	2.88	ng/g - dry wt			1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	1.29	ng/g - dry wt	U		1.29
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	560.99	ng/g - dry wt			161.84
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	32.37	ng/g - dry wt	U		32.37
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	16.18	ng/g - dry wt	U		16.18
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	16.18	ng/g - dry wt	U		16.18
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	16.18	ng/g - dry wt	U		16.18
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	16.18	ng/g - dry wt	U		16.18
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	16.18	ng/g - dry wt	U		16.18
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	481.74	ng/g - dry wt			16.18
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	16.18	ng/g - dry wt	U		16.18
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	41.46	ng/g - dry wt			16.18
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	523.20	ng/g - dry wt			129.48
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	104	%RECOVERY			
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	59	%RECOVERY			

SAMPLE_NO	LAB_ID	CRDL_CRQL	DF	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	1.55	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	1.55	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	0.74	J		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	1.55	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	361.99	J		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	38.77	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	19.38	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	19.38	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	19.38	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	19.38	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	19.38	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	639.23	J		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	19.38	U		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	139.53	J		T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	778.76	J		T
RWR-FP-5004-0000-01	W5532-1			54.12		9.46	G_DRY	136	&		T
RWR-FP-5004-0000-01	W5532-1			54.12		9.46	G_DRY	44			T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	10.05	J		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	5.61	J		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	29.96	J		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	1.29	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	1.29	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	28.57			T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	1.29	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	1.29	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	10.55	J		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	1.29	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	1.29	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	6.77			T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	1.29	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	1.29	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	1.29	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	1.29	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	1.29	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	2.88			T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	1.29	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	1.29	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	560.99	J		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	32.37	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	16.18	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	16.18	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	16.18	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	16.18	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	16.18	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	481.74			T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	16.18	U		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	41.46			T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	523.20			T
CMS-FP-4001-0000-01	W5533-1			43.36		11.33	G_DRY	104			T
CMS-FP-4001-0000-01	W5533-1			43.36		11.33	G_DRY	59			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	17.45	ng/g - dry wt			1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	15.83	ng/g - dry wt			1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	3.66	ng/g - dry wt			1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	55.10	ng/g - dry wt			1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	19.46	ng/g - dry wt			1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	1.48	ng/g - dry wt	U		1.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	851.81	ng/g - dry wt			184.48
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	36.90	ng/g - dry wt	U		36.90
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	18.45	ng/g - dry wt	U		18.45
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	18.45	ng/g - dry wt	U		18.45
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	18.45	ng/g - dry wt	U		18.45
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	18.45	ng/g - dry wt	U		18.45
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	18.45	ng/g - dry wt	U		18.45
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	1297.67	ng/g - dry wt			18.45
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	18.45	ng/g - dry wt	U		18.45
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	46.49	ng/g - dry wt			18.45
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	1344.16	ng/g - dry wt			147.58
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	88	%RECOVERY			
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/20/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	91	%RECOVERY			
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	15.17	ng/g - dry wt			2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	20.61	ng/g - dry wt			2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	6.59	ng/g - dry wt			2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	35.92	ng/g - dry wt			2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	9.41	ng/g - dry wt			2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15

SAMPLE_NO	LAB_ID	CRDL_CRQL	DF	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	17.45			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	15.83			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	3.66			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	55.10			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	19.46			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1.48	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	851.81			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	36.90	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	18.45	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	18.45	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	18.45	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	18.45	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	18.45	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1297.67			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	18.45	U		T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	46.49			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	1344.16			T
CMS-FP-4002-0000-01	W5534-1			51.38		9.94	G_DRY	88			T
CMS-FP-4002-0000-01	W5534-1			51.38		9.94	G_DRY	91			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	15.17			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	20.61			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	6.59			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	35.92			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	9.41			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	2.15	ng/g - dry wt	U		2.15
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	735.38	ng/g - dry wt			269.27
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	53.85	ng/g - dry wt	U		53.85
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	26.93	ng/g - dry wt	U		26.93
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	26.93	ng/g - dry wt	U		26.93
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	26.93	ng/g - dry wt	U		26.93
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	26.93	ng/g - dry wt	U		26.93
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	26.93	ng/g - dry wt	U		26.93
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	838.72	ng/g - dry wt			26.93
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	26.93	ng/g - dry wt	U		26.93
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	83.60	ng/g - dry wt			26.93
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	922.32	ng/g - dry wt			215.41
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	6.33	ng/g - dry wt			1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	7.65	ng/g - dry wt			1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	6.60	ng/g - dry wt			1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	7.81	ng/g - dry wt			1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	4.24	ng/g - dry wt			1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	8.15	ng/g - dry wt			1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	1.24	ng/g - dry wt	U		1.24
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	278.20	ng/g - dry wt			155.14
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	31.03	ng/g - dry wt	U		31.03
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	15.51	ng/g - dry wt	U		15.51
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	15.51	ng/g - dry wt	U		15.51
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	15.51	ng/g - dry wt	U		15.51
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	15.51	ng/g - dry wt	U		15.51
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	15.51	ng/g - dry wt	U		15.51
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	394.64	ng/g - dry wt			15.51
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	15.51	ng/g - dry wt	U		15.51
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	68.85	ng/g - dry wt			15.51
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	463.49	ng/g - dry wt			124.11
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	94	%RECOVERY			
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/20/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	53	%RECOVERY			
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	14.42	ng/g - dry wt			1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	8.12	ng/g - dry wt			1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	16.58	ng/g - dry wt			1.57

SAMPLE_NO	LAB_ID	CRDL_CRQL	DF	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	2.15	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	735.38			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	53.85	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	26.93	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	26.93	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	26.93	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	26.93	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	26.93	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	838.72			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	26.93	U		T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	83.60			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	922.32			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	6.33			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	7.65			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	6.60			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	1.24	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	1.24	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	7.81			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	1.24	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	1.24	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	4.24			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	1.24	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	1.24	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	8.15			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	1.24	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	1.24	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	1.24	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	1.24	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	1.24	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	1.24	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	1.24	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	278.20			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	31.03	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	15.51	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	15.51	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	15.51	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	15.51	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	15.51	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	394.64			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	15.51	U		T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	68.85			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	463.49			T
RWR-FP-5003-0000-01	W5536-1			41.63		11.82	G_DRY	94			T
RWR-FP-5003-0000-01	W5536-1			41.63		11.82	G_DRY	53			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	14.42			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	8.12			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	16.58			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	39.63	ng/g - dry wt			1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	14.88	ng/g - dry wt			1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	7.74	ng/g - dry wt			1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	2.78	ng/g - dry wt			1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	799.29	ng/g - dry wt			195.91
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	39.18	ng/g - dry wt	U		39.18
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	19.59	ng/g - dry wt	U		19.59
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	19.59	ng/g - dry wt	U		19.59
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	19.59	ng/g - dry wt	U		19.59
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	19.59	ng/g - dry wt	U		19.59
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	19.59	ng/g - dry wt	U		19.59
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	588.35	ng/g - dry wt			19.59
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	19.59	ng/g - dry wt	U		19.59
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	33.93	ng/g - dry wt			19.59
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	622.28	ng/g - dry wt			156.73
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	88	%RECOVERY			
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/20/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	56	%RECOVERY			
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	15.61	ng/g - dry wt			1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	10.43	ng/g - dry wt			1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	14.83	ng/g - dry wt			1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	40.17	ng/g - dry wt			1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	18.40	ng/g - dry wt			1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	9.48	ng/g - dry wt			1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	1.75	ng/g - dry wt			1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	1.57	ng/g - dry wt	U		1.57

SAMPLE_NO	LAB_ID	CRDL_CRQL	DF	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	1.57	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	1.57	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	39.63			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	1.57	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	1.57	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	14.88			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	1.57	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	1.57	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	7.74			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	1.57	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	1.57	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	1.57	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	1.57	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	1.57	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	2.78			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	1.57	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	1.57	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	799.29			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	39.18	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	19.59	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	19.59	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	19.59	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	19.59	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	588.35			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	19.59	U		T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	33.93			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	622.28			T
CMS-FP-4005-0000-01	W5537-1			54.94		9.36	G_DRY	88			T
CMS-FP-4005-0000-01	W5537-1			54.94		9.36	G_DRY	56			T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	15.61	J		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	10.43	J		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	14.83	J		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.57	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.57	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	40.17			T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.57	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.57	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	18.40	J		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.57	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.57	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	9.48			T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.57	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.57	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.57	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.57	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.57	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.75			T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.57	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	1.57	U		T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	965.66	ng/g - dry wt			196.33
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	39.27	ng/g - dry wt	U		39.27
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	19.63	ng/g - dry wt	U		19.63
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	19.63	ng/g - dry wt	U		19.63
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	19.63	ng/g - dry wt	U		19.63
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	19.63	ng/g - dry wt	U		19.63
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	19.63	ng/g - dry wt	U		19.63
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	685.38	ng/g - dry wt			19.63
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	19.63	ng/g - dry wt	U		19.63
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	45.08	ng/g - dry wt			19.63
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	730.46	ng/g - dry wt			157.06
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	100	%RECOVERY			
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/20/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	59	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	4,4'-DDD	50-29-3	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	4,4'-DDE	72-54-8	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	4,4'-DDT	72-55-9	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Aldrin	309-00-2	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	alpha-BHC	319-84-6	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	alpha-Chlordane	5103-71-9	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	beta-BHC	319-85-7	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	delta-BHC	319-86-8	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Dieldrin	60-57-1	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Endosulfan I	959-98-8	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Endosulfan II	33213-65-9	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Endosulfan Sulfate	1031-07-8	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Endrin	72-20-8	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Endrin Aldehyde	7421-93-4	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Endrin Ketone	53494-70-5	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	gamma-BHC	58-89-9	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	gamma-Chlordane	5103-74-2	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Heptachlor	76-44-8	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Heptachlor Epoxide	1024-57-3	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Methoxychlor	72-43-5	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Technical chlordane	57-74-9	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Toxaphene	8001-35-2	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Aroclor-1016	12674-11-2	PEST/PCB	BATD_SOP_5_128	66	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Aroclor-1221	1104-28-2	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Aroclor-1232	11141-16-5	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Aroclor-1242	53469-21-9	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Aroclor-1248	12672-29-6	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Aroclor-1254	11097-69-1	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Aroclor-1260	11096-82-5	PEST/PCB	BATD_SOP_5_128	82	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Aroclor-1268	11100-14-4	PEST/PCB	BATD_SOP_5_128	NA	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Total Aroclor		PEST/PCB	BATD_SOP_5_128	74	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Cl3(34)	37680-68-5	PEST/PCB	BATD_SOP_5_128	71	%RECOVERY			
NA	ZJ51LCS#2	BATD	LCS	NA	09/24/01	10/24/01		01-499	Cl5(112)	74472-36-9	PEST/PCB	BATD_SOP_5_128	91	%RECOVERY			

SAMPLE_NO	LAB_ID	CRDL_CRQL	DF	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	965.66	J		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	39.27	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	19.63	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	19.63	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	19.63	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	19.63	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	19.63	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	685.38			T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	19.63	U		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	45.08			T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	730.46			T
CMS-DU-072001	W5538-1			53.97		9.34	G_DRY	100			T
CMS-DU-072001	W5538-1			53.97		9.34	G_DRY	59			T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2		1.667	NA		NA	G_DRY				T
NA	ZJ51LCS#2			NA		NA	G_DRY				T
NA	ZJ51LCS#2			NA		NA	G_DRY				T

Section 4
PAH Results

QA/QC Narrative
Soil and QC Results

QA/QC Narrative

PAH SOIL QA/QC SUMMARY
QC Batch 01-499

PROJECT: USACE NAE Delivery Order #01 Centredale

PARAMETER: PAHs

LABORATORY: Battelle, Duxbury, MA

MATRIX: Soils

SAMPLE CUSTODY: Soil samples arrived at Battelle Duxbury on July 21, 2001. Samples were received in good condition and the cooler temperature upon receipt was 0.7 °C. Note that one sample was received that was not listed on the COC form – sample RWR-FP-5002-0000-01. The laboratory sample custodian added this sample ID to the comment section of the COC.

QA/QC MEASUREMENT PERFORMANCE CRITERIA:

	Reference Method	Blank	Surrogate Recovery	LCS/MS Recovery	SRM % Diff.	MS/MSD Replicate Relative Precision	Achieved RL (ng/g)	Project Goals * (ng/g)
PAH	Battelle SOP 5-157	<QL[a]	40-125% Recovery	40-120% Recovery [b]	≤30% PD [c]	≤30% RPD [b,d]	1.2 to 785.3	0.18 to 16900

[a] Or analyte concentrations in associated samples >10× blank values.
[b] For 90% of analytes; Analyte concentration in MS/MSD must be >5× background to be used for data quality assessment
[c] From a range of certified values; using surrogate corrected data; certified values in SRM must be >3× the detection limit to be used for data quality assessment
[d] Analyte concentration in Replicates must be >3× QL to be used for data quality assessment
* Project detection limit goals vary by analyte – see Worksheet #9a in the project QAPP (Battelle, 2001) for detection limit goals by analyte.

METHOD: Soil samples were prepared and analyzed for PCB Aroclor, chlorinated pesticides, and SVOCs (as PAHs) following methods described in Battelle's Quality Assurance Project Plan (Battelle, 2001). Briefly,

Sample Preparation – Soil samples were extracted for PCB Aroclors, chlorinated pesticides and SVOCs (PAHs) following Battelle Duxbury SOP 5-192. Briefly, approximately 20 g of wet soil material was weighed into an extraction vessel and spiked with the surrogate internal standard (SIS) compounds. Next, the sample was extracted three times with 100 mL dichloromethane (DCM) using shaker techniques. The combined extract was dried over sodium sulfate, concentrated to approximately 2 to 3 mL using Kuderna-Danish and nitrogen evaporation techniques. Sample extracts were treated with activated copper to remove elemental sulfur. The extract was then processed through an alumina cleanup column (10-g F20, 2% deactivated alumina) followed by size-exclusion high-performance liquid chromatography (HPLC). The post-HPLC extract was concentrated under nitrogen to approximately 1 mL, fortified with recovery internal standard (RIS) compounds that are used for quantification, and split for SVOC (PAHs) and chlorinated pesticides/PCB Aroclors analyses by GC/MS and GC/ECD, respectively. The extract for GC/ECD analysis was solvent exchanged into hexane prior to analysis.

Note that the initial GC/MS analysis showed some poor QC results (blank contamination, low surrogate recoveries in the SRM). Soil samples had been re-extracted for PCB Aroclor/pesticides as the GC/ECD analysis proved problematic (degraded GC performance) and was thought to be sample related. The re-extract samples were also analyzed by GC/MS for PAHs.

PAH SOIL QA/QC SUMMARY
QC Batch 01-499

METHOD:

GC/MS Analysis – PAHs were analyzed by GC/MS (Hewlett Packard 5890 Series 2 GC) in the SIM mode using a 60-m DB5 column and helium as the carrier gas. A minimum of a five-point calibration curve was used for PAH analysis, ranging from approximately 0.010 to 10.0 µg/mL. A separate minimum five-point calibration curve was used for Benzaldehyde analysis ranging, from approximately 0.010 to 10.0 µg/mL.

Total PAH was determined by adding the concentrations of all target PAH compounds except Benzaldehyde.

HOLDING TIMES:

Samples were prepared for analysis in one analytical batch. Samples were extracted and analyzed within holding times (extracted within 70-d of collection and analyzed within 18 days of extraction). Samples were held frozen and in the dark until extraction.

Batch	Extraction Date	Analysis Date
01-499	09/24/2001**	10/10 – 12/2001

** Samples were originally extracted in batch 01-365 on 7/25/2001 and were re-extracted in batch 01-499 due to QC issues.

DETECTION LIMITS:

PAHs and Benzaldehyde results are reported relative to the sample-specific reporting limits (also referred to as QL in the QAPP) for that compound. The sample-specific RL is based on the low calibration standard and adjusted for sample specific processing factors and volumes, as follow:

RL = (Concentration in Low Std. × final extract volume × dilution factors)/ Sample size

Where,

Concentration in Low Std. = 0.010 µg/mL for PAHs and Benzaldehyde (0.050 µg/mL for Benzo[g,h,i]perylene)
Final Extract Volume = 1100 µL
Dilution Factor = 1.667 (HPLC) plus individual additional dilution factors
Sample Size = Sample dry weight extracted, ranging from 2.79 to 12.89 g

Achieved RLs for Benzo(a)pyrene and Dibenz(a,h)anthracene did not meet the project detection limit goals in all samples. Achieved RLs for Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, and Indeno(1,2,3-c,d)pyrene did not meet the project detection limit goals in many samples, as the samples had to be diluted and re-analyzed due to high sample contamination.

Even so, the failure to meet project detection limit goals does not impact data quality given that the concentrations of PAHs detected in the samples were generally one or more orders of magnitude higher than the laboratory RL. Further, as noted in the QAPP, the project detection limit goals are provided for perspective rather than as a requirement for the analytical methods. If detection limits cannot be achieved, this will be addressed in the uncertainty discussions in the risk assessment.

PAH SOIL QA/QC SUMMARY
QC Batch 01-499

BLANKS:

One laboratory procedural blank (PB) was prepared with the analytical batch. Blanks are analyzed to ensure that the sample extraction and analysis methods are free of contamination.

01-499 – Several PAHs were detected in the PB. Of those compounds, only Benzaldehyde (3.69 ng/g dry) is detected at a level higher than the reporting limit.

Corrective Action – Only W5531-1 has a Benzaldehyde concentration that is <10× the PB concentration. Consequently, Benzaldehyde is "B" qualified in W5531-1.

LABORATORY CONTROL SAMPLE

Two laboratory control samples (LCS) were prepared with the analytical batch. One was for GC/ECD analysis. The second LCS sample was fortified with PAHs. The percent recoveries of PAHs were calculated to measure data quality in terms of accuracy. (Note: Benzaldehyde was not spiked into the LCS).

01-499 – All compounds were recovered within the control limits specified in QAPP.

Recoveries ranged from:

	PAHs	Benzaldehyde
ZJ50LCS#1	71 – 85%	not spiked

Note that Benzaldehyde behaves similarly to the other target SVOCs and should have been recovered from the analytical procedure. Further, Benzaldehyde was fortified into the LCS prepared with the Centredale sediment samples and the percent recovery in was 80%.

MATRIX SPIKES:

A matrix spike (MS)/matrix spike duplicate (MSD) sample set was prepared with the analytical batch. The percent recoveries of PAHs in the MS/MSD were calculated to measure data quality in terms of accuracy. The relative percent difference (RPD) between percent recoveries of PAHs in the MS and MSD were calculated to measure data quality in terms of precision.

01-499 – Only Biphenyl (MS and MSD) and Acenaphthylene (MSD only) percent recoveries are between 40 and 120%. In addition, only Biphenyl has an RPD <30%. All other PAHs were recovered outside the control limits specified in the QAPP, but are "~" qualified because MS and MSD concentrations are less than 5× background sample concentrations. RPDs other than Biphenyl are also "~" qualified.

Recoveries and RPDs ranged from:

	PAHs	Benzaldehyde
ZJ52MS	0 – 47%	not spiked
ZJ53MSD	0 – 49%	not spiked
RPDs	4.1 – 1242%	NA

Corrective Action – The MS and MSD were not fortified with high enough levels of PAHs, relative to the background concentrations, to be accurately recovered. Further, recovery data from the LCS and percent difference from the SRM were acceptable, demonstrating that the analytical method is in control.

PAH SOIL QA/QC SUMMARY
QC Batch 01-499

SURROGATES: Three PAH surrogate compounds were added to each sample prior to extraction, including Naphthalene-d8, Phenanthrene-d10, and Chrysene-d12. Recovery data were calculated to measure data quality in terms of accuracy (extraction efficiency).

01-499 – All PAH surrogates were recovered within the control limits specified in the QAPP, except for ZJ49PB (12, 10, and 11%) and ZJ54SRM (27, 32, and 35%).

Corrective Action – Since SRM data are surrogate corrected, data are corrected for low surrogate recoveries and all SRM percent differences are within the control limits. There is also a note in the prep records that approximately half of the SRM was lost after HPLC. There is no documentation for the low recoveries in ZJ49PB.

REPLICATES: A laboratory duplicate was prepared with the batch. The RPDs between laboratory replicate analyses for PAHs and Benzaldehyde were calculated to measure data quality in terms of precision.

01-499 – RPDs were outside the control limits specified in QAPP, ranging from 142.4 to 152.4%.

Corrective Action – The sample duplicate wet weight recorded in the sample preparation records is anonymously low. The sample weight recorded for the sample duplicate was approximately five-fold lower relative to all other samples (4.32 g vs. 20-g). Had a sample size more typical of the batch been used to determine sample concentrations for the duplicate, then RPDs between the sample replicates would have met the control limits specified in the QAPP. Results for the laboratory duplicate should be considered suspect and not used for data evaluation.

Field replicates – precision between field replicates was poor, with RPDs for most detected compounds being >40%.

SRM: A standard reference material (SRM, NIST 1944) was prepared with the analytical batch. The percent difference (PD) between the measured value and the certified range was calculated to measure data quality in terms of accuracy. ***Note*** – if the detected value fell within the certified range, then the PD is 0.0%.

01-499 –SRM PDs were within the control limits for all certified PAHs. PDs ranged from 0.0 to 25.4%.

REFERENCES:

Battelle 2001. *Centredale Manor Restoration Project Superfund Site Baseline Risk Assessment, Initial Project Planning and Support.* Tasks 19-22 QAPP prepared under contract to USACE NAE. Delivery Order #59. May 23, 2001. 509pp + apps.

Soil and QC Results

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	1.67	ng/g - dry wt	U		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	0.17	ng/g - dry wt	J		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	1.67	ng/g - dry wt	U		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	1.67	ng/g - dry wt	U		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Anthracene	120-12-7	OS	BATD5-157	1.67	ng/g - dry wt	U		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	3.69	ng/g - dry wt	B		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	0.25	ng/g - dry wt	J		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	0.27	ng/g - dry wt	J		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	0.35	ng/g - dry wt	J		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	0.98	ng/g - dry wt	J		9.17
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	1.67	ng/g - dry wt	U		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Chrysene	218-01-9	OS	BATD5-157	0.43	ng/g - dry wt	J		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	1.67	ng/g - dry wt	U		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	1.67	ng/g - dry wt	U		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	0.60	ng/g - dry wt	J		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Fluorene	86-73-7	OS	BATD5-157	1.67	ng/g - dry wt	U		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	0.26	ng/g - dry wt	J		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	0.54	ng/g - dry wt	J		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	0.20	ng/g - dry wt	J		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Pyrene	129-00-0	OS	BATD5-157	0.57	ng/g - dry wt	J		1.83
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Total PAHs	NA	OS	BATD5-157	4.61	ng/g - dry wt	J		42.18
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	12	%RECOVERY	&		
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	10	%RECOVERY	&		
NA	ZJ49PB	BATD	P_BLANK	NA	09/24/01	10/10/01		01-499	Chrysene-d12	NA	OS	BATD5-157	11	%RECOVERY	&		
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	71	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	78	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	76	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	76	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Anthracene	120-12-7	OS	BATD5-157	78	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	NA	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	78	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	75	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	79	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	74	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	80	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Chrysene	218-01-9	OS	BATD5-157	83	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	77	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	85	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Fluorene	86-73-7	OS	BATD5-157	77	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	72	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	74	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	80	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Pyrene	129-00-0	OS	BATD5-157	81	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Total PAHs	NA	OS	BATD5-157	77	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	81	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	76	%RECOVERY			
NA	ZJ50LCS#1	BATD	LCS	NA	09/24/01	10/10/01		01-499	Chrysene-d12	NA	OS	BATD5-157	87	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	47	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	12	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Anthracene	120-12-7	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	0	%RECOVERY	~		

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB		1.667	NA		10.00	G_DRY				T
NA	ZJ49PB			NA		10.00	G_DRY				T
NA	ZJ49PB			NA		10.00	G_DRY				T
NA	ZJ49PB			NA		10.00	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1		1.667	NA		NA	G_DRY				T
NA	ZJ50LCS#1			NA		NA	G_DRY				T
NA	ZJ50LCS#1			NA		NA	G_DRY				T
NA	ZJ50LCS#1			NA		NA	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		33.340	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		33.340	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		33.340	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		33.340	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		33.340	47.39		15.78	G_DRY				T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Chrysene	218-01-9	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Fluorene	86-73-7	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Pyrene	129-00-0	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Total PAHs	NA	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	64	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	81	%RECOVERY			
RWR-FP-5002-0000-01	ZJ52MS	BATD	MS	07/16/01	09/24/01	10/10/01		01-499	Chrysene-d12	NA	OS	BATD5-157	93	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	49	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	19	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	48	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Anthracene	120-12-7	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	NA	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Chrysene	218-01-9	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	37	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Fluorene	86-73-7	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Pyrene	129-00-0	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Total PAHs	NA	OS	BATD5-157	0	%RECOVERY	~		
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	58	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	75	%RECOVERY			
RWR-FP-5002-0000-01	ZJ53MSD	BATD	MSD	07/16/01	09/24/01	10/10/01		01-499	Chrysene-d12	NA	OS	BATD5-157	88	%RECOVERY			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Anthracene	120-12-7	OS	BATD5-157	25.4	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	6.3	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	19.9	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	0.2	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	10.6	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	2.6	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Chrysene	218-01-9	OS	BATD5-157	2.3	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	0.0	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	0.0	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	6.1	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	21.0	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	0.0	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Pyrene	129-00-0	OS	BATD5-157	0.6	%DIFFERENCE			
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	27	%RECOVERY	&		
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	32	%RECOVERY	&		
NA	ZJ54SRM	BATD	SRM	NA	09/24/01	10/10/01		01-499	Chrysene-d12	NA	OS	BATD5-157	35	%RECOVERY	&		
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	21.11	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	46.73	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	72.90	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	176.00	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Anthracene	120-12-7	OS	BATD5-157	300.14	ng/g - dry wt			6.57

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
RWR-FP-5002-0000-01	ZJ52MS		33.340	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		33.340	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		33.340	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		33.340	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		33.340	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		33.340	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		33.340	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS		1.667	47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS			47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS			47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ52MS			47.39		15.78	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		33.340	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		33.340	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		33.340	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		33.340	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		33.340	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		33.340	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		33.340	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		33.340	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		33.340	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		33.340	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		33.340	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		33.340	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD		1.667	47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD			47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD			47.81		10.57	G_DRY				T
RWR-FP-5002-0000-01	ZJ53MSD			47.81		10.57	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM		1.667	1.25		1.89	G_DRY				T
NA	ZJ54SRM			1.25		1.89	G_DRY				T
NA	ZJ54SRM			1.25		1.89	G_DRY				T
NA	ZJ54SRM			1.25		1.89	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	218.55	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	1930.96	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	2229.32	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	2777.40	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	1884.55	ng/g - dry wt			32.84
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	2416.13	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Chrysene	218-01-9	OS	BATD5-157	2934.55	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	468.81	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	71.65	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	4987.97	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Fluorene	86-73-7	OS	BATD5-157	107.97	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	2043.19	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	75.81	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	2096.13	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Pyrene	129-00-0	OS	BATD5-157	3953.65	ng/g - dry wt			6.57
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Total PAHs	NA	OS	BATD5-157	28594.97	ng/g - dry wt			151.07
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	61	%RECOVERY			
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	79	%RECOVERY			
LPX-FP-4004-0000-01	W5531DUP-1	BATD	DUPLICATE	07/19/01	09/24/01	10/10/01		01-499	Chrysene-d12	NA	OS	BATD5-157	87	%RECOVERY			
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	58.57	ng/g - dry wt			1.73
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	170.22	ng/g - dry wt			1.73
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	563.84	ng/g - dry wt			1.73
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	210.65	ng/g - dry wt			1.73
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Anthracene	120-12-7	OS	BATD5-157	982.95	ng/g - dry wt	D		34.69
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	112.08	ng/g - dry wt			1.73
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	3311.39	ng/g - dry wt	D		34.69
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	3204.84	ng/g - dry wt	D		34.69
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	3263.74	ng/g - dry wt	D		34.69
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	2183.89	ng/g - dry wt	D		173.46
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	3098.90	ng/g - dry wt	D		34.69
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Chrysene	218-01-9	OS	BATD5-157	3844.25	ng/g - dry wt	D		34.69
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	590.75	ng/g - dry wt	D		34.69
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	399.25	ng/g - dry wt			1.73
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	7686.74	ng/g - dry wt	D		34.69
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Fluorene	86-73-7	OS	BATD5-157	658.99	ng/g - dry wt			1.73
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	2384.11	ng/g - dry wt	D		34.69
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	302.18	ng/g - dry wt			1.73
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	5301.36	ng/g - dry wt	D		34.69
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Pyrene	129-00-0	OS	BATD5-157	6210.02	ng/g - dry wt	D		34.69
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Total PAHs	NA	OS	BATD5-157	44426.64	ng/g - dry wt			567.20
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	62	%RECOVERY			
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	80	%RECOVERY			
RWR-FP-5002-0000-01	W5530-1	BATD	NORMAL	07/16/01	09/24/01	10/10/01		01-499	Chrysene-d12	NA	OS	BATD5-157	93	%RECOVERY			
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	3.28	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	7.82	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	10.54	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	28.23	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Anthracene	120-12-7	OS	BATD5-157	44.75	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	29.51	ng/g - dry wt	B		1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	296.95	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	349.67	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	419.00	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	296.44	ng/g - dry wt			7.12
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	371.61	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Chrysene	218-01-9	OS	BATD5-157	457.35	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	73.75	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	11.11	ng/g - dry wt			1.42

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1		1.667	35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1			35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1			35.38		2.79	G_DRY				T
LPX-FP-4004-0000-01	W5531DUP-1			35.38		2.79	G_DRY				T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	58.57			T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	170.22	J		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	563.84	J		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	210.65	J		T
RWR-FP-5002-0000-01	W5530-1		33.340	48.08		10.57	G_DRY	982.95			T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	112.08			T
RWR-FP-5002-0000-01	W5530-1		33.340	48.08		10.57	G_DRY	3311.39			T
RWR-FP-5002-0000-01	W5530-1		33.340	48.08		10.57	G_DRY	3204.84			T
RWR-FP-5002-0000-01	W5530-1		33.340	48.08		10.57	G_DRY	3263.74			T
RWR-FP-5002-0000-01	W5530-1		33.340	48.08		10.57	G_DRY	2183.89			T
RWR-FP-5002-0000-01	W5530-1		33.340	48.08		10.57	G_DRY	3098.90			T
RWR-FP-5002-0000-01	W5530-1		33.340	48.08		10.57	G_DRY	3844.25			T
RWR-FP-5002-0000-01	W5530-1		33.340	48.08		10.57	G_DRY	590.75	J		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	399.25			T
RWR-FP-5002-0000-01	W5530-1		33.340	48.08		10.57	G_DRY	7686.74	J		T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	658.99	J		T
RWR-FP-5002-0000-01	W5530-1		33.340	48.08		10.57	G_DRY	2384.11			T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	302.18	J		T
RWR-FP-5002-0000-01	W5530-1		33.340	48.08		10.57	G_DRY	5301.36			T
RWR-FP-5002-0000-01	W5530-1		33.340	48.08		10.57	G_DRY	6210.02			T
RWR-FP-5002-0000-01	W5530-1		1.667	48.08		10.57	G_DRY	44426.64			T
RWR-FP-5002-0000-01	W5530-1			48.08		10.57	G_DRY	62			T
RWR-FP-5002-0000-01	W5530-1			48.08		10.57	G_DRY	80			T
RWR-FP-5002-0000-01	W5530-1			48.08		10.57	G_DRY	93			T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	3.28	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	7.82	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	10.54	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	28.23	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	44.75	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	29.51	U		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	296.95	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	349.67	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	419.00	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	296.44	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	371.61	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	457.35	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	73.75	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	11.11	J		T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	792.52	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Fluorene	86-73-7	OS	BATD5-157	16.38	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	322.96	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	12.75	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	331.52	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Pyrene	129-00-0	OS	BATD5-157	625.17	ng/g - dry wt			1.42
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Total PAHs	NA	OS	BATD5-157	4471.80	ng/g - dry wt			32.73
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	48	%RECOVERY			
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	62	%RECOVERY			
LPX-FP-4004-0000-01	W5531-1	BATD	NORMAL	07/19/01	09/24/01	10/10/01		01-499	Chrysene-d12	NA	OS	BATD5-157	68	%RECOVERY			
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	38.37	ng/g - dry wt			1.61
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	85.15	ng/g - dry wt			1.61
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	319.74	ng/g - dry wt			1.61
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	330.61	ng/g - dry wt			1.61
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Anthracene	120-12-7	OS	BATD5-157	933.32	ng/g - dry wt	D		64.40
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	181.40	ng/g - dry wt			1.61
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	5649.91	ng/g - dry wt	D		64.40
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	6288.84	ng/g - dry wt	D		64.40
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	7565.51	ng/g - dry wt	D		64.40
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	4994.34	ng/g - dry wt	D		322.00
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	6652.42	ng/g - dry wt	D		64.40
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Chrysene	218-01-9	OS	BATD5-157	7958.10	ng/g - dry wt	D		64.40
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	1266.60	ng/g - dry wt	D		64.40
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	220.38	ng/g - dry wt			1.61
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	13929.21	ng/g - dry wt	D		64.40
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Fluorene	86-73-7	OS	BATD5-157	427.30	ng/g - dry wt			1.61
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	5531.18	ng/g - dry wt	D		64.40
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	140.14	ng/g - dry wt			1.61
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	6360.56	ng/g - dry wt	D		64.40
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Pyrene	129-00-0	OS	BATD5-157	11129.12	ng/g - dry wt	D		64.40
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Total PAHs	NA	OS	BATD5-157	79820.79	ng/g - dry wt			1041.68
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	65	%RECOVERY			
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	81	%RECOVERY			
CMS-FP-4003-0000-01	W5527-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Chrysene-d12	NA	OS	BATD5-157	101	%RECOVERY			
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	15.51	ng/g - dry wt			1.71
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	35.66	ng/g - dry wt			1.71
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	71.58	ng/g - dry wt			1.71
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	213.23	ng/g - dry wt			1.71
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Anthracene	120-12-7	OS	BATD5-157	275.32	ng/g - dry wt	D		17.07
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	70.51	ng/g - dry wt			1.71
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	1748.81	ng/g - dry wt	D		17.07
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	2066.37	ng/g - dry wt	D		17.07
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	2814.41	ng/g - dry wt	D		17.07
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	1970.47	ng/g - dry wt	D		85.33
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	2383.12	ng/g - dry wt	D		17.07
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Chrysene	218-01-9	OS	BATD5-157	2830.46	ng/g - dry wt	D		17.07
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	466.27	ng/g - dry wt	D		17.07
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	70.22	ng/g - dry wt			1.71
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	4871.19	ng/g - dry wt	D		17.07
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Fluorene	86-73-7	OS	BATD5-157	106.14	ng/g - dry wt			1.71
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	2122.70	ng/g - dry wt	D		17.07
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	63.40	ng/g - dry wt			1.71
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	2130.94	ng/g - dry wt	D		17.07
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Pyrene	129-00-0	OS	BATD5-157	3846.04	ng/g - dry wt	D		17.07
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Total PAHs	NA	OS	BATD5-157	28101.84	ng/g - dry wt			284.99
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	58	%RECOVERY			
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	73	%RECOVERY			

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	792.52	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	16.38	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	322.96	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	12.75	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	331.52	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	625.17	J		T
LPX-FP-4004-0000-01	W5531-1		1.667	35.45		12.89	G_DRY	4471.80	J		T
LPX-FP-4004-0000-01	W5531-1			35.45		12.89	G_DRY	48			T
LPX-FP-4004-0000-01	W5531-1			35.45		12.89	G_DRY	62			T
LPX-FP-4004-0000-01	W5531-1			35.45		12.89	G_DRY	68			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	38.37			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	85.15			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	319.74			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	330.61			T
CMS-FP-4003-0000-01	W5527-1		66.680	44.69		11.39	G_DRY	933.32			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	181.40			T
CMS-FP-4003-0000-01	W5527-1		66.680	44.69		11.39	G_DRY	5649.91			T
CMS-FP-4003-0000-01	W5527-1		66.680	44.69		11.39	G_DRY	6288.84			T
CMS-FP-4003-0000-01	W5527-1		66.680	44.69		11.39	G_DRY	7565.51			T
CMS-FP-4003-0000-01	W5527-1		66.680	44.69		11.39	G_DRY	4994.34			T
CMS-FP-4003-0000-01	W5527-1		66.680	44.69		11.39	G_DRY	6652.42			T
CMS-FP-4003-0000-01	W5527-1		66.680	44.69		11.39	G_DRY	7958.10			T
CMS-FP-4003-0000-01	W5527-1		66.680	44.69		11.39	G_DRY	1266.60			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	220.38			T
CMS-FP-4003-0000-01	W5527-1		66.680	44.69		11.39	G_DRY	13929.21			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	427.30			T
CMS-FP-4003-0000-01	W5527-1		66.680	44.69		11.39	G_DRY	5531.18			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	140.14			T
CMS-FP-4003-0000-01	W5527-1		66.680	44.69		11.39	G_DRY	6360.56			T
CMS-FP-4003-0000-01	W5527-1		66.680	44.69		11.39	G_DRY	11129.12			T
CMS-FP-4003-0000-01	W5527-1		1.667	44.69		11.39	G_DRY	79820.79			T
CMS-FP-4003-0000-01	W5527-1			44.69		11.39	G_DRY	65			T
CMS-FP-4003-0000-01	W5527-1			44.69		11.39	G_DRY	81			T
CMS-FP-4003-0000-01	W5527-1			44.69		11.39	G_DRY	101			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	15.51			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	35.66			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	71.58			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	213.23			T
LPX-FP-4007-0000-01	W5528-1		16.670	44.98		10.75	G_DRY	275.32			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	70.51			T
LPX-FP-4007-0000-01	W5528-1		16.670	44.98		10.75	G_DRY	1748.81			T
LPX-FP-4007-0000-01	W5528-1		16.670	44.98		10.75	G_DRY	2066.37			T
LPX-FP-4007-0000-01	W5528-1		16.670	44.98		10.75	G_DRY	2814.41			T
LPX-FP-4007-0000-01	W5528-1		16.670	44.98		10.75	G_DRY	1970.47			T
LPX-FP-4007-0000-01	W5528-1		16.670	44.98		10.75	G_DRY	2383.12			T
LPX-FP-4007-0000-01	W5528-1		16.670	44.98		10.75	G_DRY	2830.46			T
LPX-FP-4007-0000-01	W5528-1		16.670	44.98		10.75	G_DRY	466.27			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	70.22			T
LPX-FP-4007-0000-01	W5528-1		16.670	44.98		10.75	G_DRY	4871.19			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	106.14			T
LPX-FP-4007-0000-01	W5528-1		16.670	44.98		10.75	G_DRY	2122.70			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	63.40			T
LPX-FP-4007-0000-01	W5528-1		16.670	44.98		10.75	G_DRY	2130.94			T
LPX-FP-4007-0000-01	W5528-1		16.670	44.98		10.75	G_DRY	3846.04			T
LPX-FP-4007-0000-01	W5528-1		1.667	44.98		10.75	G_DRY	28101.84			T
LPX-FP-4007-0000-01	W5528-1			44.98		10.75	G_DRY	58			T
LPX-FP-4007-0000-01	W5528-1			44.98		10.75	G_DRY	73			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
LPX-FP-4007-0000-01	W5528-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Chrysene-d12	NA	OS	BATD5-157	87	%RECOVERY			
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	15.52	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	17.29	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	21.38	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	19.34	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Anthracene	120-12-7	OS	BATD5-157	57.24	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	55.66	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	245.99	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	281.37	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	296.53	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	222.54	ng/g - dry wt			9.30
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	274.86	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Chrysene	218-01-9	OS	BATD5-157	320.25	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	55.03	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	24.17	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	596.05	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Fluorene	86-73-7	OS	BATD5-157	23.79	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	237.08	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	29.65	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	340.10	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Pyrene	129-00-0	OS	BATD5-157	490.12	ng/g - dry wt			1.86
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Total PAHs	NA	OS	BATD5-157	3568.29	ng/g - dry wt			42.76
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	65	%RECOVERY			
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	75	%RECOVERY			
LPX-FP-4006-0000-01	W5529-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Chrysene-d12	NA	OS	BATD5-157	80	%RECOVERY			
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	36.90	ng/g - dry wt			1.94
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	101.96	ng/g - dry wt			1.94
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	216.23	ng/g - dry wt			1.94
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	365.79	ng/g - dry wt			1.94
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Anthracene	120-12-7	OS	BATD5-157	666.64	ng/g - dry wt	D		38.75
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	172.29	ng/g - dry wt			1.94
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	3410.86	ng/g - dry wt	D		38.75
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	3394.61	ng/g - dry wt	D		38.75
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	3940.44	ng/g - dry wt	D		38.75
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	2612.84	ng/g - dry wt	D		193.75
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	3559.19	ng/g - dry wt	D		38.75
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Chrysene	218-01-9	OS	BATD5-157	4298.55	ng/g - dry wt	D		38.75
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	704.69	ng/g - dry wt	D		38.75
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	195.84	ng/g - dry wt			1.94
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	7547.84	ng/g - dry wt	D		38.75
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Fluorene	86-73-7	OS	BATD5-157	316.66	ng/g - dry wt			1.94
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	2830.24	ng/g - dry wt	D		38.75
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	151.65	ng/g - dry wt			1.94
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	3962.44	ng/g - dry wt	D		38.75
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Pyrene	129-00-0	OS	BATD5-157	6372.72	ng/g - dry wt	D		38.75
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Total PAHs	NA	OS	BATD5-157	44686.10	ng/g - dry wt			633.58
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	61	%RECOVERY			
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	77	%RECOVERY			
RWR-FP-5004-0000-01	W5532-1	BATD	NORMAL	07/19/01	09/24/01	10/11/01		01-499	Chrysene-d12	NA	OS	BATD5-157	93	%RECOVERY			
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	31.03	ng/g - dry wt			1.62
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	103.66	ng/g - dry wt			1.62
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	349.76	ng/g - dry wt			1.62
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	201.67	ng/g - dry wt			1.62
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Anthracene	120-12-7	OS	BATD5-157	765.10	ng/g - dry wt	D		64.75
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	97.44	ng/g - dry wt			1.62
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	4866.68	ng/g - dry wt	D		64.75
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	5170.57	ng/g - dry wt	D		64.75

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
LPX-FP-4007-0000-01	W5528-1			44.98		10.75	G_DRY	87			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	15.52			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	17.29			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	21.38			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	19.34			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	57.24			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	55.66			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	245.99			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	281.37			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	296.53			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	222.54			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	274.86			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	320.25			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	55.03			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	24.17			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	596.05			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	23.79			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	237.08			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	29.65			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	340.10			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	490.12			T
LPX-FP-4006-0000-01	W5529-1		1.667	49.31		9.86	G_DRY	3568.29			T
LPX-FP-4006-0000-01	W5529-1			49.31		9.86	G_DRY	65			T
LPX-FP-4006-0000-01	W5529-1			49.31		9.86	G_DRY	75			T
LPX-FP-4006-0000-01	W5529-1			49.31		9.86	G_DRY	80			T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	36.90			T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	101.96			T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	216.23			T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	365.79			T
RWR-FP-5004-0000-01	W5532-1		33.340	54.12		9.46	G_DRY	666.64			T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	172.29			T
RWR-FP-5004-0000-01	W5532-1		33.340	54.12		9.46	G_DRY	3410.86			T
RWR-FP-5004-0000-01	W5532-1		33.340	54.12		9.46	G_DRY	3394.61			T
RWR-FP-5004-0000-01	W5532-1		33.340	54.12		9.46	G_DRY	3940.44			T
RWR-FP-5004-0000-01	W5532-1		33.340	54.12		9.46	G_DRY	2612.84			T
RWR-FP-5004-0000-01	W5532-1		33.340	54.12		9.46	G_DRY	3559.19			T
RWR-FP-5004-0000-01	W5532-1		33.340	54.12		9.46	G_DRY	4298.55			T
RWR-FP-5004-0000-01	W5532-1		33.340	54.12		9.46	G_DRY	704.69			T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	195.84			T
RWR-FP-5004-0000-01	W5532-1		33.340	54.12		9.46	G_DRY	7547.84			T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	316.66			T
RWR-FP-5004-0000-01	W5532-1		33.340	54.12		9.46	G_DRY	2830.24			T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	151.65			T
RWR-FP-5004-0000-01	W5532-1		33.340	54.12		9.46	G_DRY	3962.44			T
RWR-FP-5004-0000-01	W5532-1		33.340	54.12		9.46	G_DRY	6372.72			T
RWR-FP-5004-0000-01	W5532-1		1.667	54.12		9.46	G_DRY	44686.10			T
RWR-FP-5004-0000-01	W5532-1			54.12		9.46	G_DRY	61			T
RWR-FP-5004-0000-01	W5532-1			54.12		9.46	G_DRY	77			T
RWR-FP-5004-0000-01	W5532-1			54.12		9.46	G_DRY	93			T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	31.03	J		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	103.66			T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	349.76	J		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	201.67			T
CMS-FP-4001-0000-01	W5533-1		66.680	43.36		11.33	G_DRY	765.10			T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	97.44			T
CMS-FP-4001-0000-01	W5533-1		66.680	43.36		11.33	G_DRY	4866.68			T
CMS-FP-4001-0000-01	W5533-1		66.680	43.36		11.33	G_DRY	5170.57	J		T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	6412.48	ng/g - dry wt	D		64.75
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	4220.65	ng/g - dry wt	D		323.74
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	5940.65	ng/g - dry wt	D		64.75
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Chrysene	218-01-9	OS	BATD5-157	6920.45	ng/g - dry wt	D		64.75
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	1033.58	ng/g - dry wt	D		64.75
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	225.31	ng/g - dry wt			1.62
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	13076.87	ng/g - dry wt	D		64.75
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Fluorene	86-73-7	OS	BATD5-157	412.78	ng/g - dry wt			1.62
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	4691.51	ng/g - dry wt	D		64.75
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	119.66	ng/g - dry wt			1.62
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	6231.65	ng/g - dry wt	D		64.75
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Pyrene	129-00-0	OS	BATD5-157	10134.45	ng/g - dry wt	D		64.75
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Total PAHs	NA	OS	BATD5-157	70908.52	ng/g - dry wt			1047.31
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	59	%RECOVERY			
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	78	%RECOVERY			
CMS-FP-4001-0000-01	W5533-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Chrysene-d12	NA	OS	BATD5-157	97	%RECOVERY			
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	38.20	ng/g - dry wt			1.84
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	101.27	ng/g - dry wt			1.84
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	258.37	ng/g - dry wt			1.84
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	242.49	ng/g - dry wt			1.84
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Anthracene	120-12-7	OS	BATD5-157	596.06	ng/g - dry wt	D		36.88
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	72.88	ng/g - dry wt			1.84
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	2747.50	ng/g - dry wt	D		36.88
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	3024.19	ng/g - dry wt	D		36.88
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	3620.64	ng/g - dry wt	D		36.88
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	2694.75	ng/g - dry wt	D		184.42
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	3239.64	ng/g - dry wt	D		36.88
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Chrysene	218-01-9	OS	BATD5-157	3834.68	ng/g - dry wt	D		36.88
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	617.88	ng/g - dry wt	D		36.88
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	198.57	ng/g - dry wt			1.84
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	6757.77	ng/g - dry wt	D		36.88
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Fluorene	86-73-7	OS	BATD5-157	325.02	ng/g - dry wt			1.84
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	2782.74	ng/g - dry wt	D		36.88
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	136.12	ng/g - dry wt			1.84
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	3784.44	ng/g - dry wt	D		36.88
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Pyrene	129-00-0	OS	BATD5-157	5673.47	ng/g - dry wt	D		36.88
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Total PAHs	NA	OS	BATD5-157	40673.79	ng/g - dry wt			603.04
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	65	%RECOVERY			
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	84	%RECOVERY			
CMS-FP-4002-0000-01	W5534-1	BATD	NORMAL	07/18/01	09/24/01	10/11/01		01-499	Chrysene-d12	NA	OS	BATD5-157	102	%RECOVERY			
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	61.70	ng/g - dry wt			2.69
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	83.40	ng/g - dry wt			2.69
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	186.26	ng/g - dry wt			2.69
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	497.49	ng/g - dry wt			2.69
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Anthracene	120-12-7	OS	BATD5-157	699.86	ng/g - dry wt	D		53.85
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	87.69	ng/g - dry wt			2.69
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	3359.99	ng/g - dry wt	D		53.85
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	3418.03	ng/g - dry wt	D		53.85
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	4288.61	ng/g - dry wt	D		53.85
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	2871.39	ng/g - dry wt	D		269.27
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	3863.54	ng/g - dry wt	D		53.85
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Chrysene	218-01-9	OS	BATD5-157	4488.51	ng/g - dry wt	D		53.85
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	728.51	ng/g - dry wt	D		53.85
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	160.55	ng/g - dry wt			2.69
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	7731.24	ng/g - dry wt	D		53.85
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Fluorene	86-73-7	OS	BATD5-157	256.25	ng/g - dry wt			2.69
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	3092.90	ng/g - dry wt	D		53.85

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
CMS-FP-4001-0000-01	W5533-1		66.680	43.36		11.33	G_DRY	6412.48	J		T
CMS-FP-4001-0000-01	W5533-1		66.680	43.36		11.33	G_DRY	4220.65	J		T
CMS-FP-4001-0000-01	W5533-1		66.680	43.36		11.33	G_DRY	5940.65	J		T
CMS-FP-4001-0000-01	W5533-1		66.680	43.36		11.33	G_DRY	6920.45	J		T
CMS-FP-4001-0000-01	W5533-1		66.680	43.36		11.33	G_DRY	1033.58	J		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	225.31			T
CMS-FP-4001-0000-01	W5533-1		66.680	43.36		11.33	G_DRY	13076.87			T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	412.78	J		T
CMS-FP-4001-0000-01	W5533-1		66.680	43.36		11.33	G_DRY	4691.51	J		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	119.66			T
CMS-FP-4001-0000-01	W5533-1		66.680	43.36		11.33	G_DRY	6231.65			T
CMS-FP-4001-0000-01	W5533-1		66.680	43.36		11.33	G_DRY	10134.45	J		T
CMS-FP-4001-0000-01	W5533-1		1.667	43.36		11.33	G_DRY	70908.52	J		T
CMS-FP-4001-0000-01	W5533-1			43.36		11.33	G_DRY	59			T
CMS-FP-4001-0000-01	W5533-1			43.36		11.33	G_DRY	78			T
CMS-FP-4001-0000-01	W5533-1			43.36		11.33	G_DRY	97			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	38.20			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	101.27			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	258.37			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	242.49			T
CMS-FP-4002-0000-01	W5534-1		33.340	51.38		9.94	G_DRY	596.06			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	72.88			T
CMS-FP-4002-0000-01	W5534-1		33.340	51.38		9.94	G_DRY	2747.50			T
CMS-FP-4002-0000-01	W5534-1		33.340	51.38		9.94	G_DRY	3024.19			T
CMS-FP-4002-0000-01	W5534-1		33.340	51.38		9.94	G_DRY	3620.64			T
CMS-FP-4002-0000-01	W5534-1		33.340	51.38		9.94	G_DRY	2694.75			T
CMS-FP-4002-0000-01	W5534-1		33.340	51.38		9.94	G_DRY	3239.64			T
CMS-FP-4002-0000-01	W5534-1		33.340	51.38		9.94	G_DRY	3834.68			T
CMS-FP-4002-0000-01	W5534-1		33.340	51.38		9.94	G_DRY	617.88			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	198.57			T
CMS-FP-4002-0000-01	W5534-1		33.340	51.38		9.94	G_DRY	6757.77			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	325.02			T
CMS-FP-4002-0000-01	W5534-1		33.340	51.38		9.94	G_DRY	2782.74			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	136.12			T
CMS-FP-4002-0000-01	W5534-1		33.340	51.38		9.94	G_DRY	3784.44			T
CMS-FP-4002-0000-01	W5534-1		33.340	51.38		9.94	G_DRY	5673.47			T
CMS-FP-4002-0000-01	W5534-1		1.667	51.38		9.94	G_DRY	40673.79			T
CMS-FP-4002-0000-01	W5534-1			51.38		9.94	G_DRY	65			T
CMS-FP-4002-0000-01	W5534-1			51.38		9.94	G_DRY	84			T
CMS-FP-4002-0000-01	W5534-1			51.38		9.94	G_DRY	102			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	61.70			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	83.40			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	186.26			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	497.49			T
RWR-FP-5001-0000-01	W5535-1		33.340	66.93		6.81	G_DRY	699.86			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	87.69			T
RWR-FP-5001-0000-01	W5535-1		33.340	66.93		6.81	G_DRY	3359.99			T
RWR-FP-5001-0000-01	W5535-1		33.340	66.93		6.81	G_DRY	3418.03			T
RWR-FP-5001-0000-01	W5535-1		33.340	66.93		6.81	G_DRY	4288.61			T
RWR-FP-5001-0000-01	W5535-1		33.340	66.93		6.81	G_DRY	2871.39			T
RWR-FP-5001-0000-01	W5535-1		33.340	66.93		6.81	G_DRY	3863.54			T
RWR-FP-5001-0000-01	W5535-1		33.340	66.93		6.81	G_DRY	4488.51			T
RWR-FP-5001-0000-01	W5535-1		33.340	66.93		6.81	G_DRY	728.51			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	160.55			T
RWR-FP-5001-0000-01	W5535-1		33.340	66.93		6.81	G_DRY	7731.24			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	256.25			T
RWR-FP-5001-0000-01	W5535-1		33.340	66.93		6.81	G_DRY	3092.90			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	123.24	ng/g - dry wt			2.69
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	3485.83	ng/g - dry wt	D		53.85
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Pyrene	129-00-0	OS	BATD5-157	6313.86	ng/g - dry wt	D		53.85
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Total PAHs	NA	OS	BATD5-157	45711.17	ng/g - dry wt			61.93
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	66	%RECOVERY			
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	85	%RECOVERY			
RWR-FP-5001-0000-01	W5535-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Chrysene-d12	NA	OS	BATD5-157	104	%RECOVERY			
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	26.02	ng/g - dry wt			1.55
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	72.82	ng/g - dry wt			1.55
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	195.04	ng/g - dry wt			1.55
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	196.67	ng/g - dry wt			1.55
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Anthracene	120-12-7	OS	BATD5-157	480.20	ng/g - dry wt	D		31.01
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	60.52	ng/g - dry wt			1.55
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	2292.65	ng/g - dry wt	D		31.01
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	2291.23	ng/g - dry wt	D		31.01
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	2315.49	ng/g - dry wt	D		31.01
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	1676.00	ng/g - dry wt	D		155.07
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	2283.94	ng/g - dry wt	D		31.01
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Chrysene	218-01-9	OS	BATD5-157	2747.66	ng/g - dry wt	D		31.01
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	435.44	ng/g - dry wt	D		31.01
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	163.56	ng/g - dry wt			1.55
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	5227.48	ng/g - dry wt	D		31.01
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Fluorene	86-73-7	OS	BATD5-157	262.70	ng/g - dry wt			1.55
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	1768.19	ng/g - dry wt	D		31.01
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	103.75	ng/g - dry wt			1.55
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	3072.07	ng/g - dry wt	D		31.01
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Pyrene	129-00-0	OS	BATD5-157	4335.06	ng/g - dry wt	D		31.01
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Total PAHs	NA	OS	BATD5-157	29945.97	ng/g - dry wt			35.67
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	57	%RECOVERY			
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	76	%RECOVERY			
RWR-FP-5003-0000-01	W5536-1	BATD	NORMAL	07/17/01	09/24/01	10/11/01		01-499	Chrysene-d12	NA	OS	BATD5-157	90	%RECOVERY			
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	37.08	ng/g - dry wt			1.96
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	79.29	ng/g - dry wt			1.96
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	416.46	ng/g - dry wt			1.96
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	246.72	ng/g - dry wt			1.96
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Anthracene	120-12-7	OS	BATD5-157	908.71	ng/g - dry wt	D		78.34
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	207.41	ng/g - dry wt			1.96
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	6007.46	ng/g - dry wt	D		78.34
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	7236.58	ng/g - dry wt	D		78.34
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	8576.07	ng/g - dry wt	D		78.34
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	5915.09	ng/g - dry wt	D		391.68
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	7788.67	ng/g - dry wt	D		78.34
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Chrysene	218-01-9	OS	BATD5-157	9135.77	ng/g - dry wt	D		78.34
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	1394.46	ng/g - dry wt	D		78.34
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	255.03	ng/g - dry wt			1.96
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	16435.55	ng/g - dry wt	D		78.34
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Fluorene	86-73-7	OS	BATD5-157	465.77	ng/g - dry wt			1.96
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	6516.13	ng/g - dry wt	D		78.34
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	130.61	ng/g - dry wt			1.96
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	7315.77	ng/g - dry wt	D		78.34
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Pyrene	129-00-0	OS	BATD5-157	12720.81	ng/g - dry wt	D		78.34
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Total PAHs	NA	OS	BATD5-157	91582.02	ng/g - dry wt			45.04
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	52	%RECOVERY			
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	66	%RECOVERY			
CMS-FP-4005-0000-01	W5537-1	BATD	NORMAL	07/20/01	09/24/01	10/11/01		01-499	Chrysene-d12	NA	OS	BATD5-157	82	%RECOVERY			
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Biphenyl	92-52-4	OS	BATD5-157	88.26	ng/g - dry wt			1.96
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	2-Methylnaphthalene	91-57-6	OS	BATD5-157	109.67	ng/g - dry wt			1.96

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	123.24			T
RWR-FP-5001-0000-01	W5535-1		33.340	66.93		6.81	G_DRY	3485.83			T
RWR-FP-5001-0000-01	W5535-1		33.340	66.93		6.81	G_DRY	6313.86			T
RWR-FP-5001-0000-01	W5535-1		1.667	66.93		6.81	G_DRY	45711.17			T
RWR-FP-5001-0000-01	W5535-1			66.93		6.81	G_DRY	66			T
RWR-FP-5001-0000-01	W5535-1			66.93		6.81	G_DRY	85			T
RWR-FP-5001-0000-01	W5535-1			66.93		6.81	G_DRY	104			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	26.02			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	72.82			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	195.04			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	196.67			T
RWR-FP-5003-0000-01	W5536-1		33.340	41.63		11.82	G_DRY	480.20			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	60.52			T
RWR-FP-5003-0000-01	W5536-1		33.340	41.63		11.82	G_DRY	2292.65			T
RWR-FP-5003-0000-01	W5536-1		33.340	41.63		11.82	G_DRY	2291.23			T
RWR-FP-5003-0000-01	W5536-1		33.340	41.63		11.82	G_DRY	2315.49			T
RWR-FP-5003-0000-01	W5536-1		33.340	41.63		11.82	G_DRY	1676.00			T
RWR-FP-5003-0000-01	W5536-1		33.340	41.63		11.82	G_DRY	2283.94			T
RWR-FP-5003-0000-01	W5536-1		33.340	41.63		11.82	G_DRY	2747.66			T
RWR-FP-5003-0000-01	W5536-1		33.340	41.63		11.82	G_DRY	435.44			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	163.56			T
RWR-FP-5003-0000-01	W5536-1		33.340	41.63		11.82	G_DRY	5227.48			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	262.70			T
RWR-FP-5003-0000-01	W5536-1		33.340	41.63		11.82	G_DRY	1768.19			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	103.75			T
RWR-FP-5003-0000-01	W5536-1		33.340	41.63		11.82	G_DRY	3072.07			T
RWR-FP-5003-0000-01	W5536-1		33.340	41.63		11.82	G_DRY	4335.06			T
RWR-FP-5003-0000-01	W5536-1		1.667	41.63		11.82	G_DRY	29945.97			T
RWR-FP-5003-0000-01	W5536-1			41.63		11.82	G_DRY	57			T
RWR-FP-5003-0000-01	W5536-1			41.63		11.82	G_DRY	76			T
RWR-FP-5003-0000-01	W5536-1			41.63		11.82	G_DRY	90			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	37.08			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	79.29			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	416.46			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	246.72			T
CMS-FP-4005-0000-01	W5537-1		66.680	54.94		9.36	G_DRY	908.71			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	207.41			T
CMS-FP-4005-0000-01	W5537-1		66.680	54.94		9.36	G_DRY	6007.46			T
CMS-FP-4005-0000-01	W5537-1		66.680	54.94		9.36	G_DRY	7236.58			T
CMS-FP-4005-0000-01	W5537-1		66.680	54.94		9.36	G_DRY	8576.07			T
CMS-FP-4005-0000-01	W5537-1		66.680	54.94		9.36	G_DRY	5915.09			T
CMS-FP-4005-0000-01	W5537-1		66.680	54.94		9.36	G_DRY	7788.67			T
CMS-FP-4005-0000-01	W5537-1		66.680	54.94		9.36	G_DRY	9135.77			T
CMS-FP-4005-0000-01	W5537-1		66.680	54.94		9.36	G_DRY	1394.46			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	255.03			T
CMS-FP-4005-0000-01	W5537-1		66.680	54.94		9.36	G_DRY	16435.55			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	465.77			T
CMS-FP-4005-0000-01	W5537-1		66.680	54.94		9.36	G_DRY	6516.13			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	130.61			T
CMS-FP-4005-0000-01	W5537-1		66.680	54.94		9.36	G_DRY	7315.77			T
CMS-FP-4005-0000-01	W5537-1		66.680	54.94		9.36	G_DRY	12720.81			T
CMS-FP-4005-0000-01	W5537-1		1.667	54.94		9.36	G_DRY	91582.02			T
CMS-FP-4005-0000-01	W5537-1			54.94		9.36	G_DRY	52			T
CMS-FP-4005-0000-01	W5537-1			54.94		9.36	G_DRY	66			T
CMS-FP-4005-0000-01	W5537-1			54.94		9.36	G_DRY	82			T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	88.26	J		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	109.67			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Acenaphthene	83-32-9	OS	BATD5-157	597.40	ng/g - dry wt			1.96
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Acenaphthylene	208-96-8	OS	BATD5-157	306.41	ng/g - dry wt			1.96
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Anthracene	120-12-7	OS	BATD5-157	1232.73	ng/g - dry wt	D		157.05
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Benzaldehyde	100-52-7	OS	BATD5-157	142.08	ng/g - dry wt			1.96
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Benzo[a]anthracene	56-55-3	OS	BATD5-157	7861.94	ng/g - dry wt	D		157.05
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Benzo[a]pyrene	50-32-8	OS	BATD5-157	9617.88	ng/g - dry wt	D		157.05
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Benzo[b]fluoranthene	205-99-2	OS	BATD5-157	11383.07	ng/g - dry wt	D		157.05
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Benzo[g,h,i]perylene	191-24-2	OS	BATD5-157	7473.29	ng/g - dry wt	D		785.27
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Benzo[k]fluoranthene	207-08-9	OS	BATD5-157	10518.57	ng/g - dry wt	D		157.05
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Chrysene	218-01-9	OS	BATD5-157	11721.71	ng/g - dry wt	D		157.05
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Dibenz[a,h]anthracene	53-70-3	OS	BATD5-157	1746.72	ng/g - dry wt	D		157.05
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Dibenzofuran	132-64-9	OS	BATD5-157	355.92	ng/g - dry wt			1.96
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Fluoranthene	206-44-0	OS	BATD5-157	22283.20	ng/g - dry wt	D		157.05
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Fluorene	86-73-7	OS	BATD5-157	640.90	ng/g - dry wt			1.96
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Indeno[1,2,3-c,d]pyrene	193-39-5	OS	BATD5-157	8172.14	ng/g - dry wt	D		157.05
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Naphthalene	91-20-3	OS	BATD5-157	179.18	ng/g - dry wt			1.96
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Phenanthrene	85-01-8	OS	BATD5-157	10253.65	ng/g - dry wt	D		157.05
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Pyrene	129-00-0	OS	BATD5-157	17223.08	ng/g - dry wt	D		157.05
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Total PAHs	NA	OS	BATD5-157	121765.74	ng/g - dry wt			45.15
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Naphthalene-d8	NA	OS	BATD5-157	60	%RECOVERY			
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Phenanthrene-d10	NA	OS	BATD5-157	76	%RECOVERY			
CMS-DU-072001	W5538-1	BATD	REPLICATE	07/20/01	09/24/01	10/11/01		01-499	Chrysene-d12	NA	OS	BATD5-157	97	%RECOVERY			

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	COMMENT	FRACTION
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	597.40	J		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	306.41			T
CMS-DU-072001	W5538-1		133.360	53.97		9.34	G_DRY	1232.73			T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	142.08			T
CMS-DU-072001	W5538-1		133.360	53.97		9.34	G_DRY	7861.94			T
CMS-DU-072001	W5538-1		133.360	53.97		9.34	G_DRY	9617.88	J		T
CMS-DU-072001	W5538-1		133.360	53.97		9.34	G_DRY	11383.07	J		T
CMS-DU-072001	W5538-1		133.360	53.97		9.34	G_DRY	7473.29	J		T
CMS-DU-072001	W5538-1		133.360	53.97		9.34	G_DRY	10518.57	J		T
CMS-DU-072001	W5538-1		133.360	53.97		9.34	G_DRY	11721.71	J		T
CMS-DU-072001	W5538-1		133.360	53.97		9.34	G_DRY	1746.72	J		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	355.92			T
CMS-DU-072001	W5538-1		133.360	53.97		9.34	G_DRY	22283.20			T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	640.90	J		T
CMS-DU-072001	W5538-1		133.360	53.97		9.34	G_DRY	8172.14	J		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	179.18			T
CMS-DU-072001	W5538-1		133.360	53.97		9.34	G_DRY	10253.65			T
CMS-DU-072001	W5538-1		133.360	53.97		9.34	G_DRY	17223.08	J		T
CMS-DU-072001	W5538-1		1.667	53.97		9.34	G_DRY	121765.74	J		T
CMS-DU-072001	W5538-1			53.97		9.34	G_DRY				T
CMS-DU-072001	W5538-1			53.97		9.34	G_DRY				T
CMS-DU-072001	W5538-1			53.97		9.34	G_DRY				T

Section 5
Metal and Methyl Mercury Results

QA/QC Narrative
Soil and QC Results

QA/QC Narrative

Metals and MeHg SOIL QA/QC SUMMARY
SDG Number 8

PROJECT: USACE NAE Delivery Order #01 Centredale

PARAMETER: Metals (including Mercury) and Methyl Mercury

LABORATORY: Battelle Marine Sciences Laboratory (MSL), Sequim, WA

MATRIX: Floodplain Soils

SAMPLE CUSTODY: Twelve (12) soil samples were received on 7/21/2001 and were logged into Battelle's sample tracking system. One rinsate sample was received on 7/21/01, acidified and logged into Battelle's sample tracking system.

QA/QC MEASUREMENT PERFORMANCE CRITERIA:

	Reference Method	Blank	LCS/MS Recovery	SRM % Diff.	MS/MSD Replicate Relative Precision	Achieved QL (µg/g dry)	Project Goals * (µg/g dry)
Beryllium	L-44 (ICP/AES)					0.016	1.65
Aluminum	L-44 (ICP/AES)					4.0	549
Vanadium	L-44 (ICP/AES)					1.08	2.22
Chromium	L-44 (ICP/AES)					1.0	0.772
Manganese	L-44 (ICP/AES)					0.064	288
Iron	L-44 (ICP/AES)					1.1	Not specified
Cobalt	L-42 (ICP/MS)					1.34	7.41
Nickel	L-44 (ICP/AES)					3.1	3.58
Copper	L-44 (ICP/AES)					0.39	9.56
Zinc	L-44 (ICP/AES)					0.38	6.86
Arsenic	L-42 (ICP/MS)	<5× MDL [a]	70-130 Recovery [b]	≤25%PD [c]	≤30% RPD [b,d]	2.0	0.097
Selenium	FIAS					1.06	0.271
Molybdenum	L-42 (ICP/MS)					1.6	Not specified
Silver	L-44 (ICP/AES)					0.36	1.37
Cadmium	L-42 (ICP/MS)					0.71	0.0294
Antimony	L-42 (ICP/MS)					0.08	0.329
Barium	L-44 (ICP/AES)					0.04	384
Thallium	L-42 (ICP/MS)					0.08	0.00165
Lead	L-42 (ICP/MS)					0.4	0.396
Mercury	L-41 (CVAF)					0.008	0.000727
Me Mercury	L-40 (CVAF)					0.0002	0.000242

[a] Or analyte concentrations in associated samples >10× blank values
[b] Analyte concentration in MS/MSD must be >5× background
[c] From certified values; certified values in SRM must be >5× MDL
[d] *Duplicate*: Analytes must be detected at level >10× MDL

METHOD: Soil samples were prepared and analyzed for 20 metals (including Hg) and Methyl mercury following methods described in Battelle's Quality Assurance Project Plan (Battelle, 2001). Briefly,

Sample Preparation – Twelve (12) soil samples were analyzed for:

- cobalt (Co), arsenic (As), molybdenum (Mo), cadmium (Cd), antimony (Sb), thallium (Tl) and lead (Pb) by inductively coupled plasma mass spectroscopy (ICP/MS) following EPA Method 1638-M;

METHOD (cont):

- beryllium (Be), aluminum (Al), vanadium (V), chromium (Cr), manganese (Mn), iron (Fe), nickel (Ni), copper (Cu), zinc (Zn), silver (Ag), and barium (Ba), by ICP/AES following SW6010B-M/L-44;
- selenium. (Se) by flow- injection atomic spectroscopy (FIAS) following a modification of SW846 Methods 7062 and 7742;
- mercury (Hg) and Methyl mercury (MeHg) by cold vapor atomic fluorescence (CVAF) following EPA Method 1631c and Bloom (1989), respectively;
- Percent dry weight following SOP MSL-C-003

One (1) rinsate blank was analyzed for

- beryllium (Be), aluminum (Al), cobalt (Co), nickel (Ni), copper, (Cu), zinc (Zn), arsenic (As), molybdenum (Mo), silver (Ag), cadmium (Cd), antimony (Sb), barium (Ba), thallium (Tl) and lead (Pb) by inductively coupled plasma mass spectroscopy (ICP/MS) following EPA Method 1638-M;
- vanadium (V), chromium (Cr), manganese (Mn), and iron (Fe), by ICP/AES following SW6010B-M/L-44;
- selenium (Se) by flow- injection atomic spectroscopy (FIAS) following a modification of SW846 Methods 7062 and 7742; and
- mercury (Hg) by cold vapor atomic fluorescence (CVAF) following EPA Method 1631c.

Selenium was analyzed by FIAS instead of ICP/MS or ICP/AES as it is a more sensitive method for this metal and allowed us to achieve the detection limit required.

To prepare soil samples for metals analysis, each was weighed wet, placed in a low-temperature freezer (–70°C ± 10°C), then freeze-dried. When dry, samples were weighed, then ball-milled using a Spex Mill. Approximately 0.2 g of soil was digested with concentrated nitric acid, diluted and analyzed by the methods discussed above.

Samples were digested and analyzed for MeHg following the method discussed above.

To prepare the rinsate sample for analysis, it was acidified upon arrival at Battelle MSL. Samples analyzed by FIAS were pre-treated prior to analysis using hydrochloric acid for Se. Pre-treatment is necessary to obtain the oxidation state of each metal that will provide the greatest sensitivity by this method. Samples analyzed for Hg by CVAF were pre-treated with bromine chloride and stannous chloride to oxidize and convert all Hg compounds to volatile Hg which is subsequently trapped onto a gold-coated sand trap.

Metals and MeHg SOIL QA/QC SUMMARY
SDG Number 8

HOLDING TIMES:

All samples were digested and analyzed within the holding time for metals in dried soils, the 28-day holding time for MeHg in soils, and Hg and MeHg in water. The following list summarizes all analysis dates:

Parameter/Method	Extraction Date	Analysis Date
Total Hg soils	8/8/2001	8/15/2001
MeHg soils	8/16/2001	8/17/2001
ICP/MS soils	8/8/2001	8/15/2001
ICP/AES soils	8/8/2001	8/31/2001
FIAS, Se soils	8/8/2001	9/10/2001
Hg water	NA	8/2-3/2001
MeHg water	8/6/2001	8/7/2001
ICP/MS direct water	NA	8/15/2001
FIAS, Se water	NA	8/15/2001
ICP/AES water	NA	8/13/2001

DETECTION LIMITS:

Metals and MeHg results are reported relative to the quantitation reporting limits (also referred to as QL in the QAPP) for that compound. The QL was calculated as four times the method detection limit (MDL). MDLs provided in the QAPP were determined by multiplying the standard deviation of the results for a minimum of 7 replicate low level spikes by the Student's t value at the 99th percentile.

Achieved QLs met the project detection limit goals for all metals except Arsenic, Cadmium, Chromium, Mercury, Selenium, and Thallium.

As noted in the QAPP, the project detection limit goals are provided for perspective rather than as a requirement for the analytical methods. If detection limits cannot be achieved, this will be addressed in the uncertainty discussions in the risk assessment.

BLANKS:

A minimum of three method blanks were analyzed with this batch of samples for all methods.

Results were less than the MDL and/or quantitation limit for all metals, except Zn and Ba. The blank results for Zn and Ba were less than 5 times the QL and much lower than the sample concentrations

LABORATORY CONTROL SAMPLE

A minimum of three reagent water samples were fortified with all metals except Iron and MeHg. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy.

Recoveries were within the QC limits of 70-130% for all metals.

MATRIX SPIKES:

A minimum of one sample was spiked in duplicate with all metals, except Al and Fe, where native concentrations are normally extremely high for sediments and accurate recoveries are unlikely, and for every method. Recovery data for the MS and MSD were used to monitor data quality in terms of accuracy and precision.

Recoveries were within the QC limits of 70-130% for all metals, except Mn, Zn, Ag, Ba, and Pb, where the spiking level was inappropriate to the native sample concentration.

Recovery criteria were also exceeded for Sb due to the weak digestion requested, Sb probably precipitated out of solution during the dilution step. Sample data for Sb should be considered biased low.

Replicate precision for the MS/MSD was within the criteria of ±30% for all metals, except those noted above.

All exceedances were flagged as appropriate.

REPLICATES:

A minimum of one sample was analyzed in duplicate for each metal and each method. Precision for duplicate analysis is reported by calculating the relative percent difference (RPD) between the replicate results. RPD data are used to measure data quality in terms of precision.

RPD values were within the QC limits of ±30% for all metals, except Ag. Blank spike and SRM recoveries were excellent for Ag, therefore, no corrective action was taken. Results that were less than the quantitation limit were not calculated, although the actual values have been provided.

Field replicates – precision between field replicates was on average 30% RPD for all metals.

SRM:

A minimum of one matrix-appropriate standard reference material (SRM) was analyzed for each metal and each method, as follows:

- **2704** – a river sediment obtained from the National Bureau of Standards was analyzed for metals,
- **2711** – a soil obtained from the National Institute of Science and Technology was analyzed for metals;
- **1944** – a soil obtained from the National Institute of Science and Technology was analyzed for MeHg; and
- **IAEA-356** – a sediment sample, was analyzed for MeHg.

The percent difference (PD) between detected concentrations and certified values was calculated to measure data quality in terms of accuracy.

SRM 2704 is certified for 25 metals, of which Be, Mo and Ag are not one. PDs for all certified metals were within the control limit of ±25% of the certified value, except Al, Cr, Se, Sb and one replicate for Tl. Al and Cr are crustal metals that are difficult to dissolve in a weak leach-type digestion as was used for these sediments. Recoveries should be expected to be low. The Se certified value is less than the QL and recoveries are slightly low. Thallium is not-certified in this SRM, however results were near the estimated concentration.

SRM (cont):

SRM 2711 is certified for 25 metals, of which Be, Cr, Co, and Mo are not one. PD for all certified metals were within the criteria of ±25%, except Al, Mo, and Sb. Al recoveries were low for the same reason stated for SRM 2704; recoveries for Mo were low for the same reason stated for Se in SRM 2704; recoveries for Sb were low for the same reason stated for Sb in SRM 2704.

SRM IAEA-356 is certified for MeHg. PD was 37%. However, the certified value is less than three times the QL and PD results should not be used to assess data quality. Note that the recovery of MeHg in the MS and MSD was acceptable, demonstrating that the method is in control.

SRM 1944 is also certified for MeHg. PD was also 37%. However, the certified value is less than three times the QL and PD results should not be used to assess data quality. Note that the recovery of MeHg in the MS and MSD was acceptable, demonstrating that the method is in control.

REFERENCES:

Battelle 2001. *Centredale Manor Restoration Project Superfund Site Baseline Risk Assessment, Initial Project Planning and Support.* Tasks 19-22 QAPP prepared under contract to USACE NAE. Delivery Order #59. May 23, 2001. 509pp + apps.

Soil and QC Results

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	2.08	µg/g - dry wt			0.016
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Aluminum	7429-90-5	M	L-44	12558	µg/g - dry wt			4.0
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	46.1	µg/g - dry wt			1.08
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	107	µg/g - dry wt			1.0
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	823	µg/g - dry wt			0.064
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Iron	7439-89-6	M	L-44	23915	µg/g - dry wt			1.1
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	9.74	µg/g - dry wt			1.34
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	24.9	µg/g - dry wt			3.1
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	93.3	µg/g - dry wt			0.39
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	272	µg/g - dry wt			0.38
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	5.01	µg/g - dry wt			2.00
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.580	µg/g - dry wt	J		1.06
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	15.8	µg/g - dry wt			1.6
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	1.01	µg/g - dry wt			0.36
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	1.20	µg/g - dry wt			0.710
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.328	µg/g - dry wt			0.080
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	172	µg/g - dry wt			0.040
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.295	µg/g - dry wt			0.080
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	221	µg/g - dry wt			0.400
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	0.389	µg/g - dry wt			0.008
CMS-FP-4003-0000-01	1678*190	MSL	NORMAL	7/19/2001	8/16/2001	8/17/2001		8	Methyl mercury	22967-92-6	M	L-40	0.000223	µg/g - dry wt			0.0002
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	0.698	µg/g - dry wt			0.016
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Aluminum	7429-90-5	M	L-44	13131	µg/g - dry wt			4.0
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	31.6	µg/g - dry wt			1.08
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	27.2	µg/g - dry wt			1.0
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	307	µg/g - dry wt			0.064
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Iron	7439-89-6	M	L-44	18481	µg/g - dry wt			1.1
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	4.94	µg/g - dry wt			1.34
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	20.4	µg/g - dry wt			3.1
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	86.0	µg/g - dry wt			0.39
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	218	µg/g - dry wt			0.38
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	4.93	µg/g - dry wt			2.00
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.438	µg/g - dry wt	J		1.06
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	1.42	µg/g - dry wt	J		1.6
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	3.88	µg/g - dry wt			0.36
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	1.76	µg/g - dry wt			0.710
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.213	µg/g - dry wt			0.080
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	105	µg/g - dry wt			0.040
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.289	µg/g - dry wt			0.080
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	248	µg/g - dry wt			0.400
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	0.159	µg/g - dry wt			0.008
LPX-FP-4007-0000-01	1678*191	MSL	NORMAL	7/19/2001	8/16/2001	8/17/2001		8	Methyl mercury	22967-92-6	M	L-40	0.000294	µg/g - dry wt			0.0002
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	0.649	µg/g - dry wt			0.016
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Aluminum	7429-90-5	M	L-44	20313	µg/g - dry wt			4.0
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	42.6	µg/g - dry wt			1.08
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	107	µg/g - dry wt			1.0
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	470	µg/g - dry wt			0.064
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Iron	7439-89-6	M	L-44	25516	µg/g - dry wt			1.1
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	7.47	µg/g - dry wt			1.34
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	25.8	µg/g - dry wt			3.1
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	400	µg/g - dry wt			0.39
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	1150	µg/g - dry wt			0.38

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
CMS-FP-4003-0000-01	1678*190		2	43.9		0.205	G_DRY	2.08			T
CMS-FP-4003-0000-01	1678*190		2	43.9		0.205	G_DRY	12558	J		T
CMS-FP-4003-0000-01	1678*190		2	43.9		0.205	G_DRY	46.1			T
CMS-FP-4003-0000-01	1678*190		2	43.9		0.205	G_DRY	107			T
CMS-FP-4003-0000-01	1678*190		2	43.9		0.205	G_DRY	823			T
CMS-FP-4003-0000-01	1678*190		2	43.9		0.205	G_DRY	23915			T
CMS-FP-4003-0000-01	1678*190		1.002	43.9		0.205	G_DRY	9.74			T
CMS-FP-4003-0000-01	1678*190		2	43.9		0.205	G_DRY	24.9			T
CMS-FP-4003-0000-01	1678*190		2	43.9		0.205	G_DRY	93.3			T
CMS-FP-4003-0000-01	1678*190		2	43.9		0.205	G_DRY	272			T
CMS-FP-4003-0000-01	1678*190		1.002	43.9		0.205	G_DRY	5.01			T
CMS-FP-4003-0000-01	1678*190		10.275	43.9		0.205	G_DRY	0.580	U		T
CMS-FP-4003-0000-01	1678*190		1.002	43.9		0.205	G_DRY	15.8	J		T
CMS-FP-4003-0000-01	1678*190		2	43.9		0.205	G_DRY	1.01			T
CMS-FP-4003-0000-01	1678*190		1.002	43.9		0.205	G_DRY	1.20			T
CMS-FP-4003-0000-01	1678*190		1.002	43.9		0.205	G_DRY	0.328	J		T
CMS-FP-4003-0000-01	1678*190		2	43.9		0.205	G_DRY	172			T
CMS-FP-4003-0000-01	1678*190		1.002	43.9		0.205	G_DRY	0.295			T
CMS-FP-4003-0000-01	1678*190		1.002	43.9		0.205	G_DRY	221			T
CMS-FP-4003-0000-01	1678*190		2	43.9		0.205	G_DRY	0.389			T
CMS-FP-4003-0000-01	1678*190		1	43.9		0.520	G_DRY	0.000223	J		T
LPX-FP-4007-0000-01	1678*191		2	41.9		0.203	G_DRY	0.698			T
LPX-FP-4007-0000-01	1678*191		2	41.9		0.203	G_DRY	13131	J		T
LPX-FP-4007-0000-01	1678*191		2	41.9		0.203	G_DRY	31.6			T
LPX-FP-4007-0000-01	1678*191		2	41.9		0.203	G_DRY	27.2	U		T
LPX-FP-4007-0000-01	1678*191		2	41.9		0.203	G_DRY	307			T
LPX-FP-4007-0000-01	1678*191		2	41.9		0.203	G_DRY	18481			T
LPX-FP-4007-0000-01	1678*191		1.013	41.9		0.203	G_DRY	4.94			T
LPX-FP-4007-0000-01	1678*191		2	41.9		0.203	G_DRY	20.4			T
LPX-FP-4007-0000-01	1678*191		2	41.9		0.203	G_DRY	86.0			T
LPX-FP-4007-0000-01	1678*191		2	41.9		0.203	G_DRY	218			T
LPX-FP-4007-0000-01	1678*191		1.013	41.9		0.203	G_DRY	4.93			T
LPX-FP-4007-0000-01	1678*191		10.281	41.9		0.203	G_DRY	0.438	U		T
LPX-FP-4007-0000-01	1678*191		1.013	41.9		0.203	G_DRY	1.42	J		T
LPX-FP-4007-0000-01	1678*191		2	41.9		0.203	G_DRY	3.88			T
LPX-FP-4007-0000-01	1678*191		1.013	41.9		0.203	G_DRY	1.76			T
LPX-FP-4007-0000-01	1678*191		1.013	41.9		0.203	G_DRY	0.213	J		T
LPX-FP-4007-0000-01	1678*191		2	41.9		0.203	G_DRY	105			T
LPX-FP-4007-0000-01	1678*191		1.013	41.9		0.203	G_DRY	0.289			T
LPX-FP-4007-0000-01	1678*191		1.013	41.9		0.203	G_DRY	248			T
LPX-FP-4007-0000-01	1678*191		2	41.9		0.203	G_DRY	0.159			T
LPX-FP-4007-0000-01	1678*191		1	41.9		0.501	G_DRY	0.000294	J		T
LPX-FP-4006-0000-01	1678*192		2	50.4		0.200	G_DRY	0.649			T
LPX-FP-4006-0000-01	1678*192		2	50.4		0.200	G_DRY	20313	J		T
LPX-FP-4006-0000-01	1678*192		2	50.4		0.200	G_DRY	42.6			T
LPX-FP-4006-0000-01	1678*192		2	50.4		0.200	G_DRY	107			T
LPX-FP-4006-0000-01	1678*192		2	50.4		0.200	G_DRY	470			T
LPX-FP-4006-0000-01	1678*192		2	50.4		0.200	G_DRY	25516			T
LPX-FP-4006-0000-01	1678*192		1.021	50.4		0.200	G_DRY	7.47			T
LPX-FP-4006-0000-01	1678*192		2	50.4		0.200	G_DRY	25.8			T
LPX-FP-4006-0000-01	1678*192		2	50.4		0.200	G_DRY	400			T
LPX-FP-4006-0000-01	1678*192		2	50.4		0.200	G_DRY	1150			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	7.42	µg/g - dry wt			2.00
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.586	µg/g - dry wt	J		1.06
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	2.67	µg/g - dry wt			1.6
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	1.43	µg/g - dry wt			0.36
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	3.18	µg/g - dry wt			0.710
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.704	µg/g - dry wt			0.080
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	842	µg/g - dry wt			0.040
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.575	µg/g - dry wt			0.080
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	901	µg/g - dry wt			0.400
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	0.245	µg/g - dry wt			0.008
LPX-FP-4006-0000-01	1678*192	MSL	NORMAL	7/19/2001	8/16/2001	8/17/2001		8	Methyl mercury	22967-92-6	M	L-40	0.000159	µg/g - dry wt	J		0.0002
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	2.48	µg/g - dry wt			0.016
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/31/2001		8	Aluminum	7429-90-5	M	L-44	12231	µg/g - dry wt			4.0
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	53.6	µg/g - dry wt			1.08
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	171	µg/g - dry wt			1.0
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	2286	µg/g - dry wt			0.064
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/31/2001		8	Iron	7439-89-6	M	L-44	25960	µg/g - dry wt			1.1
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	12.5	µg/g - dry wt			1.34
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	27.4	µg/g - dry wt			3.1
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	109	µg/g - dry wt			0.39
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	248	µg/g - dry wt			0.38
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	6.34	µg/g - dry wt			2.00
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.611	µg/g - dry wt	J		1.06
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	37.0	µg/g - dry wt			1.6
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	1.38	µg/g - dry wt			0.36
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	1.06	µg/g - dry wt			0.710
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.462	µg/g - dry wt			0.080
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	282	µg/g - dry wt			0.040
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.345	µg/g - dry wt			0.080
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	319	µg/g - dry wt			0.400
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	0.381	µg/g - dry wt			0.008
RWR-FP-5002-0000-01	1678*193	MSL	NORMAL	7/16/2001	8/16/2001	8/17/2001		8	Methyl mercury	22967-92-6	M	L-40	0.000762	µg/g - dry wt			0.0002
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	1.06	µg/g - dry wt			0.016
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Aluminum	7429-90-5	M	L-44	14791	µg/g - dry wt			4.0
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	38.6	µg/g - dry wt			1.08
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	33.9	µg/g - dry wt			1.0
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	740	µg/g - dry wt			0.064
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Iron	7439-89-6	M	L-44	18264	µg/g - dry wt			1.1
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	5.03	µg/g - dry wt			1.34
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	12.3	µg/g - dry wt			3.1
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	33.4	µg/g - dry wt			0.39
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	97.5	µg/g - dry wt			0.38
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	4.25	µg/g - dry wt			2.00
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.779	µg/g - dry wt	J		1.06
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	3.48	µg/g - dry wt			1.6
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	0.407	µg/g - dry wt			0.36
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	0.463	µg/g - dry wt	J		0.710
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.112	µg/g - dry wt			0.080
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	72.3	µg/g - dry wt			0.040
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.279	µg/g - dry wt			0.080
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	158	µg/g - dry wt			0.400
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	0.209	µg/g - dry wt			0.008

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
LPX-FP-4006-0000-01	1678*192		1.021	50.4		0.200	G_DRY	7.42			T
LPX-FP-4006-0000-01	1678*192		10.212	50.4		0.200	G_DRY	0.586	U		T
LPX-FP-4006-0000-01	1678*192		1.021	50.4		0.200	G_DRY	2.67	J		T
LPX-FP-4006-0000-01	1678*192		2	50.4		0.200	G_DRY	1.43			T
LPX-FP-4006-0000-01	1678*192		1.021	50.4		0.200	G_DRY	3.18			T
LPX-FP-4006-0000-01	1678*192		1.021	50.4		0.200	G_DRY	0.704	J		T
LPX-FP-4006-0000-01	1678*192		2	50.4		0.200	G_DRY	842			T
LPX-FP-4006-0000-01	1678*192		1.021	50.4		0.200	G_DRY	0.575			T
LPX-FP-4006-0000-01	1678*192		1.021	50.4		0.200	G_DRY	901			T
LPX-FP-4006-0000-01	1678*192		2	50.4		0.200	G_DRY	0.245			T
LPX-FP-4006-0000-01	1678*192		1	50.4		0.491	G_DRY	0.000159	J		T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.202	G_DRY	2.48			T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.202	G_DRY	12231	J		T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.202	G_DRY	53.6			T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.202	G_DRY	171			T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.202	G_DRY	2286			T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.202	G_DRY	25960			T
RWR-FP-5002-0000-01	1678*193		1.015	48.7		0.202	G_DRY	12.5			T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.202	G_DRY	27.4			T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.202	G_DRY	109			T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.202	G_DRY	248			T
RWR-FP-5002-0000-01	1678*193		1.015	48.7		0.202	G_DRY	6.34			T
RWR-FP-5002-0000-01	1678*193		10.25	48.7		0.202	G_DRY	0.611	U		T
RWR-FP-5002-0000-01	1678*193		1.015	48.7		0.202	G_DRY	37	J		T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.202	G_DRY	1.38			T
RWR-FP-5002-0000-01	1678*193		1.015	48.7		0.202	G_DRY	1.06			T
RWR-FP-5002-0000-01	1678*193		1.015	48.7		0.202	G_DRY	0.462	J		T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.202	G_DRY	282			T
RWR-FP-5002-0000-01	1678*193		1.015	48.7		0.202	G_DRY	0.345			T
RWR-FP-5002-0000-01	1678*193		1.015	48.7		0.202	G_DRY	319			T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.202	G_DRY	0.381			T
RWR-FP-5002-0000-01	1678*193		1	48.7		0.487	G_DRY	0.000762	J		T
LPX-FP-4004-0000-01	1678*194		2	35.9		0.198	G_DRY	1.06			T
LPX-FP-4004-0000-01	1678*194		2	35.9		0.198	G_DRY	14791	J		T
LPX-FP-4004-0000-01	1678*194		2	35.9		0.198	G_DRY	38.6			T
LPX-FP-4004-0000-01	1678*194		2	35.9		0.198	G_DRY	33.9			T
LPX-FP-4004-0000-01	1678*194		2	35.9		0.198	G_DRY	740			T
LPX-FP-4004-0000-01	1678*194		2	35.9		0.198	G_DRY	18264			T
LPX-FP-4004-0000-01	1678*194		1.039	35.9		0.198	G_DRY	5.03			T
LPX-FP-4004-0000-01	1678*194		2	35.9		0.198	G_DRY	12.3			T
LPX-FP-4004-0000-01	1678*194		2	35.9		0.198	G_DRY	33.4			T
LPX-FP-4004-0000-01	1678*194		2	35.9		0.198	G_DRY	97.5			T
LPX-FP-4004-0000-01	1678*194		1.039	35.9		0.198	G_DRY	4.25			T
LPX-FP-4004-0000-01	1678*194		10.282	35.9		0.198	G_DRY	0.779	J		T
LPX-FP-4004-0000-01	1678*194		1.039	35.9		0.198	G_DRY	3.48	J		T
LPX-FP-4004-0000-01	1678*194		2	35.9		0.198	G_DRY	0.407			T
LPX-FP-4004-0000-01	1678*194		1.039	35.9		0.198	G_DRY	0.463	J		T
LPX-FP-4004-0000-01	1678*194		1.039	35.9		0.198	G_DRY	0.112	U		T
LPX-FP-4004-0000-01	1678*194		2	35.9		0.198	G_DRY	72.3			T
LPX-FP-4004-0000-01	1678*194		1.039	35.9		0.198	G_DRY	0.279			T
LPX-FP-4004-0000-01	1678*194		1.039	35.9		0.198	G_DRY	158			T
LPX-FP-4004-0000-01	1678*194		2	35.9		0.198	G_DRY	0.209			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
LPX-FP-4004-0000-01	1678*194	MSL	NORMAL	7/19/2001	8/16/2001	8/17/2001		8	Methyl mercury	22967-92-6	M	L-40	0.000767	µg/g - dry wt			0.0002
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	3.47	µg/g - dry wt			0.016
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Aluminum	7429-90-5	M	L-44	18600	µg/g - dry wt			4.0
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	103	µg/g - dry wt			1.08
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	246	µg/g - dry wt			1.0
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	4126	µg/g - dry wt			0.064
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Iron	7439-89-6	M	L-44	37162	µg/g - dry wt			1.1
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	20.3	µg/g - dry wt			1.34
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	39.0	µg/g - dry wt			3.1
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	255	µg/g - dry wt			0.39
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	249	µg/g - dry wt			0.38
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	12.2	µg/g - dry wt			2.00
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.963	µg/g - dry wt	J		1.06
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	56.6	µg/g - dry wt			1.6
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	2.31	µg/g - dry wt			0.36
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	1.28	µg/g - dry wt			0.710
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.982	µg/g - dry wt			0.080
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	222	µg/g - dry wt			0.040
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.585	µg/g - dry wt			0.080
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	574	µg/g - dry wt			0.400
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	0.712	µg/g - dry wt			0.008
RWR-FP-5004-0000-01	1678*195	MSL	NORMAL	7/18/2001	8/16/2001	8/17/2001		8	Methyl mercury	22967-92-6	M	L-40	0.000348	µg/g - dry wt			0.0002
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	1.59	µg/g - dry wt			0.016
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Aluminum	7429-90-5	M	L-44	10832	µg/g - dry wt			4.0
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	39.1	µg/g - dry wt			1.08
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	83.2	µg/g - dry wt			1.0
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	1066	µg/g - dry wt			0.064
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Iron	7439-89-6	M	L-44	19468	µg/g - dry wt			1.1
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	7.03	µg/g - dry wt			1.34
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	23.8	µg/g - dry wt			3.1
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	81.5	µg/g - dry wt			0.39
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	217	µg/g - dry wt			0.38
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	3.94	µg/g - dry wt			2.00
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.485	µg/g - dry wt	J		1.06
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	11.7	µg/g - dry wt			1.6
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	0.599	µg/g - dry wt			0.36
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	1.13	µg/g - dry wt			0.710
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.243	µg/g - dry wt			0.080
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	128	µg/g - dry wt			0.040
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.286	µg/g - dry wt			0.080
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	211	µg/g - dry wt			0.400
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	0.252	µg/g - dry wt			0.008
CMS-FP-4001-0000-01	1678*196	MSL	NORMAL	7/18/2001	8/16/2001	8/17/2001		8	Methyl mercury	22967-92-6	M	L-40	0.000499	µg/g - dry wt			0.0002
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	0.676	µg/g - dry wt			0.016
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Aluminum	7429-90-5	M	L-44	8643	µg/g - dry wt			4.0
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	40.3	µg/g - dry wt			1.08
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	81.2	µg/g - dry wt			1.0
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	180	µg/g - dry wt			0.064
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Iron	7439-89-6	M	L-44	17365	µg/g - dry wt			1.1
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	3.14	µg/g - dry wt			1.34
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	13.6	µg/g - dry wt			3.1
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	62.1	µg/g - dry wt			0.39

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
LPX-FP-4004-0000-01	1678*194		1	35.9		0.529	G_DRY	0.000767	J		T
RWR-FP-5004-0000-01	1678*195		2	49.9		0.198	G_DRY	3.47			T
RWR-FP-5004-0000-01	1678*195		2	49.9		0.198	G_DRY	18600	J		T
RWR-FP-5004-0000-01	1678*195		2	49.9		0.198	G_DRY	103			T
RWR-FP-5004-0000-01	1678*195		2	49.9		0.198	G_DRY	246			T
RWR-FP-5004-0000-01	1678*195		2	49.9		0.198	G_DRY	4126			T
RWR-FP-5004-0000-01	1678*195		2	49.9		0.198	G_DRY	37162			T
RWR-FP-5004-0000-01	1678*195		1.034	49.9		0.198	G_DRY	20.3			T
RWR-FP-5004-0000-01	1678*195		2	49.9		0.198	G_DRY	39.0			T
RWR-FP-5004-0000-01	1678*195		2	49.9		0.198	G_DRY	255			T
RWR-FP-5004-0000-01	1678*195		2	49.9		0.198	G_DRY	249			T
RWR-FP-5004-0000-01	1678*195		1.034	49.9		0.198	G_DRY	12.2			T
RWR-FP-5004-0000-01	1678*195		10.231	49.9		0.198	G_DRY	0.963	J		T
RWR-FP-5004-0000-01	1678*195		1.034	49.9		0.198	G_DRY	56.6	J		T
RWR-FP-5004-0000-01	1678*195		2	49.9		0.198	G_DRY	2.31			T
RWR-FP-5004-0000-01	1678*195		1.034	49.9		0.198	G_DRY	1.28			T
RWR-FP-5004-0000-01	1678*195		1.034	49.9		0.198	G_DRY	0.982	J		T
RWR-FP-5004-0000-01	1678*195		2	49.9		0.198	G_DRY	222			T
RWR-FP-5004-0000-01	1678*195		1.034	49.9		0.198	G_DRY	0.585			T
RWR-FP-5004-0000-01	1678*195		1.034	49.9		0.198	G_DRY	574			T
RWR-FP-5004-0000-01	1678*195		2	49.9		0.198	G_DRY	0.712			T
RWR-FP-5004-0000-01	1678*195		1	49.9		0.499	G_DRY	0.000348	J		T
CMS-FP-4001-0000-01	1678*196		2	49.5		0.205	G_DRY	1.59			T
CMS-FP-4001-0000-01	1678*196		2	49.5		0.205	G_DRY	10832	J		T
CMS-FP-4001-0000-01	1678*196		2	49.5		0.205	G_DRY	39.1			T
CMS-FP-4001-0000-01	1678*196		2	49.5		0.205	G_DRY	83.2			T
CMS-FP-4001-0000-01	1678*196		2	49.5		0.205	G_DRY	1066			T
CMS-FP-4001-0000-01	1678*196		2	49.5		0.205	G_DRY	19468			T
CMS-FP-4001-0000-01	1678*196		0.997	49.5		0.205	G_DRY	7.03	J		T
CMS-FP-4001-0000-01	1678*196		2	49.5		0.205	G_DRY	23.8			T
CMS-FP-4001-0000-01	1678*196		2	49.5		0.205	G_DRY	81.5			T
CMS-FP-4001-0000-01	1678*196		2	49.5		0.205	G_DRY	217	J		T
CMS-FP-4001-0000-01	1678*196		0.997	49.5		0.205	G_DRY	3.94			T
CMS-FP-4001-0000-01	1678*196		10.223	49.5		0.205	G_DRY	0.485	U		T
CMS-FP-4001-0000-01	1678*196		0.997	49.5		0.205	G_DRY	11.7	J		T
CMS-FP-4001-0000-01	1678*196		2	49.5		0.205	G_DRY	0.599			T
CMS-FP-4001-0000-01	1678*196		0.997	49.5		0.205	G_DRY	1.13			T
CMS-FP-4001-0000-01	1678*196		0.997	49.5		0.205	G_DRY	0.243	J		T
CMS-FP-4001-0000-01	1678*196		2	49.5		0.205	G_DRY	128			T
CMS-FP-4001-0000-01	1678*196		0.997	49.5		0.205	G_DRY	0.286			T
CMS-FP-4001-0000-01	1678*196		0.997	49.5		0.205	G_DRY	211			T
CMS-FP-4001-0000-01	1678*196		2	49.5		0.205	G_DRY	0.252			T
CMS-FP-4001-0000-01	1678*196		1	49.5		0.498	G_DRY	0.000499	J		T
CMS-FP-4002-0000-01	1678*197		2	50.6		0.197	G_DRY	0.676			T
CMS-FP-4002-0000-01	1678*197		2	50.6		0.197	G_DRY	8643	J		T
CMS-FP-4002-0000-01	1678*197		2	50.6		0.197	G_DRY	40.3			T
CMS-FP-4002-0000-01	1678*197		2	50.6		0.197	G_DRY	81.2			T
CMS-FP-4002-0000-01	1678*197		2	50.6		0.197	G_DRY	180			T
CMS-FP-4002-0000-01	1678*197		2	50.6		0.197	G_DRY	17365			T
CMS-FP-4002-0000-01	1678*197		1.043	50.6		0.197	G_DRY	3.14			T
CMS-FP-4002-0000-01	1678*197		2	50.6		0.197	G_DRY	13.6			T
CMS-FP-4002-0000-01	1678*197		2	50.6		0.197	G_DRY	62.1			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	91.1	µg/g - dry wt			0.38
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	4.27	µg/g - dry wt			2.00
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.458	µg/g - dry wt	J		1.06
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	16.0	µg/g - dry wt			1.6
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	0.468	µg/g - dry wt			0.36
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	0.368	µg/g - dry wt	J		0.710
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.275	µg/g - dry wt			0.080
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	87.5	µg/g - dry wt			0.040
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.338	µg/g - dry wt			0.080
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	477	µg/g - dry wt			0.400
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	0.222	µg/g - dry wt			0.008
CMS-FP-4002-0000-01	1678*197	MSL	NORMAL	7/18/2001	8/16/2001	8/17/2001		8	Methyl mercury	22967-92-6	M	L-40	0.000263	µg/g - dry wt			0.0002
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	4.46	µg/g - dry wt			0.016
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Aluminum	7429-90-5	M	L-44	21793	µg/g - dry wt			4.0
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	90.7	µg/g - dry wt			1.08
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	291	µg/g - dry wt			1.0
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	511	µg/g - dry wt			0.064
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Iron	7439-89-6	M	L-44	24538	µg/g - dry wt			1.1
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	9.57	µg/g - dry wt			1.34
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	387	µg/g - dry wt			3.1
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	324	µg/g - dry wt			0.39
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	497	µg/g - dry wt			0.38
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	5.58	µg/g - dry wt			2.00
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.862	µg/g - dry wt	J		1.06
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	34.8	µg/g - dry wt			1.6
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	3.80	µg/g - dry wt			0.36
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	3.46	µg/g - dry wt			0.710
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.521	µg/g - dry wt			0.080
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	239	µg/g - dry wt			0.040
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.566	µg/g - dry wt			0.080
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	591	µg/g - dry wt			0.400
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	0.811	µg/g - dry wt			0.008
RWR-FP-5001-0000-01	1678*198	MSL	NORMAL	7/17/2001	8/16/2001	8/17/2001		8	Methyl mercury	22967-92-6	M	L-40	0.000326	µg/g - dry wt			0.0002
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	1.90	µg/g - dry wt			0.016
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Aluminum	7429-90-5	M	L-44	10971	µg/g - dry wt			4.0
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	81.7	µg/g - dry wt			1.08
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	214	µg/g - dry wt			1.0
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	439	µg/g - dry wt			0.064
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Iron	7439-89-6	M	L-44	21383	µg/g - dry wt			1.1
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	10.1	µg/g - dry wt			1.34
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	25.5	µg/g - dry wt			3.1
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	132	µg/g - dry wt			0.39
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	158	µg/g - dry wt			0.38
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	6.74	µg/g - dry wt			2.00
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.687	µg/g - dry wt	J		1.06
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	87.7	µg/g - dry wt			1.6
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	1.23	µg/g - dry wt			0.36
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	0.711	µg/g - dry wt			0.710
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.532	µg/g - dry wt			0.080
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	181	µg/g - dry wt			0.040
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.346	µg/g - dry wt			0.080
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	316	µg/g - dry wt			0.400

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
CMS-FP-4002-0000-01	1678*197		2	50.6		0.197	G_DRY	91.1			T
CMS-FP-4002-0000-01	1678*197		1.043	50.6		0.197	G_DRY	4.27			T
CMS-FP-4002-0000-01	1678*197		10.272	50.6		0.197	G_DRY	0.458	U		T
CMS-FP-4002-0000-01	1678*197		1.043	50.6		0.197	G_DRY	16.0	J		T
CMS-FP-4002-0000-01	1678*197		2	50.6		0.197	G_DRY	0.468			T
CMS-FP-4002-0000-01	1678*197		1.043	50.6		0.197	G_DRY	0.368	J		T
CMS-FP-4002-0000-01	1678*197		1.043	50.6		0.197	G_DRY	0.275	J		T
CMS-FP-4002-0000-01	1678*197		2	50.6		0.197	G_DRY	87.5			T
CMS-FP-4002-0000-01	1678*197		1.043	50.6		0.197	G_DRY	0.338			T
CMS-FP-4002-0000-01	1678*197		1.043	50.6		0.197	G_DRY	477			T
CMS-FP-4002-0000-01	1678*197		7	50.6		0.197	G_DRY	0.222			T
CMS-FP-4002-0000-01	1678*197		1	50.6		0.486	G_DRY	0.000263	J		T
RWR-FP-5001-0000-01	1678*198		2	67.3		0.196	G_DRY	4.46			T
RWR-FP-5001-0000-01	1678*198		2	67.3		0.196	G_DRY	21793	J		T
RWR-FP-5001-0000-01	1678*198		2	67.3		0.196	G_DRY	90.7			T
RWR-FP-5001-0000-01	1678*198		2	67.3		0.196	G_DRY	291			T
RWR-FP-5001-0000-01	1678*198		2	67.3		0.196	G_DRY	511			T
RWR-FP-5001-0000-01	1678*198		2	67.3		0.196	G_DRY	24538			T
RWR-FP-5001-0000-01	1678*198		1.041	67.3		0.196	G_DRY	9.57			T
RWR-FP-5001-0000-01	1678*198		2	67.3		0.196	G_DRY	387			T
RWR-FP-5001-0000-01	1678*198		2	67.3		0.196	G_DRY	324			T
RWR-FP-5001-0000-01	1678*198		2	67.3		0.196	G_DRY	497			T
RWR-FP-5001-0000-01	1678*198		1.041	67.3		0.196	G_DRY	5.58			T
RWR-FP-5001-0000-01	1678*198		10.204	67.3		0.196	G_DRY	0.862	J		T
RWR-FP-5001-0000-01	1678*198		1.041	67.3		0.196	G_DRY	34.8	J		T
RWR-FP-5001-0000-01	1678*198		2	67.3		0.196	G_DRY	3.80			T
RWR-FP-5001-0000-01	1678*198		1.041	67.3		0.196	G_DRY	3.46			T
RWR-FP-5001-0000-01	1678*198		1.041	67.3		0.196	G_DRY	0.521	J		T
RWR-FP-5001-0000-01	1678*198		2	67.3		0.196	G_DRY	239			T
RWR-FP-5001-0000-01	1678*198		1.041	67.3		0.196	G_DRY	0.566			T
RWR-FP-5001-0000-01	1678*198		1.041	67.3		0.196	G_DRY	591			T
RWR-FP-5001-0000-01	1678*198		7	67.3		0.196	G_DRY	0.811			T
RWR-FP-5001-0000-01	1678*198		1	67.3		0.516	G_DRY	0.000326	J		T
RWR-FP-5003-0000-01	1678*199		2	45.5		0.201	G_DRY	1.90			T
RWR-FP-5003-0000-01	1678*199		2	45.5		0.201	G_DRY	10971	J		T
RWR-FP-5003-0000-01	1678*199		2	45.5		0.201	G_DRY	81.7			T
RWR-FP-5003-0000-01	1678*199		2	45.5		0.201	G_DRY	214			T
RWR-FP-5003-0000-01	1678*199		2	45.5		0.201	G_DRY	439			T
RWR-FP-5003-0000-01	1678*199		2	45.5		0.201	G_DRY	21383			T
RWR-FP-5003-0000-01	1678*199		1.019	45.5		0.201	G_DRY	10.1			T
RWR-FP-5003-0000-01	1678*199		2	45.5		0.201	G_DRY	25.5			T
RWR-FP-5003-0000-01	1678*199		2	45.5		0.201	G_DRY	132			T
RWR-FP-5003-0000-01	1678*199		2	45.5		0.201	G_DRY	158			T
RWR-FP-5003-0000-01	1678*199		1.019	45.5		0.201	G_DRY	6.74			T
RWR-FP-5003-0000-01	1678*199		10.243	45.5		0.201	G_DRY	0.687	J		T
RWR-FP-5003-0000-01	1678*199		1.019	45.5		0.201	G_DRY	87.7	J		T
RWR-FP-5003-0000-01	1678*199		2	45.5		0.201	G_DRY	1.23			T
RWR-FP-5003-0000-01	1678*199		1.019	45.5		0.201	G_DRY	0.711			T
RWR-FP-5003-0000-01	1678*199		1.019	45.5		0.201	G_DRY	0.532	J		T
RWR-FP-5003-0000-01	1678*199		2	45.5		0.201	G_DRY	181			T
RWR-FP-5003-0000-01	1678*199		1.019	45.5		0.201	G_DRY	0.346			T
RWR-FP-5003-0000-01	1678*199		1.019	45.5		0.201	G_DRY	316			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	0.423	µg/g - dry wt			0.008
RWR-FP-5003-0000-01	1678*199	MSL	NORMAL	7/17/2001	8/16/2001	8/17/2001		8	Methyl mercury	22967-92-6	M	L-40	0.000535	µg/g - dry wt			0.0002
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	1.57	µg/g - dry wt			0.016
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/31/2001		8	Aluminum	7429-90-5	M	L-44	13135	µg/g - dry wt			4.0
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	41.5	µg/g - dry wt			1.08
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	74.5	µg/g - dry wt			1.0
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	1966	µg/g - dry wt			0.064
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/31/2001		8	Iron	7439-89-6	M	L-44	25275	µg/g - dry wt			1.1
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	10.6	µg/g - dry wt			1.34
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	27.3	µg/g - dry wt			3.1
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	85.4	µg/g - dry wt			0.39
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	371	µg/g - dry wt			0.38
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	4.64	µg/g - dry wt			2.00
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.538	µg/g - dry wt	J		1.06
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	8.81	µg/g - dry wt			1.6
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	0.875	µg/g - dry wt			0.36
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	2.01	µg/g - dry wt			0.710
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.199	µg/g - dry wt			0.080
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	161	µg/g - dry wt			0.040
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.336	µg/g - dry wt			0.080
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	236	µg/g - dry wt			0.400
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	0.336	µg/g - dry wt			0.008
CMS-FP-4005-0000-01	1678*200	MSL	NORMAL	7/20/2001	8/16/2001	8/17/2001		8	Methyl mercury	22967-92-6	M	L-40	0.000387	µg/g - dry wt			0.0002
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	2.14	µg/g - dry wt			0.016
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Aluminum	7429-90-5	M	L-44	15039	µg/g - dry wt			4.0
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	49.0	µg/g - dry wt			1.08
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	104	µg/g - dry wt			1.0
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	1534	µg/g - dry wt			0.064
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Iron	7439-89-6	M	L-44	28499	µg/g - dry wt			1.1
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	14.9	µg/g - dry wt			1.34
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	33.7	µg/g - dry wt			3.1
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	102	µg/g - dry wt			0.39
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	376	µg/g - dry wt			0.38
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	5.60	µg/g - dry wt			2.00
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.598	µg/g - dry wt	J		1.06
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	15.7	µg/g - dry wt			1.6
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	0.596	µg/g - dry wt			0.36
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	1.95	µg/g - dry wt			0.710
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.229	µg/g - dry wt			0.080
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	181	µg/g - dry wt			0.040
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.379	µg/g - dry wt			0.080
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	272	µg/g - dry wt			0.400
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	0.362	µg/g - dry wt			0.008
CMS-DU-072001-DUP	1678*201	MSL	REPLICATE	7/20/2001	8/16/2001	8/17/2001		8	Methyl mercury	22967-92-6	M	L-40	0.000572	µg/g - dry wt			0.0002
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Beryllium	7440-41-7	M	L-42	0.00400	µg/L	J		0.212
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Aluminum	7429-90-5	M	L-42	1.20	µg/L	J		40.0
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001		8/13/2001		8	Vanadium	7440-62-2	M	L-44	8.00	µg/L	U		8.00
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001		8/13/2001		8	Chromium	7440-47-3	M	L-44	6.63	µg/L	J		12.0
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001		8/13/2001		8	Manganese	7439-96-5	M	L-44	0.897	µg/L			0.800
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001		8/13/2001		8	Iron	7439-89-6	M	L-44	20.4	µg/L			14.0
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	0.00375	µg/L	J		0.016
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Nickel	7440-02-0	M	L-42	0.0192	µg/L	J		14.3

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
RWR-FP-5003-0000-01	1678*199		2	45.5		0.201	G_DRY	0.423			T
RWR-FP-5003-0000-01	1678*199		1	45.5		0.480	G_DRY	0.000535	J		T
CMS-FP-4005-0000-01	1678*200		2	54.4		0.200	G_DRY	1.57			T
CMS-FP-4005-0000-01	1678*200		2	54.4		0.200	G_DRY	13135	J		T
CMS-FP-4005-0000-01	1678*200		2	54.4		0.200	G_DRY	41.5			T
CMS-FP-4005-0000-01	1678*200		2	54.4		0.200	G_DRY	74.5			T
CMS-FP-4005-0000-01	1678*200		2	54.4		0.200	G_DRY	1966			T
CMS-FP-4005-0000-01	1678*200		2	54.4		0.200	G_DRY	25275			T
CMS-FP-4005-0000-01	1678*200		1.023	54.4		0.200	G_DRY	10.6			T
CMS-FP-4005-0000-01	1678*200		2	54.4		0.200	G_DRY	27.3			T
CMS-FP-4005-0000-01	1678*200		2	54.4		0.200	G_DRY	85.4			T
CMS-FP-4005-0000-01	1678*200		2	54.4		0.200	G_DRY	371			T
CMS-FP-4005-0000-01	1678*200		1.023	54.4		0.200	G_DRY	4.64			T
CMS-FP-4005-0000-01	1678*200		10.23	54.4		0.200	G_DRY	0.538	U		T
CMS-FP-4005-0000-01	1678*200		1.023	54.4		0.200	G_DRY	8.81	J		T
CMS-FP-4005-0000-01	1678*200		2	54.4		0.200	G_DRY	0.875			T
CMS-FP-4005-0000-01	1678*200		1.023	54.4		0.200	G_DRY	2.01			T
CMS-FP-4005-0000-01	1678*200		1.023	54.4		0.200	G_DRY	0.199	J		T
CMS-FP-4005-0000-01	1678*200		2	54.4		0.200	G_DRY	161			T
CMS-FP-4005-0000-01	1678*200		1.023	54.4		0.200	G_DRY	0.336			T
CMS-FP-4005-0000-01	1678*200		1.023	54.4		0.200	G_DRY	236			T
CMS-FP-4005-0000-01	1678*200		2	54.4		0.200	G_DRY	0.336			T
CMS-FP-4005-0000-01	1678*200		1	54.4		0.507	G_DRY	0.000387	J		T
CMS-DU-072001-DUP	1678*201		2	56.3		0.198	G_DRY	2.14			T
CMS-DU-072001-DUP	1678*201		2	56.3		0.198	G_DRY	15039	J		T
CMS-DU-072001-DUP	1678*201		2	56.3		0.198	G_DRY	49.0			T
CMS-DU-072001-DUP	1678*201		2	56.3		0.198	G_DRY	104			T
CMS-DU-072001-DUP	1678*201		2	56.3		0.198	G_DRY	1534			T
CMS-DU-072001-DUP	1678*201		2	56.3		0.198	G_DRY	28499			T
CMS-DU-072001-DUP	1678*201		1.034	56.3		0.198	G_DRY	14.9	J		T
CMS-DU-072001-DUP	1678*201		2	56.3		0.198	G_DRY	33.7			T
CMS-DU-072001-DUP	1678*201		2	56.3		0.198	G_DRY	102			T
CMS-DU-072001-DUP	1678*201		2	56.3		0.198	G_DRY	376	J		T
CMS-DU-072001-DUP	1678*201		1.034	56.3		0.198	G_DRY	5.6			T
CMS-DU-072001-DUP	1678*201		10.239	56.3		0.198	G_DRY	0.598	U		T
CMS-DU-072001-DUP	1678*201		1.034	56.3		0.198	G_DRY	15.7	J		T
CMS-DU-072001-DUP	1678*201		2	56.3		0.198	G_DRY	0.596			T
CMS-DU-072001-DUP	1678*201		1.034	56.3		0.198	G_DRY	1.95			T
CMS-DU-072001-DUP	1678*201		1.034	56.3		0.198	G_DRY	0.229	J		T
CMS-DU-072001-DUP	1678*201		2	56.3		0.198	G_DRY	181			T
CMS-DU-072001-DUP	1678*201		1.034	56.3		0.198	G_DRY	0.379			T
CMS-DU-072001-DUP	1678*201		1.034	56.3		0.198	G_DRY	272			T
CMS-DU-072001-DUP	1678*201		7	56.3		0.198	G_DRY	0.362			T
CMS-DU-072001-DUP	1678*201		1	56.3		0.486	G_DRY	0.000572	J		T
RB-071801-A	1678*202		1.042	100		10	mL	0.00400	J		D
RB-071801-A	1678*202		1.042	100		10	mL	1.20	J		D
RB-071801-A	1678*202		1.07	100		5	mL	8.00	U		D
RB-071801-A	1678*202		1.07	100		5	mL	6.63	J		D
RB-071801-A	1678*202		1.07	100		5	mL	0.897			D
RB-071801-A	1678*202		1.07	100		5	mL	20.4			D
RB-071801-A	1678*202		1.042	100		10	mL	0.00375	J		D
RB-071801-A	1678*202		1.042	100		10	mL	0.0192	J		D

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Copper	7440-50-8	M	L-42	3.24	µg/L	U		3.24
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Zinc	7440-66-6	M	L-42	0.439	µg/L	J		4.80
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	0.00190	µg/L	J		0.160
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001		8/15/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.0160	µg/L	J		0.400
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	0.0120	µg/L	J		14.4
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Silver	7440-22-4	M	L-42	2.68	µg/L	U		2.68
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	0.000800	µg/L	J		0.060
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.0325	µg/L	J		0.040
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Barium	7440-39-3	M	L-42	0.0130	µg/L	J		0.288
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.016	µg/L	U		0.016
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/15/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	0.0133	µg/L	J		0.020
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/1/2001	8/2/2001		8	Mercury	7439-97-6	M	L-39	0.000189	µg/L	J		0.0008
RB-071801-A	1678*202	MSL	NORMAL	7/18/2001	8/6/2001	8/7/2001		8	Methyl mercury	22967-92-6	M	L-40	0.0002	µg/L	U		0.0002
	Blank R1	MSL	P_Blank		8/8/2001	8/31/2001			Beryllium	7440-41-7	M	L-44	0.016	µg/g - dry wt	U		0.016
	Blank R1	MSL	P_Blank		8/8/2001	8/31/2001			Aluminum	7429-90-5	M	L-44	4.00	µg/g - dry wt	U		4.0
	Blank R1	MSL	P_Blank		8/8/2001	8/31/2001			Vanadium	7440-62-2	M	L-44	1.08	µg/g - dry wt	U		1.08
	Blank R1	MSL	P_Blank		8/8/2001	8/31/2001			Chromium	7440-47-3	M	L-44	1.00	µg/g - dry wt	U		1.0
	Blank R1	MSL	P_Blank		8/8/2001	8/31/2001			Manganese	7439-96-5	M	L-44	0.0290	µg/g - dry wt	J		0.064
	Blank R1	MSL	P_Blank		8/8/2001	8/31/2001			Iron	7439-89-6	M	L-44	0.916	µg/g - dry wt	J		1.1
	Blank R1	MSL	P_Blank		8/8/2001	8/15/2001			Cobalt	7440-48-4	M	L-42	1.34	µg/g - dry wt	U		1.34
	Blank R1	MSL	P_Blank		8/8/2001	8/31/2001			Nickel	7440-02-0	M	L-44	3.1	µg/g - dry wt	U		3.1
	Blank R1	MSL	P_Blank		8/8/2001	8/31/2001			Copper	7440-50-8	M	L-44	0.39	µg/g - dry wt	U		0.39
	Blank R1	MSL	P_Blank		8/8/2001	8/31/2001			Zinc	7440-66-6	M	L-44	0.582	µg/g - dry wt			0.38
	Blank R1	MSL	P_Blank		8/8/2001	8/15/2001			Arsenic	7440-38-2	M	L-42	0.239	µg/g - dry wt	J		2.00
	Blank R1	MSL	P_Blank		8/8/2001	9/10/2001			Selenium	7782-49-2	M	MSL-I-30	0.125	µg/g - dry wt	J		1.06
	Blank R1	MSL	P_Blank		8/8/2001	8/15/2001			Molybdenum	13939-06-5	M	L-42	1.6	µg/g - dry wt	U		1.6
	Blank R1	MSL	P_Blank		8/8/2001	8/31/2001			Silver	7440-22-4	M	L-44	0.0480	µg/g - dry wt	J		0.36
	Blank R1	MSL	P_Blank		8/8/2001	8/15/2001			Cadmium	7440-43-9	M	L-42	0.710	µg/g - dry wt	U		0.710
	Blank R1	MSL	P_Blank		8/8/2001	8/15/2001			Antimony	7440-36-0	M	L-42	0.080	µg/g - dry wt	U		0.080
	Blank R1	MSL	P_Blank		8/8/2001	8/31/2001			Barium	7440-39-3	M	L-44	0.0850	µg/g - dry wt			0.040
	Blank R1	MSL	P_Blank		8/8/2001	8/15/2001			Thallium	7440-28-0	M	L-42	0.000357	µg/g - dry wt	J		0.080
	Blank R1	MSL	P_Blank		8/8/2001	8/15/2001			Lead	7439-92-1	M	L-42	0.400	µg/g - dry wt	U		0.400
	Blank R1	MSL	P_Blank		8/8/2001	8/15/2001			Mercury	7439-97-6	M	L-41	0.00790	µg/g - dry wt	J		0.008
	Blank R1	MSL	P_Blank		8/16/2001	8/17/2001			Methyl mercury	22967-92-6	M	L-40	0.00000526	µg/g - dry wt	J		0.0002
	Blank R2	MSL	P_Blank		8/8/2001	8/31/2001			Beryllium	7440-41-7	M	L-44	0.016	µg/g - dry wt	U		0.016
	Blank R2	MSL	P_Blank		8/8/2001	8/31/2001			Aluminum	7429-90-5	M	L-44	4.00	µg/g - dry wt	U		4.0
	Blank R2	MSL	P_Blank		8/8/2001	8/31/2001			Vanadium	7440-62-2	M	L-44	1.08	µg/g - dry wt	U		1.08
	Blank R2	MSL	P_Blank		8/8/2001	8/31/2001			Chromium	7440-47-3	M	L-44	1.00	µg/g - dry wt	U		1.0
	Blank R2	MSL	P_Blank		8/8/2001	8/31/2001			Manganese	7439-96-5	M	L-44	0.064	µg/g - dry wt	U		0.064
	Blank R2	MSL	P_Blank		8/8/2001	8/31/2001			Iron	7439-89-6	M	L-44	0.985	µg/g - dry wt	J		1.1
	Blank R2	MSL	P_Blank		8/8/2001	8/15/2001			Cobalt	7440-48-4	M	L-42	1.34	µg/g - dry wt	U		1.34
	Blank R2	MSL	P_Blank		8/8/2001	8/31/2001			Nickel	7440-02-0	M	L-44	3.1	µg/g - dry wt	U		3.1
	Blank R2	MSL	P_Blank		8/8/2001	8/31/2001			Copper	7440-50-8	M	L-44	0.39	µg/g - dry wt	U		0.39
	Blank R2	MSL	P_Blank		8/8/2001	8/31/2001			Zinc	7440-66-6	M	L-44	0.492	µg/g - dry wt			0.38
	Blank R2	MSL	P_Blank		8/8/2001	8/15/2001			Arsenic	7440-38-2	M	L-42	0.161	µg/g - dry wt	J		2.00
	Blank R2	MSL	P_Blank		8/8/2001	9/10/2001			Selenium	7782-49-2	M	MSL-I-30	0.0510	µg/g - dry wt	J		1.06
	Blank R2	MSL	P_Blank		8/8/2001	8/15/2001			Molybdenum	13939-06-5	M	L-42	1.6	µg/g - dry wt	U		1.6
	Blank R2	MSL	P_Blank		8/8/2001	8/31/2001			Silver	7440-22-4	M	L-44	0.0490	µg/g - dry wt	J		0.36
	Blank R2	MSL	P_Blank		8/8/2001	8/15/2001			Cadmium	7440-43-9	M	L-42	0.710	µg/g - dry wt	U		0.710
	Blank R2	MSL	P_Blank		8/8/2001	8/15/2001			Antimony	7440-36-0	M	L-42	0.080	µg/g - dry wt	U		0.080
	Blank R2	MSL	P_Blank		8/8/2001	8/31/2001			Barium	7440-39-3	M	L-44	0.0720	µg/g - dry wt			0.040
	Blank R2	MSL	P_Blank		8/8/2001	8/15/2001			Thallium	7440-28-0	M	L-42	0.000943	µg/g - dry wt	J		0.080

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
RB-071801-A	1678*202		1.042	100		10	mL	3.24	U		D
RB-071801-A	1678*202		1.042	100		10	mL	0.439	J		D
RB-071801-A	1678*202		1.042	100		10	mL	0.00190	J		D
RB-071801-A	1678*202		1	100		5	mL	0.0160	J		D
RB-071801-A	1678*202		1.042	100		10	mL	0.0120	J		D
RB-071801-A	1678*202		1.042	100		10	mL	2.68	U		D
RB-071801-A	1678*202		1.042	100		10	mL	0.000800	J		D
RB-071801-A	1678*202		1.042	100		10	mL	0.0325	J		D
RB-071801-A	1678*202		1.042	100		10	mL	0.0130	J		D
RB-071801-A	1678*202		1.042	100		10	mL	0.016	U		D
RB-071801-A	1678*202		1.042	100		10	mL	0.0133	J		D
RB-071801-A	1678*202		1.007	100		47.56	mL	0.000189	J		D
RB-071801-A	1678*202		1	100		50.547	mL	0.0002	UJ		T
	Blank R1		1	N/A		0.200	G_DRY				T
	Blank R1		1	N/A		0.200	G_DRY				T
	Blank R1		1	N/A		0.200	G_DRY				T
	Blank R1		1	N/A		0.200	G_DRY				T
	Blank R1		1	N/A		0.200	G_DRY				T
	Blank R1		1	N/A		0.200	G_DRY				T
	Blank R1		1.022	N/A		0.200	G_DRY				T
	Blank R1		1	N/A		0.200	G_DRY				T
	Blank R1		1	N/A		0.200	G_DRY				T
	Blank R1		1	N/A		0.200	G_DRY				T
	Blank R1		1.022	N/A		0.200	G_DRY				T
	Blank R1		10.216	N/A		0.200	G_DRY				T
	Blank R1		1.022	N/A		0.200	G_DRY				T
	Blank R1		1	N/A		0.200	G_DRY				T
	Blank R1		1.022	N/A		0.200	G_DRY				T
	Blank R1		1.022	N/A		0.200	G_DRY				T
	Blank R1		1	N/A		0.200	G_DRY				T
	Blank R1		1.022	N/A		0.200	G_DRY				T
	Blank R1		1.022	N/A		0.200	G_DRY				T
	Blank R1		2	N/A		0.200	G_DRY				T
	Blank R1		1	N/A		0.200	G_DRY				T
	Blank R2		1	N/A		0.200	G_DRY				T
	Blank R2		1	N/A		0.200	G_DRY				T
	Blank R2		1	N/A		0.200	G_DRY				T
	Blank R2		1	N/A		0.200	G_DRY				T
	Blank R2		1	N/A		0.200	G_DRY				T
	Blank R2		1	N/A		0.200	G_DRY				T
	Blank R2		1.022	N/A		0.200	G_DRY				T
	Blank R2		1	N/A		0.200	G_DRY				T
	Blank R2		1	N/A		0.200	G_DRY				T
	Blank R2		1	N/A		0.200	G_DRY				T
	Blank R2		1.022	N/A		0.200	G_DRY				T
	Blank R2		10.222	N/A		0.200	G_DRY				T
	Blank R2		1.022	N/A		0.200	G_DRY				T
	Blank R2		1	N/A		0.200	G_DRY				T
	Blank R2		1.022	N/A		0.200	G_DRY				T
	Blank R2		1.022	N/A		0.200	G_DRY				T
	Blank R2		1	N/A		0.200	G_DRY				T
	Blank R2		1.022	N/A		0.200	G_DRY				T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
	Blank R2	MSL	P_Blank		8/8/2001	8/15/2001			Lead	7439-92-1	M	L-42	0.00631	µg/g - dry wt	J		0.400
	Blank R2	MSL	P_Blank		8/8/2001	8/15/2001			Mercury	7439-97-6	M	L-41	0.00270	µg/g - dry wt	J		0.008
	Blank R3	MSL	P_Blank		8/8/2001	8/31/2001			Beryllium	7440-41-7	M	L-44	0.016	µg/g - dry wt	U		0.016
	Blank R3	MSL	P_Blank		8/8/2001	8/31/2001			Aluminum	7429-90-5	M	L-44	0.226	µg/g - dry wt	J		4.0
	Blank R3	MSL	P_Blank		8/8/2001	8/31/2001			Vanadium	7440-62-2	M	L-44	1.08	µg/g - dry wt	U		1.08
	Blank R3	MSL	P_Blank		8/8/2001	8/31/2001			Chromium	7440-47-3	M	L-44	1.00	µg/g - dry wt	U		1.0
	Blank R3	MSL	P_Blank		8/8/2001	8/31/2001			Manganese	7439-96-5	M	L-44	0.064	µg/g - dry wt	U		0.064
	Blank R3	MSL	P_Blank		8/8/2001	8/31/2001			Iron	7439-89-6	M	L-44	0.917	µg/g - dry wt	J		1.1
	Blank R3	MSL	P_Blank		8/8/2001	8/15/2001			Cobalt	7440-48-4	M	L-42	1.34	µg/g - dry wt	U		1.34
	Blank R3	MSL	P_Blank		8/8/2001	8/31/2001			Nickel	7440-02-0	M	L-44	3.1	µg/g - dry wt	U		3.1
	Blank R3	MSL	P_Blank		8/8/2001	8/31/2001			Copper	7440-50-8	M	L-44	0.39	µg/g - dry wt	U		0.39
	Blank R3	MSL	P_Blank		8/8/2001	8/31/2001			Zinc	7440-66-6	M	L-44	0.415	µg/g - dry wt			0.38
	Blank R3	MSL	P_Blank		8/8/2001	8/15/2001			Arsenic	7440-38-2	M	L-42	0.0903	µg/g - dry wt	J		2.00
	Blank R3	MSL	P_Blank		8/8/2001	9/10/2001			Selenium	7782-49-2	M	MSL-I-30	0.0650	µg/g - dry wt	J		1.06
	Blank R3	MSL	P_Blank		8/8/2001	8/15/2001			Molybdenum	13939-06-5	M	L-42	1.6	µg/g - dry wt	U		1.6
	Blank R3	MSL	P_Blank		8/8/2001	8/31/2001			Silver	7440-22-4	M	L-44	0.36	µg/g - dry wt	U		0.36
	Blank R3	MSL	P_Blank		8/8/2001	8/15/2001			Cadmium	7440-43-9	M	L-42	0.710	µg/g - dry wt	U		0.710
	Blank R3	MSL	P_Blank		8/8/2001	8/15/2001			Antimony	7440-36-0	M	L-42	0.080	µg/g - dry wt	U		0.080
	Blank R3	MSL	P_Blank		8/8/2001	8/31/2001			Barium	7440-39-3	M	L-44	0.0630	µg/g - dry wt			0.040
	Blank R3	MSL	P_Blank		8/8/2001	8/15/2001			Thallium	7440-28-0	M	L-42	0.00359	µg/g - dry wt	J		0.080
	Blank R3	MSL	P_Blank		8/8/2001	8/15/2001			Lead	7439-92-1	M	L-42	0.0213	µg/g - dry wt	J		0.400
	Blank R3	MSL	P_Blank		8/8/2001	8/15/2001			Mercury	7439-97-6	M	L-41	0.00640	µg/g - dry wt	J		0.008
	Blank sp 1	MSL	LCS		8/8/2001	8/31/2001			Beryllium	7440-41-7	M	L-44	98%	% recovery			0.016
	Blank sp 1	MSL	LCS		8/8/2001	8/31/2001			Aluminum	7429-90-5	M	L-44	103%	% recovery			4.0
	Blank sp 1	MSL	LCS		8/8/2001	8/31/2001			Vanadium	7440-62-2	M	L-44	102%	% recovery			1.08
	Blank sp 1	MSL	LCS		8/8/2001	8/31/2001			Chromium	7440-47-3	M	L-44	102%	% recovery			1.0
	Blank sp 1	MSL	LCS		8/8/2001	8/31/2001			Manganese	7439-96-5	M	L-44	103%	% recovery			0.064
	Blank sp 1	MSL	LCS		8/8/2001	8/15/2001			Cobalt	7440-48-4	M	L-42	109%	% recovery			1.34
	Blank sp 1	MSL	LCS		8/8/2001	8/31/2001			Nickel	7440-02-0	M	L-44	103%	% recovery			3.1
	Blank sp 1	MSL	LCS		8/8/2001	8/31/2001			Copper	7440-50-8	M	L-44	101%	% recovery			0.39
	Blank sp 1	MSL	LCS		8/8/2001	8/31/2001			Zinc	7440-66-6	M	L-44	102%	% recovery			0.38
	Blank sp 1	MSL	LCS		8/8/2001	8/15/2001			Arsenic	7440-38-2	M	L-42	108%	% recovery			2.00
	Blank sp 1	MSL	LCS		8/8/2001	9/10/2001			Selenium	7782-49-2	M	MSL-I-30	87%	% recovery			1.06
	Blank sp 1	MSL	LCS		8/8/2001	8/15/2001			Molybdenum	13939-06-5	M	L-42	107%	% recovery			1.6
	Blank sp 1	MSL	LCS		8/8/2001	8/31/2001			Silver	7440-22-4	M	L-44	86%	% recovery			0.36
	Blank sp 1	MSL	LCS		8/8/2001	8/15/2001			Cadmium	7440-43-9	M	L-42	100%	% recovery			0.710
	Blank sp 1	MSL	LCS		8/8/2001	8/15/2001			Antimony	7440-36-0	M	L-42	82%	% recovery			0.080
	Blank sp 1	MSL	LCS		8/8/2001	8/31/2001			Barium	7440-39-3	M	L-44	106%	% recovery			0.040
	Blank sp 1	MSL	LCS		8/8/2001	8/15/2001			Thallium	7440-28-0	M	L-42	98%	% recovery			0.080
	Blank sp 1	MSL	LCS		8/8/2001	8/15/2001			Lead	7439-92-1	M	L-42	108%	% recovery			0.400
	Blank sp 1	MSL	LCS		8/8/2001	8/15/2001			Mercury	7439-97-6	M	L-41	109%	% recovery			0.008
	Blank sp 2	MSL	LCS		8/8/2001	8/31/2001			Beryllium	7440-41-7	M	L-44	99%	% recovery			0.016
	Blank sp 2	MSL	LCS		8/8/2001	8/31/2001			Aluminum	7429-90-5	M	L-44	100%	% recovery			4.0
	Blank sp 2	MSL	LCS		8/8/2001	8/31/2001			Vanadium	7440-62-2	M	L-44	102%	% recovery			1.08
	Blank sp 2	MSL	LCS		8/8/2001	8/31/2001			Chromium	7440-47-3	M	L-44	101%	% recovery			1.0
	Blank sp 2	MSL	LCS		8/8/2001	8/31/2001			Manganese	7439-96-5	M	L-44	102%	% recovery			0.064
	Blank sp 2	MSL	LCS		8/8/2001	8/15/2001			Cobalt	7440-48-4	M	L-42	104%	% recovery			1.34
	Blank sp 2	MSL	LCS		8/8/2001	8/31/2001			Nickel	7440-02-0	M	L-44	100%	% recovery			3.1
	Blank sp 2	MSL	LCS		8/8/2001	8/31/2001			Copper	7440-50-8	M	L-44	101%	% recovery			0.39
	Blank sp 2	MSL	LCS		8/8/2001	8/31/2001			Zinc	7440-66-6	M	L-44	101%	% recovery			0.38
	Blank sp 2	MSL	LCS		8/8/2001	8/15/2001			Arsenic	7440-38-2	M	L-42	100%	% recovery			2.00
	Blank sp 2	MSL	LCS		8/8/2001	9/10/2001			Selenium	7782-49-2	M	MSL-I-30	90%	% recovery			1.06

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
	Blank R2		1.022	N/A		0.200	G_DRY				T
	Blank R2		2	N/A		0.200	G_DRY				T
	Blank R3		1	N/A		0.200	G_DRY				T
	Blank R3		1	N/A		0.200	G_DRY				T
	Blank R3		1	N/A		0.200	G_DRY				T
	Blank R3		1	N/A		0.200	G_DRY				T
	Blank R3		1	N/A		0.200	G_DRY				T
	Blank R3		1	N/A		0.200	G_DRY				T
	Blank R3		1.021	N/A		0.200	G_DRY				T
	Blank R3		1	N/A		0.200	G_DRY				T
	Blank R3		1	N/A		0.200	G_DRY				T
	Blank R3		1	N/A		0.200	G_DRY				T
	Blank R3		1.021	N/A		0.200	G_DRY				T
	Blank R3		10.208	N/A		0.200	G_DRY				T
	Blank R3		1.021	N/A		0.200	G_DRY				T
	Blank R3		1	N/A		0.200	G_DRY				T
	Blank R3		1.021	N/A		0.200	G_DRY				T
	Blank R3		1.021	N/A		0.200	G_DRY				T
	Blank R3		1	N/A		0.200	G_DRY				T
	Blank R3		1.021	N/A		0.200	G_DRY				T
	Blank R3		1.021	N/A		0.200	G_DRY				T
	Blank R3		2	N/A		0.200	G_DRY				T
	Blank sp 1		1	N/A		0.200	G_DRY				T
	Blank sp 1		2	N/A		0.200	G_DRY				T
	Blank sp 1		2	N/A		0.200	G_DRY				T
	Blank sp 1		2	N/A		0.200	G_DRY				T
	Blank sp 1		2	N/A		0.200	G_DRY				T
	Blank sp 1		1.029	N/A		0.200	G_DRY				T
	Blank sp 1		2	N/A		0.200	G_DRY				T
	Blank sp 1		2	N/A		0.200	G_DRY				T
	Blank sp 1		2	N/A		0.200	G_DRY				T
	Blank sp 1		1.029	N/A		0.200	G_DRY				T
	Blank sp 1		20.573	N/A		0.200	G_DRY				T
	Blank sp 1		1.029	N/A		0.200	G_DRY				T
	Blank sp 1		2	N/A		0.200	G_DRY				T
	Blank sp 1		1.029	N/A		0.200	G_DRY				T
	Blank sp 1		1.025	N/A		0.200	G_DRY				T
	Blank sp 1		2	N/A		0.200	G_DRY				T
	Blank sp 1		1.025	N/A		0.200	G_DRY				T
	Blank sp 1		1.025	N/A		0.200	G_DRY				T
	Blank sp 1		7	N/A		0.200	G_DRY				T
	Blank sp 2		2	N/A		0.200	G_DRY				T
	Blank sp 2		2	N/A		0.200	G_DRY				T
	Blank sp 2		2	N/A		0.200	G_DRY				T
	Blank sp 2		2	N/A		0.200	G_DRY				T
	Blank sp 2		2	N/A		0.200	G_DRY				T
	Blank sp 2		1.035	N/A		0.200	G_DRY				T
	Blank sp 2		2	N/A		0.200	G_DRY				T
	Blank sp 2		2	N/A		0.200	G_DRY				T
	Blank sp 2		2	N/A		0.200	G_DRY				T
	Blank sp 2		1.035	N/A		0.200	G_DRY				T
	Blank sp 2		20.699	N/A		0.200	G_DRY				T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
	Blank sp 2	MSL	LCS		8/8/2001	8/15/2001			Molybdenum	13939-06-5	M	L-42	106%	% recovery			1.6
	Blank sp 2	MSL	LCS		8/8/2001	8/31/2001			Silver	7440-22-4	M	L-44	100%	% recovery			0.36
	Blank sp 2	MSL	LCS		8/8/2001	8/15/2001			Cadmium	7440-43-9	M	L-42	98%	% recovery			0.710
	Blank sp 2	MSL	LCS		8/8/2001	8/15/2001			Antimony	7440-36-0	M	L-42	82%	% recovery			0.080
	Blank sp 2	MSL	LCS		8/8/2001	8/31/2001			Barium	7440-39-3	M	L-44	107%	% recovery			0.040
	Blank sp 2	MSL	LCS		8/8/2001	8/31/2001			Thallium	7440-28-0	M	L-42	107%	% recovery			0.080
	Blank sp 2	MSL	LCS		8/8/2001	8/15/2001			Lead	7439-92-1	M	L-42	105%	% recovery			0.400
	Blank sp 2	MSL	LCS		8/8/2001	8/15/2001			Mercury	7439-97-6	M	L-41	108%	% recovery			0.008
	Blank sp 3	MSL	LCS		8/8/2001	8/31/2001			Beryllium	7440-41-7	M	L-44	99%	% recovery			0.016
	Blank sp 3	MSL	LCS		8/8/2001	8/31/2001			Aluminum	7429-90-5	M	L-44	95%	% recovery			4.0
	Blank sp 3	MSL	LCS		8/8/2001	8/31/2001			Vanadium	7440-62-2	M	L-44	101%	% recovery			1.08
	Blank sp 3	MSL	LCS		8/8/2001	8/31/2001			Chromium	7440-47-3	M	L-44	102%	% recovery			1.0
	Blank sp 3	MSL	LCS		8/8/2001	8/31/2001			Manganese	7439-96-5	M	L-44	101%	% recovery			0.064
	Blank sp 3	MSL	LCS		8/8/2001	8/15/2001			Cobalt	7440-48-4	M	L-42	101%	% recovery			1.34
	Blank sp 3	MSL	LCS		8/8/2001	8/31/2001			Nickel	7440-02-0	M	L-44	98%	% recovery			3.1
	Blank sp 3	MSL	LCS		8/8/2001	8/31/2001			Copper	7440-50-8	M	L-44	101%	% recovery			0.39
	Blank sp 3	MSL	LCS		8/8/2001	8/31/2001			Zinc	7440-66-6	M	L-44	101%	% recovery			0.38
	Blank sp 3	MSL	LCS		8/8/2001	8/15/2001			Arsenic	7440-38-2	M	L-42	98%	% recovery			2.00
	Blank sp 3	MSL	LCS		8/8/2001	9/10/2001			Selenium	7782-49-2	M	MSL-I-30	87%	% recovery			1.06
	Blank sp 3	MSL	LCS		8/8/2001	8/15/2001			Molybdenum	13939-06-5	M	L-42	105%	% recovery			1.6
	Blank sp 3	MSL	LCS		8/8/2001	8/31/2001			Silver	7440-22-4	M	L-44	75%	% recovery			0.36
	Blank sp 3	MSL	LCS		8/8/2001	8/15/2001			Cadmium	7440-43-9	M	L-42	98%	% recovery			0.710
	Blank sp 3	MSL	LCS		8/8/2001	8/15/2001			Antimony	7440-36-0	M	L-42	100%	% recovery			0.080
	Blank sp 3	MSL	LCS		8/8/2001	8/31/2001			Barium	7440-39-3	M	L-44	104%	% recovery			0.040
	Blank sp 3	MSL	LCS		8/8/2001	8/15/2001			Thallium	7440-28-0	M	L-42	102%	% recovery			0.080
	Blank sp 3	MSL	LCS		8/8/2001	8/15/2001			Lead	7439-92-1	M	L-42	110%	% recovery			0.400
	Blank sp 3	MSL	LCS		8/8/2001	8/15/2001			Mercury	7439-97-6	M	L-41	101%	% recovery			0.008
	2704 R1	MSL	SRM		8/8/2001	8/31/2001			Aluminum	7429-90-5	M	L-44	58%	% difference	&		4.0
	2704 R1	MSL	SRM		8/8/2001	8/31/2001			Chromium	7440-47-3	M	L-44	28%	% difference	&		1.0
	2704 R1	MSL	SRM		8/8/2001	8/31/2001			Manganese	7439-96-5	M	L-44	5%	% difference			0.064
	2704 R1	MSL	SRM		8/8/2001	8/31/2001			Iron	7439-89-6	M	L-44	11%	% difference			1.1
	2704 R1	MSL	SRM		8/8/2001	8/15/2001			Cobalt	7440-48-4	M	L-42	6%	% difference			1.34
	2704 R1	MSL	SRM		8/8/2001	8/31/2001			Nickel	7440-02-0	M	L-44	9%	% difference			3.1
	2704 R1	MSL	SRM		8/8/2001	8/31/2001			Copper	7440-50-8	M	L-44	8%	% difference			0.39
	2704 R1	MSL	SRM		8/8/2001	8/31/2001			Zinc	7440-66-6	M	L-44	4%	% difference			0.38
	2704 R1	MSL	SRM		8/8/2001	8/15/2001			Arsenic	7440-38-2	M	L-42	10%	% difference			2.00
	2704 R1	MSL	SRM		8/8/2001	9/10/2001			Selenium	7782-49-2	M	MSL-I-30	36%	% difference	~		1.06
	2704 R1	MSL	SRM		8/8/2001	8/15/2001			Cadmium	7440-43-9	M	L-42	1%	% difference			0.710
	2704 R1	MSL	SRM		8/8/2001	8/15/2001			Antimony	7440-36-0	M	L-42	93%	% difference	&		0.080
	2704 R1	MSL	SRM		8/8/2001	8/15/2001			Thallium	7440-28-0	M	L-42	27%	% difference	~		0.080
	2704 R1	MSL	SRM		8/8/2001	8/15/2001			Lead	7439-92-1	M	L-42	2%	% difference			0.400
	2704 R1	MSL	SRM		8/8/2001	8/15/2001			Mercury	7439-97-6	M	L-41	17%	% difference			0.008
	2704 R2	MSL	SRM		8/8/2001	8/31/2001			Aluminum	7429-90-5	M	L-44	61%	% difference	&		4.0
	2704 R2	MSL	SRM		8/8/2001	8/31/2001			Chromium	7440-47-3	M	L-44	28%	% difference	&		1.0
	2704 R2	MSL	SRM		8/8/2001	8/31/2001			Manganese	7439-96-5	M	L-44	5%	% difference			0.064
	2704 R2	MSL	SRM		8/8/2001	8/31/2001			Iron	7439-89-6	M	L-44	10%	% difference			1.1
	2704 R2	MSL	SRM		8/8/2001	8/15/2001			Cobalt	7440-48-4	M	L-42	4%	% difference			1.34
	2704 R2	MSL	SRM		8/8/2001	8/31/2001			Nickel	7440-02-0	M	L-44	11%	% difference			3.1
	2704 R2	MSL	SRM		8/8/2001	8/31/2001			Copper	7440-50-8	M	L-44	4%	% difference			0.39
	2704 R2	MSL	SRM		8/8/2001	8/31/2001			Zinc	7440-66-6	M	L-44	3%	% difference			0.38
	2704 R2	MSL	SRM		8/8/2001	8/15/2001			Arsenic	7440-38-2	M	L-42	13%	% difference			2.00
	2704 R2	MSL	SRM		8/8/2001	9/10/2001			Selenium	7782-49-2	M	MSL-I-30	26%	% difference	~		1.06

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
	Blank sp 2		1.035	N/A		0.200	G_DRY				T
	Blank sp 2		2	N/A		0.200	G_DRY				T
	Blank sp 2		1.035	N/A		0.200	G_DRY				T
	Blank sp 2		1.02	N/A		0.200	G_DRY				T
	Blank sp 2		2	N/A		0.200	G_DRY				T
	Blank sp 2		1.02	N/A		0.200	G_DRY				T
	Blank sp 2		1.023	N/A		0.200	G_DRY				T
	Blank sp 2		7	N/A		0.200	G_DRY				T
	Blank sp 3		2	N/A		0.200	G_DRY				T
	Blank sp 3		2	N/A		0.200	G_DRY				T
	Blank sp 3		2	N/A		0.200	G_DRY				T
	Blank sp 3		2	N/A		0.200	G_DRY				T
	Blank sp 3		2	N/A		0.200	G_DRY				T
	Blank sp 3		1.03	N/A		0.200	G_DRY				T
	Blank sp 3		2	N/A		0.200	G_DRY				T
	Blank sp 3		2	N/A		0.200	G_DRY				T
	Blank sp 3		1.03	N/A		0.200	G_DRY				T
	Blank sp 3		20.6	N/A		0.200	G_DRY				T
	Blank sp 3		1.03	N/A		0.200	G_DRY				T
	Blank sp 3		2	N/A		0.200	G_DRY				T
	Blank sp 3		1.03	N/A		0.200	G_DRY				T
	Blank sp 3		0.99	N/A		0.200	G_DRY				T
	Blank sp 3		2	N/A		0.200	G_DRY				T
	Blank sp 3		0.99	N/A		0.200	G_DRY				T
	Blank sp 3		1.028	N/A		0.200	G_DRY				T
	Blank sp 3		7	N/A		0.200	G_DRY				T
	2704 R1		2	0		0.203	G_DRY				T
	2704 R1		2	0		0.203	G_DRY				T
	2704 R1		2	0		0.203	G_DRY				T
	2704 R1		2	0		0.203	G_DRY				T
	2704 R1		1.014	0		0.203	G_DRY				T
	2704 R1		2	0		0.203	G_DRY				T
	2704 R1		2	0		0.203	G_DRY				T
	2704 R1		2	0		0.203	G_DRY				T
	2704 R1		1.014	0		0.203	G_DRY				T
	2704 R1		10.294	0		0.203	G_DRY				T
	2704 R1		1.014	0		0.203	G_DRY				T
	2704 R1		1.014	0		0.203	G_DRY				T
	2704 R1		1.014	0		0.203	G_DRY				T
	2704 R1		1.014	0		0.203	G_DRY				T
	2704 R1		7	0		0.203	G_DRY				T
	2704 R2		2	0		0.198	G_DRY				T
	2704 R2		2	0		0.198	G_DRY				T
	2704 R2		2	0		0.198	G_DRY				T
	2704 R2		2	0		0.198	G_DRY				T
	2704 R2		1.039	0		0.198	G_DRY				T
	2704 R2		2	0		0.198	G_DRY				T
	2704 R2		2	0		0.198	G_DRY				T
	2704 R2		2	0		0.198	G_DRY				T
	2704 R2		1.039	0		0.198	G_DRY				T
	2704 R2		10.281	0		0.198	G_DRY				T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
	2704 R2	MSL	SRM		8/8/2001	8/15/2001			Cadmium	7440-43-9	M	L-42	0%	% difference			0.710
	2704 R2	MSL	SRM		8/8/2001	8/15/2001			Antimony	7440-36-0	M	L-42	92%	% difference	&		0.080
	2704 R2	MSL	SRM		8/8/2001	8/15/2001			Thallium	7440-28-0	M	L-42	22%	% difference			0.080
	2704 R2	MSL	SRM		8/8/2001	8/15/2001			Lead	7439-92-1	M	L-42	4%	% difference			0.400
	2704 R2	MSL	SRM		8/8/2001	8/15/2001			Mercury	7439-97-6	M	L-41	15%	% difference			0.008
	2704 R3	MSL	SRM		8/8/2001	8/31/2001			Aluminum	7429-90-5	M	L-44	58%	% difference	&		4.0
	2704 R3	MSL	SRM		8/8/2001	8/31/2001			Chromium	7440-47-3	M	L-44	28%	% difference	&		1.0
	2704 R3	MSL	SRM		8/8/2001	8/31/2001			Manganese	7439-96-5	M	L-44	6%	% difference			0.064
	2704 R3	MSL	SRM		8/8/2001	8/31/2001			Iron	7439-89-6	M	L-44	11%	% difference			1.1
	2704 R3	MSL	SRM		8/8/2001	8/15/2001			Cobalt	7440-48-4	M	L-42	9%	% difference			1.34
	2704 R3	MSL	SRM		8/8/2001	8/31/2001			Nickel	7440-02-0	M	L-44	9%	% difference			3.1
	2704 R3	MSL	SRM		8/8/2001	8/31/2001			Copper	7440-50-8	M	L-44	6%	% difference			0.39
	2704 R3	MSL	SRM		8/8/2001	8/31/2001			Zinc	7440-66-6	M	L-44	3%	% difference			0.38
	2704 R3	MSL	SRM		8/8/2001	8/15/2001			Arsenic	7440-38-2	M	L-42	17%	% difference			2.00
	2704 R3	MSL	SRM		8/8/2001	9/10/2001			Selenium	7782-49-2	M	MSL-I-30	25%	% difference			1.06
	2704 R3	MSL	SRM		8/8/2001	8/15/2001			Cadmium	7440-43-9	M	L-42	2%	% difference			0.710
	2704 R3	MSL	SRM		8/8/2001	8/15/2001			Antimony	7440-36-0	M	L-42	91%	% difference	&		0.080
	2704 R3	MSL	SRM		8/8/2001	8/15/2001			Thallium	7440-28-0	M	L-42	24%	% difference			0.080
	2704 R3	MSL	SRM		8/8/2001	8/15/2001			Lead	7439-92-1	M	L-42	6%	% difference			0.400
	2704 R3	MSL	SRM		8/8/2001	8/15/2001			Mercury	7439-97-6	M	L-41	14%	% difference			0.008
	2711 R1	MSL	SRM		8/8/2001	8/31/2001			Aluminum	7429-90-5	M	L-44	61%	% difference	&		4.0
	2711 R1	MSL	SRM		8/8/2001	8/31/2001			Vanadium	7440-62-2	M	L-44	22%	% difference			1.08
	2711 R1	MSL	SRM		8/8/2001	8/31/2001			Manganese	7439-96-5	M	L-44	14%	% difference			0.064
	2711 R1	MSL	SRM		8/8/2001	8/31/2001			Iron	7439-89-6	M	L-44	12%	% difference			1.1
	2711 R1	MSL	SRM		8/8/2001	8/15/2001			Cobalt	7440-48-4	M	L-42	10%	% difference			1.34
	2711 R1	MSL	SRM		8/8/2001	8/31/2001			Nickel	7440-02-0	M	L-44	9%	% difference			3.1
	2711 R1	MSL	SRM		8/8/2001	8/31/2001			Copper	7440-50-8	M	L-44	4%	% difference			0.39
	2711 R1	MSL	SRM		8/8/2001	8/31/2001			Zinc	7440-66-6	M	L-44	7%	% difference			0.38
	2711 R1	MSL	SRM		8/8/2001	8/15/2001			Arsenic	7440-38-2	M	L-42	5%	% difference			2.00
	2711 R1	MSL	SRM		8/8/2001	8/15/2001			Molybdenum	13939-06-5	M	L-42	28%	% difference			1.6
	2711 R1	MSL	SRM		8/8/2001	8/31/2001			Silver	7440-22-4	M	L-44	2%	% difference			0.36
	2711 R1	MSL	SRM		8/8/2001	8/15/2001			Cadmium	7440-43-9	M	L-42	8%	% difference			0.710
	2711 R1	MSL	SRM		8/8/2001	8/15/2001			Antimony	7440-36-0	M	L-42	94%	% difference	&		0.080
	2711 R1	MSL	SRM		8/8/2001	8/31/2001			Barium	7440-39-3	M	L-44	25%	% difference			0.040
	2711 R1	MSL	SRM		8/8/2001	8/15/2001			Thallium	7440-28-0	M	L-42	2%	% difference			0.080
	2711 R1	MSL	SRM		8/8/2001	8/15/2001			Lead	7439-92-1	M	L-42	11%	% difference			0.400
	2711 R1	MSL	SRM		8/8/2001	8/15/2001			Mercury	7439-97-6	M	L-41	17%	% difference			0.008
	2711 R2	MSL	SRM		8/8/2001	8/31/2001			Aluminum	7429-90-5	M	L-44	60%	% difference	&		4.0
	2711 R2	MSL	SRM		8/8/2001	8/31/2001			Vanadium	7440-62-2	M	L-44	22%	% difference			1.08
	2711 R2	MSL	SRM		8/8/2001	8/31/2001			Manganese	7439-96-5	M	L-44	15%	% difference			0.064
	2711 R2	MSL	SRM		8/8/2001	8/31/2001			Iron	7439-89-6	M	L-44	12%	% difference			1.1
	2711 R2	MSL	SRM		8/8/2001	8/15/2001			Cobalt	7440-48-4	M	L-42	13%	% difference			1.34
	2711 R2	MSL	SRM		8/8/2001	8/31/2001			Nickel	7440-02-0	M	L-44	4%	% difference			3.1
	2711 R2	MSL	SRM		8/8/2001	8/31/2001			Copper	7440-50-8	M	L-44	5%	% difference			0.39
	2711 R2	MSL	SRM		8/8/2001	8/31/2001			Zinc	7440-66-6	M	L-44	7%	% difference			0.38
	2711 R2	MSL	SRM		8/8/2001	8/15/2001			Arsenic	7440-38-2	M	L-42	8%	% difference			2.00
	2711 R2	MSL	SRM		8/8/2001	8/15/2001			Molybdenum	13939-06-5	M	L-42	31%	% difference	~		1.6
	2711 R2	MSL	SRM		8/8/2001	8/31/2001			Silver	7440-22-4	M	L-44	6%	% difference			0.36
	2711 R2	MSL	SRM		8/8/2001	8/15/2001			Cadmium	7440-43-9	M	L-42	9%	% difference			0.710
	2711 R2	MSL	SRM		8/8/2001	8/15/2001			Antimony	7440-36-0	M	L-42	94%	% difference	&		0.080
	2711 R2	MSL	SRM		8/8/2001	8/31/2001			Barium	7440-39-3	M	L-44	24%	% difference			0.040
	2711 R2	MSL	SRM		8/8/2001	8/15/2001			Thallium	7440-28-0	M	L-42	2%	% difference			0.080

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
	2704 R2		1.039	0		0.198	G_DRY				T
	2704 R2		1.039	0		0.198	G_DRY				T
	2704 R2		1.039	0		0.198	G_DRY				T
	2704 R2		1.039	0		0.198	G_DRY				T
	2704 R2		7	0		0.198	G_DRY				T
	2704 R3		2	0		0.196	G_DRY				T
	2704 R3		2	0		0.196	G_DRY				T
	2704 R3		2	0		0.196	G_DRY				T
	2704 R3		2	0		0.196	G_DRY				T
	2704 R3		1.046	0		0.196	G_DRY				T
	2704 R3		2	0		0.196	G_DRY				T
	2704 R3		2	0		0.196	G_DRY				T
	2704 R3		2	0		0.196	G_DRY				T
	2704 R3		1.046	0		0.196	G_DRY				T
	2704 R3		10.25	0		0.196	G_DRY				T
	2704 R3		1.046	0		0.196	G_DRY				T
	2704 R3		1.046	0		0.196	G_DRY				T
	2704 R3		1.046	0		0.196	G_DRY				T
	2704 R3		1.046	0		0.196	G_DRY				T
	2704 R3		7	0		0.196	G_DRY				T
	2711 R1		2	0		0.195	G_DRY				T
	2711 R1		2	0		0.195	G_DRY				T
	2711 R1		2	0		0.195	G_DRY				T
	2711 R1		2	0		0.195	G_DRY				T
	2711 R1		1.063	0		0.195	G_DRY				T
	2711 R1		2	0		0.195	G_DRY				T
	2711 R1		2	0		0.195	G_DRY				T
	2711 R1		2	0		0.195	G_DRY				T
	2711 R1		1.063	0		0.195	G_DRY				T
	2711 R1		1.063	0		0.195	G_DRY				T
	2711 R1		2	0		0.195	G_DRY				T
	2711 R1		1.063	0		0.195	G_DRY				T
	2711 R1		1.063	0		0.195	G_DRY				T
	2711 R1		2	0		0.195	G_DRY				T
	2711 R1		1.063	0		0.195	G_DRY				T
	2711 R1		1.063	0		0.195	G_DRY				T
	2711 R1		13	0		0.195	G_DRY				T
	2711 R2		2	0		0.198	G_DRY				T
	2711 R2		2	0		0.198	G_DRY				T
	2711 R2		2	0		0.198	G_DRY				T
	2711 R2		2	0		0.198	G_DRY				T
	2711 R2		1.041	0		0.198	G_DRY				T
	2711 R2		2	0		0.198	G_DRY				T
	2711 R2		2	0		0.198	G_DRY				T
	2711 R2		2	0		0.198	G_DRY				T
	2711 R2		1.041	0		0.198	G_DRY				T
	2711 R2		1.041	0		0.198	G_DRY				T
	2711 R2		2	0		0.198	G_DRY				T
	2711 R2		1.041	0		0.198	G_DRY				T
	2711 R2		1.041	0		0.198	G_DRY				T
	2711 R2		2	0		0.198	G_DRY				T
	2711 R2		1.041	0		0.198	G_DRY				T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
	2711 R2	MSL	SRM		8/8/2001	8/15/2001			Lead	7439-92-1	M	L-42	8%	% difference			0.400
	2711 R2	MSL	SRM		8/8/2001	8/15/2001			Mercury	7439-97-6	M	L-41	14%	% difference			0.008
	2711 R3	MSL	SRM		8/8/2001	8/31/2001			Aluminum	7429-90-5	M	L-44	59%	% difference	&		4.0
	2711 R3	MSL	SRM		8/8/2001	8/31/2001			Vanadium	7440-62-2	M	L-44	22%	% difference			1.08
	2711 R3	MSL	SRM		8/8/2001	8/31/2001			Manganese	7439-96-5	M	L-44	15%	% difference			0.064
	2711 R3	MSL	SRM		8/8/2001	8/31/2001			Iron	7439-89-6	M	L-44	12%	% difference			1.1
	2711 R3	MSL	SRM		8/8/2001	8/15/2001			Cobalt	7440-48-4	M	L-42	13%	% difference			1.34
	2711 R3	MSL	SRM		8/8/2001	8/31/2001			Nickel	7440-02-0	M	L-44	9%	% difference			3.1
	2711 R3	MSL	SRM		8/8/2001	8/31/2001			Copper	7440-50-8	M	L-44	5%	% difference			0.39
	2711 R3	MSL	SRM		8/8/2001	8/31/2001			Zinc	7440-66-6	M	L-44	6%	% difference			0.38
	2711 R3	MSL	SRM		8/8/2001	8/15/2001			Arsenic	7440-38-2	M	L-42	8%	% difference			2.00
	2711 R3	MSL	SRM		8/8/2001	8/15/2001			Molybdenum	13939-06-5	M	L-42	27%	% difference	~		1.6
	2711 R3	MSL	SRM		8/8/2001	8/31/2001			Silver	7440-22-4	M	L-44	3%	% difference			0.36
	2711 R3	MSL	SRM		8/8/2001	8/15/2001			Cadmium	7440-43-9	M	L-42	9%	% difference			0.710
	2711 R3	MSL	SRM		8/8/2001	8/15/2001			Antimony	7440-36-0	M	L-42	94%	% difference	&		0.080
	2711 R3	MSL	SRM		8/8/2001	8/31/2001			Barium	7440-39-3	M	L-44	23%	% difference			0.040
	2711 R3	MSL	SRM		8/8/2001	8/15/2001			Thallium	7440-28-0	M	L-42	2%	% difference			0.080
	2711 R3	MSL	SRM		8/8/2001	8/15/2001			Lead	7439-92-1	M	L-42	7%	% difference			0.400
	2711 R3	MSL	SRM		8/8/2001	8/15/2001			Mercury	7439-97-6	M	L-41	10%	% difference			0.008
	IAEA-356	MSL	SRM		8/16/2001	8/17/2001			Methyl mercury	22967-92-6	M	L-40	37%	% difference	~		0.0002
	NIST 1944 R2	MSL	SRM		8/16/2001	8/17/2001			Methyl mercury	22967-92-6	M	L-40	37%	% difference	~		0.0002
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	93%	% recovery			0.016
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	94%	% recovery			1.08
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	78%	% recovery			1.0
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	0%	% recovery	~		0.064
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	97%	% recovery			1.34
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	101%	% recovery			3.1
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	94%	% recovery			0.39
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	49%	% recovery	~		0.38
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	105%	% recovery			2.00
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	87%	% recovery			1.06
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	89%	% recovery			1.6
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	0%	% recovery	~		0.36
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	96%	% recovery			0.710
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0%	% recovery	&		0.080
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	0%	% recovery	~		0.040
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	101%	% recovery			0.080
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	35%	% recovery	~		0.400
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	96%	% recovery			0.008
RWR-FP-5002-0000-01	1678*193	MSL	MS	7/10/2001	8/8/2001	8/15/2001		8	Methyl mercury	22967-92-6	M	L-40	82%	% recovery			0.0002
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	101%	% recovery			0.016
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	94%	% recovery			1.08
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	85%	% recovery			1.0
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	0%	% recovery	~		0.064
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	101%	% recovery			1.34
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	98%	% recovery			3.1
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	87%	% recovery			0.39
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	26%	% recovery	~		0.38
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	104%	% recovery			2.00
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	87%	% recovery			1.06
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	86%	% recovery			1.6
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	0%	% recovery	~		0.36

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
	2711 R2		1.041	0		0.198	G_DRY				T
	2711 R2		13	0		0.198	G_DRY				T
	2711 R3		2	0		0.201	G_DRY				T
	2711 R3		2	0		0.201	G_DRY				T
	2711 R3		2	0		0.201	G_DRY				T
	2711 R3		2	0		0.201	G_DRY				T
	2711 R3		1.022	0		0.201	G_DRY				T
	2711 R3		2	0		0.201	G_DRY				T
	2711 R3		2	0		0.201	G_DRY				T
	2711 R3		2	0		0.201	G_DRY				T
	2711 R3		1.022	0		0.201	G_DRY				T
	2711 R3		1.022	0		0.201	G_DRY				T
	2711 R3		2	0		0.201	G_DRY				T
	2711 R3		1.022	0		0.201	G_DRY				T
	2711 R3		1.022	0		0.201	G_DRY				T
	2711 R3		2	0		0.201	G_DRY				T
	2711 R3		1.022	0		0.201	G_DRY				T
	2711 R3		1.022	0		0.201	G_DRY				T
	2711 R3		13	0		0.201	G_DRY				T
	IAEA-356		1	0		0.184	G_DRY				T
	NIST 1944 R2		1	0		0.108	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.200	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.205	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.205	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.205	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1.00	48.7		0.205	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.205	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.205	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.205	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1.035	48.7		0.200	G_DRY				T
RWR-FP-5002-0000-01	1678*193		20.705	48.7		0.200	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1.00	48.7		0.205	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.201	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1.035	48.7		0.200	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1.02	48.7		0.201	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.205	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1.02	48.7		0.201	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1.00	48.7		0.205	G_DRY				T
RWR-FP-5002-0000-01	1678*193		7	48.7		0.201	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1	48.7		0.493	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.202	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.198	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.198	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.198	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1.04	48.7		0.198	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.198	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.198	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.198	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1.021	48.7		0.202	G_DRY				T
RWR-FP-5002-0000-01	1678*193		20.705	48.7		0.202	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1.04	48.7		0.198	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.197	G_DRY				T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	94%	% recovery			0.710
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	1%	% recovery	&		0.080
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	0%	% recovery	~		0.040
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	106%	% recovery			0.080
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	4%	% recovery	~		0.400
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	96%	% recovery			0.008
RWR-FP-5002-0000-01	1678*193	MSL	MSD	7/10/2001	8/8/2001	8/15/2001		8	Methyl mercury	22967-92-6	M	L-40	106%	% recovery			0.0002
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Beryllium	7440-41-7	M	L-44	2.14	µg/g - dry wt			0.016
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Aluminum	7429-90-5	M	L-44	15170	µg/g - dry wt			4.0
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Vanadium	7440-62-2	M	L-44	48.3	µg/g - dry wt			1.08
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Chromium	7440-47-3	M	L-44	95.7	µg/g - dry wt			1.0
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Manganese	7439-96-5	M	L-44	1542	µg/g - dry wt			0.064
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Iron	7439-89-6	M	L-44	27963	µg/g - dry wt			1 1
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Cobalt	7440-48-4	M	L-42	15.8	µg/g - dry wt			1.34
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Nickel	7440-02-0	M	L-44	32.9	µg/g - dry wt			3.1
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Copper	7440-50-8	M	L-44	101	µg/g - dry wt			0.39
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Zinc	7440-66-6	M	L-44	376	µg/g - dry wt			0.38
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Arsenic	7440-38-2	M	L-42	5.54	µg/g - dry wt			2.00
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	9/10/2001		8	Selenium	7782-49-2	M	MSL-I-30	0.622	µg/g - dry wt	J		1.06
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Molybdenum	13939-06-5	M	L-42	15.2	µg/g - dry wt			1.6
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Silver	7440-22-4	M	L-44	0.848	µg/g - dry wt			0.36
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Cadmium	7440-43-9	M	L-42	2.11	µg/g - dry wt			0.710
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Antimony	7440-36-0	M	L-42	0.239	µg/g - dry wt			0.080
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/31/2001		8	Barium	7440-39-3	M	L-44	173	µg/g - dry wt			0.040
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Thallium	7440-28-0	M	L-42	0.388	µg/g - dry wt			0.080
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Lead	7439-92-1	M	L-42	268	µg/g - dry wt			0.400
CMS-DU-072001-DUP	1678*201	MSL	DUPLICATE	7/20/2001	8/8/2001	8/15/2001		8	Mercury	7439-97-6	M	L-41	0.371	µg/g - dry wt			0.008
RWR-FP-5002-0000-01	1678*193	MSL	DUPLICATE	7/20/2001	8/16/2001	8/17/2001		8	Methyl mercury	22967-92-6	M	L-40	0.000756	µg/g - dry wt			0.0002

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
RWR-FP-5002-0000-01	1678*193		1.021	48.7		0.202	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1.044	48.7		0.197	G_DRY				T
RWR-FP-5002-0000-01	1678*193		2	48.7		0.198	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1.044	48.7		0.197	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1.04	48.7		0.198	G_DRY				T
RWR-FP-5002-0000-01	1678*193		7	48.7		0.197	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1	48.7		0.502	G_DRY				T
CMS-DU-072001-DUP	1678*201		2	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		2	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		2	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		2	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		2	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		2	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		1.022	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		2	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		2	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		2	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		1.022	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		10.271	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		1.022	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		2	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		1.022	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		1.022	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		2	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		1.022	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		1.022	56.3		0.201	G_DRY				T
CMS-DU-072001-DUP	1678*201		7	56.3		0.201	G_DRY				T
RWR-FP-5002-0000-01	1678*193		1	48.7		0.493	G_DRY				T

Section 6
SVOC (phenols and phthalates) Results

QA/QC Narratives
Soil and QC Results

QA/QC Narratives

STL Baltimore
ANALYTICAL NARRATIVE

Client: **Battelle Duxbury Operations**
Site: **Centerdale**
Project number: **G487002-22B1**

STL Baltimore Report: **200967**
Laboratory Project Manager: **Tara E. Martz**
Report Date: **28 August 2001**

This report contains the results of the analysis of twelve soil samples collected on 16, 17, 18, 19 and 20 July 2001 in support of the referenced project.

SAMPLE RECEIPT

The samples arrived with custody seals intact by Federal Express at STL Baltimore on 21 July 2001. Upon receipt, the samples were inspected and compared with the chain-of-custody records. The samples were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis.

* ID should be CMS-FP-4003-0000-01 (FP for floodplain soil) JDahlen 11/7/01

Client Sample Designation	ST Lab Number
* CMS-FB-4003-0000-01	200967-1
LPX-FP-4007-0000-01	200967-2
LPX-FP-4006-0000-01	200967-3
RWR-FP-5002-0000-01	200967-4
LPX-FP-4004-0000-01	200967-5
RWR-FP-5004-0000-01	200967-6
CMS-FP-4001-0000-01	200967-7
CMS-FP-4002-0000-01	200967-8
RWR-FP-5001-0000-01	200967-9
RWR-FP-5003-0000-01	200967-10
CMS-FP-4005-0000-01	200967-11
CMS-DUP-072001	200967-12

Following this narrative section are glossaries of data qualifiers (Table 1), codes associated with manual integration of chromatographic peaks (Table 2), and the original chain-of-custody records. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

ANALYTICAL METHODS

The analytical methods used by the laboratory are referenced by the STL Baltimore Method SOP which is formatted as STL-M-XXXXX-Y, where XXXXX is the reference method and Y is the SOP revision number. For example, analyses performed using EPA SW846 Method 8260B are identified as STL-M-8260B-3 where 3 is the laboratory SOP revision number. General Chemistry methods which are a consolidation of several reference methods, e.g. STL-M-CN for cyanide determinations, also include the identification of the specific reference method used for the analyses.

STL Baltimore
ANALYTICAL NARRATIVE

Client: **Battelle Duxbury Operations**
Site: **Centerdale**
Project number: **G487002-22B1**

STL Baltimore Report: **200967**
Laboratory Project Manager: **Tara E. Martz**
Report Date: **28 August 2001**

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

SEMIVOLATILES by GC/MS – SOIL (STL200967: 1-12)

Sample Chronology: Twelve samples and associated quality control were extracted on 26 July 2001 following the procedures specified in STL-M-3540C-2. The resultant extracts were analyzed on 16 and 20-21 August 2001 for the client specific list of analytes following the procedures in STL-M-8270C-2. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

STL Baltimore
ANALYTICAL NARRATIVE

Client: **Battelle Duxbury Operations**
Site: **Centerdale**
Project number: **G487002-22B1**

STL Baltimore Report: **200967**
Laboratory Project Manager: **Tara E. Martz**
Report Date: **28 August 2001**

Samples CMS-FP-4003-0000-01, RWR-FP-5002-01/MS/MSD, LPX-FP-4004-01, RWR-FP-5004-0000-01, CMS-FP-4001-0000-01, CMS-FP-4005-0000-01 and CMS-DU-072001/RE had the recovery for one or more surrogates outside laboratory QC limits. All surrogates were within QC limits for the method blank and LCS, indicating acceptable method performance.

The MS and MSD performed on sample RWR-FP-5002-0000-01, had the recovery for 2,4-dinitrophenol(10%, 3%), below the lower laboratory QC limit of 27%. All recoveries were within QC limits for the LCS, indicating acceptable method performance.

Samples RWR-FP-5004-0000-01, CMS-FP-4002-0000-01, RWR-FP-5001-0000-01, RWR-FP-5003-0000-01, CMS-FP-4005-0000-01 and CMS-DU-072001 had one or more internal standard areas below the lower QC limit of 50% of the daily referenced standard. Sample CMS-DU-072001 was re-analyzed with similar results.

CERTIFICATION OF RESULTS

1. STL Baltimore certifies that the reported results relate only to those samples tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

2. STL Baltimore has been accredited to be in compliance with these standards and the reported test results meet all the requirements of the National Environmental Laboratory Accreditation Conference (NELAC) standards. NELAP Primary Accrediting Authority laboratory IDs, #10692 (NYDOH) and #E87032 (FLDOH)

3. Release of the data contained in this report has been authorized by the Laboratory Project Manager as verified by the following signature.

Tara E. Martz 28 August 2001
Tara E. Martz, Laboratory Project Manager

STL Baltimore
ANALYTICAL NARRATIVE

Client: **Battelle Duxbury Operations**	STL Baltimore Report: **200964**
Site: **Centredale**	Laboratory Project Manager: **Tara E. Martz**
Project number: **Centredale**	Report Date: **30 August 2001**

This report contains the results of the analysis of two soil and two water samples collected on 16 July 2001 in support of the referenced project.

SAMPLE RECEIPT

The samples arrived with custody seals absent by Federal Express at STL Baltimore on 19 July 2001. Upon receipt, the samples were inspected and compared with the chain-of-custody records. The samples were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis.

(1) SVOC results for soil PE included in this report. Results for all other PE samples included with other Battelle data reports (water, sediment). DTDahlen 11/10/01.

Client Sample Designation	ST Lab Number
W5427 – water PE	200964-1
W5428 – sediment PE	200964-2
W5429 – soil PE (1)	200964-3
W5431 – water PE	200964-4

Following this narrative section are glossaries of data qualifiers (Table 1), codes associated with manual integration of chromatographic peaks (Table 2), and the original chain-of-custody records. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

ANALYTICAL METHODS

The analytical methods used by the laboratory are referenced by the STL Baltimore Method SOP which is formatted as STL-M-XXXXX-Y, where XXXXX is the reference method and Y is the SOP revision number. For example, analyses performed using EPA SW846 Method 8260B are identified as STL-M-8260B-3 where 3 is the laboratory SOP revision number. General Chemistry methods which are a consolidation of several reference methods, e.g. STL-M-CN for cyanide determinations, also include the identification of the specific reference method used for the analyses.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

STL Baltimore
ANALYTICAL NARRATIVE

Client: Battelle Duxbury Operations
Site: **Centerdale**
Project number: **G487002-22B1**

STL Baltimore Report: **200964** 64 11/2/01
Laboratory Project Manager: **Tara E. Martz**
Report Date: **30 August 2001**

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - WATER (STL200964-04)

Sample Chronology: One sample and associated quality control were analyzed on 30 July 2001 for the client specified list of analytes following the procedures specified in STL-M-5030B-1/STL-M-8260B-4. All holding times were met.

The batch MS/MSD, analyzed on 30 July 2001, was performed on other client's sample. The results for these QC analyses have not been included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exceptions:

The batch LCS, V01GLCSE16, had numerous recoveries outside of the project specified QC limits.

Sample Performance: All quality control criteria were met for the reported samples.

SEMIVOLATILES by GC/MS - WATER (STL200964: 2, 3)

Sample Chronology: Two samples and associated quality control were extracted on 26 July 2001 following the procedures specified in STL-M-3540C-2. The resultant extracts were analyzed on

STL Baltimore
ANALYTICAL NARRATIVE

Client: **Battelle Duxbury Operations**
Site: **Centerdale**
Project number: **G487002-22B1**

STL Baltimore Report: **200964** 11/2/01
Laboratory Project Manager: **Tara E. Martz**
Report Date: **30 August 2001**

09, 12 August 2001 for the project specific list of analytes following the procedures in STL-M-8270C-2. All holding times were met.

The samples were re-analyzed at 2X dilutions to bring the extract concentrations of the target analyte, phenol, within the instrument calibration range.

The batch MS/MSD was performed on another client's sample.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

SEMIVOLATILES by GC/MS - WATER (STL200964: 1)

Sample Chronology: One sample and associated quality control were extracted on 20 July 2001 following the procedures specified in STL-M-3520C-0. The resultant extracts were analyzed on 26-27 July 2001 for the project specific list of analytes following the procedures in STL-M-8270C-2. All holding times were met.

The batch MS/MSD was performed on another Batelle/Centredale sample, RAB-SW-5004-01. All data associated with these QC analyses were included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exceptions:

The batch LCS had the recovery for the control analyte, pentachlorophenol (23%), below the lower laboratory QC limit of 68%. This LCS also had no recovery of 2,4-dinitrophenol. However, the recoveries for these analytes in the batch MS and MSD, were within QC limits.

Sample Performance: All quality control criteria were met for the reported sample.

CERTIFICATION OF RESULTS

1. STL Baltimore certifies that the reported results relate only to those samples tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

STL Baltimore
ANALYTICAL NARRATIVE

Client: **Battelle Duxbury Operations**	STL Baltimore Report: **200905**
Site: **Centerdale**	Laboratory Project Manager: **Tara E. Martz**
Project number: **G487002-22B1**	Report Date: **30 August 2001**

2. STL Baltimore has been accredited to be in compliance with these standards and the reported test results meet all the requirements of the National Environmental Laboratory Accreditation Conference (NELAC) standards. NELAP Primary Accrediting Authority laboratory IDs, #10692 (NYDOH) and #E87032 (FLDOH).

3. Release of the data contained in this report has been authorized by the Laboratory Project Manager as verified by the following signature.

30 August 2001

Tara E. Martz, Laboratory Project Manager

Soil and QC Results

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/24/01	7/24/01		200967	% Moisture		WET	ASTM D2216	41.1	%			0.1
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/24/01	7/24/01		200967	% Solids		WET	ASTM D2216	58.9	%			0.1
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Phenol	108-95-2	OS	SW846 8270C	560	ug/Kg - dry wt	U		560
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	560	ug/Kg - dry wt	U		560
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	2900	ug/Kg - dry wt	U		2900
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	560	ug/Kg - dry wt	U		560
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	2900	ug/Kg - dry wt	U		2900
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	2900	ug/Kg - dry wt	U		2900
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	2900	ug/Kg - dry wt	U		2900
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Carbazole	86-74-8	OS	SW846 8270C	640	ug/Kg - dry wt			560
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	72	ug/Kg - dry wt	J		560
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	290	ug/Kg - dry wt	J		560
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	1100	ug/Kg - dry wt			560
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	560	ug/Kg - dry wt	U		560
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	46	%RECOVERY			
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	59	%RECOVERY			
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	34	%RECOVERY			
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	50	%RECOVERY			
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	41	%RECOVERY			
CMS-FP-4003-0000-01	200967-001	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	67	%RECOVERY			
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/24/01	7/24/01		200967	% Moisture		WET	ASTM D2216	43.4	%			0.1
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/24/01	7/24/01		200967	% Solids		WET	ASTM D2216	56.6	%			0.1
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Phenol	108-95-2	OS	SW846 8270C	580	ug/Kg - dry wt	U		580
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	580	ug/Kg - dry wt	U		580
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	3000	ug/Kg - dry wt	U		3000
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	580	ug/Kg - dry wt	U		580
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	3000	ug/Kg - dry wt	U		3000
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	3000	ug/Kg - dry wt	U		3000
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	3000	ug/Kg - dry wt	U		3000
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Carbazole	86-74-8	OS	SW846 8270C	450	ug/Kg - dry wt	J		580
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	89	ug/Kg - dry wt	J		580
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	210	ug/Kg - dry wt	J		580
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	1600	ug/Kg - dry wt			580
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	97	ug/Kg - dry wt	J		580
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	69	%RECOVERY			
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	75	%RECOVERY			
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	44	%RECOVERY			
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	64	%RECOVERY			
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	53	%RECOVERY			
LPX-FP-4007-0000-01	200967-002	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	94	%RECOVERY			
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/24/01	7/24/01		200967	% Moisture		WET	ASTM D2216	35.3	%			0.1
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/24/01	7/24/01		200967	% Solids		WET	ASTM D2216	64.7	%			0.1
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Phenol	108-95-2	OS	SW846 8270C	510	ug/Kg - dry wt	U		510
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	510	ug/Kg - dry wt	U		510
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	2600	ug/Kg - dry wt	U		2600
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	510	ug/Kg - dry wt	U		510
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	2600	ug/Kg - dry wt	U		2600
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	2600	ug/Kg - dry wt	U		2600
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	2600	ug/Kg - dry wt	U		2600
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Carbazole	86-74-8	OS	SW846 8270C	110	ug/Kg - dry wt	J		510
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	850	ug/Kg - dry wt			510
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	160	ug/Kg - dry wt	J		510
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	450	ug/Kg - dry wt	J		510
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	510	ug/Kg - dry wt	U		510
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	80	%RECOVERY			
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	80	%RECOVERY			
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	47	%RECOVERY			
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	68	%RECOVERY			
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	60	%RECOVERY			
LPX-FP-4006-0000-01	200967-003	STLB	NORMAL	7/18/01	7/26/01	8/16/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	96	%RECOVERY			
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/24/01	7/24/01		200967	% Moisture		WET	ASTM D2216	48.5	%			0.1
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/24/01	7/24/01		200967	% Solids		WET	ASTM D2216	51.5	%			0.1
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	Phenol	108-95-2	OS	SW846 8270C	640	ug/Kg - dry wt	U		640
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	640	ug/Kg - dry wt	U		640
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	3300	ug/Kg - dry wt	U		3300
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	640	ug/Kg - dry wt	U		640
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	3300	ug/Kg - dry wt	U		3300
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	3300	ug/Kg - dry wt	U		3300
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	3300	ug/Kg - dry wt	U		3300

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE-UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
CMS-FP-4003-0000-01	200967-001		1	41.1				41.1			T
CMS-FP-4003-0000-01	200967-001		1	41.1				58.9			T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	560	UJ		T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	560	UJ		T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	2900	UJ		T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	560	UJ		T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	2900	UJ		T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	2900	UJ		T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	2900	UJ		T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	640	J		T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	72	J		T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	290	J		T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	1100			T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	560	U		T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	46			T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	59			T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	34			T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	50			T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	41			T
CMS-FP-4003-0000-01	200967-001		1	41.1		30	G_WET	67			T
LPX-FP-4007-0000-01	200967-002		1	43.39				43.4			T
LPX-FP-4007-0000-01	200967-002		1	43.39				56.6			T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	580	U		T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	580	U		T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	3000	U		T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	580	U		T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	3000	UJ		T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	3000	U		T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	3000	U		T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	450	J		T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	89	J		T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	210	J		T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	1600			T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	97	J		T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	69			T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	75			T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	44			T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	64			T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	53			T
LPX-FP-4007-0000-01	200967-002		1	43.39		30.1	G_WET	94			T
LPX-FP-4006-0000-01	200967-003		1	35.29				35.3			T
LPX-FP-4006-0000-01	200967-003		1	35.29				64.7			T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	510	U		T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	510	U		T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	2600	U		T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	510	U		T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	2600	UJ		T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	2600	U		T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	2600	U		T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	110	J		T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	850	J		T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	160	J		T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	450	J		T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	510	U		T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	80			T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	80			T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	47			T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	68			T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	60			T
LPX-FP-4006-0000-01	200967-003		1	35.29		30	G_WET	96			T
RWR-FP-5002-0000-01	200967-004		1	48.5				48.5			T
RWR-FP-5002-0000-01	200967-004		1	48.5				51.5			T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	640	U		T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	640	U		T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	3300	U		T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	640	U		T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	R			T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	3300	U		T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	3300	U		T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	Carbazole	86-74-8	OS	SW846 8270C	860	ug/Kg - dry wt			640
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	74	ug/Kg - dry wt	J		640
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	370	ug/Kg - dry wt	J		640
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	1600	ug/Kg - dry wt			640
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	83	ug/Kg - dry wt	J		640
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	74	%RECOVERY			
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	88	%RECOVERY			
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	52	%RECOVERY			
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	78	%RECOVERY			
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	67	%RECOVERY			
RWR-FP-5002-0000-01	200967-004	STLB	NORMAL	7/16/01	7/26/01	8/16/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	114	%RECOVERY			
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Moisture		WET	ASTM D2216	35.6	%			0.1
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Solids		WET	ASTM D2216	64.4	%			0.1
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Phenol	108-95-2	OS	SW846 8270C	510	ug/Kg - dry wt	U		510
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	510	ug/Kg - dry wt	U		510
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	2600	ug/Kg - dry wt	U		2600
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	510	ug/Kg - dry wt	U		510
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	2600	ug/Kg - dry wt	U		2600
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	2600	ug/Kg - dry wt	U		2600
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	2600	ug/Kg - dry wt	U		2600
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Carbazole	86-74-8	OS	SW846 8270C	72	ug/Kg - dry wt	J		510
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	510	ug/Kg - dry wt	U		510
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	70	ug/Kg - dry wt	J		510
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	310	ug/Kg - dry wt	J		510
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	510	ug/Kg - dry wt	U		510
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	69	%RECOVERY			
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	74	%RECOVERY			
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	40	%RECOVERY			
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	63	%RECOVERY			
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	55	%RECOVERY			
LPX-FP-4004-0000-01	200967-005	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	110	%RECOVERY			
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Moisture		WET	ASTM D2216	47.8	%			0.1
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Solids		WET	ASTM D2216	52.2	%			0.1
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Phenol	108-95-2	OS	SW846 8270C	630	ug/Kg - dry wt	U		630
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	630	ug/Kg - dry wt	U		630
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	3200	ug/Kg - dry wt	U		3200
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	630	ug/Kg - dry wt	U		630
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	3200	ug/Kg - dry wt	U		3200
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	3200	ug/Kg - dry wt	U		3200
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	3200	ug/Kg - dry wt	U		3200
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Carbazole	86-74-8	OS	SW846 8270C	590	ug/Kg - dry wt	J		630
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	170	ug/Kg - dry wt	J		630
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	580	ug/Kg - dry wt	J		630
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	1700	ug/Kg - dry wt			630
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	630	ug/Kg - dry wt	U		630
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	67	%RECOVERY			
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	85	%RECOVERY			
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	50	%RECOVERY			
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	74	%RECOVERY			
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	63	%RECOVERY			
RWR-FP-5004-0000-01	200967-006	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	119	%RECOVERY			
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Moisture		WET	ASTM D2216	50.7	%			0.1
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Solids		WET	ASTM D2216	49.3	%			0.1
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Phenol	108-95-2	OS	SW846 8270C	670	ug/Kg - dry wt	U		670
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	670	ug/Kg - dry wt	U		670
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	3400	ug/Kg - dry wt	U		3400
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	670	ug/Kg - dry wt	U		670
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	3400	ug/Kg - dry wt	U		3400
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	3400	ug/Kg - dry wt	U		3400
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	3400	ug/Kg - dry wt	U		3400
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Carbazole	86-74-8	OS	SW846 8270C	980	ug/Kg - dry wt			670
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	77	ug/Kg - dry wt	J		670
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	280	ug/Kg - dry wt	J		670
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	1300	ug/Kg - dry wt			670
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	72	ug/Kg - dry wt	J		670
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	63	%RECOVERY			
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	74	%RECOVERY			
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	49	%RECOVERY			
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	71	%RECOVERY			

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE-UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	860	J		T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	74	J		T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	370	J		T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	1600			T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	83	J		T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	74			T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	88			T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	52			T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	78			T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	67			T
RWR-FP-5002-0000-01	200967-004		1	48.5		30	G_WET	114			T
LPX-FP-4004-0000-01	200967-005		1	35.59				35.6			T
LPX-FP-4004-0000-01	200967-005		1	35.59				64.4			T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	510	U		T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	510	U		T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	2600	U		T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	510	U		T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	2600	UJ		T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	2600	U		T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	2600	U		T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	72	J		T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	510	UJ		T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	70	J		T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	310	J		T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	510	U		T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	69			T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	74			T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	40			T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	63			T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	55			T
LPX-FP-4004-0000-01	200967-005		1	35.59		30.1	G_WET	110			T
RWR-FP-5004-0000-01	200967-006		1	47.79				47.8			T
RWR-FP-5004-0000-01	200967-006		1	47.79				52.2			T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	630	U		T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	630	U		T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	3200	U		T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	630	U		T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	3200	UJ		T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	3200	U		T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	3200	U		T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	590	J		T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	170	J		T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	580	J		T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	1700			T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	630	UJ		T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	67			T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	85			T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	50			T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	74			T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	63			T
RWR-FP-5004-0000-01	200967-006		1	47.79		30.1	G_WET	119			T
CMS-FP-4001-0000-01	200967-007		1	50.7				50.7			T
CMS-FP-4001-0000-01	200967-007		1	50.7				49.3			T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	670	U		T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	670	U		T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	3400	U		T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	670	U		T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	3400	UJ		T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	3400	U		T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	3400	U		T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	980	J		T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	77	J		T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	280	J		T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	1300			T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	72	J		T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	63			T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	74			T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	49			T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	71			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	61	%RECOVERY			
CMS-FP-4001-0000-01	200967-007	STLB	NORMAL	7/19/01	7/26/01	8/16/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	111	%RECOVERY			
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Moisture		WET	ASTM D2216	45.4	%			0.1
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Solids		WET	ASTM D2216	54.6	%			0.1
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Phenol	108-95-2	OS	SW846 8270C	600	ug/Kg - dry wt	U		600
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	600	ug/Kg - dry wt	U		600
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	3100	ug/Kg - dry wt	U		3100
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	600	ug/Kg - dry wt	U		600
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	3100	ug/Kg - dry wt	U		3100
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	3100	ug/Kg - dry wt	U		3100
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	3100	ug/Kg - dry wt	U		3100
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Carbazole	86-74-8	OS	SW846 8270C	520	ug/Kg - dry wt	J		600
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	71	ug/Kg - dry wt	J		600
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	370	ug/Kg - dry wt	J		600
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	1200	ug/Kg - dry wt			600
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	600	ug/Kg - dry wt	U		600
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	66	%RECOVERY			
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	76	%RECOVERY			
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	61	%RECOVERY			
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	78	%RECOVERY			
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	72	%RECOVERY			
CMS-FP-4002-0000-01	200967-008	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	100	%RECOVERY			
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Moisture		WET	ASTM D2216	67.6	%			0.1
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Solids		WET	ASTM D2216	32.4	%			0.1
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Phenol	108-95-2	OS	SW846 8270C	1000	ug/Kg - dry wt	U		1000
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	1000	ug/Kg - dry wt	U		1000
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	5200	ug/Kg - dry wt	U		5200
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	1000	ug/Kg - dry wt	U		1000
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	5200	ug/Kg - dry wt	U		5200
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	5200	ug/Kg - dry wt	U		5200
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	5200	ug/Kg - dry wt	U		5200
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Carbazole	86-74-8	OS	SW846 8270C	420	ug/Kg - dry wt	J		1000
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	150	ug/Kg - dry wt	J		1000
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	540	ug/Kg - dry wt	J		1000
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	1900	ug/Kg - dry wt			1000
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	1000	ug/Kg - dry wt	U		1000
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	67	%RECOVERY			
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	73	%RECOVERY			
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	50	%RECOVERY			
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	68	%RECOVERY			
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	64	%RECOVERY			
RWR-FP-5001-0000-01	200967-009	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	99	%RECOVERY			
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Moisture		WET	ASTM D2216	43.3	%			0.1
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Solids		WET	ASTM D2216	56.7	%			0.1
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Phenol	108-95-2	OS	SW846 8270C	580	ug/Kg - dry wt	U		580
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	580	ug/Kg - dry wt	U		580
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	3000	ug/Kg - dry wt	U		3000
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	580	ug/Kg - dry wt	U		580
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	3000	ug/Kg - dry wt	U		3000
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	3000	ug/Kg - dry wt	U		3000
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	3000	ug/Kg - dry wt	U		3000
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Carbazole	86-74-8	OS	SW846 8270C	830	ug/Kg - dry wt			580
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	61	ug/Kg - dry wt	J		580
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	120	ug/Kg - dry wt	J		580
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	800	ug/Kg - dry wt			580
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	580	ug/Kg - dry wt	U		580
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	70	%RECOVERY			
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	74	%RECOVERY			
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	43	%RECOVERY			
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	62	%RECOVERY			
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	61	%RECOVERY			
RWR-FP-5003-0000-01	200967-010	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	106	%RECOVERY			
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Moisture		WET	ASTM D2216	54.4	%			0.1
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/24/01	7/24/01		200967	% Solids		WET	ASTM D2216	45.6	%			0.1
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Phenol	108-95-2	OS	SW846 8270C	720	ug/Kg - dry wt	U		720
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	720	ug/Kg - dry wt	U		720
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	3700	ug/Kg - dry wt	U		3700
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	720	ug/Kg - dry wt	U		720
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	3700	ug/Kg - dry wt	U		3700

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE-UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	61			T
CMS-FP-4001-0000-01	200967-007		1	50.7		30	G_WET	111			T
CMS-FP-4002-0000-01	200967-008		1	45.39				45.4			T
CMS-FP-4002-0000-01	200967-008		1	45.39				54.6			T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	600	U		T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	600	U		T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	3100	U		T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	600	U		T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	3100	U		T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	3100	U		T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	3100	U		T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	520	J		T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	71	J		T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	370	J		T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	1200			T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	600	UJ		T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	66			T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	76			T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	61			T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	78			T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	72			T
CMS-FP-4002-0000-01	200967-008		1	45.39		30	G_WET	100			T
RWR-FP-5001-0000-01	200967-009		1	67.59				67.6			T
RWR-FP-5001-0000-01	200967-009		1	67.59				32.4			T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	1000	U		T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	1000	U		T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	5200	U		T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	1000	U		T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	5200	U		T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	5200	U		T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	5200	U		T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	420	J		T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	150	J		T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	540	J		T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	1900	J		T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	1000	UJ		T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	67			T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	73			T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	50			T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	68			T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	64			T
RWR-FP-5001-0000-01	200967-009		1	67.59		30	G_WET	99			T
RWR-FP-5003-0000-01	200967-010		1	43.29				43.3			T
RWR-FP-5003-0000-01	200967-010		1	43.29				56.7			T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	580	U		T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	580	U		T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	3000	U		T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	580	U		T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	3000	U		T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	3000	U		T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	3000	U		T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	830	J		T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	61	J		T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	120	J		T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	800	J		T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	580	UJ		T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	70			T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	74			T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	43			T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	62			T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	61			T
RWR-FP-5003-0000-01	200967-010		1	43.29		30	G_WET	106			T
CMS-FP-4005-0000-01	200967-011		1	54.39				54.4			T
CMS-FP-4005-0000-01	200967-011		1	54.39				45.6			T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	720	U		T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	720	U		T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	3700	U		T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	720	U		T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	3700	U		T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	3700	ug/Kg - dry wt	U		3700
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	3700	ug/Kg - dry wt	U		3700
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Carbazole	86-74-8	OS	SW846 8270C	1200	ug/Kg - dry wt			720
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	150	ug/Kg - dry wt	J		720
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	290	ug/Kg - dry wt	J		720
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	2100	ug/Kg - dry wt			720
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	120	ug/Kg - dry wt	J		720
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	65	%RECOVERY			
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	70	%RECOVERY			
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	26	%RECOVERY			
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	58	%RECOVERY			
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	50	%RECOVERY			
CMS-FP-4005-0000-01	200967-011	STLB	NORMAL	7/19/01	7/26/01	8/20/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	106	%RECOVERY			
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/24/01	7/24/01		200967	% Moisture		WET	ASTM D2216	55.2	%			0.1
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/24/01	7/24/01		200967	% Solids		WET	ASTM D2216	44.8	%			0.1
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	Phenol	108-95-2	OS	SW846 8270C	740	ug/Kg - dry wt	U		740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	Phenol	108-95-2	OS	SW846 8270C	740	ug/Kg - dry wt	U		740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	740	ug/Kg - dry wt	U		740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	740	ug/Kg - dry wt	U		740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	3800	ug/Kg - dry wt	U		3800
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	3800	ug/Kg - dry wt	U		3800
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	740	ug/Kg - dry wt	U		740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	740	ug/Kg - dry wt	U		740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	3800	ug/Kg - dry wt	U		3800
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	3800	ug/Kg - dry wt	U		3800
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	3800	ug/Kg - dry wt	U		3800
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	3800	ug/Kg - dry wt	U		3800
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	3800	ug/Kg - dry wt	U		3800
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	3800	ug/Kg - dry wt	U		3800
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	Carbazole	86-74-8	OS	SW846 8270C	1100	ug/Kg - dry wt			740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	Carbazole	86-74-8	OS	SW846 8270C	1100	ug/Kg - dry wt			740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	100	ug/Kg - dry wt	J		740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	120	ug/Kg - dry wt	J		740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	290	ug/Kg - dry wt	J		740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	270	ug/Kg - dry wt	J		740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	1800	ug/Kg - dry wt			740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	1800	ug/Kg - dry wt			740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	81	ug/Kg - dry wt	J		740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	89	ug/Kg - dry wt	J		740
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	57	%RECOVERY			
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	75	%RECOVERY			
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	41	%RECOVERY			
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	60	%RECOVERY			
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	57	%RECOVERY			
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/20/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	102	%RECOVERY			
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	60	%RECOVERY			
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	77	%RECOVERY			
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	41	%RECOVERY			
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	60	%RECOVERY			
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	57	%RECOVERY			
CMS-DU-072001	200967-012	STLB	REPLICATE	7/20/01	7/26/01	8/21/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	108	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	Phenol	108-95-2	OS	SW846 8270C	80	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	78	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	97	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	87	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	89	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	83	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	86	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	Carbazole	86-74-8	OS	SW846 8270C	94	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	102	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	101	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	99	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	111	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	89	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	88	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	73	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	80	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	77	%RECOVERY			
	LCS-4332	STLB	LCS		7/26/01	8/15/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	95	%RECOVERY			

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE-UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	3700	U		T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	3700	U		T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	1200	J		T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	150	J		T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	290	J		T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	2100	J		T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	120	J		T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	65			T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	70			T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	26			T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	58			T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	50			T
CMS-FP-4005-0000-01	200967-011		1	54.39		30	G_WET	106			T
CMS-DU-072001	200967-012		1	55.2				55.2			T
CMS-DU-072001	200967-012		1	55.2				44.8			T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	740	U		T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	740	U		T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	740	U		T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	740	U		T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	3800	U		T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	3800	U		T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	740	U		T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	740	U		T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	3800	U		T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	3800	U		T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	3800	U		T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	3800	U		T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	3800	UJ		T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	3800	UJ		T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	1100	J		T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	1100	J		T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	100	J		T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	120	J		T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	290	J		T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	270	J		T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	1800	J		T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	1800	J		T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	81	J		T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	89	J		T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	57			T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	75			T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	41			T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	60			T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	57			T
CMS-DU-072001	200967-012		1	55.2		30	G_WET	102			T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	60			T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	77			T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	41			T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	60			T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	57			T
CMS-DU-072001	200967-012		1	55.2	Reanalysis	30	G_WET	108			T
	LCS-4332		1	55.2		30	G_WET	80			T
	LCS-4332		1	55.2		30	G_WET	78			T
	LCS-4332		1	55.2		30	G_WET	97			T
	LCS-4332		1	55.2		30	G_WET	87			T
	LCS-4332		1	55.2		30	G_WET	89			T
	LCS-4332		1	55.2		30	G_WET	83			T
	LCS-4332		1	55.2		30	G_WET	86			T
	LCS-4332		1	55.2		30	G_WET	94			T
	LCS-4332		1	55.2		30	G_WET	102			T
	LCS-4332		1	55.2		30	G_WET	101			T
	LCS-4332		1	55.2		30	G_WET	99			T
	LCS-4332		1	55.2		30	G_WET	111			T
	LCS-4332		1	55.2		30	G_WET	89			T
	LCS-4332		1	55.2		30	G_WET	88			T
	LCS-4332		1	55.2		30	G_WET	73			T
	LCS-4332		1	55.2		30	G_WET	80			T
	LCS-4332		1	55.2		30	G_WET	77			T
	LCS-4332		1	55.2		30	G_WET	95			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	Phenol	108-95-2	OS	SW846 8270C	330	ug/Kg - dry wt	U		10
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	330	ug/Kg - dry wt	U		10
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	1700	ug/Kg - dry wt	U		50
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	330	ug/Kg - dry wt	U		10
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	1700	ug/Kg - dry wt	U		50
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	1700	ug/Kg - dry wt	U		50
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	1700	ug/Kg - dry wt	U		50
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	Carbazole	86-74-8	OS	SW846 8270C	330	ug/Kg - dry wt	U		10
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	330	ug/Kg - dry wt	U		10
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	330	ug/Kg - dry wt	U		10
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	330	ug/Kg - dry wt	U		10
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	330	ug/Kg - dry wt	U		10
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	67	%RECOVERY			
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	68	%RECOVERY			
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	62	%RECOVERY			
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	63	%RECOVERY			
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	61	%RECOVERY			
	MB-4332	STLB	M_BLANK		7/26/01	8/15/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	73	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	Phenol	108-95-2	OS	SW846 8270C	55	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	56	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	81	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	62	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	10	%RECOVERY	J		
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	72	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	70	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	Carbazole	86-74-8	OS	SW846 8270C	69	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	82	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	105	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	99	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	127	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	65	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	79	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	40	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	70	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	57	%RECOVERY			
RWR-FP-5002-0000-01	MS-4332	STLB	MS	7/16/01	7/26/01	8/16/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	104	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	Phenol	108-95-2	OS	SW846 8270C	72	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	94	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	2-Nitrophenol	88-75-5	OS	SW846 8270C	75	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	3	%RECOVERY	J		
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	4-Nitrophenol	100-02-7	OS	SW846 8270C	79	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	Pentachlorophenol	87-86-5	OS	SW846 8270C	72	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	Carbazole	86-74-8	OS	SW846 8270C	83	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	97	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	67	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	120	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	119	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	144	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	66	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	2-Fluorobiphenyl (surr)		OS	SW846 8270C	83	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	2-Fluorophenol (surr)		OS	SW846 8270C	52	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	Nitrobenzene-d5 (surr)		OS	SW846 8270C	85	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	Phenol-d5 (surr)		OS	SW846 8270C	72	%RECOVERY			
RWR-FP-5002-0000-01	MSD-4332	STLB	MSD	7/16/01	7/26/01	8/16/01		200967	Terphenyl-d14 (surr)		OS	SW846 8270C	122	%RECOVERY			

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE-UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
	MB-4332		1	55.2		30	G_WET	330	U		T
	MB-4332		1	55.2		30	G_WET	330	U		T
	MB-4332		1	55.2		30	G_WET	1700	U		T
	MB-4332		1	55.2		30	G_WET	330	U		T
	MB-4332		1	55.2		30	G_WET	1700	U		T
	MB-4332		1	55.2		30	G_WET	1700	U		T
	MB-4332		1	55.2		30	G_WET	1700	U		T
	MB-4332		1	55.2		30	G_WET	330	U		T
	MB-4332		1	55.2		30	G_WET	330	U		T
	MB-4332		1	55.2		30	G_WET	330	U		T
	MB-4332		1	55.2		30	G_WET	330	U		T
	MB-4332		1	55.2		30	G_WET	330	U		T
	MB-4332		1	55.2		30	G_WET	67			T
	MB-4332		1	55.2		30	G_WET	68			T
	MB-4332		1	55.2		30	G_WET	62			T
	MB-4332		1	55.2		30	G_WET	63			T
	MB-4332		1	55.2		30	G_WET	61			T
	MB-4332		1	55.2		30	G_WET	73			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	55			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	56			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	81			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	62			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	10	J		T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	72			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	70			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	69			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	82			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	105			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	99			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	127			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	65			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	79			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	40			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	70			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	57			T
RWR-FP-5002-0000-01	MS-4332		1	48.5		30	G_WET	104			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	72			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	94			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	75			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	3	J		T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	79			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	72			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	83			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	97			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	67			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	120			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	119			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	144			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	66			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	83			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	52			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	85			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	72			T
RWR-FP-5002-0000-01	MSD-4332		1	48.5		30	G_WET	122			T

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	Phenol	108-95-2	OS	SW846 8270C	64	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	61	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	82	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	2-Nitrophenol	88-75-5	OS	SW846 8270C	73	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	94	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	4-Nitrophenol	100-02-7	OS	SW846 8270C	87	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	Pentachlorophenol	87-86-5	OS	SW846 8270C	80	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	Carbazole	86-74-8	OS	SW846 8270C	78	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	83	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	97	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	98	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	98	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	88	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	2-Fluorobiphenyl (surr)		OS	SW846 8270C	69	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	2-Fluorophenol (surr)		OS	SW846 8270C	62	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	Nitrobenzene-d5 (surr)		OS	SW846 8270C	71	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	Phenol-d5 (surr)		OS	SW846 8270C	64	%RECOVERY			
	LCS-4272	STLB	LCS		7/26/01	8/10/01		200964	Terphenyl-d14 (surr)		OS	SW846 8270C	83	%RECOVERY			
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	Phenol	108-95-2	OS	SW846 8270C	330	ug/kg - dry wt	U		330
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	330	ug/kg - dry wt	U		330
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	1700	ug/kg - dry wt	U		1700
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	2-Nitrophenol	88-75-5	OS	SW846 8270C	330	ug/kg - dry wt	U		330
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	1700	ug/kg - dry wt	U		1700
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	4-Nitrophenol	100-02-7	OS	SW846 8270C	1700	ug/kg - dry wt	U		1700
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	Pentachlorophenol	87-86-5	OS	SW846 8270C	1700	ug/kg - dry wt	U		1700
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	Carbazole	86-74-8	OS	SW846 8270C	330	ug/kg - dry wt	U		330
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	330	ug/kg - dry wt	U		330
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	330	ug/kg - dry wt	U		330
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	36	ug/kg - dry wt	J		330
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	330	ug/kg - dry wt	U		330
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	88	%RECOVERY			
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	2-Fluorobiphenyl (surr)		OS	SW846 8270C	69	%RECOVERY			
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	2-Fluorophenol (surr)		OS	SW846 8270C	62	%RECOVERY			
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	Nitrobenzene-d5 (surr)		OS	SW846 8270C	71	%RECOVERY			
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	Phenol-d5 (surr)		OS	SW846 8270C	64	%RECOVERY			
	MB-4272	STLB	M_BLANK		7/26/01	8/10/01		200964	Terphenyl-d14 (surr)		OS	SW846 8270C	83	%RECOVERY			
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/12/01		200964	Phenol	108-95-2	OS	SW846 8270C	6400	ug/kg - dry wt			660
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	4 Methylphenol (p cresol)	106-44-5	OS	SW846 8270C	830	ug/kg - dry wt			330
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	2,4,5-Trichlorophenol	95-95-4	OS	SW846 8270C	1700	ug/kg - dry wt	U		1700
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	2-Nitrophenol	88-75-5	OS	SW846 8270C	330	ug/kg - dry wt	U		330
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	2,4-Dinitrophenol	51-28-5	OS	SW846 8270C	1700	ug/kg - dry wt	U		1700
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	4-Nitrophenol	100-02-7	OS	SW846 8270C	1700	ug/kg - dry wt	U		1700
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	Pentachlorophenol	87-86-5	OS	SW846 8270C	560	ug/kg - dry wt	J		1700
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	Carbazole	86-74-8	OS	SW846 8270C	330	ug/kg - dry wt	U		330
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	Di-n-butyl phthalate	84-74-2	OS	SW846 8270C	330	ug/kg - dry wt	U		330
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	Butyl benzyl phthalate	85-68-7	OS	SW846 8270C	330	ug/kg - dry wt	U		330
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	Bis(2-ethylhexyl)phthalate	117-81-7	OS	SW846 8270C	330	ug/kg - dry wt			330
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	Di-n-octyl phthalate	117-84-0	OS	SW846 8270C	330	ug/kg - dry wt	U		330
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	2,4,6-Tribromophenol (surr)		OS	SW846 8270C	71	%RECOVERY			
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	2-Fluorobiphenyl (surr)		OS	SW846 8270C	67	%RECOVERY			
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	2-Fluorophenol (surr)		OS	SW846 8270C	60	%RECOVERY			
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	Nitrobenzene-d5 (surr)		OS	SW846 8270C	73	%RECOVERY			
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	Phenol-d5 (surr)		OS	SW846 8270C	68	%RECOVERY			
ICCSV852	200964-003	STLB	NORMAL	7/16/01	7/26/01	8/10/01		200964	Terphenyl-d14 (surr)		OS	SW846 8270C	72	%RECOVERY			

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE-UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
	LCS-4272		1			30	g	64			T
	LCS-4272		1			30	g	61			T
	LCS-4272		1			30	g	82			T
	LCS-4272		1			30	g	73			T
	LCS-4272		1			30	g	94			T
	LCS-4272		1			30	g	87			T
	LCS-4272		1			30	g	80			T
	LCS-4272		1			30	g	78			T
	LCS-4272		1			30	g	83			T
	LCS-4272		1			30	g	97			T
	LCS-4272		1			30	g	98			T
	LCS-4272		1			30	g	98			T
	LCS-4272		1			30	g	88			T
	LCS-4272		1			30	g	69			T
	LCS-4272		1			30	g	62			T
	LCS-4272		1			30	g	71			T
	LCS-4272		1			30	g	64			T
	LCS-4272		1			30	g	83			T
	MB-4272		1			30	G_WET	330	U		T
	MB-4272		1			30	G_WET	330	U		T
	MB-4272		1			30	G_WET	1700	U		T
	MB-4272		1			30	G_WET	330	U		T
	MB-4272		1			30	G_WET	1700	U		T
	MB-4272		1			30	G_WET	1700	U		T
	MB-4272		1			30	G_WET	1700	U		T
	MB-4272		1			30	G_WET	330	U		T
	MB-4272		1			30	G_WET	330	U		T
	MB-4272		1			30	G_WET	330	U		T
	MB-4272		1			30	G_WET	36	J		T
	MB-4272		1			30	G_WET	330	U		T
	MB-4272		1			30	G_WET	88			T
	MB-4272		1			30	G_WET	69			T
	MB-4272		1			30	G_WET	62			T
	MB-4272		1			30	G_WET	71			T
	MB-4272		1			30	G_WET	64			T
	MB-4272		1			30	G_WET	83			T
ICCSV852	200964-003		2		Dilution	30	G_WET	6400	J		T
ICCSV852	200964-003		1			30	G_WET	830			T
ICCSV852	200964-003		1			30	G_WET	1700	U		T
ICCSV852	200964-003		1			30	G_WET	330	U		T
ICCSV852	200964-003		1			30	G_WET	1700	UJ		T
ICCSV852	200964-003		1			30	G_WET	1700	U		T
ICCSV852	200964-003		1			30	G_WET	560	J		T
ICCSV852	200964-003		1			30	G_WET	330	UJ		T
ICCSV852	200964-003		1			30	G_WET	330	UJ		T
ICCSV852	200964-003		1			30	G_WET	330	UJ		T
ICCSV852	200964-003		1			30	G_WET	330	U		T
ICCSV852	200964-003		1			30	G_WET	330	UJ		T
ICCSV852	200964-003		1			30	G_WET	71			T
ICCSV852	200964-003		1			30	G_WET	67			T
ICCSV852	200964-003		1			30	G_WET	60			T
ICCSV852	200964-003		1			30	G_WET	73			T
ICCSV852	200964-003		1			30	G_WET	68			T
ICCSV852	200964-003		1			30	G_WET	72			T

Section 7
Grain Size and TOC Results

QA/QC Narrative
Soil and QC Results

QA/QC Narrative

Grain Size and TOC SOIL QA/QC SUMMARY

PROJECT: USACE NAE Delivery Order #01 Centredale

PARAMETER: Grain Size and TOC

LABORATORY: Applied Marine Sciences, Inc., League City, Texas (AMS)

MATRIX: Floodplain Soils

SAMPLE CUSTODY: Soil samples arrived at AMS in three events between July 11 and July 24, 2001. All soil samples were received in good condition (intact) and the cooler temperatures were acceptable.

QA/QC MEASUREMENT PERFORMANCE CRITERIA:

	Reference Method	Instrument Blank	Laboratory Duplicate	SRM % Diff.	Achieved Detection Limit (% dry)	Project Goals (% dry)
Grain Size	L-46 ASTM D422	NA	≤25% RPD [b]	NA	Grain Size: 0.01	Grain Size: Not available
TOC	L-49 EPA Method 9060	<10× MDL[a]	≤25% RPD [b]	≤5% PD	TOC: 0.01	TOC: Not available

[a] With signal to noise >10:1

[b] For values >10× the MDL

METHOD: Soil samples were prepared and analyzed for grain size composition and TOC following methods described in Battelle's Quality Assurance Project Plan (Battelle, 2001). Briefly,

Grain Size – Each sample was homogenized using a stainless steel spatula. Separate grain size and water content aliquots were secured. The grain size aliquot was treated with 30% hydrogen peroxide to remove organic matter, and dispersed in a solution of sodium hexametaphosphate. The course-grained fraction (>74μm) was separated from the fine-grained fraction (<74μm) by sieving the sample through a No.200 sieve. The portion remaining on the No. 200 sieve was washed into a beaker and dried. This dried fraction was sorted through a series of nested sieves to provide the distribution of course-grained particles.

The fraction passing the No. 200 sieve was washed into a hydrometer cylinder and brought to volume. The sample was stirred and hydrometer readings were taken at 2, 5, 15, 60, 250, and 1440 minute intervals. The resulting data were combined with the sieve data to generate a grain size distribution curve. Percent, gravel and sand values may be calculated directly from the sieve data, while the silt and clay values are read from the graph.

TOC – An aliquot of sample was secured and dried at low temperature (70°C). The sample was ground and acidified with dilute solution (pH<2) of HCl to remove inorganic carbon. The sample was rinsed with distilled water until the pH is 7. The sample was dried to remove water. A small aliquot of sample was weighed into a precombusted sample boat and combusted at 900°C in a stream of oxygen to convert organic substances to CO_2. The CO_2 stream is scrubbed to remove interferants such as water vapor, NO_X and SO_X, and swept into the coulometer cell. The amount of CO_2 produced was measured, recorded digitally, and printed as a hard copy report.

Grain Size and TOC SOIL QA/QC SUMMARY

HOLDING TIMES:

Samples were prepared for analysis within holding time.

Prep Date	Analysis Date
07/24-25/2001*	07/24 – 27/2001

* Instrument blanks and SRMs prepared and analyzed on 7/27/01

DETECTION LIMITS:

Project detection limit goals were not provided for grain size and TOC parameters. Achieved laboratory detection limits are reported on the electronic data deliverable (EDD) tables.

BLANKS:

Two instrument blank samples were analyzed for TOC only. Blanks are analyzed to ensure that the sample analysis method is free of contamination.

Grain Size – not applicable
TOC – TOC was undetected in both instrument blanks at levels above the MDL

REPLICATES:

A laboratory duplicate was prepared with each set of samples for grain size and TOC analysis. The RPD between laboratory replicate analyses for grain size fractions and TOC was calculated to measure data quality in terms of precision.

Grain Size – RPDs were within the control limits specified in the QAPP, ranging from 0.90 to 14.8%. Note that the RPD between the coarse sand fractions was 200%, however concentrations of coarse sand were detected at a level <10× the MDL.

TOC – The RPD was within the control limits specified in the QAPP, 8.8%.

Field replicates – precision between field replicates for all grain size fractions and TOC was generally >30%.

SRM:

Two standard reference material (SRM, NIST 1941a) samples were prepared with the soil samples for TOC analysis. The percent difference (PD) between detected concentrations and certified values was calculated to measure data quality in terms of accuracy.

Grain Size – not applicable
TOC – SRM PDs were within the control limits specified in the QAPP, ranging from 1.25 to 4.17%.

REFERENCES:

Battelle 2001. *Centredale Manor Restoration Project Superfund Site Baseline Risk Assessment, Initial Project Planning and Support.* Tasks 19-22 QAPP prepared under contract to USACE NAE. Delivery Order #59. May 23, 2001. 509pp + apps.

Soil and QC Results

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
CMS-FP-4003-0000-01	9287	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Gravel		GS	ASTM D422	0.00	%		0.01	0.01
CMS-FP-4003-0000-01	9287	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Coarse Sand		GS	ASTM D422	2.32	%		0.01	0.01
CMS-FP-4003-0000-01	9287	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Medium Sand		GS	ASTM D422	19.05	%		0.01	0.01
CMS-FP-4003-0000-01	9287	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Fine Sand		GS	ASTM D422	29.16	%		0.01	0.01
CMS-FP-4003-0000-01	9287	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/26/01			% Silt		GS	ASTM D422	37.47	%		0.01	0.01
CMS-FP-4003-0000-01	9287	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/26/01			% Clay		GS	ASTM D422	12.00	%		0.01	0.01
CMS-FP-4003-0000-01	9287	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/27/01			TOC		TOC	EPA 9060	5.85	%		0.01	0.01
CMS-FP-4003-0000-01	9287	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/24/01			Water Content		MISC	ASTM D2216	74	%		1	1
LPX-FP-4007-0000-01	9288	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Gravel		GS	ASTM D422	0.00	%		0.01	0.01
LPX-FP-4007-0000-01	9288	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Coarse Sand		GS	ASTM D422	1.01	%		0.01	0.01
LPX-FP-4007-0000-01	9288	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Medium Sand		GS	ASTM D422	9.38	%		0.01	0.01
LPX-FP-4007-0000-01	9288	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Fine Sand		GS	ASTM D422	18.92	%		0.01	0.01
LPX-FP-4007-0000-01	9288	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/26/01			% Silt		GS	ASTM D422	60.69	%		0.01	0.01
LPX-FP-4007-0000-01	9288	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/26/01			% Clay		GS	ASTM D422	10.00	%		0.01	0.01
LPX-FP-4007-0000-01	9288	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/27/01			TOC		TOC	EPA 9060	7.10	%		0.01	0.01
LPX-FP-4007-0000-01	9288	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/24/01			Water Content		MISC	ASTM D2216	71	%		1	1
LPX-FP-4006-0000-01	9289	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Gravel		GS	ASTM D422	46.66	%		0.01	0.01
LPX-FP-4006-0000-01	9289	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Coarse Sand		GS	ASTM D422	7.44	%		0.01	0.01
LPX-FP-4006-0000-01	9289	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Medium Sand		GS	ASTM D422	27.06	%		0.01	0.01
LPX-FP-4006-0000-01	9289	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Fine Sand		GS	ASTM D422	16.55	%		0.01	0.01
LPX-FP-4006-0000-01	9289	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/26/01			% Silt		GS	ASTM D422	2.30	%		0.01	0.01
LPX-FP-4006-0000-01	9289	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/26/01			% Clay		GS	ASTM D422	0.00	%		0.01	0.01
LPX-FP-4006-0000-01	9289	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/27/01			TOC		TOC	EPA 9060	7.13	%		0.01	0.01
LPX-FP-4006-0000-01	9289	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/24/01			Water Content		MISC	ASTM D2216	95	%		1	1
RWR-FP-5002-0000-01	9290	Applied Marine Sciences, Inc.	NORMAL	07/16/01	7/24/01	7/25/01			% Gravel		GS	ASTM D422	0.00	%		0.01	0.01
RWR-FP-5002-0000-01	9290	Applied Marine Sciences, Inc.	NORMAL	07/16/01	7/24/01	7/25/01			% Coarse Sand		GS	ASTM D422	0.19	%		0.01	0.01
RWR-FP-5002-0000-01	9290	Applied Marine Sciences, Inc.	NORMAL	07/16/01	7/24/01	7/25/01			% Medium Sand		GS	ASTM D422	2.60	%		0.01	0.01
RWR-FP-5002-0000-01	9290	Applied Marine Sciences, Inc.	NORMAL	07/16/01	7/24/01	7/25/01			% Fine Sand		GS	ASTM D422	45.15	%		0.01	0.01
RWR-FP-5002-0000-01	9290	Applied Marine Sciences, Inc.	NORMAL	07/16/01	7/24/01	7/26/01			% Silt		GS	ASTM D422	40.06	%		0.01	0.01
RWR-FP-5002-0000-01	9290	Applied Marine Sciences, Inc.	NORMAL	07/16/01	7/24/01	7/26/01			% Clay		GS	ASTM D422	12.00	%		0.01	0.01
RWR-FP-5002-0000-01	9290	Applied Marine Sciences, Inc.	NORMAL	07/16/01	7/24/01	7/27/01			TOC		TOC	EPA 9060	5.35	%		0.01	0.01
RWR-FP-5002-0000-01	9290	Applied Marine Sciences, Inc.	NORMAL	07/16/01	7/24/01	7/24/01			Water Content		MISC	ASTM D2216	99	%		1	1
LPX-FP-4004-0000-01	9291	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Gravel		GS	ASTM D422	1.53	%		0.01	0.01
LPX-FP-4004-0000-01	9291	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Coarse Sand		GS	ASTM D422	3.36	%		0.01	0.01
LPX-FP-4004-0000-01	9291	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Medium Sand		GS	ASTM D422	17.79	%		0.01	0.01
LPX-FP-4004-0000-01	9291	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Fine Sand		GS	ASTM D422	31.31	%		0.01	0.01
LPX-FP-4004-0000-01	9291	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/26/01			% Silt		GS	ASTM D422	36.00	%		0.01	0.01
LPX-FP-4004-0000-01	9291	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/26/01			% Clay		GS	ASTM D422	10.00	%		0.01	0.01
LPX-FP-4004-0000-01	9291	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/27/01			TOC		TOC	EPA 9060	4.53	%		0.01	0.01
LPX-FP-4004-0000-01	9291	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/24/01			Water Content		MISC	ASTM D2216	57	%		1	1
RWR-FP-5004-0000-01	9292	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Gravel		GS	ASTM D422	0.00	%		0.01	0.01
RWR-FP-5004-0000-01	9292	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Coarse Sand		GS	ASTM D422	0.00	%		0.01	0.01
RWR-FP-5004-0000-01	9292	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Medium Sand		GS	ASTM D422	0.61	%		0.01	0.01
RWR-FP-5004-0000-01	9292	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/25/01			% Fine Sand		GS	ASTM D422	11.69	%		0.01	0.01
RWR-FP-5004-0000-01	9292	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/26/01			% Silt		GS	ASTM D422	71.70	%		0.01	0.01
RWR-FP-5004-0000-01	9292	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/26/01			% Clay		GS	ASTM D422	16.00	%		0.01	0.01
RWR-FP-5004-0000-01	9292	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/27/01			TOC		TOC	EPA 9060	10.30	%		0.01	0.01
RWR-FP-5004-0000-01	9292	Applied Marine Sciences, Inc.	NORMAL	07/19/01	7/24/01	7/24/01			Water Content		MISC	ASTM D2216	98	%		1	1
CMS-FP-4001-0000-01	9293	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/25/01			% Gravel		GS	ASTM D422	0.00	%		0.01	0.01
CMS-FP-4001-0000-01	9293	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/25/01			% Coarse Sand		GS	ASTM D422	0.00	%		0.01	0.01
CMS-FP-4001-0000-01	9293	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/25/01			% Medium Sand		GS	ASTM D422	5.30	%		0.01	0.01
CMS-FP-4001-0000-01	9293	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/25/01			% Fine Sand		GS	ASTM D422	43.88	%		0.01	0.01
CMS-FP-4001-0000-01	9293	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/26/01			% Silt		GS	ASTM D422	42.82	%		0.01	0.01
CMS-FP-4001-0000-01	9293	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/26/01			% Clay		GS	ASTM D422	8.00	%		0.01	0.01
CMS-FP-4001-0000-01	9293	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/27/01			TOC		TOC	EPA 9060	6.14	%		0.01	0.01
CMS-FP-4001-0000-01	9293	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/24/01			Water Content		MISC	ASTM D2216	91	%		1	1
CMS-FP-4002-0000-01	9294	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/25/01			% Gravel		GS	ASTM D422	0.00	%		0.01	0.01
CMS-FP-4002-0000-01	9294	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/25/01			% Coarse Sand		GS	ASTM D422	0.12	%		0.01	0.01
CMS-FP-4002-0000-01	9294	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/25/01			% Medium Sand		GS	ASTM D422	5.96	%		0.01	0.01
CMS-FP-4002-0000-01	9294	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/25/01			% Fine Sand		GS	ASTM D422	45.76	%		0.01	0.01
CMS-FP-4002-0000-01	9294	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/26/01			% Silt		GS	ASTM D422	35.66	%		0.01	0.01
CMS-FP-4002-0000-01	9294	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/26/01			% Clay		GS	ASTM D422	12.50	%		0.01	0.01
CMS-FP-4002-0000-01	9294	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/27/01			TOC		TOC	EPA 9060	6.54	%		0.01	0.01
CMS-FP-4002-0000-01	9294	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/24/01			Water Content		MISC	ASTM D2216	96	%		1	1
RWR-FP-5001-0000-01	9295	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/25/01			% Gravel		GS	ASTM D422	0.00	%		0.01	0.01

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
CMS-FP-4003-0000-01	9287	0.01				58.1846	G_DRY	0.00			
CMS-FP-4003-0000-01	9287	0.01				58.1846	G_DRY	2.32			
CMS-FP-4003-0000-01	9287	0.01				58.1846	G_DRY	19.05			
CMS-FP-4003-0000-01	9287	0.01				58.1846	G_DRY	29.16			
CMS-FP-4003-0000-01	9287	0.01				58.1846	G_DRY	37.47			
CMS-FP-4003-0000-01	9287	0.01				58.1846	G_DRY	12.00			
CMS-FP-4003-0000-01	9287	0.01				0.0396	G_DRY	5.85			
CMS-FP-4003-0000-01	9287	1				11.4723	G_DRY	74			
LPX-FP-4007-0000-01	9288	0.01				87.7746	G_DRY	0.00			
LPX-FP-4007-0000-01	9288	0.01				87.7746	G_DRY	1.01			
LPX-FP-4007-0000-01	9288	0.01				87.7746	G_DRY	9.38			
LPX-FP-4007-0000-01	9288	0.01				87.7746	G_DRY	18.92			
LPX-FP-4007-0000-01	9288	0.01				87.7746	G_DRY	60.69			
LPX-FP-4007-0000-01	9288	0.01				87.7746	G_DRY	10.00			
LPX-FP-4007-0000-01	9288	0.01				0.0552	G_DRY	7.10			
LPX-FP-4007-0000-01	9288	1				7.4221	G_DRY	71			
LPX-FP-4006-0000-01	9289	0.01				88.4446	G_DRY	46.66			
LPX-FP-4006-0000-01	9289	0.01				88.4446	G_DRY	7.44			
LPX-FP-4006-0000-01	9289	0.01				88.4446	G_DRY	27.06			
LPX-FP-4006-0000-01	9289	0.01				88.4446	G_DRY	16.55			
LPX-FP-4006-0000-01	9289	0.01				88.4446	G_DRY	2.30			
LPX-FP-4006-0000-01	9289	0.01				88.4446	G_DRY	0.00			
LPX-FP-4006-0000-01	9289	0.01				0.0724	G_DRY	7.13			
LPX-FP-4006-0000-01	9289	1				8.6250	G_DRY	95			
RWR-FP-5002-0000-01	9290	0.01				89.1735	G_DRY	0.00			
RWR-FP-5002-0000-01	9290	0.01				89.1735	G_DRY	0.19			
RWR-FP-5002-0000-01	9290	0.01				89.1735	G_DRY	2.60			
RWR-FP-5002-0000-01	9290	0.01				89.1735	G_DRY	45.15			
RWR-FP-5002-0000-01	9290	0.01				89.1735	G_DRY	40.06			
RWR-FP-5002-0000-01	9290	0.01				89.1735	G_DRY	12.00			
RWR-FP-5002-0000-01	9290	0.01				0.0505	G_DRY	5.35			
RWR-FP-5002-0000-01	9290	1				6.0353	G_DRY	99			
LPX-FP-4004-0000-01	9291	0.01				105.3233	G_DRY	1.53			
LPX-FP-4004-0000-01	9291	0.01				105.3233	G_DRY	3.36			
LPX-FP-4004-0000-01	9291	0.01				105.3233	G_DRY	17.79			
LPX-FP-4004-0000-01	9291	0.01				105.3233	G_DRY	31.31			
LPX-FP-4004-0000-01	9291	0.01				105.3233	G_DRY	36.00			
LPX-FP-4004-0000-01	9291	0.01				105.3233	G_DRY	10.00			
LPX-FP-4004-0000-01	9291	0.01				0.0653	G_DRY	4.53			
LPX-FP-4004-0000-01	9291	1				9.8898	G_DRY	57			
RWR-FP-5004-0000-01	9292	0.01				59.7351	G_DRY	0.00			
RWR-FP-5004-0000-01	9292	0.01				59.7351	G_DRY	0.00			
RWR-FP-5004-0000-01	9292	0.01				59.7351	G_DRY	0.61			
RWR-FP-5004-0000-01	9292	0.01				59.7351	G_DRY	11.69			
RWR-FP-5004-0000-01	9292	0.01				59.7351	G_DRY	71.70			
RWR-FP-5004-0000-01	9292	0.01				59.7351	G_DRY	16.00			
RWR-FP-5004-0000-01	9292	0.01				0.0319	G_DRY	10.30			
RWR-FP-5004-0000-01	9292	1				4.5200	G_DRY	98			
CMS-FP-4001-0000-01	9293	0.01				94.9715	G_DRY	0.00			
CMS-FP-4001-0000-01	9293	0.01				94.9715	G_DRY	0.00			
CMS-FP-4001-0000-01	9293	0.01				94.9715	G_DRY	5.30			
CMS-FP-4001-0000-01	9293	0.01				94.9715	G_DRY	43.88	J		
CMS-FP-4001-0000-01	9293	0.01				94.9715	G_DRY	42.82			
CMS-FP-4001-0000-01	9293	0.01				94.9715	G_DRY	8.00	J		
CMS-FP-4001-0000-01	9293	0.01				0.0560	G_DRY	6.14			
CMS-FP-4001-0000-01	9293	1				5.9930	G_DRY	91			
CMS-FP-4002-0000-01	9294	0.01				62.4968	G_DRY	0.00			
CMS-FP-4002-0000-01	9294	0.01				62.4968	G_DRY	0.12			
CMS-FP-4002-0000-01	9294	0.01				62.4968	G_DRY	5.96			
CMS-FP-4002-0000-01	9294	0.01				62.4968	G_DRY	45.76			
CMS-FP-4002-0000-01	9294	0.01				62.4968	G_DRY	35.66			
CMS-FP-4002-0000-01	9294	0.01				62.4968	G_DRY	12.50			
CMS-FP-4002-0000-01	9294	0.01				0.0275	G_DRY	6.54			
CMS-FP-4002-0000-01	9294	1				9.1624	G_DRY	96			
RWR-FP-5001-0000-01	9295	0.01				85.6619	G_DRY	0.00			

SAMPLE_NO	LAB_ID	LABORATORY	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CASE	SDG	PARAMETER	CAS_NO	CLASS	METHOD	LAB_RESULT	UNITS	LAB_QUAL	IDL	MDL
RWR-FP-5001-0000-01	9295	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/25/01			% Coarse Sand		GS	ASTM D422	0.00	%		0.01	0.01
RWR-FP-5001-0000-01	9295	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/25/01			% Medium Sand		GS	ASTM D422	0.35	%		0.01	0.01
RWR-FP-5001-0000-01	9295	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/25/01			% Fine Sand		GS	ASTM D422	3.42	%		0.01	0.01
RWR-FP-5001-0000-01	9295	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/26/01			% Silt		GS	ASTM D422	78.24	%		0.01	0.01
RWR-FP-5001-0000-01	9295	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/26/01			% Clay		GS	ASTM D422	18.00	%		0.01	0.01
RWR-FP-5001-0000-01	9295	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/27/01			TOC		TOC	EPA 9060	10.91	%		0.01	0.01
RWR-FP-5001-0000-01	9295	Applied Marine Sciences, Inc.	NORMAL	07/18/01	7/24/01	7/24/01			Water Content		MISC	ASTM D2216	221	%		1	1
RWR-FP-5003-0000-01	9296	Applied Marine Sciences, Inc.	NORMAL	07/17/01	7/24/01	7/25/01			% Gravel		GS	ASTM D422	0.00	%		0.01	0.01
RWR-FP-5003-0000-01	9296	Applied Marine Sciences, Inc.	NORMAL	07/17/01	7/24/01	7/25/01			% Coarse Sand		GS	ASTM D422	0.04	%		0.01	0.01
RWR-FP-5003-0000-01	9296	Applied Marine Sciences, Inc.	NORMAL	07/17/01	7/24/01	7/25/01			% Medium Sand		GS	ASTM D422	4.33	%		0.01	0.01
RWR-FP-5003-0000-01	9296	Applied Marine Sciences, Inc.	NORMAL	07/17/01	7/24/01	7/25/01			% Fine Sand		GS	ASTM D422	49.29	%		0.01	0.01
RWR-FP-5003-0000-01	9296	Applied Marine Sciences, Inc.	NORMAL	07/17/01	7/24/01	7/26/01			% Silt		GS	ASTM D422	35.34	%		0.01	0.01
RWR-FP-5003-0000-01	9296	Applied Marine Sciences, Inc.	NORMAL	07/17/01	7/24/01	7/26/01			% Clay		GS	ASTM D422	11.00	%		0.01	0.01
RWR-FP-5003-0000-01	9296	Applied Marine Sciences, Inc.	NORMAL	07/17/01	7/24/01	7/27/01			TOC		TOC	EPA 9060	6.05	%		0.01	0.01
RWR-FP-5003-0000-01	9296	Applied Marine Sciences, Inc.	NORMAL	07/17/01	7/24/01	7/24/01			Water Content		MISC	ASTM D2216	79	%		1	1
CMS-FP-4005-0000-01	9297	Applied Marine Sciences, Inc.	NORMAL	07/20/01	7/25/01	7/26/01			% Gravel		GS	ASTM D422	0.00	%		0.01	0.01
CMS-FP-4005-0000-01	9297	Applied Marine Sciences, Inc.	NORMAL	07/20/01	7/25/01	7/26/01			% Coarse Sand		GS	ASTM D422	0.00	%		0.01	0.01
CMS-FP-4005-0000-01	9297	Applied Marine Sciences, Inc.	NORMAL	07/20/01	7/25/01	7/26/01			% Medium Sand		GS	ASTM D422	7.29	%		0.01	0.01
CMS-FP-4005-0000-01	9297	Applied Marine Sciences, Inc.	NORMAL	07/20/01	7/25/01	7/26/01			% Fine Sand		GS	ASTM D422	25.93	%		0.01	0.01
CMS-FP-4005-0000-01	9297	Applied Marine Sciences, Inc.	NORMAL	07/20/01	7/25/01	7/26/01			% Silt		GS	ASTM D422	56.77	%		0.01	0.01
CMS-FP-4005-0000-01	9297	Applied Marine Sciences, Inc.	NORMAL	07/20/01	7/25/01	7/26/01			% Clay		GS	ASTM D422	10.00	%		0.01	0.01
CMS-FP-4005-0000-01	9297	Applied Marine Sciences, Inc.	NORMAL	07/20/01	7/25/01	7/27/01			TOC		TOC	EPA 9060	8.47	%		0.01	0.01
CMS-FP-4005-0000-01	9297	Applied Marine Sciences, Inc.	NORMAL	07/20/01	7/25/01	7/25/01			Water Content		MISC	ASTM D2216	126	%		1	1
CMS-DU-072001	9298	Applied Marine Sciences, Inc.	REPLICATE	07/20/01	7/25/01	7/26/01			% Gravel		GS	ASTM D422	0.00	%		0.01	0.01
CMS-DU-072001	9298	Applied Marine Sciences, Inc.	REPLICATE	07/20/01	7/25/01	7/26/01			% Coarse Sand		GS	ASTM D422	0.00	%		0.01	0.01
CMS-DU-072001	9298	Applied Marine Sciences, Inc.	REPLICATE	07/20/01	7/25/01	7/26/01			% Medium Sand		GS	ASTM D422	3.68	%		0.01	0.01
CMS-DU-072001	9298	Applied Marine Sciences, Inc.	REPLICATE	07/20/01	7/25/01	7/26/01			% Fine Sand		GS	ASTM D422	21.04	%		0.01	0.01
CMS-DU-072001	9298	Applied Marine Sciences, Inc.	REPLICATE	07/20/01	7/25/01	7/26/01			% Silt		GS	ASTM D422	61.28	%		0.01	0.01
CMS-DU-072001	9298	Applied Marine Sciences, Inc.	REPLICATE	07/20/01	7/25/01	7/26/01			% Clay		GS	ASTM D422	14.00	%		0.01	0.01
CMS-DU-072001	9298	Applied Marine Sciences, Inc.	REPLICATE	07/20/01	7/25/01	7/27/01			TOC		TOC	EPA 9060	8.37	%		0.01	0.01
CMS-DU-072001	9298	Applied Marine Sciences, Inc.	REPLICATE	07/20/01	7/25/01	7/25/01			Water Content		MISC	ASTM D2216	122	%		1	1
RWR-FP-5003-0000-01	9296-2	Applied Marine Sciences, Inc.	DUPLICATE	07/17/01	7/24/01	7/25/01			% Gravel		GS	ASTM D422	0.00	%		0.01	0.01
RWR-FP-5003-0000-01	9296-2	Applied Marine Sciences, Inc.	DUPLICATE	07/17/01	7/24/01	7/25/01			% Coarse Sand		GS	ASTM D422	0.00	%		0.01	0.01
RWR-FP-5003-0000-01	9296-2	Applied Marine Sciences, Inc.	DUPLICATE	07/17/01	7/24/01	7/25/01			% Medium Sand		GS	ASTM D422	5.02	%		0.01	0.01
RWR-FP-5003-0000-01	9296-2	Applied Marine Sciences, Inc.	DUPLICATE	07/17/01	7/24/01	7/25/01			% Fine Sand		GS	ASTM D422	50.50	%		0.01	0.01
RWR-FP-5003-0000-01	9296-2	Applied Marine Sciences, Inc.	DUPLICATE	07/17/01	7/24/01	7/26/01			% Silt		GS	ASTM D422	33.38	%		0.01	0.01
RWR-FP-5003-0000-01	9296-2	Applied Marine Sciences, Inc.	DUPLICATE	07/17/01	7/24/01	7/26/01			% Clay		GS	ASTM D422	11.10	%		0.01	0.01
RWR-FP-5003-0000-01	9296-2	Applied Marine Sciences, Inc.	DUPLICATE	07/17/01	7/24/01	7/27/01			TOC		TOC	EPA 9060	5.54	%		0.01	0.01
	CC03	Applied Marine Sciences, Inc.	SRM	7/27/01	7/27/01	7/27/01			TOC		TOC	EPA 9060	4.86	%		0.01	0.01
	CB03	Applied Marine Sciences, Inc.	BLANK	7/27/01	7/27/01	7/27/01			TOC		TOC	EPA 9060	0.01	%	U	0.01	0.01
	CC04	Applied Marine Sciences, Inc.	SRM	7/27/01	7/27/01	7/27/01			TOC		TOC	EPA 9060	5.00	%		0.01	0.01
	CB04	Applied Marine Sciences, Inc.	BLANK	7/27/01	7/27/01	7/27/01			TOC		TOC	EPA 9060	0.01	%	U	0.01	0.01

SAMPLE_NO	LAB_ID	CRDL_CRQL	DIL_FACTOR	PCT_MOIST	COMMENTS	SAMPLE_SIZE	SAMPLE_SIZE_UNITS	FINAL_RESULT	FINAL_QUAL	VALID_COMMENT	FRACTION
RWR-FP-5001-0000-01	9295	0.01				85.6619	G_DRY	0.00			
RWR-FP-5001-0000-01	9295	0.01				85.6619	G_DRY	0.35			
RWR-FP-5001-0000-01	9295	0.01				85.6619	G_DRY	3.42			
RWR-FP-5001-0000-01	9295	0.01				85.6619	G_DRY	78.24			
RWR-FP-5001-0000-01	9295	0.01				85.6619	G_DRY	18.00			
RWR-FP-5001-0000-01	9295	0.01				0.0215	G_DRY	10.91			
RWR-FP-5001-0000-01	9295	1				9.0291	G_DRY	221			
RWR-FP-5003-0000-01	9296	0.01				78.3361	G_DRY	0.00			
RWR-FP-5003-0000-01	9296	0.01				78.3361	G_DRY	0.04			
RWR-FP-5003-0000-01	9296	0.01				78.3361	G_DRY	4.33			
RWR-FP-5003-0000-01	9296	0.01				78.3361	G_DRY	49.29			
RWR-FP-5003-0000-01	9296	0.01				78.3361	G_DRY	35.34			
RWR-FP-5003-0000-01	9296	0.01				78.3361	G_DRY	11.00			
RWR-FP-5003-0000-01	9296	0.01				0.0454	G_DRY	6.05			
RWR-FP-5003-0000-01	9296	1				6.7220	G_DRY	79			
CMS-FP-4005-0000-01	9297	0.01				105.4075	G_DRY	0.00			
CMS-FP-4005-0000-01	9297	0.01				105.4075	G_DRY	0.00			
CMS-FP-4005-0000-01	9297	0.01				105.4075	G_DRY	7.29			
CMS-FP-4005-0000-01	9297	0.01				105.4075	G_DRY	25.93	J		
CMS-FP-4005-0000-01	9297	0.01				105.4075	G_DRY	56.77			
CMS-FP-4005-0000-01	9297	0.01				105.4075	G_DRY	10.00	J		
CMS-FP-4005-0000-01	9297	0.01				0.0308	G_DRY	8.47			
CMS-FP-4005-0000-01	9297	1				24.9122	G_DRY	126			
CMS-DU-072001	9298	0.01				76.2131	G_DRY	0.00			
CMS-DU-072001	9298	0.01				76.2131	G_DRY	0.00			
CMS-DU-072001	9298	0.01				76.2131	G_DRY	3.68			
CMS-DU-072001	9298	0.01				76.2131	G_DRY	21.04	J		
CMS-DU-072001	9298	0.01				76.2131	G_DRY	61.28			
CMS-DU-072001	9298	0.01				76.2131	G_DRY	14.00	J		
CMS-DU-072001	9298	0.01				0.0276	G_DRY	8.37			
CMS-DU-072001	9298	1				15.6116	G_DRY	122			
RWR-FP-5003-0000-01	9296-2	0.01				89.3322	G_DRY	0.00			
RWR-FP-5003-0000-01	9296-2	0.01				89.3322	G_DRY	0.00			
RWR-FP-5003-0000-01	9296-2	0.01				89.3322	G_DRY	5.02			
RWR-FP-5003-0000-01	9296-2	0.01				89.3322	G_DRY	50.50			
RWR-FP-5003-0000-01	9296-2	0.01				89.3322	G_DRY	33.38			
RWR-FP-5003-0000-01	9296-2	0.01				89.3322	G_DRY	11.10			
RWR-FP-5003-0000-01	9296-2	0.01				0.0587	G_DRY	5.54			
	CC03	0.01			4.8% NIST 1941a SRM	0.0218	G_DRY	4.86			
	CB03	0.01			Blank	0.5842	G_DRY	0.01	U		
	CC04	0.01			4.8% NIST 1941a SRM	0.0175	G_DRY	5.00			
	CB04	0.01			Blank	0.6070	G_DRY	0.01	U		

Section 8
Third Party Validation Reports

Validator findings reported here may include results from non-soil samples (e.g., water). Only validator findings specific to soil samples are applicable to this data report.

Steve Stodola
US EPA Approval Signature

4/5/02
Date

Ms. Christine Clark
Regional Sample Control Custodian
Office of Environmental Measurement and Evaluation
U.S. EPA Region I
11 Technology Drive
North Chelmsford, MA 01863

March 29, 2002
B-02-03-P-02
Revised: April 5, 2002

Re: TO No. 04, Task No. 2, TDF No. 0363
Case No. Soils B1OF1, SDG No. 49038-01 D/F
Battelle Laboratories - Columbus, OH
Centredale Manor, N. Providence, RI

Dioxin/Furan, TCX, and HCX:12/Soil/CMS-DU-072001, CMS-FP-4001-0000-01, CMS-FP-4002-0000-01, CMS-FP-4003-0000-01, CMS-FP-4005-0000-01, LPX-FP-4004-0000-01, LPX-FP-4006-0000-01, LPX-FP-4007-0000-01, RWR-FP-5001-0000-01, RWR-FP-5002-000-01, RWR-FP-5003-0000-01, RWR-FP-5004-0000-01 (Field Duplicate Pair/CMS-DU-072001 and CMS-FP-4001-0000-01

1/Soil SRM/CIL EDF 2513

Dear Ms. Clark:

A Tier III data validation was performed on the Dioxin/Furan, TCX and HCX analytical data for twelve soil samples collected by the Harding ESE for the U.S. EPA at the Centredale Manor Site in N. Providence, RI. The samples were analyzed according to EPA Method 1613B, September 15, 1997. The samples were validated using first the criteria in the Centredale Manor Tasks 19-22 QAPP (5/23/01) prepared by Battelle Duxbury Operations, which includes the criteria in EPA Method 1613B, September 15, 1997, defaulting next to Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996 criteria, and to EPA Region I's Environmental Services Assistance Team Dioxin Data Validation SOP ESAT-01-0007 (01/31/01). The criteria for HCX and TCX are documented in Battelle's December 7, 2002 letter to EPA. See the Supporting Documentation section. The data were evaluated based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues
- Data Completeness (CSF Audit - Tier I)
- * Preservation and Technical Holding Times
- * PE Samples/Accuracy Check
- * Window Defining Mix
- Initial and Continuing Calibrations

- Chromatographic Resolution
- * Instrument Sensitivity Check
- Blanks
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample
- Laboratory and Field Duplicates
- Internal/Clean-Up Standards
- Sample Analysis and Identification
- Sample Quantitation
- * Estimated Detection Limits (EDL) and Estimated Maximum Possible Concentration (EMPC)
- 2378-TCDD Toxicity Equivalents (TE) and Isomer Specificity
- * Required Sample Reruns and Second Column Confirmation
- System Performance

* - All criteria were met for this parameter.

The following information was used to generate the Data Validation Memorandum attachments:

Table I: Recommendation Summary Table - summarizes validation recommendations

Table II: Overall Evaluation of Data - summarizes site objectives and potential usability issues

Data Summary Tables - summarize accepted, qualified, and rejected data

Overall Evaluation of Data and Potential Usability Issues

The following is a summary of the site investigation/assessment objectives:

- To generate data of quality to be used for human health (HHRA) and ecological risk assessments (ERA).

One Cambridge Isotope Laboratories (CIL) Standard Reference Material (SRM) sample was evaluated for this SDG (CIL EDF 2513 for Dioxin/Furan congeners in soil). All congeners were within the Centredale Manor Tasks 19-22 QAPP (5/23/01) specified criterion of less than 30% D from the consensus value.

The TCX results indicated analytical problems. The problems included a noncompliant initial calibration, low Ongoing Precision and Recovery (OPR) recovery, and low Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries. All TCX data were rejected due to the above noncompliances.

The method blanks exhibited low level contamination. This contamination problem does not have an impact on the usability of the dioxin/furan data. Contaminants were found in both the blanks and the field samples. When the analyte concentrations in the field samples were less than the corresponding blank action level, the field sample results reported by the laboratory were

qualified as non-detected (U) on the Data Summary Table. See Table I for a summary of the qualifiers applied due to blank contamination.

Data Validation indicated minor data quality problems which do not significantly impact the usability of the dioxin/furan data. However, the TCX data were rejected. See the discussion below for details. The reported results are usable for the site objectives.

Data Completeness (CSF Audit - Tier I)

The following data or information in the data package had discrepancies and/or was missing:

1. For the sample CMS-FP-4003 results report (page 1536), the "Sample Date" should be 7/19/01. The laboratory was asked to submit a corrected report.

2. The percent moisture value (48.08%) for sample RWR-FP-5002 (Battelle ID W5530) was submitted as a printout of an e-mail (page 0054). The laboratory was asked to verify the wet/dry weights for this sample and to submit the dry weight log containing the original data and calculations.

3. The percent moisture value noted above in item #3 was entered into the "dry weight %" column on page 0051 for sample RWR-FP-5002 (Battelle ID W5530) and for the RWR-FP-5002 MS/MSD samples. The dry weight should have been 51.92%. The laboratory was asked to submit corrected quantitation and results reports using the proper dry weight for sample RWR-FP-5002 (pages 0051, 0837, 0838, 1439, and 1541). Also, corrected quantitation, results, and recovery reports were requested for the MS/MSD data run using this sample (pages 1113, 1114, 1137, 1138, 1547, 1548, and 1553).

4. The results reports (pages 1534 - 1545) are marked with various footnote flags such as #, &, and E, as well as K on page 1545. No associated footnotes appeared on the report pages. The laboratory was asked to submit the explanations for these notations.

5. The laboratory was asked to submit the missing initial calibration analyzed on 07/17/01 for the DB-225 column confirmation analysis.

6. The laboratory was asked to explain why the 2378-TCDF results were reported from the confirmation and not the primary column. According tho the QAPP, the laboratory was required to confirm but not to report results for 2378-TCDF above the MDL.

7. The results for sample RWR-FP-5004 (page 1255) were recalculated and reported using the corrected sample weight of 2.2927g. The laboratory was asked to submit recalculated "Estimated Detection Limit" (EDL) values for 23478-PeCDF and 123789-HxCDF corresponding to this corrected sample weight.

8. The laboratory was asked to submit the Certificate of Analysis for the SRM: CIL EDF 2513.

Items 1 through 8 were requested via the TOPO on January 15, 2002 and were received via the TOPO on February 22, 2002. All items were adequately addressed.

Initial and Continuing Calibrations

The following table summarizes the Initial Calibration (IC) results which did not meet the criterion specified in the Centredale Manor Tasks 19-22 QAPP (5/23/01) of RSD ≤25% and the resulting sample qualifications:

IC Date	Compound	% RSD	Action		Affected Samples
			Positive Detects	NDs	
07/19/01	TCX	30	J	UJ	All
07/19/01	HCX (Curve 2, High Range)	45	J	UJ	CMS-FP-4001-0000-01, CMS-FP-4002-0000-01, CMS-FP-4003-0000-01, CMS-FP-4005-0000-01

The data associated with the noncompliant initial calibrations are qualified due to the variability. The quantitation of the analytes in the samples could be biased.

Chromatographic Resolution

The hexachloroxanthene (HCX) peaks exhibit poor chromatography, i.e., broad shape. The broad peak shape created irregularities in the response factors used to calculate the concentrations of HCX. Therefore, professional judgment was used to estimate (J, UJ) all HCX results due to the poor chromatography.

Blanks

All of the blanks associated with this SDG were evaluated for possible sources of contamination. The following table summarizes the highest concentration of contamination that was detected in the blanks. The table lists the action levels and the samples affected:

Congener	Type of Blank	Blank Concentration ng/Kg	Action Level ng/Kg	Samples Affected
2378-TCDD	Method Blank (9/11/01) (2.9 g)	5.25	26	LPX-FP-4007-0000-01, RWR-FP-5002-0000-01, RWR-FP-5003-0000-01, RWR-FP-5004-0000-01
Total TCDD	Method Blank (9/11/01) (2.9 g)	5.25	53	LPX-FP-4007-0000-01, RWR-FP-5002-0000-01, RWR-FP-5003-0000-01, RWR-FP-5004-0000-01
Total TCDD	Method Blank (9/11/01) (1.6 g)	9.29	93	RWR-FP-5001-0000-01

Blank actions are based on Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996 and EPA Region I's Environmental Services Assistance Team Dioxin Data Validation SOP ESAT-01-0007 (01/31/01) criteria. Blank action levels are calculated as ten times the highest concentration of the contaminant determined in any blank for common contaminants (OCDD/OCDF and Total Homologues) and five times the highest concentration for all other analytes. The positive sample results that are less than the blank action level are reported as non-detects (U) at the reported concentration on the Data Summary Table.

Matrix Spike/Matrix Spike Duplicate

One MS/MSD pair was evaluated for this SDG: RWR-FP-5002MS/RWR-FP-5002MSD.

The following table summarizes the soil MS/MSD results which did not meet the recovery criterion of 50-120% and/or Relative Percent Difference (RPD) ≤30% as documented in the Centredale Manor Tasks 19-22 QAPP (5/23/01):

RWR-FP-5002-0000-01					
Congener	MS % Rec.	MSD % Rec.	RPD	Action	
				Positive Detects	NDs
OCDF	66*	113*	53	J	UJ
TCX	7	9	17*	J	R
HCX	7	28	117	J	UJ

* Recovery and/or RPD was acceptable

OCDF was estimated (J) in sample RWR-FP-5002-0000-01. Professional judgment was used to estimate (J) the positive detects for HCX in all samples due to the noncompliant recoveries and/or precision, and to reject (R) the TCX non-detected results in all samples due to the low recoveries outside the criteria. There is a possibility of false negative results for TCX.

Laboratory Control Sample

The laboratory extracted and analyzed one OPR/LCS with this group of samples. The following table summarizes the Ongoing Precision and Recovery (OPR) results which did not meet the Centredale Manor Tasks 19-22 QAPP (5/23/01) criteria and the resulting sample qualifications:

OPR Date	Compound	% Recovery	% Recovery Range	Action		Affected Samples
				Positive Detects	NDs	
07/19/01	TCX	10	50-120	J	R	All
07/19/01	HCX	26	50-120	J	UJ	All

For all samples, the positive results for HCX were estimated (J) due to low OPR recovery. The quantitation of the analytes in the samples could be biased low. The non-detected results for TCX were rejected (R) as unusable in all samples due to the possibility of false negatives.

Laboratory and Field Duplicates

- Laboratory Duplicate

One laboratory duplicate pair was evaluated for this SDG (LPX-FP-4007/LPX-FP-4007DUP).

The table below summarizes the soil laboratory duplicate results which did not meet the duplicate criterion of Relative Percent Difference (RPD) ≤30% as documented in the Centredale Manor Tasks 19-22 QAPP (5/23/01):

Congener	LPX-FP-4007	LPX-FP-4007DUP	RPD	Action	Affected Sample
	Sample Conc. ng/Kg	Duplicate Conc. ng/Kg		Positive Detects	
1234678-HpCDD	1739	938	60	J	LPX-FP-4007-0000-01
OCDD	11180	6229	57	J	LPX-FP-4007-0000-01
1234678-HpCDF	844	452	61	J	LPX-FP-4007-0000-01
OCDF	1992	1077	60	J	LPX-FP-4007-0000-01

The positive results were estimated (J) for 1234678-HpCDD, OCDD, 1234678-HpCDF, and OCDF in sample LPX-FP-4007-0000-01 due to laboratory duplicate precision outside criterion.

- Field Duplicate

One field duplicate pair was evaluated for this SDG (CMS-FP-4001-0000-01/CMS-DU-072001).

The table below summarizes the sediment field duplicate results which did not meet the duplicate criterion of Relative Percent Difference (RPD) ≤50% for soils/sediments as specified in Region I's Environmental Services Assistance Team Dioxin Data Validation SOP ESAT-01-0007 (01/31/01):

Congener	CMS-FP-4001-0000-01	CMS-DU-072001	RPD	Action	Affected Samples
	% Solids (56.1%)	% Solids (46.0%)			
	Sample Conc. ng/Kg	Duplicate Conc. ng/Kg		Positive Detects	
1234678-HpCDD	815	1371	51	J	CMS-FP-4001-0000-01, CMS-DU-072001
OCDD	5668	10934	63	J	CMS-FP-4001-0000-01, CMS-DU-072001
HCX	12984	3131	122	J	CMS-FP-4001-0000-01, CMS-DU-072001

The positive detects for 1234678-HpCDD, OCDD, and HCX in samples CMS-FP-4001-0000-01 and CMS-DU-072001 were estimated (J) due to field duplicate precision outside criterion.

Internal/Clean-Up Standards

- Internal Standards

The following table summarizes the internal standards with recoveries which did not meet the acceptance criterion of 25-150% specified in the Centredale Manor Tasks 19-22 QAPP (5/23/01):

Internal Standard	% Recovery	Action		Affected Samples
		Positive Detects	NDs	
$^{13}C_{12}$-2378-TCDD	11	J	UJ	CMS-FP-4001-0000-01
$^{13}C_{12}$-2378-TCDD	22	J	UJ	CMS-FP-4002-0000-01
$^{13}C_{12}$-2378-TCDD	19	J	UJ	CMS-FP-4005-0000-01
$^{13}C_{12}$-2378-TCDD	21	J	UJ	LPX-FP-4007-0000-01
$^{13}C_{12}$-2378-TCDF	10	J	UJ	CMS-DU-072001

Internal Standard	% Recovery	Action		Affected Samples
		Positive Detects	NDs	
$^{13}C_{12}$-2378-TCDF	4	J	R	CMS-FP-4001-0000-01
$^{13}C_{12}$-2378-TCDF	7	J	R	CMS-FP-4002-0000-01
$^{13}C_{12}$-2378-TCDF	7	J	R	CMS-FP-4003-0000-01
$^{13}C_{12}$-2378-TCDF	5	J	R	CMS-FP-4005-0000-01
$^{13}C_{12}$-2378-TCDF	7	J	R	LPX-FP-4007-0000-01
$^{13}C_{12}$-2378-TCDF	17	J	UJ	RWR-FP-5002-0000-01
$^{13}C_{12}$-2378-TCDF	18	J	UJ	RWR-FP-5003-0000-01
$^{13}C_{12}$-2378-TCDF	17	J	UJ	RWR-FP-5004-0000-01

The corresponding non-labeled congeners were estimated as shown in the table due to internal standard recoveries outside criterion. There were no 2378-TCDF non-detects, so no data were rejected.

- Clean-Up Standards

The following table summarizes the clean-up standards with recoveries which did not meet the acceptance criterion of 25-150% specified in the Centredale Manor Tasks 19-22 QAPP (5/23/01):

Clean-Up Standard	% Recovery	Action		Affected Samples
		Positive Detects	NDs	
$^{37}Cl_4$-2378-TCDD	11	J	UJ	CMS-FP-4001-0000-01
$^{37}Cl_4$-2378-TCDD	19	J	UJ	CMS-FP-4005-0000-01
$^{37}Cl_4$-2378-TCDD	19	J	UJ	LPX-FP-4007-0000-01

Since low recoveries may indicate interference in the clean-up process, the samples were qualified as noted above for all congeners.

Sample Quantitation

Concentrations quantitated and reported by the laboratory below the lowest calibration standard are flagged (J) on the Data Summary Table. Quantitation is not accurate when the reported results are below the lowest calibration standard.

The laboratory reported the 2378-TCDF values from the DB-225 column confirmation analysis

and flagged the majority of the samples as "Estimated" due to co-elution matrix interferences. Professional judgment was used to report the original DB-5 column values on the Data Summary Table because they are free of interferences.

2378-TCDD Toxicity Equivalents (TE) and Isomer Specificity

All TE values were calculated by the ESAT data validator using the validated data discussed above in this report. As a result, the TE values in the Data Summary Table may differ from the values reported by the laboratory. The validated data accounts for blank contamination and any necessary dilutions. The TE calculations include the reported EMPC values. The TEF values used are published in EPA/625/3-89/016, "Interim Procedures for Estimating Risks Associated with Exposure to Mixtures of Chlorinated Dibenzo-p-Dioxins and Dibenzofurans (CDDs and CDFs)" 1989 Update, Part II, page 13.

System Performance

No trends were noted with the dioxin/furan analysis. The results for HCX and TCX indicated analytical problems. The problems included: noncompliant initial calibrations for TCX and HCX (curve 2, high range); poor HCX chromatography; low LCS/OPR recoveries for TCX and HCX; poor MS/MSD precision for HCX; and low MS/MSD recoveries for TCX and HCX.

Very truly yours,

LOCKHEED ENVIRONMENTAL

Robert Peary
Robert Peary
Scientist

for
Louis Macri
ESAT Program Manager

cc: Cornell Rosiu, EPA RPM (DV Memorandum, Data Summary Table)

Attachments: Table I: Recommendation Summary Table
Table II: Overall Evaluation of Data
Data Summary Tables
Data Validation Worksheets
Analytical Method
PE Score Results
Communications
Field Sampling Notes

Table I
Recommendation Summary Table for Dioxins/Furans
Centredale Manor Site
Case No.: Soils B1OF1 / SDG No.: 49038-01 D/F

Sample Nos.	CMS-DU-072001	CMS-FP-4001-0000-01	CMS-FP-4002-0000-01	CMS-FP-4003-0000-01	CMS-FP-4005-0000-01	LPX-FP-4004-0000-01
Compound						
2378-TCDD	A	J[8,9]	J[8]	A	J[8,9]	A
12378-PeCDD	A	J[9]	A	A	J[9]	A
123478-HxCDD	A	J[9]	A	A	J[9]	A
123678-HxCDD	A	J[9]	A	A	J[9]	A
123789-HxCDD	A	J[9]	A	A	J[9]	A
1234678-HpCDD	J[7]	J[7,9]	A	A	J[9]	A
OCDD	J[7]	J[7,9]	A	A	J[9]	A
2378-TCDF	J[8]	J[8,9]	J[8]	J[8]	J[8,9]	A
12378-PeCDF	A	J[9]	A	A	J[9]	A
23478-PeCDF	A	J[9]	A	A	J[9]	A
123478-HxCDF	A	J[9]	A	A	J[9]	A
123678-HxCDF	A	J[9]	A	A	J[9]	A
123789-HxCDF	A	J[9]	A	A	J[9]	A
234678-HxCDF	A	J[9]	A	A	J[9]	A
1234678-HpCDF	A	J[9]	A	A	J[9]	A
1234789-HpCDF	A	J[9]	A	A	J[9]	A
OCDF	A	J[9]	A	A	J[9]	A
HCX	J[2,4,5,7]	J[1,2,4,5,7]	J[1,2,4,5]	J[1,2,4,5]	J[1,2,4,5]	J[2,4,5]
TCX	R[1,2]	R[1,2]	R[1,2]	R[1,2]	R[1,2]	R[1,2]

Table I
Recommendation Summary Table for Dioxins/Furans
Centredale Manor Site
Case No.: Soils B1OF1 / SDG No.: 49038-01 D/F

Sample Nos.	LPX-FP-4006-0000-01	LPX-FP-4007-0000-01	RWR-FP-5001-0000-01	RWR-FP-5002-0000-01	RWR-FP-5003-0000-01	RWR-FP-5004-0000-01
Compound						
2378-TCDD	A	J[3, 8, 9]	A	J[3]	J[3]	J[3]
12378-PeCDD	A	J[9]	A	A	A	A
123478-HxCDD	A	J[9]	A	A	A	A
123678-HxCDD	A	J[9]	A	A	A	A
123789-HxCDD	A	J[9]	A	A	A	A
1234678-HpCDD	A	J[6, 9]	A	A	A	A
OCDD	A	J[6, 9]	A	A	A	A
2378-TCDF	A	J[8, 9]	A	J[8]	J[8]	J[8]
12378-PeCDF	A	J[9]	A	A	A	A
23478-PeCDF	A	J[9]	A	A	A	A
123478-HxCDF	A	J[9]	A	A	A	A
123678-HxCDF	A	J[9]	A	A	A	A
123789-HxCDF	A	J[9]	A	A	A	A
234678-HxCDF	A	J[9]	A	A	A	A
1234678-HpCDF	A	J[6, 9]	A	A	A	A
1234789-HpCDF	A	J[9]	A	A	A	A
OCDF	A	J[6, 9]	A	J[4]	A	A
HCX	J[2, 4, 5]	J[2, 4, 5]	J[2, 4, 5]	J[2, 4, 5]	J[2, 4, 5]	J[2, 4, 5]
TCX	R[1, 2]	R[1, 2]	R[1, 2]	R[1, 2]	R[1, 2]	R[1, 2]

Table I
Recommendation Summary Table for Dioxins/Furans

A	-	Accept results.
J^1	-	Initial calibration outside criterion; J detects, UJ non-detects.
J^2	-	Poor chromatography; J detects, UJ non-detects.
J^3	-	Method blank contamination; positive sample results less than the blank action level are reported as non-detects (U) at the concentration reported.
J^4	-	MS/MSD recovery and/or RPD outside criteria; J detects, UJ non-detects.
J^5	-	OPR/LCS outside criterion; J detects, UJ non-detects.
J^6	-	Laboratory duplicate precision (%D) outside criterion; J detects.
J^7	-	Field duplicate precision (%D) outside criterion; J detects.
J^8	-	Internal standard recovery outside criterion; J detects, UJ non-detects.
J^9	-	Clean-up standard recovery outside criterion; J detects, UJ non-detects.
R^1	-	Poor MS/MSD recovery; R non-detects.
R^2	-	Poor OPR/LCS recovery; R non-detects.

EPA-NE - Data Validation Worksheet

Overall Evaluation of Data - Data Validation Memorandum - Table II

DIOXIN/FURAN ANALYSIS					
DQO (list all DQOs)	Sampling* and/or Analytical Method Appropriate Yes or No	Measurement Error		Sampling Variability	Potential Usability Issues
		Analytical Error	Sampling Error		
To generate data of quality sufficient to be used for human health (HHRA) and ecological risk assessments (ERA) at the site.	Yes, Sampling Method appropriate for all samples. Yes, Analytical Method appropriate for all samples.	Refer to qualification in R/S Key on Table I: J [1,2,3,4,5,6,8,9] R [1,2]	Refer to qualification in R/S Key on Table I: J [7]	**	One Cambridge Isotope Laboratories (CIL) Standard Reference Material (SRM) sample was evaluated for this SDG (CIL EDF 2513 for Dioxin/Furan congeners in soil). All congeners were within the Centredale Manor Tasks 19-22 QAPP (5/23/01) specified criteria of less than 30% D from the consensus value. The TCX results indicated analytical problems. The problems included a noncompliant initial calibration, low Ongoing Precision and Recovery (OPR) recovery, and low Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries. All TCX data were rejected due to the above noncompliances. The method blanks exhibited low level contamination. This contamination problem does not have an impact on the usability of the data. Contaminants were found in both the blanks and the field samples. When the analyte concentrations in the field samples were less than the corresponding blank action level, the field sample results reported by the laboratory were qualified as non-detected (U) on the Data Summary Table. See Table I for a summary of the qualifiers applied due to blank contamination. Data Validation indicated minor data quality problems which do not significantly impact the usability of the dioxin/furan data. However, the TCX data were rejected. See the data validation memorandum for details. The reported results are usable for the site objectives.

* The evaluation of "sampling error" cannot be completely assessed in the data validation.

** Sampling variability is not assessed in data validation.

Validator: [signature]

Date: 4/5/02

Data Summary Table
Dioxin/Furan Analysis - Soil Samples

SITE: Centredale Manor - N. Providence, RI
CASE NO. Soils B1DF1 SDG No. 49038-01 D/F
LABORATORY: BATTELLE

SAMPLE NUMBER:	Toxicity Equivalency Factors (1)	CMS-DU-072001#		CMS-FP-4001-0000-01#		CMS-FP-4002-0000-01#		CMS-FP-4003-0000-01#		CMS-FP-4005-0000-01#		LPX-FP-4004-0000-01#	
STATION LOCATION:		CENTREDALE MANOR SITE		CENTREDALE MANOR SITE		CENTREDALE MANOR SITE		CENTREDALE MANOR SITE		CENTREDALE MANOR SITE		LYMANSVILLE POND	
MATRIX:		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
TCDD/TCDF CONC.:		ng/Kg	DL/EMPC	ng/Kg	DL/EMPC	ng/Kg	DL/EMPC	ng/Kg	DL/EMPC	ng/Kg	DL/EMPC	ng/Kg	DL/EMPC
2,3,7,8-TCDD	1.0	1057.60		1582.71 J		4718.26 J		2383.01		634.29 J		1130.07	
1,2,3,7,8-PeCDD	0.5	9.49 J		6.36 J		4.92 J		7.23 J		9.79 J		0.61 J	
1,2,3,4,7,8-HxCDD	0.1	16.46		10.46 J		7.46 J		10.37 J		16.03 J		0.93 J	
1,2,3,6,7,8-HxCDD	0.1	56.60		36.00 J		31.63		39.22		70.39 J		2.63 J	
1,2,3,7,8,9-HxCDD	0.1	50.24		34.55 J		24.45		33.34		57.81 J		2.33 J	
1,2,3,4,6,7,8-HpCDD	0.01	1371.30 J		814.54 J		675.91		865.99		1411.33 J		67.14	
OCDD	0.001	10934.68 J		5668.25 J		4610.74		6387.10		10004.20 J		432.55	
2,3,7,8-TCDF	0.1	10.51 J		8.27 J		15.57 J		12.44 J		13.68 J		2.26 J	
1,2,3,7,8-PeCDF	0.05	3.59 J		2.52 J		2.89 J		U	4.67	2.71 J		0.88 J	
2,3,4,7,8-PeCDF	0.5	5.63 J		4.60 J		8.38 J		6.12 J		6.67 J		1.34 J	
1,2,3,4,7,8-HxCDF	0.1	21.04		14.21 J		23.31		20.76		20.26 J		2.87 J	
1,2,3,6,7,8-HxCDF	0.1	18.97		12.64 J		13.61 J		17.00		18.34 J		1.66 J	
1,2,3,7,8,9-HxCDF	0.1	0.50 J		UJ	1.20	U	0.76	U	12.40	UJ	7.85	U	1.16
2,3,4,6,7,8-HxCDF	0.1	11.90 J		8.38 J		8.75 J		11.07 J		13.57 J		1.31 J	
1,2,3,4,6,7,8-HpCDF	0.01	289.65		191.09 J		149.20		237.24		305.61 J		18.22	
1,2,3,4,7,8,9-HpCDF	0.01	16.38		10.26 J		9.21 J		13.35 J		18.32 J		1.18 J	
OCDF	0.001	703.90		491.89 J		340.41		523.12		813.24 J		37.19	
TOTAL TCDD		1057.60 J		1582.71 J		4718.26 J		2383.01 J		634.29 J		1130.07 J	
TOTAL PeCDD		25.85 J		17.53 J		22.78 J		16.92 J		16.82 J		2.06 J	
TOTAL HxCDD		341.89 J		211.43 J		197.07 J		238.07 J		352.67 J		22.38 J	
TOTAL HpCDD		2493.34 J		1398.16 J		1244.98 J		1496.78 J		2424.03 J		112.80 J	
TOTAL TCDF		21.78 J		14.14 J		49.41 J		33.69 J		43.32 J		7.44 J	
TOTAL PeCDF		209.65 J		151.67 J		289.92 J		223.60 J		171.23 J		33.24 J	
TOTAL HxCDF		353.63 J		233.95 J		203.52 J		245.08 J		257.93 J		30.17 J	
TOTAL HpCDF		635.56 J		397.13 J		321.68 J		497.06 J		704.71 J		37.30 J	
HCX		3130.72 J		12934.02 J		74693.84 J		27980.03 J		22059.05 J		261.93 J	
TCX		R		R		R		R		R		R	
TOXIC EQUIVALENT(1):		1100 J		1600 J		4800 J		2400 J		690 J		1100 J	
PERCENT SOLIDS:		46.0		56.6		48.6		55.3		45.1		64.5	
DILUTION FACTOR:		1.0		1.0		1.0		1.0		1.0		1.0	
DATE SAMPLED:		07/20/01		07/18/01		07/18/01		07/19/01		07/20/01		07/19/01	
DATE OF RECEIPT:		07/21/01		07/21/01		07/21/01		07/21/01		07/21/01		07/21/01	
SAMPLE EXTRACTION DATE:		08/30/01		08/30/01		08/30/01		08/30/01		08/30/01		08/30/01	
ANALYSIS DATE:		09/12/01		09/11/01		09/11/01		09/11/01		09/11/01		09/13/01	
LAB SAMPLE ID:		49038-01-06		49038-01-02		49038-01-03		49038-01-04		49038-01-05		49038-01-13	

* = The values in this column are either the Detection Limits (DL) or the Estimated Maximum Possible Concentration (EMPC). The EMPC results are marked with a "*". The DL values are unmarked. The EMPC values are not qualified with a "J", since they are already estimated.
# = Results reported on a dry weight basis.
(1) = The Toxic Equivalent concentrations are calculated with the Toxicity Equivalency Factors (TEFs) found in "Interim Procedures for Estimating Risks Associated with Exposure to Mixtures of Chlorinated Dibenzo-p-Dioxins and Dibenzofurans (CDDs and CDFs)" 1989 Update, Part II, page 13.
Concentrations reported by the laboratory below the lowest standard are flagged (J) on the Data Summary Table as estimated values. All other necessary qualifications are defined in Table I.

Data Summary Table
Dioxin/Furan Analysis - Soil Samples

SITE: Centredale Manor - N. Providence, RI
CASE NO. Soils B1OF1 SDG No. 49038-01 D/F
LABORATORY: BATTELLE

SAMPLE NUMBER:	Toxicity	LPX-FP-4006-0000-01#		LPX-FP-4007-0000-01#		RWR-FP-5001-0000-01#		RWR-FP-5002-0000-01#		RWR-FP-5003-0000-01#		RWR-FP-5004-0000-01#	
STATION LOCATION:	Equivalency	LYMANSVILLE POND		LYMANSVILLE POND		WOONASQUATUCKET RIVER UPSTREAM REACH		WOONASQUATUCKET RIVER UPSTREAM REACH		WOONASQUATUCKET RIVER UPSTREAM REACH		WOONASQUATUCKET RIVER UPSTREAM REACH	
MATRIX:	Factors (1)	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
TCDD/TCDF CONC.:		ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*
2,3,7,8-TCDD	1.0	123.29		UJ	19.71	56.70		U	3.52	U	4.57	U	18.42
1,2,3,7,8-PeCDD	0.5	6.44 J		12.64 J		6.72 J		3.09 J		2.66 J		8.05 J	
1,2,3,4,7,8-HxCDD	0.1	6.61 J		27.12 J		51.31 J		5.60 J		4.24 J		12.28 J	
1,2,3,6,7,8-HxCDD	0.1	18.29		74.39 J		48.43		21.98		18.11		45.86 J	
1,2,3,7,8,9-HxCDD	0.1	22.36		72.20 J		31.00		15.30		13.84		35.04 J	
1,2,3,4,6,7,8-HpCDD	0.01	848.12		1739.31 J		877.88		383.19		279.36		1027.63	
OCDD	0.001	1821.10		11180.23 J		5930.83		2459.31		2191.27		6388.16	
2,3,7,8-TCDF	0.1	35.51		10.12 J		21.50		10.29 J		12.25 J		40.57 J	
1,2,3,7,8-PeCDF	0.05	6.94 J		4.91 J		6.21 J		2.94 J		4.18 J		7.94 J	
2,3,4,7,8-PeCDF	0.5	12.94 J		8.44 J		11.71 J		6.63 J		7.58 J		U	24.46
1,2,3,4,7,8-HxCDF	0.1	24.27		36.22 J		31.09		19.20		20.44		50.69 J	
1,2,3,6,7,8-HxCDF	0.1	11.13 J		29.04 J		23.62		12.97 J		13.57		32.95 J	
1,2,3,7,8,9-HxCDF	0.1	0.66 J		0.49 J		1.07 J		0.61 J		0.41 J		U	3.53
2,3,4,6,7,8-HxCDF	0.1	12.65 J		25.15 J		15.54 J		10.27 J		9.68 J		24.81 J	
1,2,3,4,6,7,8-HpCDF	0.01	60.50		843.93 J		302.10		141.91		148.23		481.57	
1,2,3,4,7,8,9-HpCDF	0.01	4.19 J		38.93 J		15.01 J		6.93 J		7.30 J		21.57 J	
OCDF	0.001	73.77		1992.34 J		477.82		133.73 J		216.87		1253.55	
TOTAL TCDD		137.03 J		UJ	19.71	UJ	62.94	UJ	5.94	UJ	5.14	UJ	21.71
TOTAL PeCDD		89.24 J		30.92 J		34.78 J		16.97 J		31.66 J		32.69 J	
TOTAL HxCDD		184.09 J		396.97 J		265.45 J		144.25 J		127.55 J		318.61 J	
TOTAL HpCDD		652.20 J		3306.90 J		1688.53 J		733.27 J		565.45 J		2028.14 J	
TOTAL TCDF		161.36 J		10.12 J		110.28 J		28.31 J		52.09 J		126.81 J	
TOTAL PeCDF		225.82 J		176.45 J		386.90 J		161.95 J		207.64 J		651.09 J	
TOTAL HxCDF		146.57 J		605.05 J		415.68 J		216.32 J		220.62 J		616.83 J	
TOTAL HpCDF		119.18 J		1975.68 J		678.98 J		287.60 J		306.92 J		1249.00 J	
HCX		117.84 J		188.74 J		85.77 J		117.04 J		163.46 J		417.06 J	
TCX		R		R		R		R		R		R	
TOXIC EQUIVALENT(1):		150 J		76 J		100 J		22 J		21 J		54 J	
PERCENT SOLIDS:		50.7		55.0		33.1		51.9		58.4		45.9	
DILUTION FACTOR:		1.0		1.0		1.0		1.0		1.0		1.0	
DATE SAMPLED:		07/19/01		07/19/01		07/17/01		07/16/01		07/17/01		07/19/01	
DATE OF RECEIPT:		07/21/01		07/21/01		07/21/01		07/21/01		07/21/01		07/21/01	
SAMPLE EXTRACTION DATE:		08/30/01		08/30/01		08/30/01		08/30/01		08/30/01		08/30/01	
ANALYSIS DATE:		09/12/01		09/13/01		09/12/01		09/12/01		09/12/01		09/13/01	
LAB SAMPLE ID:		49038-01-14		49038-01-15		49038-01-07		49038-01-06		49038-01-11		49038-01-12	

* = The values in this column are either the Detection Limits (DL) or the Estimated Maximum Possible Concentration (EMPC). The EMPC results are marked with a "*". The DL values are unmarked.
The EMPC values are not qualified with a "J", since they are already estimated.
= Results reported on a dry weight basis.
(1) = The Toxic Equivalent concentrations are calculated with the Toxicity Equivalency Factors (TEFs) found in "Interim Procedures for Estimating Risks Associated with Exposure to Mixtures of Chlorinated Dibenzo-p-Dioxins and Dibenzofurans (CDDs and CDFs)" 1989 Update, Part II, page 13.
Concentrations reported by the laboratory below the lowest standard are flagged (J) on the Data Summary Table as estimated values. All other necessary qualifications are defined in Table I.

Data Summary Table
Dioxin/Furan Analysis - Soil Samples

SITE: Centredale Manor - N. Providence, RI
CASE NO. Sole B1OF1 SDG No. 49038-01 D/F
LABORATORY: BATTELLE

SAMPLE NUMBER:	Toxicity Equivalency	LPX-FP-4006-0000-01#		LPX-FP-4007-0000-01#		RWR-FP-5001-0000-01#		RWR-FP-5002-0000-01#		RWR-FP-5003-0000-01#		RWR-FP-5004-0000-01#	
STATION LOCATION:		LYMANSVILLE POND		LYMANSVILLE POND		WOONASQUATUCKET RIVER UPSTREAM REACH		WOONASQUATUCKET RIVER UPSTREAM REACH		WOONASQUATUCKET RIVER UPSTREAM REACH		WOONASQUATUCKET RIVER UPSTREAM REACH	
MATRIX:	Factors (1)	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
TCDD/TCDF CONC.:		ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*
2,3,7,8-TCDD	1.0	123.29		UJ	19.71	56.70		U	3.52	U	4.57	U	18.42
1,2,3,7,8-PeCDD	1.0	6.44 J		12.64 J		6.72 J		3.09 J		2.66 J		8.05 J	
1,2,3,4,7,8-HxCDD	0.1	6.61 J		27.12 J		11.31 J		5.50 J		4.24 J		12.28 J	
1,2,3,6,7,8-HxCDD	0.1	18.29		74.39 J		46.43		21.98		18.11		45.86 J	
1,2,3,7,8,9-HxCDD	0.1	22.36		72.20 J		31.00		15.30		13.54		35.04 J	
1,2,3,4,6,7,8-HpCDD	0.01	348.12		1739.31 J		877.88		383.19		279.36		1027.63	
OCDD	0.0001	1821.10		11580.23 J		5930.93		2409.31		2191.27		8333.15	
2,3,7,8-TCDF	0.1	35.51		10.12 J		21.50		10.29 J		12.25 J		40.57 J	
1,2,3,7,8-PeCDF	0.05	8.94 J		4.91 J		5.21 J		2.84 J		4.18 J		7.94 J	
2,3,4,7,8-PeCDF	0.5	12.94 J		8.44 J		11.71 J		6.53 J		7.58 J		U	24.46
1,2,3,4,7,8-HxCDF	0.1	24.27		35.22 J		31.09		18.20		20.44		50.59 J	
1,2,3,6,7,8-HxCDF	0.1	11.13 J		29.04 J		23.62		12.97 J		13.57		32.95 J	
1,2,3,7,8,9-HxCDF	0.1	0.66 J		0.49 J		1.07 J		0.61 J		0.41 J		U	3.53
2,3,4,6,7,8-HxCDF	0.1	12.65 J		25.15 J		15.54 J		10.27 J		9.68 J		24.81 J	
1,2,3,4,6,7,8-HpCDF	0.01	60.50		843.93 J		302.10		141.91		148.23		481.57	
1,2,3,4,7,8,9-HpCDF	0.01	4.19 J		38.93 J		15.01 J		8.93 J		7.30 J		21.57 J	
OCDF	0.0001	73.77		1992.34 J		477.82		139.73 J		216.67		1253.55	
TOTAL TCDD		137.03 J		UJ	19.71	UJ	62.94	UJ	5.94	UJ	5.14	UJ	21.71
TOTAL PeCDD		89.24 J		30.92 J		34.78 J		16.97 J		31.66 J		32.59 J	
TOTAL HxCDD		184.09 J		398.97 J		255.45 J		144.25 J		127.55 J		319.81 J	
TOTAL HpCDD		952.20 J		3305.90 J		1688.53 J		733.27 J		585.45 J		2028.14 J	
TOTAL TCDF		161.36 J		10.12 J		110.28 J		28.31 J		52.09 J		128.81 J	
TOTAL PeCDF		225.82 J		175.45 J		386.90 J		161.95 J		207.64 J		551.09 J	
TOTAL HxCDF		146.67 J		605.05 J		415.68 J		216.32 J		220.82 J		616.93 J	
TOTAL HpCDF		119.18 J		1975.65 J		678.98 J		287.60 J		305.92 J		1249.00 J	
HCX		117.84 J		188.74 J		85.77 J		117.04 J		153.46 J		417.06 J	
TCX		R		R		R		R		R		R	
TOXIC EQUIVALENT(1):		150 J		72 J		100 J		22 J		20 J		49 J	
PERCENT SOLIDS:		50.7		55.0		33.1		51.9		58.4		45.9	
DILUTION FACTOR:		1.0		1.0		1.0		1.0		1.0		1.0	
DATE SAMPLED:		07/19/01		07/19/01		07/17/01		07/16/01		07/17/01		07/18/01	
DATE OF RECEIPT:		07/21/01		07/21/01		07/21/01		07/21/01		07/21/01		07/21/01	
SAMPLE EXTRACTION DATE:		08/30/01		08/30/01		08/30/01		08/30/01		08/30/01		08/30/01	
ANALYSIS DATE:		09/13/01		09/13/01		09/12/01		09/12/01		09/12/01		09/13/01	
LAB SAMPLE ID:		49038-01-14		49038-01-15		49038-01-07		49038-01-08		49038-01-11		49038-01-12	

* = The values in this column are either the Detection Limits (DL) or the Estimated Maximum Possible Concentration (EMPC). The EMPC results are marked with a "*". The DL values are unmarked.
The EMPC values are not qualified with a "J", since they are already estimated.
= Results reported on a dry weight basis.
(1) = The Toxic Equivalent concentrations are calculated with the Toxicity Equivalency Factors (TEFs) found in "Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife", Environmental Health Perspectives, Volume (105), Number (12), December 1998, Table 1, page 778.
Concentrations reported by the laboratory below the lowest standard are flagged (J) on the Data Summary Table as estimated values. All other necessary qualifications are defined in Table I.

Steve Stodola
US EPA Approval Signature

June 26, 2002
Date

June 6, 2002
B-02-06-Y-2
Revised: June 17, 2002

Ms. Christine Clark
Regional Sample Control Custodian
Office of Environmental Measurement and Evaluation
U.S. EPA Region I
11 Technology Drive
North Chelmsford, MA 01863

Re: TO No. 010, Task No. 2, TDF No. 0603
Case No. Centredale Soil B1OF1, SDG No. 48985-09 PCB
Battelle Laboratories - Columbus, OH
Centredale Manor, North Providence, RI

209 PCB Congeners: 4/Soil/CMS-DU-0720-01, LPX-FP-4004-0000-01, LPX-FP-4007-0000-01, RWR-FP-5002-0000-01

Dear Ms. Clark:

A Tier III data validation was performed on the 209 PCB congeners analytical data for four soil samples collected by Harding ESE, Inc. for the U.S. EPA at the Centredale Manor Site in North Providence, RI. The samples were analyzed according to EPA Method 1668A, December 1999, as outlined in the Centredale Manor Tasks 19-22 QAPP (5/23/01). The samples were validated using first the criteria in the Centredale Manor Tasks 19-22 QAPP (5/23/01) prepared by Battelle Duxbury Operations which include the criteria in EPA Method 1668A, December 1999, defaulting next to Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996 criteria, and to EPA Region I's Environmental Services Assistance Team PCB Congener Data Validation ESAT-01-0008 Draft (8/31/01). The data were evaluated based on the following parameters:

	•	Overall Evaluation of Data and Potential Usability Issues
	•	Data Completeness (CSF Audit - Tier I)
*	•	Preservation and Technical Holding Times
NA	•	PE Samples/Accuracy Check
*	•	Window Defining Mix
*	•	Initial and Continuing Calibrations
	•	Chromatographic Resolution
*	•	Instrument Sensitivity Check
	•	Blanks
*	•	Matrix Spike/Matrix Spike Duplicate
NA	•	Laboratory Control Sample
	•	Laboratory and Field Duplicates
	•	Internal/Clean-up Standards
*	•	Sample Analysis and Identification
	•	Sample Quantitation

*	•	Estimated Detection Limits (EDL) and Estimated Maximum Possible Concentration (EMPC)
	•	2378-TCDD Toxicity Equivalents (TE) and Isomer Specificity
*	•	Required Sample Reruns and Second Column Confirmation
	•	System Performance

* - All criteria were met for this parameter.
NA - Not Analyzed

The following information was used to generate the Data Validation Memorandum attachments:

Table I: Recommendation Summary Table - summarizes validation recommendations

Table II: Overall Evaluation of Data - summarizes site objectives and potential usability issues

Data Summary Tables - summarize accepted, qualified, and rejected data

Overall Evaluation of Data and Potential Usability Issues

The following is a summary of the site investigation/assessment objectives as found in Centredale Manor Tasks 19-22 QAPP (5/23/01):

- To generate data of quality sufficient to be used for human health (HHRA) and ecological risk assessments (ERA) at the site.

There were no associated SRM or LCS/OPR extracted or analyzed with this SDG. The original SRM EDF-2513 soil SRM did not contain certified values for PCBs. The laboratory submitted a SRM and a LCS/OPR which was processed in a similar timeframe as the soil samples. The SRM and the LCS/OPR were extracted via a Soxhlet procedure, whereas, the soil sample in this SDG were extracted via Accelerated Solvent Extraction System. Therefore, the SRM and LCS/OPR submitted by the laboratory are not applicable to this SDG since they were extracted by a different procedure.

The method blank had low level contamination. However, the concentration in the method blanks was insignificant when compared to the concentration found in the field samples. Therefore, the method blank contamination does not impact data usability. When the analyte concentrations in the field samples were less than the corresponding blank action level, the field sample results reported by the laboratory are qualified as non-detected (U) on the Data Summary Table. See Table I for a summary of the qualifiers applied due to blank contamination.

The non-detected values for several congeners were rejected due to non-compliant internal and clean-up standard recoveries.

Data validation indicated minor data quality problems which do not significantly impact the usability of the data. See the discussion below for details. The reported results are usable for the site objectives.

Data Completeness (CSF Audit - Tier I)

The following data or information in the data package had discrepancies and/or were missing:

1. The laboratory was asked to submit the initial and continuing calibration associated with sample LPX-FP-4004.

2. The laboratory was asked to submit MS/MSD and duplicate precision spreadsheets with the RPDs reported.

3. The laboratory was asked to requantitate and resubmit the quant reports and the Form Is for samples RWR-FP-5002, RWR-FP-5002MS, and RWR-FP-5002MSD since the percent moisture values were entered as the dry weight for these samples.

4. The laboratory was asked to send an up-dated EDD for item 3.

Item 1 was requested via the TOPO on February 28, 2002 and items 2 thru 4 were requested via the TOPO on May 2, 2002. Item 1 was received via the TOPO on March 13, 2002 and items 2 thru 4 were received via the TOPO on May 15, 2002. All items were adequately addressed.

Chromatographic Resolution

Many PCB congeners coeluted on the SPB-Octyl gas chromatography column used for this project. This situation was documented in Centredale Manor Tasks 19-22 QAPP (5/23/01). The laboratory reported the coeluting concentrations as totals. These totals are reported on the Data Summary Tables in this report and are not affected by the coelution of the congeners. Three of the "toxic congeners" with TEF values coeluted: PCB-123, PCB-156, and PCB-157.

Coeluting Congeners	Reported as on the Data Summary Table:
PCB-12, PCB-13	PCB-12/PCB-13
PCB-18, PCB-30	PCB-18/PCB-30
PCB-20, PCB-21, PCB-28, PCB-33	PCB-20/PCB-21/PCB-28/PCB-33
PCB-24, PCB-27	PCB-24/PCB-27
PCB-26, PCB-29	PCB-26/PCB-29
PCB-40, PCB-41, PCB-71	PCB-40/PCB-41/PCB-71
PCB-43, PCB-52, PCB-73	PCB-43/PCB-52/PCB-73
PCB-44, PCB-47, PCB-65	PCB-44/PCB-47/PCB-65
PCB-45, PCB-51	PCB-45/PCB-51
PCB-49, PCB-69	PCB-49/PCB-69
PCB-50, PCB-53	PCB-50/PCB-53
PCB-59, PCB-62, PCB-75	PCB-59/PCB-62/PCB-75

Coeluting Congeners	Reported as on the Data Summary Table:
PCB-61, PCB-70, PCB-74, PCB-76	PCB-61/PCB-70/PCB-74/PCB-76
PCB-83, PCB-99	PCB-83, PCB-99
PCB-85, PCB-116, PCB-117	PCB-85/PCB-116/PCB-117
PCB-86, PCB-87, PCB-97, PCB-109, PCB-119, PCB-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-125
PCB-90, PCB-101, PCB-113	PCB-90/PCB-101/PCB-113
PCB-88, PCB-91	PCB-88/PCB-91
PCB-93, PCB-95, PCB-98, PCB-100, PCB-102	PCB-93/PCB-95/PCB-98/PCB-100/PCB-102
PCB-108, PCB-124	PCB-108/PCB-124
PCB-110, PCB-115	PCB-110/PCB-115
PCB-106, PCB-107, PCB-123	PCB-106/PCB-107/2'344'5-PentaCB (#123)
PCB-128, PCB-166	PCB-128/PCB-166
PCB-129, PCB-138, PCB-160, PCB-163	PCB-129/PCB-138/PCB-160/PCB-163
PCB-134, PCB-143	PCB-134/PCB-143
PCB-135, PCB-151, PCB-154	PCB-135/PCB-151/PCB-154
PCB-137, PCB-164	PCB-137/PCB-164
PCB-146, PCB-161	PCB-146/PCB-161
PCB-147, PCB-149	PCB-147/PCB-149
PCB-153, PCB-168	PCB-153/PCB-168
PCB-156, PCB-157	233'44'5-HexaCB (#156)/233'44'5'HexaCB (#157)
PCB-171, PCB-173	PCB-171/PCB-173
PCB-180, PCB-193	PCB-180/PCB-193
PCB-198, PCB-199	PCB-198/PCB-199

Blanks

All of the blanks associated with this SDG were evaluated for possible sources of contamination. The following tables list the highest concentration of contamination that was detected in the blanks. The table lists the action levels/actions and the samples affected:

Congener	Type of Blank (Sample ID)	Blank Concentration ng/Kg	Action Level ng/Kg	Sample Affected
PCB-3	Method Blank (8/02/01)	13	67	LPX-FP-4007-0000-01

Congener	Type of Blank (Sample ID)	Blank Concentration ng/Kg	Action Level ng/Kg	Sample Affected
PCB-16	Method Blank (8/02/01)	15	77	LPX-FP-4007-0000-01
PCB-17	Method Blank (8/02/01)	16	78	LPX-FP-4007-0000-01
PCB-18/PCB-30	Method Blank (8/02/01)	17	84	LPX-FP-4007-0000-01
PCB-19	Method Blank (8/02/01)	3.6	18	LPX-FP-4007-0000-01
PCB-20/PCB-21/PCB-28/PCB-33	Method Blank (8/02/01)	88	440	LPX-FP-4007-0000-01
PCB-22	Method Blank (8/02/01)	26	130	LPX-FP-4007-0000-01
PCB-24/PCB-27	Method Blank (8/02/01)	3.6	18	LPX-FP-4007-0000-01
PCB-25	Method Blank (8/02/01)	3.5	17	LPX-FP-4007-0000-01
PCB-26/PCB-29	Method Blank (8/02/01)	8.0	40	LPX-FP-4007-0000-01
PCB-31	Method Blank (8/02/01)	42	210	LPX-FP-4007-0000-01
PCB-32	Method Blank (8/02/01)	9.9	50	LPX-FP-4007-0000-01
PCB-45/PCB-51	Method Blank (8/02/01)	6.0	30	LPX-FP-4007-0000-01

Blank actions are based on Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996 and EPA Region I's Environmental Services Assistance Team PCB Congener data Validation ESAT-01-0008 Draft (8/31/01) criteria. Blank action levels are calculated as five times the highest concentration of the contaminant determined in any blank. The positive sample results that are less than the blank action level are reported as non-detects (U) at the reported concentration on the Data Summary Table.

Laboratory and Field Duplicates

One laboratory duplicate pair was evaluated for this SDG (LPX-FP-4007/LPX-FP-4007Dup).

The table below summarizes the laboratory duplicate results which did not meet the duplicate criterion of Relative Percent Difference (RPD) < 30% as specified by Centredale Manor Tasks 19-22 QAPP (5/23/01).

Congener	LPX-FP-4007	LPX-FP-4007Dup	RPD	Action		Affected Samples
	% Solids (55%)	% Solids (55%)				
	Sample Conc. (ng/Kg)	Duplicate Conc. (ng/Kg)		Positive Detects	Non-Detects	
PCB-4	33	54	48	J	UJ	All
PCB-6	10.8U	55	NC	J	UJ	All
PCB-8	106	150	34	J	UJ	All
PCB-40/41/71	173	283	48	J	UJ	All
PCB-43/52/73	600	440	31	J	UJ	All
PCB-46	17	46	90	J	UJ	All
PCB-49/69	204	133	42	J	UJ	All
PCB-50/53	42	82	65	J	UJ	All
PCB-59/62/75	32	46	37	J	UJ	All
PCB-66	507	370	31	J	UJ	All
PCB-61/70/74/76	1000	652	43	J	UJ	All
PCB-77	130	251	63	J	UJ	All
PCB-82	350	927	90	J	UJ	All
PCB-84	636	1500	81	J	UJ	All
PCB-86/87/97/109/119/125	867	2590	100	J	UJ	All
PCB-89	11	23	71	J	UJ	All

Congener	LPX-FP-4007	LPX-FP-4007Dup	RPD	Action		Affected Samples
	% Solids (55%)	% Solids (55%)				
	Sample Conc. (ng/Kg)	Duplicate Conc. (ng/Kg)		Positive Detects	Non-Detects	
PCB-93/95/98/100/102	1260	2900	79	J	UJ	All
PCB-105	860	1280	39	J	UJ	All
PCB-110/115	3940	6940	55	J	UJ	All
PCB-114	42	61	36	J	UJ	All
PCB-118	2480	3400	32	J	UJ	All
PCB-126	50	123	85	J	UJ	All
PCB-128/166	989	3340	110	J	UJ	All
PCB-129/138/160/163	4620	8520	59	J	UJ	All
PCB-130	318	628	65	J	UJ	All
PCB-131	53	124	80	J	UJ	All
PCB-132	2060	5790	95	J	UJ	All
PCB-134/143	284	613	74	J	UJ	All
PCB-136	825	1580	63	J	UJ	All
PCB-137/164	577	1250	74	J	UJ	All
PCB-141	619	983	45	J	UJ	All
PCB-146/161	230	326	35	J	UJ	All
PCB-147/149	3860	5870	41	J	UJ	All
PCB-153/168	1490	2300	42	J	UJ	All

Congener	LPX-FP-4007	LPX-FP-4007Dup	RPD	Action		Affected Samples
	% Solids (55%)	% Solids (55%)				
	Sample Conc. (ng/Kg)	Duplicate Conc. (ng/Kg)		Positive Detects	Non-Detects	
PCB-156/157	369	560	41	J	UJ	All
PCB-158	338	602	56	J	UJ	All
PCB-167	153	244	46	J	UJ	All
PCB-170	2050	4070	66	J	UJ	All
PCB-171/173	520	923	56	J	UJ	All
PCB-172	175	266	41	J	UJ	All
PCB-174	2280	4510	66	J	UJ	All
PCB-175	33	49	40	J	UJ	All
PCB-176	182U	338	NC	J	UJ	All
PCB-177	1130	1910	51	J	UJ	All
PCB-180/193	1820	2800	43	J	UJ	All
PCB-187	1150	1680	37	J	UJ	All
PCB-189	33	58	56	J	UJ	All
PCB-190	244	386	45	J	UJ	All
PCB-191	33	55	51	J	UJ	All
PCB-194	620	885	35	J	UJ	All
PCB-195	462	646	33	J	UJ	All
PCB-196	322	506	45	J	UJ	All
PCB-200	192	284	38	J	UJ	All
PCB-201	70	118	52	J	UJ	All
PCB-203	348	595	52	J	UJ	All
PCB-205	30	45	38	J	UJ	All

Congener	LPX-FP-4007	LPX-FP-4007Dup	RPD	Action		Affected Samples
	% Solids (55%)	% Solids (55%)				
	Sample Conc. (ng/Kg)	Duplicate Conc. (ng/Kg)		Positive Detects	Non-Detects	
PCB-207	71	131	60	J	UJ	All

NC RPD are not calculated when one concentration is non-detected.

Professional judgment was used to estimate (J, UJ) results for the above referenced congeners in all samples since the laboratory duplicate precision was outside criterion.

Internal/Clean-up Standards

- Internal Standards

The following table summarizes the internal standard recovery that did not meet Centredale Manor Tasks 19-22 QAPP (5/23/01) acceptance criterion of 25-150%:

Standard	% Recovery	Action		Affected Sample
		Positive Detects	NDs	
$^{13}C_{12}$-PCB-114	21	J	UJ	CMS-DU-0720-01
$^{13}C_{12}$-PCB-123	23	J	UJ	CMS-DU-0720-01
$^{13}C_{12}$-PCB-155	3	J	R	CMS-DU-0720-01
$^{13}C_{12}$-PCB-156	18	J	UJ	CMS-DU-0720-01
$^{13}C_{12}$-PCB-157	18	J	UJ	CMS-DU-0720-01
$^{13}C_{12}$-PCB-167	12	J	UJ	CMS-DU-0720-01
$^{13}C_{12}$-PCB-188	6	J	R	CMS-DU-0720-01
$^{13}C_{12}$-PCB-189	13	J	UJ	CMS-DU-0720-01
$^{13}C_{12}$-PCB-202	9	J	R	CMS-DU-0720-01
$^{13}C_{12}$-PCB-205	7	J	R	CMS-DU-0720-01
$^{13}C_{12}$-PCB-206	2	J	NA	CMS-DU-0720-01

Standard	% Recovery	Action		Affected Sample
		Positive Detects	NDs	
$^{13}C_{12}$-PCB-208	4	J	NA	CMS-DU-0720-01
$^{13}C_{12}$-PCB-209	1	J	NA	CMS-DU-0720-01
$^{13}C_{12}$-PCB-209	19	J	UJ	LPX-FP-4004-0000-01
$^{13}C_{12}$-PCB-155	16	J	UJ	LPX-FP-4007-0000-01
$^{13}C_{12}$-PCB-205	20	J	UJ	LPX-FP-4007-0000-01
$^{13}C_{12}$-PCB-206	14	J	UJ	LPX-FP-4007-0000-01
$^{13}C_{12}$-PCB-208	12	J	UJ	LPX-FP-4007-0000-01
$^{13}C_{12}$-PCB-209	4	J	NA	LPX-FP-4007-0000-01
$^{13}C_{12}$-PCB-155	11	J	UJ	RWR-FP-5002-0000-01
$^{13}C_{12}$-PCB-167	23	J	UJ	RWR-FP-5002-0000-01
$^{13}C_{12}$-PCB-188	14	J	UJ	RWR-FP-5002-0000-01
$^{13}C_{12}$-PCB-202	18	J	UJ	RWR-FP-5002-0000-01
$^{13}C_{12}$-PCB-205	16	J	UJ	RWR-FP-5002-0000-01
$^{13}C_{12}$-PCB-206	13	J	UJ	RWR-FP-5002-0000-01
$^{13}C_{12}$-PCB-208	10	J	UJ	RWR-FP-5002-0000-01
$^{13}C_{12}$-PCB-209	4	J	NA	RWR-FP-5002-0000-01

NA Not applicable, there were no non-detected results.

The corresponding non-labeled congener results are qualified as noted above due to internal standard percent recoveries outside method acceptance criterion.

- Clean-up Standards

The following table summarizes the Clean-up standard with a recovery which did not meet the Centredale Manor Tasks 19-22 QAPP (5/23/01) acceptance criterion of 30-135%:

Clean-up Standard	% Recovery	Action		Affected Samples
		Positive Detects	NDs	
$^{13}C_{12}$-PCB-28	25	J	UJ	CMS-DU-0720-01
$^{13}C_{12}$-PCB-111	6	J	R	CMS-DU-0720-01
$^{13}C_{12}$-PCB-178	12	J	UJ	CMS-DU-0720-01
$^{13}C_{12}$-PCB-111	17	J	UJ	LPX-FP-4007-0000-01
$^{13}C_{12}$-PCB-111	15	J	UJ	RWR-FP-5002-0000-01

Since low recoveries may indicate interference in the Clean-up process, the sample was qualified as noted above for all congeners.

Sample Quantitation

Concentrations quantitated below the lowest calibration standard are flagged (J) on the Data Summary Tables. Quantitation is not accurate when the reported results are below the lowest calibration standard.

2378-TCDD Toxicity Equivalents (TE) and Isomer Specificity

All TE values reported on the Data Summary Tables have been calculated by the ESAT data validator using the validated data discussed above in this report. The validated data accounts for blank contamination. The TE calculations include the reported EMPC values. The TEF values for the PCBs are published in "Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife", Environmental Health Perspectives, Volume 106, Number 12, December 1998, Table 1, page 778.

System Performance

No trends noted.

June 6, 2002
B-02-06-Y-2
Revised: June 17, 2002

Very truly yours,

LOCKHEED ENVIRONMENTAL

Janine Bartels
Principal Scientist

Louis Macri
ESAT Program Manager

cc: Cornell Rosiu, EPA RPM (DV Memorandum, Data Summary Table)

Attachments: Table I: Recommendation Summary Table
Table II: Overall Evaluation of Data
Data Summary Tables
Data Validation Worksheets
Analytical Method
Communication/Phone Logs
Field Sampling Notes

Table I
Recommendation Summary Table for 209 PCB Congeners
Centredale Manor Site
Case No.: Centredale Soil B1OF1/SDG No. 48985-09 PCB

Sample Nos.	CMS-DU-0720-01	LPX-FP-4004-0000-01	LPX-FP-4007-0000-01	RWR-FP-5002-0000-01
Compound				
PCB-1	J[6]	A	J[1]	J[1]
PCB-3	J[6]	A	J[1,2]	J[1]
PCB-4	J[3,6]	J[3]	J[1,3]	J[1,3]
PCB-5	R[2]	A	J[1]	J[1]
PCB-6	J[3,6]	J[3]	J[1,3]	J[1,3]
PCB-7	J[6]	A	J[1]	J[1]
PCB-8	J[3,6]	J[3]	J[1,3]	J[1,3]
PCB-9	J[6]	A	J[1]	J[1]
PCB-10	J[6]	A	J[1]	J[1]
PCB-12/PCB-13	J[6]	A	J[1]	J[1]
PCB-16	J[6]	A	J[1,2]	J[1]
PCB-17	J[6]	A	J[1,2]	J[1]
PCB-18/PCB-30	J[6]	A	J[1,2]	J[1]
PCB-19	J[6]	A	J[1,2]	J[1]
PCB-20/PCB-21/PCB-28/PCB-33	J[6]	A	J[1,2]	J[1]
PCB-22	J[6]	A	J[1,2]	J[1]
PCB-24/PCB-27	J[6]	A	J[1,2]	J[1]
PCB-25	J[6]	A	J[1,2]	J[1]
PCB-26/PCB-29	J[6]	A	J[1,2]	J[1]

Table I
Recommendation Summary Table for 209 PCB Congeners
Centredale Manor Site
Case No.: Centredale Soil B1OF1/SDG No. 48985-09 PCB

Sample Nos.	CMS-DU-0720-01	LPX-FP-4004-0000-01	LPX-FP-4007-0000-01	RWR-FP-5002-0000-01
Compound				
PCB-31	J[6]	A	J[1,2]	J[1]
PCB-32	J[6]	A	J[1,2]	J[1]
PCB-40/PCB-41/PCB-71	J[3,6]	J[3]	J[1,3]	J[1,3]
PCB-42	J[6]	A	J[1]	J[1]
PCB-43/PCB-52/PCB-73	J[3,6]	J[3]	J[1,3]	J[1,3]
PCB-44/PCB-47/PCB-65	J[6]	A	J[1]	J[1]
PCB-45/PCB-51	J[6]	A	J[1,2]	J[1]
PCB-46	J[3,6]	J[3]	J[1,3]	J[1,3]
PCB-48	J[6]	A	J[1]	J[1]
PCB-49/PCB-69	J[3,6]	J[3]	J[1,3]	J[1,3]
PCB-50/PCB-53	J[3,6]	J[3]	J[1,3]	J[1,3]
PCB-56	J[6]	A	J[1]	J[1]
PCB-59/PCB-62/PCB-75	J[3,6]	J[3]	J[1,3]	J[1,3]
PCB-60	J[6]	A	J[1]	J[1]
PCB-63	R[2]	A	J[1]	J[1]
PCB-64	J[6]	A	J[1]	J[1]
PCB-66	R[2]	J[3]	J[1,3]	J[1,3]
PCB-61/PCB-70/PCB-74/PCB-76	J[3,6]	J[3]	J[1,3]	J[1,3]
33'44'-TetraCB (#77)	J[3,6]	J[3]	J[1,3]	J[1,3]

Table I
Recommendation Summary Table for 209 PCB Congeners
Centredale Manor Site
Case No.: Centredale Soil B1OF1/SDG No. 48985-09 PCB

Sample Nos.	CMS-DU-0720-01	LPX-FP-4004-0000-01	LPX-FP-4007-0000-01	RWR-FP-5002-0000-01
Compound				
344'5-TetraCB (#81)	R[2]	A	J[1]	J[1]
PCB-82	J[3,4,6]	J[3]	J[1,3]	J[1,3]
PCB-83/PCB-99	J[4,6]	A	J[1]	J[1]
PCB-84	J[3,4,6]	J[3]	J[1,3]	J[1,3]
PCB-85/PCB-116/PCB-117	J[4,6]	A	J[1]	J[1]
PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-125	J[3,4,6]	J[3]	J[1,3]	J[1,3]
PCB-89	R[2]	J[3]	J[1,3]	J[1,3]
PCB-90/PCB-101/PCB-113	J[4,6]	A	J[1]	J[1]
PCB-88/PCB-91	J[4,6]	A	J[1]	J[1]
PCB-92	J[4,6]	A	J[1]	J[1]
PCB-93/PCB-95/PCB-98/PCB-100/PCB-102	J[3,4,6]	J[3]	J[1,3]	J[1,3]
233'44'-PentaCB (#105)	J[3,6]	J[3]	J[1,3]	J[1,3]
PCB-108/PCB-124	J[4,6]	A	J[1]	J[1]
PCB-110/PCB-115	J[3,4,6]	J[3]	J[1,3]	J[1,3]
2344'5-PentaCB (#114)	J[3,4,6]	J[3]	J[1,3]	J[1,3]
23'44'5-PentaCB (#118)	J[3,6]	J[3]	J[1,3]	J[1,3]
PCB-106/PCB-107/2'344'5-PentaCB (#123)	J[4,6]	A	J[1]	J[1]
33'44'5-PentaCB (#126)	J[3,6]	J[3]	J[1,3]	J[1,3]

Table I
Recommendation Summary Table for 209 PCB Congeners
Centredale Manor Site
Case No.: Centredale Soil B1OF1/SDG No. 48985-09 PCB

Sample Nos.	CMS-DU-0720-01	LPX-FP-4004-0000-01	LPX-FP-4007-0000-01	RWR-FP-5002-0000-01
Compound				
PCB-128/PCB-166	$J^{3,5,6}$	J^{3}	$J^{1,3,4}$	$J^{1,3,4}$
PCB-129/PCB-138/PCB-160/PCB-163	$J^{3,5,6}$	J^{3}	$J^{1,3,4}$	$J^{1,3,4}$
PCB-130	$J^{3,5,6}$	J^{3}	$J^{1,3,4}$	$J^{1,3,4}$
PCB-131	$J^{3,5,6}$	J^{3}	$J^{1,3,4}$	$J^{1,3,4}$
PCB-132	$J^{3,5,6}$	J^{3}	$J^{1,3,4}$	$J^{1,3,4}$
PCB-134/PCB-143	$J^{3,5,6}$	J^{3}	$J^{1,3,4}$	$J^{1,3,4}$
PCB-135/PCB-151/PCB-154	$J^{5,6}$	A	$J^{1,4}$	$J^{1,4}$
PCB-136	$J^{3,5,6}$	J^{3}	$J^{1,3,4}$	$J^{1,3,4}$
PCB-137/PCB-164	$J^{3,5,6}$	J^{3}	$J^{1,3,4}$	$J^{1,3,4}$
PCB-141	$J^{3,5,6}$	J^{3}	$J^{1,3,4}$	$J^{1,3,4}$
PCB-144	R^{2}	A	$J^{1,4}$	$J^{1,4}$
PCB-146/PCB-161	$J^{3,5,6}$	J^{3}	$J^{1,3,4}$	$J^{1,3,4}$
PCB-147/PCB-149	$J^{3,5,6}$	J^{3}	$J^{1,3,4}$	$J^{1,3,4}$
PCB-153/PCB-168	$J^{3,5,6}$	J^{3}	$J^{1,3,4}$	$J^{1,3,4}$
233'44'5-HexaCB (#156)/233'44'5'-HexaCB (#157)	$J^{3,4,6}$	J^{3}	$J^{1,3}$	$J^{1,3}$
PCB-158	$J^{3,5,6}$	J^{3}	$J^{1,3,4}$	$J^{1,3,4}$
23'44'55'-HexaCB (#167)	$J^{3,4,6}$	J^{3}	$J^{1,3}$	$J^{1,3,4}$
33'44'55'-HexaCB (#169)	R^{2}	A	J^{1}	J^{1}
PCB-170	$J^{3,5,6}$	J^{3}	$J^{1,3}$	$J^{1,3,4}$

Table I
Recommendation Summary Table for 209 PCB Congeners
Centredale Manor Site
Case No.: Centredale Soil B1OF1/SDG No. 48985-09 PCB

Sample Nos.	CMS-DU-0720-01	LPX-FP-4004-0000-01	LPX-FP-4007-0000-01	RWR-FP-5002-0000-01
Compound				
PCB-171/PCB-173	J[3,5,6]	J[3]	J[1,3]	J[1,3,4]
PCB-172	J[3,5,6]	J[3]	J[1,3]	J[1,3,4]
PCB-174	J[3,5,6]	J[3]	J[1,3]	J[1,3,4]
PCB-175	J[3,5,6]	J[3]	J[1,3]	J[1,3,4]
PCB-176	J[3,5,6]	J[3]	J[1,3]	J[1,3,4]
PCB-177	J[3,5,6]	J[3]	J[1,3]	J[1,3,4]
PCB-178	J[5,6]	A	J[1]	J[1,4]
PCB-180/PCB-193	J[3,5,6]	J[3]	J[1,3]	J[1,3,4]
PCB-182	R[1,2]	A	J[1]	J[1,4]
PCB-183	J[5,6]	A	J[1]	J[1,4]
PCB-184	R[1,2]	A	J[1]	J[1,4]
PCB-185	R[1,2]	A	J[1]	J[1,4]
PCB-187	J[3,5,6]	J[3]	J[1,3]	J[1,3,4]
233'44'55'-HeptaCB (#189)	J[3,4,6]	J[3]	J[1,3]	J[1,3]
PCB-190	J[3,5,6]	J[3]	J[1,3]	J[1,3,4]
PCB-191	J[3,5,6]	J[3]	J[1,3]	J[1,3,4]
PCB-194	J[3,5,6]	J[3]	J[1,3,4]	J[1,3,4]
PCB-195	J[3,5,6]	J[3]	J[1,3,4]	J[1,3,4]
PCB-196	J[3,5,6]	J[3]	J[1,3,4]	J[1,3,4]
PCB-197	R[1,2]	A	J[1,4]	J[1,4]

Table I
Recommendation Summary Table for 209 PCB Congeners
Centredale Manor Site
Case No.: Centredale Soil B1OF1/SDG No. 48985-09 PCB

Sample Nos.	CMS-DU-0720-01	LPX-FP-4004-0000-01	LPX-FP-4007-0000-01	RWR-FP-5002-0000-01
Compound				
PCB-198/PCB-199	J[5,6]	A	J[1,4]	J[1,4]
PCB-200	J[3,5,6]	J[3]	J[1,3,4]	J[1,3,4]
PCB-201	J[3,5,6]	J[3]	J[1,3,4]	J[1,3,4]
PCB-203	J[3,5,6]	J[3]	J[1,3,4]	J[1,3,4]
PCB-205	J[3,5,6]	J[3]	J[1,3,4]	J[1,3,4]
PCB-206	J[5,6]	A	J[1,4]	J[1,4]
PCB-207	J[3,5,6]	J[3]	J[1,3,4]	J[1,3,4]
PCB-209	J[5,6]	J[4]	J[1,5]	J[1,5]

Table I
Recommendation Summary Table for PCB Congeners

A	-	Accept all results.
J^1	-	Clean-up standard recoveries outside criterion; J detects, UJ non-detects.
J^2	-	Method blank contamination; positive sample results less than the blank action level are reported as non-detects (U) at the concentration reported.
J^3	-	Laboratory duplicate precision outside criterion; J detects, UJ non-detects.
J^4	-	Internal standard recoveries outside criterion; J detects, UJ non-detects.
J^5	-	Internal standard recoveries < 10%; J detects.
J^6	-	Clean-up standard recoveries < 10%; J detects.
R^1	-	Internal standard recoveries < 10%; R non-detects.
R^2	-	Clean-up standard recoveries < 10%; R non-detects.

06/26/2002 WED 15:38 FAX 021/024

EPA-NE - Data Validation Worksheet

Overall Evaluation of Data - Data Validation Memorandum - Table II

PCB ANALYSIS					
DQO (list all DQOs)	Sampling and/or Analytical Method Appropriate Yes or No	Measurement Error		Sampling Variability	Potential Usability Issues
		Analytical Error	Sampling Error*		
The following is a summary of the site investigation/assessment objectives as found in Centredale Minor Tasks 19-22 QAPP (5/23/01): To generate data of quality sufficient to be used for human health (HHRA) and ecological risk assessments (ERA) at the site.	Yes, Sampling Method appropriate for all samples Yes, Analytical Method appropriate for all samples.	Refer to qualification in R/S Key on Table I: J[1,2,3,4], R[1,2]	Refer to qualification in R/S Key on Table I: NA	**	There were no associated SRM or LCS/OPR extracted or analyzed with this SDG. The original SRM EDF-2513 soil SRM did not contain certified values for PCBs. The laboratory submitted a SRM and a LCS/OPR which was processed in a similar timeframe as the soil samples. The SRM and the LCS/OPR were extracted via a Soxhlet procedure, whereas, the soil sample in this SDG were extracted via Accelerated Solvent Extraction System. Therefore, the SRM and LCS/OPR submitted by the laboratory are not applicable to this SDG since they were extracted by a different procedure. The method blank had low level contamination. However, the concentration in the method blanks was insignificant when compared to the concentration found in the field samples. Therefore, the method blank contamination does not impact data usability. When the analyte concentrations in the field samples were less than the corresponding blank action level, the field sample results reported by the laboratory are qualified as non-detected (U) on the Data Summary Table. See Table I for a summary of the qualifiers applied due to blank contamination. The non-detected values for several congeners were rejected due to non-compliant internal and clean-up standard recoveries. Data validation indicated minor data quality problems which do not significantly impact the usability of the data. See the data validation memorandum for details. The reported results are usable for the site objectives.

* The evaluation of "sampling error" cannot be completely assessed in the data validation.

** Sampling variability is not assessed in data validation.

Validator: Marie Bare for Jannine Bartels

Date: 6/17/02

Data Summary Table
Polychlorinated Biphenyls Analysis - Soil Samples

SITE: Centredale Manor - N. Providence, RI
CASE NO. Centredale Soil B10F1
LABORATORY: BATTELLE

SDG No. 48985-09 PCB

SAMPLE NUMBER:	Toxicity Equivalency Factors (1)	CMS-DU-0720-01#		LPX-FP-4004-0000-01#		LPX-FP-4007-0000-01#		RWR-FP-6002-0000-01#	
STATION LOCATION:		CENTREDALE MANOR SITE		LYMANSVILLE POND		LYMANSVILLE POND		WOONASQUATUCKET R. UP-STREAM R	
MATRIX:		SOIL		SOIL		SOIL		SOIL	
		ng/kg	DL/EMPC*	ng/kg	DL/EMPC*	ng/kg	DL/EMPC*	ng/kg	DL/EMPC*
PCB-1		880.90 J		114.28		58.02 J		61.67 J	
PCB-3		1805.61 J		323.10		UJ	32.02	99.23 J	
PCB-4		1280.36 J		194.93 J		33.31 J		805.03 J	
PCB-5		R		22.40		UJ	9.09	95.78 J	
PCB-6		1896.48 J		184.02 J		UJ	9.09	737.43 J	
PCB-7		302.94 J		38.96		UJ	9.09	119.77 J	
PCB-8		7374.25 J		872.93 J		106.12 J		3582.34 J	
PCB-9		398.72 J		54.15		UJ	9.09	240.00 J	
PCB-10		86.55 J		11.38		UJ	9.09	39.45 J	
PCB-12/PCB-13		1250.86 J		177.28		UJ	18.18	243.42 J	
PCB-16		3002.76 J		338.17		UJ	56.67	2315.89 J	
PCB-17		2050.79 J		300.23		UJ	53.03	2415.76 J	
PCB-18/PCB-30		2381.44 J		683.18		UJ	21.07	2182.36 J	
PCB-19		1031.46 J		74.38		UJ	18.07	561.27 J	
PCB-20/PCB-21/PCB-28/PCB-33		15337.36 J		2449.12		UJ	328.68	8998.16 J	
PCB-22		6074.28 J		681.30		UJ	100.61	3253.85 J	
PCB-24/PCB-27		840.36 J		64.30		UJ	11.10	446.74 J	
PCB-25		729.05 J		98.40		UJ	12.42	432.19 J	
PCB-26/PCB-29		1580.64 J		236.32		UJ	28.70	1095.34 J	
PCB-31		4783.43 J		1415.30		UJ	125.48	4032.20 J	
PCB-32		791.35 J		211.20		UJ	26.62	796.27 J	
PCB-40/PCB-41/PCB-71		12727.83 J		584.10 J		173.22 J		3296.77 J	
PCB-42		5923.60 J		379.78		88.74 J		1544.95 J	
PCB-43/PCB-52/PCB-73		25864.61 J		3214.74		600.03 J		5386.47 J	
PCB-44/PCB-47/PCB-65		21145.25 J		1658.25		358.65 J		4211.99 J	
PCB-45/PCB-51		4374.76 J		167.10		UJ	51.08	1170.33 J	
PCB-46		1800.93 J		47.92 J		17.44 J		450.03 J	
PCB-48		1487.36 J		213.67		40.88 J		927.78 J	
PCB-49/PCB-69		6465.80 J		1272.60 J		203.72 J		2106.11 J	
PCB-50/PCB-53		3778.34 J		118.10 J		41.78 J		928.47 J	
PCB-56		3569.93 J		890.71		258.79 J		861.04 J	
PCB-59/PCB-62/PCB-75		1540.86 J		118.35 J		31.63 J		405.94 J	
PCB-60		3196.74 J		478.62		123.77 J		261.41 J	
PCB-63		R		58.76 J		11.10 J		32.72 J	
PCB-64		6443.67 J		776.16		185.91 J		1577.55 J	
PCB-66		R		2451.89 J		505.88 J		2559.48 J	
PCB-67/PCB-70/PCB-74/PCB-76		25878.56 J		6021.08 J		1005.72 J		3104.09 J	
3,3',4,4'-TetraCB (#77)	0.0001	2928.45 J		412.88 J		139.09 J		393.67 J	
3,4,4',5-TetraCB (#81)	0.0001	R		U	77.46	UJ	90.88	UJ	96.30

Data Summary Table
Polychlorinated Biphenyls Analysis - Soil Samples

SITE: Centredale Manor - N. Providence, RI
CASE NO. Centredale Soil B1OF1
LABORATORY: BATTELLE

SDG No. 46985-09 PCB

SAMPLE NUMBER:	Toxicity Equivalency Factors (1)	CMS-DU-0720-01#		LPX-FP-4004-0000-01#		LPX-FP-4007-0000-01#		RWR-FP-6002-0000-01#	
STATION LOCATION:		CENTREDALE MANOR SITE		LYMANSVILLE POND		LYMANSVILLE POND		WOONASQUATUCKET R. UP-STREAM R	
MATRIX:		SOIL		SOIL		SOIL		SOIL	
		ng/kg	DL/EMPC*	ng/kg	DL/EMPC*	ng/kg	DL/EMPC*	ng/kg	DL/EMPC*
PCB-82		21965.79 J		527.66 J		350.37 J		3685.49 J	
PCB-83/PCB-99		19509.84 J		3611.49 J		992.28 J		6580.09 J	
PCB-84		47153.00 J		1347.98 J		635.53 J		8054.84 J	
PCB-85/PCB-116/PCB-117		11628.75 J		1645.89		436.05 J		3200.73 J	
PCB-86/PCB-87/PCB-97/PCB-108/PCB-119/PCB-125		58726.14 J		6506.16 J		866.82 J		13200.21 J	
PCB-89		R		32.07 J		11.12 J		112.35 J	
PCB-90/PCB-101/PCB-113		36972.46 J		7441.17		1904.88 J		11078.59 J	
PCB-88/PCB-91		12763.46 J		911.94		375.16 J		3376.77 J	
PCB-92		8190.31 J		1313.60		385.40 J		2798.20 J	
PCB-95/PCB-95/PCB-98/PCB-102/PCB-182		87212.45 J		4995.30 J		1261.77 J		17800.39 J	
2,3,3',4,4'-PentaCB (#106)	0.0001	20456.71 J		2947.01 J		859.53 J		4414.97 J	
PCB-108/PCB-124		2064.84 J		360.66		80.75 J		736.18 J	
PCB-110/PCB-115		15992.86 J		6230.50 J		3941.70 J		34326.38 J	
2,3,4,4',5-PentaCB (#114)	0.0005	2634.25 J		186.76 J		42.08 J		187.79 J	
2,3',4,4',5-PentaCB (#118)	0.0001	65183.50 J		8836.73 J		2475.66 J		14779.85 J	
PCB-106/PCB-118/2',3,4,4',5-PentaCB (#123)	0.0001	4347.26 J		682.71		183.90 J		937.45 J	
3,3',4,4',5-PentaCB (#126)	0.1	1331.67 J		42.81 J		49.65 J		340.83 J	
PCB-129/PCB-166		69035.02 J		2349.40 J		989.34 J		8718.91 J	
PCB-128/PCB-166/PCB-168/PCB-167		146807.66 J		10994.04 J		4615.40 J		29846.94 J	
PCB-130		12053.31 J		891.51 J		318.42 J		2338.84 J	
PCB-131		3223.79 J		118.09 J		63.29 J		482.72 J	
PCB-132		122181.77 J		3699.36 J		2063.64 J		17986.81 J	
PCB-134/PCB-143		14547.64 J		611.12 J		283.64 J		2526.31 J	
PCB-135/PCB-151/PCB-154		31919.46 J		1850.87		1584.23 J		7495.59 J	
PCB-136		37080.56 J		819.79 J		825.49 J		5219.51 J	
PCB-137/PCB-164		11484.88 J		1244.78 J		576.62 J		4394.06 J	
PCB-141		13853.44 J		1311.81 J		619.49 J		3256.07 J	
PCB-144		R		234.84		UJ	90.88	UJ	98.30
PCB-146/PCB-161		4028.42 J		711.62 J		229.86 J		1181.74 J	
PCB-147/PCB-149		85962.74 J		8632.76 J		3881.88 J		21337.22 J	
PCB-153/PCB-168		24357.28 J		4525.52 J		1490.58 J		7677.13 J	
2,3,3',4,4',5-HexaCB (#156)/2,3,3',4,4',5'-HexaCB (#157)	0.0005	7539.04 J		1080.36 J		369.06 J		2528.39 J	
PCB-158		10391.70 J		946.13 J		338.50 J		2385.98 J	
2,3',4,4',5,5'-HexaCB (#167)	0.00001	2570.08 J		368.74 J		152.92 J		1099.31 J	
3,3',4,4',5,5'-HexaCB (#169)	0.01	R		8.47 J		UJ	90.88	UJ	98.30

Data Summary Table
Polychlorinated Biphenyls Analysis - Soil Samples

SITE: Centredale Manor - N. Providence, RI
CASE NO. Centredale Soil B10F1 SDG No. 46985-09 PCB
LABORATORY: BATTELLE

SAMPLE NUMBER	Toxicity Equivalency Factors (1)	CMS-DU-0720-01#		LPX-FP-4004-0000-01#		LPX-FP-4007-0000-01#		RWR-FP-5002-0000-01#	
STATION LOCATION:		CENTREDALE MANOR SITE		LYMANSVILLE POND		LYMANSVILLE POND		WOONASQUATUCKET R. UP-STREAM R	
MATRIX:		SOIL		SOIL		SOIL		SOIL	
		ug/kg	DL/EMPC*	ug/kg	DL/EMPC*	ug/kg	DL/EMPC*	ug/kg	DL/EMPC*
PCB-170		29732.46 J		1816.10 J		2047.37 J		7601.64 J	
PCB-171/PCB-173		7582.50 J		494.20 J		520.82 J		1941.35 J	
PCB-172		1267.33 J		198.58 J		174.75 J		820.98 J	
PCB-174		21694.13 J		1409.23 J		2278.64 J		8304.21 J	
PCB-175		221.35 J		34.24 J		32.72 J		105.77 J	
PCB-176		2502.01 J		131.16 J		UJ	181.76	685.04 J	
PCB-177		11591.43 J		810.20 J		1132.87 J		3225.16 J	
PCB-178		1485.56 J		289.39		255.77 J		774.51 J	
PCB-180/PCB-193		11167.02 J		1776.94 J		1815.22 J		4956.13 J	
PCB-182		R		6.52 J		UJ	181.76	UJ	192.61
PCB-183		2887.78 J		420.19		463.89 J		1368.84 J	
PCB-184		R		U	154.91	UJ	181.76	UJ	192.61
PCB-185		R		100.98 J		UJ	181.76	280.95 J	
PCB-187		6102.77 J		981.43 J		1163.23 J		2814.25 J	
2,3,3',4,4',5,5'-HeptaCB (#189)	0.0001	328.26 J		45.82 J		32.83 J		144.33 J	
PCB-190		2017.64 J		286.77 J		244.09 J		973.40 J	
PCB-191		293.79 J		37.11 J		32.69 J		127.93 J	
PCB-194		2882.18 J		382.64 J		619.56 J		1862.39 J	
PCB-195		1805.40 J		175.79 J		462.09 J		918.33 J	
PCB-196		1714.64 J		218.86 J		321.56 J		1246.99 J	
PCB-197		R		11.27 J		UJ	181.76	45.08 J	
PCB-198/PCB-199		8778.70 J		1261.22		1296.78 J		7619.85 J	
PCB-200		934.23 J		82.11 J		192.49 J		553.63 J	
PCB-201		463.26 J		77.68 J		69.95 J		498.37 J	
PCB-203		1885.77 J		472.62 J		348.50 J		2270.38 J	
PCB-205		127.43 J		24.01 J		30.60 J		102.46 J	
PCB-206		7565.78 J		2025.32		1109.67 J		11304.34 J	
PCB-207		859.12 J		143.13 J		70.63 J		781.62 J	
PCB-209		12540.88 J		2026.26 J		1252.53 J		16450.15 J	
TOTAL PCB		1455192.71 J		129288.01 J		63134.85 J		383546.30 J	
TOXIC EQUIVALENCY(1):			150 J		62 J		5.5 J		37 J
PERCENT SOLIDS:			48		65		56		52
DILUTION FACTOR:			1		1		1		1
DATE SAMPLED:			07/20/01		07/19/01		07/19/01		07/16/01
DATE OF RECEIPT:			07/21/01		07/21/01		07/21/01		07/21/01
SAMPLE EXTRACTION DATE:			07/24/01		07/23/01		07/24/01		07/24/01
ANALYSIS DATE:			08/02/01		09/27/01		08/02/01		08/02/01
LABORATORY SAMPLE I.D.:			46985-09-6		46985-18-25		46985-09-13		46985-09-14

* = The values in this column are either the Detection Limits (DL) or the Estimated Maximum Possible Concentration (EMPC). The EMPC results are marked with a "*". The DL values are unmarked.
The EMPC values are not qualified with a "J", since they are already estimated.
(1) The Toxic Equivalent concentration is calculated with the Toxicity Equivalency Factors (TEFs) found in "Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife", Environmental Health Perspectives, Volume 106, Number (12), December 1998, Table 1, page 778.
Concentrations are reported on a dry weight basis.

Section 1 Quality Assurance Review

A. Organic Data

The organic analyses of 19 soil samples (including QC samples, two dilutions, and a reanalysis), one sediment sample, and 17 aqueous samples (including QC samples) were performed by Severn Trent Laboratories (STL) of Baltimore, Maryland. The samples were collectively analyzed for volatile organic compounds by SW-846 Method 8260B and for semivolatile organic compounds (phenols and phthalates) by SW-846 Method 8270C. These analyses are specified on Table 1. The laboratory organized the samples into five sample delivery groups (SDGs 200954, 200959, 200964, 200967, and 200972).

The findings in this report are based upon a rigorous review of holding times, condition of samples upon laboratory receipt, blank analysis results, laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) recoveries and precision, matrix spike (MS)/matrix spike duplicate (MSD) recoveries and precision, surrogate recoveries, internal standard response, instrument sensitivity, field duplicate precision, analytical sequence, gas chromatography/mass spectroscopy (GC/MS) bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP) instrument performance checks, calibrations, overall system performance, and quantitation of positive results.

Overall, the organic data quality appears to be good. The data reviewer has edited the laboratory-reported data and QC forms based on the deficiencies and comments listed in this QC review. Contractual and reporting requirements were met for this data set, with the exception of the items identified in the following sections of this QA review; it should be emphasized that these items do not necessarily impact data usability. Based upon a Tier II review of the data provided, the organic data qualifiers associated with the samples that underwent data validation are presented in the subsequent Organic Data Qualifiers section. These qualifiers should not be applied to any organic results that did not undergo data validation. Data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the validation guidelines specify areas of the data that require qualification, yet the methods used for analysis do not require any corrective action by the laboratory. Accordingly, the data usability issues that follow should not necessarily be construed as an indication of laboratory performance.

Noncorrectable Deficiencies

1. High percent differences (>20%) were observed for the semivolatile compounds in the initial and/or continuing calibration verifications (ICV/CCVs) listed below. According to the QAPP (Worksheet #21), the laboratory should reanalyze the Check Standard Solution if any percent difference is greater than 20%. The laboratory did not reanalyze the below-listed Check Standard Solutions; the impact on data usability (if any) due to high percent difference is addressed in the subsequent Organic Data Qualifiers section.

Compound(s)	SDG	Initial or Continuing Calibration Verification(s) With High Percent Difference(s) (>20%)
2,4-dinitrophenol	~~200954~~	~~CCV on 7/30/01 at 1140 on instrument SD4~~ G
	~~200959 and~~ 200964	~~ICV on 8/9/01 at 2322 on instrument SC3 and~~ ICV on 7/18/01 at 2259 on instrument SA1 ①
	200967	CCV on 8/15/01 at 1957 on instrument SB2
2,4-dinitrophenol and 4-nitrophenol	~~200959~~	~~ICV on 7/30/01 at 1645 on instrument SA1~~ ①
4-nitrophenol	~~200959 and~~ 200964	~~CCV on 7/26/01 at 2017 on instrument SA1~~ ①

2. ~~According to the Sample Split and Transfer Log and the Job Sample Receipt Checklist Report, SDG 200972 sample RB-0718-01-A was received on 7/24/01 with a cooler temperature greater than 6°C. According to the QAPP (Worksheet #22a), the cooler temperature should be less than 6°C. The laboratory did not note the elevated temperature in the Case Narrative and did not report the measured temperature of the cooler. The data reviewer could not determine if the cooler temperature was significantly high (i.e., >10°C); therefore, data were not qualified due to this deficiency.~~ ①

Comments

1. ~~According to the Job Sample Receipt Checklist Report, two sample containers for SDG 200959 sample RAB-SW-5004-01 were received broken. The data reviewer assumed the laboratory used sample from undamaged containers for the analyses. Data were not qualified due to this issue.~~ ①

2. ~~According to the Job Sample Receipt Checklist Report, one sample container for SDG 200959 sample WRL-SW-4004-01 contained headspace. The data reviewer assumed the laboratory used sample from containers without headspace for the analyses. Data were not qualified due to this issue.~~

3. The results for phenol in SDG 200964 samples W5428 (1CCSV851) and W5429 (1CCSV852) were reported from a two-fold dilution due to high levels of phenol in the undiluted analysis.

4. Percent solids data were not provided for SDG 200964 samples W5428 and W5429; results were reported on a wet-weight basis.

① Not relevant to soil data packages. BL 3-8-02

5. In SDG 200967, sample CMS-DUP-072001 was reanalyzed due to low internal standard area counts; the reanalysis yielded similar results.

6. In SDG 200972, the laboratory did not include a Method Blank Summary Form (Form IV) or Internal Standard Response Summary form (Form VIII) in the data package provided to Environmental Standards. Upon Environmental Standards' request, the laboratory stated that the forms "cannot be regenerated at this point" (see Project Correspondence [Section 6]). The data reviewer used the associated raw data to evaluate the method blank associations and internal standard responses. ①

7. In SDG 200954, the laboratory did not include the result for sample TRIP BLANK in the EDD provided to Environmental Standards. Upon Environmental Standards' request, the laboratory provided these data.

8. The laboratory did not report internal standard retention times (RTs) on the Internal Standard Response Summary forms (Form VIIIs) for any of the project sample or QC sample analyses. SW-846 Methods 8260B and 8270C (Sections 7.4.6) stipulate that the RTs of the internal standards in the CCV must be within 30 seconds of those from the mid-level standard in the most recent initial calibration. The data reviewer was not able to evaluate the internal standard RTs for method compliance.

9. According to the Analytical Narratives and Job Sample Receipt Checklist Reports, all samples in SDGs 200959, 200964, and 200972 were received at the laboratory without custody seals present on the sample bottles or on the shipping containers. The data reviewer assumed that the shipping containers were sealed prior to shipment and that the integrity of the samples was not compromised during transport. Qualification of data was not warranted due to this issue.

10. The percent relative standard deviation (%RSD) of the relative response factors (RRFs) exceeded 15% for bromomethane; chloroethane; bromoform; 1,1,2,2-tetrachloroethane; 1,2,3-trichloropropane; 1,3-dichlorobenzene; 1,4-dichlorobenzene; 1,2-dichlorobenzene; 1,2-dibromo-3-chloropropane; 1,2,4-trichlorobenzene; hexachlorobutadiene; naphthalene; and 1,2,3-trichlorobenzene in the volatile organic initial calibration performed on 7/18/01 on instrument VE5 and associated with samples in SDGs 200954, 900959, and 200964. SW-846 Method 8260B (Sections 7.3.8.2 and 7.3.8.3) requires the laboratory to re-calibrate the instrument if the %RSD for any compound exceeds 15%, unless the overall mean %RSD for all compounds in the initial calibration is less than 15%. The laboratory should also generate a linear or non-linear calibration curve for the individual compounds that exceeded the %RSD criterion in the initial calibration. The data packages for SDGs 200954, 200959, and 200964 did not contain information to suggest that the laboratory had generated linear or non-linear calibration curves for these compounds. The qualification of project samples associated with the noncompliant %RSDs is addressed in the Organic Data Qualifiers section.

① Not relevant to soil data packages. BL 3-8-02

11. The %RSD of the RRFs exceeded 15% for phenol; 2,4-dinitrophenol; carbazole; di-*n*-butyl phthalate; butylbenzylphthalate; bis(2-ethylhexyl)phthalate; di-*n*-octyl phthalate; and/or pentachlorophenol in various semivolatile organic initial calibrations associated with samples in all SDGs. SW-846 Method 8270C (Section 7.3.7.1) requires the laboratory to re-calibrate the instrument if the %RSD for any compound exceeds 15%, unless the overall mean %RSD for all compounds in the initial calibration is less than 15%. The laboratory should also generate a linear or non-linear calibration curve for the individual compounds that exceeded the %RSD criteria in the initial calibration. The data packages did not contain information to suggest that the laboratory had generated linear or non-linear calibration curves for these compounds. The qualification of project samples associated with the noncompliant %RSDs is addressed in the Organic Data Qualifiers section.

With respect to data usability, the principal areas of concern include blank contamination, low MS/MSD and LCS recoveries, high initial calibration %RSDs, high continuing calibration percent differences, low surrogate recoveries, low internal standard area counts, and quantitation of results below the project-required reporting limit. Based on a Tier II review of the data provided, the following organic data qualifiers are offered. The following data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the data validation guidelines routinely specify areas of the data that require qualification, yet the methods used for analysis may not require corrective action by the laboratory. Accordingly, the following data usability issues should <u>not</u> be construed as an indication of laboratory performance.

<u>Organic Data Qualifiers</u>

- Due to the trace-level presence of bis(2-ethylhexyl)phthalate in the associated method blank, the reported positive results for bis(2-ethylhexyl)phthalate in SDG 200964 samples W5428 (1CCSV851) and W5429 (1CCSV852) should be considered "not-detected" and have been flagged "U" on the data tables. It should be noted that sample weights were taken into consideration when evaluating blank contamination.

- The analysis for 2,4-dinitrophenol in SDG 200967 sample RWR-FP-5002-0000-01 should be considered unusable, and the "not-detected" result has been flagged "R" on the data tables. A very low recovery (<10%) was observed for 2,4-dinitrophenol in the associated MSD analysis.

- The analyses for 2,4-dinitrophenol in the samples listed below should be considered unusable, and the "not-detected" results have been flagged "R" on the data tables. Very low recoveries (<10%) were observed for this compound in the associated LCS analyses.

Compound	SDG	Sample(s) With Unusable Analyses ("R")
2,4-dinitrophenol	~~200959~~	RWR-SW-5001-01, RWR-SW-5002-01, ~~RAB-SW-5004-01, WRL-SW-4004-01, WRL-DU-071701-A(DUP), and WRL-SW-4005-01~~ ①
	200964	W5427 (0026491)

- The quantitation limits for the volatile compounds bromomethane; chloroethane; 1,2-dibromo-3-chloropropane; 1,1,2,2-tetrachloroethene; bromoform; 1,2,3-trichloropropane; 1,3-dichlorobenzene; 1,4-dichlorobenzene; 1,2-dichlorobenzene; 1,2,4-trichlorobenzene; naphthalene; hexachlorobutadiene; and 1,2,3-trichlorobenzene in all SDG 200954 and SDG 200959 samples and in SDG 200964 sample W5431 (PX326) may be higher than reported, and the "not-detected" results have been flagged "UJ" on the data tables. In addition, any reported positive results for these compounds in the samples cited above should be considered estimated and have been flagged "J" on the data tables. High %RSDs (>15%) were observed among the RRFs for the aforementioned compounds in the associated initial multipoint calibration standards.

- The quantitation limits for the semivolatile compounds in the samples listed below may be higher than reported, and the "not-detected" results have been flagged "UJ" (unless previously flagged "R") on these data tables. In addition, any reported positive results for these semivolatile compounds in the samples listed below should be considered estimated and have been flagged "J" (unless previously flagged "U") on the data tables. High %RSDs (>15%) were observed among the RRFs for these compounds in the associated initial multipoint calibration standards.

Compound(s)	SDG	Sample(s) With Qualified Quantitation Limits ("UJ") or Estimated Positive Results ("J")
2,4-dinitrophenol	~~200954~~	~~All Samples~~ ①
	~~200959~~	~~All Samples~~ ①
	200964	All Samples
	~~200972~~	~~All Samples~~ ① ②
pentachlorophenol	~~200959~~	~~WRL-SW-4004-01~~ ①

① Not relevant to soil data packages. BL 3-8-02
② disregard cross-out. DDahlen 5/6/02

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Compound(s)	SDG	Sample(s) With Qualified Quantitation Limits ("UJ") or Estimated Positive Results ("J")
carbazole and di-*n*-butylphthalate	200967	All Samples
~~phenol, carbazole,~~	~~200959~~	~~LPX-SD-071601-A(DUP)~~ (1)
di-*n*-butylphthalate, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, and di-*n*-octylphthalate	200964	W5478 (1CCSV851) and W5429 (1CCSV852)

- The quantitation limits for the following volatile compounds in the samples listed below may be higher than reported, and the "not-detected" results have been flagged "UJ" on the data tables. In addition, any reported positive results for these volatile compounds in the samples listed below should be considered estimated and have been flagged "J" on the data tables. High percent differences (>20%), coupled with decreases in instrument sensitivity, were observed for these compounds in the associated continuing calibration standards.

Compound(s)	SDG	Sample(s) With Qualified Quantitation Limits ("UJ") or Estimated Positive Results ("J")
tetrachloroethene	200954 (1)	All samples (1)
	~~200959~~	~~All~~ samples
	200964	W5431
bromomethane	~~200954~~ (1)	All ~~samples~~ (1)
	200964	W5431 (PX326)
	200959 (1)	All samples (1)
methylene chloride and hexachlorobutadiene	~~200959~~	All ~~samples~~
naphthalene	200964	W5431 (PX326)

- The quantitation limits for the semivolatile compounds in the samples listed below may be higher than reported, and the "not-detected" results have been flagged "UJ" (unless previously flagged "R") on the data tables. In addition, any reported positive results for these compounds in the samples listed below should be considered estimated and have been flagged "J" on the data tables. High percent differences (>20%), coupled with decreases in instrument sensitivity, were observed for these compounds in the associated initial and/or continuing calibration standards.

(1) Not relevant to soil data rpt. DTDahlen 5/6/02

Compound(s)	SDG	Sample(s) With Qualified Quantitation Limits ("UJ") or Estimated Positive Results ("J")
2,4-dinitrophenol	~~200954~~ ①	All ~~samples~~ ①
	~~200959~~ ①	LPX-SD-071~~601-A~~(DUP) ①
	200964	All samples
	200967	CMS-FP-4003-0000-01, LPX-FP-4007-0000-01, LPX-FP-4006-0000-01, RWR-FP-5002-0000-01, LPX-FP-4004-0000-01, RWR-FP-5004-0000-01, and CMS-FP-4001-0000-01
4-nitrophenol	~~200959~~ ①	RWR-SW-5001-01, RWR-SW-5002~~-01~~, RAB-SW-5004-01, WRL-DU-071~~701-A~~(DUP), and WRL-SW-4~~005-01~~ ①
	200964	W5427 (0026491)
2,4-dinitrophenol and 4-nitrophenol	~~200959~~ ①	WRL-SW-4~~004-01~~ ①

- The quantitation limits for the volatile compounds ~~SDG 200959~~ sample RAB-SW-5~~004-01~~ ① may be higher than reported, ~~and the~~ "not-detected" results have been flagged "UJ" on the data tables. ~~Low~~ recoveries (< acceptance limits) were observed for these compounds in the associated MS/MSD analyses.

Compounds

benzene; 1,2-dichloroethane; 1,2-dichloropropane; dibromomethane; bromodichloromethane; *cis*-1,3-dichloropropene; toluene; *trans*-1,3-dichloropropene; 1,1,2-trichloroethane; tetrachloroethene; 1,3-dichloropropane; dibromochloromethane; 1,2-dibromomethane; chlorobenzene; 1,1,1,2-tetrachloroethane; *m&p*-xylenes; *o*-xylene; styrene; bromoform; bromobenzene; 1,1,2,2-tetrachloroethane; 1,2,3-trichloropropane; 1,3,5-trimethylbenzene; 1,2,4-trimethylbenzene; *sec*-butylbenzene; 1,3-dichlorobenzene; *p*-isopropyltoluene; 1,4-dichlorobenzene; *n*-butylbenzene; 1,2-dichlorobenzene; 1,2-dibromo-3-chloropropane; 1,2,4-trichlorobenzene; hexachlorobutadiene; naphthalene; and 1,2,3-trichlorobenzene

- The quantitation limits for the volatile compounds in the samples listed below may be higher than reported, and the "not-detected" results have been flagged "UJ" on the data tables. In addition, any reported positive results for these compounds in the samples listed below should be considered estimated and have been flagged "J" on the data tables. Low

① Not relevant to soil data packages.
BL 3-8-02

recoveries (< acceptance limit) were observed for these compounds in the associated LCS analyses.

Compounds	SDG	Sample(s) With Qualified Quantitation Limits ("UJ") or Estimated Positive Results ("J")
tetrachloroethene and 1,2,3-trichloropropane	200954	WRC-SW-4002-01, WRC-SW-4003-01, WRC-SW-4004-01, WRC-SW-4001-01, and ~~TRIP~~ BLANK
bromodichloromethane and 1,2-dichlorobenzene	200954	WRC-SW-4003-01, WRC-SW-4004-01, and WRC-SW-4001-01
bromomethane; 1,2-dichloroethane; bromodichloromethane; tetrachloroethene; 1,3-dichloropropane; dibromochloromethane; 1,1,1,2-tetrachloroethane; *m&p*-xylenes; styrene; bromobenzene; 1,2,3-trichloropropane; 1,2,4-trimethylbenzene; *sec*-butylbenzene; 1,3-dichlorobenzene; 1,2-dichlorobenzene; and hexachlorobutadiene	200959	All samples
bromodichloromethane; tetrachloroethene; bromobenzene; 1,2,3-trichloropropane; 1,2-dichlorobenzene; and hexachlorobutadiene	200964	W5431 (PX326)

- The quantitation limits for the semivolatile compounds in the samples listed below may be higher than reported, and the "not-detected" results have been flagged "UJ" on the data tables. In addition, any reported positive results for these compounds in the samples listed below should be considered estimated and have been flagged "J" on the data tables. Low recoveries (< acceptance limits) were observed for these compounds in the associated LCS or LCSD analysis.

① Not relevant to soil data packages. BL 3-8-02

Compounds	SDG	Sample(s) With Qualified Quantitation Limits ("UJ") or Estimated Positive Results ("J")
2-nitrophenol and pentachlorophenol	~~200959~~	~~RWR-SW-5001-01, RWR-SW-5002-01, RAB-SW-5004-01, WRL-SW-4004-01, WRL-DU-071701-A(DUP), and WRL-SW-4005-01~~
	200964	W5427 (0026491)
2,4,5-trichlorophenol; 2-nitrophenol; pentachlorophenol; and butyl benzyl phthalate	200972	RB-0718-01-A

- The quantitation limits for the semivolatile acid compounds in SDG 200967 sample CMS-FP-4003-0000-01 may be higher than reported, and the "not-detected" results have been flagged "UJ" on the data tables. Low recoveries (< acceptance limits) were observed for three semivolatile acid surrogate compounds in this sample analysis.

- The quantitation limits for all semivolatile compounds quantitated with the internal standards in the samples listed below may be biased low, and the "not-detected" results have been flagged "UJ" on the data tables. In addition, any reported positive results for compounds quantitated with these internal standards should be considered estimated and have been flagged "J" on the data tables. Low area counts (<50% of the area of the internal standard in the associated continuing calibration standard) were obtained for the associated internal standards in the semivolatile analyses of these samples.

Internal Standard(s)	SDG	Sample(s) With Qualified Quantitation Limits ("UJ") or Estimated Positive Results ("J")
chrysene-d_{12} and perylene-d_{12}	200967	CMS-FP-4002-0000-01, RWR-FP-5001-0000-01, RWR-FP-5003-0000-01, and CMS-FP-4005-0000-01
phenanthrene-d_{10}, chrysene-d_{12}, and perylene-d_{12}	200967	CMS-DUP-072001 and CMS-DUP-072001RE
perylene-d_{12}	200967	RWR-FP-5004-0000-01

- Two field duplicate pairs [SDG 200959 sample WRL-SW-4004-01 and its field duplicate, sample WRL-DU-071701-A (DUP), and SDG 200967 sample CMS-FP-4001-0000-01 and its field duplicate, sample CMS-DUP-072001] were submitted to the laboratory with this data set. Acceptable precision and sample representativeness were demonstrated by all reported positive results in these field QC samples.

- Based on the project-specific reporting requirements, all reported positive results with concentrations between the laboratory method detection limit and the project reporting limit should be considered estimated and have been flagged "J" on the data tables.

Complete support documentation for this organic QA review is presented in Section 3 of this report. The cover sheet for this section is a checklist of all QA procedures required by the methods and examined in this data review.

B. Conclusions

Overall, the data quality is good. Based on this QA review, a few semivolatile positive results were qualified as "not-detected" due to blank contamination and a few semivolatile results were qualified as unusable due to very low MS/MSD and LCS recoveries. In addition, several volatile and semivolatile results were qualified as estimated due to calibration issues, low MS/MSD and LCS recoveries, low surrogate recoveries, low internal standard area counts, and quantitation of results below the project-required reporting limit. Overall, the data are acceptable for use, provided the data user understands the limitations and qualifications stated in this QA review. The Laboratory Case Narratives, Chain-of-Custody Records, and Project Correspondence are presented in Sections 4, 5, and 6, respectively.

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Section 1 Quality Assurance Review

A. Organic Data

The organic analyses of 15 soil samples (including QC samples) and one sediment sample were performed by Battelle Laboratories of Duxbury, Massachusetts. The samples were analyzed for polyaromatic hydrocarbon (PAH) compounds by Battelle Method SOP 5-157-06 and for pesticide/PCB compounds by Battelle Method SOP 5-128-05. These analyses are specified on Table 1. The laboratory organized the samples into sample delivery group (SDG) 01-499.

The findings in this report are based upon a US EPA Region I Tier II (Tier II) review of holding times, condition of samples upon laboratory receipt, blank analysis results, laboratory control sample (LCS) recoveries, matrix spike (MS)/matrix spike duplicate (MSD) recoveries and precision, surrogate recoveries, internal standard response, instrument sensitivity, field and laboratory duplicate precision, analytical sequence, and calibrations.

Overall, the organic data quality appears to fair. The data reviewer has edited the QC forms based on the deficiencies and comments listed in this QA review. Analytical and reporting requirements defined in the QAPP were met for this data set, with the exception of the items identified in the following sections of this QA review; it should be emphasized that these items do not necessarily impact data usability. Based upon a Tier II review of the data provided, the organic data qualifiers associated with the samples that underwent limited data validation are presented in the subsequent Organic Data Qualifiers section. These qualifiers should not be applied to any organic results that did not undergo data validation. Data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the validation guidelines specify areas of the data that require qualification, yet the methods used for analysis do not require any corrective action by the laboratory. Accordingly, the data usability issues that follow should not necessarily be construed as an indication of laboratory performance.

Noncorrectable Deficiencies

1. For the PAH fraction, high levels of benzaldehyde (greater than the quantitation limit) were observed in the method blank samples, and the benzaldehyde result in an associated project sample was less than 10-times the blank level. According to the QAPP (Worksheet #24a), the laboratory should have reextracted and/or reanalyzed the samples. The laboratory did not reextract and/or reanalyze the samples. The impact on data usability due to the blank contamination is addressed in the subsequent Organic Data Qualifiers section. This issue was documented in the associated QA/QC Summary. DTDahlen 5/6/02

2. For the PAH fraction, low surrogate recoveries (<40%) were observed for naphthalene-d_8, phenanthrene-d_{10}, and chrysene-d_{12} in method blank ZJ49PB, analyzed on 10/10/01. According to the QAPP (Worksheet #24a), the laboratory should reextract and reanalyze the sample if any surrogate fails the specified limits. The laboratory did not reanalyze the method blank. The Environmental Standards data reviewer used the method blank results as reported to evaluate sample results. Data were not qualified due to this deficiency because all associated project samples had surrogates within the specified limits. This exceedence was documented in the associated QA/QC Summary. DTDahlen 5/6/02.

3. For the PAH fraction, the laboratory did not reanalyze the project samples associated with the PAH MS/MSD analyses in which more than 10% of the target analytes had recoveries outside of QC performance criteria. According to the QAPP, if less than 90% of the target analytes meet the QC performance criteria (40%-120%R), the samples must be reanalyzed. Qualification of data due to this issue is addressed in the subsequent Organic Data Qualifiers section. PAH results for MS/MSD met contingency criteria - see QA/QC Summary. DTDahlen 5/6/02.

4. For the pesticide/PCB fraction of all SDGs, the laboratory quantitated several samples for pesticides using response factors generated from an initial calibration that was analyzed after the samples had been analyzed. According to the Battelle Duxbury Method 5-128 (Section 3.1), a valid multi-point initial calibration should be analyzed at the beginning of each set of continuous sample analyses. The laboratory did analyze an initial calibration at the beginning of the analytical sequence. The laboratory, however, indicated that due to the nature of the sample matrix, a loss of instrument sensitivity was observed in the associated pesticide CCV standards. The laboratory recalibrated the instrument (as required, due to the non-compliant CCV standards), but did not reanalyze the samples analyzed prior to the recalibration because the laboratory concluded that the sample matrix negatively impacted the instrument's column condition (as evidenced by the non-compliant pesticide CCV standards that followed the second initial calibration in the sequence). Battelle laboratory personnel indicated to the data reviewer that these sample analyses already represented reextractions and that the initial extractions and analyses exhibited similar matrix problems that impacted calibration stability. Reanalysis of project samples, therefore, was not warranted because similar conditions would likely be encountered. Based on an evaluation of both initial calibrations and all CCV standards in the analytical sequence, the laboratory determined that the second initial calibration was the "better" of the two calibrations. The results for all samples and standards in the analytical sequence were processed against the response factors generated from this calibration.

Comments

1. In the Case Narrative for SDG 01-499, the laboratory did not cite data package page numbers for references to issues addressed in the Case Narrative. Upon request, the laboratory provided a revised Case Narrative that included the page numbers for reference. Data were not qualified due to this issue.

2. The results for several PAH compounds in all SDG 01-499 samples, except samples LPX-FP-4004-0000-01 and LPX-FP-4006-0000-01, were reported from dilutions due to high levels of target compounds in the original analysis.

3. For the PAH fraction, the MS/MSD samples and LCS were not spiked with benzaldehyde. The Environmental Standards data reviewer could not evaluate the accuracy and precision of the analytical methods for benzaldehyde in this SDG.

4. Sample LPX-SD-071601-A is the field duplicate of SDG 01-498 sample LPX-SD-4013-0000-01. SDG 01-498 sample LPX-SD-4013-0000-01 was not analyzed for PAH compounds; therefore, the data reviewer could not evaluate the PAH precision of the analytical method relative to the field duplicate pair. ①

5. For the pesticide/PCB fraction, sample LPX-SD-071601-A is the field duplicate of SDG 01-498 sample LPX-SD-4013-0000-01. SDG 01-498 sample LPX-SD-4013-0000-01 is reported as part of the QA report issued January 28, 2002.

6. According to the Sample Custody Corrective Action Form, the sample container for SDG 01-499 sample LPX-SD-071601-A was cracked upon laboratory receipt. The laboratory determined that the sample had not been compromised and subsequently analyzed the sample. Data were not qualified due to this issue.

7. According to the Sample Custody Corrective Action Form, sample RWR-FP-5002-0000-01 was not listed on the Chain-of-Custody form. The laboratory received this sample and listed sample RWR-FP-5002-0000-01 in the comment section on the Chain-of-Custody form. Data were not qualified due to this issue.

With respect to data usability, the principal areas of concern include blank contamination, low MS/MSD recoveries, MS/MSD imprecision, laboratory duplicate imprecision, high surrogate recoveries, field duplicate imprecision, and results below the project-required quantitation limit (PRQL). Based on a rigorous review of the data provided, the following organic data qualifiers are offered. The following data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the data validation guidelines routinely specify areas of the data that require qualification, yet the methods used for analysis may not require corrective action by the laboratory. Accordingly, the following data usability issues should not be construed as an indication of laboratory performance.

Organic Data Qualifiers

- Due to the presence of benzaldehyde in the associated method blank, the reported positive result for benzaldehyde in SDG 01-499 sample LPX-FP-4004-0000-01 should be considered "not-detected" and has been flagged "U" on the data tables. It should be noted that sample volumes and dilution factors were taken into consideration when evaluating blank contamination.

- The reported positive results for 2-methylnaphthalene; acenaphthene; acenaphthylene; dibenz[a,h]anthracene; fluorene, and naphthalene in SDG 01-499 sample RWR-FP-5002-0000-01 should be considered estimated and have been flagged "J" on the data tables. Very low (<10%) recoveries were observed for these compounds in the associated MS/MSD analyses. Note that concentrations of these PAHs in the MS/MSD were not above 5x background levels!

① Not relevant to soil data packages. BL 3-8-02 DDahlen 5/6/02

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- The reported positive results for 2-methylnaphthalene; acenaphthene; acenaphthylene; dibenz[a,h]anthracene; fluorene, and naphthelene in SDG 01-499 sample RWR-FP-5002-0000-01 should be considered estimated and have been flagged "J" on the data tables. High relative percent differences (RPDs >30%) were observed for these compounds in the associated MS/MSD analyses. Note that MS/MSD results met contingency criteria – MS/MSD concentration not above 5x background levels. DTDahlen 5/6/02

- The reported positive results for all PAH compounds in SDG 01-499 sample LPX-FP-4004-0000-01 should be considered estimated and have been flagged "J" on the data tables (unless previously flagged "U"). High RPDs (>30%) were observed for these compounds in associated laboratory duplicate analyses. See QA/QC Summary. Elevated RPDs appear to be due to incorrect sample size used in calc. DTDahlen 5/6/02

- The reported positive results for 4,4′-DDD; 4,4′-DDE; *alpha*-chlordane; dieldrin; and endosulfan sulfate in SDG 01-499 sample RWR-FP-5002-0000-01 should be considered estimated and have been flagged "J" on the data tables. Low (<60%) recoveries were observed for these compounds in the associated MS/MSD analyses. All cmpds identified above were under-recovered in MS/MSD because the spike amount was insufficient compared to background levels. DTD 5/6/02

- The quantitation limits for 4,4′-DDD; 4,4′-DDE; 4,4′-DDT; *alpha*-chlordane; dieldrin; endosulfan I; endosulfan sulfate; and *gamma*-chlordane in SDG 01-499 sample RWR-FP-5002-0000-01 may be higher than reported, and the "not-detected" results have been flagged "UJ" on the data tables. In addition, any reported positive results for these compounds in SDG 01-499 sample RWR-FP-5002-0000-01 should be considered estimated and have been flagged "J" on the data tables. High RPDs (>30%) were observed for these compounds in the associated MS/MSD analyses.

- The reported positive results for 4,4′-DDT; 4,4′-DDE; 4,4′-DDD; *alpha*-chlordane; dieldrin; endosulfan sulfate; technical chlordane; Aroclor-1254; and Aroclor-1268 in SDG 01-499 sample LPX-FP-4004-0000-01 should be considered estimated and have been flagged "J" on the data tables. High RPDs (>30%) were observed for these compounds in associated laboratory duplicate analyses. See QA/QC Summary. Elevated RPDs are likely due to incorrect sample size documented and used in calc. for dup. DTD 5/6/02

- The reported positive results for all pesticide/PCB compounds in SDG 01-499 samples LPX-FP-4006-0000-01 and RWR-FP-5004-0000-01 should be considered estimated and have been flagged "J" on the data tables. High recoveries (>125%) were observed for one of the surrogate compounds in these samples.

- Two field duplicate pairs (SDG 01-499 sample CMS-FP-4001-0000-01 and its field duplicate, SDG 01-499 sample CMS-DUP-072001 and SDG 01-498 sample LPX-SD-4013-0000-01 and its field duplicate, SDG 01-499 sample LPX-SD-071601-A) were submitted to the laboratory with this data set. SDG 01-498 sample LPX-SD-4013-0000-01 was evaluated in a separate QA review. Acceptable precision and sample representativeness were demonstrated by the correlation observed between the results in the field duplicate pair (*i.e.*, when both results were ≥ 5× the PRQL, the RPD was ≤50% or when one of the results was < 5× the PRQL, the difference between the results was ≤3× the PRQL) with the exception of the results for the following compounds in the samples listed below. Complete comparisons of the quantitatively confident positive results in the field duplicate pairs have been included in Section 3.

Compound(s)	SDG	Sample(s) With Qualified Quantitation Limits ("UJ") and/or Estimated Positive Results ("J")
4,4'-DDE; 4,4'DDT; dieldrin; technical chlordane; biphenyl; acenaphthene; benzo(a)pyrene; benzo(b)fluoranthene; benzo(g,h,i)perylene; chrysene; benzo(k)fluoranthene; dibenz(a,h)anthracene; fluorene; indeno(1,2,3-cd)pyrene; pyrene; and total PAHs	01-499	CMS-FP-4001-0000-01 and CMS-DU-072001
4,4'-DDD; *alpha*-chlordane; *gamma*-chlordane; ~~Aroclor-1254,~~ Aroclor-1~~268; and~~ Total Aroclor	01-499	~~LPX-SD-071601-A~~ ①

- Based on the project-specific reporting requirements, all reported positive results with concentrations between the laboratory method detection limit and the PRQL should be considered estimated and have been flagged "J" on the data tables.

Complete support documentation for this organic QA review is presented in Section 3 of this report. The cover sheet for this section is a checklist of all QA procedures required by the methods and examined in this data review.

B. Inorganic Data – Pertinent of waters – includes Rinsate Blank. BL 5-7-02

The inorganic analyses of 26 aqueous samples (including QC samples) were performed by Battelle/Marine Sciences Laboratory (Battelle-MSL) of Sequim, Washington. The samples were collectively analyzed for vanadium, chromium, manganese, and iron by Battelle-MSL Method MSL-I-027-03; for beryllium, aluminum, cobalt, nickel, copper, zinc, arsenic, molybdenum, silver, cadmium, antimony, barium, thallium, lead, and hardness by Battelle-MSL Method MSL-I-022-04; for selenium by Battelle-MSL Method MSL-I-030; and for total mercury by Battelle-MSL Method MSL-I-013-02. These analyses are specified on Table 1. The laboratory organized the samples into SDG 1678.

The findings in this report are based upon a Tier II review of sample holding times, condition of samples upon laboratory receipt, blank analysis results, MS/MSD recoveries and precision, laboratory/field duplicate precision, blank spike/LCS recoveries, instrument sensitivity, method detection limits (MDLs), calibrations, sample preparation, a critical review of raw data, and the quantitation of positive results.

Overall, the inorganic data quality appears to be good. The data reviewer has edited the QC forms based on the deficiencies and comments listed in this QA review. Analytical and reporting requirements defined in the QAPP were met for this data set, with the exception of the items identified in the following sections of this QA review; it should be emphasized that these items do not necessarily impact data usability. Based upon a Tier II review of the data provided, the

① Not relevant to soil data report. BL 5-7-02

inorganic data qualifiers associated with the samples that underwent limited data validation are presented in the subsequent Inorganic Data Qualifiers Section. These qualifiers should not be applied to any inorganic results that did not undergo data validation. Data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the validation guidelines specify areas of the data that require qualification, yet the methods used for analysis do not require any corrective action by the laboratory. Accordingly, the data usability issues that follow should not necessarily be construed as an indication of laboratory performance.

Correctable Deficiency (1)

- The laboratory reported the copper concentration in the dissolved procedural blank as "0.119µg/l" and the cobalt concentration in the TRM procedural blank as "0.0170µg/l". The correct concentrations are 0.115µg/L and 0.002921µg/L, respectively.

Noncorrectable Deficiency

- The laboratory did not analyze a continuing calibration verification (CCV) standard every 10 analyses for the ICPMS and mercury methods. According to the QAPP (Worksheet #21), the laboratory should analyze a CCV every 10 analyses. Data were not qualified due to this deficiency because all other QC samples were within specifications.

Comments

1. The laboratory did not consistently blank correct all standards in the mercury initial calibrations performed on 8/02/01 and 8/03/01. The laboratory did not blank correct the 0.1-ng concentration standard in these initial calibrations. The blank correction was minimal and, therefore, did not impact the overall %RSD for the calibration.

2. Blank summary forms and ICV/CCV summary forms for the metals analyses were not included in the submitted data package. Upon Environmental Standards' request, the laboratory provided these deliverables.

3. The laboratory reported all observed detections as positive results. Battelle project management indicated to the Environmental Standards that this reporting convention was consistent with project requirements. US EPA reporting conventions typically dictate that results with concentrations less than the method detection limit (MDL) or the IDL are reported as "not-detected" results. As part of this Tier II review, the Environmental Standards data reviewer did not alter the laboratory-reported results. The impact of this reporting issue on data quality is addressed in the Inorganic and Wet Chemistry Data Qualifiers section.

(1) Not relevant to soils data report. DTDahle 5/7/02

With respect to data usability, the principal areas of concern are blank contamination, negative instrument bias, dissolved and total recoverable metals results comparison, field duplicate imprecision, and results below the project-required detection limit. Based on a rigorous review of the data provided, the following inorganic data qualifiers are offered. The following data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the data validation guidelines routinely specify areas of the data that require qualification, yet the methods used for analysis may not require corrective action by the laboratory. Accordingly, the following data usability issues should not be construed as an indication of laboratory performance.

Inorganic Data Qualifiers

- Due to the trace-level presence of the following analytes in the associated initial calibration blank, continuing calibration blank, and/or preparation blank analyses, the reported positive results for the following analytes in the samples listed below should be considered "not-detected" and have been flagged "U" on the data tables. Furthermore, results that were reported below the sample-specific detection limit were replaced with the detection limit and the appropriate "U" qualifier. It should be noted that sample weights, volumes, and dilution factors were taken into consideration when evaluating blank contamination. ①

Analyte	Sample(s) With Results Qualified as "Not-Detected" ("U")
antimony	WRC-SW-4001-01(Dissolved), RAB-SW-5004-01(TRM), RWR-SW-5001-01(Dissolved), and RAB-SW-5004-01(Dissolved)
chromium	All samples except WRC-SW-4004-01(TRM)
copper	RAB-SW-5004-01(Dissolved)
silver	All samples
selenium	All samples except RWR-SW-5002-01(TRM) and RAB-SW-5004-01(TRM)
zinc	RAB-SW-5004-01(Dissolved)

- The detection limits for vanadium in all samples may be higher than reported, and the "not-detected" results have been flagged "UJ" on the data tables. In addition, any reported positive results for vanadium should be considered estimated and have been flagged "J" on the data tables. Significant negative instrument bias (absolute value of concentration > twice the IDL) was observed for vanadium in the associated initial calibration blank, continuing calibration blank, and/or preparation blank analyses.

- The following analytes in the samples listed below should be considered estimated and have been flagged "J" on the data tables. A comparison of the total recoverable metals (TRM) results and dissolved metals results revealed dissolved metals (dissolved) results that were significantly greater than the total metals results for these analytes. Large differences (> the detection limit) were observed for these analytes between the TRM and dissolved samples results. Complete comparisons of the quantitatively confident positive results have been included in Section 4. ①

① Not pertinent to soils data report DMDahlen 5/7/02

(1)

Sample	Analyte	TRM Concentration	Dissolved Concentration	MDL
WRC-SW-4002-01	aluminum	69.2 µg/L	95.8 µg/L	10 µg/L
WRL-SW-4004-01	thallium	0.00722 µg/L	0.02290 µg/L	0.0040 µg/L
WRL-DU-071701-A	thallium	0.00601 µg/L	0.02000 µg/L	0.0040 µg/L
WRL-SW-4005-01	thallium	0.00678 µg/L	0.02280 µg/L	0.0040 µg/L

- Two field duplicate pairs [sample WRL-SW-4004-01(TRM) and its field duplicate, sample WRL-DU-071701-A(TRM) and sample WRL-SW-4004-01(Dissolved) and its field duplicate, sample WRL-DU-071701-A(Dissolved)] were submitted to the laboratory with this data set. Acceptable precision and sample representativeness were demonstrated by the reported positive results in these field QC samples with the following exception. The reported positive results for antimony in samples WRL-SW-4004-01(TRM) and WRL-DU-071701-A(TRM) should be considered estimated and have been flagged "J" on the data tables. A high relative percent difference (>20%) was observed for antimony in the associated field duplicate analyses. Complete comparisons of the reported positive results have been included in Section 4.

- Based on standard project reporting requirements, all positive results reported with concentrations between the laboratory's associated MDLs and detection limits have been flagged "J" (unless flagged "U") on the data tables.

Complete support documentation for this inorganic QA review is presented in Section 4 of this report. The cover sheet for this section is a checklist of all QA procedures required by the methods and examined in this data review.

(1) Not relevant to sub data report. DMahler 5/7/02

C. Conclusions

Overall, the data quality is fair. Based on this QA review, several results were qualified as "not-detected" due to blank contamination and as estimated due to low MS/MSD recoveries, MS/MSD imprecision, laboratory duplicate imprecision, high surrogate recoveries, field duplicate imprecision, and results below the project-required quantitation limit. Several inorganic results were qualified as "not-detected" due to blank contamination and as estimated due to negative instrument bias, dissolved and total recoverable metals results comparison, field duplicate imprecision, and results below the project-required detection limits. Overall, the data are acceptable for use, provided the data user understands the limitations and qualifications stated in this QA review. The Laboratory Case Narratives and Chain-of-Custody Records are presented in Sections 5 and 6, respectively.

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Section 1 Quality Assurance Review

A. Inorganic and Wet Chemistry Data

The inorganic analyses of 16 soil samples (including QC samples), 33 sediment samples (including QC samples), and three rinsate blanks were performed by Battelle Marine Sciences Laboratory of Sequim, Washington. The samples were collectively analyzed for beryllium, aluminum, vanadium, chromium, manganese, iron, nickel, copper, zinc, silver, and barium by Battelle-MSL Method MSL-I-027-03; for cobalt, arsenic, molybdenum, cadmium, antimony, thallium, copper, nickel, zinc, and lead by Battelle-MSL Method MSL-I-022-04; for methylmercury by Battelle Method MSL-I-015-05; for selenium by Battelle-MSL Method MSL-I-029-03; for mercury by Battelle-MSL Method MSL-I-016-03 or MSL-I-013-02; for acid volatile solids by Battelle-MSL Method MSL-C-001; and for simultaneously extracted metals by Battelle Methods MSL-I-013-02, MSL-I-022-4, and MSL-W-009-00. These analyses are specified on Table 1. The laboratory organized the samples into one SDG (SDG 1678).

The findings in this report are based upon a Tier II review of sample holding times, condition of samples upon laboratory receipt, blank analysis results, laboratory and field duplicate precision, blank spike recoveries, matrix spike/matrix spike duplicate (MS/MSD) recoveries and precision, standard reference material results, instrument sensitivity, method detection limits (MDLs), and calibrations.

Overall, the inorganic and wet chemistry data quality appears to be satisfactory. The data reviewer has edited the laboratory-reported data and QC forms based on the deficiencies listed in this QA review. Contractual and reporting requirements were met for this data set, with the exception of the items identified in the following sections of this QA review; it should be emphasized that these items do not necessarily impact data usability. Based upon a Tier II review of the data provided, the inorganic and wet chemistry data qualifiers associated with the samples that underwent limited data validation are presented in the subsequent Inorganic and Wet Chemistry Data Qualifiers Section. These qualifiers should not be applied to any inorganic results that did not undergo data validation. Data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the validation guidelines specify areas of the data that require qualification, yet the methods used for analysis do not require any corrective action by the laboratory. Accordingly, the data usability issues that follow should not necessarily be construed as an indication of laboratory performance.

Correctable Deficiency

- The laboratory identified sample LPX-SD-4004-0000-01 as "LPK-SD-4004-0000-01" on the results summary forms. As instructed by Battelle personnel, the Environmental Standards data reviewer did not edit the sample identifications on the electronic data deliverables. ①

① Not relevant to soil data packages. BL 3-8-02

Noncorrectable Deficiencies

1. For the ICP/MS analytical sequence for SEM metals (nickel, copper, zinc, and lead) analyzed on 8/7/01, the laboratory did not reanalyze the samples that were not bracketed by continuing calibration verification standards. The last three continuing calibration verification standards of the sequence, according to the laboratory, were not analyzed due to autosampler tray misalignment. Qualification of data due to this issue is addressed in the Inorganic and Wet Chemistry Data Qualifiers section.

2. The laboratory digested and analyzed samples GMP-SD-5007-0000-01, RAB-SD-5008-0000-01, APB-SD-4008-0000-01, APB-SD-4009-0000-01, APB-SD-4010-0000-01, LPX-SD-4011-0000-01, and LPX-SD-4012-0000-01, LPX-SD-4013-0000-01 for mercury and samples RWR-FP-5002-0000-01, RWR-FP-5004-0000-01, CMS-FP-4001-0000-01, CMS-FP-4002-0000-01, RWR-FP-5001-0000-01, and RWR-FP-5003-0000-01 for methylmercury 1-3 days beyond the QAPP Worksheet 12b holding time of 28 days from collection to digestion. Qualification of data due to this issue is addressed in the subsequent Inorganic and Wet Chemistry Data Qualifiers section.
Per approval from EPA - the 28-day holding time was met as soon as samples put in the freeze-dryer. DTDahler 5/7/02

Comments

1. The field sampling team did not include the rinsate blanks (laboratory sample identifications 1678*175 and 1678*176) on the Chain-of-Custody forms. The laboratory analyzed these samples for ICP metals, ICP/MS metals, selenium, mercury, and methylmercury.

2. The laboratory reported all observed detections ~~as~~ positive results. Battelle project management indicated to the Environmental Standards that this reporting convention was consistent with project requirements. US EPA reporting conventions typically dictate that results with concentrations less than the method detection limit (MDL) or the IDL are reported as "not-detected" results. As part of this Tier II review, the Environmental Standards data reviewer did not alter the laboratory-reported results. The impact of this reporting issue on data quality is addressed in the Inorganic and Wet Chemistry Data Qualifiers section.

With respect to data usability, the principal areas of concern are blank contamination, exceeded holding times, laboratory and field duplicate imprecision, low and high MS/MSD recoveries, MS/MSD imprecision, low standard reference material recoveries, low and high blank spike recoveries, calibration issues, and results reported below project-specific detection limits. Based on a review of the data provided, the following inorganic and wet chemistry data qualifiers are offered. The following data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the data validation guidelines routinely specify areas of the data that require qualification, yet the methods used for analysis may not require corrective action by the laboratory. Accordingly, the following data usability issues should <u>not</u> be construed as an indication of laboratory performance.

Inorganic and Wet Chemistry Data Qualifiers

- Due to the trace-level presence of the following compounds in the associated method blanks and/or rinsate blanks, the reported positive results for the analytes in the samples listed below should be considered "not-detected" and have been flagged "U" on the data tables. It should be noted that sample weights were taken into consideration when evaluating blank contamination.

Analyte	Sample(s) With Results Qualified as "Not-Detected" ("U")
~~arsenic~~ ①	~~LPX-SD-4001-000-01~~ ①
chromium	LPX-FP-4007-0000-01
~~antimony~~ ① ②	RAB-SD-5008-0000-01, APB-SD-4008-0000-01, APB-SD-4009-0000-01, APB-SD-4010-0000-01, LPX-SD-4011-0000-01, LPX-SD-4013-0000-01, RWR-SD-5003-0000-01, RWR-SD-5004-0000-01, RAB-SD-5004-0000-01, CMS-SD-4006-0000-01, CMS-SD-4003-0000-01, WRL-SD-4005-0000-01, WRL-SD-071201-A, LPX-SD-4004-0000-01, LPX-SD-4002-0000-01, LPX-SD-071601-A, and LPX-FP-4004-0000-01 — Sed / soil
silver	RWR-SD-5003-0000-01 and RAB-SD-5004-0000-01
selenium	RAB-SD-5008-0000-01, APB-SD-4009-0000-01, APB-SD-4010-0000-01, LPX-SD-4013-0000-01, RWR-SD-5003-0000-01, RWR-SD-5004-0000-01, RAB-SD-5004-0000-01, CMS-SD-4006-0000-01, CMS-SD-4003-0000-01, WRL-SD-4005-0000-01, WRL-SD-071201-A, LPX-SD-4002-0000-01, LPX-SD-071601-A, CMS-FP-4003-0000-01, LPX-FP-4007-0000-01, LPX-FP-4006-0000-01, RWR-FP-5002-0000-01, CMS-FP-4001-0000-01, CMS-FP-4002-0000-01, CMS-FP-4005-0000-01, and CMS-DU-072001 — Sed / soils
SEM zinc ①	~~RAB-SD-5008-0000-01, APB-SD-4010-0000-01, RWR-SD-5003-0000-01, RWR-SD-5004-0000-01, RAB-SD-5004-0000-01, CMS-SD-4003-0000-01, WRL-SD-4005-0000-01, WRL-SD-071201-A, and LPX-SD-4002-0000-01~~ ①

- The reported positive results for the following analytes in the samples listed below should be considered estimated and have been flagged "J" on the data tables. These samples were digested and analyzed 1–3 days beyond the QAPP Worksheet 12b holding time of 28 days from collection to digestion.

① Not relevant to soils data report. DiDahlen 5/7/02
② This regard crossout. DiDahlen 5/7/02

Analyte	Samples With Estimated Positive Results ("J")
methylmercury	RWR-FP-5002-0000-01, RWR-FP-5004-0000-01, CMS-FP-4001-0000-01, CMS-FP-4002-0000-01, RWR-FP-5001-0000-01, and RWR-FP-5003-0000-01
mercury ①	GMP-SD-5007-0000-01, RAB-SD-5008-0000-01, APB-SD-4008-0000-01, APB-SD-4009-0000-01, APB-SD-4010-0000-01, LPX-SD-4011-0000-01, LPX-SD-4012-0000-01, and LPX-SD-4013-0000-01 ①

- The reported positive results for the following analytes in the samples listed below should be considered estimated and have been flagged "J" (unless flagged "U") on the data tables. High RPDs (>35%) were observed for these analytes in associated laboratory duplicate analyses.

Analyte	Samples With Estimated Positive Results ("J")
~~arsenic~~ ①	All sediment samples except LPX-SD-4013-0000-01 ①
~~SEM cadmium~~ ①	~~All sediment samples~~ ①
antimony	All soil samples

- The reported positive results for antimony in all samples, except samples RB-071001 (1678*175), RB-071001(1678*176), and RB-071801-A, should be considered estimated and have been flagged "J" (unless flagged "U") on the data tables. Low recoveries (<75%) were observed for these analytes in the associated MS/MSD analyses. ①

- The reported positive results for the following analytes in the samples listed below should be considered estimated and have been flagged "J" on the data tables. High recoveries (>125%) were observed for these analytes in the associated MS/MSD analyses. ①

Analytes ①	Samples With Estimated Positive Results ("J") ①
lead, manganese, and barium	All sediment samples
chromium	All sediment samples except RAB-SD-5008-0000-01

- The detection limits for the following analytes in the samples listed below may be higher than reported, and the "not-detected" results have been flagged "UJ" on the data tables. In addition, the reported positive results for the following analytes in the samples listed below should be considered estimated and have been flagged "J" (unless flagged "U") on the data tables. Low recoveries (<75%) were observed for these analytes in the associated standard reference material analyses.

① Not relevant to soils data report. DTD 5/7/02

Analytes	Samples With Qualified Detection Limits ("UJ") and/or Estimated Positive Results ("J")
aluminum and antimony	All samples
chromium, selenium, and thallium	All sediment samples, RB-071001-(1678*175), and RB-071001(1678*176)
molybdenum	All soil samples and RB-071801-A
methylmercury	All samples except RWR-SD-5004-0000-01

- The reported positive results for the following analytes in the samples listed below should be considered estimated and have been flagged "J" on the data tables. High RPDs (>35%) were observed for these analytes in associated MS/MSD analyses.

Analytes	Sample(s) With Estimated Positive Results ("J")
manganese and zinc	All sediment samples
lead	All sediment samples except RAB-SD-5008-0000-01

- The reported positive results for acid volatile solids in all sediment samples, except sample RWR-SD-5004-0000-01, should be considered estimated and have been flagged "J" on the data tables. High recoveries (>125%) were observed for acid volatile solids in the associated blank spike analyses.

- The reported positive results for acid volatile solids in all sediment samples, except sample RWR-SD-5004-0000-01, should be considered estimated and have been flagged "J" on the data tables. A low recovery (<75%) was observed for acid volatile solids in the associated blank spike analysis.

- The reported positive results for SEM nickel, SEM copper, SEM zinc, and SEM lead in the samples listed below should be considered estimated and have been flagged "J" (unless flagged "U") on the data tables. These samples were not bracketed by continuing calibration verification standards in the analytical sequence.

Samples With Estimated Positive Results ("J")

APB-SD-4010-0000-01, LPX-SD-4011-0000-01, LPX-SD-4012-0000-01, LPX-SD-4013-0000-01, GMP-SD-5002-0000-01, RWR-SD-5003-0000-01, RWR-SD-5004-0000-01, RAB-SD-5004-0000-01, CMS-SD-4006-0000-01, CMS-SD-4003-0000-01, CMS-SD-4007-0000-01, LPX-SD-4004-0000-01, WRL-SD-4005-0000-01, WRL-SD-071201-A, LPX-SD-4001-0000-01, LPX-SD-4002-0000-01, and LPX-SD-071601-A

- Three field duplicate pairs (sample WRL-SD-4005-0000-01 and its field duplicate, sample WRL-SD-071201-A; sample LPX-SD-4013-0000-01 and its field duplicate, sample LPX-SD-071601-A; and sample CMS-FP-4001-0000-01 and its field duplicate, sample CMS-DU-072001) were submitted to the laboratory with this data set.

① Not relevant to soils data report. DDSaulin 5/7/02

Acceptable precision and sample representativeness were demonstrated by the reported positive results in these field QC samples except the reported positive results for the analytes in the samples listed below; these positive results should be considered estimated and have been flagged "J" on the data tables. High RPDs (>40%) were observed for these analytes in the associated field duplicate analyses.

Analytes	Samples With Estimated Positive Results ("J")
chromium and ~~SEM~~ cadmium ①	~~LPX-SD-4013-0000-01 and LPX-SD-071601-A~~ ①
cobalt and zinc	CMS-FP-4001-0000-01 and CMS-DU-072001

- Based on standard project reporting requirements, all observed positive results reported with concentrations below the laboratory's project-specific reporting limits have been flagged "J" (unless flagged "U") on the data tables.

Complete support documentation for this inorganic and Wet Chemistry QA review is presented in Section 4 of this report. The cover sheet for this section is a checklist of all QA procedures required by the methods and examined in this data review.

① Not pertinent to soils data report.
DDahler 5/7/02

ENVIRONMENTAL STANDARDS

B. Conclusions

Overall, the data quality is satisfactory. Based on this QA review, several inorganic results were qualified due to blank contamination, exceeded holding times, laboratory and field duplicate imprecision, low and high MS/MSD recoveries, MS/MSD imprecision, low standard reference material recoveries, low and high blank spike recoveries, calibration issues, and results reported below project-specific detection limits. Overall, the data are acceptable for use, provided the data user understands the limitations and qualifications stated in this QA review. The Laboratory Case Narratives and Chain-of-Custody Records are presented in Sections 4 and 5, respectively.

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Section 1 Quality Assurance Review

Grain Size
TOC

~~A. Organic Data~~ ①

The organic analyses of 11 sediment samples (including QC samples) and one aqueous blank sample were performed by Severn Trent Laboratories (STL) of St. Louis, Missouri. The samples were analyzed for semivolatile organic compounds (phenols and phthalates) by SW-846 Method 8270C. These analyses are specified on Table 1. The laboratory organized the samples into the two sample delivery groups (SDGs 200929 and 200940).

The findings in this report are based upon a US EPA Region I Tier II (Tier II) review of holding times, condition of samples upon laboratory receipt, blank analysis results, laboratory control sample (LCS) recoveries, matrix spike (MS)/matrix spike duplicate (MSD) recoveries and precision, surrogate recoveries, internal standard response, instrument sensitivity, analytical sequence, gas chromatography/mass spectroscopy (GC/MS) decafluorotriphenylphosphine (DFTPP) instrument performance checks, calibrations, overall system performance, and quantitation of positive results.

Overall, the organic data quality is satisfactory. The data reviewer has edited the laboratory-reported data and QC forms based on the deficiencies and comments listed in this QC review. Contractual and reporting requirements were met for this data set, with the exception of the items identified in the following sections of this QA review; it should be emphasized that these items do not necessarily impact data usability. Based upon a Tier II review of the data provided, the organic data qualifiers associated with the samples that underwent data validation are presented in the subsequent Organic Data Qualifiers section. These qualifiers should not be applied to any organic results that did not undergo data validation. Data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the validation guidelines specify areas of the data that require qualification, yet the methods used for analysis do not require any corrective action by the laboratory. Accordingly, the data usability issues that follow should not necessarily be construed as an indication of laboratory performance.

Noncorrectable Deficiencies

1. In SDG 200929, high percent differences (%Ds >20%) were observed for 2,4-dinitrophenol and 4-nitrophenol in the initial calibration verification (ICV) standard analyzed on 7/30/01 at 1645 on instrument SA1. According to the QAPP (Worksheet #21), the laboratory is required to perform corrective measures, such as recalibrating the instrument, if any %D is greater than 20%; the laboratory did not perform corrective measures. Data were not qualified due to this deficiency because project samples were not analyzed in association with this ICV.

① Not relevant to soil report. BL 5-6-02

2. In SDG 200929, a high %D (>20%) was observed for 4-nitrophenol in the continuing calibration verification (CCV) performed on 7/31/01 at 1421 on instrument SA1. According to the QAPP (Worksheet #21), the laboratory is required to perform corrective measures, such as recalibrating the instrument, if any %D is greater than 20%; the laboratory did not perform corrective measures. The impact on data usability due to the high %D is addressed in the subsequent Organic Data Qualifiers section. ①

3. In SDG 200929, high %Ds (>20%) were observed for 2,4-dinitrophenol and 4-nitrophenol in the CCV performed on 8/2/01 at 0233 on instrument SA1. According to the QAPP (Worksheet #21), the laboratory is required to perform corrective measures, such as recalibrating the instrument, if any %D is greater than 20%; the laboratory did not perform corrective measures. Data were not qualified due to this deficiency because only the result for bis(2-ethylhexyl)phthalate in sample APB-SD-4010-0000-01 was associated with this CCV.

4. In SDG 200940, a high %D (>20%) was observed for 2,4-dinitrophenol in the ICV performed on 7/18/01 at 2308 on instrument SC3. According to the QAPP (Worksheet #21), the laboratory is required to perform corrective measures, such as recalibrating the instrument, if any percent difference is greater than 20%; the laboratory did not perform corrective measures. Data were not qualified due to this deficiency because project samples were not analyzed in association with this ICV.

5. In SDG 200940, high %Ds (>20%) were observed for 2,4-dinitrophenol and 4-nitrophenol in the CCV performed on 7/23/01 at 1024 on instrument SC3. According to the QAPP (Worksheet #21), the laboratory is required to perform corrective measures, such as recalibrating the instrument, if any percent difference is greater than 20%; the laboratory did not perform corrective measures. The impact on data usability due to the high %Ds is addressed in the subsequent Organic Data Qualifiers section.

6. For the SDG 200940 preparation batch 3472, several surrogate compounds in the LCS/LCSD and the preparation blank analyses were recovered below the QC limits specified in the QAPP (Worksheet #24b). According to the QAPP (Worksheet #24a), the laboratory must reanalyze, reprepare, or qualify the data when surrogates are outside of QC limits. The laboratory should have re-prepped the QC samples and any associated samples based on the low surrogate recoveries. The data for sample RB-071001 exhibited one low surrogate recovery and, therefore, qualification of data was not warranted; it is possible that the low surrogate recovery in this sample was a systematic extraction problem or spike addition problem.

① Not relevant to soil report. BL 5-6-02

Comments

1. According to the Chain-of-Custody Record and Job Sample Receipt Checklist Report (Checklist Report), the sample containers for SDG 200929 samples RAB-SD-5008-0000-01 and GMP-SD-5007-0000-01 were received broken. In addition, sample GMP-SD-5007-0000-01 was received without a label and with an incorrect time of collection indicated on the bottle. The laboratory indicated on the Checklist Report that a Non-Conformance Recovery (NCR) was issued; however, the NCR was not provided in the package received for review. It was, therefore, assumed that the laboratory used sample from the damaged containers for analysis. The COC indicated that sample GWP-SD-5007-0000-01 was transferred to another sample jar. It was not apparent if multiple sample containers were provided for these samples or if the integrity of the samples was compromised as a result of the broken sample jars. Data were not qualified due to this issue.

2. According to the Analytical Narrative and the Checklist Report, SDG 200940 sample RB-071001 was received at the laboratory without custody seals present on two sample bottles or on the shipping container. It was assumed by the Environmental Standards data reviewer that the shipping container was sealed prior to delivery and the integrity of the sample was not comprised during transport. Qualification of data was not warranted due to this issue.

3. The laboratory did not perform MS/MSD analyses in association with SDG 200940 sample RB-071001 due to insufficient sample volume. The laboratory did perform an LCS/LCSD analyses associated with this sample. There was no impact on data usability due to the absence of an MS/MSD associated with this sample because sample RB-071001 is an equipment rinsate blank sample.

4. The laboratory did not report internal standard retention times (RTs) or upper and lower limits for internal standard areas on the Internal Standard Response Summary forms (Form VIIIs) for any of the project sample or QC sample analyses. The Environmental Standards data reviewer was not able to evaluate the internal standard RTs for method compliance. The Environmental Standards data reviewer was able to evaluate the internal standard areas by calculating the upper and lower limits. SW-846 Method 8270C (Section 7.4.6) states that the RTs of the internal standards in the CCV must be within 30 seconds of those from the mid-level standard in the most recent initial calibration. Qualification of data was not warranted due to this issue.

5. The result for bis(2-ethylhexyl)phthalate in SDG 200929 sample APB-SD-4010-0000-01 was reported from a three-fold dilution due to a high level of this compound in the original analysis.

① Not relevant to soil report. BL 5-6-02

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6. The percent relative standard deviation (%RSD) for relative response factors (RRFs) for 2,4-dinitrophenol, pentachlorophenol, phenol, carbazole, and/or di-n-butylphthalate in various initial calibrations associated with samples in SDGs 200929 and 900940 exceeded 15%. SW-846 Method 8270C (Section 7.3.7.1) requires the laboratory to re-calibrate the instrument if the %RSD for any compound exceeds 15% unless the overall mean %RSD for all compounds in the initial calibration is less than 15%. The laboratory should also generate a linear or non-linear calibration curve for the individual compounds that exceeded the %RSD criteria in the initial calibration. The data packages for SDGs 200929 and 900940 did not contain information to suggest that the laboratory generated linear or non-linear calibration curves for 2,4-dinitrophenol, pentachlorophenol, phenol, carbazole, and di-n-butylphthalate. The qualification of project samples associated with the noncompliant %RSDs is addressed in the Organic Data Qualifiers section. ①

7. The MS/MSD concentrations, spike amounts, and background concentrations presented on the Quality Control Results form for SDG 200929 were not corrected for dry weight, sample extract weight, or extraction field volume; consequently, the Environmental Standards data reviewer could not recalculate several of the percent recoveries (those with positive results reported in the background QC sample) for the MS/MSD samples based solely on the information provided on the summary form. The Environmental Standards data reviewer was able to recalculate the MS/MSD recoveries presented on the Quality Control Results form using information provided on the Sample Preparation Batch Worksheet and the percent moisture summary forms. Qualification of data was not warranted due to this issue.

With respect to data usability, the principal areas of concern include a low LCS recovery, high continuing calibration %Ds, low internal standard area counts, high and low MS/MSD recoveries, high initial calibration %RSD, very low percent solids results, and quantitation of results below the project-required reporting limits. Based on the Tier II review of the data provided, the following organic data qualifiers are offered. The following data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the data validation guidelines routinely specify areas of the data that require qualification, yet the methods used for analysis may not require corrective action by the laboratory. Accordingly, the following data usability issues should <u>not</u> be construed as an indication of laboratory performance.

① Not relevant to soil report. BL 5-6-02

Organic Data Qualifiers

(1)

- The analysis for 2,4-dinitrophenol in SDG 200929 sample LPX-SD-4013-DUP should be considered unusable, and the "not-detected" result has been flagged "R" on the data tables. Very low recoveries (<10%) were observed for 2,4-dinitrophenol in the associated MS/MSD analyses.

- The analyses for semivolatile compounds in SDG 200929 samples GMP-SD-5007-0000-01, RAB-SD-5008-0000-01, APB-SD-4008-0000-01, LPX-SD-4011-0000-01, and LPX-SD-4012-0000-01 should be considered unusable, and the "not-detected" results have been flagged "R" on the data tables. In addition, any reported positive results for semivolatile compounds in these samples should be considered estimated and have been flagged "J" on the data tables. Very low percent solids results (<30%) were obtained for these sediment samples.

- The detection limits for 2,4-dinitrophenol and pentachlorophenol in all SDG 200929 samples and for phenol; 2,4-dinitrophenol; carbazole; and di-n-butylphalate in the SDG 200940 sample RB-071001 may be higher than reported, and the "not-detected" results have been flagged "UJ" (unless previously flagged "R") on the data tables. A high %RSD (>15%) was observed among the RRFs for these compounds in the associated initial multipoint calibration standards.

- The detection limits for 4-nitrophenol in all SDG 200929 samples may be higher than reported, and the "not-detected" results have been flagged "UJ" (unless previously flagged "R") on the data tables. A high %D (>20%), coupled with a decrease in instrument sensitivity, was observed between the average RRFs of the initial calibration and the RRFs in the associated continuing calibration.

- The detection limits for 2,4-dinitrophenol and 4-nitrophenol in SDG 200940 sample RB-071001 may be higher than reported, and the "not-detected" results have been flagged "UJ" on the data tables. High %Ds (>20%), coupled with a decrease in instrument sensitivity, were observed between the average RRFs of the initial calibration and the RRFs in the associated continuing calibration.

- The detection limit for carbazole in SDG 200940 sample RB-071001 may be higher than reported, and the "not-detected" result has been flagged "UJ" on the data tables. A low recovery (<66%) was observed for carbazole in the associated LCS analysis.

- The detection limits for all semivolatile compounds quantitated with the following internal standards in the samples listed on the table below may be biased low, and the "not-detected" results have been flagged "UJ" (unless previously flagged "R") on the data tables. In addition, any reported positive results for compounds quantitated with these internal

(1) Not relevant to to soil report. BL 5-6-02

standards should be considered estimated and have been flagged "J" on the data tables. ① Low area counts (<50% of the area of the internal standard in the associated continuing calibration standard) were observed for the associated internal standards in the semivolatile analyses of the following samples.

Internal Standard(s)	SDG	Samples With Biased Quantitation Limits ("UJ") and Estimated Positive Results ("J")
perylene-d_{12}	200929	APB-SD-4008-0000-01 and APB-SD-4009-0000-01
phenanthrene-d_{10}, chrysene-d_{12}, and perylene-d_{12}	200929	APB-SD-4010-0000-01, LPX-SD-4012-0000-01, and LPX-SD-4013-DUP
chrysene-d_{12} and perylene-d_{12}	200929	APB-SD-4010-0000-01 (3× Dilution), LPX-SD-4011-0000-01, and LPX-SD-4013-0000-01

- The reported positive results for carbazole, butyl benzyl phthalate, and bis(2-ethylhexyl)phthalate in SDG 200929 sample LPX-SD-4013-DUP should be considered estimated and have been flagged "J" on the data tables. High recoveries were observed for these compounds in the associated MS/MSD analyses.

- Based on the project-specific reporting requirements, all reported positive results with concentrations between the laboratory method detection limit and the project reporting limit should be considered estimated and have been flagged "J" on the data tables.

- One field duplicate pair (SDG 200929 sample LPX-SD-4013-0000-01 and its field duplicate, sample LPX-SD-4013-DUP) was submitted to the laboratory with this data set. Acceptable precision and sample representativeness were demonstrated by all reported positive results in these field QC samples.

Complete support documentation for this organic QA review is presented in Section 3 of this report. The cover sheet for this section is a checklist of all QA procedures required by the methods and examined in this data review.

B. Inorganic and Wet Chemistry Data

The inorganic analyses of 13 soil samples and 23 sediment samples (including QC samples) were performed by Applied Marine Sciences, Inc. (AMS) of League City, Texas. The samples were analyzed for total organic carbon (TOC) by SW-846 Method 9060 and for grain size by ASTM

① Not relevant to soil report. BL 5-6-02

Method D422. These analyses are specified on Table 1. The laboratory organized the samples into one SDG (SDG 2001-03-09).

The findings in this report are based upon a Tier II review of sample holding times, condition of samples upon laboratory receipt, blank analysis results, laboratory duplicate precision, instrument sensitivity, method detection limits (MDLs), calibrations, sample preparation, and the quantitation of positive results.

Overall, the inorganic data quality appears to be good. The data reviewer has edited the laboratory-reported data and QC forms based on the deficiencies and comments listed in this QC review. Contractual and reporting requirements were met for this data set, with the exception of the items identified in the following sections of this QA review; it should be emphasized that these items do not necessarily impact data usability. Based upon a Tier II review of the data provided, the inorganic data qualifiers associated with the samples that underwent data validation are presented in the subsequent Inorganic and Wet Chemistry Data Qualifiers Section. These qualifiers should not be applied to any inorganic results that did not undergo data validation. Data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the validation guidelines specify areas of the data that require qualification, yet the methods used for analysis do not require any corrective action by the laboratory. Accordingly, the data usability issues that follow should not necessarily be construed as an indication of laboratory performance.

Correctable Deficiency

- The laboratory incorrectly identified sample GMP-SD-5007-0000-01 as "GMD-SD-5007-0000-01" on the TOC result summary form.

Noncorrectable Deficiency

- The samples received on 7/18/01 had a cooler temperature of 9°C. According to the QAPP (Worksheet #22a), the cooler temperature should be less than 6°C. The laboratory did not note the elevated temperature in the Case Narrative. Data were not qualified due to this deficiency because the cooler temperature was less than 10°C.

Comments

1. The laboratory noted on the Sample Receipt Checklist form and in the Case Narrative that the container for sample WRL-SD-4005-0000-01 was broken and the sample was possibly contaminated with cooler water. The laboratory contacted Ms. Deirdre Dahlen of Battelle who arranged to have the sample re-sent with the next shipment.

2. Sample LPX-SD-071601-A was received with the shipment of samples on 7/24/01 but was not listed on the Chain-of-Custody Record. The laboratory contacted Ms. Deirdre Dahlen of Battelle who instructed the laboratory to add the sample to the Chain-of-Custody Record and analyze the sample for Total Organic Carbon and Grain Size.

With respect to data usability, the principal areas of concern are high laboratory and field duplicate relative percent differences (RPDs). Based on a rigorous review of the data provided, the following inorganic and wet chemistry data qualifiers are offered. The following data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the data validation guidelines routinely specify areas of the data that require qualification, yet the methods used for analysis may not require corrective action by the laboratory. Accordingly, the following data usability issues should not be construed as an indication of laboratory performance.

Inorganic and Wet Chemistry Data Qualifiers

- The reported positive results for the following grain size fractions in the samples listed below should be considered estimated and have been flagged "J" on the data tables. High RPDs (>25%) were observed for these fractions in the associated laboratory duplicate analyses.

Grain Size Fraction	SDG	Samples With Estimated Positive Results ("J")
fine sand	2001-03-09	GMP-SD-5002-0000-01, RWR-SD-5003-0000-01, RWR-SD-5004-0000-01, RAB-SD-5004-0000-01, CMS-SD-4003-0000-01, CMS-SD-4006-0000-01, CMS-SD-4007-0000-01, LPX-SD-4001-0000-01, LPX-SD-4002-0000-01, LPX-SD-4004-0000-01, CMS-FP-4005-0000-01, CMS-DU-072001, WRL-SD-4005-0000-01, and LPX-SD-071601-A
clay	2001-03-09	CMS-FP-4005-0000-01, CMS-DU-072001, WRL-SD-4005-0000-01, and LPX-SD-071601-A

- One field duplicate pair (SDG 2001-03-09 sample CMS-FP-4001-0000-01 and its field duplicate, sample CMS-DU-072001) was submitted to the laboratory with this data set. Acceptable precision and sample representativeness were demonstrated by the reported positive results in these field QC samples with the following exception. The reported positive results for the fine sand and clay grain size fractions in these samples should be considered estimated and have been flagged "J" on the data tables. High RPDs (>50%) were observed for these fractions in the associated field duplicate analyses.

Complete support documentation for this inorganic QA review is presented in Section 4 of this report. The cover sheet for this section is a checklist of all QA procedures required by the methods and examined in this data review.

C. Conclusions

Overall, the data quality is satisfactory. Based on this QA review, several organic results were qualified as unusable due to very low MS/MSD recoveries and very low percent solids results. In addition, several organic results were qualified as estimated due to a low LCS recovery, low internal standard area counts, high MS/MSD recoveries, calibration issues, and quantitation of positive results below the project-required reporting limits. A few inorganic results were qualified as estimated due to high laboratory and field duplicate RPDs. Overall, the data are acceptable for use, provided the data user understands the limitations and qualifications stated in this QA review. The Laboratory Case Narratives and Chain-of-Custody Records are presented in Sections 5 and 6, respectively.

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