U.S. Army Corps
of Engineers
Buffalo District

Scope of Work

for the Transportation and Disposal of Remedial Investigation Derived and Legacy Waste

Authorized under the
Formerly Utilized Sites Remedial Action Program (FUSRAP)

APPENDIX A - Niagara Falls Storage Site
Lewiston, New York

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ATTACHMENTS (following text)

Attachment 1: Solid and Liquid Analytical Results and Listing of Components of Composite Samples
Attachment 1a: Qualitative Description of the Contents of Waste Containers
Attachment 2: Field Documentation Requirements
Attachment 3: Contractor Accident Prevention Plan (APP) Checklist
Attachment 4: Unified Facilities Guide Specifications 01 35 26
Attachment 5: Unified Facilities Guide Specifications 01 35 29
Attachment 6: Blank Activity Hazard Analysis Form
Attachment 7: Contractor Monthly Man Hour Exposure Form
Attachment 8: Blank Accident Investigation Report ENGForm 3394
Attachment 9: Blank Certificate of Compliance (Crane) Form

1 PURPOSE

The US Army Corps of Engineers (USACE) is completing the Remedial Investigation of the Formerly Utilized Sites Remedial Action Program (FUSRAP) Niagara Falls Storage Site (NFSS) in Lewiston, NY. This Statement of Work (SOW) describes activities to be performed by the Contractor to prepare, package, load, transport and properly dispose of two waste streams (legacy and investigation derived wastes (IDW)) in an approved disposal facility. The RI IDW was generated during multiphase Remedial Investigation (RI) activities and RI Addendum sampling activities, and legacy waste was left on-site by the United States Department of Energy (DOE). The Contractor shall temporarily relocate both waste streams to another (USACE-accepted) location on-site for staging and coordinate with and obtain acceptance from an approved disposal facility for subsequent transport and disposal of all wastes. The Contractor shall use their own contracting mechanisms to secure the most cost-effective disposal rates for the wastes. The Contractor shall also coordinate its transport of the waste with USACE and disposal facility representatives.

2 PROPOSED SCHEDULE

It is anticipated that the award of the Contract will occur in the summer of 2010. Wastes must be relocated by 31 August 2010 and removed from the NFSS Site no later than January 2011. The Contractor shall prepare and submit with its proposal a critical path method schedule with target dates and milestones which shall, at a minimum, meet the above identified dates for completion. Section 6.1 presents the submittal requirement summary schedule for this SOW.

3 COORDINATION WITH USACE

USACE is responsible for signing all waste manifests and, as such, the Contractor shall provide USACE with at least 7 calendar days notice prior to transporting any IDW from NFSS to the disposal facility. The Contractor shall be responsible for ensuring all documentation (e.g., waste manifests) is correct and acceptable to the USACE and waste disposal facility. The Contractor shall also obtain approval of the waste disposal facility prior to waste transport.

4 NATURE OF MATERIALS

Composite samples of the waste to be disposed of under this SOW were collected and analyzed for disposal parameters. The solid and liquid analytical results and a listing of the components of each composite sample are presented in Tables 1, 2 and 3, respectively, of Attachment 1. A qualitative description of the contents of each waste container is presented in Attachment 1a. The Contractor is required to use these results to assess the proper classification of the waste to aid in the identification of potential disposal facilities.

5 DESCRIPTION OF WORK

The Contractor shall prepare, package for shipment, load and provide safe transportation of FUSRAP IDW and Legacy waste from the current storage location on the NFSS Site to the designated off-site disposal facility accepted by USACE. The Contractor shall coordinate disposal with the facility and the USACE. All work performed under the Contract shall be in accordance with all applicable, relevant and appropriate Federal, State and Local laws and regulations, as well as USACE guidance and disposal facility requirements. The Contractor shall provide USACE with qualified personnel, materials, equipment, services and facilities to perform the required work.

5.1 TASK 1 – Work Plans

The Contractor shall prepare and submit the following work plans for review and acceptance by the USACE. The Contractor shall not implement any work plans or initiate any work until USACE issues acceptance of these submissions. Additionally, the Contractor shall not implement any field changes without acceptance from the USACE Project Manager and/or Contracting Officer Representative.

Five (5) hard copies and one (1) electronic copy of each plan shall be supplied in Microsoft Word, Excel, and Adobe Acrobat PDF format to the NFSS Project Manager, John Busse (CELRB-PM-SPF), 1776 Niagara Street, Buffalo, NY 14207-3199 as specified in Section 6.1, *Submittal Requirements Summary* and as directed by the USACE Project Manager and/or Contracting Officer Representative. The USACE will review and provide written comments to the Contractor via e-mail. The Contractor shall formally respond to all USACE comments and finalize all work plans within 7 calendar days upon receipt of USACE's comments. The Contractor shall send five (5) hard copies and three (3) compact discs (in Adobe PDF and Microsoft Word (and Excel) format) of the final work plans.

5.1.1 Sampling and Analysis Plan

The Contractor shall prepare a Sampling and Analysis Plan (SAP) that sets forth detailed plans for conducting the work described in Tasks 1 through 5 in this SOW. The SAP shall be comprised of the following two volumes: Volume I: Field Sampling Plan (FSP); Volume II: Quality Assurance Project Plan (QAPP). These two Volumes shall be prepared in accordance with the USACE guidance provided in *Requirements for the Preparation of Sampling and Analysis Plans, EM 200-1-3, February, 2001* (USACE 2001). This document is available electronically from the following web site: www.usace.army mil/publications/eng-manuals. The FSP and QAPP shall be submitted as a single document (although they may be bound separately to facilitate use of the FSP in the field). The FSP addresses all the field investigative activities including all aspects of sampling and field data gathering activities. The FSP shall specify the number of samples to be collected, the type of analyses required, the methods and procedures for collecting soil samples, and the vertical and lateral soil sample locations. The FSP shall also present the Contractor's proposed method and procedures for radiological, volatile organic compound (VOC), and metal soil screening including instruments. The QAPP addresses the data quality objectives, analytical methodologies, specific quality assurance (QA) and quality control (QC) activities, laboratory requirements, and data assessment activities designed to achieve the project objectives for this SOW. Included in the FSP shall be a restatement of project objectives, together with a table depicting how the planned data acquisition shall satisfy each objective. A summary of required field operations documentation requirements are provided in Attachment 2.

5.1.2 Accident Prevention Plan / Site Safety and Health Plan (APP/SSHP)

The Contractor shall prepare a site-specific Accident Prevention Plan/Site Safety and Health Plan (APP/SSHP) in accordance with requirements located in USACE EM 385-1-1, 15 September 2008, "Safety and Health Requirements Manual", Section 11.3 of the MARC Description and Specifications, and any specific requirements of this SOW. **The APP/SSHP shall be developed and submitted in the format provided in Appendix A of USACE EM 385-1-1.** The Contractor shall complete the APP/SSHP Checklist (Attachment 3) and submit this as an attachment to the APP/SSHP. The Contractor shall complete an Activity Hazard Analysis (AHA) per EM 385-1-1, 01.A.13 for each work activity, which will be submitted as an attachment to the APP/SSHP (attachment 6).

Per EM 385-1-1, 15 Sep 08, Section 01.A.17, the **Site Safety and Health Officer (SSHO), as a minimum, must have completed the 30-hour OSHA Construction Safety Training**, must be on-site at all times when work is being performed, and must have five years of construction industry safety experience or three years if he possesses a Certified Safety Professional (CSP) or safety and health degree.

The Contractor shall utilize the services of a Certified Health Physicist (CHP) with at least two years experience in radioactive waste handling and disposal operations, to develop a Radiation Safety Program (RSP) that is commensurate with the scope and extent of the activities, and is sufficient to ensure compliance with the provisions of the applicable standards. The RSP shall be signed by the CHP and be an attachment to the APP/SSHP.

Notify the Contracting Officer as soon as practical, but not later than 4 hours after ALL accidents. Notification will include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.).

Additional safety requirements will be found in UFGS 01 35 26 and UFGS 01 35 29.13 (Attachments 4 and 5).

If a crane will be used, the Contractor must follow all of the requirements of OSHA and EM 385-1-1, Chapter 16, and complete the Certificate of Compliance for cranes (Attachment 9). The completed certificate will be attached to the APP/SSHP as well as posted in the cab.

Work shall not proceed until the APP/SSHP has been submitted to, and accepted by, the USACE Buffalo District Safety Department.

Safety is a key operating principle for the USACE, and, therefore, the Contractor shall adhere to the application of all applicable local, state, and federal requirements. The following documents shall be considered in the preparation of the APP/SSHP:

- USACE EM 385-1-1 (15 Sep 2008) *Safety and Health Requirements Manual*;
- USACE ER 385-1-92 (1 May 2007) *Safety and Occupational Health Requirements for Hazardous, Toxic and Radioactive Waste (HTRW) Activities*.
- UFGS-01 35 26 (February 2009) *Governmental Safety Requirements*
- UFGS-01 35 29.13 (January 2008) *Health, Safety, and Emergency Response Procedures for Contaminated Sites*
- USACE ER 385-1-80 (30 May 1997) *Radiological Safety*
- USACE EM 385-1-80 (30 May 1997) *Radiation Protection Manual*
- USDOL OSHA 29 CFR 1926 *Safety and Health Regulations for Construction*
- USDOL OSHA 29 CFR 1910 *Occupational Safety and Health Standards*
- USDOL OSHA 29 CFR 1910.120 or 1926.65 *HAZWOPER Standard*
- USNRC 10 CFR Part 20 *Standards of Protection Against Radiation*

ENGINEER MANUAL EM 385-1-1 can be accessed at http://www.usace.army.mil/CESO/Pages/EM385-1-1.aspx

5.1.2.1 Training, Security Planning, and Medical Monitoring

The Contractor shall provide all necessary training (for hazardous materials and radioactive materials as applicable), security planning and medical monitoring for their on-site and off-site employees and subcontractors and assure that all required training and medical monitoring is provided to employees of any subcontractor, vendor or other suppliers involved in the project. Employees shall be trained, tested and certified to safely, securely and effectively carry out their duties in accordance with Federal, State and Local laws and regulations and USACE guidance. All Transporters of Hazardous Materials/ Wastes must have a Security Plan in place per 49 CFR 172 Subparts H & I and comply with ER 385-1-1.

5.1.2.2 Employee Health and Safety & Radiation Protection

All work performed by the Contractor and its subcontractors shall meet applicable requirements of the Department of Labor, and occupational Safety and Health Administration (OSHA). As applicable, the Contractor will meet all requirements associated with a radiation protection program (10 CFR 19 and 10 CFR 20 along with ER 385-1-80 and ER 385-1-92). The Contractor shall prepare a SSHP, and all work shall conform to that plan and the USACE's Safety and Health Requirements Engineering Manual (EM-385-1-1). The plan shall be submitted as a draft document, and in final form following resolution of comments on the draft version, concurrent with the Hazardous Materials Management Plan.

The Contractor shall submit to the CO or his/her authorized contracting officer representative, prior to mobilizing to the site, written documentation that all involved personnel have successfully completed training and medical monitoring in accordance with applicable NRC and OSHA requirements, the SSHP, and EM 385-1-1.

The Contractor shall maintain and implement their own safety and health procedures addressing all preparation and transportation activities performed on site and off site.

The Contractor shall provide personnel for on-site radiological measurements, including but not limited to its own Radiation Safety Officer, for release of waste containers, transportation equipment and other equipment, as well as health and safety monitoring of its personnel and on-site representative of USACE and USACE's representatives. The radiation measurements and monitoring shall be performed under the supervision of the Contractor's Certified Health Physicist.

5.1.2.3 Hazardous Material Management Plan

The Contractor shall prepare and submit a plan detailing the manner in which hazardous material, including IDW and Legacy waste, shall be managed from the time the Contractor accepts custody of the material until receipt and acceptance of the material at the disposal facility. The plan shall describe the types and volumes of materials anticipated to be managed as well as the management practices to be utilized. The plan shall identify:

- EPA identification numbers;
- Names, locations and telephone numbers of all transporters proposed;
- Waste minimization methods;
- Safe preparation, packaging, loading and transport, including but not limited to physical, chemical and radiological safety, environmental protection, and security;
- Transportation routes;
- How the waste will be tracked to final disposal;
- Plans for transportation spill response and coordination with local responders;
- Contractor's plans for repair and decontamination of transportation equipment;
- Contractor's plans and procedures to be implemented to ensure that operations conducted under this SOW do not result in causing further contamination to the NFSS site; and
- Emergency procedures for contacting USACE and regulators in case of spills, notices of violation or other incidents.

The Hazardous Materials Management Plan shall include copies of all shipping papers filled out for review/acceptance by USACE. The Contractor shall provide 5 copies of the draft and 5 bound hard copies of the final plan, along with three electronic (diskette or CD-ROM) copies of the final plan. The plan shall be prepared in a version of Microsoft Word for Windows compatible with one specified by the CO or his/her authorized contracting officer representative.

5.1.2.4 Spill Response

The Contractor shall provide spill response materials including, but not limited to, containers, adsorbent, shovels, personal protective equipment, and instrumentation for measuring / monitoring radiation. The Contractor shall provide spill response materials at all times in which hazardous materials are being handled or transported. Spill response materials shall be compatible with the type of material being handled.

The Contractor shall respond to any spill of material which is in the custody or care of the Contractor pursuant to the Contract for the work described in this SOW. Any direction from the CO or his/her authorized contracting officer representative concerning a spill or release shall not be considered a change under that Contract. The Contractor shall comply with all applicable requirements of federal, state and local laws and regulations regarding any spill or release incident.

5.1.2.5 Equipment and Tools

The Contractor shall provide miscellaneous equipment and tools necessary to handle hazardous materials and IDW and Legacy waste in a safe and environmentally sounds manner. On-site equipment shall include, but not be limited to, instrumentation for measuring radiation, personal protective equipment, equipment for repackaging and loading waste onto transportation vehicles, and a means for weighing containers placed in transport vehicles to assure that load limits are not exceeded.

5.1.2.6 Decontamination of Equipment, Containers, and Transport Vehicles

At the conclusion of the use of any individual container for storage and/or transport of IDW and Legacy waste, the Contractor shall assure decontamination and document that all shipping containers, transport vehicles, and rail cars if applicable meet DOT shipping criteria and/or NRC Reg. Guide 1.86, whichever is more stringent, prior to release. The Contractor shall survey all exterior surfaces of the containers, vehicles and/or rail cars as applicable prior to release for transportation to ensure that all are in compliance with all applicable regulations. The Contractor shall, prior to release for transportation, address any excess radioactive material found on the exterior of the above surfaces, and then resurvey the surfaces in question prior to release for transportation. The Contractor shall document the process prior to release and provide survey results to the USACE COR for review and acceptance before any appurtenance is released." MARSSIM, Multi-Agency Radiation Survey and Site Investigation Manual (DoD August 2000) and MARSAME, Multi-Agency Radiological Survey and Assessment of Materials and Equipment Manual (DoD January 2009), may be consulted for further guidance in making the determination of unrestricted release.

5.1.3 Quality Control Plan (QCP) and Independent Technical Review (ITR) Documentation

The Contractor shall prepare a Quality Control Plan (QCP) that describes the Contractor's protocol for producing deliverables and controlling their associated quality. The QCP defines how quality control shall be executed for all aspects of the project. This document is not part of the QAPP that provides quality assurance for sample acquisition and analysis. The QCP shall include the Contractor's management philosophy, management approach, management structure, planned design tools, proposed schedule, cost control methodology, communications standards, and independent technical review (ITR) procedures. The QCP shall also include a designated design quality control manager, a list of the product delivery team and their review responsibilities, any special considerations and/or crucial features that shall be addressed, and procedures for a design deficiency tracking system. The project QCP shall be updated as required during project execution. Quality control records shall be maintained by the Contractor's technical team leader.

The Contractor shall perform an ITR of all work plan documents, all design drawings, and all other documents (or deliverables) related to the field investigative activities. The ITR shall be performed prior to submission of any products (or documents) to the USACE with any significant changes made and accepted before submission to the USACE. A certificate of ITR completion shall accompany each submitted document/report/work plan. The ITR shall not be performed by the same personnel producing the product, and personnel performing the ITR shall have different supervision than those individuals producing the product. While ITR is a critical component of quality control, it will not replace checks or other quality controls processes. The QCP shall identify the Subcontractor for USACE acceptance if the Contractor elects to subcontract the ITR task to another agency or firm.

The Contractor shall identify as Contractor Quality Control (CQC) System Manager an individual within the on-site work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, or a graduate of construction management, with a minimum of 1 year of experience on construction similar to this contract or a construction person with a minimum of 3 years experience in related work. This CQC System Manager shall be on site at all times during performance of field investigative activities. The CQC System Manager shall be assigned as System Manager but may have duties as Project Superintendent in addition to quality control. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The

requirements for the alternate shall be the same as for the designated CQC System Manager. The CQC System Manager shall know in detail the requirements of this SOW and the Contract Documents.

The Contractor shall identify any additional CQC personnel proposed to be utilized during this SOW to assist the CQC System Manager. These individuals shall be directly employed by the Contractor, unless waived in writing by the USACE Contracting Officer Representative, and may not be employed by a supplier or sub-contractor on this project; be responsible to the CQC System Manager; be physically present at the site during work on their areas of responsibility; have the necessary education and/or experience in accordance with this SOW. Reference U.S. Army Corps of Engineers Regulation ER 1180-1-6 "Construction Quality Management" and pamphlet EP 715-1-2 "A Guide to Effective Contractor Quality Control" for further details.

5.1.4 Waste Management, Transportation and Disposal Plan

Disposal of FUSRAP radioactively contaminated materials shall only occur at facilities licensed by the NRC or an Agreement State, or at facilities permitted by a Federal or State regulator to accept radioactive materials in accordance with all applicable laws and regulations. Materials shall be disposed of in a cost-effective manner, considering all feasible options that achieve protectiveness and compliance with all applicable Federal, State, and local laws and regulations. The Contractor shall be responsible for segregating, handling, volume reduction, packaging and staging the IDW and Legacy waste as warranted or as directed by the USACE COR. The Contractor shall contact the disposal facility(ies) prior to work to ensure that any segregation is in accordance with the facility's waste acceptance criteria, protocols and policies regarding accepting material from radiological sites, and shall properly document all correspondence with the facility(ies). The Contractor shall provide health physics technical support on-site at all times, commencing with mobilization activities, to ensure worker safety and proper disposition of waste streams. The technician(s) shall specifically provide continuous monitoring of all IDW and Legacy waste for possible radioactive contamination during the performance of this work.

The Contractor shall handle, package, and dispose of any hazardous materials in accordance with Federal hazardous waste regulations (40 CFR 260-272), DOT regulations (49 CFR 171-178), State regulations (i.e., 6NYCRR 370-376), and any other applicable Federal, State, and local laws and regulations. The Contractor shall adhere to the substantive requirements (storage areas, land disposal restrictions, etc.) of all applicable regulations. Additionally, the Contractor shall comply with the notification requirements of the "Off-Site Rule," found in the National Oil and Hazardous Substances Pollution Contingency Plan at 40 CFR 300.440, and as described in EC 200-1-3, "Off-Site Disposal of Materials from the Formerly Utilized Sites Remedial Action Program." All IDW and Legacy waste shall be contained, labeled, and disposed of by the Contractor appropriately and in accordance with all applicable regulations. The packaging of all IDW and Legacy waste shall meet the requirements of the disposal facility selected by the Contractor. The Contractor shall load, transport, and dispose of all waste to the licensed/permitted disposal facility. Wastes to be transported shall meet the acceptance criteria established by the disposal facility. The Contractor shall track all transportation vehicles to the disposal facility using existing transportation outfit tracking software systems. The Contractor shall maintain tracking reports on a daily basis, and these reports shall be available to USACE upon request. Additionally, in accordance with 49 CFR 172.604, during all periods of waste transportation, the Contractor shall provide a 24-hour emergency telephone number with a point of contact knowledgeable of the shipping contents, immediately and directly available 24-hours a day during the entire period of transportation.

All incidental wastes generated during the performance of work authorized under this Contract shall be disposed of by the Contractor; The Contractor shall ensure that the shipping containers meet U.S. and State Department of Transportation (DOT) requirements; The Contractor shall be responsible for all operations associated with the shipping containers, such as moving, handling, weighing, etc.

The Contractor shall package, mark, label, and placard shipping containers, and shall submit all required documents to USACE, including, but not limited to, Certificate of Disposal from the disposal facility and all shipment records.

The Contractor shall ensure that all transportation operations comply with the Emergency Preparedness Community Right to Know Act (EPCRA).

For any hazardous waste co-mingled with MED related radioactive waste that is generated or stored at the site, the Remediation Contractor shall be responsible for preparation of a treatment plan for fulfilling USACE obligations under Section 3021 (b) of the Resource, Conservation, and Recovery Act (RCRA), as amended by the Federal Facility Compliance Act of 1992.

The Waste Management, Transportation, and Disposal Plan shall describe the following for all waste streams generated during site remediation:

- name, address, telephone number, and appropriate permit information for each licensed/permitted disposal facility along with the facility's requirements for accepting each waste stream, including their waste acceptance criteria.

- a letter from each accepting facility and its regulating authority acknowledging that the anticipated waste stream can be accepted, and the offsite rule compliance letter from the Environmental Protection Agency (EPA) Regional Offsite Coordinator (ROC) (60-day rule is in effect.). If shipments do not commence within 60 days a new "Offsite Rule" verification must be made before shipments can begin.

- waste sampling, testing, and analysis for each waste stream. The Remediation Contractor shall provide qualifications and experience of the personnel in charge of any on- or offsite laboratory. Also, the Remediation Contractor shall identify the number, type, and licenses for other testing equipment to be used.

- name, address, telephone number, and appropriate permit information for each waste transportation outfit to be employed for waste shipment to the licensed/permitted disposal facility. All waste transportation containers (i.e. Intermodal Containers (IMCs), "Bags", Gondolas,) shall be used for sole source, and an exclusive use agreement shall be obtained from the transporter. The Remediation Contractor shall demonstrate that the proposed transportation mode is safe and cost-effective for waste transportation. Whatever method of transportation is chosen, the minimum must also be included in the plan:

    - preparation of waste transportation containers; leak and spill protection and prevention; loading the excavated material into waste transportation containers; and transporting waste transportation containers to the rail car loading area (if applicable).

    - staging IMCs or Bags at the rail car loading area (if applicable), preparing the rail cars or gondolas, loading the IMCs or Bags onto the rail cars (if applicable), labeling, placarding, marking, and preparing the shipping documents, and any other requirements for transportation of waste to the licensed/permitted disposal facility. The Remediation Contractor shall submit a copy of the waste profile sheets, manifests and bill of lading, as necessary, to USACE for signature.

    - methods for moving the rail cars to facilitate waste loading operations, after they have been delivered by the railroad company. All waste transportation containers shall be inspected, radiologically surveyed, and decontaminated, if required, upon arrival at the rail car loading area and prior to leaving the rail car loading area.

- techniques and equipment to be used for establishing the weight of each shipment.

- a rigging plan for lifts heavier than 20,000 lb. The plan shall be signed by the registered PE.

- number of containers required for waste shipment.

- method of obtaining containers, transportation vehicles, rail cars, etc. and other necessary equipment to accommodate the shipping schedules.

- format and description of en route tracking system. The Remediation Contractor shall utilize a tracking system that allows for daily monitoring of any vehicle used for transportation of material to the licensed/permitted facility.

- identification of an experienced transportation coordinator designated for the project.

- waste minimization and housekeeping practices.

- method of surveying the rail car loading area and/or haul routes.

- cleaning and maintaining erosion and sediment control measures, etc.

- security of the rail car loading area, if applicable.

- each conveyance shall have a contact number in case of emergency. The number shall be in service 24 hours per day, 7 days per week.

- method of stockpiling contaminated soils. Any unpackaged waste stored overnight and over the weekends shall be covered using reinforced tarpaulin such as TR55, manufactured by ReefIndustries or USACE-accepted equal. The cover shall be properly anchored and ballasted using 40-pound sand bags or USACE-accepted equal. The height of the stored materials shall be limited to 8 feet. The cover material shall be considered radiologically contaminated and disposed at the licensed/permitted disposal facility after completing the waste transportation.

- submit Certificate's of Disposal and weight tickets, issued by the licensed/permitted disposal facility and any shipment records, to USACE within (10) days of receipt of waste by disposal facility.

5.2 TASK 2 – Relocation of IDW and Legacy Waste from Building 401

The contractor shall relocate all existing IDW and Legacy Waste from Building 401 and elsewhere on-site to a staging location as designated by USACE in preparation for transit. The Contractor shall tarp and overpack waste as deemed necessary by on-site USACE personnel to protect the waste from the elements and store in a manner that is compliant with all applicable, relevant and appropriate Federal, State and Local laws and regulations.

5.3 TASK 3 – Pre-Transportation Preparation

The Contractor shall conduct preparation activities prior to loading waste for transport, including:

- Verify Inventory & Suitability of Waste Containers – The Contractor shall verify the inventory of the IDW and Legacy waste and suitability for transport to USACE accepted disposal facility. Verification activities shall include, but not be limited to, the following:

    - Verify the accuracy of the inventory (description);

    - Identify any individual waste items/pieces exceeding the treatment/disposal facility's dimensional limits for oversized debris;

    - Identify the percentage of each type of item (i.e., soil, metal, concrete, wood, etc.) in each waste container, consistent with the waste profile requirements;

    - Identify the presence of free liquids in specific wastes/containers;

    - Collect and analyze samples as needed to determine the actual and optimum moisture content if deemed necessary by Contractor; and

- Assess the condition of the waste containers (i.e., corroded or damaged) to confirm the suitability for transport of the containers in which the IDW and Legacy waste are currently stored.

- Securing Licenses, Permits and Approvals – The Contractor shall obtain all licenses, permits and/or approvals necessary to transport the IDW and Legacy waste to and for disposal facility acceptance. This shall be in full compliance with Federal, State and Local laws and regulations, USACE guidance and disposal facility requirements. *The Contractor shall supply USACE a copy of the Disposal State Acceptance Letter indicating the waste is acceptable for disposal at the designated facility prior to mobilizing for shipment off-site.*

- Solidification of Free Liquids – The Contractor shall solidify all non-Hazardous (RCRA) aqueous wastes (i.e., drummed water samples) and all other waste solids as necessary to eliminate free liquids, as determined at the disposal facility using the "paint filter test" method, prior to removing wastes from the NFSS for off-site transport. Free liquids must be solidified in accordance with disposal facility requirements. Free liquids shall not be added to soil waste for solidification.

- Achieving Optimum Moisture Content of Wastes - The Contractor shall make adjustments to the IDW and Legacy waste as necessary to meet the disposal facility's "optimum moisture content" requirements. The Contractor may do so either on the NFSS or arrange for the disposal facility to undertake that effort, at the Contractor's discretion. However, the Contractor is responsible for directly paying any and all surcharges or fees charged by the disposal facility if they adjust the moisture content.

- Management of Decontamination Fluids/Solids and Personal Protective Equipment - Any fluids generated from equipment or personnel decontamination shall be consolidated with other wastewater on-site per USACE direction and approval. All solids [i.e., spent personal protective equipment (PPE)] generated during waste preparation activities shall be placed into containers and transported along with other project IDW (e.g., debris) for disposal. The Contractor shall make every effort to minimize the volume of decontamination and PPE wastes.

- Preparation of Shipping Documents – The Contractor shall prepare and submit draft copies of all waste profile sheets and shipping documents for review and acceptance by USACE, and shall subsequently prepare, secure approvals for and manage final shipping documents.

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5.4 TASK 4 – Packaging / Repackaging of IDW and Legacy Waste

All containers and packaging/repackaging efforts shall comply with Federal, State and Local laws and regulations, including but not limited to USEPA, NRC, and DOT requirements, and USACE guidance. The Contractor shall package and/or repackage the IDW and Legacy waste as necessary to comply with those requirements. Such repackaging will be deemed necessary if the Contractor identifies, during its (Task 2) inventory confirmation and container evaluation, that either:

- Waste is not currently inside DOT-compliant containers (i.e., drums, B-25 boxes), or

- Existing containers are not in suitable condition for loading and transport (i.e., corroded or damaged), or

- Oversized debris might result in surcharges and resizing could avoid unnecessary fees, or

- It is determined that bulk shipping is more advantageous to USACE or

- As otherwise recommended by the Contractor and accepted by USACE.

Any containers that are determined to be unsuitable for loading and transport will be either decontaminated for free release and removed from the site by the Contractor, or crushed and disposed with other debris being transported to the designated Disposal Facility in accordance with this SOW.

Any fluids generated from decontaminating existing containers being replaced shall be stored with other wastewater on-site per USACE direction and approval. All solids (i.e., spent PPE) generated during packaging and repackaging shall be placed into containers and transported along with other project investigation derived wastes (e.g., debris) for disposal at the designated disposal facility. The Contractor may repackage wastes into larger containers (overpack) if the sole purpose is to replace existing containers that are unsuitable (i.e., corroded or damaged) for loading and transport.

The Contractor shall not mix soil with debris or other IDW and Legacy waste for any purpose, however, partial containers of like material may be combined to reduce number of containers to be shipped. Wastes may be combined per the approved Waste Profile description if shipment is to be in bulk.

Soil shall not be mixed with debris in individual containers being transported unless the IDW and Legacy waste are being shipped in bulk packages.

If IDW and Legacy waste sampling/laboratory analysis identifies that any of the containerized IDW and Legacy waste are also a "RCRA hazardous waste," the Contractor shall not mix or place those "mixed wastes" in the same containers with any other IDW not deemed mixed waste.

The Contractor shall perform packaging/repackaging of IDW and Legacy waste as necessary following approval from the CO or his/her authorized contracting officer representative.

5.5 TASK 5 – Loading and Transportation of IDW

The Contractor shall load onto transport vehicles and provide safe transportation of the FUSRAP IDW from the NFSS Site to the USACE's accepted off-site disposal facility. All work performed under the Contract shall be in accordance with all applicable, relevant and appropriate Federal, State and Local laws and regulations, USACE guidance and Disposal Facility requirements. The Contractor shall provide the USACE with qualified personnel, materials, equipment and facilities to perform the required work. The work shall include, but not be limited to, the following:

1) Notifying, arranging, and coordinating all activites for transportation of the IDW and Legacy waste, including mixed waste if any is present, from the NFSS Site to the designated disposal facility for disposal;

2) Paying all taxes, surcharges, and fees of any kind associated with transport of the waste, including but not limited to all fees imposed by Federal, Sate, Regional, County and/or Local governmental agencies or authorities. Securing all required permits, licenses, and approvals necessary to package, load, transport and dispose IDW and Legacy waste;

3) Furnishing all equipment, tools, materials, labor, services, insurance and supervision to perform all work as specified;

4) Scheduling, delivering, preparing, and providing sufficient quantities of clean and serviceable containers, and/or transport vehicles, inner liners, covers, placards, stickers and associated materials;

5) Loading and transporting all IDW and Legacy waste from NFSS to the USACE accepted disposal facility;

6) Assuring that the transportation equipment is cleaned and decontaminated prior to being mobilized to the NFSS site and upon completion of the work;

7) Preparing, modifying, and managing shipping documents (Note: USACE Field Representative will sign all shipping paperwork after verifying it is correct. Contractor can not sign on behalf of USACE);

8) Managing all transportation activities and providing a tracking system compliant with all Federal, State, and Local laws and regulations and USACE guidance;

9) Securing all required permits, licenses, and approvals necessary to package, load, transport, and dispose of IDW and Legacy waste;

10) Reporting, notifying, and responding to any spill, notice of violation or similar incident during transportation. The Contractor shall immediately (less than 2 hours) notify the USACE CO, COR, and PM in the event of any emergency, spill or accident. The Contractor shall also notify the USACE CO, COR, and PM within 24 hours of receiving a notice of violation;

11) Assuming all responsibility of the IDW and Legacy waste after it has been loaded into the Contractor's transportation vehicle until acceptance by the USACE accepted disposal facility.

12) Securing all IDW and Legacy waste packages/containers/drums/etc. Against shifting, including relative motion between packages/containers/drums/ect., within the transportation vehicle from NFSS to the USACE accepted disposal facility;

13) Loading all IDW and Legacy waste packages/containers/drums/etc. in the correct position as indicated on the orientation markings in accordance with all applicable federal, state, and local laws and regulations;

14) Smoking shall not be permitted in any work areas during the performance of this work;

15) Using appropriate methods to prevent vehicle movement during loading/unloading of IDW and Legacy waste;

16) Preventing undue rise in temperature of packages/containers/drums/etc. during transport to the USACE accepted disposal facility;

17) Maintaining all regulatory required distances between packages/containers/drums/etc.; and,

18) Surveying each transportation vehicle for radioactivity prior to being loaded with IDW and Legacy waste, prior to leaving NFSS, and after unloading IDW and Legacy waste at the USACE accepted disposal facility. A transportation vehicle shall not be returned to service until the radiation dose at every accessible surface is acceptable to the USACE and in accordance with federal, state, and local laws and regulations. The Contractor shall immediately provide all transportation vehicle survey results to the USACE as directed by the USACE COR.

The Contractor shall notify the CO or his/her authorized contracting officer representative a minimum of seven calendar days prior to the scheduled date of each individual shipment of IDW and Legacy waste. The Contractor shall transport the IDW and Legacy waste directly to the USACE accepted Disposal Facility. Transportation of IDW and Legacy waste to the USACE accepted disposal facility shall occur within five calendar days for each transportation vehicle. The Contractor shall not ship the IDW and Legacy waste to temporary storage at a transfer

station or storage location. Vehicles used to transport these wastes shall not transport wastes other than those associated with this project during its shipment to the USACE accepted Disposal Facility. The Contractor shall submit to the USACE for review and acceptance detailed information on the tare and gross weights of each container and vehicle to ensure that maximum allowable weights are not exceeded prior to leaving the NFSS site for transport to the disposal facility. The Contractor shall ensure that gross vehicle weights and axle weights per applicable state regulations are legal before vehicles leave the NFSS site. USACE does not assume any responsibility for violation of Federal, State and/or Local waste management and transportation laws or regulations, including weight limits after the containers leave the NFSS Site.

Work shall meet or exceed all applicable requirements established by Federal, State and Local laws and regulations, as well as the NFSS Site/Facility and the disposal facility. These requirements are amended frequently and the Contractor shall be responsible for complying with amendments as they become effective.

The Contactor shall complete appropriate shipping documents as required by Federal, State and Local requirements, as well as the designated disposal facility requirements. Transportation shall comply with all requirements of the DOT regulations, including but not limited to Chapter 49 of the Code of Federal Regulations (CFR). The Contractor shall prepare appropriate documents for each shipment of material.

The Contractor shall, within 24 hours of receipt, notify and provide the CO or his/her authorized contracting officer representative with copies of any notice of non-compliance or notice of violation from any Federal, State or Local regulatory agency issued in connection to any work performed under the Contract. The Contractor shall also furnish all relevant documents regarding any incidents and any information requested by the CO, and shall coordinate its response to the notice(s) with the CO or his/her authorized contracting officer representative prior to submission to the notifying authority. The Contractor shall also furnish a copy to the CO or his/her authorized contracting officer representative of all documents submitted to the regulatory authority, including the final reply to notice(s), and all other materials, until the matter is resolved.

5.5.1 Transportation and Disposal Coordinator

The Contractor shall designate by position and title, in the Hazardous Materials Management Plan, one person to act as the Transportation and Disposal Coordinator for the Contract. The Transportation and Disposal Coordinator shall act as a single point of contact for all environmental regulatory matters and shall have overall responsibility for total environmental compliance, including, but not limited to:

- Accurate identification and classification of regulated materials;
- Determination of proper shipping names;
- Preparation of shipping documents for all materials transported using language concurred with by the USACE;
- Completion of all exception and discrepancy reports;
- Identification and compliance with marking, labeling, packaging and placarding requirements;
- Preparation and submission of Daily Status Tracking Reports;
- Coordination with USACE, USACE representatives, disposal facility, and transportation agencies as applicable; and
- Preparation and submission of any other documents required by Federal, State or Local laws and regulations, by USACE, or the disposal facility.

Prior to shipment of any IDW and Legacy Waste off site, the Transportation and Disposal Coordinator shall provide written certification to the Contracting Officer (CO) and his/her authorized contracting officer representative that the hazardous materials have been properly packaged, labeled, marked, loaded, and placarded in accordance with all applicable Federal, State, Regional, County and Local laws and regulations, including but not limited to the requirements of the USACE, DOT, NRC, US Environmental Protection Agency, Disposal State, and the Contract.

Hazardous material is defined in Chapter 49, Section 171.8 of the Code of Federal Regulations (49 CFR 171.8) and Chapter 40, section 262 of the Code of Federal Regulations (40 CFR 262).

5.5.2 Shipping Documents

The Contractor shall ensure that each waste shipment is accompanied by properly completed shipping documents, as necessary. The Contractor shall use appropriate shipping documents as required by Federal, State and Local laws and regulations. Transportation shall comply with all requirements of the DOT reference regulation in the 49 CFR series along with requirements listed in 40 CFR 262 Subpart B.

The Contractor shall prepare appropriate documents for each waste shipment. The Contractor shall use 49 CFR 172.101 to identify proper shipping names for each hazardous material to be shipped off site. Proper shipping names shall be submitted to the CO or his/her authorized contracting officer representative in the form of draft shipping documents, for review and approval prior to shipment. Shipping documents shall be submitted to the CO and his/her authorized contracting officer representative for review and approval a minimum of seven (7) calendar days prior to the first shipment of waste.

The Contractor shall prepare a bill of lading/manifest for each shipment of hazardous material. The bill of lading shall satisfy the requirements of 49 CFR 172, Subpart C and any applicable state and local law and regulation, and disposal facility requirements and shall be submitted to the CO or his/her authorized contracting officer representative for review and acceptance. USACE will sign manifests/bills of lading requiring shipper's certifications. The Contractor shall package, label, mark and placard any hazardous materials in accordance with the referenced authorizations.

Each shipment leaving the NFSS Site shall have shipping documents consisting of at a minimum, a USACE-accepted Chain-of-Custody (CoC) form. The CoC form describes the material being shipped and includes certification that the material is not radioactive material as defined in 49 CFR 173. An example of an approved CoC can be found in USACE Engineering Pamphlet 200-1-2, pages A-81 and A-82.

All transportation-related shipping documents shall be provided and completed by the Contractor and completed copies furnished to the USACE CO or his/her authorized contracting officer representative for review and approval seven (7) calendar days prior to waste shipments. These will include the following as appropriate:

- Draft shipping documents
- List of corresponding proposed labels, packages, marks and placards to be used for shipment
- Disposal Facility advanced shipment notification forms (if required).

The Contractor shall furnish to the CO or his/her authorized contracting officer representative completed "generator copy" shipping documents prior to transporting materials from the NFSS Site when shipments originate.

5.5.3 Shipping Materials

The Contractor shall provide all of the materials required for the packaging, labeling, marking, placarding and transporting IDW and legacy waste, in conformance with DOT and EPA standards listed in the 40 and 49 of the Code of Federal Regulations. Details in this SOW shall not be construed as establishing the limits of the Contractor's responsibility.

5.5.4 Packaging

The Contractor shall perform all functions and activities necessary to bring the packaging into compliance with 49 CFR Part 173 and 178 as warranted. If repacking is necessary the Contractor shall provide containers, a size of its choosing, for packaging the IDW and Legacy waste consistent with the authorizations referenced in the Hazardous Materials Table in 49 CFR 172, Subsection 101 and Column 8. Bulk and non-bulk packaging shall meet packaging

requirements of 49 CFR 301 and 49 CFR 302. Each packaging shall conform to the general packaging requirements of Subpart B or 49 CFR 173, to the requirements of 49 CFR 178 at the specified packaging group performance level, and to the requirements of special provisions of Column 7 of the Hazardous Materials Table in 49 CFR 172.101. The Contractor shall also provide other packaging regulated materials such as materials used to cushion or fill voids in over packed containers, etc. Sorbent materials shall not be capable of reacting dangerously with, being decomposed by, or being ignited by the IDW and Legacy waste being packaged. Additionally, sorbents used to treat free liquids to be disposed in landfills shall be non-biodegradable as specified in 40 CFR 264.314.

5.5.5 Markings

The Contractor shall provide markings for each IDW and Legacy waste package, freight container and transport vehicle consistent with the requirements of 40 CFR 172, Subpart D. Markings shall be capable of withstanding, without deterioration or substantial color change, a 180-day exposure to conditions reasonably expected to be encountered during container transport.

5.5.6 Labeling

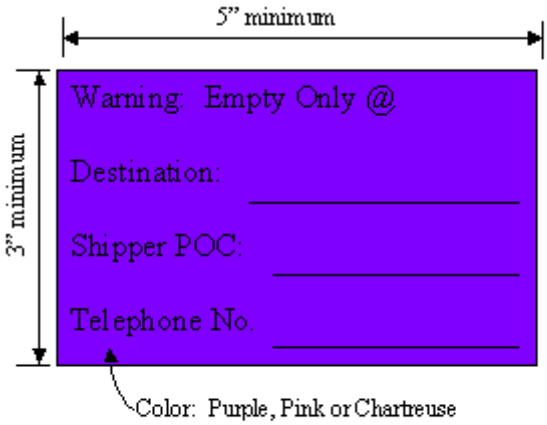
The Contractor shall provide primary and secondary labels for the IDW and Legacy waste consistent with the requirements of 49 CFR 172, Section 101 and Column 6. Labels shall meet design specifications required by 49 CFR 172, Subpart E, including size, shape, color, printing and symbol requirements. Labels shall be durable and weather resistant and capable of withstanding, without deterioration or substantial color change, a 180-day exposure to conditions reasonably expected to be encountered during container transport.

5.5.7 Placards

For each off-site shipment of IDW and Legacy waste, the Contractor shall provide primary and secondary placards consistent with the requirements of 49 CFR 172, Subpart F. Placards shall be provided for each side and each end of bulk packaging, freight containers, and transport vehicles requiring such placarding. Placards may be plastic, metal or other material capable of withstanding, without deterioration, a 30-day exposure to open weather conditions and shall meet design requirements specified in 49 CFR 172, Subpart F.

5.5.8 Non-DOT Marking Stickers

In addition to the labeling, placarding and marking requirements of the USEPA, NRC, DOT, the USACE requires the use of a secondary non-DOT communication “marking sticker” [Federal Railroad Administration (FRA) designation] on all bulk containers of radioactive materials regardless of whether the material is a DOT hazardous material or not. The sticker indicates the destination of the shipment and a telephone number of a USACE Point of Contact with knowledge of the shipment. This additional marking sticker duplicates existing information that is required on shipping documents when the shipment is a DOT hazardous material. Marking stickers shall be placed in visible locations on the exterior sides of transport vehicles, and the top of the container liner (e.g., burrito bag for bulk shipment) as applicable to ensure that workers observe the information prior to emptying the container or vehicle. A bulk container shall have the marking sticker on all four sides and if the transport vehicle is an open truck, there should be at least two stickers on top of the closed liner. An example of the marking sticker may be found below and on page A-64 and A-65 of USACE Engineering Pamphlet 200-1-2.



5.5.9 Licenses, Permits and Agreements

The Contractor shall secure all licenses, permits and/or approvals necessary to repackage as necessary, load and transport the IDW and Legacy waste from the NFSS Site to the disposal facility in full compliance with applicable federal, state and local requirements. Note that the USACE will provide characterization data. However, the Contractor shall be responsible for preparation of final waste profile sheets and obtaining permission from the Disposal Facility and Disposer State to accept the IDW and Legacy waste. The Contractor shall ensure that an Approval Letter from the Disposer State is forwarded to the USACE CO for inclusion in the Project's Regulatory File and shall be provided to the USACE prior to the removal of any IDW from NFSS.

5.6 TASK 6 – Reporting

5.6.1 Close-out Report

The Contractor shall prepare a project close-out report documenting their performance including but not limited to; final waste shipping documentation, certificates of disposal, surveys of transport vehicles, and building surveys, surveys of transport vehicles, equipment and appurtenances used during the performance of this work. The Contractor shall submit a draft version of the plan to USACE for review and approval by the CO or his/her authorized contracting officer representative within 10 calendar days following receipt of completed disposal facility manifest documents, and a final version submitted to the USACE within five calendar days of resolution of comments on the draft plan. The Contractor shall provide 5 copies of the draft and 5 bound hard copies of the final report, along with three electronic (diskette or CD-ROM) copies of the final report. The close-out report shall be prepared in a version of Microsoft Word for Windows compatible with one specified by the CO or his/her authorized contracting officer representative.

5.6.2 Reporting and Coordination Requirements

The Contractor shall maintain direct, concise and daily contact/coordination with the USACE concerning field operations and scheduling for off-site shipments. The Contractor shall provide written confirmation of IDW and Legacy waste shipping schedules to the USACE COR on a weekly basis for review and acceptance.

The Contractor shall submit to the CO or his/her authorized contracting officer representative a Daily Contractor Quality Control (CQC) Report and a Daily Health and Safety Report for each day Contractor's personnel are on the NFSS site. The Contractor shall also submit a daily CQC Report to the CO or his/her authorized contracting officer representative for each day waste is in transport until received at the designated Disposal Facility. The report will identify the current location of the waste, any unanticipated delays or occurrences involving the IDW and Legacy waste transportation, any communications with the Disposal Facility, and the anticipated arrival date.

The Contractor shall be responsible for maintaining adequate records to support information provided to the CO or his/her authorized contracting officer representative regarding exception reports, annual reports and biennial reports.

6 SUMBITTALS

Deliverables tasked under this SOW shall be submitted directly to the NFSS Project Manager at the address below.

<u>Hard Copy Deliverables</u>:
U.S. Army Corps of Engineers
Attn: John Busse (NFSS Project Manager)
CELRB-PM-SPF
1776 Niagara Street
Buffalo, NY 14207-3199

OR

Electronic Copy Deliverables:
[redacted] **with a cc. to** [redacted]

The Contractor submittal requirements are summarized in Section 6.1. All electronically provided submittals shall be supplied both in Microsoft © format (i.e. Word, Access, Excel) as well as Adobe © portable document file (.pdf) in a readable text format. The PDF deliverables shall be a complete, mirror image of the hardcopy, and include maps, appendices, signature pages, etc. All reports presenting data, analysis, and recommendations shall be prepared in the following standard format:

- All draft and final report submittals shall be letter quality with all page numbered with chapter number followed by page number (e.g., 1-1, 1-2, 1-3, 2-1, 2-2, 2-3, etc.).
- Appendix documentation submittals shall be letter quality with all pages numbered (e.g., A-1, A-2, B-1, B-2, etc.).
- A decimal paragraphing system shall be used. A report title page shall identify the report title, name of Contractor, USACE-Buffalo District, and the date. The Contractor identification shall not dominate the page.
- Submissions shall include incorporation of all previous review comments as well as the disposition of each comment.
- Deliverables shall contain a “Response to Comments” table indicating how each comment was addressed. The Contractor shall not incorporate review comment response(s) into the Project Report unless the USACE indicates that the Contractor's response appropriately addresses the USACE comments during the comment resolution period.

6.1 Submittal Requirements Summary

Submittal Schedule	Submittal Type Required	Classification
S Prior to Shipment	O Original	FIO For information only
A Per S/C Schedule	P Print/Photocopy	R1 PDT Review and Accept.
M Prior to Mobilization	E Electronic Format	R2 CX/LRD/HQ Rev./Accept.
W Prior to Commencing Work	M Microfilm	
Y Prior to Progress Payment	PH Photograph	

SUBMITTAL REQUIREMENTS SUMMARY

NOTICES

1. To each item submitted, the Contractor shall attach a copy of this form and circle the title of the item being submitted.
2. Failure to submit required submittals as delineated on this form may result in withholding of payment in accordance with provisions of the Contract.
3. The Contract Administrator is responsible for distributing submittals to the requesting Department (e.g., Construction). The Department is responsible for further distributions (e.g., Site Superintendent).

Submittal		Scope of Work (SOW) Paragraph	Classification	ITR Required	Submittal Schedule (Calendar Days after NTP)	Submittal (No.) and Type
1	Draft Sampling and Analysis Plan	5.1.1	R1	Yes	14	E, O
2	Draft Health, Safety and Radiation Protection Plan	5.1.2	R1	Yes	14	E, O
3	Draft Quality Control Plan and ITR documentation	5.1.3	R1	Yes	14	E, O
4	Draft Waste Management, Transportation, and Disposal Plan	5.1.4	R1	Yes	14	E, O
5	Final Work Plans	5.1	R1	Yes	35	E, O
6	IDW and Legacy Waste Manifests and Shipping Documents	5.5.2	R1	Yes	7 days prior to waste shipments	E, O
7	Draft Close Out Report	5.6.1	R1	Yes	As Specified in 5.6.1 and 6.1	E, O
8	Final Close Out Report	5.6.1	R1	Yes	As Specified in 5.6.1 and 6.1	E, O

The Contractor shall also submit weekly status reports, daily quality control reports (DQCRs), photographic records, sample documentation, and field analytical and monitoring records in accordance with the timelines established within this SOW. USACE requires 14 calendar days to review draft work plans and close-out report.

6.2 Communication

Good communication between the Contractor and the USACE is essential to deliver quality products and keep the project on schedule. Accordingly, the Contractor is encouraged to contact the USACE Project Manager for project management questions and the USACE Project Engineer with technical questions, and required to advise the USACE about problems and delays as soon as they arise.

6.3 Preparation of Proposal

The Contractor shall prepare cost estimates based on work tasks as presented in this SOW. Additional cost proposals shall be prepared by the Contractor as directed by the USACE.

7 WRITTEN MONTHLY REPORTS, PAYMET REQUESTS, AND ACCRUALS

7.1 Written Monthly Progress Reports

The Contractor shall submit status reports, along with accrual estimates, in a monthly letter (progress report) on the status of the execution of the tasks under the Task Order SOW by the 23rd of each month (or following business day). This report shall include information on tasks that have been completed since the last report, tasks in progress, tasks still to be executed, and the date by which the next invoice will be provided. Any safety infractions, accidents, violations of regulations, delays, problems, or expected cost overruns shall be identified including recommendations/solutions. The Contractor shall make a record of each telephone conversation, written correspondence, and confirmation notice regarding information related to the performance of tasks under this SOW. A summary of these records shall be submitted monthly to the Buffalo District Project Manager with the monthly progress report, copy of the monthly payment request for services performed, and an accrual through the end of the month as described in Section 7.2, “Payment Requests” and Section 7.3, “Accruals”.

7.2 Payment Requests

Payment requests or invoices shall contain, at a minimum, the following information:

- Project Title;
- Contract Number;
- Delivery Order Number;
- Invoice Number (or indicate FINAL PAYMENT);
- Date of invoice;
- Dates covered for each invoice;
- Total contract amount with all modifications and amounts listed individually;
- Amounts retained;
- Amount remaining in the contract to be completed;
- Certification of the invoice by a responsible individual of the firm; and,
- Any other pertinent information that will assist in review and processing.

The invoice shall be accompanied by supporting documentation for each Task worked on during the billing period. The supporting documentation shall include, but not be limited to, an overall status/description of work completed, actual versus scheduled progress, and identification of any potential risks that could negatively impact the project

schedule, SOW, and/or the Contract. The USACE Contracting Officer cannot sign off on any invoice that does not contain supporting documentation. Mail payment requests promptly to:

U.S. Army Engineer District, Buffalo
ATTN: CELRB-TD-DE (Mr. Stephen J. Golyski, P.E., A-E Program Manager)
Contract No.
Delivery Order No. 00X
1776 Niagara Street
Buffalo, NY 14207

7.3 Accruals

By the 25th of each month, the Contractor shall present accrual information according to the following sample format:

Current Earnings & Cost Projections **Project Name** **Project Phase (i.e., Pre-Remediation Soil Sampling)** **For Month Ending May 2009**			
Month	**Actual Billings**	**Projections**	**Cumulative = Actual + Projections**
Oct. 2008			
Nov. 2008			
Dec. 2008			
Jan. 2009			
Feb. 2009			
March 2009			
April 2009			
May 2009			
June 2009			
July 2009			
August 2009			
Sept. 2009			
TOTALS			

Current Earnings & Cost Projections **Project Name** **Project Phase (i.e., Pre-Remediation Soil Sampling)** **For Month Ending June 2009**			
Month	**Actual Billings**	**Projections**	**Cumulative = Actual + Projections**
Oct. 2008			
Nov. 2008			
Dec. 2008			
Jan. 2009			
Feb. 2009			
March 2009			
April 2009			
May 2009			
June 2009			
July 2009			
August 2009			
Sept. 2009			
TOTALS			

The above table shall include actual billings, accruals, and projections of costs for each month remaining in the fiscal year (i.e., 01 October 2008 - 30 September 2009). Updated earnings and cost projections for the current month shall be presented along side accrual information from the previous month.

Actual payments made may not include all of the earned value of work performed in a given month. Accruals are used to provide projections of the incremental costs not yet paid for, but earned. Consequently, there may be instances where both actual payments and an accrual must be entered for the current month. Accruals may also be entered for previous months where no billings and/or payments have been made but work has been accomplished.

ATTACHMENT 1

Solid and Liquid Analytical Results and Listing of Components of Composite Samples

Table 1. Analytical Results for Solid Waste Samples

Parameter	Unit	CG-100	CG-101	CG-102*	CG-103	CG-105	CG-106	CG-107	CG-108	CG-109	CG-110	CG-111
Volatile Organic Compounds (TCLP)												
1,1-Dichloroethylene	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
1,2-Dichloroethane	mg/L	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
1,4-Dichlorobenzene	mg/L	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
2-Butanone**	mg/L	0.0125 U	0.0125 U	0.0143 J	0.0125 U	0.0135 J	0.0125 U	0.0125 U	0.0125 U	0.0163 J	0.0125 U	0.0125 U
Benzene	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Carbon tetrachloride	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Chlorobenzene	mg/L	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
Chloroform	mg/L	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
Tetrachloroethylene	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Trichloroethylene	mg/L	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
Vinyl chloride	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Semi-Volatile Organic Compounds (TCLP)												
1,4-Dichlorobenzene	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2,4,5-Trichlorophenol	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0398 J	0.01 U	0.01 U
2,4,6-Trichlorophenol	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2,4-Dinitrotoluene	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Hexachlorobenzene	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Hexachlorobutadiene	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Hexachloroethane	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
m,p-Cresols	mg/L	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Nitrobenzene	mg/L	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
o-Cresol	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Pentachlorophenol	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Pyridine	mg/L	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Herbicides (TCLP)												
2,4,5-TP	mg/L	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U
2,4-D	mg/L	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U
Pesticides (TCLP)												
Chlordane (tech.)	mg/L	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U
Endrin	mg/L	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
gamma-BHC (Lindane)	mg/L	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U
Heptachlor	mg/L	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U
Heptachlor epoxide	mg/L	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U
Methoxychlor	mg/L	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Toxaphene	mg/L	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Metals (TCLP)												
Arsenic	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Barium	mg/L	0.353	0.464	0.263	0.21	0.461	0.529	0.555	0.361	0.424	0.591	0.698
Cadmium	mg/L	0.158	0.151	0.0681	0.0193 J	0.01 U	0.01 U	0.01 U	0.0101 J	0.0239 J	0.01 U	0.01 U
Chromium	mg/L	0.0494 J	0.119	0.0179 J	0.0245 J	0.0172 J	0.01 U	0.015 J	0.0134 J	0.0181 J	0.0114 J	0.0111 J
Lead	mg/L	0.116	0.248	0.033 U	0.059 J	0.033 U	0.033 U	0.033 U	0.204	0.033 U	0.033 U	0.033 U
Mercury	mg/L	0.00000 U	0.00104 J	0.00000 U	0.00000 U	0.0765	0.00000 U	0.00000 U	0.00000 U	0.00000 U	0.00000 UJ	0.00000 UJ
Selenium	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0582 J	0.05 U
Silver	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Table 1. Analytical Results for Solid Waste Samples

Parameter	Unit	WC-167	WC-168	WC-169	WC-172	WC-173	WC-176	CG-125	CG-126	CG-131	CG-132
Volatile Organic Compounds (TCLP)											
1,1-Dichloroethylene	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
1,2-Dichloroethane	mg/L	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
1,4-Dichlorobenzene	mg/L	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
2-Butanone**	mg/L	0.0133 J	0.0125 U	0.0125 U	0.0125 U	0.0125 U	0.0125 U	0.0125 U	0.0125 U	0.0125 U	0.0125 U
Benzene	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Carbon tetrachloride	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Chlorobenzene	mg/L	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
Chloroform	mg/L	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
Tetrachloroethylene	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.586	0.003 U	0.293	0.003 U
Trichloroethylene	mg/L	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0127	0.0025 U	0.0025 U	0.0025 U
Vinyl chloride	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Semi-Volatile Organic Compounds (TCLP)											
1,4-Dichlorobenzene	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2,4,5-Trichlorophenol	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2,4,6-Trichlorophenol	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2,4-Dinitrotoluene	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Hexachlorobenzene	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Hexachlorobutadiene	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Hexachloroethane	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
m,p-Cresols	mg/L	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Nitrobenzene	mg/L	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
o-Cresol	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Pentachlorophenol	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Pyridine	mg/L	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Herbicides (TCLP)											
2,4,5-TP	mg/L	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U
2,4-D	mg/L	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U	0.0166 U
Pesticides (TCLP)											
Chlordane (tech.)	mg/L	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U
Endrin	mg/L	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
gamma-BHC (Lindane)	mg/L	0.00005 U	0.00005 U	0.0003	0.00126	0.00018 J	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U
Heptachlor	mg/L	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U
Heptachlor epoxide	mg/L	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U
Methoxychlor	mg/L	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Toxaphene	mg/L	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Metals (TCLP)											
Arsenic	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Barium	mg/L	0.0363 J	0.208	0.383	0.414	0.185	0.252	0.519	0.277	0.701	0.864
Cadmium	mg/L	0.012 J	0.0103 J	0.677	0.81	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Chromium	mg/L	0.0262 J	0.01 U	0.0721	0.0998	0.0104 J	0.019 J	0.01 U	0.01 U	0.0187 J	0.0157 J
Lead	mg/L	0.033 U	0.033 U	1.24	0.25	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U
Mercury	mg/L	0.00000 UJ	0.00000 UJ	0.00000 UJ	0.00000 UJ	0.00000 UJ	0.00000 UJ	0.00000 UJ	0.00000 UJ	0.00000 U	0.00000 U
Selenium	mg/L	0.0689 J	0.0722 J	0.0971 J	0.0681 J	0.0746 J	0.05 U	0.05 U	0.0647 J	0.05 U	0.05 U
Silver	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Table 1. Analytical Results for Solid Waste Samples

Parameter	Unit	CG-100	CG-101	CG-102*	CG-103	CG-105	CG-106	CG-107	CG-108	CG-109	CG-110	CG-111
Polychlorinated Biphenyls (Total)												
Aroclor-1016	µg/kg	27.7 U	111 U	55.4 U	5.55 U	5.54 U	5.53 U	554 U	22.1 U	55.2 U	1.11 U	1.11 U
Aroclor-1221	µg/kg	27.7 U	111 U	55.4 U	5.55 U	5.54 U	5.53 U	554 U	22.1 U	55.2 U	1.11 U	1.11 U
Aroclor-1232	µg/kg	27.7 U	111 U	55.4 U	5.55 U	5.54 U	5.53 U	554 U	22.1 U	55.2 U	1.11 U	1.11 U
Aroclor-1242	µg/kg	27.7 U	111 U	55.4 U	5.55 U	5.54 U	5.53 U	554 U	22.1 U	55.2 U	1.11 U	1.11 U
Aroclor-1248	µg/kg	27.7 U	4410	55.4 U	5.55 U	5.54 U	5.53 U	17800	22.1 U	55.2 U	1.11 U	1.11 U
Aroclor-1254	µg/kg	105 J	5310	1560	105	34.8	5.53 U	9040	22.1 U	3510	1.11 U	1.11 U
Aroclor-1260	µg/kg	27.7 U	2130 J	1150 J	5.55 U	5.54 U	6.8 J	554 U	22.1 U	1490	1.11 U	25.2
Total PCBs (Calculated)	µg/kg	105	11850	2710	105	34.8	6.8	26840	ND	5000	ND	25.2
Radiological Coumpounds												
Plutonium-238	pCi/g	0.348 U	0.134 U	0.144 U	0.145 U	0.046 U	0.165 U	-0.0314 U	0.39 U	0.197 U	0.135 U	-0.0133 U
Plutonium-239/240	pCi/g	0.00196 U	0.0811 U	0.107 U	0.0877 U	-0.0145 U	0.0165 U	-0.047 U	-0.0366 U	0.00 U	-0.015 U	0.0421 U
Radium-226	pCi/g	0.398	10.4	1.45	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Radium-228	pCi/g	0.0123 U	0.256 U	0.392	0.257	6.41	1.06	1.22	0.274 U	1.46	1.07	0.983
Thorium-228 (Gamma Spec)	pCi/g	0.0716 U	0.329	0.417	0.208	6.84	0.93	1.29	0.378	1.26	1.06	1.01
Thorium-228 (Alpha Spec)	pCi/g	-0.00893 U	0.0378 U	0.163 U	1.4	3.99	0.498	1.09	0.293	0.862	0.68	1.21
Thorium-230	pCi/g	-0.0077 U	4	0.738	1.27	0.345	1.1	16	0.239	0.61	1.3	0.757
Thorium-232	pCi/g	-0.0123 U	0.0891 U	0.304	0.203	2.77	1.06	1.2	0.397 U	0.757	0.776	0.844
Uranium-233/234	pCi/g	0.0952	17.8	0.815	0.0924 U	1.39	0.349	3.24	0.151 U	5.67	0.95	0.889
Uranium-235 (Gamma Spec)	pCi/g	-0.299 U	2.48	-0.0783 U	-0.257 U	0.0966 U	0.0187 U	0.64	-0.0227 U	0.62	0.302 U	0.0508 U
Uranium-235/236	pCi/g	0.0861 U	0.988	-0.0682 U	-0.011 U	0.0909 U	0.0444 U	0.0476 U	0.0881 U	0.351	0 U	0.116 U
Uranium-238 (Gamma Spec)	pCi/g	-2.79 U	35.1	2.35 U	-0.633 U	-0.349 U	0.656 U	2.15	0.0344 U	10.9	1.96	0.368 U
Uranium-238 (Alpha Spec)	pCi/g	0.139	19.6	0.426	0.205	1.13	0.467	3.24	0.107	6.71	0.803	0.779
Miscellaneous												
Asbestos	NA	NA	NA	Detected	NA	NA	NA	NA	NA	NA	NA	NA

* Asbestos was detected in four of the six waste containers that comprise this composite group.
**Also known as Methyl ethyl ketone
Note: WC-169 and WC-172 (paint chips) were not analyzed for radiological compounds due to limited sample volume.
NA: Not Analyzed
ND: Not Detected

Table 1. Analytical Results for Solid Waste Samples

Parameter	Unit	WC-167	WC-168	WC-169	WC-172	WC-173	WC-176	CG-125	CG-126	CG-131	CG-132
Polychlorinated Biphenyls (Total)											
Aroclor-1016	µg/kg	11 U	5.54 U	NA	NA	5.54 U	11.1 U	1.11 U	1.11 U	5.52 U	1.1 U
Aroclor-1221	µg/kg	11 U	5.54 U	NA	NA	5.54 U	11.1 U	1.11 U	1.11 U	5.52 U	1.1 U
Aroclor-1232	µg/kg	11 U	5.54 U	NA	NA	5.54 U	11.1 U	1.11 U	1.11 U	5.52 U	1.1 U
Aroclor-1242	µg/kg	11 U	5.54 U	NA	NA	5.54 U	11.1 U	1.11 U	1.11 U	5.52 U	1.1 U
Aroclor-1248	µg/kg	185	23.7 J	NA	NA	5.54 U	11.1 U	1.11 U	1.11 U	5.52 U	1.1 U
Aroclor-1254	µg/kg	212	27.7	NA	NA	359	11.1 U	1.11 U	1.11 U	5.52 U	1.1 U
Aroclor-1260	µg/kg	11 U	5.54 U	NA	NA	5.54 U	11.1 U	1.11 U	1.11 U	42.8	1.1 U
Total PCBs (Calculated)	µg/kg	397	27.7	NA	NA	359	ND	ND	ND	42.8	ND
Radiological Coumpounds											
Plutonium-238	pCi/g	-0.0247 U	-0.147 U	NA	NA	0.0991 U	-0.018 U	-0.0136 U	-0.0614 U	-0.0164 U	0 U
Plutonium-239/240	pCi/g	0.0392 U	0.0361 U	NA	NA	-0.0686 U	-0.0541 U	-0.0136 U	-0.024 U	-0.0164 U	0.0624 U
Radium-226	pCi/g	0.528	0.34[illegible]	NA	NA	0.344	1.58	0.4[illegible]	[illegible]	[illegible]	[illegible]59
Radium-228	pCi/g	0 UI	0 UI	NA	NA	0.554	1.97	0 UI	0.729	1.03	0.842
Thorium-228 (Gamma Spec)	pCi/g	0.0634 U	0 UI	NA	NA	0.371	1.94	0.558	0.861	1.01	0.89
Thorium-228 (Alpha Spec)	pCi/g	0.15	-0.0102 U	NA	NA	0.486	2.01	0.695	0.814	0.804	0.703
Thorium-230	pCi/g	0.151	0.669	NA	NA	0.863	1.96	0.31	0.571	0.919	0.866
Thorium-232	pCi/g	0.155	0.125	NA	NA	0.547	1.95	0.388	0.56	0.994	0.991
Uranium-233/234	pCi/g	0.19	0.898	NA	NA	4.25	1.87	0.115	0.3	1.04	0.78
Uranium-235 (Gamma Spec)	pCi/g	0.0552 U	-0.14 U	NA	NA	-0.0055 U	0.182 U	0.107 U	0.0106 U	0.241 U	0.095 U
Uranium-235/236	pCi/g	0.0409 U	0.0898 U	NA	NA	0.176	0.0904 U	0.0515 U	0 U	0.0698 U	0 U
Uranium-238 (Gamma Spec)	pCi/g	1.28 U	-0.299 U	NA	NA	1.97 U	2.75 U	0.97 U	0.0453 U	-0.187 U	0 UI
Uranium-238 (Alpha Spec)	pCi/g	0.165	0.709	NA	NA	3.66	1.79	0.157 U	0.518	1.4	1.06
Miscellaneous											
Asbestos	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

* Asbestos was detected in four of the six waste contain
**Also known as Methyl ethyl ketone
Note: WC-169 and WC-172 (paint chips) were not anal
NA: Not Analyzed
ND: Not Detected

Table 2. Analytical Results for Liquid Samples

Parameter	Unit	CG-104*	CG-113**	WC-219	WW0001-0129	WW0001F-0130	WW10001-0131	WW10001F-0132	WW20001-0133	WW20001F-0134	WW30001-0135	WW30001F-0136
Volatile Organic Compounds												
1,1,1-Trichloroethane	µg/L	NA	136 HUh	1 U	650 U	NA	0.325 U	NA	0.325 U	NA	0.325 U	NA
1,1,2,2-Tetrachloroethane	µg/L	NA	136 HUh	1 U	500 U	NA	0.25 U	NA	0.25 U	NA	0.25 U	NA
1,1,2-Trichloroethane	µg/L	NA	136 HUh	1 U	500 U	NA	0.25 U	NA	0.25 U	NA	0.25 U	NA
1,1-Dichloroethane	µg/L	NA	136 HUh	1 U	600 U	NA	0.3 U	NA	0.3 U	NA	0.3 U	NA
1,1-Dichloroethylene	µg/L	NA	136 HUh	1 U	600 U	NA	0.3 U	NA	0.3 U	NA	0.3 U	NA
1,2-Dichloroethane	µg/L	NA	136 HUh	1 U	500 U	NA	0.25 U	NA	0.25 U	NA	0.25 U	NA
1,2-Dichloropropane	µg/L	NA	136 HUh	1 U	500 U	NA	0.25 U	NA	0.25 U	NA	0.25 U	NA
2-Butanone	µg/L	NA	2040 HJh	44.4	2500 U	NA	1.25 U	NA	2.48 J	NA	2.44 J	NA
2-Hexanone	µg/L	NA	682 HUh	1.46 J	2500 U	NA	1.25 U	NA	1.25 U	NA	1.25 U	NA
4-Methyl-2-pentanone	µg/L	NA	568 HUh	2.57 J	2500 U	NA	1.25 U	NA	1.25 U	NA	1.25 U	NA
Acetone	µg/L	NA	755 HUh	180	3000 U	NA	2860 J	NA	120	NA	1510 J	NA
Benzene	µg/L	NA	136 HUh	1 U	600 U	NA	0.3 U	NA	0.3 U	NA	0.3 U	NA
Bromodichloromethane	µg/L	NA	136 HUh	1 U	500 U	NA	0.25 U	NA	0.25 U	NA	0.25 U	NA
Bromoform	µg/L	NA	136 HUh	1 U	500 U	NA	0.25 U	NA	0.25 U	NA	0.25 U	NA
Bromomethane	µg/L	NA	136 HUh	1 U	600 U	NA	0.3 U	NA	0.3 U	NA	0.3 U	NA
Carbon disulfide	µg/L	NA	568 HUh	5 U	2500 U	NA	1.25 U	NA	1.25 U	NA	1.25 U	NA
Carbon tetrachloride	µg/L	NA	136 HUh	1 U	600 U	NA	0.3 U	NA	0.3 U	NA	0.3 U	NA
Chlorobenzene	µg/L	NA	136 HUh	1 U	500 U	NA	0.25 U	NA	0.25 U	NA	0.25 U	NA
Chloroethane	µg/L	NA	136 HUh	1 U	600 U	NA	0.3 U	NA	0.3 U	NA	0.3 U	NA
Chloroform	µg/L	NA	136 HUh	1 U	500 U	NA	0.55 J	NA	2.9	NA	2.09	NA
Chloromethane	µg/L	NA	136 HUh	0.64 J	600 U	NA	0.35 J	NA	0.3 U	NA	0.3 U	NA
cis-1,2-Dichloroethylene	µg/L	NA	136 HUh	1 U	600 U	NA	0.3 U	NA	0.3 U	NA	0.41 J	NA
cis-1,3-Dichloropropylene	µg/L	NA	136 HUh	1 U	500 U	NA	0.25 U	NA	0.25 U	NA	0.25 U	NA
Ethylbenzene	µg/L	NA	136 HUh	4.63	500 U	NA	0.25 U	NA	0.25 U	NA	0.25 U	NA
Methylene chloride	µg/L	NA	909 HUh	5 U	4000 U	NA	2 U	NA	2 U	NA	2 U	NA
Styrene	µg/L	NA	136 HUh	14.7	500 U	NA	0.25 U	NA	0.25 U	NA	0.25 U	NA
Tetrachloroethylene	µg/L	NA	136 HUh	1 U	137000	NA	3.55	NA	19.3	NA	44.6	NA
Toluene	µg/L	NA	258 HJh	31.4	500 U	NA	0.25 U	NA	0.25 U	NA	0.25 U	NA
trans-1,2-Dichloroethylene	µg/L	NA	136 HUh	1 U	600 U	NA	0.3 U	NA	0.3 U	NA	0.3 U	NA
trans-1,3-Dichloropropylene	µg/L	NA	136 HUh	1 U	500 U	NA	0.25 U	NA	0.25 U	NA	0.25 U	NA
Trichloroethylene	µg/L	NA	150 HUh	1 U	14400	NA	0.37 J	NA	0.44 J	NA	6.53	NA
Vinyl chloride	µg/L	NA	136 HUh	1 U	1000 U	NA	0.5 U	NA	0.5 U	NA	0.5 U	NA
Xylenes (total)	µg/L	NA	664 Hh	14.3	600 U	NA	0.3 U	NA	0.3 U	NA	0.3 U	NA
Semi-Volatile Organic Compounds												
1,1'-Biphenyl	µg/L	NA	2800000 U	9.52 U	2.97 U	NA	2.68 U	NA	2.83 U	NA	2.83 U	NA
2,4,5-Trichlorophenol	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
2,4,6-Trichlorophenol	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
2,4-Dichlorophenol	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
2,4-Dimethylphenol	µg/L	NA	3270000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
2,4-Dinitrophenol	µg/L	NA	3550000 U	19 U	4.95 U	NA	4.46 U	NA	4.72 U	NA	4.72 U	NA
2,4-Dinitrotoluene	µg/L	NA	935000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
2,6-Dinitrotoluene	µg/L	NA	935000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
2-Chloronaphthalene	µg/L	NA	308000 U	0.952 U	0.297 U	NA	0.268 U	NA	0.283 U	NA	0.283 U	NA
2-Chlorophenol	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
2-Methyl-4,6-dinitrophenol	µg/L	NA	1870000 U	9.52 U	2.97 U	NA	2.68 U	NA	2.83 U	NA	2.83 U	NA
2-Methylnaphthalene	µg/L	NA	187000 QU	0.952 U	0.297 U	NA	0.268 U	NA	0.283 U	NA	0.283 U	NA
2-Nitrophenol	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
3,3'-Dichlorobenzidine	µg/L	NA	2800000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
4-Bromophenylphenylether	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
4-Chloro-3-methylphenol	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA

Table 2. Analytical Results for Liquid Samples

Parameter	Unit	CG-104*	CG-113**	WC-219	WW0001-0129	WW0001F-0130	WW10001-0131	WW10001F-0132	WW20001-0133	WW20001F-0134	WW30001-0135	WW30001F-0136
4-Chloroaniline	µg/L	NA	1870000 QU	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
4-Chlorophenylphenylether	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
4-Nitrophenol	µg/L	NA	3080000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Acenaphthene	µg/L	NA	308000 U	0.952 U	0.307 U	NA	0.277 U	NA	0.292 U	NA	0.292 U	NA
Acenaphthylene	µg/L	NA	280000 QU	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
Acetophenone	µg/L	NA	1870000 U	9.52 QU	1.98 QU	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Anthracene	µg/L	NA	187000 U	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
Atrazine	µg/L	NA	2800000 U	9.52 U	2.97 U	NA	2.68 U	NA	2.83 U	NA	2.83 U	NA
Benzaldehyde	µg/L	NA	2800000 U	9.52 U	2.97 U	NA	2.68 U	NA	2.83 U	NA	2.83 U	NA
Benzo(a)anthracene	µg/L	NA	280000 U	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
Benzo(a)pyrene	µg/L	NA	280000 U	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
Benzo(b)fluoranthene	µg/L	NA	280000 U	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
Benzo(ghi)perylene	µg/L	NA	280000 U	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
Benzo(k)fluoranthene	µg/L	NA	280000 U	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
bis(2-Chloroethoxy)methane	µg/L	NA	1870000 U	9.52 U	2.97 U	NA	2.68 U	NA	2.83 U	NA	2.83 U	NA
bis(2-Chloroethyl) ether	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
bis(2-Chloroisopropyl)ether	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
bis(2-Ethylhexyl)phthalate	µg/L	NA	1870000 U	2.12 J	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Butylbenzylphthalate	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Caprolactam	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Carbazole	µg/L	NA	280000 U	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
Chrysene	µg/L	NA	280000 U	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
Dibenzo(a,h)anthracene	µg/L	NA	280000 U	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
Dibenzofuran	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Diethylphthalate	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Dimethylphthalate	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Di-n-butylphthalate	µg/L	NA	1870000 QU	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Di-n-octylphthalate	µg/L	NA	1870000 U	9.52 U	2.97 U	NA	2.68 U	NA	2.83 U	NA	2.83 U	NA
Diphenylamine	µg/L	NA	1870000 U	9.52 U	2.97 U	NA	2.68 U	NA	2.83 U	NA	2.83 U	NA
Fluoranthene	µg/L	NA	280000 U	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
Fluorene	µg/L	NA	280000 U	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
Hexachlorobenzene	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Hexachlorobutadiene	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Hexachlorocyclopentadiene	µg/L	NA	1870000 U	9.52 U	2.97 U	NA	2.68 U	NA	2.83 U	NA	2.83 U	NA
Hexachloroethane	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Indeno(1,2,3-cd)pyrene	µg/L	NA	280000 U	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
Isophorone	µg/L	NA	1870000 U	9.52 U	2.97 U	NA	2.68 U	NA	2.83 U	NA	2.83 U	NA
m,p-Cresols	µg/L	NA	2800000 QU	8.25 J	2.97 U	NA	2.68 U	NA	2.83 U	NA	2.83 U	NA
m-Nitroaniline	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Naphthalene	µg/L	NA	280000 U	0.952 U	0.297 U	NA	0.268 U	NA	0.283 U	NA	0.283 U	NA
Nitrobenzene	µg/L	NA	1870000 U	9.52 U	2.97 U	NA	2.68 U	NA	2.83 U	NA	2.83 U	NA
N-Nitrosodipropylamine	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
o-Cresol	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
o-Nitroaniline	µg/L	NA	1870000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Pentachlorophenol	µg/L	NA	2340000 U	9.52 U	1.98 U	NA	1.79 U	NA	1.89 U	NA	1.89 U	NA
Phenanthrene	µg/L	NA	280000 U	0.952 U	0.198 U	NA	0.179 U	NA	0.189 U	NA	0.189 U	NA
Phenol	µg/L	NA	1870000 U	25.7	0.99 U	NA	0.893 U	NA	0.943 U	NA	0.943 U	NA
p-Nitroaniline	µg/L	NA	2800000 U	9.52 U	2.97 U	NA	2.68 U	NA	2.83 U	NA	2.83 U	NA
Pyrene	µg/L	NA	280000 U	0.952 U	0.297 U	NA	0.268 U	NA	0.283 U	NA	0.283 U	NA

Table 2. Analytical Results for Liquid Samples

Parameter	Unit	CG-104*	CG-113**	WC-219	WW0001-0129	WW0001F-0130	WW10001-0131	WW10001F-0132	WW20001-0133	WW20001F-0134	WW30001-0135	WW30001F-0136
Polycyclic Aromatic Hydrocarbon												
Acenaphthene	µg/L	NA	NA	NA	0.124 U	NA	0.12 U	NA	0.123 U	NA	0.123 U	NA
Acenaphthylene	µg/L	NA	NA	NA	0.124 U	NA	0.12 U	NA	0.123 U	NA	0.123 U	NA
Anthracene	µg/L	NA	NA	NA	0.129 U	NA	0.125 U	NA	0.127 U	NA	0.257 J	NA
Benzo(a)anthracene	µg/L	NA	NA	NA	0.0158 U	NA	0.0154 U	NA	0.0157 U	NA	1.86	NA
Benzo(a)pyrene	µg/L	NA	NA	NA	0.0158 U	NA	0.0154 U	NA	0.0157 U	NA	1.92	NA
Benzo(b)fluoranthene	µg/L	NA	NA	NA	0.0158 U	NA	0.0154 U	NA	0.0157 U	NA	2.6	NA
Benzo(ghi)perylene	µg/L	NA	NA	NA	0.0158 U	NA	0.0154 U	NA	0.0157 U	NA	1.54	NA
Benzo(k)fluoranthene	µg/L	NA	NA	NA	0.0158 U	NA	0.0154 U	NA	0.0157 U	NA	1.39	NA
Chrysene	µg/L	NA	NA	NA	0.0158 U	NA	0.0154 U	NA	0.0157 U	NA	2	NA
Dibenzo(a,h)anthracene	µg/L	NA	NA	NA	0.0158 U	NA	0.0154 U	NA	0.0157 U	NA	0.0157 U	NA
Fluoranthene	µg/L	NA	NA	NA	0.0158 U	NA	0.0154 U	NA	0.0157 U	NA	6.34	NA
Fluorene	µg/L	NA	NA	NA	0.124 U	NA	0.12 U	NA	0.123 U	NA	0.123 U	NA
Indeno(1,2,3-cd)pyrene	µg/L	NA	NA	NA	0.0158 U	NA	0.0154 U	NA	0.0157 U	NA	0.0157 U	NA
Naphthalene	µg/L	NA	NA	NA	0.124 U	NA	0.12 U	NA	0.123 U	NA	0.123 U	NA
Phenanthrene	µg/L	NA	NA	NA	0.124 U	NA	0.12 U	NA	0.123 U	NA	3.83	NA
Pyrene	µg/L	NA	NA	NA	0.0158 U	NA	0.0154 U	NA	0.0364 J	NA	4.48	NA
Herbicides												
2,4,5-T	µg/L	NA	1420 U	0.236 U	0.0814 U	NA	0.0822 U	NA	0.083 U	NA	0.0847 U	NA
2,4,5-TP	µg/L	NA	1420 U	0.236 U	0.0814 U	NA	0.0822 U	NA	0.083 U	NA	0.0847 U	NA
2,4-D	µg/L	NA	1420 U	0.236 U	0.0814 QU	NA	0.0822 U	NA	0.083 U	NA	0.0847 U	NA
Pesticides												
4,4'-DDD	µg/L	NA	1.66 U	0.0385 U	0.0099 U	NA	0.0098 U	NA	0.01 U	NA	0.0102 U	NA
4,4'-DDE	µg/L	NA	1.66 U	0.0385 U	0.00495 U	NA	0.0049 U	NA	0.005 U	NA	0.0051 U	NA
4,4'-DDT	µg/L	NA	1.66 U	0.0385 U	0.0099 U	NA	0.0098 U	NA	0.01 U	NA	0.0102 U	NA
Aldrin	µg/L	NA	0.831 U	0.0197	0.00495 U	NA	0.0049 U	NA	0.005 U	NA	0.0051 U	NA
alpha-BHC	µg/L	NA	0.831 U	0.0192 U	0.00495 U	NA	0.0049 U	NA	0.005 U	NA	0.0051 U	NA
alpha-Chlordane	µg/L	NA	0.831 U	0.0192 U	0.00495 U	NA	0.0049 U	NA	0.005 U	NA	0.0051 U	NA
beta-BHC	µg/L	NA	0.831 U	0.0192 U	0.00594 U	NA	0.00588 U	NA	0.006 U	NA	0.00612 U	NA
delta-BHC	µg/L	NA	0.831 U	0.0192 U	0.00495 U	NA	0.00524 J	NA	0.005 U	NA	0.0051 U	NA
Dieldrin	µg/L	NA	1.66 U	0.0385 U	0.0099 U	NA	0.0098 U	NA	0.01 U	NA	0.0102 U	NA
Endosulfan I	µg/L	NA	0.831 U	0.0192 U	0.00495 U	NA	0.0049 U	NA	0.005 U	NA	0.0051 U	NA
Endosulfan II	µg/L	NA	1.66 U	0.0385 U	0.0099 U	NA	0.0098 U	NA	0.01 U	NA	0.0102 U	NA
Endosulfan sulfate	µg/L	NA	1.66 U	0.0385 U	0.0099 U	NA	0.0098 U	NA	0.01 U	NA	0.0102 U	NA
Endrin	µg/L	NA	1.66 U	0.0385 U	0.0099 U	NA	0.0098 U	NA	0.01 U	NA	0.0102 U	NA
Endrin aldehyde	µg/L	NA	1.66 U	0.0385 U	0.00495 U	NA	0.0049 U	NA	0.005 U	NA	0.0051 U	NA
Endrin ketone	µg/L	NA	1.66 U	0.0385 U	0.0099 U	NA	0.0098 U	NA	0.01 U	NA	0.0102 U	NA
gamma-BHC (Lindane)	µg/L	NA	0.831 U	0.0192 U	0.00495 U	NA	0.0049 U	NA	0.005 U	NA	0.0051 U	NA
gamma-Chlordane	µg/L	NA	0.831 U	0.0192 U	0.00495 U	NA	0.0049 U	NA	0.005 U	NA	0.0051 U	NA
Heptachlor	µg/L	NA	0.831 U	0.0192 U	0.00495 U	NA	0.0049 U	NA	0.005 U	NA	0.0051 U	NA
Heptachlor epoxide	µg/L	NA	1.04 U	0.0192 U	0.00495 U	NA	0.0049 U	NA	0.005 U	NA	0.0051 U	NA
Methoxychlor	µg/L	NA	8.31 U	0.192 U	0.0495 U	NA	0.049 U	NA	0.05 U	NA	0.051 U	NA
Toxaphene	µg/L	NA	27.7 U	0.481 U	0.149 U	NA	0.147 U	NA	0.15 U	NA	0.153 U	NA

Table 2. Analytical Results for Liquid Samples

Parameter	Unit	CG-104*	CG-113**	WC-219	WW0001-0129	WW0001F-0130	WW10001-0131	WW10001F-0132	WW20001-0133	WW20001F-0134	WW30001-0135	WW30001F-0136
Metals												
Antimony	µg/L	NA	0.309 U	3.76 JJ	3.44 J	NA	3 U	NA	3 U	NA	3 U	NA
Arsenic	µg/L	NA	0.468 U	19.5	4.29 J	NA	2.04 JJ	NA	1.6 UJ	NA	3.55 JJ	NA
Barium	µg/L	NA	0.265 J	499	72.3	NA	26.7	NA	43	NA	94.6	NA
Beryllium	µg/L	NA	0.0936 U	2.68 J	0.5 U	NA	0.1 U	NA	0.1 U	NA	0.366 J	NA
Cadmium	µg/L	NA	0.0936 U	5.23	0.179 J	NA	0.86 JJ	NA	0.11 UJ	NA	0.579 JJ	NA
Chromium	µg/L	NA	4.18	98.1	8.14 J	NA	2 U	NA	2 U	NA	9.69 J	NA
Lead	µg/L	NA	59.4	640	1.55 J	NA	0.775 JJ	NA	1.19 JJ	NA	10.7 J	NA
Mercury	µg/L	NA	0.00381 UJ	0.132 U	0.066 U	NA	0.066 U	NA	0.066 U	NA	0.066 U	NA
Nickel	µg/L	NA	3.3	153	10	NA	6.19	NA	5.95	NA	15.1	NA
Selenium	µg/L	NA	2.51 J	2.37 J	1 U	NA	1 UJ	NA	1 UJ	NA	1 UJ	NA
Silver	µg/L	NA	0.122 J	2 U	1 U	NA	1 U	NA	1.56 J	NA	1 U	NA
Thallium	µg/L	NA	1.08 J	0.738 J	0.3 U	NA	0.3 UJ	NA	0.3 UJ	NA	0.3 UJ	NA
Zinc	µg/L	NA	194	1410	22.4	NA	61.7	NA	126	NA	198	NA
Polychlorinated Biphenyls												
Aroclor-1016	µg/L	NA	332 U	0.0893 U	0.167 U	NA	0.033 U	NA	0.0342 U	NA	0.0336 U	NA
Aroclor-1221	µg/L	NA	332 U	0.0893 U	0.167 U	NA	0.033 U	NA	0.0342 U	NA	0.0336 U	NA
Aroclor-1232	µg/L	NA	332 U	0.0893 U	0.167 U	NA	0.033 U	NA	0.0342 U	NA	0.0336 U	NA
Aroclor-1242	µg/L	NA	332 U	0.0893 U	0.167 U	NA	0.033 U	NA	0.0342 U	NA	0.0336 U	NA
Aroclor-1248	µg/L	NA	332 U	0.0893 U	0.167 U	NA	0.033 U	NA	0.0342 U	NA	0.0336 U	NA
Aroclor-1254	µg/L	NA	332 U	0.0893 U	0.167 U	NA	0.033 U	NA	0.0342 U	NA	0.0336 U	NA
Aroclor-1260	µg/L	NA	332 U	0.0893 U	0.167 U	NA	0.033 U	NA	0.0342 U	NA	0.0336 U	NA
Radiological Coumpounds												
Actinium-227 (Gamma Spec)	pCi/L	NA	-0.0016 U	23.9 U	NA	NA	NA	NA	NA	NA	NA	NA
Americium-241 (Gamma Spec)	pCi/L	NA	-0.234 U	2.51 U	NA	NA	NA	NA	NA	NA	NA	NA
Cesium-137 (Gamma Spec)	pCi/L	NA	0.00606 U	-1 U	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt-60 (Gamma Spec)	pCi/L	NA	0.00968 U	0.348 U	NA	NA	NA	NA	NA	NA	NA	NA
Plutonium-238	pCi/L	0.0258 U	0.0857 U	0 U	-0.00537 U	-0.00874 U	0 U	0 U	0 U	-0.0737 U	-0.0121 U	0.000693 U
Plutonium-239/240	pCi/L	0.0181 U	0.0384 U	0.0441 U	0.00537 U	0.0175 U	0 U	0 U	0 U	-0.0115 U	0 U	-0.0125 U
Potassium-40 (Gamma Spec)	pCi/L	NA	1.59	32.7 U	NA	NA	NA	NA	NA	NA	NA	NA
Protactinium-231 (Gamma Spec)	pCi/L	NA	-0.482 U	-2.54 U	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 (Gamma Spec)	pCi/L	NA	0.236 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 (EPA 903.1 Modified)	pCi/L	NA	NA	7.94	1.3	0.561	0.221 U	0.0608 U	0.125 U	0.515 U	1.31	0.449 U
Radium-226 (EPA 903.)	pCi/L	NA	NA	27.9 U	NA	NA	NA	NA	NA	NA	NA	NA
Radium-228 (Gamma Spec)	pCi/L	NA	0.269 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-228 (EPA 904.0)	pCi/L	NA	NA	8.76	0.339 U	0.706	0.204 U	0.632 U	0.194 U	-0.207 U	0.0493 U	0.0152 U
Radium-228 (EPA 901.1)	pCi/L	NA	NA	2.18 U	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90	pCi/L	NA	-0.376 U	0.648 U	0.454 U	0.378 U	-0.248 U	-0.0237 U	-0.222 U	-0.427 U	-0.31 U	0.676 U
Thorium-228 (Gamma Spec)	pCi/L	NA	0.396	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thorium-228 (Alpha Spec)	pCi/L	0.048 U	-0.0701 U	2.67	0.185	-0.0116 U	0.0186 U	-0.00552 U	0.0215 U	0.0554 U	1.97	0.0397 U
Thorium-230 (Alpha Spec)	pCi/L	0.0301 U	-0.00463 U	1.18	0.0847	0.0842	-0.00686 U	0.0108 U	-0.00397 U	0.0286 U	3.17	0.0402 U
Thorium-232 (Alpha Spec)	pCi/L	-0.00149 U	0.0338 U	2.01	0.123	0.021 U	-0.00097 U	-0.00098 U	0.0818 U	0.0172 U	1.77	0.0514 U
Uranium-233/234 (Alpha Spec)	pCi/L	-0.00779 U	0.0525 U	25.9	2.51	1.9	4.93	4.28	1.06	1.07	3.53	3.03
Uranium-235	pCi/L	NA	-0.0912 U	-19.6 U	NA	NA	NA	NA	NA	NA	NA	NA
Uranium-235/236 (Alpha Spec)	pCi/L	0	0.012 U	1.76	0.218	0.0234 U	0.249	0.249	0.0272 U	0 U	0.0288 U	0.175
Uranium-238 (Gamma Spec)	pCi/L	NA	-0.294 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium-238 (Alpha Spec)	pCi/L	0.154 U	-0.0153 U	27.4	2	1.49	4.1	3.78	0.726	0.994	2.96	2.96
Uranium-238 (EPA 901.1)	pCi/L	NA	NA	-28.6 U	NA	NA	NA	NA	NA	NA	NA	NA

Table 2. Analytical Results for Liquid Samples

Parameter	Unit	CG-104*	CG-113**	WC-219	WW0001-0129	WW0001F-0130	WW10001-0131	WW10001F-0132	WW20001-0133	WW20001F-0134	WW30001-0135	WW30001F-0136
General												
Corrosivity	SU	NA	7.33 H	8.83 H	8.14 H	NA	7.27 H	NA	7.47 H	NA	7.38 H	NA
Flashpoint-200	Fahrenheit	NA	>200	NA	NA	NA	NA	NA	NA	NA		NA
Reactive Releasable Cyanide	µg/L	NA	<250000	<250000	<250000	NA	<250000	NA	<250000	NA	<250000	NA
Reactive Releasable Sulfide	mg/L	NA	<500	<500	<500	NA	<500	NA	<500	NA	<500	NA
Setaflash-200	Fahrenheit	NA	NA	>200	>200	NA	75	NA	75	NA	75	NA
Total Dissolved Solids	mg/L	NA	NA	920	800	NA	493	NA	424	NA	481	NA
Total Suspended Solids	mg/L	NA	NA	14000	70	NA	12.8	NA	34.4	NA	218	NA

* CG-104 radiological compounds were analyzed as a solid. All units are in pCi/g.

** CG-113 was analyzed as a solid; chemical and reactive releasable cyanide results are µg/kg, metal and reactive releasable sulfide results are mg/kg, and radiological results are in pCi/g.

NA: Not Analyzed

Table 3. Sample ID and Composite Group Inventory Summary

Sample ID	Composite Group	WC Number	Matrix	Primary Component	Analytical Suite
CG-100	CG-100	WC-001	Solid	PPE	Full Suite- Solid
		WC-002		PPE	
		WC-005		PPE	
		WC-006		PPE	
		WC-007		PPE	
		WC-008		PPE	
		WC-009		PPE	
		WC-010		PPE	
		WC-011		PPE	
		WC-012		PPE	
		WC-013		PPE	
		WC-015		PPE	
		WC-017		PPE	
		WC-018		PPE	
		WC-019		PPE	
		WC-020		PPE	
		WC-021		PPE	
		WC-022		PPE	
		WC-023		PPE	
		WC-024		PPE	
		WC-025		PPE	
		WC-030		PPE	
		WC-108		PPE	
		WC-111		PPE	
		WC-158		PPE	
		WC-160		PPE	

Table 3. Sample ID and Composite Group Inventory Summary

Sample ID	Composite Group	WC Number	Matrix	Primary Component	Analytical Suite
CG-101	CG-101	WC-162	Solid	PPE	Full Suite- Solid
		WC-163		PPE	
		WC-164		PPE	
		WC-165		PPE	
		WC-166		PPE	
		WC-183		PPE	
		WC-184		PPE	
		WC-199		PPE	
		WC-200		PPE	
		WC-201		PPE	
		WC-202		PPE	
		WC-205		PPE	
		WC-215		PPE	
CG-102	CG-102	WC-188	Solid	Soil/Soil-Like	Full Suite- Solid
		WC-190		Soil/Soil-Like	Contains Asbestos
		WC-191		Soil/Soil-Like	
		WC-192		Soil/Soil-Like	
		WC-193		Soil/Soil-Like	
		WC-194		Soil/Soil-Like	
CG-103	CG-103	WC-189	Solid	Soil/Soil-Like	Full Suite- Solid
		WC-198		Soil/Soil-Like	
CG-104	CG-104	WC-225	Liquid	Liquid Mercury 250 mL jar	Alpha Spectroscopy - Have Not Received
CG-105	CG-105	WC-185	Solid	Soil/Soil-Like	Full Suite- Solid
		WC-186		Soil/Soil-Like	
		WC-187		Soil/Soil-Like	
		WC-222		Soil/Soil-Like	

Table 3. Sample ID and Composite Group Inventory Summary

Sample ID	Composite Group	WC Number	Matrix	Primary Component	Analytical Suite
CG-106	CG-106	WC-028	Solid	Soil/Soil-Like	Full Suite- Solid
		WC-031		Soil/Soil-Like	
		WC-033		Soil/Soil-Like	
		WC-035		Soil/Soil-Like	
		WC-036		Soil/Soil-Like	
		WC-039		Soil/Soil-Like	
		WC-053		Soil/Soil-Like	
		WC-066		Soil/Soil-Like	
		WC-068		Soil/Soil-Like	
		WC-069		Soil/Soil-Like	
		WC-074		Soil/Soil-Like	
		WC-076		Soil/Soil-Like	
		WC-082		Soil/Soil-Like	
		WC-083		Soil/Soil-Like	
		WC-086		Soil/Soil-Like	
		WC-087		Soil/Soil-Like	
		WC-089		Soil/Soil-Like	
		WC-090		Soil/Soil-Like	
		WC-091		Soil/Soil-Like	
		WC-092		Soil/Soil-Like	
		WC-093		Soil/Soil-Like	
		WC-094		Soil/Soil-Like	
		WC-095		Soil/Soil-Like	
		WC-098		Soil/Soil-Like	
		WC-099		Soil/Soil-Like	
		WC-106		Soil/Soil-Like	

Table 3. Sample ID and Composite Group Inventory Summary

Sample ID	Composite Group	WC Number	Matrix	Primary Component	Analytical Suite
CG-107	CG-107	WC-107	Solid	Soil/Soil-Like	Full Suite- Solid
		WC-109		Soil/Soil-Like	
		WC-110		Soil/Soil-Like	
		WC-131		Soil/Soil-Like	
		WC-132		Soil/Soil-Like	
		WC-133		Soil/Soil-Like	
		WC-134		Soil/Soil-Like	
		WC-135		Soil/Soil-Like	
		WC-136		Soil/Soil-Like	
		WC-146		Soil/Soil-Like	
		WC-147		Soil/Soil-Like	
		WC-148		Soil/Soil-Like	
		WC-149		Soil/Soil-Like	
		WC-150		Soil/Soil-Like	
		WC-151		Concrete	
		WC-152		Soil/Soil-Like	
		WC-153		Concrete	
		WC-156		Soil/Soil-Like	
		WC-159		Soil/Soil-Like	
		WC-179		Soil/Soil-Like	
		WC-180		Soil/Soil-Like	
		WC-181		Soil/Soil-Like	
		WC-182		Soil/Soil-Like	
		WC-203		Soil/Soil-Like	
		WC-206		Soil/Soil-Like	
		WC-226		Soil/Soil-Like	

Table 3. Sample ID and Composite Group Inventory Summary

Sample ID	Composite Group	WC Number	Matrix	Primary Component	Analytical Suite
CG-108	CG-108	WC-003	Solid	PVC/Plastic	Full Suite- Solid
		WC-004		PVC/Plastic	
		WC-014		PVC/Plastic	
		WC-016		PVC/Plastic	
		WC-029		PVC/Plastic	
		WC-112		PVC/Plastic	
		WC-113		PVC/Plastic	
		WC-114		PVC/Plastic	
		WC-115		PVC/Plastic	
		WC-116		PVC/Plastic	
		WC-117		PVC/Plastic	
		WC-118		PVC/Plastic	
		WC-119		PVC/Plastic	
		WC-120		PVC/Plastic	
		WC-121		PVC/Plastic	
		WC-122		PVC/Plastic	
		WC-123		PVC/Plastic	
		WC-124		PVC/Plastic	
		WC-125		PVC/Plastic	
		WC-126		PVC/Plastic	
		WC-127		PVC/Plastic	
		WC-128		PVC/Plastic	
		WC-144		PVC/Plastic	
		WC-145		PVC/Plastic	
		WC-154		PVC/Plastic	
		WC-155		PVC/Plastic	

Table 3. Sample ID and Composite Group Inventory Summary

Sample ID	Composite Group	WC Number	Matrix	Primary Component	Analytical Suite
CG-109	CG-109	WC-026	Solid	Plastic Tubing	Full Suite- Solid
		WC-027		Plastic Tubing	
		WC-104		Soil/Soil-Like	
		WC-129		Metal	
		WC-130		Canvas Tarp	
		WC-137		Soil/Soil-Like	
		WC-138		Soil/Soil-Like	
		WC-157		PVC/Plastic	
		WC-161		Absorbent	
		WC-195		Spongeblast	
		WC-196		Spongeblast	
		WC-197		Spongeblast	
		WC-204		Spongeblast	
		WC-207		Absorbent	
		WC-208		Styrofoam	
		WC-209		PVC/Plastic	
		WC-210		Styrofoam	
		WC-211		PVC/Plastic	
		WC-212		PVC/Plastic	
		WC-213		PVC/Plastic	
		WC-214		PVC/Plastic	
		WC-216		PVC/Plastic	
		WC-217		PVC/Plastic	

Table 3. Sample ID and Composite Group Inventory Summary

Sample ID	Composite Group	WC Number	Matrix	Primary Component	Analytical Suite
CG-110	CG-110	WC-032	Solid	Soil/Soil-Like	Full Suite- Solid
		WC-034		Soil/Soil-Like	
		WC-037		Soil/Soil-Like	
		WC-038		Soil/Soil-Like	
		WC-040		Soil/Soil-Like	
		WC-041		Soil/Soil-Like	
		WC-042		Soil/Soil-Like	
		WC-043		Soil/Soil-Like	
		WC-044		Soil/Soil-Like	
		WC-045		Soil/Soil-Like	
		WC-046		Soil/Soil-Like	
		WC-047		Soil/Soil-Like	
		WC-048		Soil/Soil-Like	
		WC-049		Soil/Soil-Like	
		WC-050		Soil/Soil-Like	
		WC-051		Soil/Soil-Like	
		WC-052		Soil/Soil-Like	
		WC-054		Soil/Soil-Like	
		WC-055		Soil/Soil-Like	
		WC-056		Soil/Soil-Like	
		WC-057		Soil/Soil-Like	
		WC-058		Soil/Soil-Like	
		WC-059		Soil/Soil-Like	
		WC-060		Soil/Soil-Like	
		WC-061		Soil/Soil-Like	

Table 3. Sample ID and Composite Group Inventory Summary

Sample ID	Composite Group	WC Number	Matrix	Primary Component	Analytical Suite
CG-111	CG-111	WC-062	Solid	Soil/Soil-Like	Full Suite- Solid
		WC-063		Soil/Soil-Like	
		WC-064		Soil/Soil-Like	
		WC-065		Soil/Soil-Like	
		WC-067		Soil/Soil-Like	
		WC-070		Soil/Soil-Like	
		WC-071		Soil/Soil-Like	
		WC-072		Soil/Soil-Like	
		WC-073		Soil/Soil-Like	
		WC-075		Soil/Soil-Like	
		WC-077		Soil/Soil-Like	
		WC-078		Soil/Soil-Like	
		WC-079		Soil/Soil-Like	
		WC-080		Soil/Soil-Like	
		WC-081		Soil/Soil-Like	
		WC-084		Soil/Soil-Like	
		WC-085		Soil/Soil-Like	
		WC-088		Soil/Soil-Like	
		WC-096		Soil/Soil-Like	
		WC-097		Soil/Soil-Like	
		WC-100		Soil/Soil-Like	
		WC-101		Soil/Soil-Like	
		WC-102		Soil/Soil-Like	
		WC-103		Soil/Soil-Like	
		WC-105		Soil/Soil-Like	
WC-219	CG-112	WC-218	Liquid	Water	Full Suite- Liquid
		WC-219		Water	
				2-55 gallon drums	
CG-113	CG-113	WC-220	Liquid	Oil	Full Suite Oil- Complete
		WC-221		Oil	
		WC-223		Oil	
				3-55 gallon drums	

Table 3. Sample ID and Composite Group Inventory Summary

Sample ID	Composite Group	WC Number	Matrix	Primary Component	Analytical Suite
WC-167	CG-114	WC-167	Solid	PPE	Full Suite- Solid
WC-168	CG-115	WC-168	Solid	PPE	Full Suite- Solid
WC-169	CG-116	WC-169	Solid	Metal Sample - Paint Chips	Full Suite- Solid- Only TCLP Due to limited sample volume - Paint Chips See Attached - Radiological Screening Forms
Metal LSA - No Sample	CG-117	WC-170	Solid	Metal	Metal LSA - No Sample See Attached - Radiological Screening Forms
Metal LSA - No Sample	CG-118	WC-171	Solid	Metal	Metal LSA - No Sample See Attached - Radiological Screening Forms
WC-172	CG-119	WC-172	Solid	Metal Sample - Paint Chips	Full Suite- Solid- Only TCLP Due to limited sample volume - Paint Chips See Attached - Radiological Screening Forms
WC-173	CG-120	WC-173	Solid	Metal, Concrete, Wood	Full Suite- Solid See Attached - Radiological Screening Forms
Metal LSA - No Sample	CG-121	WC-174	Solid	Metal	Metal LSA - No Sample See Attached - Radiological Screening Forms
Metal LSA - No Sample	CG-122	WC-175	Solid	Metal	Metal LSA - No Sample See Attached - Radiological Screening Forms
WC-176	CG-123	WC-176	Solid	Metal, Soil-like	Full Suite- Solid See Attached - Radiological Screening Forms

Table 3. Sample ID and Composite Group Inventory Summary

Sample ID	Composite Group	WC Number	Matrix	Primary Component	Analytical Suite
Metal LSA - No Sample	CG-124	WC-177	Solid	Metal	Metal LSA - No Sample See Attached - Radiological Screening Forms
CG-125	CG-125	WC-224	Solid	Wood	Full Suite Solid - Confirmed
CG-126	CG-126	WC-227	Solid	PPE	Full Suite Solid - Confirmed
WW0001-0129 WW0001F-0130	CG-127	WC-643 WC-644 WC-645 WC-646	Liquid	Water Water Water Water 4-55 gallon drums	RIR Water
WW10001-0131 WW10001F-0132	CG-128	TANK1	Liquid	Water 1550 gallon poly tank	RIR Water
WW20001-0133 WW20001F-0134	CG-129	TANK2	Liquid	Water 1550 gallon poly tank	RIR Water
WW30001-0135 WW30001F-0136	CG-130	TANK3	Liquid	Water 550 gallon poly tank	RIR Water

Table 3. Sample ID and Composite Group Inventory Summary

Sample ID	Composite Group	WC Number	Matrix	Primary Component	Analytical Suite
CG-131	CG-131	WC-139	Solid	Soil/Soil-Like	Full Suite- Solid
		WC-140		Soil/Soil-Like	
		WC-141		PVC/Plastic	
		WC-142		Soil/Soil-Like	
		WC-143		Soil/Soil-Like	
		WC-607		Soil/Soil-Like	
		WC-608		Soil/Soil-Like	
		WC-609		Soil/Soil-Like	
		WC-610		Soil/Soil-Like	
		WC-611		Soil/Soil-Like	
		WC-625		Soil/Soil-Like	
		WC-626		Soil/Soil-Like	
		WC-627		Soil/Soil-Like	
		WC-628		Soil/Soil-Like	
		WC-629		Soil/Soil-Like	
		WC-630		Soil/Soil-Like	
		WC-631		Soil/Soil-Like	
		WC-632		Soil/Soil-Like	
		WC-633		Soil/Soil-Like	
		WC-634		Soil/Soil-Like	
		WC-635		Soil/Soil-Like	
		WC-639		Soil/Soil-Like	

Table 3. Sample ID and Composite Group Inventory Summary

Sample ID	Composite Group	WC Number	Matrix	Primary Component	Analytical Suite
CG-132	CG-132	WC-600	Solid	Soil/Soil-Like	Full Suite- Solid
		WC-601		Soil/Soil-Like	
		WC-602		Soil/Soil-Like	
		WC-603		Soil/Soil-Like	
		WC-604		Soil/Soil-Like	
		WC-605		Soil/Soil-Like	
		WC-606		Soil/Soil-Like	
		WC-612		Soil/Soil-Like	
		WC-613		Soil/Soil-Like	
		WC-614		Soil/Soil-Like	
		WC-615		Soil/Soil-Like	
		WC-616		Soil/Soil-Like	
		WC-617		Soil/Soil-Like	
		WC-618		Soil/Soil-Like	
		WC-619		Soil/Soil-Like	
		WC-620		Soil/Soil-Like	
		WC-621		Soil/Soil-Like	
		WC-622		Soil/Soil-Like	
		WC-623		Soil/Soil-Like	
		WC-624		Soil/Soil-Like	
		WC-636		Soil/Soil-Like	
		WC-637		Soil/Soil-Like	
		WC-638		Soil/Soil-Like	
		WC-640		Soil/Soil-Like	
		WC-641		Soil/Soil-Like	
		WC-642		Soil/Soil-Like	

AVESI

Niagara Falls Storage Site, Lewiston, New York

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: **Drum Storage Area**	SURVEYOR: Joshua Bushman	Page 1 of 2
PURPOSE OF SURVEY: Characterization Survey	DATE: 11/20/09	TIME: 1600

Instrument Type(s): (√ if used)	Detector Area (cm^2)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☒ Ludlum 2221/43-10-1	N/A	157320	PR157821	9/24/10	9/24/10	0.2	48	.358	.321
☒ Ludlum 2360/43-93	100	215279	PR197430	9/23/10	9/23/10	3	204	.176	.228
☐ Ludlum 2221/44-9	15.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
☒ Micro-R	N/A	1716	N/A	05-18-10	N/A	N/A	N/A	N/A	N/A

Contamination Limits: ($dpm/100cm^2$) Removable α **20 DPM** Removable βγ **100 DPM** Total α **1000 DPM** Total βγ **5000 DPM**

Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	$dpm/100cm^2$ α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	$dpm/100cm^2$ βγ Removable	Gross CPM α Total	Net CPM α Total	$dpm/100cm^2$ α Total	Gross CPM βγ Total	Net CPM βγ Total	$dpm/100cm^2$ βγ Total	mR/hr
1	LSA Box 12	1	0.8	<12	52	8	<83	4	1	<62	212	8	<304	<0.01
2	LSA Box 12	0	0	<12	46	2	<83	1	0	<62	208	4	<304	<0.01
3	LSA Box 12	0	0	<12	49	5	<83	9	6	<62	215	11	<304	<0.01
4	LSA Box 12	2	1.8	<12	47	3	<83	3	0	<62	262	58	<304	<0.01
5	LSA Box 12	0	0	<12	49	5	<83	6	3	<62	255	51	<304	<0.01
6	LSA Box 12	0	0	<12	43	0	<83	4	1	<62	213	9	<304	<0.01
7	LSA Box 12	3	2.8	<12	40	0	<83	8	5	<62	265	61	<304	<0.01
8	LSA Box 12	1	0.8	<12	45	1	<83	1	0	<62	203	0	<304	<0.01
9	LSA Box 12	2	1.8	<12	48	4	<83	2	0	<62	245	41	<304	<0.01
10	LSA Box 12	4	3.8	<12	46	2	<83	5	2	<62	274	70	307	<0.01

REMARKS: Metal from LSA box 12 and box 4 (non-impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-169

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11.20.09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

SAIC RADIOLOGICAL SURVEY REPORT (Supplement)

SURVEY LOCATION: **Drum Storage Area**

Contamination Limits: (dpm/100cm²)		Removable α **20 DPM**			Removable βγ **100 DPM**			Total α **1000 DPM**			Total βγ **5000 DPM**			
Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hr or µR/hr
11	LSA Box 12	2	1.8	<12	50	6	<83	24	21	119	290	86	377	<0.01
12	LSA Box 12	0	0	<12	57	13	<83	3	0	<62	276	72	316	<0.01
13	LSA Box 12	1	0.8	<12	40	0	<83	4	1	<62	288	84	368	<0.01
14	LSA Box 12	0	0	<12	43	0	<83	8	5	<62	274	70	307	<0.01
15	LSA Box 12	1	0.8	<12	47	3	<83	4	1	<62	310	106	465	<0.01
16	LSA Box 12	1	0.8	<12	42	0	<83	3	0	<62	315	111	487	<0.01
17	LSA Box 12	2	1.8	<12	49	5	<83	5	2	<62	301	97	425	<0.01
18	LSA Box 12	0	0	<11	42	0	<83	3	0	<62	274	70	307	<0.01
19	LSA Box 12	5	4.8	14	47	3	<83	1	0	<62	261	57	<304	<0.01
20	LSA Box 12	4	3.8	<12	52	8	<83	11	8	<62	245	41	<304	<0.01

REMARKS: Metal from LSA box 12 and box 4 (non-impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-169

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11.20.09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

AVESI

Niagara Falls Storage Site, Lewiston, New York

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: **Drum Storage Area**	SURVEYOR: Joshua Bushman	Page 1 of 2
PURPOSE OF SURVEY: Characterization Survey	DATE: 11/22/09	TIME: 1625

Instrument Type(s): (√ if used)	Detector Area (cm^2)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☒ Ludlum 2221/43-10-1	N/A	157320	PR157821	9/24/10	9/24/10	0.2	48	.358	.321
☒ Ludlum 2360/43-93	100	215279	PR197430	9/23/10	9/23/10	2	195	.176	.228
☐ Ludlum 2221/44-9	15.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
☒ Micro-R	N/A	1716	N/A	05-18-10	N/A	N/A	N/A	N/A	N/A

Contamination Limits: (dpm/100cm²) Removable α **20 DPM** Removable βγ **100 DPM** Total α **1000 DPM** Total βγ **5000 DPM**

Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hr
1	LSA Box 11	7	6.8	19	64	16	<83	7	5	<54	1245	1050	4606	<0.01
2	LSA Box 11	0	0	<12	98	50	156	10	8	<54	1009	814	3571	<0.01
3	LSA Box 11	29	28.8	81	185	137	427	6	4	<54	1124	929	4075	<0.01
4	LSA Box 11	3	2.8	<12	79	31	97	3	1	<54	987	792	3474	<0.01
5	LSA Box 11	1	0.8	<12	62	14	<83	5	3	<54	1158	963	4224	<0.01
6	LSA Box 11	5	4.8	14	85	37	116	7	5	<54	1345	1150	5044	<0.01
7	LSA Box 11	31	30.8	87	78	30	94	5	3	<54	1304	1109	4865	<0.01
8	LSA Box 11	30	29.8	84	136	88	275	9	7	<54	1169	974	4272	<0.01
9	LSA Box 11	3	2.8	<12	86	38	119	4	2	<54	1416	1221	5356	<0.01
10	LSA Box 11	16	15.8	45	114	66	206	6	4	<54	1255	1060	4650	<0.01

REMARKS: Metal from LSA box 11, box 6, box 4, box 12, box 2 (impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-170

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11.22.09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

AVESI

Niagara Falls Storage Site, Lewiston, New York

SAIC RADIOLOGICAL SURVEY REPORT (Supplement)

SURVEY LOCATION: **Drum Storage Area**

Contamination Limits: (dpm/100cm²)		Removable α **20 DPM**			Removable βγ **100 DPM**			Total α **1000 DPM**			Total βγ **5000 DPM**			
Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hr or µR/hr
11	LSA Box 11	22	21.8	61	87	39	122	14	12	69	1289	1094	4799	<0.01
12	LSA Box 11	14	13.8	39	79	31	97	6	4	<54	999	804	3527	<0.01
13	LSA Box 11	8	7.8	22	54	6	<83	9	7	<54	1096	901	3952	<0.01
14	LSA Box 11	5	4.8	14	47	0	<83	3	1	<54	1425	1230	5395	<0.01
15	LSA Box 11	17	16.8	47	66	18	<83	4	2	<54	1311	1116	4895	<0.01
16	LSA Box 11	28	27.8	78	82	34	106	15	13	74	1280	1085	4759	<0.01
17	LSA Box 11	44	43.8	123	185	137	427	295	293	1665	1525	1330	5834	<0.01
18	LSA Box 11	6	5.8	17	52	4	<83	7	5	<54	1496	1301	5707	<0.01
19	LSA Box 11	8	7.8	22	60	12	<83	10	8	<54	1268	1073	4707	<0.01
20	LSA Box 11	31	30.8	87	91	43	134	24	22	125	1436	1241	5443	<0.01

REMARKS: Metal from LSA box 11, box 6, box 4, box 12, box 2 (impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-170

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11.22.09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

AVESI

Niagara Falls Storage Site, Lewiston, New York

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: **Drum Storage Area**	SURVEYOR: Joshua Bushman	Page 1 of 2
PURPOSE OF SURVEY: Characterization Survey	DATE: 11/21/09	TIME: 1630

Instrument Type(s): (√ if used)	Detector Area (cm^2)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☒ Ludlum 2221/43-10-1	N/A	157320	PR157821	9/24/10	9/24/10	0.2	48	.358	.321
☒ Ludlum 2360/43-93	100	215279	PR197430	9/23/10	9/23/10	2	185	.176	.228
☐ Ludlum 2221/44-9	15.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
☒ Micro-R	N/A	1716	N/A	05-18-10	N/A	N/A	N/A	N/A	N/A

Contamination Limits: (dpm/100cm²) Removable α **20 DPM** Removable βγ **100 DPM** Total α **1000 DPM** Total βγ **5000 DPM**

Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hr
1	LSA Box 4	3	2.8	<12	50	4	<83	3	1	<54	212	27	<290	<0.01
2	LSA Box 4	0	0	<12	41	0	<83	1	0	<54	201	16	<290	<0.01
3	LSA Box 4	1	0.8	<12	45	0	<83	2	0	<54	194	9	<290	<0.01
4	LSA Box 4	2	1.8	<12	49	3	<83	5	3	<54	225	40	<290	<0.01
5	LSA Box 4	3	2.8	<12	40	0	<83	3	1	<54	196	11	<290	<0.01
6	LSA Box 4	0	0	<12	48	2	<83	4	2	<54	217	32	<290	<0.01
7	LSA Box 4	1	0.8	<12	46	0	<83	7	5	<54	208	23	<290	<0.01
8	LSA Box 4	0	0	<12	45	0	<83	4	2	<54	184	0	<290	<0.01
9	LSA Box 4	3	2.8	<12	51	5	<83	2	0	<54	193	8	<290	<0.01
10	LSA Box 4	1	0.8	<12	53	7	<83	2	0	<54	207	22	<290	<0.01

REMARKS: Metal from LSA box 4 and box 6 (non-impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-171

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11·21·09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

AVESI

Niagara Falls Storage Site, Lewiston, New York

SAIC RADIOLOGICAL SURVEY REPORT (Supplement)

SURVEY LOCATION: **Drum Storage Area**

Contamination Limits: (dpm/100cm²)		Removable α **20 DPM**			Removable βγ **100 DPM**			Total α **1000 DPM**			Total βγ **5000 DPM**			
Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hr
11	LSA Box 4	4	3.8	<12	46	0	<83	8	6	<54	240	55	<290	<0.01
12	LSA Box 4	1	0.8	<12	41	0	<83	1	0	<54	215	30	<290	<0.01
13	LSA Box 4	2	1.8	<12	52	6	<83	7	5	<54	198	13	<290	<0.01
14	LSA Box 4	0	0	<12	49	3	<83	2	0	<54	226	41	<290	<0.01
15	LSA Box 4	0	0	<12	53	7	<83	3	1	<54	232	47	<290	<0.01
16	LSA Box 4	2	1.8	<12	47	1	<83	3	1	<54	187	2	<290	<0.01
17	LSA Box 4	1	0.8	<12	42	0	<83	4	2	<54	209	24	<290	<0.01
18	LSA Box 4	1	0.8	<12	40	0	<83	2	0	<54	218	33	<290	<0.01
19	LSA Box 4	1	0.8	<12	58	12	<83	10	8	<54	194	9	<290	<0.01
20	LSA Box 4	2	1.8	<12	44	0	<83	6	4	<54	211	26	<290	<0.01

REMARKS: Metal from LSA box 4 and box 6 (non-impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-171

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11·21·09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

AVESI

Niagara Falls Storage Site, Lewiston, New York

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: **Drum Storage Area** | SURVEYOR: Joshua Bushman | Page 1 of 2

PURPOSE OF SURVEY: Characterization Survey | DATE: 11/23/09 | TIME: 1615

Instrument Type(s): (√ if used)	Detector Area (cm^2)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☒ Ludlum 2221/43-10-1	N/A	157320	PR157821	9/24/10	9/24/10	0.2	48	.358	.321
☒ Ludlum 2360/43-93	100	215279	PR197430	9/23/10	9/23/10	2	214	.176	.228
☐ Ludlum 2221/44-9	15.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
☒ Micro-R	N/A	1716	N/A	05-18-10	N/A	N/A	N/A	N/A	N/A

Contamination Limits: ($dpm/100cm^2$) Removable α **20 DPM** | Removable βγ **100 DPM** | Total α **1000 DPM** | Total βγ **5000 DPM**

Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	$dpm/100cm^2$ α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	$dpm/100cm^2$ βγ Removable	Gross CPM α Total	Net CPM α Total	$dpm/100cm^2$ α Total	Gross CPM βγ Total	Net CPM βγ Total	$dpm/100cm^2$ βγ Total	mR/hr
1	LSA Box 6	6	5.8	17	49	1	<83	24	22	125	246	32	<311	<0.01
2	LSA Box 6	2	1.8	<12	52	4	<83	10	8	<54	210	0	<311	<0.01
3	LSA Box 6	1	0.8	<12	50	2	<83	5	3	<54	257	43	<311	<0.01
4	LSA Box 6	0	0	<12	42	0	<83	11	9	<54	286	72	316	<0.01
5	LSA Box 6	1	0.8	<12	43	0	<83	14	12	68	310	96	421	<0.01
6	LSA Box 6	1	0.8	<12	47	0	<83	10	8	<54	246	32	<311	<0.01
7	LSA Box 6	2	1.8	<12	40	0	<83	6	4	<54	216	2	<311	<0.01
8	LSA Box 6	1	0.8	<12	45	0	<83	7	5	<54	233	19	<311	<0.01
9	LSA Box 6	0	0	<12	49	1	<83	1	0	<54	220	6	<311	<0.01
10	LSA Box 6	1	0.8	<12	46	0	<83	4	2	<54	247	33	<311	<0.01

REMARKS: Metal from LSA box 2 and box 7 (non-impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-172

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11.23.09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

AVESI

Niagara Falls Storage Site, Lewiston, New York

SAIC RADIOLOGICAL SURVEY REPORT (Supplement)

SURVEY LOCATION: **Drum Storage Area**

Contamination Limits: (dpm/100cm²)		Removable α **20 DPM**			Removable βγ **100 DPM**			Total α **1000 DPM**			Total βγ **5000 DPM**			
Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hr or µR/hr
11	LSA Box 6	4	3.8	<12	65	17	<83	17	15	86	264	50	<311	<0.01
12	LSA Box 6	10	9.8	28	61	13	<83	12	10	57	215	1	<311	<0.01
13	LSA Box 6	6	5.8	17	43	0	<83	7	5	<54	226	12	<311	<0.01
14	LSA Box 6	2	1.8	<12	49	1	<83	19	17	97	278	64	<311	<0.01
15	LSA Box 6	1	0.8	<12	51	3	<83	11	9	<54	304	90	395	<0.01
16	LSA Box 6	1	0.8	<12	47	0	<83	7	5	<54	266	52	<311	<0.01
17	LSA Box 6	0	0	<12	42	0	<83	9	7	<54	289	75	329	<0.01
18	LSA Box 6	1	0.8	<12	40	0	<83	5	3	<54	274	60	<311	<0.01
19	LSA Box 6	2	1.8	<12	42	0	<83	8	6	<54	213	0	<311	<0.01
20	LSA Box 6	0	0	<12	46	0	<83	15	13	74	208	0	<311	<0.01

REMARKS: Metal from LSA box 2 and box 7 (non-impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-172

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11-23-09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

AVESI

HARSHAW Chemical Site, Cleveland, Ohio

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: **Drum Storage Area** | SURVEYOR: Joshua Bushman | Page 1 of 2

PURPOSE OF SURVEY: Characterization Survey | DATE: 11/23/09 | TIME: 1615

Instrument Type(s): (√ if used)	Detector Area (cm^2)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☒ Ludlum 2221/43-10-1	N/A	157320	PR157821	9/24/10	9/24/10	0.2	48	.358	.321
☒ Ludlum 2360/43-93	100	215279	PR197430	9/23/10	9/23/10	2	214	.176	.228
☐ Ludlum 2221/44-9	15.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
☒ Micro-R	N/A	1716	N/A	05-18-10	N/A	N/A	N/A	N/A	N/A

Contamination Limits: (dpm/100cm²) Removable α **20 DPM** | Removable βγ **100 DPM** | Total α **1000 DPM** | Total βγ **5000 DPM**

Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hr
1	LSA Box 2	10	9.8	28	60	12	<83	42	40	228	1378	1164	5106	<0.01
2	LSA Box 2	16	15.8	45	74	26	<83	20	18	103	1262	1048	4597	<0.01
3	LSA Box 2	5	4.8	14	45	0	<83	38	36	205	1345	1131	4961	<0.01
4	LSA Box 2	19	18.8	53	63	15	<83	55	53	302	1359	1145	5022	<0.01
5	LSA Box 2	3	2.8	<12	49	1	<83	27	25	143	1265	1051	4610	<0.01
6	LSA Box 2	26	25.8	73	114	66	206	61	59	336	1587	1373	6022	<0.01
7	LSA Box 2	11	10.8	31	58	10	<83	52	50	285	1358	1144	5018	<0.01
8	LSA Box 2	31	30.8	87	124	76	237	38	36	205	1245	1031	4522	<0.01
9	LSA Box 2	36	35.8	100	119	71	222	45	43	245	1350	1136	4983	<0.01
10	LSA Box 2	8	7.8	22	47	0	<83	16	14	80	992	778	3413	<0.01

REMARKS: Metal from LSA box 2, box 7, and box 6 (impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-173

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11.23.09 / /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

AVESI

HARSHAW Chemical Site, Cleveland, Ohio

SAIC RADIOLOGICAL SURVEY REPORT (Supplement)

SURVEY LOCATION: **Drum Storage Area**

Contamination Limits: (dpm/100cm²)		Removable α **20 DPM**			Removable βγ **100 DPM**			Total α **1000 DPM**			Total βγ **5000 DPM**			
Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hr or µR/hr
11	LSA Box 2	162	161.8	452	490	442	1377	273	271	1540	2300	2086	9150	0.02
12	LSA Box 2	34	33.8	95	141	93	290	50	48	273	1512	1298	5693	<0.01
13	LSA Box 2	12	11.8	33	87	39	122	41	39	222	1401	1187	5207	<0.01
14	LSA Box 2	19	18.8	53	91	43	134	30	28	160	1328	1114	4886	<0.01
15	LSA Box 2	9	8.8	25	61	13	<83	49	47	268	1571	1357	5952	<0.01
16	LSA Box 2	46	45.8	128	101	53	165	27	25	143	1368	1154	5062	<0.01
17	LSA Box 2	21	20.8	59	87	39	122	19	17	97	1208	994	4360	<0.01
18	LSA Box 2	14	13.8	39	67	19	<83	57	55	313	1434	1220	5351	<0.01
19	LSA Box 2	35	34.8	98	59	11	<83	28	26	148	1316	1102	4834	<0.01
20	LSA Box 2	72	71.8	201	139	91	284	46	44	250	1481	1267	5558	<0.01

REMARKS: Metal from LSA box 2, box 7, and box 6 (impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-173

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11.23.09 /

REVIEWER SIGNATURE/DATE: ([redacted] / 1-16-10

AVESI

Niagara Falls Storage Site, Lewiston, New York

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: **Drum Storage Area** | SURVEYOR: Joshua Bushman | Page 1 of 2

PURPOSE OF SURVEY: Characterization Survey | DATE: 11/23/09 | TIME: 1700

Instrument Type(s): (√ if used)	Detector Area (cm^2)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☒ Ludlum 2221/43-10-1	N/A	157320	PR157821	9/24/10	9/24/10	0.2	48	.358	.321
☒ Ludlum 2360/43-93	100	215279	PR197430	9/23/10	9/23/10	2	214	.176	.228
☐ Ludlum 2221/44-9	15.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
☒ Micro-R	N/A	1716	N/A	05-18-10	N/A	N/A	N/A	N/A	N/A

Contamination Limits: ($dpm/100cm^2$) Removable α **20 DPM** | Removable βγ **100 DPM** | Total α **1000 DPM** | Total βγ **5000 DPM**

Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	$dpm/100cm^2$ α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	$dpm/100cm^2$ βγ Removable	Gross CPM α Total	Net CPM α Total	$dpm/100cm^2$ α Total	Gross CPM βγ Total	Net CPM βγ Total	$dpm/100cm^2$ βγ Total	mR/hr
1	LSA Box 7	5	4.8	14	61	13	<83	34	32	182	431	217	952	<0.01
2	LSA Box 7	1	0.8	<12	50	2	<83	11	9	<54	219	5	<311	<0.01
3	LSA Box 7	2	1.8	<12	43	0	<83	8	6	<54	198	0	<311	<0.01
4	LSA Box 7	1	0.8	<12	49	1	<83	16	14	80	268	54	<311	<0.01
5	LSA Box 7	1	0.8	<12	41	0	<83	24	22	125	314	100	439	<0.01
6	LSA Box 7	0	0	<12	47	0	<83	10	8	<54	205	0	<311	<0.01
7	LSA Box 7	5	4.8	14	52	4	<83	7	5	<54	226	12	<311	<0.01
8	LSA Box 7	3	2.8	<12	56	8	<83	4	2	<54	207	0	<311	<0.01
9	LSA Box 7	2	1.8	<12	42	0	<83	13	11	63	245	31	<311	<0.01
10	LSA Box 7	4	3.8	<12	47	0	<83	19	17	97	237	23	<311	<0.01

REMARKS: Metal from LSA box 2, box 7, and box 8 (non-impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-174

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11.23.09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

AVESI

Niagara Falls Storage Site, Lewiston, New York

SAIC RADIOLOGICAL SURVEY REPORT (Supplement)

SURVEY LOCATION: **Drum Storage Area**

Contamination Limits: (dpm/100cm²)		Removable α **20 DPM**			Removable βγ **100 DPM**			Total α **1000 DPM**			Total βγ **5000 DPM**			
Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hr or μR/hr
11	LSA Box 7	5	4.8	14	48	0	<83	21	19	108	235	21	<311	<0.01
12	LSA Box 7	1	0.8	<12	43	0	<83	11	9	<54	213	0	<311	<0.01
13	LSA Box 7	6	5.8	17	57	9	<83	18	16	91	219	5	<311	<0.01
14	LSA Box 7	2	1.8	<12	46	0	<83	10	8	<54	206	0	<311	<0.01
15	LSA Box 7	0	0	<12	52	4	<83	4	2	<54	197	0	<311	<0.01
16	LSA Box 7	1	0.8	<12	40	0	<83	31	29	165	247	33	<311	<0.01
17	LSA Box 7	7	6.8	19	45	0	<83	29	27	154	224	10	<311	<0.01
18	LSA Box 7	15	14.8	42	112	64	200	64	62	353	622	408	1790	<0.01
19	LSA Box 7	8	7.8	22	61	13	<83	12	10	57	203	0	<311	<0.01
20	LSA Box 7	4	3.8	<12	47	0	<83	15	13	74	198	0	<311	<0.01

REMARKS: Metal from LSA box 2, box 7, and box 8 (non-impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-174

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11.23.09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

SURVEY LOCATION: **Drum Storage Area** | SURVEYOR: Joshua Bushman |

PURPOSE OF SURVEY: Characterization Survey | DATE: 11/23/09 | TIME: 1615

Instrument Type(s): (√ if used)	Detector Area (cm^2)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☒ Ludlum 2221/43-10-1	N/A	157320	PR157821	9/24/10	9/24/10	0.2	48	.358	.321
☒ Ludlum 2360/43-93	100	215279	PR197430	9/23/10	9/23/10	2	214	.176	.228
☐ Ludlum 2221/44-9	15.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
☒ Micro-R	N/A	1716	N/A	05-18-10	N/A	N/A	N/A	N/A	N/A

Contamination Limits: (dpm/100cm²) Removable α **20 DPM** | Removable βγ **100 DPM** | Total α **1000 DPM** | Total βγ **5000 DPM**

Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hr
1	LSA Box 8	18	17.8	50	68	20	<83	49	47	268	1215	1001	4391	<0.01
2	LSA Box 8	5	4.8	14	51	3	<83	67	65	370	1315	1101	4829	<0.01
3	LSA Box 8	24	23.8	67	58	10	<83	109	107	608	1452	1238	5430	<0.01
4	LSA Box 8	44	43.8	123	104	56	175	196	194	1103	2650	2436	10685	<0.01
5	LSA Box 8	5	4.8	14	48	0	<83	50	48	273	1387	1173	5145	<0.01
6	LSA Box 8	4	3.8	<12	43	0	<83	63	61	347	1299	1085	4759	<0.01
7	LSA Box 8	6	5.8	17	47	0	<83	121	119	677	1345	1131	4961	<0.01
8	LSA Box 8	16	15.8	45	56	8	<83	54	52	296	1098	884	3878	<0.01
9	LSA Box 8	9	8.8	25	49	1	<83	86	84	478	1165	951	4172	<0.01
10	LSA Box 8	7	6.8	19	54	6	<83	97	95	540	1173	959	4207	<0.01

REMARKS: Metal from LSA box 8 and box 9 (impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-175

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11·23·09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

SURVEY LOCATION: **Drum Storage Area**

Contamination Limits: (dpm/100cm²)		Removable α **20 DPM**			Removable βγ **100 DPM**			Total α **1000 DPM**			Total βγ **5000 DPM**			
Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hr or μR/hr
11	LSA Box 8	10	9.8	28	62	14	<83	24	22	125	1301	1087	4768	0.02
12	LSA Box 8	6	5.8	17	50	2	<83	58	56	319	1275	1061	4654	<0.01
13	LSA Box 8	4	3.8	<12	43	0	<83	61	59	336	1369	1155	5066	<0.01
14	LSA Box 8	2	1.8	<12	49	1	<83	52	50	285	1425	1211	5312	<0.01
15	LSA Box 8	11	10.8	31	42	0	<83	57	55	313	1208	994	4360	<0.01
16	LSA Box 8	3	2.8	<12	48	0	<83	28	26	148	1148	934	4097	<0.01
17	LSA Box 8	1	0.8	<12	44	0	<83	34	32	182	1466	1252	5492	<0.01
18	LSA Box 8	14	13.8	39	52	4	<83	29	27	154	1342	1128	4948	<0.01
19	LSA Box 8	7	6.8	19	41	0	<83	54	52	296	1189	975	4277	<0.01
20	LSA Box 8	5	4.8	14	57	9	<83	59	57	324	1277	1063	4663	<0.01

REMARKS: Metal from LSA box 8 and box 9 (impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-175

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11.23.09 /

REVIEWER SIGNATURE/DATE [redacted] / 1-16-10

SURVEY LOCATION: **Drum Storage Area** | SURVEYOR: Joshua Bushman |

PURPOSE OF SURVEY: Characterization Survey | DATE: 11/23/09 | TIME: 1630

Instrument Type(s): (√ if used)	Detector Area (cm^2)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☒ Ludlum 2221/43-10-1	N/A	157320	PR157821	9/24/10	9/24/10	0.2	48	.358	.321
☒ Ludlum 2360/43-93	100	215279	PR197430	9/23/10	9/23/10	2	214	.176	.228
☐ Ludlum 2221/44-9	15.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
☒ Micro-R	N/A	1716	N/A	05-18-10	N/A	N/A	N/A	N/A	N/A

Contamination Limits: ($dpm/100cm^2$) Removable α **20 DPM** | Removable βγ **100 DPM** | Total α **1000 DPM** | Total βγ **5000 DPM**

Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	$dpm/100cm^2$ α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	$dpm/100cm^2$ βγ Removable	Gross CPM α Total	Net CPM α Total	$dpm/100cm^2$ α Total	Gross CPM βγ Total	Net CPM βγ Total	$dpm/100cm^2$ βγ Total	mR/hr
1	LSA Box 9	5	4.8	14	61	13	<83	36	34	194	715	501	2198	<0.01
2	LSA Box 9	2	1.8	<12	54	6	<83	21	19	108	245	31	<311	<0.01
3	LSA Box 9	2	1.8	<12	34	0	<83	17	15	86	201	0	<311	<0.01
4	LSA Box 9	0	0	<12	43	0	<83	24	22	125	194	0	<311	<0.01
5	LSA Box 9	0	0	<12	59	11	<83	15	13	74	226	12	<311	<0.01
6	LSA Box 9	1	0.8	<12	54	6	<83	9	7	<54	186	0	<311	<0.01
7	LSA Box 9	2	1.8	<12	63	15	<83	4	2	<54	257	43	<311	<0.01
8	LSA Box 9	1	0.8	<12	48	0	<83	5	3	<54	301	87	382	<0.01
9	LSA Box 9	1	0.8	<12	36	0	<83	14	12	69	218	4	<311	<0.01
10	LSA Box 9	1	0.8	<12	64	16	<83	8	2	<54	207	0	<311	<0.01

REMARKS: Metal from LSA box 9 and box 3 (non-impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-176

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11-23-09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

SAIC RADIOLOGICAL SURVEY REPORT (Supplement)

SURVEY LOCATION: **Drum Storage Area**

Contamination Limits: (dpm/100cm²)		Removable α **20 DPM**			Removable βγ **100 DPM**			Total α **1000 DPM**			Total βγ **5000 DPM**			
Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hr
11	LSA Box 9	12	11.8	33	96	48	150	11	9	<54	268	54	<311	<0.01
12	LSA Box 9	5	4.8	14	61	13	<83	7	5	<54	309	95	417	<0.01
13	LSA Box 9	4	3.8	<12	43	0	<83	9	7	<54	210	0	<311	<0.01
14	LSA Box 9	0	0	<12	49	1	<83	4	2	<54	207	0	<311	<0.01
15	LSA Box 9	1	0.8	<12	50	2	<83	3	1	<54	192	0	<311	<0.01
16	LSA Box 9	3	2.8	<12	42	0	<83	13	11	63	255	41	<311	<0.01
17	LSA Box 9	0	0	<12	56	8	<83	24	22	125	368	154	676	<0.01
18	LSA Box 9	7	6.8	19	44	0	<83	16	14	80	302	88	386	<0.01
19	LSA Box 9	1	0.8	<12	49	1	<83	10	8	<54	246	32	<311	<0.01
20	LSA Box 9	4	3.8	<12	39	0	<83	5	3	<54	206	0	<311	<0.01

REMARKS: Metal from LSA box 9 and box 3 (non-impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-176

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 11.23.09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

AVESI

Niagara Falls Storage Site, Lewiston, New York

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: **Drum Storage Area**	SURVEYOR: Joshua Bushman	Page 1 of 1
PURPOSE OF SURVEY: Characterization Survey	DATE: 12/1/09	TIME: 1130

Instrument Type(s): (√ if used)	Detector Area (cm^2)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☒ Ludlum 2221/43-10-1	N/A	157320	PR157821	9/24/10	9/24/10	0.2	48	.358	.321
☒ Ludlum 2360/43-93	100	215279	PR197430	9/23/10	9/23/10	2	200	.176	.228
☐ Ludlum 2221/44-9	15.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
☒ Micro-R	N/A	1716	N/A	05-18-10	N/A	N/A	N/A	N/A	N/A

Contamination Limits: ($dpm/100cm^2$) Removable α **20 DPM** Removable βγ **100 DPM** Total α **1000 DPM** Total βγ **5000 DPM**

Sample No.	Description/ Location	Gross CPM α Removable	Net CPM α Removable	$dpm/100cm^2$ α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	$dpm/100cm^2$ βγ Removable	Gross CPM α Total	Net CPM α Total	$dpm/100cm^2$ α Total	Gross CPM βγ Total	Net CPM βγ Total	$dpm/100cm^2$ βγ Total	mR/hr
1	LSA Box 13	4	3.8	<12	55	7	<83	136	134	762	3895	3695	16207	<0.01
2	LSA Box 13	11	10.8	31	80	32	100	38	36	205	497	297	1303	<0.01
3	LSA Box 13	182	181.8	508	385	337	1050	286	284	1614	760	560	2457	<0.01
4	LSA Box 13	194	193.8	542	706	658	2050	1101	1099	6245	4185	3985	17479	<0.01
5	LSA Box 13	5	4.8	14	48	0	<83	453	451	2563	1473	1273	5584	<0.01
6	LSA Box 13	7	6.8	19	99	51	159	20	18	103	3504	3304	14492	<0.01
7	LSA Box 13	7	6.8	19	67	19	<83	212	210	1194	10588	10388	45562	<0.01
8	LSA Box 13	13	12.8	36	73	25	<83	24	22	125	9750	9550	41886	<0.01
9	LSA Box 13	190	189.8	531	895	847	2639	1580	1578	8966	12400	12200	53509	<0.01
10	LSA Box 13	13	12.8	36	75	27	84	101	99	563	1894	1694	7430	<0.01

REMARKS: Metal from LSA box 13 (impacted metal)
Micro-R Dose Rate Background 0.01 mR/hr
WC-177

TECHNICIAN(S) SIGNATURE/DATE: [redacted] / 12·1·09 /

REVIEWER SIGNATURE/DATE: [redacted] / 1-16-10

ATTACHMENT 1a

Qualitative Description of the Contents of Waste Containers

NIAGARA FALLS STORAGE SITE - WASTE CHARACTERIZATION PROJECT
WASTE INVENTORY

		WC Container									
WC Container	**Matrix**	**Type**	**Volume**	**Units**	**% Full**	**Contents 1**	**Contents 2**	**Contents 3**	**Contents 4**	**Original Container ID**	**Notes**
WC-001	SOLID	Steel Drum	55	GALLON	100	PPE	PVC/Plastic			6N,6P	
WC-002	SOLID	Steel Drum	55	GALLON	100	PPE				177743	
WC-003	SOLID	Steel Drum	55	GALLON	100	PVC/Plastic	PPE			6B	
WC-004	SOLID	Steel Drum	55	GALLON	100	PVC/Plastic	Soil/Soil-Like			6A	
WC-005	SOLID	Steel Drum	55	GALLON	100	PPE	PVC/Plastic			177712	
WC-006	SOLID	Steel Drum	55	GALLON	100	PPE				177711	
WC-007	SOLID	Steel Drum	55	GALLON	100	PPE	PVC/Plastic			177747	
WC-008	SOLID	Steel Drum	55	GALLON	100	PPE	PVC/Plastic			177746	
WC-009	SOLID	Steel Drum	55	GALLON	100	PPE	PVC/Plastic			6G	
WC-010	SOLID	Steel Drum	55	GALLON	100	PPE				177748	
WC-011	SOLID	Steel Drum	55	GALLON	100	PPE				6I	
WC-012	SOLID	Steel Drum	55	GALLON	100	PPE	PVC/Plastic			SAIC #150	
WC-013	SOLID	Steel Drum	55	GALLON	100	PPE				6J	
WC-014	SOLID	Steel Drum	55	GALLON	100	PVC/Plastic	PPE			6C	
WC-015	SOLID	Steel Drum	55	GALLON	100	PPE				6K	
WC-016	SOLID	Steel Drum	55	GALLON	100	PVC/Plastic	PPE			148	
WC-017	SOLID	Steel Drum	55	GALLON	100	PPE				151	
WC-018	SOLID	Steel Drum	55	GALLON	100	PPE				177679	
WC-019	SOLID	Steel Drum	55	GALLON	75	PPE	Trash			177652	
WC-020	SOLID	Steel Drum	55	GALLON	99	PPE	Trash	PVC/Plastic		177680	
WC-021	SOLID	Steel Drum	55	GALLON	100	PPE	Trash			177677	
WC-022	SOLID	Steel Drum	55	GALLON	100	PPE	Trash			177651	
WC-023	SOLID	Steel Drum	55	GALLON	100	PPE	Trash	Tubing		177678	
WC-024	SOLID	Steel Drum	55	GALLON	100	PPE	Trash			149	
WC-025	SOLID	Steel Drum	55	GALLON	100	PPE	PVC/Plastic	Grass/Twigs		217	
WC-026	SOLID	Steel Drum	55	GALLON	100	Plastic Tubing	Pump Material	Trash		206; 0177732	
WC-027	SOLID	Steel Drum	55	GALLON	100	Plastic Tubing	Pump Material	Trash		215; Tag #0177731	
WC-028	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				6E, 6D	
WC-029	SOLID	Steel Drum	55	GALLON	100	PVC/Plastic	PPE	Soil/Soil-Like		6M or 169	
WC-030	SOLID	Steel Drum	55	GALLON	100	PPE	Soil/Soil-Like	PVC/Plastic		6F	
WC-031	SOLID	Steel Drum	55	GALLON	60	Soil/Soil-Like				177739	
WC-032	SOLID	Steel Drum	55	GALLON	30	Soil/Soil-Like				177632	
WC-033	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				177638	
WC-034	SOLID	Steel Drum	55	GALLON	70	Soil/Soil-Like				177634	
WC-035	SOLID	Steel Drum	55	GALLON	35	Soil/Soil-Like				177635	
WC-036	SOLID	Steel Drum	55	GALLON	70	Soil/Soil-Like				177621	
WC-037	SOLID	Steel Drum	55	GALLON	40	Soil/Soil-Like				177681	
WC-038	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like				177682	Drum headspace oxygen deficient upon opening per H&S monitoring
WC-039	SOLID	Steel Drum	55	GALLON	65	Soil/Soil-Like	Metal	PVC/Plastic		177683	
WC-040	SOLID	Steel Drum	55	GALLON	80	Soil/Soil-Like				177700	Moss-like material in top 1 inch of contents
WC-041	SOLID	Steel Drum	55	GALLON	75	Soil/Soil-Like				177695	
WC-042	SOLID	Steel Drum	55	GALLON	70	Soil/Soil-Like				177663	
WC-043	SOLID	Steel Drum	55	GALLON	65	Soil/Soil-Like				177662	
WC-044	SOLID	Steel Drum	55	GALLON	80	Soil/Soil-Like				177668	
WC-045	SOLID	Steel Drum	55	GALLON	75	Soil/Soil-Like				177713	
WC-046	SOLID	Steel Drum	55	GALLON	75	Soil/Soil-Like				Tag #177719; Writing #177694	Tag # does not match writing on side of drum
WC-047	SOLID	Steel Drum	55	GALLON	20	Soil/Soil-Like				177622/177631	
WC-048	SOLID	Steel Drum	55	GALLON	60	Soil/Soil-Like				177624	
WC-049	SOLID	Steel Drum	55	GALLON	10	Soil/Soil-Like				Tag #177602; Sheet #177699	Tag # does not match writing on side of drum
WC-050	SOLID	Steel Drum	55	GALLON	40	Soil/Soil-Like				Tag #177615; Writing #177685	Tag # does not match writing on side of drum
WC-051	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				177694	
WC-052	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				177716	
WC-053	SOLID	Steel Drum	55	GALLON	65	Soil/Soil-Like				177613	
WC-054	SOLID	Steel Drum	55	GALLON	80	Soil/Soil-Like				Tag #177614; Writing #177673/#177674	Tag # does not match writing on side of drum
WC-055	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				Tag #177612; Writing #177673/#177674	Tag # does not match writing on side of drum
WC-056	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				177714	
WC-057	SOLID	Steel Drum	55	GALLON	70	Soil/Soil-Like				177717	
WC-058	SOLID	Steel Drum	55	GALLON	40	Soil/Soil-Like				177718	
WC-059	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				177610; 177719	
WC-060	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like				177673; 177674	
WC-061	SOLID	Steel Drum	55	GALLON	20	Soil/Soil-Like				177676	
WC-062	SOLID	Steel Drum	55	GALLON	30	Soil/Soil-Like				177675	
WC-063	SOLID	Steel Drum	55	GALLON	30	Soil/Soil-Like				177671	

		WC Container									
WC Container	**Matrix**	**Type**	**Volume**	**Units**	**% Full**	**Contents 1**	**Contents 2**	**Contents 3**	**Contents 4**	**Original Container ID**	**Notes**
WC-064	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like				177661; 177670	
WC-065	SOLID	Steel Drum	55	GALLON	60	Soil/Soil-Like				177684	
WC-066	SOLID	Steel Drum	55	GALLON	30	Soil/Soil-Like				MH-45	
WC-067	SOLID	Steel Drum	55	GALLON	70	Soil/Soil-Like				177687	
WC-068	SOLID	Steel Drum	55	GALLON	40	Soil/Soil-Like				177692	Hole in drum lid from corrosion
WC-069	SOLID	Steel Drum	55	GALLON	65	Soil/Soil-Like				177674	
WC-070	SOLID	Steel Drum	55	GALLON	70	Soil/Soil-Like				177657	
WC-071	SOLID	Steel Drum	55	GALLON	60	Soil/Soil-Like				177658	
WC-072	SOLID	Steel Drum	55	GALLON	75	Soil/Soil-Like				177698	
WC-073	SOLID	Steel Drum	55	GALLON	20	Soil/Soil-Like				177659	
WC-074	SOLID	Steel Drum	55	GALLON	60	Soil/Soil-Like				177715	
WC-075	SOLID	Steel Drum	55	GALLON	60	Soil/Soil-Like				177672	
WC-076	SOLID	Steel Drum	55	GALLON	75	Soil/Soil-Like				177631	
WC-077	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				177645; 177693	
WC-078	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like				177690	
WC-079	SOLID	Steel Drum	55	GALLON	80	Soil/Soil-Like				177686	
WC-080	SOLID	Steel Drum	55	GALLON	15	Soil/Soil-Like				177656	
WC-081	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like				177669	
WC-082	SOLID	Steel Drum	55	GALLON	80	Soil/Soil-Like				177643; 177969	Added top layer of soil from existing drum #177969
WC-083	SOLID	Steel Drum	55	GALLON	65	Soil/Soil-Like				177697	
WC-084	SOLID	Steel Drum	55	GALLON	75	Soil/Soil-Like				177660	
WC-085	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like				177642	
WC-086	SOLID	Steel Drum	55	GALLON	85	Soil/Soil-Like				177630	
WC-087	SOLID	Steel Drum	55	GALLON	75	Soil/Soil-Like				177623	
WC-088	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like				177689	
WC-089	SOLID	Steel Drum	55	GALLON	70	Soil/Soil-Like				177619	
WC-090	SOLID	Steel Drum	55	GALLON	80	Soil/Soil-Like				177601	
WC-091	SOLID	Steel Drum	55	GALLON	30	Soil/Soil-Like				177620	
WC-092	SOLID	Steel Drum	55	GALLON	40	Soil/Soil-Like				177670	Small hole in side of drum
WC-093	SOLID	Steel Drum	55	GALLON	60	Soil/Soil-Like				177617	
WC-094	SOLID	Steel Drum	55	GALLON	75	Soil/Soil-Like				177673	
WC-095	SOLID	Steel Drum	55	GALLON	60	Soil/Soil-Like				177618	
WC-096	SOLID	Steel Drum	55	GALLON	20	Soil/Soil-Like				177716	
WC-097	SOLID	Steel Drum	55	GALLON	70	Soil/Soil-Like				177633	
WC-098	SOLID	Steel Drum	55	GALLON	30	Soil/Soil-Like				TWP-841	
WC-099	SOLID	Steel Drum	55	GALLON	40	Soil/Soil-Like				177666	
WC-100	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like				177637	
WC-101	SOLID	Steel Drum	55	GALLON	40	Soil/Soil-Like				177699	
WC-102	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				177688	
WC-103	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like				177685	
WC-104	SOLID	Poly Drum	80	GALLON	90	Soil/Soil-Like				OPD-5; 177735	
WC-105	SOLID	Steel Drum	55	GALLON	80	Soil/Soil-Like				177667	
WC-106	SOLID	Steel Drum	55	GALLON	40	Soil/Soil-Like				177611	
WC-107	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				177692	
WC-108	SOLID	Steel Drum	55	GALLON	95	PPE	PVC/Plastic			177637	
WC-109	SOLID	Steel Drum	55	GALLON	30	Soil/Soil-Like	Metal			177705	
WC-110	SOLID	Steel Drum	55	GALLON	45	Soil/Soil-Like				Drum #1-5	
WC-111	SOLID	Steel Drum	55	GALLON	95	PPE	Soil/Soil-Like	Bag Filters		Drum # 2-BF	
WC-112	SOLID	Steel Drum	55	GALLON	95	PVC/Plastic				09/02 PPE	
WC-113	SOLID	Steel Drum	55	GALLON	80	PVC/Plastic				177710	
WC-114	SOLID	Steel Drum	55	GALLON	80	PVC/Plastic				177709	
WC-115	SOLID	Steel Drum	55	GALLON	70	PVC/Plastic				177744	
WC-116	SOLID	Steel Drum	55	GALLON	80	PVC/Plastic				177724	
WC-117	SOLID	Steel Drum	55	GALLON	90	PVC/Plastic				177725	
WC-118	SOLID	Steel Drum	55	GALLON	75	PVC/Plastic				177722	
WC-119	SOLID	Steel Drum	55	GALLON	80	PVC/Plastic				177723	
WC-120	SOLID	Steel Drum	55	GALLON	75	PVC/Plastic				177745	
WC-121	SOLID	Steel Drum	55	GALLON	70	PVC/Plastic				177720	
WC-122	SOLID	Steel Drum	55	GALLON	65	PVC/Plastic				177706	
WC-123	SOLID	Steel Drum	55	GALLON	80	PVC/Plastic				177645	
WC-124	SOLID	Steel Drum	55	GALLON	90	PVC/Plastic				177646	
WC-125	SOLID	Steel Drum	55	GALLON	90	PVC/Plastic				177704	
WC-126	SOLID	Steel Drum	55	GALLON	90	PVC/Plastic				177647	

		WC Container									
WC Container	**Matrix**	**Type**	**Volume**	**Units**	**% Full**	**Contents 1**	**Contents 2**	**Contents 3**	**Contents 4**	**Original Container ID**	**Notes**
WC-127	SOLID	Steel Drum	55	GALLON	90	PVC/Plastic				177707	
WC-128	SOLID	Steel Drum	55	GALLON	75	PVC/Plastic	Metal			177708	
WC-129	SOLID	Steel Drum	55	GALLON	75	Metal	PVC/Plastic			177644	
WC-130	SOLID	Steel Drum	55	GALLON	90	Canvas Tarp				177709	
WC-131	SOLID	Steel Drum	55	GALLON	70	Soil/Soil-Like	Metal			177730	
WC-132	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like	Metal			177540	
WC-133	SOLID	Steel Drum	55	GALLON	80	Soil/Soil-Like	Metal			177729	
WC-134	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like	Metal			177749	
WC-135	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like	Metal			177750	
WC-136	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like	Metal			177740	
WC-137	SOLID	Poly Drum	80	GALLON	90	Soil/Soil-Like	Wood	Metal		OPD-9 (177727)	
WC-138	SOLID	Poly Drum	80	GALLON	95	Soil/Soil-Like	Wood	Metal		OPD-9 (177737)	
WC-139	SOLID	Poly Drum	80	GALLON	90	Soil/Soil-Like	Wood	Metal		OPD-2 (177728)	Elevated carbon monoxide level upon opening per H&S monitoring
WC-140	SOLID	Poly Drum	80	GALLON	90	Soil/Soil-Like	Wood	Metal		OPD-1 (177738)	
WC-141	SOLID	Poly Drum	80	GALLON	80	PVC/Plastic	PPE			OPD-7 (177726)	
WC-142	SOLID	Poly Drum	80	GALLON	80	Soil/Soil-Like	Wood	Metal		OPD-4 (177734)	
WC-143	SOLID	Poly Drum	80	GALLON	85	Soil/Soil-Like	Wood	Metal		OPD-3 (177733)	
WC-144	SOLID	Steel Drum	55	GALLON	80	PVC/Plastic	Soil/Soil-Like			170 (9/02)	
WC-145	SOLID	Steel Drum	55	GALLON	70	PVC/Plastic	Soil/Soil-Like			171 (9/02)	Removed small piece of apparent pitchblende ore (600k CPM gamma)
WC-146	SOLID	Steel Drum	55	GALLON	40	Soil/Soil-Like				162029	
WC-147	SOLID	Steel Drum	55	GALLON	60	Soil/Soil-Like				9905006-270	
WC-148	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like				162029	
WC-149	SOLID	Steel Drum	55	GALLON	80	Soil/Soil-Like	PVC/Plastic	Concrete		177655	Drum lid severely corroded
WC-150	SOLID	Steel Drum	55	GALLON	75	Soil/Soil-Like				177696	
WC-151	SOLID	Steel Drum	55	GALLON	95	Concrete				Concrete Cores	Removed concrete cores, transferred to new drum
WC-152	SOLID	Steel Drum	55	GALLON	70	Soil/Soil-Like	PVC/Plastic			177654	
WC-153	SOLID	Steel Drum	55	GALLON	70	Concrete	Soil/Soil-Like	PVC/Plastic		177653	
WC-154	SOLID	Steel Drum	55	GALLON	90	PVC/Plastic	Metal			6P; VPG IDW Container	Contents include 5 carboys (1 from VPG)
WC-155	SOLID	Steel Drum	55	GALLON	60	PVC/Plastic				Carboys	
WC-156	SOLID	Steel Drum	55	GALLON	95	Soil/Soil-Like	PVC/Plastic			Vegetation drums; Tetra Tech samples	Contents include vegetation from 2 existing drums and box of samples from Tetra Tech
WC-157	SOLID	Steel Drum	55	GALLON	90	PVC/Plastic				Carboys	
WC-158	SOLID	Steel Drum	55	GALLON	95	PPE	PVC/Plastic	Soil/Soil-Like	Metal	N/A	
WC-159	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like	PVC/Plastic	PPE	Metal	N/A	
WC-160	SOLID	Steel Drum	55	GALLON	95	PPE	Soil/Soil-Like			LSA Box #5	
WC-161	SOLID	Steel Drum	55	GALLON	100	Absorbent	PPE	Styrofoam		LSA Box #5 (3048)	
WC-162	SOLID	Steel Drum	55	GALLON	100	PPE				LSA Box #5 (3048)	
WC-163	SOLID	Steel Drum	55	GALLON	100	PPE				LSA Box #5 (3048)	
WC-164	SOLID	Steel Drum	55	GALLON	100	PPE	PVC/Plastic			LSA Box #5 (3048)	
WC-165	SOLID	Steel Drum	55	GALLON	100	PPE	PVC/Plastic	Soil/Soil-Like		LSA Box #5 (3048)	
WC-166	SOLID	Steel Drum	55	GALLON	95	PPE	Soil/Soil-Like	Glass		LSA Box 1 (3076); LSA Box 5 (3048)	Contents include soil from old sample containers, material from LSA Box 5 and LSA Box 1, pitchblende ore (all elevated activity)
WC-167	SOLID	LSA Box	3.6	CUBIC YARD	95	PPE	PVC/Plastic			LSA Box #5 (3048); LSA Box 10 (3075)	Contents from LSA Box 10 added to this container (LSA Box 5)
WC-168	SOLID	LSA Box	3.6	CUBIC YARD	100	PPE	PVC/Plastic			LSA Box 11 (2777)	Contents from LSA Box 11 added to this container (LSA Box 10)
WC-169	SOLID	LSA Box	3.6	CUBIC YARD	95	Metal				LSA Box 4; LSA Box 12	Contents from LSA Box 4 added to this container (LSA Box 12); no detectable activity on metal; survey report attached
WC-170	SOLID	LSA Box	3.6	CUBIC YARD	100	Metal				LSA Box 11 (2777); LSA Box 6; LSA Box 4; LSA Box	Metal from LSA Box 6, LSA Box 4, LSA Box 12, LSA Box 2 added to this container (LSA Box 11); elevated activity on metal; survey report attached
WC-171	SOLID	LSA Box	3.6	CUBIC YARD	95	Metal				LSA Box 4; LSA Box 6	Metal from LSA Box 6 added to this container (LSA Box 4); no detectable activity on metal; survey report attached
WC-172	SOLID	LSA Box	3.6	CUBIC YARD	100	Metal				LSA Box 7; LSA Box 2	Metal from LSA Box 2 and LSA Box 7 added to this container (LSA Box 6); no detectable activity on metal; survey report attached
WC-173	SOLID	LSA Box	3.6	CUBIC YARD	100	Metal	Wood	Concrete		LSA Box 6; LSA Box 7; LSA Box 2	Combined materials from LSA Box 6 and LSA Box 7 into this container (LSA Box 2); sampled concrete and wood; elevated activity; survey report attached.
WC-173	SOLID	LSA Box	3.6	CUBIC YARD	100	Metal	Wood	Concrete		LSA Box 6; LSA Box 7; LSA Box 2	Combined materials from LSA Box 6 and LSA Box 7 into this container (LSA Box 2); sampled paint chips; elevated activity; survey report attached.
WC-174	SOLID	LSA Box	3.6	CUBIC YARD	100	Metal				LSA Box 7; LSA Box 8; LSA Box 2	Combined metal from LSA Box 8 and LSA Box 2 into this container (LSA Box 7); no detectable activity on metal; survey report attached
WC-175	SOLID	LSA Box	3.6	CUBIC YARD	100	Metal				LSA Box 8; LSA Box 9	Material from LSA Box 9 added to this container (LSA Box 8); elevated activity; survey report attached
WC-176	SOLID	LSA Box	3.6	CUBIC YARD	100	Metal	Bentonite	Wood	PVC/Plastic	LSA Box 9; LSA Box 3	Material from LSA Box 3 added to this container (LSA Box 9); no detectable activity; survey report attached
WC-177	SOLID	LSA Box	3.6	CUBIC YARD	100	Metal				LSA Box 13	This container previously LSA Box 13; elevated activity; survey report attached
WC-179	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like	Metal			LSA Box 1	
WC-180	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like	Glass			LSA Box 1 (3076)	Contents include metal sample containers taken from LSA Box 1 (3076)
WC-181	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like	Glass			LSA Box 1 (3076)	Contents include soil from old sample containers
WC-182	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like	Metal	Cardboard	Styrofoam	LSA Box 1 (3076)	Contents include soil from old Shelby tubes
WC-183	SOLID	Steel Drum	55	GALLON	100	PPE	Soil/Soil-Like			N/A	
WC-184	SOLID	Steel Drum	55	GALLON	100	PPE	Cardboard	Soil/Soil-Like		N/A	
WC-185	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like	Glass			LSA Box 1	Soil from old sample containers; possible mercury contamination
WC-186	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like	Glass			LSA Box 1	Soil samples from LSA Box 1; possible mercury contamination
WC-187	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like	Glass			LSA Box 1	Soil samples from LSA Box 1; possible mercury contamination
WC-188	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	Soil from hydraulic oil spill clean up box; possible asbestos contamination
WC-189	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like	PPE			N/A	Contents include black powder containers and PPE used for sampling; possible PCB contamination per historical analytical data

		WC Container									
WC Container	**Matrix**	**Type**	**Volume**	**Units**	**% Full**	**Contents 1**	**Contents 2**	**Contents 3**	**Contents 4**	**Original Container ID**	**Notes**
WC-190	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like	PPE			N/A	Soil from hydraulic oil spill clean up box; possible asbestos contamination
WC-191	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like	PPE			N/A	Soil from hydraulic oil spill clean up box; possible asbestos contamination
WC-192	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like	PPE			N/A	Soil from hydraulic oil spill clean up box; possible asbestos contamination
WC-193	SOLID	Steel Drum	55	GALLON	95	Soil/Soil-Like	PPE			N/A	Soil from hydraulic oil spill clean up box; possible asbestos contamination
WC-194	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like	Metal	Wood	PPE	N/A	Soil from hydraulic oil spill clean up box; possible asbestos contamination
WC-195	SOLID	Steel Drum	55	GALLON	95	Spongeblast				N/A	
WC-196	SOLID	Steel Drum	55	GALLON	30	Spongeblast	Soil/Soil-Like			N/A	
WC-197	SOLID	Steel Drum	55	GALLON	30	Spongeblast				N/A	
WC-198	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like	PVC/Plastic	PPE		N/A	Contents include black powder; possible PCB contamination
WC-199	SOLID	Steel Drum	55	GALLON	90	PPE	Soil/Soil-Like	Wood		N/A	Contents include HEPA vacuum dust, wood (elevated activity), and PPE
WC-200	SOLID	Steel Drum	55	GALLON	90	PPE	Soil/Soil-Like	PVC/Plastic		N/A	Contents include HEPA vacuum dust and PPE
WC-201	SOLID	Steel Drum	55	GALLON	90	PPE	Soil/Soil-Like			N/A	Contents include HEPA vacuum dust and PPE
WC-202	SOLID	Steel Drum	55	GALLON	90	PPE	Soil/Soil-Like			N/A	Contents include HEPA vacuum dust, filter, and PPE
WC-203	SOLID	Steel Drum	55	GALLON	20	Soil/Soil-Like				N/A	Contents include HEPA vacuum dust and filter
WC-204	SOLID	Steel Drum	55	GALLON	95	Spongeblast				N/A	
WC-205	SOLID	Steel Drum	55	GALLON	90	PPE	Soil/Soil-Like			N/A	Contents include small bag of soil and drywall (elevated activity) and PPE
WC-206	SOLID	Steel Drum	55	GALLON	30	Soil/Soil-Like	PVC/Plastic			N/A	Contents include HEPA vacuum dust, hose, and filter
WC-207	SOLID	Steel Drum	55	GALLON	40	Absorbent	Soil/Soil-Like			N/A	
WC-208	SOLID	Steel Drum	55	GALLON	90	Styrofoam	Soil/Soil-Like			SUD 0206	
WC-209	SOLID	Steel Drum	55	GALLON	90	PVC/Plastic	Styrofoam	Soil/Soil-Like	Wood	SUD 0606	
WC-210	SOLID	Steel Drum	55	GALLON	95	Styrofoam	PVC/Plastic	Soil/Soil-Like	Wood	SUD 0506	
WC-211	SOLID	Steel Drum	55	GALLON	100	PVC/Plastic	Styrofoam	PPE	Wood	SUD 0406	
WC-212	SOLID	Steel Drum	55	GALLON	95	PVC/Plastic	Styrofoam	Soil/Soil-Like	Wood	SUD 0706	
WC-213	SOLID	Steel Drum	55	GALLON	100	PVC/Plastic	Styrofoam	Wood		SUD 0306	
WC-214	SOLID	Steel Drum	55	GALLON	90	PVC/Plastic	Soil/Soil-Like	Styrofoam	Wood	SUD 0106	
WC-215	SOLID	Steel Drum	55	GALLON	100	PPE	Soil/Soil-Like			N/A	
WC-216	SOLID	Steel Drum	55	GALLON	100	PVC/Plastic				N/A	
WC-217	SOLID	Steel Drum	55	GALLON	80	PVC/Plastic	Soil/Soil-Like	PPE		N/A	
WC-218	WATER	Steel Drum	55	GALLON	95	Water				N/A	Contents generated from RI IDW drums with free liquids; included in composite sample WC-219
WC-219	WATER	Steel Drum	55	GALLON	95	Water				N/A	Contents generated from RI IDW drums with free liquids; composite sample WC-219 includes liquid from WC-218
WC-220	OIL	Steel Drum	55	GALLON	80	Oil				N/A	Waste oil drum
WC-221	OIL	Steel Drum	55	GALLON	30	Oil				N/A	Waste oil sludge drum
WC-222	SOLID	Steel Drum	55	GALLON	80	Soil/Soil-Like	PPE	PVC/Plastic		N/A	Possible mercury contamination per H&S monitoring; WC-225 (liquid mercury) also stored inside this container for security
WC-223	OIL	Steel Drum	55	GALLON	10	Oil	Metal			N/A	Contents include 10 metal cans containing oil; absorbent added to drum after sampling
WC-224	SOLID	LSA Box	3.6	CUBIC YARD	90	Wood	PPE	PVC/Plastic	Soil/Soil-Like	N/A	Contents from RI Addendum field work include wood from driller decontamination pad, PVC from well abandonment, and various radiological trash/PPE; no detectable activity
WC-225	MERCURY	Plastic Jar	250	ML	30	Liquid Mercury				N/A	Liquid mercury (approximately 200 mL); stored inside WC-222 container for security
WC-226	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like				N/A	RI Addendum driller decontamination pad solids
WC-227	SOLID	LSA Box	3.6	CUBIC YARD	100	PPE	Soil/Soil-Like	PVC/Plastic		N/A	RI Addendum driller decontamination IDW water drums (halved); sediment sampled
WC-600	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP923
WC-601	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP923
WC-602	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP922
WC-603	SOLID	Steel Drum	55	GALLON	50	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP922
WC-604	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP925
WC-605	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP924
WC-606	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP926
WC-607	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP927
WC-608	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP928
WC-609	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP930
WC-610	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP931
WC-611	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP929
WC-612	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP936
WC-613	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP939
WC-614	SOLID	Steel Drum	55	GALLON	100	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP921
WC-615	SOLID	Steel Drum	55	GALLON	60	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP921
WC-616	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP935
WC-617	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP938
WC-618	SOLID	Steel Drum	55	GALLON	40	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP938
WC-619	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP941
WC-620	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP940
WC-621	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP937
WC-622	SOLID	Steel Drum	55	GALLON	40	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP937
WC-623	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP942
WC-624	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP943

NIAGARA FALLS STORAGE SITE - WASTE CHARACTERIZATION PROJECT
WASTE INVENTORY

		WC Container									
WC Container	**Matrix**	**Type**	**Volume**	**Units**	**% Full**	**Contents 1**	**Contents 2**	**Contents 3**	**Contents 4**	**Original Container ID**	**Notes**
WC-625	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP932
WC-626	SOLID	Steel Drum	55	GALLON	40	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP932
WC-627	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP934
WC-628	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP933
WC-629	SOLID	Steel Drum	55	GALLON	40	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP930
WC-630	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP929
WC-631	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP928
WC-632	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP927
WC-633	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP931
WC-634	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP932
WC-635	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP933
WC-636	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP926
WC-637	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP925
WC-638	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP924
WC-639	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP939
WC-640	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP942
WC-641	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP937
WC-642	SOLID	Steel Drum	55	GALLON	90	Soil/Soil-Like				N/A	RI Addendum soil cuttings from TWP940
WC-643	WATER	Steel Drum	55	GALLON	100	Water					RI Addendum DNAPL driller decontamination water
WC-644	WATER	Steel Drum	55	GALLON	100	Water					RI Addendum DNAPL driller decontamination water
WC-645	WATER	Steel Drum	55	GALLON	100	Water					RI Addendum DNAPL driller decontamination water
WC-646	WATER	Steel Drum	55	GALLON	100	Water					RI Addendum DNAPL driller decontamination water
TANK1	WATER	Poly Tank	1550	GALLON	85	Water					
TANK2	WATER	Poly Tank	1550	GALLON	85	Water					
TANK3	WATER	Poly Tank	550	GALLON	55	Water					

ATTACHMENT 2

Field Documentation Requirements

ATTACHMENT 2: FIELD DOCUMENTATION REQUIREMENTS

This Attachment outlines the standard practices and procedures for documenting a sampling episode. All project-specific documentation requirements must be presented in the SAP. This includes, but is not limited to, field documentation, sample labeling, and chain of custody maintenance and requirements. Indelible ink shall be used for all documentation to support the use of these records in any potential legal proceedings. Protocols for corrections to documentation shall not eliminate data entries. Corrections shall be made by placing a single line through an incorrect entry, noting corrected information, recorder's initials, and date correction was performed. Any error discovered on a document shall be corrected by the individual responsible for the entry, and shall be initialed by the person making the correction. Following field investigative activities, all project documentation becomes a part of the final evidence file. Further details regarding applicable requirements are provided within this Attachment.

A2.1 Daily Quality Control Report (DQCR)

The Contractor shall prepare a Daily Quality Control Report (DQCR) documenting each day of project field operations. The DQCR shall be signed by the site quality control officer and submitted electronically to the USACE Buffalo District Project Manager on a weekly basis. The DQCR shall include, at a minimum, the following information:

- A daily summary of site activities;
- Weather information;
- Field instrument measurements;
- Identification of all field and control samples collected;
- Quality assurance (QA) sample tables that match up primary, replicate (quality control (QC)/QA), and other field control samples (e.g., blanks);
- Copies of chain-of-custody forms, field-generated analytical results, and any other project forms that are generated;
- Results of quality control activities performed including field instrument calibrations;
- List of Contractor/Subcontractors and area of responsibility for work performed;
- List of site visitors;
- List of on-site equipment;
- Any deviations from the FSP including the justification for the deviation;
- Any problems encountered during daily field activities; and,
- A summary of any instructions received from USACE or government personnel.

Any deviations that may affect the project objectives shall be immediately conveyed to the USACE Project Manager. The Contractor shall not commence with any deviations from the work plans without acceptance by the USACE Project Manager and/or Contracting Officer Representative.

A2.2 Field Logbook and Logsheet Requirements

All information pertinent to the field investigative activities, including field instrumentation calibration data, shall be recorded in field logbooks. Each logbook shall have the site name and project name and number on the inside front cover. Sufficient information shall be recorded in the logbooks to permit reconstruction of all conducted field investigative activities. The logbooks shall be bound and the pages shall be consecutively numbered and water resistant. Entries in the

logbooks shall be made in black waterproof ink and shall include, at a minimum, a description of all accomplished activities, names of individuals involved in field investigative activities, date and time of drilling, excavation, and/or sampling at each location, weather conditions, a description of any problems encountered, and all field measurements. Lot numbers, manufacturer names, and expiration dates of standard solutions used for field instrument calibration shall be recorded in the field logbooks. A summary of each day's activities shall also be recorded in the logbooks. If any recorded information is noticed to be in error, the original entry shall be crossed out so that the original entry is still legible and shall be replaced with the new entry. All such changes shall be initialed by the Field Manager. At the conclusion of each work day, the person responsible for maintaining the logbook shall sign and date the day's documentation entries.

Information recorded on other project documents need not be repeated in the logbooks (e.g., boring logs, drum logs, etc.), although a summary of other project related field documentation shall be included where deemed necessary. All field logbooks shall be kept in the possession of the Field Manager or the recording author, or in a secure place when not being utilized for field work. The technical planning team may also elect to establish documentation requirements that follow a more uniform organization than a field logbook (e.g., project forms). Any forms shall be task specific and incorporate appropriate topics. The Contractor shall submit these forms for review and acceptance by the USACE. Upon completion of the field activities, all logbooks shall become part of the final project evidence file. The title page of each logbook shall be labeled as follows:

- Logbook title (e.g., Luckey FUSRAP Site FSP);
- Project name (e.g., Luckey FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Soil Sampling);
- USACE contract number and project delivery order number;
- Start date for field investigative activities recorded in the logbook; and,
- End date for field investigative activities recorded in the logbook.

Logbook entries shall include, but not be limited, to the following information:

- Name and title of author and Field Manager;
- Date and times of arrival and departure from site;
- Description of the sampling and/or monitoring activity;
- Name and address of the field contact(s);
- Names and responsibilities of field crew members;
- Names, affiliations, and purpose of any site visitors;
- Level of personal protective equipment worn at the site and/or specific sampling locations;
- Weather conditions on the day of sampling and any additional environmental conditions or observations relevant to the field activities;
- Field instrumentation or equipment used, and purpose of use (e.g., health and safety screening or sample selection for laboratory analysis). Note source, quality or lot numbers for any supplies or reagents (e.g., sample containers, preservatives, reagents, water for field blanks/field control samples, and decontamination procedures). Retain any certificates or information supplied with the equipment used;
- Type, matrix, and characterization method for generated IDW;
- Sample collection method and sample handling procedures such as filtration and executed preservation techniques including the distinction between composite and grab samples;
- Number and volume of sample(s) collected with each sample given a unique sampling identification;
- Document the sample locations on a site plan. The exact locations of sampling points shall be documented for purposes of generating an accurate representation

of the site conditions using the field investigative data and defining data gaps that could impact the project objectives specified in this SOW;

- Location, description and log of sampling point photographs;
- Identify sample numbers, volumes, and containers (number, size, type) used for each sample collected. Note the day and time of each sample, identify any associated QC samples or any factors that may affect quality. Also, identify the name of the sample collector;
- Record any field measurements, field screening/analytical results generated, calibration methods used, field results, and QC information;
- Identify decontamination procedures employed for sampling equipment;
- Document appropriate references to maps and photographic logs of the site;
- Record information on scheduling modifications, change orders, sampling or drilling decisions, changes, and/or modifications accepted by the USACE;
- Information regarding access agreements, if applicable;
- Describe the number of shipping coolers packed, note chain of custody numbers or attach a copy of the chain of custody, and record the mode of transportation, and applicable tracking numbers;
- Decontamination procedures;
- IDW documentation including types and numbers of containers (or drums), contents, type, and approximate volume of waste, and waste classification (hazardous or non-hazardous);
- Record name and address of all receiving laboratories and couriers;
- Information on sample preservation methods;
- Maintain appropriate documentation for IDW. Note contents and volumes of waste generated, storage, and disposal methods used. In addition, record all analytical methods and sampling results for the IDW in order to generate waste disposal characterization as necessary; and,
- Name and address of the government QA laboratory for the project.

Field data collected during invasive soil sampling shall be recorded on boring logs formatted specifically for the field investigative activities at the Luckey site.

A2.3 Photographic Records

A photographic record shall be kept that documents USACE selected aspects of the field investigative activities. Photographs shall be taken to document visual information such as sample locations, field conditions, indications of visual contamination, or additional items as determined by the on-site USACE representative. In some cases, a photograph of the actual sample collected may be required from two or more reference points to facilitate relocating the sampling point at a later date or at locations as specified by the on-site USACE representative. All photographs shall be digitized images with descriptive captions and unique identifiers that are e-mailed to addresses provided by the USACE. A site photo map shall also be included with the site photographs and clearly indicate the location and direction of each photograph.

For each photograph taken during the field investigative activities, field logbook entries shall include the following items:

- Date and time;
- Photographer (name and signature);
- Site name;
- General direction faced and description;
- Unique identifier in sequential order for each photograph; and,
- Site photo map.

In addition to the information recorded in the field log book, one or more photograph reference maps shall be prepared. If available, a GPS-enabled camera is preferred to allow map-based referencing of each photo. Photographs taken to document sampling points shall include two or more permanent reference points within the photograph to facilitate relocating the point at a later date.

A2.4 Sample Documentation

Sample Numbering System

A unique sample numbering system shall be used to identify each sample collected and submitted for laboratory analysis. The unique sample number shall provide a tracking procedure to allow ease of data retrieval, data reduction, and evaluation and to ensure that sample identifier are not duplicated. The sample identification numbers shall be maintained by the Field Manager in the field logbook and on sample field sheets. Sample identification numbers shall be used on all sample labels or tags, field data sheets and/or logbooks, chain of custody records, and all other applicable documentation used during the project. Each container used to collect samples shall be properly handled. The sample numbering system shall also be used for duplicate samples so that these samples will not be recognized as duplicates by the QA laboratory. Other field QC samples, however, shall be numbered so that they can be readily identified. Samples shall be numbered as continuation of previous sampling efforts or provide with unique samples numbers not previously used. The sample numbering system shall be accepted by the USACE prior to use.

Sample Labels

Sample labels shall be affixed to all containers during sampling activities at the time of sample collection and securely affixed to the container prior to shipment. Sample label information shall include, but not be limited to, the following:

- Contractor name;
- Sample identification number;
- Site name;
- Sample station number;
- Requested analysis;
- Type of sample (discrete, grab, or composite);
- Type of chemical preservative present in container;
- Date and time of sample collection; and,
- Sampler's name and signature or initials.

Sample Field Sheets and/or Logbook

Each field team shall have a field logbook containing, at a minimum, a Table of Contents, task team activity log sheets, and sample log sheets or other applicable sheets depending upon the task in progress. Each field logbook shall consist of bound forms based upon this SOW and the Contractor's QAPP. Field personnel shall complete the field logbooks during sampling or other activities. The sample log/field sheets shall contain the following information:

- Project name or identification;
- Name and affiliation of sample collector;
- Instrument measurements;
- Sample identification numbers;
- Date and time of sample collection;
- Method of sample collection;
- Deviations from sample procedure;
- Analyses required; and,

- Location referencing methods.

The sample field/log sheet shall also act as the field chain of custody form for each collected sample until the samples are transferred to the laboratory chain of custody form for shipment. The field logbook and/or sample field sheet entries must be legible, factual, detailed, and objective. Field logbooks and sample field sheets shall be the responsibility of the Contractor's Field Manager. However, all field personnel shall be familiar with and maintain field logbooks. The lead Field Manager also shall maintain a daily logbook.

Chain of Custody Records

Chain of custody procedures provide documentation of the handling of each sample from the time it is collected until it is destroyed. Chain of custody procedures are implemented so that a record of sample collection, transfer of sample between personnel, sample shipping, and receipt by the laboratory that will analyze the sample is maintained. The chain of custody record serves as a legal record of possession of the sample. To simplify the chain of custody record and eliminate potential litigation problems, as few people as possible should handle the sample or physical evidence during the investigation. The chain of custody procedures implemented for the project shall document the handling and security of each sample from the time of collection through and including completion of the laboratory analysis. A sample is considered under custody if one or more of the following criteria are met:

- The sample is in the sampler's possession;
- The sample is in the sampler's view after being in possession;
- The sample was in the sampler's possession and then was placed into a locked area to prevent tampering; and,
- The sample is in a designated secure area.

In addition to the chain of custody record, there is also a chain of custody seal. The chain of custody seal is an adhesive seal placed in areas such that if a sealed container is opened, the seal would be broken. The chain of custody seal ensures that no sample tampering occurred between the field and the laboratory analysis.

Custody shall be documented throughout the field investigative activities for all collected samples using the standard chain of custody form with one form initiated each day samples are collected. The record shall accompany the samples from the site to the laboratory and shall be returned to the laboratory coordinator with the final analytical report. All personnel with sample custody responsibilities shall be required to sign, date, and note the time on the chain of custody form when relinquishing the samples from their immediate custody (except in the case where samples are placed into designated secure areas for storage prior to shipment). Bills of lading or air bills shall be used as custody documentation during times when samples are shipped from the site to the laboratory. These documents shall be retained as part of the permanent sample custody documentation. The air bill number or registered mail serial number shall be recorded in the remarks section of the chain of custody record.

Information shall be documented on all chain of custody forms as follows:

- Sample number (for each sample in the shipment);
- Collection date and time (for each sample in the shipment);
- Number of containers for each sample;
- Sample description (i.e., environmental matrix);
- Analysis required for each sample;
- Sample preservation technique(s);
- Site Point of Contact (POC);
- Laboratory POC;

- Chain of custody or shipment number;
- Shipping address of the laboratory;
- Date, time, method of shipment, courier, and air bill number; and,
- Signatures when custody is transferred between individuals.

The individual responsible for shipping the samples from the field to the laboratory shall be responsible for completing the chain of custody form. This individual shall also inspect the form for completeness and accuracy. In addition, this individual shall be responsible for determining the shipping classification for samples under United States Department of Transportation (USDOT) Regulatory Requirements. After the form has been inspected and determined to be satisfactorily completed, the responsible individual shall sign, date, and note the time of transfer on the form. For commercial carriers, the chain of custody form shall be placed in a sealable plastic bag and placed inside the cooler used for sample transport after the field copy of the form has been detached. For laboratory couriers, the chain of custody form shall be placed in a sealable plastic bag on the top of the cooler for the courier to accept custody. The field copy of the form shall be appropriately filed and kept at the site for the duration of the field investigative activities.

Shipping containers shall be secured using nylon strapping tape and chain of custody seals. Chain of custody seals shall be placed on each cooler used for sample transport. These seals shall consist of a tamper-proof adhesive material placed across the lid and body of the coolers in such a manner that if the cooler is opened, the seals will be broken. Chain of custody seals placed in this manner will ensure that no sample tampering occurs between the time of sample placement in the coolers to the time the coolers are opened for analysis at the laboratory. Cooler custody seals shall be signed and dated by the individual responsible for completing the chain of custody form contained within the cooler.

Contracted Laboratory Custody Responsibilities

The contracted analytical laboratory shall document the receipt of analytical samples by accepting custody of the samples from the accepted shipping company. In addition, the contracted laboratory shall document the condition of the shipping coolers and received samples upon receipt and shall immediately inform the USACE Buffalo District Project Manager and Project Chemist if any sample containers are broken or if any tampering occurred with the seals on the cooler(s). This documentation shall be accomplished by completing the cooler receipt checklist as provided in the Contractor's QAPP.

A cooler receipt check list shall be placed either into each shipping container together with the completed chain of custody form, or provided to the laboratory at the start of the project. A copy of the completed check list shall be faxed to both the USACE Buffalo District Project Manager and the Project Chemist immediately after it has been completed at the laboratory. The original completed checklist shall be transmitted with the final analytical results from the laboratory.

A2.5 Field Analytical Records

As discussed in previous Sections, documentation of all field activities shall be maintained through the used of field logbooks and applicable field forms (i.e., field sample sheets, instrument calibration logs, etc.). All field documentation, including field analytical records, shall be the responsibility of the Contractor's Site Manager.

Field instrumentation shall be used to scan soils for radiological materials using an appropriate radiological detector as accepted by the USACE and the OhioEPA and in accordance with the Contractor's SAP. Each field instrument used for measurement or analysis shall be calibrated in accordance with the manufacturer's recommendations with the calibration procedures provided in the SAP. Calibration checks shall also be performed as recommended by the manufacturer

during the course of field investigative activities. Calibration records shall be maintained in a field logbook. Additionally, all field personnel shall be properly trained in the operation and calibration of the field instrumentation. Any field instrumentation out of calibration shall be immediately re-calibrated. When field instrumentation is out of calibration or damaged, an evaluation shall be made to ascertain the validity of previous results since the last acceptable (or valid) calibration check. If it is necessary to ensure the acceptability of suspect data, the originally required tests shall be repeated if possible. Data or measurements since the last acceptable (or valid) calibration shall be noted as suspect in the field logbook and further evaluated to determine the suitability of the data for its intended use.

Malfunctioning equipment shall be replaced and any questionable measurements shall be documented in the field logbook. The Contractor's Field Manager shall be responsible for ensuring that the field instrumentation are of the proper range, type, and accuracy for the measurements being performed and all field instrumentation are properly calibrated. Field instrumentation shall undergo response verification checks as recommended by the manufacturer to detect anomalies in the data being generated. If an unacceptable response is obtained, the data shall be labeled suspect, the problem documented in the field logbook, and appropriate corrective actions immediately implemented. Corrective actions shall be accepted by the USACE prior to implementation.

All acquired field analytical and monitoring data shall be recorded in the field logbooks on a daily basis. At the end of each week, this data shall be extracted from the logbooks and incorporated into the project analytical data base. All field analytical and monitoring data shall be used together with laboratory analytical data to evaluate the nature and extent of soil contamination.

The use of field laboratory analytical procedures is not anticipated. However, should field laboratory analytical procedures be required, all field laboratory data records shall be maintained by the field analytical laboratory under the supervision of the Contractor's Site Manager. Additionally, if field laboratory analytical results are required, the SAP shall present the field laboratory procedures including calibration methods and detection limits.

A2.6 Documentation Procedures

The documentation procedures for sample collection shall include the following steps:

- Collect and place samples into laboratory sample containers;
- Complete sample container label information;
- Complete sample documentation information in the field logbook;
- Complete project and sampling information sections of the chain of custody form(s);
- Complete the air bill for the cooler to be shipped;
- Perform a completeness and accuracy check of the chain of custody form(s);
- Complete the sample relinquishment section of the chain of custody form(s);
- Place chain of custody seals on the exterior of the cooler;
- Package and ship the cooler to the laboratory;
- Receive cooler at the laboratory, inspect the contents, and fax a copy of contained chain of custody form(s) and cooler receipt form(s); and,
- Transmit original chain of custody form(s) with final analytical results from laboratory.

Original chain of custody record, shipping documents, and sample cooler receipt forms shall be attached to each data package.

A2.7 Sample Packaging and Shipping Requirements

This Section describes the procedures for properly packaging and shipping environmental and hazardous waste samples and the shipment of preservatives used in the environmental sampling. Contractor personnel involved in packaging, shipping, and receipt of samples shall be aware of the USDOT regulations and the appropriate procedures and methods for complying with USDOT regulations. Personnel who ship a USDOT hazardous material shall be trained in accordance with the requirements of 49 CFR Part 172.704. Further information is presented for shipping carriers (e.g., FedEx) that use the International Air Transportation Association (IATA) regulations to govern domestic and international shipments. Details regarding sample packaging and shipping requirements are provided within this Section, in USACE EM 200-1-3 (1 February 2001) *Requirements for Preparation of Sampling and Analysis Plans, Appendix F,* and in ASTM D6911 – 03 *Standard Guide for Packaging and Shipping Environmental Samples for Laboratory Analysis,* NRC Requirements 10 CFR Part 71, and 49 CFR Parts 170 through 185.

Sample Packaging

Proper sample packaging is essential for the safe delivery of unbroken sample containers that will provide reliable environmental data. Sample containers shall be packaged in thermally insulated rigid-body coolers. Sample packaging and shipping shall be conducted in accordance with applicable DOT regulatory requirements. Prior to sample shipment, each container shall be prepared as follows:

- Contents of sample containers shall be identified with definitive labels placed onto each container.
- The cap tightness shall be checked with clear tape placed over the label and completely encircling the container.
- Each sample container shall be wrapped in bubble wrap or closed cell foam sheets (shipped samples only).
- Each sample container shall be enclosed in a clear zip-lock plastic bag. As much air as possible shall be forced from the sample container bags before sealing.

Once the above procedures have been completed for each sample container, the following procedures shall be performed for each sample cooler:

- Several layers of bubble wrap (inert packing material) shall be placed on the bottom of the cooler and inside the cooler to prevent shifting during transport. The cooler shall be lined with an open garbage bag, all samples shall be placed upright inside the garbage bag, and the bag shall be tied.
- Ice is not required for shipping most radiological solid samples, [but must be used for shipping radiological groundwater samples and TCL/TAL samples]. Ice is required for shipment of lead soil samples, lead groundwater samples, beryllium soil samples, beryllium groundwater samples, surface water samples and sediment samples. Before initial placement of samples into a rigid-body cooler, the cooler drain plug shall be taped shut both inside and outside the container.
- All required laboratory paperwork, including the chain of custody form(s), shall be placed inside a plastic bag and taped to the inside of the cooler lid. If a laboratory-provided courier is used, the paperwork may be attached to the outside of the cooler to facilitate exchange of sample custody. If more than one cooler is being used, each cooler shall have its own documentation.
- Upon completion of the packing process, the cooler lid shall be closed and two signed/dated custody seals shall be placed on the cooler, one across the front and one across the side of the cooler, such that opening the cooler will result in breaking the custody seals.
- Rigid-body coolers shall be sealed by applying strapping tape directly to the cooler body.

- The air bill for the shipment shall be completed and attached to the top of the cooler, which will then be transferred to the courier for delivery to the laboratory.

Requirements for Samples Classified as Radioactive Materials

Transportation of radioactive waste is regulated by the IATA and by the USDOT. Overnight couriers (e.g., Federal Express) typically ship by air and follow IATA regulations (IATA 2005), while overland transport is governed by regulations promulgated in 49 CFR Parts 170 through 185. Samples generated during project activities shall be transported in accordance with procedures that ensure compliance with regulatory requirements. Historical data and processing information has demonstrated that Luckey FUSRAP material does not contain fissile material.

Radiological samples shall follow the *Sample Packaging* procedures presented above for container preparation prior to sample shipment including a radiological survey on the outside of the container for radioactivity. Each cooler shall be prepared for shipment as follows:

- Several layers of bubble wrap (inert packing material) will be placed on the bottom of the cooler and inside the cooler to prevent shifting during transport. The cooler shall be lined with an open garbage bag, all samples shall be placed upright inside the garbage bag, and the bag shall be tied.
- Each cooler shall have its drain plug taped shut, both inside and out.
- All required laboratory paperwork, including the chain of custody form(s), shall be placed inside a plastic bag and taped to the inside of the cooler lid. If a laboratory-provided courier is used, the paperwork may be attached to the outside of the cooler to facilitate exchange of sample custody. If more than one cooler is being used, each cooler shall have its own documentation.
- Rigid-body coolers shall be sealed by applying strapping tape directly to the cooler body.
- Upon completion of the packaging process, the cooler lid shall be closed and two signed/dated custody seals shall be placed on the cooler, one across the front and one across the side.
- The cooler shall be surveyed for radiation and contamination in accordance with HP-702 "Transfer of Radioactive Material" to ensure the package meets the requirements for limited quantity as found in 49 CFR Part 173.
- A notice shall be placed on the outside of each cooler that includes the name of the cosigner and the statement "This package conforms to the conditions and limitations specified in 49 CFR 173.421 for radioactive material, excepted package-limited quantity of material, UN2910". The outside of the inner packaging or, if there is no inner packaging, the outside of the package itself, shall be labeled "Radioactive" if fully applicable.
- The following label shall be placed on the cooler(s):

    - Appropriate hazard class label;
    - "Cargo Aircraft Only", if applicable; and,
    - Arrows indicating "This Way Up"

- The air bill for the shipment shall be completed and attached to the top of each cooler, which will then be transferred to the courier for delivery to the laboratory. If required, dangerous goods air bills shall be used for the shipment.

Sample Shipping

All environmental samples collected during the project shall be shipped no later than 12 to 72 hours after time of collection. The latter time of 72 hours may be necessary if the samples are collected on a Friday and have to be shipped Monday via commercial courier. During the time

between collection and shipment, all samples shall be stored in a secure area to maintain custody. All coolers containing environmental samples shall be shipped overnight to the laboratory by Federal Express, similar courier, or laboratory courier. Due to holding time limitations, the Contractor shall discourage shipping of samples on Fridays unless it is absolutely necessary and provided that the laboratory has assured that personnel will be present on Saturdays to receive and carry out any necessary processing within the holding time and temperatures when applicable.

ATTACHMENT 3

Contractor Accident Prevention Plan(APP) Checklist

Appendix
Accident Prevention Plan/ Site Safety and Health Plan (APP/SSHP) Checklist
(EM 385-1-1, Appendix A & Section 28, 15 September 2008)

CONTRACTOR ACCIDENT PREVENTION PLAN (APP) CHECKLIST (EM 385-1-1, Appendix - A, dated; 15 Sept. 08)

Minimum Basic Outline for Accident Prevention Plan

The APP is the Contractor Safety and Health Program Document. The following Site Specific Areas will be addressed:

NOTE: 1. Contractor will complete Checklist and Submit with their APP.
NOTE: 2. Contractor APP WILL be submitted in format below.
NOTE: 3. Safety Office will review Contractor APP and return to PM / COR.
NOTE: 4. Contractor APP's ARE NOT APPROVED by the USACE, only found as Acceptable or Non-Acceptable.

Safety Office Review Status: ACCEPTED BY/DATE: _____ NOT ACCEPTED BY/DATE:_____

Contractor Name: **Contract No:**

Project Title & Location:	Included ?			Location:
	Yes	No	N/A	Page(s)
ALL CHECKLIST ITEMS WILL BE COMPLETED!				
1. SIGNATURE SHEET. Title, signature, and phone number of the following:				
a. ***Plan Preparer*** (qualified person, Competent Person such as corporate safety staff person, QC).				
b. ***Plan Approval*** by company/corporate officers authorized to obligate the company (e.g. owner company president, regional vice president etc.)				
c. ***Plan Concurrence*** (e.g. Chief of Operations, Corporate Chief of Safety, Corporate Industrial Hygienist, project manager or superintendent, project safety professional, project QC). Provide concurrence of other applicable corporate and project personnel (Contractor).				
2. BACKGROUND INFORMATION. List the following:				
a. Contractor;				
b. Contract number;				
c. Project name;				
d. Brief project description, description of work to be performed, and location; phases of work anticipated (these will require an AHA).				
3. STATEMENT OF SAFETY AND HEALTH POLICY. Provide a copy of your current corporate/company Safety & Health Policy Statement, detailing commitment to providing a safe and healthful workplace for all employees. The Contractor's written safety program goals, objectives, and accident experience goals for this contract should be provided.				
4. RESPONSIBILITIES AND LINES OF AUTHORITIES. Provide the following:				
a. A statement of the employer's ultimate responsibility for the implementation of his SOH program;				
b. Identification and accountability of personnel responsible for safety at both corporate and project level. Contracts specifically requiring safety or industrial hygiene personnel shall include a copy of their resumes. Qualifications shall include the OSHA 30-hour course or equivalent course areas as listed here:				
(1) OSH Act/General Duty Clause;				
(2) 29 CFR 1904, Recordkeeping;				
(3) Subpart C: General Safety and Health Provisions, Competent Person				
(4) Subpart D: Occupational Health and Environmental Controls, Citations and Safety Programs;				

CONTRACTOR ACCIDENT PREVENTION PLAN (APP) CHECKLIST (EM 385-1-1, Appendix - A, dated; 15 Sept. 08)

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Safety Office Review Status: ACCEPTED BY/DATE: _____ NOT ACCEPTED BY/DATE:_____

Contractor Name: **Contract No:**

Project Title & Location:	Included ?			Location:
	Yes	No	N/A	Page(s)
(5) Subpart E: PPE, types and requirements for use;				
(6) Subpart F: understanding fire protection in the workplace;				
(7) Subpart K: Electrical;				
(8)Subpart M: Fall Protection;				
(9) Rigging, welding and cutting, scaffolding, excavations, concrete and masonry, demolition; health hazards in construction, materials handling, storage and disposal, hand and power tools, motor vehicles, mechanized equipment, marine operations, steel erection, stairways and ladders, confined spaces or any others that are applicable to the work being performed.				
c. The names of Competent and/or Qualified Person(s) and proof of competency/qualification to meet specific OSHA Competent/Qualified Person(s) requirements must be attached. The District SOHO will review the qualifications for acceptance;				
d. Requirements that no work shall be performed unless a designated competent person is present on the job site;				
e. Requirements for pre-task safety and health analysis;				
f. Lines of authority;				
g. Policies and procedures regarding noncompliance with safety requirements (to include disciplinary actions for violation of safety requirements) should be identified;				
h. Provide written company procedures for holding managers and supervisors accountable for safety.				
5. SUBCONTRACTORS AND SUPPLIERS. If applicable, provide procedures for coordinating SOH activities with other employers on the job site:				
a. Identification of subcontractors and suppliers (if known);				
b. Safety responsibilities of subcontractors and suppliers.				
6. TRAINING.				
a. Requirements for new hire SOH orientation training at the time of initial hire of each new employee.				
b. Requirements for mandatory training and certifications that are applicable to this project (e.g., explosive actuated tools, confined space entry, crane operator, diver, vehicle operator, HAZWOPER training and certification, PPE) and any requirements for periodic retraining/recertification.				
c. Procedures for periodic safety and health training for supervisors and employees.				

CONTRACTOR ACCIDENT PREVENTION PLAN (APP) CHECKLIST (EM 385-1-1, Appendix - A, dated; 15 Sept. 08)

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Contractor Name: **Contract No:**

Project Title & Location:	Included ?			Location:
	Yes	No	N/A	Page(s)
d. Requirements for emergency response training. > See 9.b. below for a list of requirements that may require emergency response training.				
7. SAFETY AND HEALTH INSPECTIONS.				
a. Specific assignment of responsibilities for a minimum daily job site safety and health inspection during periods of work activity: Who will conduct (e.g., SSHO, PM, safety professional, QC, supervisors, employees – depends on level of technical proficiency needed to perform said inspections), proof of inspector's training/qualifications, when inspections will be conducted, procedures for documentation, deficiency tracking system, and follow-up procedures;				
b. Any external inspections/certifications that may be required (e.g., USCG).				
8. ACCIDENT REPORTING. The Contractor shall identify person(s) responsible to provide the following:				
a. Exposure data (man-hours worked);				
b. Accident investigations, reports, and logs: Report all accidents as soon as possible but not more than 24 hours afterwards to the Contracting Officer/Representative (CO/COR). The contractor shall thoroughly investigate the accident and submit the findings of the investigation along with appropriate corrective actions to the CO/COR in the prescribed format as soon as possible but no later than five (5) working days following the accident. Implement corrective actions as soon as reasonably possible;				
c. The following require immediate accident notification:				
(1) A fatal injury;				
(2) A permanent total disability;				
(3) A permanent partial disability;				
(4) The hospitalization of three or more people resulting from a single occurrence;				
(5) Property damage of $200,000 or more.				
9. PLANS (PROGRAMS, PROCEDURES) REQUIRED BY THE SAFETY MANUAL. Based on a risk assessment of contracted activities and on mandatory OSHA compliance programs, the Contractor shall address all applicable occupational risks and compliance plans. Using the EM 385-1-1 as a guide, plans may include but not be limited to:				
a. Layout plans (04.A.01);				
b. Emergency response plans:				

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Contractor Name: **Contract No:**

Project Title & Location:	Included ?			Location:
	Yes	No	N/A	Page(s)
(1) Procedures and tests (01.E.01);				
(2) Spill plans (01.E.01, 06.A.02);				
(3) Firefighting plan (01.E.01, Section 19);				
(4) Posting of emergency telephone numbers (01.E.05);				
(5) Man overboard/abandon ship (Section19.A.04);				
(6) Medical Support. Outline on-site medical support and offsite medical arrangements including rescue and medical duties for those employees who are to perform them, and the name(s) of on-site Contractor personnel trained in first aid and CPR. A minimum of two employees shall be certified in CPR and first aid per shift/site (Section 03.A.02; 03.D);				
c. Plan for prevention of alcohol and drug abuse (01.C.02);				
d. Site sanitation plan (Section 02);				
e. Access and haul road plan (4.B);				
f. Respiratory protection plan (05.G);				
g. Health hazard control program (06.A);				
h. Hazard communication program (06.B.01);				
i. Process Safety Management Plan (06.B.04);				
j. Lead abatement plan (06.B.05 & specifications);				
k. Asbestos abatement plan (06.B.05 & specifications);				
l. Radiation Safety Program (06.E.03.a);				
m. Abrasive blasting (06.H.01);				
n. Heat/Cold Stress Monitoring Plan (06.I.02)				
o. Crystalline Silica Monitoring Plan (Assessment) (06.M) ;				
p. Night operations lighting plan (07.A.08);				
q. Fire Prevention Plan (09.A);				
r. Wild Land Fire Management Plan (09.K);				
s. Hazardous energy control plan (12.A.01);				
t. Critical lift Plan (16.H);				
u. Contingency plan for Floating Plants for severe weather (19.A.03);				
v. Float Plan (19.F.04);				
w. Site-Specific Fall Protection & Prevention Plan (21.C);				

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Contractor Name: **Contract No:**

Project Title & Location:	Included ?			Location:
	Yes	No	N/A	Page(s)
x. Demolition plan (to include engineering survey) (23.A.01);				
y. Excavation/trenching plan (25.A.01);				
z. Emergency rescue (tunneling) (26.A.);				
aa. Underground construction fire prevention and protection plan (26.D.01);				
bb. Compressed air plan (26.I.01);				
cc. Formwork and shoring erection and removal plans (27.C);				
dd. PreCast Concrete Plan (27.D);				
ee. Lift slab plans (27.E);				
ff. Steel erection plan (27.F.01);				
gg. Site Safety and Health Plan for HTRW work (28.B);				
hh. Blasting Safety Plan (29.A.01);				
ii. Diving plan (30.A.13);				
jj. Confined space Program (34.A).				
10. RISK MANAGEMENT PROCESSES. Detailed project-specific hazards and controls shall be provided by an **Activity Hazard Analysis** (01.A.13) for each major phase/activity of work.				
11. ABBREVIATED APP for LIMITED-SCOPE SERVICE, SUPPLY AND R&D CONTRACTS. If service, supply and R&D contracts with limited scopes are awarded, the contractor may submit an abbreviated Accident Prevention Plan. This APP shall address the following areas at a minimum. If other areas of the EM 385-1-1 are pertinent to the contract, the contractor must assure these areas are addressed as well.				
a. Title, signature, and phone number of the plan preparer.				
b. Background Information to include: Contractor; Contract number; Project name; Brief project description, description of work to be performed, and location (map); The project description shall provide a means to evaluate the work being done (see AHA requirements in 01.A.13) and associated hazards involved. Contractor's APP shall address the identified hazards involved and the control measures to be taken.				
c. Statement of Safety and Health Policy detailing their commitment to providing a safe and healthful workplace for all employees.				
d. Responsibilities and Lines of Authorities – to include a statement of the employer's ultimate responsibility for the implementation of his SOH program; Identification and accountability of personnel responsible for safety at all levels to include designated site safety and health officer (SSHO) and associated qualifications. The District SOHO will review the qualifications for acceptance.				

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e. Training - new hire SOH orientation training at the time of initial hire of each new employee and any periodic retraining/recertification requirements.				
f. Procedures for job site inspections - assignment of responsibilities and frequency.				
g. Procedures for reporting man-hours worked and reporting and investigating any accidents as soon as possible but not more than 24 hours afterwards to the Contracting Officer/Representative (CO/COR). An accident that results in a fatal injury, permanent partial or permanent total disability shall be immediately reported to the Contracting Officer.				
h. Emergency Planning. Employees working alone shall be provided an effective means of emergency communication. This may be cellular phone, two-way radio or other acceptable means. The selected means of communication must be readily available and must be in working condition.				
i. Drinking Water provisions, toilet and washing facilities.				
j. First Aid and CPR training (at least two employees on each shift shall be qualified/certified to administer first aid and CPR) and provision of first aid kit (types/size).				
k. Personal Protective Equipment.				
(1) WORK CLOTHING - Minimum Requirements. Employees shall wear clothing suitable for the weather however minimum requirements for work shall be short-sleeve shirt, long pants (excessively long or baggy pants are prohibited) and leather work shoes. If analysis determines that safety-toed (or other protective) footwear is necessary (i.e., mowing, weed eating, chain saw use, etc), they shall be worn.				
(2) Eye and Face Protection. Eye and face protection shall be worn as determined by an analysis of the operations being performed HOWEVER, all involved in chain saw use, chipping, stump grinding, pruning operations, grass mowing, weed eating and blowing operations shall be provided safety eyewear (Z87.1) as a minimum.				
(3) Hearing Protection. Hearing protection must be worn by all those exposed to high noise activities (to include grass mowing and trimming, chainsaw operations, tree chipping, stump grinding and pruning).				
(4) Head Protection. Hard hats shall comply with ANSI Z89.1 and shall be worn by all workers when a head hazard exists. At a minimum, hard hats shall be worn when performing activities identified in (2) above.				
(5) High Visibility Apparel shall comply with ANSI/ISEA 107, Class 2 requirements at a minimum and shall be worn by all workers exposed to vehicular or equipment traffic.				
(6) Protective Leg chaps shall be worn by all chainsaw operators.				
(7) Gloves of the proper type shall be worn by persons involved in activities that expose the hands to cuts, abrasions, punctures, burns and chemical irritants.				

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(8) If work is being performed around water and drowning is a hazard, PFDs must be provided and worn as appropriate.				
l. Machine Guards and safety devices. Lawn maintenance equipment must have appropriate guards and safety devices in place and operational.				
m. Hazardous Substances. When any hazardous substances are procured, used, stored or disposed, a hazard communication program must be in effect and MSDSs shall be available at the worksite. Employees shall have received training in hazardous substances being used. When the eyes or body of any person may be exposed to corrosives, irritants or toxic chemicals, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within 10 seconds of the worksite.				
n. Traffic control shall be accomplished in accordance with DOT's MUTCD.				
o. Control of Hazardous Energy (Lockout/Tagout). Before an employee performs any servicing or maintenance on any equipment where the unexpected energizing or startup of the equipment could occur, procedures must be in place to ensure adequate control of this energy.				
p. Driving, working on (i.e., working with equipment/mowers) while on slopes, working from/in boats/skiffs, etc shall also be considered and dealt with accordingly.				
HTRW Projects Additional Requirements (EM 385-1-1, Section 28 HAZWOPER): SSHP (Site Safety and Health Plan) shall be attached to the APP as an Appendix. The SSHP shall cover the following in project-specific detail. General information adequately covered in the APP need not be duplicated.				
a. Site description and contamination characterization				
b. Hazard/Risk Analysis - AHA for each task				
c. Staff Organization; Qualifications; Responsibilities				
d. Training - General, Supervisor and Project Specific				
e. PPE Personal Protective Equipment				
f. Medical Surveillance				
g. Exposure Monitoring/ Air Sampling Program				
h. Heat and Cold Stress - Procedures and Practices				
i. SOPs Standard Operating Procedures; Engineering Controls; Work Practices:				
(1) Site rules/prohibitions (buddy system, eating/drinking/smoking restrictions, etc.)				
(2) Work permit requirements (rad work, excavation, hot work, confined space etc.)				
(3) Material handling procedures (soil, liquid, rad materials, spill contingency)				
(4) Drum/container/tank handling (opening, sampling, draining, removal, etc.)				
(5) Comprehensive AHA of treatment technologies employed at site				

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Contractor Name: **Contract No:**

Project Title & Location:	Included ?			Location:
	Yes	No	N/A	Page(s)
j. Site Control Measures: Clearly Defined EZ, SZ, CRZ				
k. Personal Hygiene and Decontamination				
l. Equipment Decontamination				
m. Emergency Equipment and First Aid				
n. Emergency Response and Contingency Procedures:				
(1) Pre-emergency planning				
(2) Personnel and lines of authority for emergency situations				
(3) Criteria and procedures for emergency recognition and site evacuation (alarms, etc.)				
(4) Decontamination and medical treatment of injured personnel				
(5) A route map to emergency medical facilities and phone numbers for emergency responders				
(6) Criteria for alerting the local community responders				

ATTACHMENT 4

Unified Facilities Guide Specifications 01 35 26

NFSS REMOVAL OF INVESTIGATIVE DERIVED WASTE AND LEGACY WASTE
MODIFIED TO BE PROJECT SPECIFIC ON April 16, 2010
****
USACE UFGS - 01 35 26 (August 2009)

Preparing Activity: NAVFAC Superseding
UFGS-01 35 29 (February 2009)
UNIFIED FACILITIES GUIDE SPECIFICATIONS
****

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08/09

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-- End of Section Table of Contents --

****
1.1 REFERENCES
****
The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

USACE Safety and Health Requirements Manual, EM 385-1-1:
http://www.usace.army.mil/CESO/Pages/EM385-1-1.aspx

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)
ASSE/SAFE A10.32 (2004) Fall Protection
ASSE/SAFE A10.34 (2001; R 2005) Protection of the Public on or Adjacent to Construction Sites
ASSE/SAFE Z359.1 (2007) Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components
ASME INTERNATIONAL (ASME)
ASME B30.22 (2005) Articulating Boom Cranes
ASME B30.3 (2004) Construction Tower Cranes
ASME B30.5 (2007) Mobile and Locomotive Cranes
ASME B30.8 (2004) Floating Cranes and Floating Derricks
Explosives, Propellants and Pyrotechnics
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
NFPA 10 (2007; Errata 2007; AMD 1 2007) Standard for Portable Fire Extinguishers
NFPA 241 (2004) Safeguarding Construction, Alteration, and Demolition Operations
NFPA 51B (2008) Fire Prevention During Welding, Cutting, and Other Hot Work
NFPA 70 (2007; AMD 1 2008) National Electrical Code - 2008 Edition
NFPA 70E (2008) Electrical Safety in the Workplace
U.S. ARMY CORPS OF ENGINEERS (USACE)EM 385-1-1 (2008) Safety and Health Requirements Manual
U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
10 CFR 20 Standards for Protection Against Radiation
29 CFR 1910 Occupational Safety and Health Standards
29 CFR 1910.146 Permit-required Confined Spaces
29 CFR 1915 Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment
29 CFR 1919 Gear Certification
29 CFR 1926 Safety and Health Regulations for Construction
29 CFR 1926.500 Fall Protection

1.2 SUBMITTALS
****
Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval.
SUBMITTAL PROCEDURES:
****
NOTE: A "G" followed by "A" indicates that the submittal requires Government acceptance.
****
Government acceptance is required for submittals with a "G, A" designation.
SD-01 Preconstruction Submittals

Accident Prevention Plan/Site Safety and Health Plan (APP/SSHP); G, A
Accident Prevention Plan/Site Safety and Health Plan (APP/SSHP) Checklist; G, A
Activity Hazard Analysis (AHA); G, A
Crane Critical Lift Plan (if used); G, A
Proof of qualification for Crane Operators (if used); G, A
Proof of qualifications for Competent Persons/Site Safety Officers; G, A

SD-06 Reports
Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."
Accident Reports
Monthly Man-Hour Exposure Reports

SD-07 Certificates (if used)
Hot work permit
Crane & Operator Certificate of Compliance

1.3 DEFINITIONS
a. Competent Person. A person who is capable of identifying hazardous or dangerous conditions, and has the authority to take prompt corrective measures to eliminate the hazards of falling.
b. High Visibility Accident. Any mishap which may generate publicity and/or high visibility.
c. Medical Treatment. Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.
d. Operating Envelope. The area surrounding any crane. Inside this "envelope" is the crane, the operator, riggers and crane walkers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).
e. Recordable Injuries or Illnesses. Any work-related injury or illness that results in:
(1) Death, regardless of the time between the injury and death, or the length of the illness;
(2) Days away from work (any time lost after day of injury/illness onset);
(3) Restricted work;
(4) Transfer to another job;
(5) Medical treatment beyond first aid;
(6) Loss of consciousness; or
(7) A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.
f. "USACE" property and equipment specified in USACE EM 385-1-1 should be interpreted as Government property and equipment.

1.5 REGULATORY REQUIREMENTS
In addition to the detailed requirements included in the provisions of this contract, comply with USACE EM 385-1-1, and all federal, state, and local laws, ordinances, criteria, rules and regulations. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements govern.

1.6 SITE QUALIFICATIONS, DUTIES AND MEETINGS
1.6.1 Personnel Qualifications – ***for this job, Level 3 was selected.***

<u>Level 1</u> should be selected for small low hazard service or maintenance projects.

<u>Level 2</u> should be selected for minor construction, service and maintenance projects. Normally will have a dollar value of less than $200,000. Sample projects include: minor re-roofing or window replacement.

<u>Level 3</u> should be selected for small to mid-size construction projects that have limited hazards with the potential to cause serious injury/illness. Normally will have a dollar value of less than $2 million. Sample projects include: aircraft wash racks, paving, two story buildings less that 30,000 sq ft or utility modifications.

<u>Level 4</u> should be selected for construction projects that may involve potential risk to life or cause serious injury or illness. Normally will have a dollar value less

than $15 million. Sample projects include: buildings greater than 30,000 sq ft or large utility projects.

Level 5 should be selected for medium to large construction projects that may involve potential risk to life, property or environment. Any dollar value. Sample projects include: waterfront improvements, fuel tank projects and tower projects.

Level 6 should be selected for large, complex, and high hazard construction and service projects, or any project that requires significant safety and health leadership, management and oversight activities. Any dollar value. Sample projects include: chemical process facilities, complex hospitals and environmental clean-ups.

When levels 4, 5 or 6 are selected, select the required areas of competency necessary for the project. At least 4 must be identified.

****

1.6.1.1 Site Safety and Health Officer (SSHO)

****

Provide a site Safety and Health Officer (SSHO) at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The Contractor Quality Control (QC) person cannot be the SSHO on this project, even though the QC has safety inspection responsibilities as part of the QC duties. can be the SSHO on this project.

SSHO must meet the following requirements:

Level 3:

- A minimum of 5 years safety work on similar projects.
- 30-hour OSHA construction safety class.
- An average of at least 24 hours of formal safety training each year for the past 5 years.
- Competent person training as needed.

1.6.1.5 Competent Person for Confined Space Entry (Not applicable)

1.6.1.6 Crane Operators Meet the crane operators requirements in USACE EM 385-1-1, Section 16 and Appendix G. In addition, for mobile cranes with Original Equipment Manufacturer (OEM) rated capacitates of 50,000 pounds or greater, designate crane operators as qualified by a source that qualifies crane operators (i.e., union, a government agency, or and organization that tests and qualifies crane operators). Provide proof of current qualification.

1.6.2 Personnel Duties

1.6.2.1 Site Safety and Health Officer (SSHO)

a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Attach safety inspection logs to the Contractors' daily quality control report.
b. Conduct mishap investigations and complete required reports. Maintain the OSHA Form 300 and Daily Production reports for prime and sub-contractors.
c. Maintain applicable safety reference material on the job site.
d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.
e. Implement and enforce accepted APPS and AHAs.
f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. Post a list of unresolved safety and health deficiencies on the safety bulletin board.
g. Ensure sub-contractor compliance with safety and health requirements. Failure to perform the above duties will result in dismissal of the superintendent and/or SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

1.6.3 Meetings

1.6.3.1 Preconstruction Conference

a. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, quality control supervisor, or any other assigned safety and health professionals who participated in the development of the APP/SSHP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).

b. Discuss the details of the submitted APP/SSHP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that were and will be developed and implemented during the performance of the contract.
c. Deficiencies in the submitted APP/SSHP will be brought to the attention of the Contractor prior to the preconstruction conference, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Do not begin work until there is an accepted APP/SSHP.
d. The functions of a Preconstruction conference may take place at the Post-Award Kickoff meeting for Design Build Contracts.

1.6.3.2 Safety Meetings

Conduct and document meetings as required by EM 385-1-1. Attach minutes showing contract title, signatures of attendees and a list of topics discussed for the Contractors' daily quality control report.

1.7 ACCIDENT PREVENTION PLAN/SITE SAFETY AND HEALTH PLAN (APP/SSHP)

Use a Certified Safety Professional (CSP) or Certified Industrial Hygienist (CIH) to prepare the written site-specific APP/SSHP and to provide oversight of the Occupational Safety and Health Program. Prepare the APP/SSHP in accordance with the format and requirements of USACE EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in USACE EM 385-1-1, Appendix A, "Minimum Basic Outline for Accident Prevention Plan" and Section 28 “Hazardous Waste Operations and Emergency Response (HAZWOPER).” Specific requirements for some of the APP/SSHP elements are described below. The APP/SSHP shall be job-specific and address any unusual or unique aspects of the project or activity for which it is written. The APP/SSHP shall interface with the Contractor's overall safety and health program. Include any portions of the Contractor's overall safety and health program referenced in the APP/SSHP in the applicable APP/SSHP element and made site-specific. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Prime Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP/SSHP shall be signed by the person and firm (senior person) preparing the APP/SSHP, the Contractor, the on-site superintendent, the designated site safety and health officer and any designated CSP and/or CIH. Submit the APP/SSHP to the Contracting Officer at least **15** calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP/SSHP. Once accepted by the Contracting Officer, the APP/SSHP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP/SSHP will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified. Once work begins, changes to the accepted APP/SSHP shall be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and quality control manager. Should any hazard become evident, stop work in the area, secure the area, and develop a plan to remove the hazard. Notify the Contracting Officer within 4 hours of discovery. Eliminate/remove the hazard. In the interim, take all necessary action to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by ASSE/SAFE A10.34,) and the environment. Copies of the accepted plan will be maintained at the job site. Continuously review and amend the APP/SSHP, as necessary, throughout the life of the contract. Incorporate unusual or high-hazard activities not identified in the original APP/SSHP as they are discovered.

1.7.1 EM 385-1-1 Contents

In addition to the requirements outlines in Appendix A and Section 28 of USACE EM 385-1-1, the following is required:

a. Names and qualifications (resumes including education, training, experience and certifications) of all site safety and health personnel designated to perform work on this project to include the designated site safety and health officer and other competent and qualified personnel to be used such as CSPs, CIHs, STSs, CHSTs. Specify the duties of each position.
b. Qualifications of competent and of qualified persons. As a minimum, designate and submit qualifications of competent persons for each of the following major areas (if encountered): excavation; scaffolding; fall protection; hazardous energy; confined space; health hazard recognition, evaluation and control of chemical, physical and biological agents; personal protective equipment and clothing to include selection, use and maintenance.
c. Confined Space Entry Plan (Anticipated to be not applicable)
d. Crane Critical Lift Plan (if crane is used). Prepare and sign weight handling critical lift plans for lifts over 75 percent of the capacity of the crane or hoist

(or lifts over 50 percent of the capacity of a barge mounted mobile crane's hoists) at any radius of lift; lifts involving more than one crane or hoist; lifts of personnel; and lifts involving non-routine rigging or operation, sensitive equipment, or unusual safety risks. Submit 15 calendar days prior to on-site work and include the requirements of USACE EM 385-1-1, paragraph 16.H.02. and the following:
(1) For lifts of personnel, demonstrate compliance with the requirements of 29 CFR 1926.550(g).
e. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place and during different phases of construction. Address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 1.8 m (6 feet). A qualified person for fall protection shall prepare and sign the plan. Include fall protection and prevention systems, equipment and methods employed for every phase of work, responsibilities, assisted rescue, self-rescue and evacuation procedures, training requirements, and monitoring methods. Revise the fall Protection and Prevention Plan as needed for lengthy projects, reflecting any changes during the course of construction due to changes in personnel, equipment, systems or work habits. Keep and maintain the accepted Fall Protection and Prevention Plan at the job site for the duration of the project. Include the Fall Protection and Prevention Plan in the Accident Prevention Plan (APP).
f. Occupant Protection Plan. (not applicable)
g. Lead Compliance Plan. (not applicable)
h. Asbestos Hazard Abatement Plan. (not applicable)
i. Site Safety and Health Plan. The safety and health aspects prepared in accordance with Section 01 35 29.13 HEALTH, SAFETY, AND EMERGENCY RESPONSE PROCEDURES FOR CONTAMINATED SITES and Section 28 of EM 385-1-1. (These requirements are included in the APP/SSHP and the elements are located per the APP/SSHP Checklist).
j. PCB Plan. (not applicable)
k. Site Demolition Plan. (not applicable)
l. Excavation Plan. (not applicable)

1.7.2. ACCIDENT PREVENTION PLAN/SITE SAFETY AND HEALTH PLAN Checklist
Contractor will complete the APP/SSHP Checklist and submit attached to the APP/SSHP as an Appendix. The APP/SSHP Checklist assists the APP/SSHP Preparer with including all mandatory requirements. APP/SSHP WILL be submitted in the proper format described per Appendix A.

1.8 ACTIVITY HAZARD ANALYSIS (AHA)
The Activity Hazard Analysis (AHA) format shall be in accordance with USACE EM 385-1-1. Submit the AHA for review at least **15** calendar days prior to the start of each phase. Format subsequent AHAs as amendments to the APP/SSHP. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls. The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change. Develop the activity hazard analyses using the project schedule as the basis for the activities performed. Any activities listed on the project schedule will require an AHA. The AHAs will be developed by the contractor, supplier or subcontractor and provided to the prime contractor for submittal to the Contracting Officer.

1.9 DISPLAY OF SAFETY INFORMATION
Within **1** calendar day after commencement of work, erect a safety bulletin board at the job site. Include and maintain information on safety bulletin board as required by EM 385-1-1, section 01.A.06.

1.10 SITE SAFETY REFERENCE MATERIALS
Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturer's manuals.

1.11 EMERGENCY MEDICAL TREATMENT
Contractors will arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment.

1.12 REPORTS
1.12.1 Accident Reports
a. Conduct an accident investigation for recordable injuries and illnesses, and property damage accidents resulting in at least $2,000 in damages, to establish the root cause(s) of the accident, complete the USACE Accident Report Form 3394 and provide the report to the Contracting Officer within 5 calendar days of the accident. The Contracting Officer will provide copies of any required forms.

b. Conduct an accident investigation for any weight handling equipment accident (including rigging gear accidents) to establish the root cause(s) of the accident. Do not proceed with crane operations until cause is determined and corrective actions have been implemented to the satisfaction of the contracting officer.

1.12.2 Accident Notification

Notify the Contracting Officer as soon as practical, but not later than **4 hours** after ALL accidents. Notification will include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted.

1.12.3 Monthly Exposure Reports

Monthly exposure reporting to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. The Contracting Officer will provide copies of any special forms.

1.12.4 Crane Reports (if used)

Submit crane inspection reports required in accordance with USACE EM 385-1-1, Appendix I and as specified herein with Daily Reports of Inspections.

1.12.5 Certificate of Compliance (if crane is used)

Provide a Certificate of Compliance for each crane entering an activity under this contract. Contractor certifies that the crane, rigging, and operator meet applicable OSHA regulations (with the Contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance comply with 29 CFR 1926 and USACE EM 385-1-1 section 16 and Appendix I. Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. Also certify that all of its crane operators working on the DOD activity have been trained in the proper use of all safety devices (e.g., anti-two block devices). Post certifications inside the crane operator cab.

1.13 HOT WORK (if applicable)

Submit and obtain a written permit prior to performing "Hot Work" (welding, cutting, etc.) or operating other flame-producing/spark producing devices, from the SSHO. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. The Contractor will provide at least two (2) twenty (20) pound 4A:20 BC rated extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch shall be trained in accordance with NFPA 51B and remain on-site for a minimum of 30 minutes after completion of the task or as specified on the hot work permit. When starting work in the facility, require personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency/Fire phone number. ANY FIRE, NO MATTER HOW SMALL, SHALL BE REPORTED TO THE SSHO IMMEDIATELY.
Obtain services from a NFPA Certified Marine Chemist for "HOT WORK" within or around flammable materials (such as fuel systems, welding/cutting on fuel pipes) or confined spaces (such as sewer wet wells, manholes, vaults, etc.) that have the potential for flammable or explosive atmospheres.

1.15 FACILITY OCCUPANCY CLOSURE

Streets, walks, and other facilities occupied and used by the Government shall not be closed or obstructed without written permission from the Contracting Officer.

1.18 SEVERE STORM PLAN

In the event of a severe storm warning, the Contractor must:
a. Secure outside equipment and materials and place materials that could be damaged in protected areas.
b. Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.
c. Ensure that temporary erosion controls are adequate.

2.1 CONFINED SPACE SIGNAGE (not applicable)

2.2 FALL PROTECTION ANCHORAGE (if needed)

Leave in place fall protection anchorage, conforming to ASSE/SAFE Z359.1, installed under the supervision of a qualified person in fall protection, for continued customer use and so identified by signage stating the capacity of the anchorage (strength and number of persons who may be tied-off to it at any one time).

3.1 CONSTRUCTION AND/OR OTHER WORK

Comply with USACE EM 385-1-1, NFPA 241, the APP, the AHA, Federal and/or State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard prevails.

3.1.1 Hazardous Material Use

Each hazardous material must receive approval by the SSHO prior to being brought onto the job site or prior to any other use in connection with this contract.

3.1.2 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with USACE EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocynates, lead-based paint are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials.

3.1.3 Unforeseen Hazardous Material

The design should have identified materials such as PCB, lead paint, and friable and non-friable asbestos. If material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. If material is subsequently found not to be hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

3.2 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages at least 15 days in advance. As a minimum, the request should include the location of the outage, utilities being affected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved, and prior to beginning work on the utility system requiring shut down, attend a pre-outage coordination meeting with the Contracting Officer and the Installation representative, and Public Utilities representative to review the scope of work and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits unless proof is provided that no other means exist.

3.3 SAFETY LOCKOUT/TAGOUT PROCEDURES (if applicable)

Contractor shall ensure that each employee is familiar with and complies with these procedures and 29 CFR 1910.147. Contracting Officer will, at the Contractor's request, apply lockout/tagout tags and take other actions that, because of experience and knowledge, are known to be necessary to make the particular equipment safe to work on. No person, regardless of position or authority, shall operate any switch, valve, or equipment that has an official lockout/tagout tag attached to it, nor shall such tag be removed except as provided in this section. No person shall work on any equipment that requires a lockout/tagout tag unless he, his immediate supervisor, project leader, or a subordinate has in his possession the stubs of the required lockout/tagout tags.

When work is to be performed on electrical circuits, only qualified personnel shall perform work on electrical circuits. A supervisor who is required to enter an area protected by a lockout/tagout tag will be considered a member of the protected group provided he notifies the holder of the tag stub each time he enters and departs from the protected area. Identification markings on building light and power distribution circuits shall not be relied on for established safe work conditions. Before clearance will be given on any equipment other than electrical (generally referred to as mechanical apparatus), the apparatus, valves, or systems shall be secured in a passive condition with the appropriate vents, pins, and locks. Pressurized or vacuum systems shall be vented to relieve differential pressure completely. Vent valves shall be tagged open during the course of the work. Where dangerous gas or fluid systems are involved, or in areas where the environment may be oxygen deficient, system or areas shall be purged, ventilated, or otherwise made safe prior to entry.

3.3.1 Tag Placement

Lockout/tagout tags shall be completed in accordance with the regulations printed on the back thereof and attached to any device which, if operated, could cause an unsafe condition to exist.

If more than one group is to work on any circuit or equipment, the employee in charge of each group shall have a separate set of lockout/tagout tags completed and properly attached. When it is required that equipment be tagged, the Contractor will review the characteristics of the various systems involved that affect the safety of the

operations and the work to be done; take the necessary actions, including voltage and pressure checks, grounding, and venting, to make the system and equipment safe to work on; and apply such lockout/tagout tags to those switches, valves, vents, or other mechanical devices needed to preserve the safety provided. This operation is referred to as "Providing Safety Clearance."

3.3.2 Tag Removal

When any individual or group has completed its part of the work and is clear of the circuits or equipment, the supervisor, project leader, or individual for whom the equipment was tagged shall turn in his signed lockout/tagout tag stub to the Contracting Officer. That group's or individual's lockout/tagout tags on equipment may then be removed on authorization by the Contracting Officer.

3.4 FALL HAZARD PROTECTION AND PREVENTION PROGRAM (if applicable)

Establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. Within the program include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures.

3.4.1 Training

Institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, provide training for each employee who might be exposed to fall hazards. Provide training by a competent person for fall protection in accordance with USACE EM 385-1-1, section 21.B.

3.4.2 Fall Protection Equipment and Systems

Enforce use of the fall protection equipment and systems designated for each specific work activity in the Fall Protection and Prevention Plan and/or AHA at all times when an employee is exposed to a fall hazard. Protect employees from fall hazards as specified in EM 385-1-1, section 21. In addition to the required fall protection systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with USACE EM 385-1-1, paragraphs 05.J. and 05.K. Personal fall arrest systems are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems are required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, or travel. Fall protection must comply with 29 CFR 1926.500, Subpart M, USACE EM 385-1-1 and ASSE/SAFE A10.32.

3.4.2.1 Personal Fall Arrest Equipment

Personal fall arrest equipment, systems, subsystems, and components shall meet ASSE/SAFE Z359.1. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). Harnesses shall have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Only locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment shall not exceed 1.8 m 6 feet. The total fall distance and any swinging of the worker (pendulum-like motion) that can occur during a fall shall always be taken into consideration when attaching a person to a fall arrest system.

3.4.3 Fall Protection for Roofing Work (not applicable)

3.4.4 Existing Anchorage (not applicable)

3.4.5 Horizontal Lifelines (not applicable)

3.4.6 Guardrails and Safety Nets

Design, install and use guardrails and safety nets in accordance with EM 385-1-1 and 29 CFR 1926 Subpart M.

3.4.7 Rescue and Evacuation Procedures (if applicable)

When personal fall arrest systems are used, the contractor must ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. Prepare a Rescue and Evacuation Plan and include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. Include the Rescue and Evacuation Plan within the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP).

3.6 SCAFFOLDING(not applicable)

3.6.1 Stilts (not applicable)

3.7 EQUIPMENT

3.7.1 Material Handling Equipment

a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.

b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions.

c. Operators of forklifts or power industrial trucks shall be licensed in accordance with OSHA.

3.7.2 Weight Handling Equipment (if applicable)

a. Equip cranes and derricks as specified in EM 385-1-1, section 16.

b. Comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Perform erection under the supervision of a designated person (as defined in ASME B30.5). Perform all testing in accordance with the manufacturer's recommended procedures.

c. Comply with ASME B30.5 for mobile and locomotive cranes, ASME B30.22 for articulating boom cranes, ASME B30.3 for construction tower cranes, and ASME B30.8 for floating cranes and floating derricks.

d. Under no circumstance shall a Contractor make a lift at or above 90% of the cranes rated capacity in any configuration.

e. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and follow the requirements of USACE EM 385-1-1 section 11 and ASME B30.5 or ASME B30.22 as applicable.

f. Do not crane suspended personnel work platforms (baskets) unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Do not lift personnel with a line hoist or friction crane.

g. Inspect, maintain, and recharge portable fire extinguishers as specified in NFPA 10, Standard for Portable Fire Extinguishers.

h. All employees must keep clear of loads about to be lifted and of suspended loads.

i. Use cribbing when performing lifts on outriggers.

j. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.

k. A physical barricade must be positioned to prevent personnel from entering the counterweight swing (tail swing) area of the crane.

l. Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected shall always be available for review by Contracting Officer personnel.

m. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by Contracting Officer personnel.

n. Certify that all crane operators have been trained in proper use of all safety devices (e.g. anti-two block devices).

o. Take steps to ensure that wind speed does not contribute to loss of control of the load during lifting operations. Prior to conducting lifting operations set a maximum wind speed at which a crane can be safely operated based on the equipment being used, the load being lifted, experience of operators and riggers, and hazards on the work site. This maximum wind speed determination shall be included as part of the activity hazard analysis plan for that operation.

3.7.3 Equipment and Mechanized Equipment

a. Proof of qualifications for operator shall be kept on the project site for review.

b. Manufacture specifications or owner's manual for the equipment shall be on-site and reviewed for additional safety precautions or requirements that are sometimes not identified by OSHA or USACE EM 385-1-1. Incorporate such additional safety precautions or requirements into the AHAs.

3.7.4 USE OF EXPLOSIVES (not applicable)

3.8 EXCAVATIONS (not applicable)

3.8.1 Utility Locations (not applicable)

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3.8.3 Shoring Systems (not applicable)

3.8.4 Trenching Machinery (not applicable)

3.9 UTILITIES WITHIN CONCRETE SLABS (not applicable)

3.10 ELECTRICAL

3.10.1 Conduct of Electrical Work (not applicable)

3.10.2 Portable Extension Cords

Size portable extension cords in accordance with manufacturer ratings for the tool to be powered and protected from damage. Immediately removed from service all damaged extension cords. Portable extension cords shall meet the requirements of NFPA 70.

3.11 WORK IN CONFINED SPACES (not applicable)

-- End of Section --

ATTACHMENT 5

Unified Facilities Guide Specifications 01 35 29

NFSS REMOVAL OF INVESTIGATIVE DERIVED WASTE AND LEGACY WASTE
MODIFIED TO BE PROJECT SPECIFIC ON April 16, 2010
****
USACE / NAVFAC / AFCESA / NASA UFGS-01 35 29.13 (January 2008)

Preparing Activity: USACE **Superseding**
UFGS-01 35 30 (April 2006)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2009
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PART 1 GENERAL
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1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA)
ISEA Z358.1 (2004) Emergency Eyewash and Shower Equipment

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH 85-115 (1985) Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2008) Safety and Health Requirements Manual

ER 385-1-95 (2003) Safety and Health Requirements for Ordnance and Explosives (OE) Operations

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

10 CFR 20	Standards for Protection Against Radiation
29 CFR 1904	Recording and Reporting Occupational Injuries and Illnesses
29 CFR 1910	Occupational Safety and Health Standards

Hazardous Waste Operations and Emergency Response

29 CFR 1926	Safety and Health Regulations for Construction

Hazardous Waste Operations and Emergency Response

49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements

1.2 DESCRIPTION OF WORK

This section requires Contractors to implement practices and procedures for working safely and in compliance with OSHA and USACE regulation while performing cleanup activities on uncontrolled hazardous waste sites.

1.3 SUBMITTALS

Government acceptance is required for submittals with a "G" designation; Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Work Zones; G

Drawings including initial work zone boundaries: Exclusion Zone (EZ), including restricted and regulated areas; Contamination Reduction Zone (CRZ); and Support Zone (SZ).

Decontamination Facilities; G

Drawings showing the layout of the personnel and equipment decontamination [areas] [facilities].

SD-03 Product Data

Exposure Monitoring/Air Sampling Program

Personnel exposure monitoring/sampling results.

Site Control Log

Record of each entry and exit into the site, as specified.

Employee Certificates

A certificate for each worker performing cleanup operations with potential for contaminant-related occupational exposure signed by the safety and health manager and the occupational physician indicating the workers meet the training and medical surveillance requirements of this contract.

1.4 REGULATORY REQUIREMENTS

Comply with EM 385-1-1, OSHA requirements in 29 CFR 1910 and 29 CFR 1926 with work performed under this contract, especially OSHA's Standards 29 CFR 1926.65 and 29 CFR 1910.120 and state specific OSHA requirements where applicable. Submit to the Contracting Officer for resolution matters of interpretation of standards before starting work. The most stringent requirements apply where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary.

1.5 PRECONSTRUCTION SAFETY CONFERENCE

Conduct a preconstruction safety conference prior to the start of site activities and after submission of the Contractor's APP/SSHP. The objective of the meeting will be to discuss health and safety concerns related to the impending work, discuss project health and safety organization and expectations, review and answer comments and concerns regarding the APP/SSHP or other health and safety concerns the Contractor may have. Ensure that those individuals responsible for health and safety at the project level are available and attend this meeting.

1.6 ACCIDENT PREVENTION PLAN/SITE SAFETY AND HEALTH PLAN (APP/SSHP)

Develop and implement a Site Safety and Health Plan as an integral part of the Accident Prevention Plan to produce the APP/SSHP. Address all occupational safety and health hazards (traditional construction as well as contaminant-related hazards) associated with cleanup operations within the APP/SSHP. Cover each SSHP element in section 28.A.01 of EM 385-1-1 and each APP element in Appendix A of EM 385-1-1. There are overlapping elements in Section 28.A.01 and Appendix A of EM 385-1-1. SSHP appendix elements that overlap with APP elements need not be duplicated in the APP/SSHP provided each SOH issue receives adequate attention and is documented in the APP/SSHP. The APP/SSHP is

a dynamic document, subject to change as project operations/execution change. The APP/SSHP will require modification to address changing and previously unidentified health and safety conditions. It is the Contractor's responsibility to ensure that the APP/SSHP is updated accordingly. Submit amendments to the APP/SSHP to the COR as the APP/SSHP is updated. For long duration projects resubmit the APP/SSHP to the COR annually for review. The APP/SSHP must contain all updates.

1.6.1 Acceptance and Modifications

Prior to submittal, the APP/SSHP must be signed and dated by the Safety and Health Manager and the Site Superintendent. Submit for review [_____] days prior to the Preconstruction Safety Conference. Deficiencies in the APP/SSHP will be discussed at the preconstruction safety conference, and be revised to correct the deficiencies and resubmitted for acceptance. Onsite work must not begin until the plan has been accepted. Maintain a copy of the written APP/SSHP onsite. Changes and modifications to must be made with the knowledge and concurrence of the Safety and Health Manager, the Site Superintendent, and the Contracting Officer. Bring to the attention of the Safety and Health Manager, the Site Superintendent, and the Contracting Officer any unforeseen hazard that becomes evident during the performance of the work, through the Site Safety and Health Officer (SSHO) for resolution as soon as possible. In the interim, take necessary action to re-establish and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment. Disregard for the provisions of this specification or the accepted APP/SSHP will be cause for stopping work until the matter has been rectified.

1.6.2 Availability

Make available the APP/SSHP in accordance with 29 CFR 1910.120, (b)(1)(v) and 29 CFR 1926.65, (b)(1)(v).

1.7 SITE DESCRIPTION AND CONTAMINATION CHARACTERIZATION

1.7.1 Project/Site Conditions

Refer to the following reports and information for the site description and contamination characterization.

1.7.1.1 CERCLA Documents

1.7.1.2 RCRA Documents

1.7.1.3 UST Documents (Not applicable to this project)

1.7.2 Ordnance and Explosives (OE) (Not anticipated for this project)

Stop work and contact the Contracting Officer (CO) if ordnance and explosives (OE), explosive media or chemical agent contaminated media (CACM) are discovered during hazardous waste site cleanup activities. Proceed with work after the CO gives permission and, according to

ER 385-1-95 requirements.

1.8 TASK SPECIFIC HAZARDS, INITIAL PPE, HAZWOPER MEDICAL SURVEILLANCE AND TRAINING APPLICABILITY

Task specific occupational hazards, task specific HAZWOPER medical surveillance and training applicability and task specific initial PPE requirements for the project are listed on the **Task Hazard and Control Sheets** at the end of this section.

It is the Contractor's responsibility to reevaluate occupational safety and health hazards as the work progresses and to adjust the PPE and onsite operations, if necessary, so that the work is performed safely and in compliance with occupational safety and health regulations.

1.9 STAFF ORGANIZATION, QUALIFICATION AND RESPONSIBILITIES

1.9.1 Contractor Safety and Health Manager

Safety and Health Manager must be an Industrial Hygienist certified by the American Board of Industrial Hygiene, a safety professional certified by the Board of Certified Safety Professionals or a health physicist certified by the American Board of Health Physicists.

1). The Safety and Health Manager must have the following additional qualifications:

a. A minimum of 3 years experience in developing and implementing safety and health programs at hazardous waste sites and/or in the hazardous waste disposal industry.

b. Documented experience in supervising professional and technician level personnel.

c. Documented experience in developing worker exposure assessment programs and air monitoring programs and techniques.

d. Documented experience in managing personal protective equipment programs and conducting PPE hazard evaluations for the types of activities and hazards likely to be encountered on the project.

e. Working knowledge of state and Federal occupational safety and health regulations.

2). The Safety and Health Manager will:

a. Be responsible for the development, implementation, oversight, and enforcement of the APP/SSHP.

b. Sign and date the APP/SSHP prior to submittal.

c. Conduct initial site-specific training.

d. Be present onsite during the first 3 days of remedial activities and at the startup of each new major phase of work.

e. Visit the site as needed and at least once per month for the duration of activities, to audit the effectiveness of the APP/SSHP.

f. Be available for emergencies.

g. Provide onsite consultation as needed to ensure the APP/SSHP is fully implemented.

h. Coordinate any modifications to the APP/SSHP with the Site Superintendent, the SSHO, and the Contracting Officer.

i. Provide continued support for upgrading/downgrading of the level of personal protection.

j. Be responsible for evaluating air monitoring data and recommending changes to engineering controls, work practices, and PPE.

k. Review accident reports and results of daily inspections.

l. Serve as a member of the Contractor's quality control staff.

1.9.2 Additional Certified Health and Safety Support Personnel

Retain health physics support from a health physicist certified by the American Board of Health Physics to develop radiation protection requirements of the APP/SSHP and, when necessary, visit the site to help implement ionizing radiation protection requirements of the APP/SSHP. Retain a Health Physicist to be on site at all times to implement the Radiation Safety Plan.

1.9.3 Site Safety and Health Officer

Designate an individual and one alternate as the Site Safety and Health Officer (SSHO). The name, qualifications (education and training summary and documentation), and include work experience of the Site Safety and Health Officer and alternate in the APP/SSHP.

1). The SSHO must have the following qualifications:

a. A minimum of 2 years experience in implementing safety and health programs at hazardous waste sites and/or in the hazardous waste disposal industry where Level C personal protective equipment was required.

b. Documented experience in construction techniques and construction safety procedures.

c. Working knowledge of Federal and state occupational safety and health regulations.

d. Specific training in personal and respiratory protective equipment, confined space entry and in the proper use of air monitoring instruments and air sampling methods including monitoring for ionizing radiation.

2). The Site Safety and Health Officer must:

a. Assist and represent the Safety and Health Manager in onsite training and the day to day onsite implementation and enforcement of the accepted APP/SSHP.

b. Be assigned to the site on a full time basis for the duration of field activities. The SSHO will have no duties other than Safety and Health related duties. If operations are performed during more than 1 work shift per day, a site Safety and Health Officer must be present for each shift and when applicable, act as the radiation safety officer (RSO) as defined in paragraph 06.E.02 of EM 385-1-1 on radioactive waste cleanup projects.

c. Have authority to ensure site compliance with specified safety and health requirements, Federal, state and OSHA regulations and all aspects of the APP/SSHP including, but not limited to, activity hazard analyses, air monitoring, monitoring for ionizing radiation, use of PPE, decontamination, site control, standard operating procedures used to minimize hazards, safe use of engineering controls, the emergency response plan, confined space entry procedures, spill containment program, and preparation of records by performing a daily safety and health inspection and documenting results on the Daily Safety Inspection Log in accordance with 29 CFR 1904.

d. Have authority to stop work if unacceptable health or safety conditions exist, and take necessary action to re-establish and maintain safe working conditions.

e. Consult with and coordinate any modifications to the APP/SSHP with the Safety and Health Manager, the Site Superintendent, and the Contracting Officer.

f. Serve as a member of the Contractor's quality control staff on matters relating to safety and health.

g. Conduct accident investigations and prepare accident reports.

h. Conduct daily safety inspection and document safety and health findings into the Daily Safety Inspection Log. Track noted safety and health deficiencies to ensure that they are corrected.

i. In coordination with site management and the Safety and Health Manager, recommend corrective actions for identified deficiencies and oversee the corrective actions.

1.9.4 Occupational Physician

Utilize the services of a licensed physician, who is certified in occupational medicine by the American Board of Preventative Medicine, or who, by necessary training and experience is Board eligible. The physician must be familiar with this site's hazards and the scope of this project. Include the medical consultant's name, qualifications, and knowledge of the site's conditions and proposed activities in the APP/SSHP. The physician will be responsible for the determination of medical surveillance protocols and for review of examination/test results performed in compliance with 29 CFR 1910.120, (f) and 29 CFR 1926.65, (f) and paragraph MEDICAL SURVEILLANCE.

1.9.5 Persons Certified in First Aid and CPR

At least two persons who are currently certified in first aid and CPR by the American Red Cross or other approved agency must be onsite at all times during site operations. They must be trained in universal precautions and the use of PPE as described in the Bloodborne Pathogens Standard of 29 CFR 1910, Section .1030. These persons may perform other duties but will be immediately available to render first aid when needed.

1.9.6 Safety and Health Technicians

For each work crew in the exclusion zone, one person, designated as a Safety and Health technician, must perform activities such as air monitoring, decontamination, and safety oversight on behalf of the SSHO. They must have appropriate training equivalent to the SSHO in each specific area for which they have responsibility and report to and be under the supervision of the SSHO.

1.10 TRAINING

Meet the following requirements in the Contractor's training program for workers performing cleanup operations and who will be exposed to contaminants.

1.10.1 General Hazardous Waste Operations Training

All Personnel performing duties with potential for exposure to onsite contaminants must meet and maintain the following 29 CFR 1910.120/ 29 CFR 1926.65 (e) training requirements:

a. 40 hours of off site hazardous waste instruction.

b. 3 days actual field experience under the direct supervision of a trained, experienced supervisor.

c. 8 hours refresher training annually.

Onsite supervisors must have an additional 8 hours management and supervisor training specified in 29 CFR 1910.120/29 CFR 1926.65 (e) (4).

1.10.2 Pre-entry Briefing

Prior to commencement of onsite field activities, all site employees, including those assigned only to the Support Zone, must attend a site-specific safety and health training session. This session will be conducted by the Safety and Health Manager and the Site Safety and Health Officer to ensure that all personnel are familiar with requirements and responsibilities for maintaining a safe and healthful work environment. Thoroughly discuss procedures and contents of the accepted APP/SSHP and Sections 01.B.02 and 28.D.02 of EM 385-1-1 . Each employee must sign a training log to acknowledge attendance and understanding of the training. Notify the Contracting Officer at least 5 days prior to the initial site-specific training session so government personnel involved in the project may attend.

1.10.3 Periodic Sessions

Conduct periodic onsite training by the SSHO at least daily for personnel assigned to work at the site during that day. Address safety and health procedures, work practices, any changes in the APP/SSHP, activity hazard analyses, work tasks, or schedule; results of previous week's air monitoring, review of safety discrepancies and accidents. Convene a meeting prior to implementation of the change must be convened should an operational change affecting onsite field work be made, to explain safety and health procedures. Conduct a site-specific training sessions for new personnel, visitors, and suppliers by the SSHO using the training curriculum outlines developed by the Safety and Health Manager. Each employee must sign a training log to acknowledge attendance and understanding of the training.

1.10.4 Other Training

a. Site specific procedures for handling and storing radioactive materials;

b. Health and safety hazards associated with exposure to the radioactive material that will be cleaned up or otherwise handled and the purpose and function of protective devices and precautions used to minimize exposures;

c. Elements of the APP/SSHP and company specific procedures intended to provide protection from radiation exposure;

d. Worker responsibility to report any unsafe acts which might result in exposure to ionizing radiation;

e. Appropriate worker response procedures to events that may result in worker exposure to ionizing radiation;

f. Worker rights and responsibilities with respect to ionizing radiation exposure. Provide training as specified by 29 CFR 1910 Section .146, by the Safety and Health Manager shall for employees who are required to supervise, standby, or enter permit-required confined spaces. Train in accordance with 49 CFR 172 Subpart, Persons involved in any aspect of the transportation of hazardous materials.

1.11 PERSONAL PROTECTIVE EQUIPMENT

1.11.1 Site Specific PPE Program

Provide onsite personnel exposed to contaminants with appropriate personal

protective equipment. Components of levels of protection (B, C, D and modifications) must be relevant to site-specific conditions, including heat and cold stress potential and safety hazards. Use only respirators and PPE approved by NIOSH. Keep protective equipment and clothing clean and well maintained. Include site-specific procedures to determine PPE program effectiveness and for onsite fit-testing of respirators, cleaning, maintenance, inspection, and storage of PPE within the PPE section of the APP/SSHP.

1.11.2 Levels of Protection

The Safety and Health Manager must establish and evaluate as the work progresses the levels of protection for each work activity. Also establish action levels for upgrade or downgrade in levels of PPE. Describe in the APP/SSHP the protocols and the communication network for changing the level of protection. Address air monitoring results, potential for exposure, changes in site conditions, work phases, job tasks, weather, temperature extremes, individual medical considerations, etc. within the PPE evaluation protocol.

1.11.2.1 Initial PPE Components

The following items constitute initial minimum protective clothing and equipment ensembles.

a. Level D.

b. Modified Level D.

c. Level C.

d. Level B.

1.11.3 PPE for Government Personnel

Three clean sets of personal protective equipment and personal dosimeters for work on radioactive waste cleanup sites and clothing (excluding air-purifying negative-pressure respirators and safety shoes, which will be provided by individual visitors), as required for entry into the Exclusion Zone and/or Contamination Reduction Zone, must be available for use by the Contracting Officer or official visitors. The items must be cleaned and maintained by the Contractor and stored and clearly marked: "FOR USE BY GOVERNMENT ONLY." Provide basic training in the use and limitations of the PPE provided.

1.12 MEDICAL SURVEILLANCE PROGRAM

Meet 29 CFR 1910.120/29 CFR 1926.65 (f) and the following requirements for medical surveillance program for workers performing cleanup operations and who will be exposed to contaminants. Assure the Occupational Physician or the physician's designee performs the physical examinations and reviews examination results. Participation in the medical surveillance program will be without cost to the employee, without loss of pay and at a reasonable time and place.

1.12.1 Frequency of Examinations

Medical surveillance program participants must receive medical examinations and consultations on the following schedule:

a. Every 12 months

b. If and when the participant develops signs and symptoms indicating a possible overexposure due to an uncontrolled release of a hazardous substance on the

project.

c. Upon termination or reassignment to a job where medical surveillance program participation is not required, unless his/her previous annual examination/consultation was less than 6 months prior to reassignment or termination.

d. On a schedule specified by the occupational physician.

1.12.2 Content of Physical Examinations/Consultation

Verify the following information about medical surveillance program participants:

a. Baseline health conditions and exposure history.

b. Allergies/sensitivity/susceptiblity to hazardous substances exposure.

c. Ability to wear personal protective equipment inclusive of NIOSH certified respirators under extreme temperature conditions.

d. Fitness to perform assigned duties.

Provide the occupational physician with the following information for each medical surveillance program participant:

a. Information on the employee's anticipated or measured exposure.

b. A description of any PPE used or to be used.

c. A description of the employee's duties as they relate to the employee's exposures (including physical demands on the employee and heat/cold stress).

d. A copy of 29 CFR 1910.120, or 29 CFR 1926.65.

e. Information from previous examinations not readily available to the examining physician.

f. A copy of Section 5.0 of NIOSH 85-115.

g. Information required by 29 CFR 1910 Section .134.

1.12.3 Physician's Written Opinion

Obtain and furnish to the Safety and Health Manager; and the employee before work begins, a copy of the physician's written opinion for each employee. Address the employee's ability to perform hazardous waste site remediation work and containing the following:

a. The physician's verification of the employee's fitness to perform duties as well as recommended limitations upon the employee's assigned work and/or PPE usage.

b. The physician's opinion about increased risk to the employee's health resulting from work; and

c. A statement that the employee has been informed and advised about the results of the examination.

1.12.4 Employee Certificates

Provide on employee certificates, documentation that employees have received medical examinations.

1.13 EXPOSURE MONITORING/AIR SAMPLING PROGRAM

Prepare and implement by the Safety and Health Manager an exposure monitoring/air sampling program to identify and quantify safety and health hazards and airborne levels of hazardous substances in order to assure proper selection of engineering controls, work practices and personal protective equipment for affected site personnel. Include action levels for upgrading/downgrading PPE in the program. The contractor will determine which contaminants to monitor to ensure the safety of their employees.

1.13.1 Ionizing Radiation Sampling and Dosimetry

1.13.1.1 Air Sampling and Dosimetery

Use appropriate OSHA approved equipment for air sampling and dosimetry.

1.13.1.2 Evaluation

Radiation dosimetry must be evaluated by an individual or company holding current personnel dosimetry accreditation from the National Voluntary Laboratory Accreditation Program (NVLAP). Electronic dosimetry may be used to assign external dose if approved by the Contracting Officer. Internal intake assessment and applicable monitoring must be evaluated by the CHP.

1.13.1.3 Documentation

Document employee exposure to external radiation. Include reviewing each employee's radiation exposure history in accordance with 10 CFR 20 Section .2104, for compliance with exposure standards prior to allowing the employee access to a restricted area. If the employee has no exposure history, the employee must provide a signed written statement to that effect.

1.13.1.4 Reporting

Furnish reports of exposure to ionizing radiation to the Contracting Officer as soon as available and to each employee annually, upon termination, and within 30 days of any personal request.

1.14 HEAT STRESS MONITORING AND MANAGEMENT

Document in the APP/SSHP and implement the procedures and practices in section 06.J. in EM 385-1-1 to monitor and manage heat stress.

1.15 SPILL AND DISCHARGE CONTROL

Develop and implement written spill and discharge containment/control procedures. Address radioactive wastes, shock sensitive wastes, laboratory waste packs, material handling equipment, as well as drum and container handling, opening, sampling, shipping and transport. Describe prevention measures, such as building berms or dikes; spill control measures and material to be used (e.g. booms, vermiculite); location of the spill control material; personal protective equipment required to cleanup spills; disposal of contaminated material; and who is responsible to report the spill. Storage of contaminated material or hazardous materials must be appropriately bermed, diked and/or contained to prevent any spillage of material on uncontaminated soil. If the spill or discharge is reportable, and/or human health or the environment are threatened, the National

Response Center, the state, and the Contracting Officer must be notified as soon as possible. Reporting requirements must be in accordance with all Federal, State and Local requirements.

1.16 MATERIALS TRANSFER SAFETY

Remove liquids and residues from the tanks using explosion-proof or air-driven pumps. Bond to the tank and ground pump motors and suction hoses to prevent electrostatic ignition hazards. Use of a hand pump will be permitted to remove the last of the liquid from the bottom of the tanks. If a vacuum truck is used for removal of liquids or residues, the area of operation for the vacuum truck must be vapor free. locate the truck upwind from the tank and outside the path of probable vapor travel. Discharge the vacuum pump exhaust gases through a hose of adequate size and length downwind of the truck and tank area. Vacuum truck operating and safety practices must conform to API RP 2219. Collect tank residues in drums, tanks, or tank trucks labeled according to 49 CFR 171 and 49 CFR 172 and disposed of as specified. Disconnect and drain fittings and lines of their contents after the materials have been transferred and the tanks have been exposed. Do not spill contents into the environment during cutting or disconnecting of tank fittings. Transfer materials drained into DOT-approved drums for storage and/or transportation. Only non-sparking or non-heat producing tools shall be used to disconnect and drain or to cut through tank fittings. Electrical equipment (e.g., pumps, portable hand tools, etc.) used for tank preparation must be explosion-proof. Following cutting or disconnecting of the fittings, plug openings leading to the tanks.

1.17 DRUM AND CONTAINER HANDLING

Procedures and Precautions (opening, sampling, overpacking)

1.18 CONFINED SPACE ENTRY PROCEDURES (not applicable)

1.19 HOT WORK (if applicable)

Hot work will not be permitted on or within the tanks or anywhere else not previously specified as a hot work area, except as outlined herein. Prior to conducting hot work, a hot work permit must be prepared by the person to be conducting the hot work and reviewed and signed off by the Contractor's qualified person. An additional hot work permit may need to be obtained from local authorities or in the case of military or other federal installations, the fire marshal. An example format for a hot work permit must be included in the AAPP/SSHP. Describe compliance with the following procedures. After tank interiors have been decontaminated, hot work may be conducted only when the tank is inerted, and to the extent necessary to begin dismantling the tanks. After decontamination of tank interiors, hot work must not be performed unless monitoring indicates atmospheres within and immediately surrounding the tanks are less than 8% oxygen inside the tank and less than 10% of the LFL outside the tank; continuous monitoring must continue until the hot work is completed. The hot work prohibition includes welding, cutting, grinding, sawing, or other similar operations which could be expected to potentially generate combustion-producing temperatures or sparks, or which could produce potentially hazardous fumes or vapors. Designate an individual at each hot work site as a fire watch. This person's sole responsibility is to monitor the hot work and have immediate access to the fire extinguisher located at each hot work site. A new permit must be obtained at the start of each work shift during which hot work will be conducted.

1.20 IGNITION SOURCES

1.21 FIRE PROTECTION AND PREVENTION

1.22 ELECTRICAL SAFETY

1.23 EXCAVATION AND TRENCH SAFETY

1.24 GUARDING OF MACHINERY AND EQUIPMENT

1.25 LOCKOUT/TAGOUT

1.26 FALL PROTECTION

1.27 HAZARD COMMUNICATION

1.28 ILLUMINATION

1.29 SANITATION

1.30 ENGINEERING CONTROLS

1.31 PROCESS SAFETY MANAGEMENT

1.32 SIGNS AND LABELS

1.33 WASTE DISPOSAL

1.34 TANK PURGING (not app)

1.35 TANK INERTING (not applicable)

1.36 TANK ATMOSPHERE TESTING (not applicable)

1.36.1 Monitoring to Ensure Purging (not applicable)

1.36.2 Monitoring to Ensure Inerting (not applicable)

1.37 TANK LIFTING (not applicable)

1.38 TANK DEMOLITION(not applicable)

1.39 TANK CLEANING (not applicable)

1.40 SITE CONTROL MEASURES

1.40.1 Work Zones (if applicable)

Initial anticipated work zone boundaries (exclusion zone, contamination reduction zone, support zone, all access points and decontamination areas) are to be clearly delineated on the site drawings. Base delineation of work zone boundaries on the contamination characterization data and the hazard/risk analysis to be performed as described in paragraph: HAZARD/RISK ANALYSIS. As work progresses and field conditions are monitored, work zone boundaries may be modified (and site drawings modified) with approval of the Contracting Officer. Clearly identify work zones and marked in the field (using fences, tape, signs, etc.). Post a site map, showing work zone boundaries and locations of decontamination facilities in the onsite office. Work zones must consist of the following:

a. Exclusion Zone (EZ): The exclusion zone is the area where hazardous contamination is either known or expected to occur and the greatest potential for exposure exists. Control entry into this area and exit may only be made through the CRZ.

b. Contamination Reduction Zone (CRZ): The CRZ is the transition area between the Exclusion Zone and the Support Zone. The personnel and equipment decontamination areas must be separate and unique areas located in the CRZ.

c. Support Zone (SZ): The Support Zone is defined as areas of the site, other than exclusion zones and contamination reduction zones, where workers do not have the potential to be exposed to hazardous substances or dangerous conditions resulting from hazardous waste operations. Secure the Support Zone against active or passive contamination. Site offices, parking areas, and other support facilities must be located in the Support Zone.

1.40.2 Site Control Log

A log of personnel visiting, entering, or working on the site must be maintained. Include the following: date, name, agency or company, time entering and exiting site, time entering and exiting the exclusion zone (if applicable). Before visitors are allowed to enter the Contamination Reduction Zone or Exclusion Zone, they must show proof of current training, medical surveillance and respirator fit testing (if respirators are required for the tasks to be performed) and fill out a Certificate of Worker or Visitor Acknowledgment. Record this visitor information, including date, in the log.

1.40.3 Communication

Provide and install an employee alarm system that has adequate means of on and off site communication in accordance with 29 CFR 1910 Section .165. The means of communication must be able to be perceived above ambient noise or light levels by employees in the affected portions of the workplace. The signals must be distinctive and recognizable as messages to evacuate or to perform critical operations.

1.40.4 Site Security

Print signs in bold large letters on contrasting backgrounds. Signs must be visible from all points where entry might occur and at such distances from the restricted area that employees may read the signs and take necessary protective steps before entering.

1.41 PERSONAL HYGIENE AND DECONTAMINATION

Personnel entering the Exclusion or Contamination Reduction Zones or otherwise exposed to hazardous chemical vapors, gases, liquids, or contaminated solids must decontaminate themselves and their equipment prior to exiting the contamination reduction zone (CRZ) and entering the support zone. Consult Chapter 10.0 of NIOSH 85-115 when preparing decontamination procedures. Submit a detailed discussion of personal hygiene and decontamination facilities and procedures to be followed by site workers as part of the APP/SSHP. Train employees in the procedures and enforce the procedures throughout site operations.

1.41.1 Decontamination Facilities

Initially set up a decontamination line in the CRZ. Employees must exit the exclusion zone through the CRZ and implement appropriate decontamination procedures and techniques. It is the Site Safety and Health Officer's responsibility to recommend techniques to improve personnel decontamination procedures, if necessary.

1.41.2 Equipment Decontamination

Decontaminate the vehicles and equipment used in the EZ shall be decontaminated in the CRZ prior to leaving the site.

1.41.2.1 Facilities for Equipment and Personnel

Indicate Site Specific equipment for this job.

1.41.2.2 Procedures

Procedures for equipment decontamination must be developed and utilized to prevent the spread of contamination into the SZ and offsite areas. These procedures must address disposal of contaminated products and spent materials used on the site, including containers, fluids, oils, etc. Assume any item taken into the EZ to be contaminated and perform an inspection and decontaminate. Vehicles, equipment, and materials must be cleaned and decontaminated prior to leaving the site. Handle construction material in such a way as to minimize the potential for contaminants being spread and/or carried offsite. Prior to exiting the site, vehicles and equipment must be monitored to ensure the adequacy of decontamination.

1.42 EMERGENCY EQUIPMENT AND FIRST AID REQUIREMENTS

Maintain, as a minimum, the following items onsite and available for immediate use:

a. First aid equipment and supplies approved by the consulting physician.

b. Emergency eyewashes and showers that comply with ISEA Z358.1.

c. Emergency-use respirators (as determined by SSHO).

d. Provide fire extinguishers of sufficient size and type at site facilities and in all vehicles and at any other site locations where flammable or combustible materials present a fire risk.

1.43 EMERGENCY RESPONSE AND CONTINGENCY PROCEDURES

An Emergency Response Plan, that meets the requirements of 29 CFR 1910.120 (l) and 29 CFR 1926.65 (l), must be developed and implemented as a section of the APP/SSHP. In the event of any emergency associated with remedial action, without delay, alert all onsite employees and as necessary offsite emergency responders that there is an emergency situation; take action to remove or otherwise minimize the cause of the emergency; alert the Contracting Officer; and institute measures necessary to prevent repetition of the conditions or actions leading to, or resulting in, the emergency. Train employees that are required to respond to hazardous emergency situations to their level of responsibility according to 29 CFR 1910.120 (q) and 29 CFR 1926.65 (q) requirements. Rehearse the plan regularly as part of the overall training program for site operations. Review the plan periodically and revised as necessary to reflect new or changing site conditions or information. Provide copies of the Emergency Response Portion of the accepted APP/SSHP to the affected local emergency response agencies. Address, as a minimum, the following elements in the plan:

a. Pre-emergency planning. Coordinate with local emergency response providers during preparation of the Emergency Response Plan. At a minimum, coordinate with local fire, rescue, hazardous materials response teams, police and emergency medical providers to assure all organizations are capable and willing to respond to and provide services for on-site emergencies. Ensure the Emergency Response Plan for the site is compatible and integrated with the local fire, rescue, medical and police security services available from local emergency response planning agencies.

b. Personnel roles, lines of authority, communications for emergencies.
c. Emergency recognition and prevention.
d. Site topography, layout, and prevailing weather conditions.
e. Criteria and procedures for site evacuation (emergency alerting procedures, employee alarm system, emergency PPE and equipment, safe distances, places of refuge, evacuation routes, site security and control).
f. Specific procedures for decontamination and medical treatment of injured personnel.
g. Route maps to nearest prenotified medical facility. Site-support vehicles must be equipped with maps. At the beginning of project operations, drivers of the support vehicles must become familiar with the emergency route and the travel time required.
h. Emergency alerting and response procedures including posted instructions and a list of names and telephone numbers of emergency contacts (physician, nearby medical facility, fire and police departments, ambulance service, Federal, state, and local environmental agencies; as well as Safety and Health Manager, the Site Superintendent, the Contracting Officer and/or their alternates).
i. Criteria for initiating community alert program, contacts, and responsibilities.
j. Procedures for reporting incidents to appropriate government agencies. In the event that an incident such as an explosion or fire, or a spill or release of toxic materials occurs during the course of the project, the appropriate government agencies must be immediately notified. In addition, verbally notify the Contracting Officer and the local district safety office immediately and receive a written notification within 24 hours. Include within the report the following items:
(1) Name, organization, telephone number, and location of the Contractor.

(2) Name and title of the person(s) reporting.

(3) Date and time of the incident.

(4) Location of the incident, i.e., site location, facility name.

(5) Brief summary of the incident giving pertinent details including type of operation ongoing at the time of the incident.

(6) Cause of the incident, if known.

(7) Casualties (fatalities, disabling injuries).

(8) Details of any existing chemical hazard or contamination.

(9) Estimated property damage, if applicable.

(10) Nature of damage, effect on contract schedule.

(11) Action taken to ensure safety and security.

(12) Other damage or injuries sustained, public or private.
k. Procedures for critique of emergency responses and follow-up.

1.44 CERTIFICATE OF WORKER/VISITOR ACKNOWLEDGEMENT

A copy of a Contractor-generated certificate of worker/visitor acknowledgement must be completed and submitted for each visitor allowed to enter contamination reduction or exclusion zones, and for each employee, following the example certificate at the end of this section.

1.45 INSPECTIONS

Attach to and submit with the Daily Quality Control reports the SSHO's Daily Inspection Logs. Include with each entry the following: date, work area checked, employees present in work area, PPE and work equipment being used in each area, special safety and health issues and notes, and signature of preparer.

1.46 SAFETY AND HEALTH PHASE-OUT REPORT

Submit a Safety and Health Phase-Out Report in conjunction with the project close out report and will be received prior to final acceptance of the work. Include the following minimum information :

a. Summary of the overall performance of safety and health (accidents or incidents including near misses, unusual events, lessons learned, etc.).

b. Final decontamination documentation including procedures and techniques used to decontaminate equipment, vehicles, and on site facilities.

c. Summary of exposure monitoring and air sampling accomplished during the project.

d. Signatures of Safety and Health Manager and SSHO.

Task _____
Initial Anticipated Hazards_____
Initial PPE_____
Initial Controls_____
Initial Exposure Monitoring _____
HAZWOPER Medical Surveillance Required yes no
HAZWOPER Training Required yes no

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section -

ATTACHMENT 6

Blank Activity Hazard Analysis Form

ACTIVITY HAZARD ANALYSIS

DATE PREPARED:

PROJECT OR ACTIVITY

PREPARED BY:

Risk Accepted by:

A = Frequent occurrence
B = Likely to occur
C = Occasional occurrence
D = Seldom occurrence
E = Unlikely to occur

SEVERITY		PROBABILITY					
Catastrophic	1	A	B	C	D	E
Critical	2	A	B	C	D	E
Marginal	3	A	B	C	D	E
Negligible	4	A	B	C	D	E

Required Safety Equipment and Training

PRINCIPLE STEPS	POTENTIAL SAFETY & HEALTH HAZARDS	Safety Controls - E=Engineering/Elimination A=Administrative PPE=Personal Protective Equipment	RAC CODE

ATTACHMENT 7

Contractor Monthly Man Hour Exposure Form

USACE Buffalo, NY. District

Contractor Monthly Man-Hour Report

(Ref. EM 385-1-1, page-17, para. 01.D.05c)

MONTH:_____ YEAR:_____

PROJECT NAME	CONTRACTOR NAME	MANHOURS WORKED this Month	Civil or Military Funded	LOCATION (City & State)	# of Illness/Injury Cases	# of Days Away from Work Cases
			Civ / Mil			
			Civ / Mil			
			Civ / Mil			
			Civ / Mil			
			Civ / Mil			
			Civ / Mil			
			Civ / Mil			
			Civ / Mil			
			Civ / Mil			
			Civ / Mil			
			Civ / Mil			
			Civ / Mil			

ATTACHMENT 8

Blank Accident Investigation Report ENGForm 3394

(For Safety Staff only)	REPORT NO.	EROC CODE	**UNITED STATES ARMY CORPS OF ENGINEERS ACCIDENT INVESTIGATION REPORT** *(For Use of this Form See Help Menu and USACE Suppl to AR 385-40)*	REQUIREMENT CONTROL SYMBOL: CEEC-S-8(R2)

1. ACCIDENT CLASSIFICATION

PERSONNEL CLASSIFICATION	INJURY/ILLNESS/FATAL	PROPERTY DAMAGE	MOTOR VEHICLE INVOLVED	DIVING
GOVERNMENT ☐ CIVILIAN ☐ MILITARY	☐	☐ FIRE INVOLVED ☐ OTHER	☐	☐
☐ CONTRACTOR	☐	☐ FIRE INVOLVED ☐ OTHER	☐	☐
☐ PUBLIC	☐ FATAL ☐ OTHER		☐	

2. PERSONAL DATA

a. Name *(Last, First, MI)*	b. AGE	c. SEX ☐ MALE ☐ FEMALE	d. SOCIAL SECURITY NUMBER	e. GRADE

f. JOB SERIES/TITLE

g. DUTY STATUS AT TIME OF ACCIDENT
☐ ON DUTY ☐ TDY
☐ OFF DUTY

h. EMPLOYMENT STATUS AT TIME OF ACCIDENT
☐ ARMY ACTIVE ☐ ARMY RESERVE ☐ VOLUNTEER
☐ PERMANENT ☐ FOREIGN NATIONAL ☐ SEASONAL
☐ TEMPORARY ☐ STUDENT
☐ OTHER *(Specify)* _____

3. GENERAL INFORMATION

a. DATE OF ACCIDENT *(month/day/year)*

b. TIME OF ACCIDENT *(Military time)* hrs

c. EXACT LOCATION OF ACCIDENT

d. CONTRACTOR'S NAME
(1) PRIME:
(2) SUBCONTRACTOR:

e. CONTRACT NUMBER _____
☐ CIVIL WORKS ☐ MILITARY
☐ OTHER *(Specify)* _____

f. TYPE OF CONTRACT
☐ CONSTRUCTION ☐ SERVICE
☐ A/E ☐ DREDGE
☐ OTHER *(Specify)* _____

g. HAZARDOUS/TOXIC WASTE ACTIVITY
☐ SUPERFUND ☐ DERP
☐ IRP ☐ OTHER *(Specify)* _____

4. CONSTRUCTION ACTIVITIES ONLY *(Fill in line and corresponding code number in box from list - see help menu)*

a. CONSTRUCTION ACTIVITY _____ (CODE) #

b. TYPE OF CONSTRUCTION EQUIPMENT _____ (CODE) #

5. INJURY/ILLNESS INFORMATION *(Include name on line and corresponding code number in box for items e, f & g - see help menu)*

a. SEVERITY OF ILLNESS/INJURY _____ (CODE) #

B. ESTIMATED DAYS LOST

C. ESTIMATED DAYS HOSPITALIZED

D. ESTIMATED DAYS RESTRICTED DUTY

e. BODY PART AFFECTED
PRIMARY _____ (CODE) #
SECONDARY _____ (CODE) #

f. NATURE OF ILLNESS / INJURY _____ (CODE) #

g. TYPE AND SOURCE OF INJURY/ILLNESS
TYPE _____ (CODE) #
SOURCE _____ (CODE) #

6. PUBLIC FATALITY *(Fill in line and correspondence code number in box - see help menu)*

a. ACTIVITY AT TIME OF ACCIDENT _____ (CODE) #

b. PERSONAL FLOATATION DEVICE USED? ☐ YES ☐ NO ☐ N/A

7. MOTOR VEHICLE ACCIDENT

a. TYPE OF VEHICLE
☐ PICKUP/VAN ☐ AUTOMOBILE
☐ TRUCK ☐ OTHER *(Specify)* _____

b. TYPE OF COLLISION
☐ SIDE SWIPE ☐ HEAD ON ☐ REAR END
☐ BROADSIDE ☐ ROLL OVER ☐ BACKING
☐ OTHER *(Specify)* _____

c. SEAT BELTS	USED	NOT USED	NOT AVAILABLE
(1) FRONT SEAT			
(2) REAR SEAT			

8. PROPERTY/MATERIAL INVOLVED

a. NAME OF ITEM	B. OWNERSHIP	C. $ AMOUNT OF DAMAGE
(1)		
(2)		
(3)		

9. VESSEL/FLOATING PLANT ACCIDENT *(Fill in line and correspondence code number in box from list - see help menu)*

a. TYPE OF VESSEI/FLOATING PLANT _____ (CODE) #

b. TYPE OF COLLISION/MISHAP _____ (CODE) #

10. ACCIDENT DESCRIPTION *(Use additional paper, if necessary)*

See attached page.

11. CAUSAL FACTOR(S) *(Read Instruction Before Completing)*

a. (Explain YES answers in item 13)	YES	NO
DESIGN: Was design of facility, workplace or equipment a factor?	☐	☐
INSPECTION/MAINTENANCE: Were inspection & maintenance procedures a factor?	☐	☐
PERSON'S PHYSICAL CONDITION: In your opinion, was the physical condition of the person a factor?	☐	☐
OPERATING PROCEDURES: Were operating procedures a factor?	☐	☐
JOB PRACTICES: Were any job safety/health practices not followed when the accident occurred?	☐	☐
HUMAN FACTORS: Did any human factors such as, size or strength of person, etc., contribute to accident?	☐	☐
ENVIRONMENTAL FACTORS: Did heat, cold, dust, sun, glare, etc., contribute to the accident?	☐	☐

a. *(CONTINUED)*	YES	NO
CHEMICAL AND PHYSICAL AGENT FACTORS: Did exposure to chemical agents, such as dust, fumes, mists, vapors or physical agents, such as, noise, radiation, etc., contribute to accident?	☐	☐
OFFICE FACTORS: Did office setting such as, lifting office furniture, carrying, stooping, etc., contribute to the accident?	☐	☐
SUPPORT FACTORS: Were inappropriate tools/resources provided to properly perform the activity/task?	☐	☐
PERSONAL PROTECTIVE EQUIPMENT: Did the improper selection, use or maintenance of personal protective equipment contribute to the accident?	☐	☐
DRUGS/ALCOHOL: In your opinion, was drugs or alcohol a factor to the accident	☐	☐

b. WAS A WRITTEN JOB/ACTIVITY HAZARD ANALYSIS COMPLETED FOR TASK BEING PERFORMED AT TIME OF ACCIDENT?

☐ YES *(If yes, attach a copy.)* ☐ NO

12. TRAINING

a. WAS PERSON TRAINED TO PERFORM ACTIVITY/TASK?	b. TYPE OF TRAINING.	c. DATE OF MOST RECENT FORMAL TRAINING.
☐ YES ☐ NO	☐ CLASSROOM ☐ ON JOB	(Month) (Day) (Year)

13. FULLY EXPLAIN WHAT ALLOWED OR CAUSED THE ACCIDENT; INCLUDE DIRECT AND INDIRECT CAUSES *(See instruction for definition of direct and indirect causes.) (Use additional paper, if necessary)*

a. DIRECT CAUSE

See attached page.

b. INDIRECT CAUSE(S)

See attached page.

14. ACTION(S) TAKEN, ANTICIPATED OR RECOMMENDED TO ELIMINATE CAUSE(S).

DESCRIBE FULLY:

See attached page.

15. DATES FOR ACTIONS IDENTIFIED IN BLOCK 14.

a. BEGINNING (Month/Day/Year)	b. ANTICIPATED COMPLETION (Month/Day/Year)

c. SIGNATURE AND TITLE OF SUPERVISOR COMPLETING REPORT	d. DATE *(Mo/Da/Yr)*	e. ORGANIZATION IDENTIFIER *(Div, Br, Sect)*	f. OFFICE SYMBOL
CORPS _____ CONTRACTOR _____			

16. MANAGEMENT REVIEW *(1st)*

a. ☐ CONCUR b. ☐ NON CONCUR c. COMMENTS

SIGNATURE	TITLE	DATE

17. MANAGEMENT REVIEW *(2nd - Chief Operations, Construction, Engineering, etc.)*

a. ☐ CONCUR b. ☐ NON CONCUR c. COMMENTS

SIGNATURE	TITLE	DATE

18. SAFETY AND OCCUPATIONAL HEALTH OFFICE REVIEW

a. ☐ CONCUR b. ☐ NON CONCUR c. ADDITIONAL ACTIONS/COMMENTS

SIGNATURE	TITLE	DATE

19. COMMAND APPROVAL

COMMENTS

COMMANDER SIGNATURE	DATE

*U.S. GOVERNMENT PRINTING OFFICE: 1993-0-791-757

10. ACCIDENT DESCRIPTION *(Continuation)*

13a. DIRECT CAUSE *(Continuation)*

13b. INDIRECT CAUSES *(Continuation)*

14. ACTION(S) TAKEN, ANTICIPATED, OR RECOMMENDED TO ELIMINATE CAUSE(S) *(Continuation)*

ATTACHMENT 9

Blank Certificate of Compliance (Crane) Form

CERTIFICATE OF COMPLIANCE

This certificate shall be signed by an official of the company that provides cranes for any application under this contract. Post a completed certificate on each crane utilized during this contract

CONTRACTING OFFICER'S POINT OF CONTACT	PHONE
PRIME CONTRACTOR/PHONE	CONTRACT NUMBER
CRANE SUPPLIER/PHONE (if different from prime contractor)	CRANE(S) NUMBER (i.e., ID number)
CRANE MANUFACTURER/TYPE/CAPACITY	
CRANE OPERATOR'S NAME(S)	

I certify that

1. The above noted crane and associated rigging gear conform to applicable USACE & OSHA regulations and applicable ASME B30 standards. The following USACE, OSHA regulations and ASME standards apply: EM 385-1-1, 29 CFR 1910.180 & B30.8-2004
2. The operators noted above have been trained and are qualified for the operation of the above noted crane(s).
3. The operators noted above have been trained not to bypass safety devices during lifting operations.

COMPANY OFFICIAL SIGNATURE	DATE
COMPANY OFFICIAL NAME/TITLE	

POST ON CRANE

(IN CAB OR VEHICLE)