

**FINAL
Quality Control Plan**

**Stabilization, Excavation and Disposal of Contaminated Soil
Plum Brook Ordnance Works
Pentolite Road Red Water Ponds**

Sandusky, Ohio

**Contract No. DACW69-02-D-0004
Work Order No. 013**

Prepared for:

**Department of the Army
Huntington District, Corps of Engineers
Huntington, WV**

Prepared by:

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Definitions and Acronyms

CFR	Code of Federal Regulations
COC	Constituents of Concern
CPR	Cardiopulmonary Resuscitation
DERP	Defense Environmental Restoration Program
DNT	Dinitrotoluene
EPA	United States Environmental Protection Agency
FS	Feasibility Study
GSA	General Service Administration
HAZWOPER	Hazardous Waste Operations and Emergency Response
HTF	Hypersonic Tunnel Facility
HTRW	Hazardous, Toxic, and Radioactive Waste
IDW	Investigation Derived Waste
IQCT	Independent Quality Control Team
NIOSH	National Institute for Occupational Safety and Health
NTCRA	Non-time Critical Removal Action
OSHA	Occupational Safety & Health Administration
PAH	Polynuclear Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PBOW	Plum Brook Ordnance Works
PBS	Plum Brook Station
POC	Point of Contact – technical point of contact for the U.S. Army Corps of Engineers

PPE	Personal Protective Equipment
PRGs	Preliminary Remediation Goals
PRRWP	Pentolite Road Red Water Ponds
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RGO	Remedial Goal Option
QAP	Quality Assurance Plan
QC	Quality Control
QCR	Quality Control Reports
SOW	Scope of Work
SSHO	Site Safety and Health Officer
SSHP	Site-Specific Safety and Health Plan
TCLP	Toxicity Characteristic Leaching Procedure
TNT	Trinitrotoluene
USACE	United States Army Corps of Engineers

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1.0 Purpose

This WasteTron Quality Control Plan (QCP) is based on the professional competence of the employees performing the project tasks and consists of checklists and documentation to ensure that all project activities are of high standards. WasteTron has high standards for its employees and subcontractors involved in all projects. Project tasks are assigned in accordance with clearly demonstrated capabilities. Quality Control (QC) is implemented within the project framework by a distinct QC organization functioning under established guidelines. This QCP ensures the development of a high quality project in the areas of plans/reports, field activities, sampling and analysis, and disposal activities.

2.0 Scope of QC Services

The general QC program is designed to ensure quality performance, traceable results, and confidence in the documents prepared for all projects completed by the firm. This project will adhere to the following guideline documents:

EM-200-1-3, "*Requirements for the Preparation of Sampling and Analysis Plans*," U.S. Army Corps of Engineers, February 2001

EM-200-1-6, "*Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste Projects (HTRW)*," U.S. Army Corps of Engineers, October 1997

ER-1110-1-263, "*Chemical Data Quality Management for Hazardous Waste Remedial Activities*," U.S. Army Corps of Engineers, April 1998

CELRHR 5-2-7, "*Quality Management Plan*," U.S. Army Corps of Engineers, May, 1999

ER 385-1-92, "*Safety and Health Document Requirements*," U.S. Army Corps of Engineers, March 1994

EM 385-1-1, "*Safety and Health Requirements Manual*," U.S. Army Corps of Engineers, September 1996

EM 200-1-2, "*Technical Project Planning Process*," U.S. Army Corps of Engineers, August 1998

EM 200-1-1, "*Validation of Analytical Chemistry Labs*," U.S. Army Corps of Engineers, July 1994

ER 1165-2-132, "*HTRW Guidance for Civil Works Projects*," U.S. Army Corps of Engineers, June 1992

EM 1110-1-4000, "*Monitoring Well Design, Installation, and Documentation at Hazardous Toxic, and Radioactive Waste Sites*," U.S. Army Corps of Engineers, November 1998

All field procedures and reporting requirements are performed in accordance with the listed guidelines/references. Draft documents are subject to internal peer review and senior review prior to completion. All project deliverables are subject to review by the United States Army Corps of Engineers (USACE). It should be noted that, the Engineering and Construction Division of the Huntington District is currently working towards ISO 9000 certification. WasteTron is dedicated to providing quality services to the USACE; therefore, WasteTron will work towards QCP compliance with the ISO 9000 standards.

2.1 Training

All field personnel performing intrusive work and soil treatment on this project have received forty- (40) hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training and 8-hour updates, where appropriate. All field personnel performing intrusive work and soil treatment meet the training requirements as cited in 29 Code of Federal Regulations (CFR) 1910.120. At least two personnel on-site will have received first aid and cardiopulmonary resuscitation (CPR) training. Appendix B of the Site Specific Safety and Health Plan (SSHP) contains copies of all training certifications and dates of refresher training for employees who may work on this project.

2.2 Project Planning

Project planning encompasses the preparation of a series of procedures that specify the manner in which project activities will be conducted. The purpose of these procedures is to provide step-

by-step control on how and when tasks will be completed. In general, the following procedures are followed for USACE projects:

- The project is assigned to a Project Manager experienced in the type of work to be completed.
- The Project Manager reviews the Scope of Work (SOW) to determine the extent of work required and to determine the best personnel to be assigned to the project.
- The Project Manager discusses their personnel requirements with an Administrator who authorizes the use of those personnel.
- The Project Manager then notifies the field coordinator that a project is in the planning status and informs the field coordinator what personnel he/she would like to use for the project.
- An initial project team will be formed consisting of the Project Manager, an administrative assistant, and a technical support person.
- The project team will discuss the project objectives, data requirements, and identify the possible regulatory requirements associated with all aspects of the project.
- The project team will gather and evaluate site information. This would include a site reconnaissance and review of any available background data including previous site assessments.
- After plan preparation, an internal Independent Quality Control Team (IQCT) will review the plans and make comments, which will be resolved or incorporated into the plans.
- Draft Plans will be submitted to the USACE.
- During the IQCT and USACE reviews, the Project Manager tentatively schedules equipment, personnel for the project, and subcontractors.
- Upon receipt of comments from the USACE, the technical support person will review comments with the Project Manager.
- Comments from the USACE will be incorporated in the plans or resolved prior to beginning work.
- The Project Manager notifies all appropriate parties of concern (utilities, property owners, and so forth) of the intended project schedule. Coordination with the USACE POC and the NASA POC will be very important to the performance of this project.
- The Project Manager has the utilities marked prior to performing any intrusive activities. A digging permit from NASA PBS is required for this project. Intrusive activities cannot be performed without approval from NASA PBS.
- The Project Manager confirms the scheduling of equipment and personnel for the project and then performs the project.
- The Project Manager supplies copies of all field documentation and gives a narrative of field activities to the technical support person who will prepare the report.
- After the report is prepared, an internal Independent Quality Control Team (IQCT) will review the report and make comments, which will be resolved or incorporated into the report.

- A Draft Report will be submitted to the USACE.
- Upon receipt of comments from the USACE, the comments will be resolved or incorporated into the report and the final report will be issued.

2.3 Technical Reviews

Technical reviews include issuance of all project-related documents controlled by a technical review system. Plans and reports will be reviewed by the Project Manager and by qualified, independent reviewers to ensure proper documentation. All project submittals will independently be reviewed by at least two WasteTron personnel (one senior reviewer and one peer reviewer). Reviews will be performed by personnel who are knowledgeable concerning regulatory requirements and who are experienced in performing field related procedures associated with this project. All comments resulting from the technical reviews are resolved and/or incorporated in the project submittals.

A Senior Project Manager will serve as the senior reviewer and shall review all project submittals. The Senior Reviewer will perform a review of all plans for precision, accuracy, representativeness, comparability, completeness, and verification that the work has been conducted in accordance with the SOW, policies, and guidelines. A Peer Review of the plans and reports is performed to determine their adequacy, completeness, and verification that the work was conducted in accordance with the scope of work, policies and guidelines.

2.4 Document Control

Project technical and administrative files will be maintained at WasteTron's office in Poca, West Virginia.

2.5 Quality Evaluation/Audit Surveillance

Qualified personnel who are independent of project activities will perform quality evaluation at predetermined intervals. The purpose of evaluations and audits is to ensure compliance with technical procedures and to document quality control. The Senior Project Manager performing technical reviews will perform quality evaluations of technical procedures and paperwork documentation during the course of the project. The quality evaluations may take the form of site visits to evaluate personnel's field procedures and/or review of field documents. Additionally, an administrative review is performed to ensure that project submittals are performed in a timely manner.

The Project Manager will perform daily reviews of work activities and paper work documentation to check for discrepancies or missing items so these can be corrected as soon as possible. The Project Manager will use the SOW to determine if work each day has been performed in accordance with the SOW and the approved plans.

2.6 Project Management

The Project Manager will oversee the project and ensure that all details are followed and that project activities are on track. Any project problems will be directed to the client for quick resolution.

2.7 Analytical Laboratory

The overall QC objective is to ensure that data of known and acceptable quality is generated from both field and laboratory activities. WasteTron Inc. will use REIC Laboratory to perform laboratory analysis for this project. REIC Laboratory is an USACE certified laboratory. Pursuant to the Scope of Work (SOW), WasteTron will not be responsible for collecting quality assurance samples. The laboratory will be responsible for ensuring that their personnel adhere to their laboratory's Quality Assurance Plans (QAP). The number and types of internal quality control checks for each analytical method is defined in the laboratory's QAP.

The Contract Laboratory shall follow EPA guidelines for reporting as outlined in Level 2, QA/QC Levels of Reporting. The Level 2 report shall include the following:

- Case Narrative (information should include the number and type of samples received, analysis of those samples, any problems that occurred, whether quality control was within acceptable limits, etc.)
- Analytical Report (summary of all sample analysis information including surrogates for organic methods.) Detection limits/reporting limits shall be included.
- Chains-of-Custody
- Summary of Quality Control (a summary shall be included of all quality control specific to the project.) This may include method reagent blanks, midlevel calibration checks, spike and spike duplicates, and sample duplicates. All QC shall include acceptance criteria and relative percent data where applicable.

Any sample failing the method or laboratory quality control limit may be reanalyzed. The analytical laboratory, WasteTron, and the USACE will jointly make the decision regarding re-analysis.

2.8 Field Quality Control

2.8.1 Field Quality Control (QC) for Chemical Data Measurement

Field quality control is as vital to a project as is quality control within the laboratory. Proper execution of each project task is needed in order to yield consistent, reliable information that is representative of the media and conditions being measured. The overall quality assurance objective is to ensure that data of known quality is generated which will be useful in meeting the

intended project objectives. The Project Manager/On-site Supervisor will be responsible for seeing that field personnel adhere to the QCP. Quality Control Field Oversight Checklists to be used for field activities are provided in Appendix B. The field oversight checklists will be completed for each project area. More detailed information concerning QC for the general field activities and sampling procedures is contained in the Plan of Operations developed for this project.

2.8.2 QC for Field Activities

Field quality control for site activities is important to the proper completion of a project. The Project Manger, and/or the On-site Supervisor is responsible for ensuring that personnel and subcontractor's perform work in accordance with the specifications of the SOW and the approved plans. The Quality Control Officer will be responsible for performing quality control oversight and reporting findings to the On-site Supervisor and the Project Manager. Quality Control Field Oversight Checklists to be used for field activities are provided in Appendix B.

The Project Manager or the On-site Supervisor will be responsible for overseeing the work performed by WasteTron personnel and WasteTron's subcontractors. The Quality Control Officer will be responsible for ensuring that Quality Control measures are followed to ensure proper completion of the project. The Quality Control Officer may stop work at any time that the quality of work being performed or any materials being used are found to be of inferior quality. Materials will not be accepted for delivery at the site if they do not meet contract specifications. Written records will be kept of all materials brought on-site, their condition at time of delivery, storage methods, and condition of the material at time of use. The work performed by subcontractors will be inspected to ensure that it meets contract requirements. Work not meeting contract specifications will be immediately stopped and remedied.

2.8.3 Daily Quality Control Reports (QCR)

During the field investigation and excavation activities, daily Quality Control Reports (QCR) will be prepared daily, dated, and signed by the On-site Supervisor or the QC Officer. WasteTron will utilize the USACE QCR Report Form (see Appendix B). The following information will be recorded on the QCR:

- Weather information
- Field instrument measurements
- Departures from the approved plans (any deviation that may affect data quality objectives must be conveyed to the USACE immediately)
- Personnel on-site and their job activities
- Any problems encountered
- Instructions from government personnel

- A copy of the chain-of-custody and any other project forms generated on-site should be attached to the daily report

2.9 Corrective Action

Corrective action procedures may be required in the event a discrepancy is discovered in the field, during an audit, and/or by the laboratory. Laboratory discrepancies that are unrelated to field procedures will be addressed by the laboratory's personnel and will be corrected in accordance with their QAP. The WasteTron Project Manager will address discrepancies relating to field procedures. Any deviations from approved plans shall be fully documented. The USACE POC shall be notified if deviations to the approved plans are necessary. No deviations to approved plans shall be made without the prior approval of the USACE POC. No deviations from the approved plans that compromise data quality or personnel safety shall be allowed.

2.10 Site Security

NASA Plum Brook Station (PBS) is responsible for overall security at the site. Pursuant to the Scope of Work, coordination with PBS personnel will be conducted by USACE to ensure that WasteTron is allowed access to/from the site to perform all activities during this removal action. WasteTron and its subcontractors shall be required to enter/exit through the PBS security gate. WasteTron is responsible for ensuring that WasteTron employees and subcontractors follow all rules set forth by the PBS security. Security requirements, as set forth by PBS, shall not be compromised. WasteTron personnel and subcontractors are required by NASA to review a safety video prior to performing any on-site activities.

The On-site Supervisor or QC Officer will be responsible for checking all equipment, storage containers, excavated areas, and so forth prior to leaving the site each day. Caution tape or fence shall be constructed around excavation pits and storage areas. Work materials shall be picked up and properly stored each day.

3.0 General Project Information

3.1 Project Type

Stabilization, Excavation and Disposal of Nitroaromatic Contaminated Soil

3.2 Project Location

Pentolite Road Red Water Ponds at the Plum Brook Ordnance Works located in Sandusky, Ohio

3.3 Customer/Sponsor

U.S. Army Corps of Engineers (USACE), Huntington District (Contract No. DACW69-02-D-0004, Work Order No. 0013)

3.4 Project Description

3.4.1 Introduction and Site History

The purpose of the SOW is for the completion of a non-time critical removal action (NTCRA) within the Pentolite Road Red Water Ponds (PRRWP) area of the Plum Brook Ordnance Works (PBOW) project site. The United States Army Corps of Engineers (USACE) is the responsible authority for the former PRRWP area under the Defense Environmental Restoration Program (DERP). Based on the results of the completed Remedial Investigation/Feasibility Study (RI/FS) for soils, the USACE will conduct a NTCRA in the PRRWP area to prevent human exposure to site soil containing 2,4,6-trinitrotoluene (TNT), which is the primary constituent of concern (COCs) that was detected at concentrations that exceeded the site remediation goals. The remedial goal shall be met by a removal action that will consist of the excavation of approximately 148 cubic yards of material, backfilling of the excavation pit with clean material, ex-situ stabilization of the excavated material, and off-site disposal of the stabilized soil.

The site of the former Plum Brook Ordnance Works (PBOW) is located approximately 4 miles south of Sandusky, Ohio and 59 miles west of Cleveland, Ohio. Although primarily in Perkins and Oxford Townships, the eastern edge of the site extends into Huron and Milan Townships. PBOW is bounded on the north by Bogart Road, on the south by Mason Road, on the west by County Road 43, and on the east by U.S. Highway 250. The surrounding area is mostly agricultural and residential.

The 9,009-acre PBOW site was built in early 1941 as a manufacturing plant for 2,4,6-trinitrotoluene (TNT), dinitrotoluene (DNT), and pentolite. Production of explosives at PBOW began in December 1941 and continued until 1945. It is estimated that more than 1 billion pounds of nitroaromatic explosives were manufactured during the 4-year operating period.

The PRRWP is located just south of the Pentolite Road and southeast of the former Pentolite Area. Wastewater from TNT manufacturing areas A and B was sent by wooden flumes and ceramic pipes to the Waste Water Disposal Plant #1 which was located about 700 feet east of the PRRWP. The wastewater was then discharged from the Disposal Plant #1 through pipes to the PRRWP.

The National Aeronautics and Space Administration (NASA) acquired the property on March 15, 1963 and currently utilizes the site as the Plum Brook station (PBS) of the John Glenn Research Center. Most of the aerospace testing facilities at the site were built in the 1960's and are currently in standby or inactive status. On April 18, 1978, NASA declared approximately 2,152 acres of PBOW as excess. The Perkins Township Board of Education acquired 46 acres of the excess acreage and uses this area as a bus transportation area. The Government Services Administration (GSA) retains ownership of the remaining of the excess acreage and currently has a use agreement with Ohio National Guard for 604 acres of the land. NASA presently controls

approximately 6,400 acres and is using the site to conduct space research as a satellite operation of the John Glenn Research Center at Lewis Field.

GSA performed decontamination efforts during 1963 to facilitate land transfer to NASA. An April 1977 memorandum (Teledyne Isotopes, 1977) stated that PBS personnel discovered red-brownish water coming from an area of broken drain tile associated with the PRRWP. The memorandum stated that PRRWP associated dikes, sump pits, and 60,000 gallons of red water were removed, the ponds backfilled, and grading and draining improvements were made to alter runoff patterns (Dames And Moore, 1997).

3.4.2 Proposed Action Description

To provide a basis for taking an action at this site, a remedial investigation (RI) was conducted under the title Risk Assessment and Direct Push Investigation of the Red Water Pond Areas (IT, 2000). Twenty surface soil samples, 39, sub-surface soil samples, and 20 direct push groundwater samples were collected in the PRRWP during the RI. In addition, the RI included collection of four co-located surface water and sediment samples, two each in the east to west ditch and two in the east to southeast ditch. Various nitroaromatics were detected in the soil and groundwater direct push samples. Nitroaromatic compounds were not detected in the surface water or sediment samples.

The Feasibility Study (FS) performed by IT Corporation in 2002 and the human health risk assessment revealed that approximately 148 cubic yards of material located in PRRWP presents an unacceptable risk to human health through exposure to TNT contaminated soils above a remedial goal option (RGO) of 13.8 mg/kg for TNT in soil. The remedial goal shall be met by a removal action that will consist of the excavation of the 148 cubic yards (approximately 225 tons) of nitroaromatic contaminated soil, backfilling of the excavation pit with clean material, ex-situ stabilization of the excavated soil, and off-site disposal of the stabilized soil.

Pursuant to the Scope of Work, representative soil samples of the stabilized soil shall be collected at a rate of one for every 150 tons of processed soil. The samples shall be tested for hazardous characteristics using the toxicity characteristic leaching procedure (TCLP) test. If the soil tests non-hazardous, it will be disposed of at a non-hazardous landfill. If the soil is found to be hazardous, further stabilization will be required. Any water generated during the excavation shall be containerized, sampled, and disposed in accordance with local, state, and federal regulations.

3.4.3 Tasks

The following tasks are required to be performed under this Scope of Work:

- Task 1** Preparation and submission of a Site Specific Safety and Health Plan.
- Task 2** Preparation and submission of a Quality Control Plan.

- Task 3** Preparation and submission of a Plan of Operations, which shall include information on the disposal of Investigation Derived Waste, Erosion Control Plan, Spill Containment Plan, Sampling and Analysis Plan, Environmental Protection Plan and a Materials Handling Plan.
- Task 4** Notification/scheduling of field activities and coordination of utility marking with NASA officials prior to site mobilization.
- Task 5** Site surveying is necessary for identifying limits of excavation.
- Task 6** Excavation of Contaminated Material (removal of approximately 148 cubic yards of contaminated material from PRRWP area).
- Task 7** Chemical stabilization of excavated soils classified as hazardous waste and subsequent testing of mixed soils prior to disposal.
- Task 8** Disposal of Investigation Derived Waste (IDW).
- Task 9** Confirmation sampling will be performed.
- Task 10** Preparation and submission of the Draft and Final Remedial Action Report.
- Task 11** Public meeting support will be provided to the USACE for the work defined by this delivery order.

3.4.4 Summary of Field Activities

In accordance with contract requirements, WasteTron will notify the USACE POC and provide a schedule of events prior to beginning field activities. WasteTron has retained Mountain State Company to perform surveying of the PRRWP excavation area. After Mountain State performs the survey, WasteTron will submit the survey information with a digging permit form to the NASA Plum Brook Station (PBS) Point of Contact (POC). WasteTron will not perform excavation activities until NASA issues a digging permit.

Investigation derived waste (IDW) drums and other project materials (plastic, sampling equipment, decontamination solvents, so forth) will be stored in the storage area currently used for TNT B area. This storage area is located behind the office trailer. WasteTron does not intend to store backfill material on-site.

WasteTron proposes to place the excavated soil into a plastic lined pit approximately 25' wide by 60' long and 3' tall. The pit would serve to hold the soil while waiting for analytical data (TCLP analysis for disposal purposes) from the laboratory and can serve as a "mixing" area if the analytical data reveals that the soil must be treated to pass TCLP analysis.

To construct the storage/mixing area for the excavated soil, an approximately 1-½ foot depression shall be constructed near the PRRWP excavation area. A 1-½ foot berm of clean soil will be constructed around the perimeter of the depression so that the height from the bottom of the depression to the top of the berm is approximately 3 feet. Three layers of overlapping 6-mil polyethylene plastic will be laid in the depression and up over the berms.

Excavated material will be sampled and analyzed for hazardous characteristics utilizing the TCLP analysis for volatiles, semi-volatiles, and metals. If the soil tests non-hazardous, stabilization will not be necessary and the soil may be disposed in a non-hazardous landfill. The walls and the floor of the excavation will be field tested to determine if excavation has been sufficient to remove the contaminated nitroaromatics prior to sending confirmation samples to the laboratory. Analytical data from the confirmation sampling shall be compared to the remedial goal option (RGO) set for the Pentolite Road Red Water Ponds. Only one RGO (13.8 mg/kg for TNT) was set for this area.

If the material is found to be hazardous, a treatability study will be performed to determine if the material can be stabilized/solidified with Portland cement and granular activated carbon in order for it to pass the TCLP test. Based upon the findings of the treatability study and in coordination with the USACE POC, the appropriate “mix” (soil plus cement/carbon) for stabilization/solidification of the waste shall be determined. Mixing of contaminated soil and the cement/carbon will be performed in the “mixing area”. After mixing and solidification, the soil shall be sampled and analyzed for full TCLP analysis to determine if it may be disposed as non-hazardous waste. After removal of any treated soil, the floor of the “mixing” area shall be randomly sampled (four samples) for nitroaromatics to ensure that no nitroaromatic contaminated soil/water escaped from the containment area through the plastic to the ground.

The excavated area will be backfilled with clean soil from an off-site borrow area. Prior to backfilling, the borrow area soil will be analyzed for volatiles, semi-volatiles, target analyte metals, and polychlorinated biphenyls (PCBs). Analytical data from the borrow area sampling shall be compared against EPA Region IX PRGs, EPA Region III risk based concentrations, and where available, PBOW site background levels. The backfilled area will be seeded and mulched in accordance with the Plan of Operations. Non-hazardous waste from the site will be transported to the Erie County Landfill for subsequent disposal. Hazardous solid waste, if present and untreatable, will be transported to Environmental Quality’s (EQ) Wayne Disposal Landfill in Michigan for subsequent disposal.

Monitoring wells #27 and PRMW-08 shall be abandoned in accordance with Ohio state regulations and the requirements of EM 1110-1-4000, Monitoring Well Design, Installation, and Documentation at Hazardous Toxic, and Radioactive Waste Sites. The four bollard posts protecting the wells shall be removed. Care must be taken when removing the plug from the MW-27 because of a potential for pressure build-up in the well from hydrogen sulfide gas. As a safety precaution, WasteTron will ventilate the well using a venturi prior to beginning abandonment activities. The venturi will be equipped with an extension so that gases will be

dispersed at a height of approximately 10 to 12 feet above grade. Additionally, the venturi shall be grounded since the emission of hydrogen sulfide may result in a potentially explosive atmosphere. Prior to grouting, the groundwater shall be purged from the well (the well has a very low recharge rate) using a 3-inch bailer to remove the black, smelly hydrogen sulfide contaminated water. Well (PRMW-08) is located within the Pentolite Red area of excavation and must be abandoned prior to the excavation of contaminated soil in the area.

The wells shall be abandoned by sealing with grout from the bottom of the well to the ground surface using a non-shrinkable mixture of bentonite and concrete grout. The bentonite and concrete grout shall be introduced into the wells by use of a tremie pipe. The tremie pipe shall be placed into the bottom of each well and the grout/bentonite mix will be pumped through it until undiluted grout flows from the well at the ground surface. The casing around each well shall be removed to a minimum depth of four feet below grade. The void created will be filled to grade with non-shrinkable grout/concrete. All tire ruts and disturbed ground will be seeded and mulched.

3.4.5 Project Personnel

The collection of quality data and the completion of any given project are strongly affected by the project organization. A project that is properly organized with personnel responsibilities well-delineated results in a successful project conclusion. A listing of functional areas and qualified personnel are given for this project.

- A. **Government Technical POC** —This is the technical point of contact (POC) representing the USACE who will serve as a liaison between the USACE and the contractor.

<u>USACE POC</u>	<u>Phone Number</u>
Lisa Humphreys	(304) 529-5953

- B. **NASA POC**— This is the technical point of contact (POC) representing NASA.

<u>NASA POC</u>	<u>Phone Number</u>
Robert Lallier	(419) 621-3234

- C. **Contractor’s Project Manager** – WasteTron’s Project Manager provides technical insight and provides supervision for the project. The Project Manager has overall responsibility to see that the project is completed in accordance with the Scope of Work. Also, the Project Manager is responsible to ensure that all field documentation is completed and submitted to WasteTron’s Poca office for generation of a project report.

<u>WasteTron Inc. Project Manager</u>	<u>Phone Number</u>
Steve Arbogast	(304) 755-8448
Cellular phone	(304) 389-9580

D. On-Site Supervisor—The On-Site Supervisor will be in charge of field activities when the Project Manager is away from the site. It is anticipated that the Project Manager will be on-site for the majority of the project.

<u>On-Site Supervisor</u>	<u>Phone Number</u>
Malcolm Slone	(304) 755-8448
Cellular phone	(304) 633-2373

E. Site Safety and Health Officer (SSHO) – This person is responsible for safety on site. The SSHO is an employee of Pinnacle Environmental, a company specializing in safety and health issues. The SSHO is responsible for ensuring that daily safety meetings are held and safety records are kept.

<u>SSHO</u>	<u>Phone Number</u>
Andrea Thomas	(304) 757-5204

F. QC Officer—This person is responsible for quality control (QC) at the site. This person has the authority to stop the work if QC is not being met. The QC officer is responsible for completing daily QC reports and ensuring that work is performed in accordance with the Quality Control Plan.

<u>WasteTron QC Officer</u>	<u>Phone Number</u>
Senah Gussler	(304) 755-8448

G. Field Personnel – These personnel are responsible for assisting the Project Manager in completing the tasks required under this contract.

<u>WasteTron Field Personnel</u>	<u>Phone Number</u>
Travis Engle	(304) 755-8448
Gary Henry	
Lynn Moles	
Chester Porter	
Malcolm Slone	
Dwayne James	

H. WasteTron’s Independent Quality Control Team-- An internal quality control team will independently review the work plans and reports to ensure that they meet requirements of the Scope of Work.

<u>WasteTron Independent Quality Control Team</u>	<u>Phone Number</u>
David Beam	(740) 574-6144
Joseph Wheeler	(304) 755-8448

- I. **REIC Laboratory**—Samples will be sent to the following USACE certified laboratory. REIC Laboratory is located in Beaver, West Virginia.

<u>REIC Contact</u>	<u>Phone Number</u>
Grant Wilton	(800) 999-0105

- J. **Disposal Facility for Contaminated Soil**— Non-hazardous soil removed from the site will be disposed of at the Erie County Landfill.

<u>Erie County Landfill</u>	<u>Phone Number</u>
Fred Dobbert	(419) 433-3624

- K. **Barnes Nursery**—This company may be used for the transportation of any non-hazardous materials removed from the site and may be used to transport clean backfill material to the site.

<u>Barnes Nursery Contact</u>	<u>Phone Number</u>
Leslie Morgan	(800) 421-8722

- L. **Mountain State**—Personnel from Mountain State will perform a survey the proposed excavation area.

<u>Mountain State Contact</u>	<u>Phone Number</u>
Jim Young	(304) 949-4762

- M. **Dart Trucking**— In the event that some of the soil does not pass the TCLP test for disposal at the Erie County Landfill then Dart Trucking will be responsible for the transportation of material to EQ Environmental located in Michigan.

<u>Dart Trucking Contact</u>	<u>Phone Number</u>
Bill McCluskey	(800) 541-8206 Extension 192

- N. **EQ Environmental**—The hazardous disposal facility for the contaminated soil is EQ Environmental located in Michigan.

<u>EQ Environmental Contact</u>	<u>Phone Number</u>
Debbie Chamberlain	(800) 592-5489

- O. Enviro-Clean Inc.**—Non-hazardous investigation derived waste (IDW) containing liquids will be transported to Enviro-Clean Inc. located in Wooster, Ohio for ultimate disposal.

<u>Enviro-Clean Inc.</u>	<u>Phone Number</u>
Robert Jarrett	(330) 264-8080

- P. Eco First**—This company will be responsible for the transportation of any drums (small quantities) of hazardous IDW to EQ Environmental for disposal.

<u>Eco First Contact</u>	<u>Phone Number</u>
Dana Tomes	(304) 736-7303

- Q. Belasco Drilling Services-** Personnel from this company will perform abandonment activities for MW #27 and PRMW-08. Mr. Guyer is the contact person, but he will not be on-site.

<u>Driller Contact</u>	<u>Phone Number</u>
Scott Guyer	(614-252-2511)
Shane Congrove	
Kevin Little	

4.0 Internal Quality Control

The project will be conducted under the guidance of a Project Manager. The Project Manager will be responsible for ensuring a quality product in the functional area through internal checks and reviews. An internal quality control team will independently review the work plans and reports. This work will be conducted with full communication between team members. Review of problems shall be in writing. Comments from the independent quality control team will be resolved or incorporated in the work plans and reports generated for this project. Only quality products will be released from the review team after signoffs.

4.1 Independent Quality Control Team (IQCT)

In addition to the review of the plans/report by the Project Manager, two independent reviewers (1 senior reviewer and 1 peer reviewer) shall review all project submittals. The Senior Reviewer will perform a review of all plans for precision, accuracy, representativeness, comparability, completeness, and verification that the work has been conducted in accordance with the SOW, policies, and guidelines. All comments resulting from the various reviews will be resolved and/or incorporated in the project submittals. The Senior Reviewer for this project is:

<u>Senior Review</u>	<u>Phone Number</u>
David Beam	(740) 574-6144

A Peer Review of the plans will be performed to determine their adequacy, completeness, and verification that the work was conducted in accordance with the scope of work, policies and guidelines.

<u>Peer Review</u>	<u>Phone Number</u>
Joseph Wheeler	(304) 755-8448

Appendix A contains resumes for members of the IQCT team, the Project Manager, and the SSHO.

5.0 Project Schedule

The proposed project schedule is as follows:

Submission of 10 copies of the Draft Site-Specific Safety and Health Plan (SSHP), the Draft Quality Control Plan (QCP), and the Draft Plan of Operations	Oct. 29, 2002
Submission of six copies of the Final SSHP, QCP, and Plan of Operations	5 days after receipt of comments but prior to beginning intrusive fieldwork
Submission of Draft Remedial Action Summary Report	120 days after notice to proceed
Submission of Final Remedial Action Summary Report	150 days after notice to proceed

APPENDIX A Resumes

Rt. 2, Box 33-B
Poca, WV 25159

Joseph T. Wheeler

PROJECT MANAGER

(304) 755-8448
jwheeler@wastetron.com

Years with WasteTron: 8

Years of Environmental Practice: 12

Certifications:

- Certified Tank Installer and Remover in WV and KY
- Certified Corrosion Inspector WV
- 40 Hour HAZWOPER
- Certified Veeder Root Installer

Education:

West Virginia University
Institute of Technology
Associate Degree
Mechanical Engineering

References Available Upon Request

General Qualifications

Mr. Wheeler offers nearly 13 years of environmental experience. Currently, he is an Environmental Project Manager with WasteTron. Mr. Wheeler directs and manages projects, including emergency response, industrial cleaning, waste management site remediation and report generation.

Before joining WasteTron, Mr. Wheeler was a Facility Manager for RUST Industrial Cleaning in Ashland, KY. He oversaw operation and maintenance of a large agricultural chemical company's wastewater treatment sludge de-watering unit. In addition, he was in charge of production, chemical usage, scheduling preventative maintenance and transportation of hazardous waste to landfills.

Mr. Wheeler also served as a Project Manager with Weavertown Transport Leasing in Pittsburgh, PA in 1992.

Experience Highlights

- Operated and managed two wastewater treatment units for the United States Army Corps of Engineers, treating dissolved explosives in groundwater.
- Installed Fuel storage and dispensing system for Yeager Airport's Car Rental Facility in Charleston, WV.
- Mr. Wheeler has worked in the wastewater field for a total of 5 years and has obtained a Class II Wastewater Treatment Operator Certification. Mr. Wheeler has worked at Wastewater Treatment Plants that use activated sludge as the primary treatment process and. Microbiology is used to maintain and adjust those type of treatment systems.
- Managed numerous storage tank installations and removals in three states.
- Responded to numerous emergency projects, providing management and completion.
- Mr. Wheeler has working knowledge of bioremediation systems including soil bioremediation from petroleum-impacted projects and ground water bioremediation of petroleum and heavy metals projects.

Rt. 1, Box 33-B
Poca, WV 25159

David F. Beam, Jr.

PROJECT MANAGER

(304) 755-8448
dbeam@wastetron.com

Years with WasteTron: 11

Years of Environmental Practice: 24

Professional Affiliations:

*Licensed Remediation Specialist - WV
*Certified Corrective Action Supervisor
KY OPSTEAF (UST Fund)
*Technical and Professional Training
Performing Phase I ESA - ASTM
*OSHA 40-Hour HazWoper
*Complete RCRA Seminar
*Completed course on environmental site
assessment for commercial real estate
*First Aid and CPR

Education:

University of Kentucky
Chemistry Major

References Available Upon Request

General Qualifications

Mr. Beam has more than 24 years of environmental experience. He established WasteTron's Wheelersburg, OH office and serves as project manager for the company. Mr. Beam provides consultation for industrial, municipal and commercial clients regarding industrial and hazardous waste management, environmental permitting, assessment, remediation and negotiation with regulatory agencies.

Before joining WasteTron, Mr. Beam served in several roles within the environmental industry. Previous positions include: Chemical Analyst with Mallinckrodt Chemicals, Research and Development Chemist with DataBeam Corp., Analyst and Environmental Consultant with Loss Control Industrial Hygiene, Environmental Chemist with Commonwealth Technology, Pre-Treatment Coordinator-Chemist with Frankfort Municipal Sewer Board, and Industrial Pre-Treatment Administrator with the City of Ashland, KY.

Experience Highlights

- *United State Army Corps of Engineers*

Served as Senior Project Manager on several ASTM Phase I Environmental Site Assessments for the USACE. Under the 202 Program, Congress mandated that these properties be either flood-proofed or acquired by the USACE. Prior to purchase or invasive work on the properties, the USACE needed to assess the environmental condition of each property. These properties are located within the floodplain of various rivers and streams in Mingo, McDowell, and Greenbrier County West Virginia as well as Martin County Kentucky.

- *Heiners Bakery*

Performed a Phase I Environmental Site Assessment on each facility for Heiners Bakery according to ASTM standards. This assessment consisted of an investigation to determine if there were any recognized environmental conditions on any of the properties. Included a thorough inspection of each facility, a review of all standard environmental record sources, producing a site sketch of each facility, investigation of all current and past uses of the properties and adjoining properties, and conducting interviews. All of this information was organized and presented in a final report.

- *Town of Wytheville, Virginia*

Served as Lead Consultant for the Town of Wytheville, Virginia, to develop and implement an industrial pretreatment program. The program consisted of several elements, including a wastewater user survey, calculation of WWTP headworks loadings and local discharge limits, development of inspection and documentation procedures, development and negotiation of industrial user discharge permits, sampling and analysis of all potentially permitted industries, and final submission of the program to VDEQ. Ten industrial users were identified and permitted. Most of the users were permitted with requiring installation of additional treatment equipment. The project was considered a great success by the Town, and Virginia DEQ.

- *Logan Corporation*

Served as Lead Consultant for Logan Corporation to obtain stormwater permits for each of its facilities. Included sampling and analysis, site inspections, and producing applicable Stormwater Pollution Prevention Plans and Groundwater Protection Plans for each facility.

STEVEN S. ARBOGAST

250 Blue Creek Road
Elkview, West Virginia 25071
(304) 965-0473

EDUCATION:

Ben Franklin Career Center in Dunbar, WV
Underground Mining, 80 hours, 1977

Carver Career Center in Belle, WV
Mine Maintenance, 1975-76

Coal Miner's Certificate (Surface)
Surface Construction Supervisor
Class A Drivers License

Herbert Hoover High School in Clendenin, WV
1976 Graduate

EXPERIENCE:

Mar. 1997-Present

WasteTron, Inc.
Poca, West Virginia
Environmental Project Manager

Market, direct, and manage excavation and reclamation projects including, pond and drainage construction, highwall, spoil, and refuse reclamation at active and inactive coal mines.

Dec. 1996-Mar. 1977

Knuck Clearing Company
South Charleston, West Virginia
Heavy Equipment Operator

Clean water treatment ponds, construction ponds, roads, and evaporation cells at active coal mines. Operated various sizes of equipment including dozers and excavators.

Feb. 1993-Dec. 1996

Kimberly Construction Company
Marmet, West Virginia
General Superintendent

Market, bids, and supervise construction work for various coal

companies. New construction of ponds, roads, drainage, and face up of deep mines. Reclamation of highwalls, ponds, spoil piles, refuse dumps, slips, and slides.

June 1991-Feb. 1993

Knuck Clearing Company
Belle, WV
Heavy Equipment Operator

Clearing and grubbing land for strip mines and regrading slopes at various mine sites. Operated various sizes of equipment including dozer and excavators.

Jan.1990-June 1991

WasteTron, Inc.
Charleston, West Virginia
Environmental Technician

Certified for underground storage tank testing. Completed 40 hour OSHA Hazwopper training. Duties included waste removal and disposal.

Feb. 1988-Jan. 1990

Fetsko Forestry
West Middlesex, PA
Dozer Operator

Operated 650-G John Deere Dozer .

June 1986-Feb. 1988

Christopher Construction
Columbus, OH
Truck Driver

Heavy hauler, drove Mac Superliner tractor and Western Star Tractor .

REFERENCES:

Available upon request.

APPENDIX B

QC Documentation

Quality Control Certification

Stabilization, Excavation and Disposal of Contaminated Soil Plum Brook Ordnance Works Pentolite Road Red Water Ponds Sandusky, Ohio

This document is provided to certify that the Project Manager and the Independent Quality Control Team (IQCT) have reviewed the Quality Control Plan. All comments resulting from the various reviews have been resolved and/or incorporated.

<u>Assignment</u>	<u>Name</u>	<u>Signature</u>	<u>Date</u>
<u>Senior Review</u>	David Beam		10-22-02
<u>Peer Review</u>	Joseph Wheeler	_____	_____
<u>Project Manager Review</u>	Steve Arbogast	_____	_____

Quality Control Certification

Stabilization, Excavation and Disposal of Contaminated Soil Plum Brook Ordnance Works Pentolite Road Red Water Ponds Sandusky, Ohio

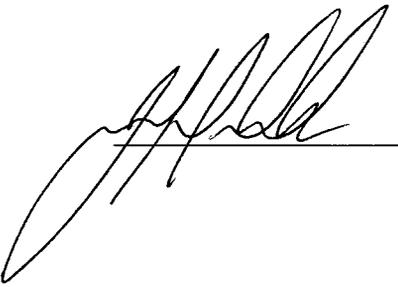
This document is provided to certify that the Project Manager and the Independent Quality Control Team (IQCT) have reviewed the Quality Control Plan. All comments resulting from the various reviews have been resolved and/or incorporated.

<u>Assignment</u>	<u>Name</u>	<u>Signature</u>	<u>Date</u>
-------------------	-------------	------------------	-------------

Senior Review

David Beam	_____	_____
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Peer Review

Joseph Wheeler	 _____	<u>10-20-02</u>
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Project Manager Review

Steve Arbogast	_____	_____
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Quality Control Certification

Stabilization, Excavation and Disposal of Contaminated Soil Plum Brook Ordnance Works Pentolite Road Red Water Ponds Sandusky, Ohio

This document is provided to certify that the Project Manager and the Independent Quality Control Team (IQCT) have reviewed the Quality Control Plan. All comments resulting from the various reviews have been resolved and/or incorporated.

<u>Assignment</u>	<u>Name</u>	<u>Signature</u>	<u>Date</u>
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Senior Review

David Beam	_____	_____
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Peer Review

Joseph Wheeler	_____	_____
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Project Manager Review

Steve Arbogast



10-28-02

QUALITY CONTROL REVIEW CHECKLIST

The following checklist is provided for QC review of the QCP for this project.

- | | | |
|----|-----------------------------|-------|
| 1. | Purpose | _____ |
| 2. | Scope of QA/QC Services | _____ |
| 3. | General Project Information | _____ |
| 4. | Internal Quality Control | _____ |
| 5. | Project Schedule | _____ |

APPENDICES

- | | | |
|------------|------------------|-------|
| APPENDIX A | Resumes | _____ |
| APPENDIX B | QC Documentation | _____ |

CONTRACTOR'S QUALITY CONTROL REPORT (QCR) (ER 1180-1-6)		DATE:	REPORT NO.
CONTRACT NUMBER AND NAME OF CONTRACTOR		DESCRIPTION AND LOCATION OF THE WORK:	
WEATHER CLASSIFICATION: CLASS A No interruptions of any kind from weather conditions occurring on this or previous shifts. CLASS B Weather occurred during this shift that caused a complete stoppage of all work. CLASS C Weather occurred during this shift that caused a partial stoppage of work. CLASS D Weather overhead excellent or suitable during shift. Work completely stopped due to results of previous adverse weather. CLASS E Weather overhead excellent or suitable during shift but work partially stopped due to previous adverse manner. OTHER Explain.		CLASSIFICATION: CLASS _____ TEMPERATURE: MAX ___ MIN ___ PRECIPITATION: INCHES _____	
CONTRACTOR/SUBCONTRACTORS AND AREA OF RESPONSIBILITY FOR WORK PERFORMED TODAY: <i>(Attach list of items of equipment either idle or working as appropriate.)</i> a. _____ b. _____ c. _____ d. _____ e. _____ f. _____ g. _____			
1. WORK PERFORMED TODAY: <i>(Indicate location and description of work performed. Refer to work performed by prime and/or subcontractors by letter in Table above.)</i>			
2. TYPE AND RESULTS OF INSPECTION: <i>(Indicate whether: P-Preparatory, I-Initial, or F-Follow-up and include satisfactory work completed or deficiencies with action to be taken.)</i>			
3. TESTS REQUIRED BY PLANS AND/OR SPECIFICATIONS PERFORMED AND RESULTS OF TESTS:			

4. VERBAL INSTRUCTIONS RECEIVED: *(List any instructions given by Government personnel on construction deficiencies, retesting required, etc., with action to be taken.)*

5. REMARKS: *(Cover any conflicts in plans, specifications or instructions: acceptability of incoming materials; offsite surveillance activities; progress of work, delays, causes and extent thereof; days of no work with reasons for same.)*

6. SAFETY: *(Include any infractions of approved safety plan, safety manual or instructions from Government personnel. Specify corrective actions taken.)*

INSPECTOR

CONTRACTOR'S CERTIFICATION: I certify that the above report is complete and correct and that all material and equipment used, work performed and tests conducted during this reporting period were in strict compliance with the contract plans and specifications except as noted above.

CONTRACTOR'S APPROVED AUTHORIZED REPRESENTATIVE

Quality Control Field Oversight Checklist General Procedures

The following checklist is provided for use in the field to assure that general QC procedures are followed. The Project Manager or his designee should complete and sign a checklist for the project site.

Project Site _____

Date: _____

Personnel on-site: _____

Signature: _____

		Yes	No	N/A
1.	Did the Field Supervisor or Project Manager discuss the following items with the field crew prior to beginning field activities?			
	Site Security issues	_____	_____	_____
	Contents of the Plan of Operations	_____	_____	_____
	Contents of Site-Specific Safety and Health Plan	_____	_____	_____
	Contents of Quality Control Plan	_____	_____	_____
2.	Was the USACE notified in writing 2 weeks prior to mobilizing to the site?	_____	_____	_____
3.	Was the USACE provided a time schedule for field work?	_____	_____	_____
4.	Was a digging permit obtained from NASA prior to mobilizing to the site for excavation activities?	_____	_____	_____
5.	Did WasteTron personnel and subcontractors view the safety/orientation video prior to beginning work?	_____	_____	_____
6.	Were the limits of the digging permit strictly adhered to?	_____	_____	_____

	Yes	No	N/A
7. Were excavation limits survey by a qualified surveyor prior to performing excavation activities?	_____	_____	_____
8. Were all drawings done in English units and of engineering quality with sufficient detail to show interrelations of major features on the site map (i.e. north arrows, keys, scales, etc.)?	_____	_____	_____
9. Were all drawings done in the newest version of Microstation and in conformance with the current USACE CADD standards?	_____	_____	_____
10. If drawings are larger than 8.5" by 11" were they folded to 8.5" x 11" size?	_____	_____	_____
11. At a minimum, photos shall be taken of the following site activities.			
A. Surveying	_____	_____	_____
B. Site prior to excavation (including Borrow Area)	_____	_____	_____
C. Excavation	_____	_____	_____
D. Stabilization of soil	_____	_____	_____
E. Loading of soil for transportation	_____	_____	_____
F. Sampling activities	_____	_____	_____
G. Decontamination activities	_____	_____	_____
H. Storage/handling of IDW	_____	_____	_____
I. Backfilling of the excavation pit	_____	_____	_____
J. Seed and mulching of all disturbed areas	_____	_____	_____
12. If water was generated during excavation, was it properly containerized, sampled, analyzed, and disposed in accordance with state and federal regulations?	_____	_____	_____
13. Prior to disposal, were excavated and stabilized soils properly stored until analytical results were available?	_____	_____	_____
14. Was clean fill material placed in the excavation pit? (Note: Borrow materials must be tested prior to use as fill)	_____	_____	_____
15. Were excavation areas rough graded as necessary to achieve proper drainage and reseeded/mulched?	_____	_____	_____
16. Was all IDW containerized and sampled?	_____	_____	_____

	Yes	No	N/A
17. Were all IDW drums labeled as to project name, contents, date of collection, and generator? (Note: waste from different sites shall not be mixed)	_____	_____	_____
18. Were the IDW drums secured with tarps, ropes and placed on pallets?	_____	_____	_____
19. Was the USACE POC notified prior to the disposal of the IDW?	_____	_____	_____
20. Did all Contractor personnel document all correspondence, phone conversations and meetings with the USACE?	_____	_____	_____
21. Was water used at the site to control dust during excavation activities?	_____	_____	_____
22. Were flagmen or temporary signage used when working near roads?	_____	_____	_____

Quality Control Field Oversight Checklist HTRW Sampling Procedures

The following checklist is provided for use in the field to assure that general QC procedures are followed. The Project Manager should complete and sign a checklist for the project site.

Project Site _____

Date: _____

Personnel on-site: _____

Signature: _____

What type and how many samples were collected? _____

Describe the sampling procedure. _____

		Yes	No	N/A
1.	Were representative samples collected?	_____	_____	_____
2.	Were samples properly placed into sample containers?	_____	_____	_____
3.	Was the following information recorded on the sample labels?			
	Site location	_____	_____	_____
	Project number	_____	_____	_____
	Sample Identification number assigned in field	_____	_____	_____
	Description of the sample	_____	_____	_____
	Time and date sample was taken	_____	_____	_____
	Notation of whether preservatives were added to the sample	_____	_____	_____
	Type of preservative	_____	_____	_____
	Type of analysis requested	_____	_____	_____

Quality Control Field Oversight Checklist
HTRW Sampling Procedures
 Continued

	Yes	No	N/A
4. Were samples chilled with ice immediately after collection?	_____	_____	_____
5. Was a chain-of-custody form filled out on-site?	_____	_____	_____
6. Was the following recorded on the chain-of-custody form?			
Project number	_____	_____	_____
Project manager	_____	_____	_____
Site location	_____	_____	_____
Client contact	_____	_____	_____
Description of the sample	_____	_____	_____
Time and date sample was taken	_____	_____	_____
Notation of whether preservatives were added to the sample	_____	_____	_____
Type of preservative	_____	_____	_____
Type of sample such as a grab or composite	_____	_____	_____
Matrix of sample	_____	_____	_____
Amount of sample being transported to the laboratory	_____	_____	_____
Sample number or ID assigned in the field	_____	_____	_____
The appropriate analytical parameters to be tested	_____	_____	_____
7. Were custody seals placed on each sample container (except samples for volatiles analysis)?	_____	_____	_____
8. Was the custody seal form signed and dated?	_____	_____	_____

Quality Control Field Oversight Checklist
HTRW Sampling Procedures
 Continued

	Yes	No	N/A
9. Were the following packing and shipping procedures performed?			
All containers, except the volatile organic analysis (VOA) vials, are to be taped shut.	_____	_____	_____
Was the drain plug taped shut on the picnic cooler from the inside and outside, and a large plastic bag used as a liner for the cooler?	_____	_____	_____
Was inert packing material placed in the bottom of the liner?	_____	_____	_____
Were the sample containers placed upright in the lined picnic cooler in such a way that they do not touch and will not touch during shipping?	_____	_____	_____
Were plastic ice packs or ice placed in double plastic bags placed around, among, and on top of the sample bottles?	_____	_____	_____
Was the paperwork going to the laboratory placed inside a sealed plastic bag, which was taped to the inside lid of the cooler?	_____	_____	_____
Was the cooler taped shut with strapping tape?	_____	_____	_____
Was at least two signed custody seals placed on the cooler (one in front, the other on the side)?	_____	_____	_____
10. Was the proper sampling procedure followed as outlined in the Sampling and Analysis Section of the Plan of Operations?	_____	_____	_____
11. Was sampling equipment properly decontaminated between samples?	_____	_____	_____
12. Was a decontamination area located where the cleaning activities would not cross-contaminate clean and/or drying equipment?	_____	_____	_____

Quality Control Field Oversight Checklist
HTRW Sampling Procedures
 Continued

		Yes	No	N/A
13.	Was cleaned equipment properly stored?	_____	_____	_____
14.	Were the cleaning and decontamination procedures conducted in accordance with the project plans?	_____	_____	_____
15.	Were sampling locations properly selected?	_____	_____	_____
16.	Were photographs taken of sampling/decon activities?	_____	_____	_____
17.	Was sampling equipment constructed of Teflon, polyethylene, glass, or stainless steel?	_____	_____	_____
18.	Were samples collected in proper order? (least suspected contamination to most contaminated?)	_____	_____	_____
19.	Were clean disposable latex or vinyl gloves worn during sampling and field screening tests?	_____	_____	_____
20.	Were gloves changed between sampling events and screening tests?	_____	_____	_____
21.	Were equipment rinse blanks collected after field cleaning?	_____	_____	_____
22.	Were proper sample containers used for samples?	_____	_____	_____
23.	Were duplicate and split samples collected?	_____	_____	_____
24.	Were samples properly field preserved?	_____	_____	_____
25.	Were field and/or trip blanks utilized?	_____	_____	_____
26.	Were field screening tests utilized for nitroaromatics and lead (where appropriate) prior to collection of the excavation pit confirmation samples?	_____	_____	_____
27.	Were the procedures for the field test kits, as described in the Plan of Operations followed?	_____	_____	_____
28.	Was all information generated during the field screening activities recorded in accordance with the Plan of Operations requirements?	_____	_____	_____

Comments on Quality Control Plan

Stabilization, Excavation and Disposal of Contaminated Soil Plum Brook Ordnance Works Pentolite Road Red Water Ponds Sandusky, Ohio

The following comments were provided by the WasteTron Project Manager and the Independent Quality Control Team (IQCT). All comments resulting from this review have been resolved and/or incorporated.

1. page iii—COC is shown as constituent of concern here and in the text; however, COC is used in the QC form as chain of custody, please change

Response: Concur, COC has been left in the text as constituent of concern and all references to COC in the QC forms has been changed to state chain-of-custody.

2. Page 2, Section 2.1, 3rd sentence, insert “will” before have received

Response: Concur, “will” was inserted

3. page 9, Section 3.4.2, last sentence, change “samples” to sampled

Response: Concur, change made

4. General – It is not clear in the plan who has the responsibility for data gathering and field documentation, or the procedure that will be followed to insure that the data and information will be accurately reported. The plan does not designate the person/position that will be responsible for organizing and assembling the interim and final reports. The specific standard operating procedure for project documentation (data/information collection, transfer, and reporting) needs to be better defined and stated in both the Plan of Operations and the Quality Control Plan.

Response: It has been further clarified that the QC Officer is responsible for ensuring that the daily QC reports are completed, the SSHO is responsible for seeing that Daily safety meetings are performed and recorded. The QC officer and the SSHO is responsible to ensure that their respective paper work is given to the Project Manager. The Project Manager has overall responsibility for all aspects of the project.

Comments on Quality Control Plan

Stabilization, Excavation and Disposal of Contaminated Soil Plum Brook Ordnance Works Pentolite Road Red Water Ponds Sandusky, Ohio

The following comments were provided by the Huntington District of the USCAE. All comments resulting from this review have been resolved and/or incorporated.

Pursuant to correspondence from the USACE POC, there are no comments being made on the draft plan by the USACE, NASA, or OhioEPA.