Quality Assurance Sample Plan

Contained Burn Chamber

For:

Camp Minden M6 Destruction
Camp Minden
1600 Java Road
Minden, Louisiana 71055-7924

Prepared By:

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Quality Assurance Sample Plan

Acronym	Description
ASTM	American Society of Testing and Materials
bgs	below ground surface
CBI	Clean Burning Igniter
COC	Constituent of Concern
DO	Dissolved Oxygen
EPA	Environmental Protection Agency
ESI	Explosive Service International, Inc.
EWI	Explosive Waste Incinerator
GC/MS	Gas Chromatography/Mass Spectroscopy
GPS	Global Positioning System
HPLC	High Pressure Liquid Chromotography
IDW	Investigative Derived Waste
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LIMS	Laboratory Information Management System
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NIOSH	National Institute for Occupational Safety and Health
ORP	Oxidation-Reduction Potential
OSHA	Occupational Safety & Health Association
PID	Photoionization Detector
PVC	Polyvinylchloride
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QAQC	Quality Assurance Quality Control
QASP	Quality Assurance Sampling Plan
QC	Quality Control
RCRA	Resource Conservation Recovery Act
RECAP	Risk Evaluation Corrective Action Program
SOP	Standard Operating Procedure
SVOC	Semi-volatile Organic Compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSP	TriSodiumPhosphate
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds

1.0 Introduction

This plan outlines Explosive Service International (ESI) sampling and analysis procedures for field and analytical work pertaining to the complete removal, destruction, and disposal of all hazardous materials and waste located at Camp Minden associated with the M-6 destruction Project at Camp Minden. Explo is located at 1600 Java Road, Minden, LA 71055-7924, on the Camp Minden National Guard Training Site in Webster and Bossier Parishes, Louisiana.

This Quality Assurance Sample Plan (QASP) describes samples that the ESI Team will collect during the project, how the samples will be analyzed, and how the results will be evaluated. The QASP follows quality assurance (QA) and quality control (QC) measures detailed in the site Quality Assurance Project Plan (QAPP) which will be applied to ensure that the data obtained are of the type and quality needed to meet Remedial Action Objectives (RAOs) per the Louisiana Department of Environmental Quality Risk Evaluation/Corrective Action Program (LDEQ RECAP). The QASP follows United States Environmental Protection Agency (USEPA) Requirements for Quality Assurance Project Plans (EPA QA/R-5) (EPA 2001) and the accompanying document, Guidance for Quality Assurance Project Plans (EPA QA/G-5) (EPA 2002).

2.0 Project Description

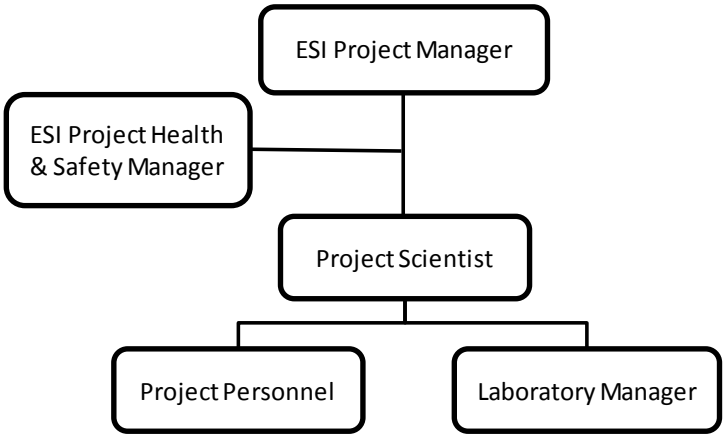
Explo was located on the Camp Minden National Guard Training Site. Camp Minden is also an industrial park. Approximately 15,687,247 pounds of M6 propellant and approximately 320,890 pounds of Clean Burning Igniter (CBI) were abandoned at the Explo site. Ninety-seven (97) magazines are filled with M6 propellant and other explosive materials. Some of the magazines were loaded by Explo while it was operating, while other magazines were filled to capacity by Explo as directed after the improper storage was discovered. Some of the M6 propellant was stacked outside for an undetermined period of time. The propellant and other explosive materials are stored and packaged within multiple configurations, including 60-pound cardboard boxes, 100/140-pound fiber drums, and primarily 880-pound super sacks, which were over packed into cardboard boxes. The storage of explosive material in magazines is not in accordance with the Department of Defense standards and requires handling techniques not standard for classical munitions technicians. The primary materials to be addressed are the M6 and the CBI.

Short-term and long-term measures being addressed with this QASP include the assessment and restoration of the site to the condition it was received by ESI to complete the removal and destruction work. Our remedy is to properly remove, handle, and destroy the material. The material will be removed from present packaging and moved to a controlled burn area where the material will be systematically and safely burned as final destruction. Resulting waste (ash, process water, packaging, storage pallets) will then be characterized and profiled for destruction/reuse/recycling and then properly removed from the site for final disposition.

Figure 1 shows the location of the site within the State of Louisiana. Destruction activities conducted under the EPA administration order will be conducted at the Camp Minden – Area I Destruction Site. Figure 2 presents the Camp Minden – Area I – Destruction Site and the significant features.

3.0 Project Organization and Responsibility

This section establishes the M-6 Destruction Project organization functional responsibilities of key staff, levels of authority among key participants and lines of communication for activities affecting quality. The project team has been selected to provide the technical and management capabilities and qualifications as required by the investigative and/or restoration action tasks. These personnel have appropriate educational qualifications and previous experience on related projects.



Project Organization

ESI Project Manager

The ESI Project Manager is responsible for effective day-to-day management of all operations. His responsibilities include:

- Review and approval of all plans.
- Implementation of all quality control and health & safety standards required by the project.
- Preparation of progress reports with the assistance of key support personnel.
- Management of all funds for labor and materials procurement.
- Technical review of all task deliverables.
- Establishment and enforcement of work element milestones to ensure timely completion of project objectives.
- Liaison with the Camp Minden representative in regard to all operations of the project.

The ESI project manager for this site is Dean S. Schellhase of ESI.

ESI Project Health & Safety Officer

The ESI project health & safety officer is responsible for establishing and implementing the Site Specific Health & Safety Plan. His responsibilities include:

- Reviewing and monitoring compliance with the Site Specific Health & Safety Plan.
- Implementing corrective measures for site specific health & safety deficiencies.
- Ensuring required training and medical monitoring of project personnel.
- Oversight of air monitoring at all areas where personnel will potentially be exposed to hazardous conditions.
- Brief all personnel concerning health & safety requirements.
- Maintain all necessary calibration records related to health & safety monitoring.

The designated ESI project health & safety officer is Ken Williams of ESI.

Project Scientist

The project scientist is responsible for all sample collection and laboratory analysis. His responsibilities include:

- Preparation, maintenance and verification of compliance of this plan.

- Ensuring all established laboratory and field procedures as identified in the plan are being followed.
- Ensure all documentation is provided.
- Ensure all sampling and analysis problems are handled in an expeditious manner.
- Auditing of project sampling and analysis activities to verify conformance with the objectives.
- Ensuring all subcontractor activities are performed in accordance to the QASP through review of subcontractor documents, laboratory data and audits, as needed.
- Informing the Project Manager of the sampling and analysis findings.

The designated project scientist is Matthew Salinger.

Project Personnel

Project personnel include both project specialists (environmental scientists, geotechnical engineers, chemists, etc…) and site personnel (supervisors, equipment operators, field technicians) as required for the individual task. Project personnel have the required education, training and/or experience commensurate with their responsibilities during the project. All personnel qualifications will be reviewed and evaluated by the ESI Project Manager and ESI administrative support.

Laboratory Project Manager

The analytical laboratory project manager has the ultimate responsibility for analytical performance, including adherence to contract requirements and quality control requirements. He will serve as the primary laboratory contact person for the Project Scientist, and any change in the scope of work will be processed through him. The Laboratory Project Manager for this project will be Randy Whittington,

4.0 Field Sampling

This section contains brief summaries and references for field tasks that may be performed during execution of the project. All field methodologies utilized in collecting samples for analysis will be conducted in accordance with the procedures set forth in the project QAPP.

Split or duplicate samples will be provided to the Military Department, USEPA and the State regulators, or their authorized representatives upon request. ESI will notify the Military Department, USEPA and the State regulators not less than seven (7) days in advance of any sample collection activity unless shorter notice is agreed to by the Military Department.

4.1 Soil Sampling

4.1.1 On-Site Soil Sampling

Soil samples will be collected on-site as part of the mobilization and site setup, and site restoration tasks. The primary purpose of the sampling and analysis under this QASP is to obtain data needed to support the proper restoration of the site to conditions existing prior to work completed by ESI.

Upon mobilization, soil sample locations will be demarked using site markers (pin flags, stakes, etc.) as shown on Figure 3. No more than 35 soil samples will be collected throughout the Camp Minden – Area I Destruction Area to obtain data from all areas which may be impacted by ESI activities. These samples will be comprised of a single grab sample of the upper 2 feet of soil at each sample point.

Each on-site soil sample location will be plotted utilizing a hand held GPS for future identification in the post-activity sampling event. Upon completion of the project, on-site soil samples will be collected in

each location sampled prior to commencement of activities conducted by ESI. A single grab sample will be collected from the upper 2 feet of soil at each location. On-site soil samples will be collected after pad removal activities have been completed and prior to restoration backfilling, if any. Sample locations and representative areas will be identified and documented on a final report map as well as the sample log.

On-site surface soil samples collected prior to commencement of activities by ESI, and upon project completion will be analyzed for the following:

PARAMETER	MATRIX	METHOD
Explosives	Soil	EPA8330B
RECAP VOCs	Soil	EPA8260C
RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	Soil	EPA8270D

Four (4) of the on-site surface soil samples will be further analyzed. The sample locations will include one (1) soil sample from each of the three identified areas (contained burn chamber system, the location of the former explosives waste incinerator (EWI), and the location of the former incinerator). The fourth surface soil sample will be collected southeast of the area of operation entrance gate. The soil samples will be analyzed for the following additional parameters:

PARAMETER	MATRIX	METHOD
Nitrocellulose	Soil	EPA353.2 Modified[1]
RCRA Metals[2]	Soil	6020A/7470A
Dioxins/Furans	Soil	1613B

1) To be determined
2) RCRA Metals: Arsenic (As), Barium (Ba), Cadmium (Cd), Chromium (Cr), Lead (Pb), Mercury (Hg), Selenium (Se), and Silver (Ag).

The on-site soil sample located between the diesel and gasoline tanks shown on Figure 3 will be analyzed for the following analysis:

PARAMETER	MATRIX	METHOD
Total Petroleum Hydrocarbons – Gasoline Range Organics	Soil	8015
Total Petroleum Hydrocarbons – Diesel Range Organics	Soil	8015

4.1.2 Perimeter Soil Sampling

Soil samples will be collected around the area of operation as part of the mobilization and site setup. Six (6) boreholes will be advanced to a maximum depth of 50 feet below ground surface (bgs). These borings will be converted into permanent monitoring wells. The approximate borehole/well locations are indicated on the Sample Location Map provided as Figure 3. Soil samples will be collected continuously from each soil boring on two-foot intervals from ground surface to the total boring depth. A portion of each soil sample will be placed into a 16-ounce jar and sealed with foil for field screening. In addition, a portion of each sample will be collected in accordance with EPA Method 5035 sampling procedures.

Each sample will be field screened for volatile organic compounds using a photoionization detector (PID) calibrated to 100 parts per million isobutylene. All data will be recorded on the boring logs. A sample of the boring log is provided in Appendix A. In accordance with RECAP Appendix B criteria, a minimum of three (3) soil samples will be retained from each borehole for laboratory analysis, including the sample exhibiting the highest PID reading in surface soil (0–15 feet bgs); highest PID reading in subsurface soil (greater than 15 feet bgs); first encountered groundwater; and the total depth of the borehole.

Sample locations and representative areas will be identified and documented on a final report map as well as the sample log. Perimeter soil samples collected prior to commencement of activities by ESI will be analyzed for the following:

PARAMETER	MATRIX	METHOD
Explosives	Soil	EPA8330B
RECAP VOCs	Soil	EPA8260C
RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	Soil	EPA8270D

4.1.3 Community Soil Sampling

Soil samples will be collected prior to the Initial Acceptance Testing of the Contained Burn Chamber system to establish a baseline. The primary purpose of the sampling and analysis of the community soil sampling is to monitor the community for constituents identified in the USEPA's Baseline Quality Assurance Sampling Plan.

Four (4) air stations will be positioned to monitor the contained burn chamber system. Station locations will include upwind from the system, downwind from the system, at the property boundary, and in the community. The fourth location will not be stationary and will move throughout the project dependent upon prevailing winds. Prior to the Initial Acceptance Testing, one (1) soil sample will be collected from each of the air stations before commencement of destruction activities. Upon completion of the project, each air station location will also be sampled. A single grab soil sample will be collected from the surface soil (0 to 1 inch) at each air monitoring location. Sample locations and representative areas will be identified and documented on a final report map as well as the sample log.

Community soil samples collected before commencement of destruction activities prior to the Initial Acceptance Testing and upon completion of the project will be analyzed for the following constituents identified in the USEPA's Baseline Quality Assurance Sampling Plan:

Parameter	Matrix	Method
RECAP VOCs	Soil	EPA8260C
RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	Soil	EPA8270D
RCRA Metals[1]	Soil	6020A/7470A

1) RCRA Metals: Arsenic (As), Barium (Ba), Cadmium (Cd), Chromium (Cr), Lead (Pb), Mercury (Hg), Selenium (Se), and Silver (Ag).

The following procedures will be conducted during operations requiring soil sampling:

- Discrete samples will be collected at the appropriate locations using an appropriate sampling equipment suitable for the desired collection depth and laboratory analytical procedure.

- Sampling equipment and tools will be scrubbed in a solution of TSP and distilled water, tripled rinsed in distilled water prior to and between sampling locations to minimize the potential for cross-contamination. Reference Section 4.11.3.
- The project scientist will visually log the materials and collect samples at appropriate locations.
- Samples will be collected in laboratory-supplied, pre-preserved containers (if applicable). Immediately upon collection, the containers will be sealed, labeled with an identification number, wrapped in bubble pack, and placed on ice in a cooler maintained at approximately 4°C pending shipment to the laboratory.
- Samples will be delivered to the laboratory the same day they are collected, if possible. If samples are to be held until the next day, they will be maintained at approximately 4° C in a controlled environment.
- Sample control will be maintained by a chain-of-custody (COC) form which accompanies the sample from the point of collection. The form documents the time, date and responsible person during each step of the transportation process.

- All samples taken will be logged and identified with a naming system to include the year, month, and day collected, and a naming system specific to the sample location collected, as outlined below:

  -Surface Soil Sample: (yy,mm,dd Grid#);

  -Perimeter Soil Sample: defined by soil boring (SB) (yy,mm,dd SB# (interval collected); and

  -Community Soil Sample: defined by Air Station (yy,mm,dd Station#).
- The complete labeling of the containers will include the project number, date and time of collection, preservative used (if any) and sampler's name.

4.2 Surface Water Sampling

Three (3) surface water samples will be collected during the mobilization and site setup, and upon completion of activities conducted by ESI. The purpose of the sampling and analysis of the surface water samples is to monitor for non-point sources to ensure activities conducted at the site have not caused an adverse impact at the point of discharge, upstream of the site, and downstream of the site. The nearest surface water body is Clarkes Bayou, located approximately 2,250 feet west of the site. Approximate surface water sample locations are indicated on the Sample Location Map provided as Figure 3.

Each sample location will be plotted utilizing a hand held GPS for future identification in the post-activity sampling event. Upon completion of the project, three (3) surface water samples will be collected in each location sampled prior to commencement of activities conducted by ESI. Sample locations and representative areas will be identified and documented on a final report map as well as the sample log.

The following procedures will be conducted during surface water sampling activities:

- Discrete samples will be collected from Clarkes Bayou at the designated locations using a dip sampler.
- Surface water samples will be collected from Clarkes Bayou with the sampling device facing upstream and without disturbing the sediment.
- Surface water samples collected from Clarkes Bayou will be collected prior to collection of the sediment samples.
- Sampling equipment will be scrubbed in a solution of TSP and distilled water, tripled rinsed in distilled water prior to and between sampling locations to minimize the potential for cross-contamination. Reference Section 4.11.3.
- Samples will be collected in laboratory-supplied, pre-preserved containers (if applicable). Immediately upon collection, the containers will be sealed, labeled with an identification number, wrapped in bubble pack, and placed on ice in a cooler maintained at approximately 4°C pending shipment to the laboratory.

- Samples will be delivered to the laboratory the same day they are collected, if possible. If samples are to be held until the next day, they will be maintained at approximately 4º C in a controlled environment.
- Sample control will be maintained by a COC form which accompanies the sample from the point of collection. The form documents the time, date and responsible person during each step of the transportation process.
- All samples taken will be logged and identified with a naming system to include the year, month, and day collected, and a naming system specific to the sample location collected as outlined below:
  -Surface Water Sample: (yy,mm,dd SW Point of Discharge);
  -Surface Water Sample: (yy,mm,dd SW Upstream); and
  -Surface Water Sample: (yy,mm,dd SW Downstream).
- The complete labeling of the containers will include the project number, date and time of collection, preservative used (if any) and sampler's name.

Surface water samples collected prior to commencement of activities by ESI, and upon project completion will be analyzed for the following:

PARAMETER	MATRIX	METHOD
RECAP VOCs	Water	EPA8260C
RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	Water	EPA8270D

4.3 Sediment Sampling

Three (3) sediment samples will be collected during the mobilization and site setup and upon completion of activities conducted by ESI. Sediment samples will be collected at the same locations as the surface water samples. The purpose of the sampling and analysis of the sediment samples is to monitor the sediment at the point of discharge from the site, upstream of the site, and downstream of the site. Approximate sediment sample locations are indicated on the Sample Location Map provided as Figure 3. Sample locations and representative areas will be identified and documented on a final report map as well as the sample log.

The following procedures will be conducted during sampling operations requiring sediment sampling:

- Discrete samples will be collected from Clarkes Bayou at the designated locations using a PVC pipe equipped with a ball valve or claim shell sampling device at the desired location. The device will be lowered into the sediment with an open valve, the valve will be closed, and the sampling device will be withdrawn. ESI will identify low flow areas (for example inside a curve of the waterway) to obtain representative samples. Excess water will be removed from the sampling device through a drainage port, and the sample will be collected from the reservoir.
- Sediment samples collected from Clarkes Bayou shall be collected after collection of the surface water samples.
- Sampling equipment will be scrubbed in a solution of TSP and distilled water, tripled rinsed in distilled water prior to and between sampling locations to minimize the potential for cross-contamination. Reference Section 4.11.3.
- Samples will be collected in laboratory-supplied, pre-preserved containers (if applicable). Immediately upon collection, the containers will be sealed, labeled with an identification number, wrapped in bubble pack, and placed on ice in a cooler maintained at approximately 4°C pending shipment to the laboratory.

- Samples will be delivered to the laboratory the same day they are collected, if possible. If samples are to be held until the next day, they will be maintained at approximately 4° C in a controlled environment.
- Sample control will be maintained by a COC form which accompanies the sample from the point of collection. The form documents the time, date and responsible person during each step of the transportation process.
- All samples taken will be logged and identified with a naming system to include the year, month, and day collected, and a naming system specific to the sample location collected as outlined below:
  -Sediment Sample: (yy,mm,dd Sediment Point of Discharge);
  -Sediment Sample: (yy,mm,dd Sediment Upstream); and
  -Sediment Sample: (yy,mm,dd Sediment Downstream).
- The complete labeling of the containers will include the project number, date and time of collection, preservative used (if any) and sampler's name.

Sediment samples collected prior to commencement of activities by ESI, and upon project completion will be analyzed for the following:

PARAMETER	MATRIX	METHOD
RECAP VOCs	Sediment	EPA8260C
RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	Sediment	EPA8270D

4.4 Groundwater Sampling

Groundwater samples will be collected and analyzed from the six (6) perimeter monitoring wells to evaluate groundwater conditions at the site. The wells will be sampled following installation, and quarterly throughout the duration of the project. Monitoring well locations are indicated on the Sample Location Map provided as Figure 3.

4.4.1 Monitoring Well Installation and Construction

Upon reaching the total depth of the six (6) direct push soil borings advanced around the area of operation, each borehole will be completed with a 2-inch permanent monitoring well to provide monitoring of the groundwater around the operational area throughout the duration of the project. Monitoring wells will be constructed of schedule-40 PVC casing; 10 foot long 0.01-inch slotted screen assembly, and riser pipe from the top-of screen to the surface. The annular space around the well will be filled with a sand pack material of uniform gradation (20/40 silca sand filter); a bentonite seal will be placed above the sand pack material utilizing water-activated pellets; and grout will be used to backfill the remaining annular space above the bentonite seal to the ground surface. Each well location will be completed with an above ground surface completion, lockable metal shroud, concrete pad, and four (4) protective metal guard posts. Well construction diagrams will be completed, and monitoring wells will be registered with the Louisiana Department of Natural Resources (LDNR) in accordance with guidelines.

4.4.2 Monitoring Well Development

Following installation, each well will be developed in an attempt to remove fine-grained particles. Each well will be developed via low-flow micro purging technique with a peristaltic pump (Geopump) using dedicated tubing at each location in order to prevent cross contamination. New polyethylene tubing will be lowered into each well, and the tubing will be connected to a peristaltic pump. Well development will

be complete when groundwater removed from the well is visually clear of fine-grained particles, or to dryness. Following well development, groundwater will be allowed to recharge if necessary.

4.4.3 Water Level Measurements

Data for the determination of the groundwater potentiometric surface will be collected at each monitoring well. The wells will be uncapped to allow water levels to equilibrate to atmospheric conditions. After equilibration, depth-to-water will be measured to the nearest one-hundredth of a foot with a groundwater interface probe. In the event that contamination is detected in ground water, subsequent sampling will be conducted in a manner from least contaminated to the most contaminated. The interface probe will be decontaminated prior to on-site work, between each well, and after fluid level measurements are complete. A sample of the water level measurements log is included in Appendix A.

4.4.4 Well Purging

Following gauging, the six (6) monitoring wells will be purged using appropriate equipment and dedicated tubing. New polyethylene tubing will be lowered into each well to an appropriate depth within the well screen interval. The tubing will be connected to a peristaltic pump, and the purge rates will be maintained between 0.1 and 0.5 L/min. Water quality data will be collected to determine when stabilization is achieved. The outlet tubing from the pump will be connected to a flow-cell canister with a water quality instrument installed around the canister. Water will be pumped through the flow-through cell and instrument sensors. Water parameter readings will be recorded at a frequency of 3 to 5 minutes during well purging activities. Groundwater samples will be collected when water quality indicator parameters have stabilized within the parameter criteria for three consecutive measurements. Temperature, pH, specific conductivity, oxidation–reduction potential (ORP), dissolved oxygen (DO), and turbidity will be considered stable when three of the parameters are within the designated criteria for three successive measurements. Water levels, in conjunction with the water quality parameters, will be monitored to ensure that true formation water is extracted for sampling, rather than stagnant casing water. A sample of the low-flow groundwater monitoring sampling log is included in Appendix A.

4.4.5 Groundwater Collection

Once stabilization is achieved, groundwater samples will be collected from the six (6) perimeter monitoring wells. The samples shall be collected directly from the discharge port of the tubing, prior to passing through the flow-through cell. For volatiles, the discharge rate will be reduced to avoid aeration; not more than 100 ml/min, of the sample.

Additional procedures will be followed during sampling operations requiring groundwater sampling:

- Groundwater samples will be collected from the monitoring wells following USEPA Low-Flow Groundwater Sampling Procedures as appropriate for the desired laboratory analytical procedure.
- Dedicated sampling equipment will be used at each well.
- All field data will be recorded on the monitoring well sampling logs (Appendix A).
- Samples will be collected in laboratory-supplied, pre-preserved containers (if applicable). Immediately upon collection, the containers will be sealed, labeled with an identification number, wrapped in bubble pack, and placed on ice in a cooler maintained at approximately 4°C pending shipment to the laboratory.
- Samples will be delivered to the laboratory the same day they are collected, if possible. If samples are to be held until the next day, they will be maintained at approximately 4° C in a controlled environment.
- Sample control will be maintained by a COC form which accompanies the sample from the point of collection. The form documents the time, date and responsible person during each step of the transportation process.

- All samples taken will be logged and identified with a naming system to include the year, month, and day collected, and a naming system specific to the sample location collected as outlined below:
  -Groundwater Sample: (yy,mm,dd MW-#)
- The complete labeling of the containers will include the project number, date and time of collection, preservative used (if any) and sampler's name.

Groundwater samples will be analyzed for the following:

PARAMETER	MATRIX	METHOD
Explosives	Water	EPA8330B
RECAP VOCs	Water	EPA8260C
RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	Water	EPA8270D

4.5 Community Air Quality Monitoring & Sampling

Air sampling techniques are detailed in the Air Monitoring Sample Plan provided as Appendix B.

4.6 Comprehensive Performance Testing

The comprehensive performance test plan associated with the initial acceptance testing regarding air emissions will be provided as a separate plan.

4.7 CEMS Stack Monitoring

The Continuous Emission Monitoring System performance evaluation plan will be provided as a separate plan.

4.8 Waste Feed Sampling

Waste feed sampling will be conducted prior to testing of the contained burn chamber system. The purpose of the sampling is to characterize the wastes being introduced into the destruction unit.

Prior to the Initial Acceptance Testing of the contained burn chamber system, representative samples of M6 and the CBI waste only, and associated packing materials (plastic bags, super-sacks, boxes, and fiber drums) will be collected and analyzed. A single grab sample will be collected of each waste feed. Samples and materials collected for analysis will be identified and documented on a final report map as well as the sample log.

Waste feed samples collected prior to commencement of the destructive activities will be analyzed for the following constituents:

Parameter	Matrix	Method
RECAP VOCs	M6 and CBI Waste	EPA8260C
RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	M6 and CBI Waste	EPA8270D
Metals[1]	M6 and CBI Waste	6020A/7470A

Parameter	Matrix	Method
Total Chlorine	M6 and CBI Waste	9056
RECAP VOCs	Packaging Material	EPA8260C
RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	Packaging Material	EPA8270D
Metals[1]	Packaging Material	6020A/7470A
Total Chlorine	Packaging Material	9056

1) Metals: Arsenic (As), Barium (Ba), Cadmium (Cd), Chromium (Cr), Lead (Pb), and Mercury (Hg).

The following procedures will be conducted during sampling operations requiring waste feed sampling:

- Discrete samples will be collected as appropriate for the required laboratory analytical procedure.
- Sampling equipment and tools will be scrubbed in a solution of TSP and distilled water, tripled rinsed in distilled water prior to and between sampling locations to minimize the potential for cross-contamination. Reference Section 4.11.3.
- The project scientist will visually log the materials and collect samples at appropriate locations.
- Samples will be collected in laboratory-supplied, pre-preserved containers (if applicable). Immediately upon collection, the containers will be sealed, labeled with an identification number, wrapped in bubble pack, and placed on ice in a cooler maintained at approximately 4°C pending shipment to the laboratory.
- Samples will be delivered to the laboratory the same day they are collected, if possible. If samples are to be held until the next day, they will be maintained at approximately 4° C in a controlled environment.
- Sample control will be maintained by a COC form which accompanies the sample from the point of collection. The form documents the time, date and responsible person during each step of the transportation process.
- All samples taken will be logged and identified with a naming system to include the year, month, and day collected, and a naming system specific to the sample location collected, as outlined below:
  -Waste Feed Samples: (yy,mm,dd Waste Feed: M6 only); and
  -Waste Feed Samples: (yy,mm,dd Waste Feed: M6 and packaging).
- The complete labeling of the containers will include the project number, date and time of collection, preservative used (if any) and sampler's name.

4.9 Waste Characterization

Waste characterization will be conducted to identify waste streams for disposal. Generator's knowledge and analytical testing will be used to accurately characterize each waste stream. The waste streams anticipated for the project include the following:

- Investigative derived waste (IDW) generated during the field sampling events (soil generated during drilling of the boreholes; groundwater collected at the site during well development and sampling activities; and equipment decontamination water);
- Ash from the material destruction process;
- Cooling water from the trolley loading system; and
- Packaging from the material containers (plastic liners and material from the super sack storage bags). It is noted that the super sacks and plastic bags may be combined into one waste stream and would be stored and disposed collectively.

One (1) composite sample per waste stream will be collected and analyzed for characterization, if necessary for disposal.

- IDW Soil –IDW soil will include soil cuttings generated during installation of monitoring wells. Soil IDW will be containerized in 55-gallon steel drums, properly labeled, and stored at a designated holding area pending analytical results for proper disposal. A representative composite soil sample will be collected and submitted for laboratory analysis. A grab sample will be collected from each drum, and retained for the laboratory to composite.
- IDW Water – IDW water will include decontamination water and purge water generated from monitoring well development and groundwater sampling. IDW will be containerized in 55-gallon steel drums, properly labeled, and stored at a designated holding area pending analytical results for proper disposal. A representative composite sample of the decontamination water and the purged water will be collected and submitted for laboratory analysis. A grab sample will be collected from each drum, and retained for the laboratory to composite.
- Ash – A composite sample of ash will be collected and submitted for laboratory analysis. Five (5) grab samples will be collected from the vessel for composite. Samples will be collected from the north, south, east, and west locations of the vessel, as well as the center of the vessel as appropriate for the laboratory analysis.
- Cooling Water – A representative composite sample of cooling water will be collected from within the sump. The composite sample will be submitted for laboratory analysis.
- Material Packaging: Plastic Liners – Generator's knowledge is anticipated.
- Material Packaging: Super sacks – Generator's knowledge is anticipated.

The following procedures will be conducted during sampling operations for waste characterization:

- Discrete samples will be collected for the particular waste stream as detailed above.
- Sampling gear will be scrubbed in a solution of TSP and distilled water, tripled rinsed in distilled water prior to and between sampling locations to minimize the potential for cross-contamination. Reference Section 4.11.3.
- The project scientist will visually log the materials and collect samples at appropriate locations.
- Samples will be collected in laboratory-supplied, pre-preserved containers (if applicable). Immediately upon collection, the containers will be sealed, labeled with an identification number, wrapped in bubble pack, and placed on ice in a cooler pending shipment to the laboratory.
- Samples will be delivered to the laboratory the same day they are collected, if possible. If samples are to be held until the next day, they will be maintained at approximately 4^{o} C in a controlled environment.
- Sample control will be maintained by a COC form which accompanies the sample from the point of collection. The form documents the time, date and responsible person during each step of the transportation process.
- All samples taken will be logged and identified with a naming system to include the year, month, and day collected, and a naming system specific to the sample location collected as outlined below:
  -Waste Characterization: (yy,mm,dd Waste Stream Destruction)
- The complete labeling of the containers will include the project number, date and time of collection, preservative used (if any) and sampler's name.

Waste characterization samples will be analyzed for the following:

PARAMETER	MATRIX	METHOD
Explosives	Water	EPA8330B
RECAP VOCs	Water	EPA8260C
RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	Water	EPA8270D

PARAMETER	MATRIX	METHOD
Explosives (grab)	Solid	EPA8330B
Nitrocellulose	Solid	EPA353.2 Modified[1]
TCLP RECAP VOCs	Solid	EPA1311/8260C
TCLP RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	Solid	EPA1311/8270D
TCLP RCRA Metals	Solid	EPA1311/6020A/7470A
RCI	Solid	SW846, Chapter 7.3.3.2

1) To be determined

Note: Fluids and solids will be submitted for analysis as required by the permitted landfill.

4.10 Quality Assurance/Quality control (QA/QC) Sample Collection

A QA/QC sampling program will be implemented as a systematic process that controls the validity of the analytical results by measuring the accuracy and precision of the analytical method and sample matrix. The QA/QC program also develops expected control limits and uses these limits to detect anomalous events. Subsequently, corrective action techniques are implemented to prevent or minimize recurrence of the events. The accuracy and precision of the sample analyses are assessed by the analysis of both field and laboratory samples. To ensure that reliable data is collected, the data will meet the following requirements:

- The data will be generated using EPA approved SW-846 Test Methods;
- The data will be analyte-specific with the identity and concentration of the compound confirmed;
- Selected analysis reports (approximately 10%) will include raw data such as chromatograms, spectra, and digital values; and
- QA/QC samples will be included.

4.11 Field QA/QC Samples

Field QA/QC samples will be collected by the field sampling team during the collection of soil and/or groundwater samples to insure QA/QC standards are attained. The field QA/QC samples are not included as part of the laboratory's internal QA/QC program and will be handled by the laboratory as a routine environmental sample. The field team will, to the extent practical, schedule sample collection and shipment of samples to minimize the number of QA/QC samples requiring analysis.

4.11.1 Field Duplicate Samples

Each duplicate is defined as a second sample taken in the field at a given location. Immediately following of the original sample, the field duplicate sample is collected by using the same collation method. For duplicate soil sampling, a shallow surface sample or a sample interval to be retained for laboratory analysis per RECAP Appendix B criteria will be collected. A discrete soil sample will be collected using the appropriate sampling tool for the desired depth. Groundwater duplicate samples will be collected using low-flow groundwater sampling procedures as appropriate for the desired laboratory analytical procedure. The field duplicate sample location and time will not be revealed to the laboratory. Field duplicate samples will be analyzed using the same analyses performed on its associated routine sample.

Duplicate samples will be collected at a frequency of one (1) per twenty field samples per matrix.

4.11.2 Material Spike and Material Spike Duplicate Samples

Material Spike/Material Spike Duplicate (MS/MSD) samples are collected for use as laboratory QC samples for analysis by organic methods. Aqueous samples are collected from one (1) sampling location at triple the normal sample volume for all organic analyses. In the laboratory, MS/MSD samples are split, and two portions are spiked with known amounts of analytes. Analytical results for MS/MSD samples are used to measure the precision and accuracy of the laboratory organic analytical program.

MS/MSD samples will be collected at a frequency of one (1) per twenty field samples per matrix.

4.11.3 Equipment Rinsate Blanks

Equipment rinsate blanks will be collected during the field program to assess the effectiveness of the equipment decontamination methods. An equipment rinsate blank will consist of analyte-free water, which is poured over the decontaminated sampling equipment and subsequently collected in laboratory prepared sample bottles. Equipment rinsate samples will be analyzed for all analytes of interest in the media for which the equipment is being used.

Rinsate samples will be collected at a frequency of one (1) per 20 field samples.

4.11.4 Trip Blanks

Trip blanks will be included in this program to evaluate the possible introduction of VOCs into samples during sample transit and storage. Trip blanks will include vials of analyte-free water prepared by the laboratory. Trip blank samples will be analyzed for VOCs only.

Trip blanks will be analyzed at a frequency of one (1) per cooler containing groundwater samples for volatiles analysis.

4.11.5 Field Blanks

Field blanks will be included in this program to evaluate the possible introduction of VOCs into samples from external sources. This sample is created by pouring analyte-free water used in the field into a randomly selected sample container at the sampling site. Each field blank will be analyzed for VOCs only. The field blank will be obtained near the sampling location and handled as a site sample.

Field blanks will be collected at a frequency of one (1) per day during groundwater sampling activities.

5.0 Field Sample Documentation

Sample custody procedures are based on USEPA-recommended procedures that emphasize careful documentation of sample collection and sample transfer. To ensure that all of the important information pertaining to each sample is recorded, these documentation procedures will be followed. Copies of field logs are provided as Appendix A.

5.1 Sample Collection

The collection of samples will be in accordance with the established sampling procedures outlined in Section 4.0. Sample containers, preservatives and holding times will be in accordance with USEPA Test Methods for Evaluating Solid Waste (SW-846) document and the contracted laboratory.

5.2 Field Logbooks

Project field books will be kept. All pertinent information regarding the site and sampling procedures will be documented in indelible ink. Notations will be made in on site activity logs, noting the time and date of all entries.

5.3 Documenting Sampling Locations

The exact locations of sampling points will be documented for purposes of generating an accurate representation of the site conditions using sample location maps.

5.4 Sample packaging and shipping

Proper sample containers ensure that no chemical alteration occurs during the field sampling and transit to the laboratory. Containers will be delivered by the laboratory or shipped by a commercial supplier. All samples will be packaged carefully to avoid breakage or cross contamination and will be shipped to the laboratory at proper temperatures. Shipping times will be minimized to prevent holding time violations. All care will be taken following these procedures:

- Sample containers will be selected to ensure compatibility with the sample and to minimize breakage during field activities.
- The lid of each sample container will be securely tightened.
- Sample labels will be affixed to each container. Each label will identify the site name, a unique identification number, collector's name, date and time of collection, preservatives (if any), and analyses to be performed. All labels will be completed in waterproof ink. This same information will be placed on the COC form and the COC will accompany the samples to the laboratory. The water resistant sample will be completed and affixed to the sample container.
- The sample containers will be packed in coolers with samples from each sampling location grouped together. Packing material will be used to cushion and support the sample container. Sample labels will be verified against the COC form as they are packed.
- The COC will be checked for completeness for the samples contained within the cooler. A copy of relinquished COC forms will be retained with the field documentation. Samples will be maintained under strict COC protocol, including documentation of transfers among facilities and archival after completion of analysis. Samples and signed COC forms will remain in the possession of the field sampler until relinquished for transport to the laboratory.

5.5 Chain-of-Custody Records

COC involves maintaining the integrity and traceability of the process of sample collection, laboratory analysis, and final evidence files. A sample is defined as being in one's custody if:

- The sample container is in one's actual possession.
- The sample container is in one's view after being in one's physical possession.
- The sample container has been continuously in one's physical possession and then placed in a secure location.

Samples will be maintained under strict COC protocol from the time of the sample collection through delivery to the laboratory. Each sample container will be recorded on a COC form. A sample of the COC is included in Appendix A. The COC will be completed in triplicate with the original to accompany the final analytical report, one copy to be retained by the laboratory and the third copy to be retained in the

project records. The COC will be placed into a plastic sealable bag and taped to the inside of the cooler lid.

Sample and shipping containers will remain in the custody of a sampling team member until relinquished via dated signature to the laboratory, shipping courier, or other appropriate party, who must sign and date the COC at the time the sample is transferred. If the courier does not sign the COC, sampler will note the name of the courier company, and the tracking number on the COC.

Laboratory COC begins when samples are received and continues until samples are discarded. Laboratories analyzing samples must follow custody procedures specified in their Standard Operating Procedures (SOPs).

6.0 Laboratory Sample Documentation

All sample log-in, storage and COC documentation will be the responsibility of the laboratory manager or his designee. He is responsible for retaining shipment documents and verifying data entered into the sample custody records. He will also ensure that the sample storage is secure and maintained at the proper temperature. Any problems are documented on the COC and the project scientist is notified immediately.

All samples are kept under the proper environmental control until after the holding times have expired and there are no QA/QC problems with any analysis on the samples. The contracted laboratory Quality Assurance Manual is included in the QAPP.

Sample administration will log the samples into the order entry system and the Laboratory Information Management System (LIMS). The LIMS will assist the tracking of the samples while the samples are in the custody of the laboratory.

7.0 Laboratory Analysis

Laboratory analysis will include compounds associated with explosives and propellants of this nature. These include*:*

Parameter	**Matrix**	**Method**
Environmental Activities		
Explosives	Soil	EPA8330B
Nitrocellulose	Soil	EPA353.2 Modified[1]
RECAP VOCs	Soil	EPA8260C
RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	Soil	EPA8270D
RCRA Metals[2]	Soil	6020A/7470A
Dioxins/Furans	Soil	1613B
Total Petroleum Hydrocarbons – Gasoline Range Organics	Soil	8015
Total Petroleum Hydrocarbons – Diesel Range Organics	Soil	8015
Explosives	Water	EPA8330B
RECAP VOCs	Water	EPA8260C
RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-	Water	EPA8270D

dinitrotoluene, di-n-butylpthalate, and diphenylamine)		
RECAP VOCs	Sediment	EPA8260C
RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	Sediment	EPA8270D
Destructive Activities		
Explosives (grab)	Solid	EPA8330B
Nitrocellulose	Solid	EPA353.2[1]
TCLP RECAP VOCs	Solid	EPA1311/8260C
TCLP RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	Solid	EPA1311/8270D
TCLP RCRA Metals[2]	Solid	EPA1311/6020A/7470A
RCI	Solid	SW846, Chapter 7.3.3.2
Explosives (grab)	Water	EPA8330B
Nitrocellulose	Water	EPA353.2[1]
RECAP VOCs	Water	EPA8260C
RECAP SVOCs (and 2,4-dinitrotoluene, 2,6-dinitrotoluene, di-n-butylpthalate, and diphenylamine)	Water	EPA8270D
RCRA Metals[2]	Water	6020A7470A
RCI	Water	SW846, Chapter 7.3.3.2

1) To be determined
2) RCRA Metals: Arsenic (As), Barium (Ba), Cadmium (Cd), Chromium (Cr), Lead (Pb), Mercury (Hg), Selenium (Se), and Silver (Ag).
3) Fluids and solids will be submitted for analysis as required by the permitted landfill.

The USEPA and State regulator personnel and their authorized representatives will have access at reasonable times to all laboratories utilized by ESI in implementing the contract. ESI ensures that all laboratories contracted will analyze all samples submitted by EPA pursuant to the QAPP for quality assurance, quality control, and technical activities that will satisfy the stated performance criteria as specified in the QAPP. ESI ensures that the laboratories they utilize for the analysis of samples taken will perform all analyses according to accepted EPA methods. Accepted EPA methods consist of, but are not limited to:

- Methods that are documented in the EPA's Contract Laboratory Program (http://www.epa.gov/superfund/programs/clp/);
- SW 846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm);
- "Standard Methods for the Examination of Water and Wastewater" (http://www.standardmethods.org/);
- 40 C.F.R. Part 136, "Air Toxics - Monitoring Methods" (http://www.epa.gov/ttnamti1/airtox.html);" and

- Amendments made thereto during the course of the implementation of the contract resulting from this RFP.

ESI understands, upon approval by EPA, ESI may use other appropriate analytical methods, as long as:

- QA/QC criteria are contained in the methods, and the methods are included in the QAPP;
- The analytical methods are at least as stringent as the methods listed above; and
- The methods have been approved for use by a nationally recognized organization responsible for verification and publication of analytical methods, e.g., EPA, ASTM, NIOSH, OSHA, etc.

ESI ensures that all laboratories they use for analysis of samples have a documented Quality System that complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), and "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001, reissued May 2006), or equivalent documentation as determined by EPA. ESI understands EPA may consider Environmental Response Laboratory Network ("ERLN") laboratories, laboratories accredited under the National Environmental Laboratory Accreditation Program ("NELAP"), or laboratories that meet International Standardization Organization (ISO 17025) standards or other nationally recognized programs (www.epa.gov/fem/accredit.htm) as meeting the Quality System requirements. All contracted testing companies and laboratories used to generate monitoring data will be Louisiana Environmental Laboratory Accreditation Program (LELAP) certified per LAC 33:I.subpart 3.

ESI, on behalf of the Military Department, will submit to EPA the results of all sampling and/or tests or other data obtained or generated by or on behalf of Military Department with respect to the project. ESI understands that the USEPA and the State of Louisiana regulating authorities retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes and regulations.

FIGURES

FIGURE 1

REGIONAL LOCATION MAP

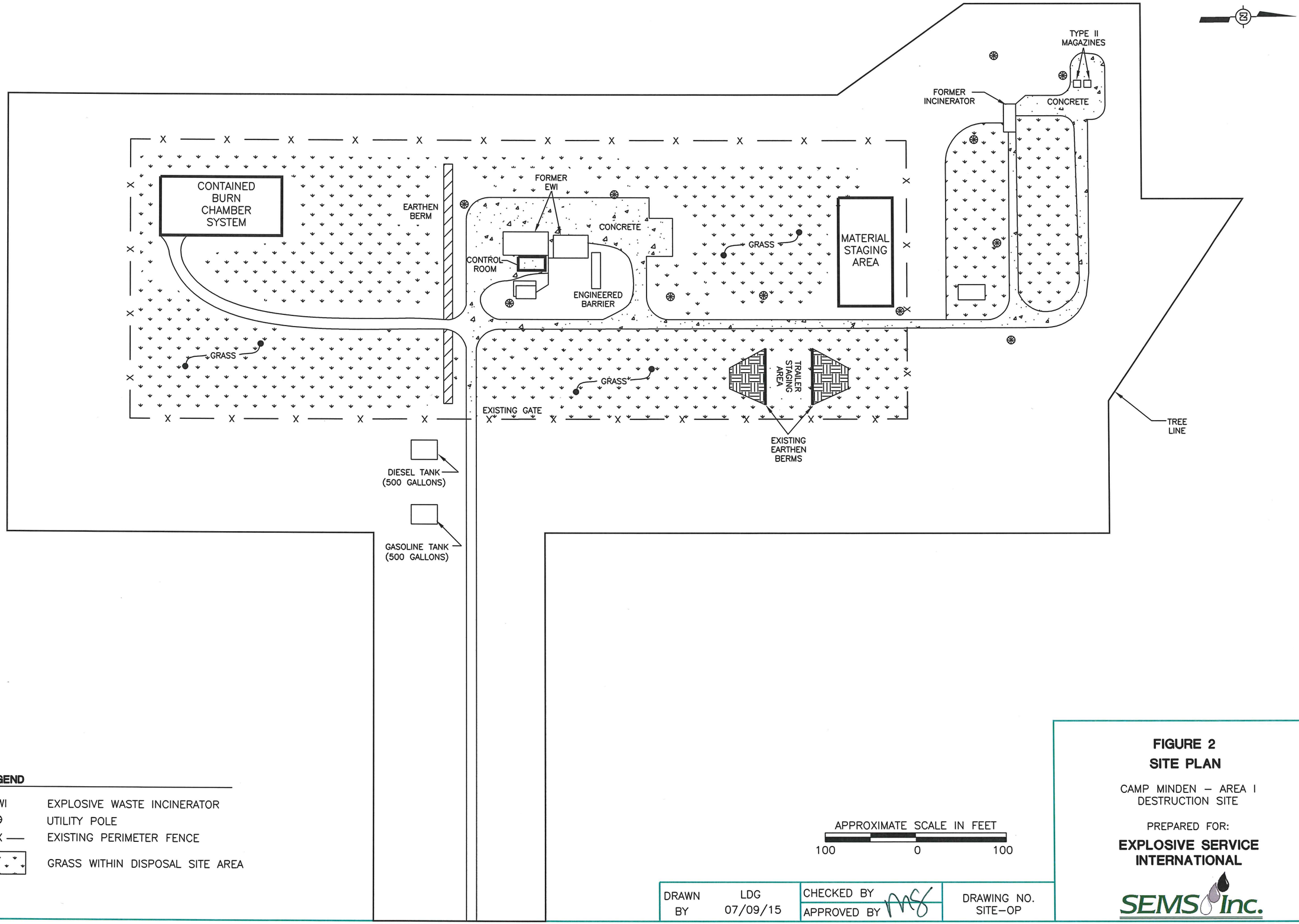
CAMP MINDEN – AREA I
DESTRUCTION SITE

PREPARED FOR:

EXPLOSIVE SERVICE INTERNATIONAL

SEMS Inc.

DRAWN BY	LDG	CHECKED BY		DRAWING # SITE LOC
	07/09/15	APPROVED BY		



LEGEND

EWI	EXPLOSIVE WASTE INCINERATOR
⊛	UTILITY POLE
— X —	EXISTING PERIMETER FENCE
	GRASS WITHIN DISPOSAL SITE AREA

APPROXIMATE SCALE IN FEET

100 0 100

DRAWN BY	LDG 07/09/15	CHECKED BY APPROVED BY	DRAWING NO. SITE-OP

FIGURE 2

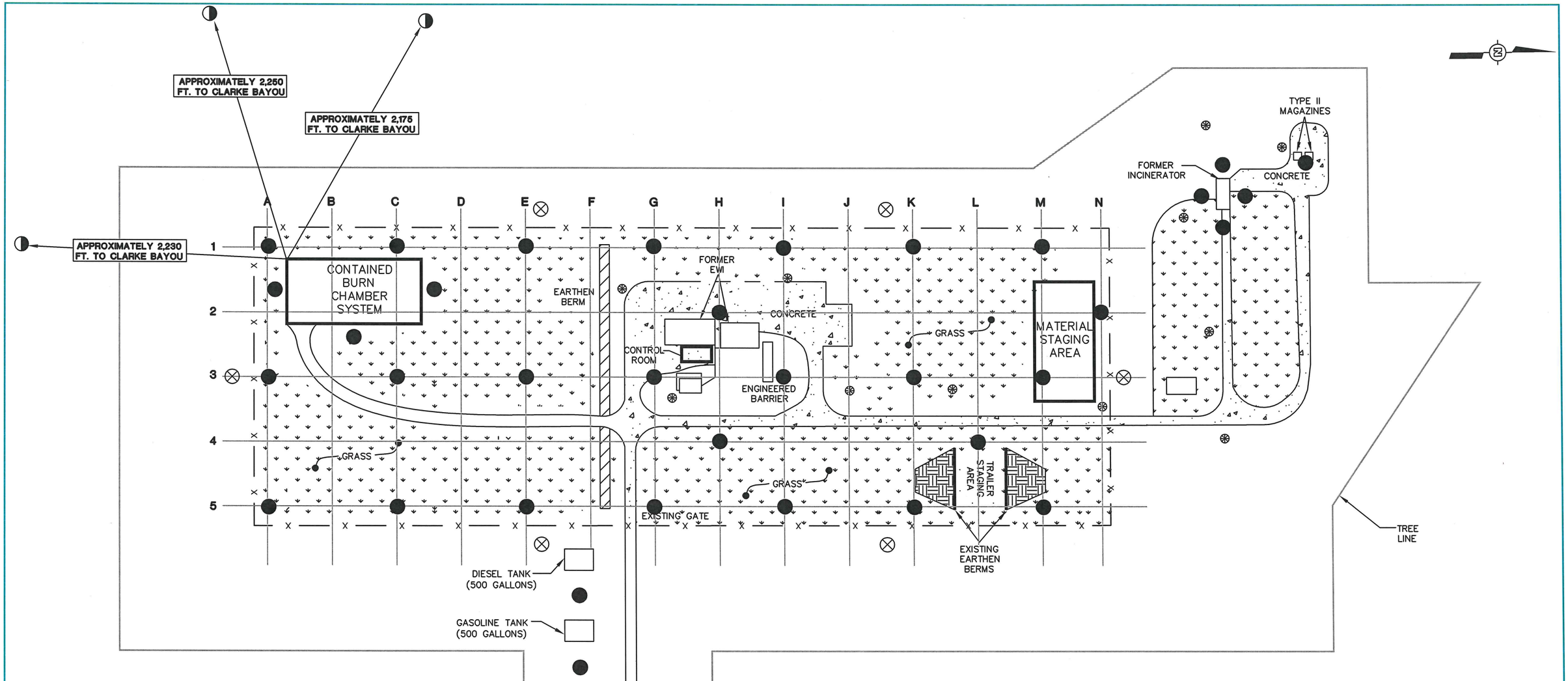
SITE PLAN

CAMP MINDEN – AREA I
DESTRUCTION SITE

PREPARED FOR:

EXPLOSIVE SERVICE INTERNATIONAL

SEMS Inc.



LEGEND

EWI	EXPLOSIVE WASTE INCINERATOR
⊛	UTILITY POLE
—X—	EXISTING PERIMETER FENCE
	GRASS WITHIN DISPOSAL SITE AREA
●	ON SITE SOIL SAMPLE
⊗	PERIMETER SOIL SAMPLE LOCATION COMPLETED WITH MONITORING WELL FOR GROUNDWATER SAMPLING
◑	SURFACE WATER AND SEDIMENT SAMPLE LOCATION

NOTE:
LOCATIONS MAY BE ADJUSTED BASED ON SITE ACCESS AND SURFACE OBSTRUCTIONS.

APPROXIMATE SCALE IN FEET

100 0 100

DRAWN BY	LDG 07/09/15	CHECKED BY	DRAWING NO. 002
		APPROVED BY	

FIGURE 3

SAMPLE LOCATION MAP

CAMP MINDEN – AREA I DESTRUCTION SITE

PREPARED FOR:

EXPLOSIVE SERVICE INTERNATIONAL

SEMS Inc.

APPENDIX A
FIELD FORMS

SITE ACTIVITY LOG

PAGE

PROJECT GENERAL INFORMATION

Client: **LMD**

Date:

M6 Destruction at Camp Minden

Activities:

Address:

Project #:

Weater Conditions:	
Visitors OnSite:	
Impt. Phone Calls:	
Changes Plans/Specs:	

ESI EQUIPMENT & MATERIALS USED

Description		Unit	Quantity	Rate

ESI PERSONNEL INFORMATION

Employee Name:

Employee Signature:

DAILY ACTIVITY LOG

PAGE OF

PROJECT GENERAL INFORMATION

Client: LMD **Date:** _____

Project #: _____ **Activities:** _____

ESI ACTIVITY DOCUMENTATION

Notes & Observations

Time (Military)	Personnel:

ESI PERSONNEL INFORMATION

Employee Name: _____ Date: _____

ESI

TAILGATE SAFETY MEETING

GENERAL INFORMATION

Company ESI

Date _____ Time _____ Job Number _____

Customer LMD Address _____

Job Location Camp Minden - Area I Destruction Site

Type of Work _____

Protective Clothing/Equipment Level D PPE

Hard hat, glasses, long sleeves, high viz vest, safety-toe work boots, gloves (as needed)

SAFETY TOPICS

Chemical Hazards _____

Physical Hazards _____

Emergency Procedures See HASP for emergency proceedure details

Hospital/Clinic Minden Medical Center Phone (318) 377-2321

Hospital Address 1 Medical Plaza, Minden, LA 71055

Special Equipment _____

Other _____

ATTENDEES

NAME PRINTED	SIGNATURE

SITE SUPERVISOR SIGNATURE

M6 DESTRUCTION CAMP MINDEN
AREA I DESTRUCTION SITE
EQUIPMENT CALIBRATION LOG

GENERAL INFORMATION			
Date of Calibration		Technician Name	

CALIBRATION EQUIPMENT INFORMATION			
Equipment	Model Number	Serial/Unit Number	Manufacture Name

RECOMMENDATIONS/OBSERVATIONS:

CALIBRATION			
Function	Initial Reading	Calibrated To	Comments

Additional Comments

Notes for Eagle 2: Calibrate Methane (CH4) to 2.5 %; Oxygen (O2) to 12%; Hydrogen Sulfide (H2S) to 25ppm; Carbon Monoxide (CO) to 50ppm; and Isobutylene (IBL) to 100ppm.

SOIL BORING & WELL CONSTRUCTION LOG

OWNER:		**BORING/WELL #:**	
FACILITY #:	Camp Minden - Area I Destruction Site	**DATE COMPLETED:**	
ADDRESS:	1600 Java Road	**GW DEPTH (Encountered):**	
CITY, STATE:	Minden, Louisiana	**GW DEPTH (Static):**	
PROJECT ID#:	750-0001	**WELL T-O-C ELEVATION:**	

DEPTH (ft)	SAMPLING Method	SAMPLING Time	PID Reading	USCS Symbol	% Recoverd	SOIL CHARACTERISTICS AND REMARKS	GEN WELL CONSTR (Refer to Diagram)	DEPTH (ft)
0							cap	0
2								2
4								4
6								6
8								8
10								10
12								12
14								14
16								16
18								18
20								20
22								22
24								24
26								26
28								28
30								30

NOTES

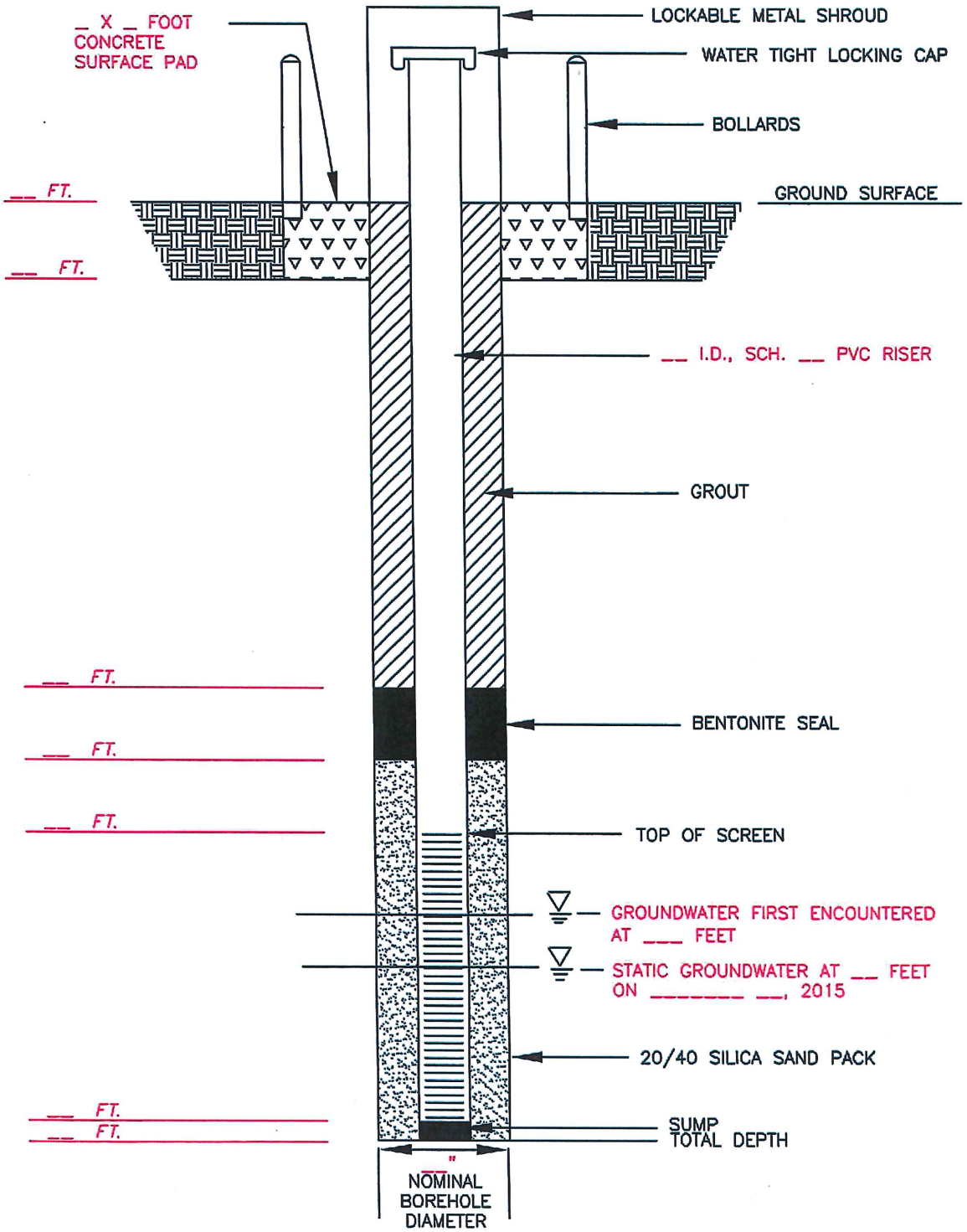
All Times Military
*-Sample Analyzed
GW-Groundwater
HA-Hand Auger
NA-Not Applicable
NR-No Recovery
PH-Post Hole Digger
SS-Split Spoon
ST-Shelby Tube
TD-Total Depth
NS-Not Sampled

Drilling Company:
Driller Name:
Drill Rig Type:
Drill Diam. & Meth:
SEMS, Inc. Rep:

Conc./Grout
Bentonite Plug
Sand Pack
Well Casing
**** Natural Soil

NOTES

SEMS Inc.



LEGEND

JOB/PHASE/TASK NO.:	750–0001
WELL NO.:	MW–__
DATE INSTALLED:	__/__/15
ELEVATION OF CASING:	___ FEET
LATITUDE:	__° __' __" N
LONGITUDE:	__° __' __" W

SAND FILL
GROUT
CONCRETE FILL

NOT TO SCALE

WELL CONSTRUCTION DIAGRAM

CAMP MINDEN – AREA I
MINDEN, LOUISIANA

PREPARED FOR

EXPLOSIVE SERVICE INTERNATIONAL

SEMS Inc.

DRAWN BY	LDG	CHECKED BY		DRAWING #
	07/09/15	APPROVED BY		MW–NO.

SEMS Inc.
Southern Environmental Management & Specialties

CAMP MINDEN - AREA I DESTRUCTION SITE
GROUNDWATER SAMPLING EVENT
WATER LEVEL MEASUREMENTS

WELL NO.	DATE	TOC Elev. Ft. MSL	Water Level		Comments	
			Depth	Elev.		
MW-1						
MW-2						
MW-3						
MW-4						
MW-5						
MW-6						

GROUNDWATER MONITORING SAMPLING LOG
LOW-FLOW

Project: Camp Minden – Area I Destruction Site
Project No.: 750-0001
Site Location: Minden, Louisiana
Monitor Well No.: MW-
Date Purged/Sampled: _____ **Sampled By:** _____

MONITOR WELL INFORMATION

Total Depth of Monitor Well (**TD**): _____ ft.
Static Depth to Groundwater (**DTW**): _____ ft.
Screen Length (**SL**) from Boring Logs: _____ ft.
Depth to Top of Well Screen (**TD-SL**): _____ ft.
Height of Water Column (**H=TD-DTW**): _____ ft.

Purge Flow Rate: _____ mL/min
Volume Purged: _____ gallons
Date/Time of Sample: _____ @ _____ Time

WELL CASING VOLUME CALCULATIONS

☐ 2" Well (H x 0.163 gal/ft) _____ gal. (1 well volume) _____ gal. (3 well volumes)
☐ 4" Well (H x 0.653 gal/ft) _____ gal. (1 well volume) _____ gal. (3 well volumes)
☐ Other: _____

PURGING METHOD

☐ Peristaltic Pump
☐ Low-flow Submersible Pump
☐ Water Well
☐ Other (Specify)

METHOD OF SAMPLE COLLECTION

☐ Peristaltic Pump
☐ Low-flow Submersible Pump
☐ Bailer ☐ Dedicated ☐ Disposable
☐ Other (Specify) _____

LOW-FLOW MONITORING PARAMETERS

Time	Flow Rate	Temp.	Specific Conductivity	Dissolved Oxygen	pH	ORP	Turbidity	DTW
hr/min	mL/min	°C	mS/cm	mg/L	Standard Units	mV	NTU or FTU	feet
Stabilization Criteria	100 - 500 mL/min	+/- 1°C	+/- 3%	+/- 10%	+/- 0.1	+/- 10%	+/- 10% (if >10 NTU or FTU)	<0.3 ft. or Top of Screen
	Initial							

Notes:
1. Well is stable if 3 consecutive measurements of as many as 3 indicators are within their target ranges.
2. Take measurements every 3 to 5 minutes.
3. Field QA/QC Sample ID and Time Collected: _____

SHEET _____ OF _____

ANALYSIS REQUEST AND CHAIN OF CUSTODY FORM

Project Manager & Company	Phone #:
Address:	FAX #:
Project PO No.: Project No.:	Project Name:
Project Location:	Sampler Signature:

Sample ID	Lab # Lab use Only	# Containers	Volume/Amount	Matrix					Method Preserved					Sampling		ANALYSIS REQUESTED										HANDLING					
				Water	Soil	Sludge	Other	Other	Ice	HCl	HNO_3	None	Other	Date	Time											Priority One Service (24-48 Hrs)	Expedited Service (2-3 working days)	Normal Service	Verbals / Fax	Special Detection Limits (Specify)	Special Reporting Requirements

Relinquished by:	Date	Time	Received by:	Date	Time	Remarks:

P.O.= must be included or work may be delayed. Please call 1-2 days in advance to arrange for expedited service, if not samples may be delayed.

Explosive Service International
9985 Baringer Foreman Road
Baton Rouge, Louisiana 70809
Phone 225-275-2152

ESI Material Transportation Manifest on Camp Minden, LA

1. Date: _____

2. Magazine Number: _____

3. Load on Trailer:

   a. No. Super Sacks: _____

   b. No. Drums: _____

   c. No. Boxes: _____

4. Time Dispatched from Magazine: _____

5. ESI Magazine Supervisor Signature: _____

6. ESI Tractor Operator Signature: _____

Transfer of Material Responsibility from ESI Magazine Supervisor to ESI Tractor Operator

---

7. Time of Arrival at Area I: _____

8. Load Delivered on Trailer at Area I:

   a. No. Super Sacks: _____

   b. No. Drums: _____

   c. No. Boxes: _____

9. ESI Tractor Operator Signature: _____

10. Certification of Receipt of Materials

    ESI Area I Staging Area Supervisor Signature: _____

Transfer of Material Responsibility from ESI Tractor Operator to ESI Staging Area Supervisor

NOTES: (1) Emergency Phone Number: 225-275-2152

(2) Upon signature of this form by the ESI Area I Staging Area Supervisor, material responsibility and accountability is transferred from ESI Tractor Operator to the ESI Area I Staging Area Supervisor.

(3) This local ESI Transportation Manifest Form for Camp Minden, LA is modeled on EPA Form 8700-22.

M6 Destruction at Camp Minden
Example of Scale Ticket - Net Explosive Weight

DATE _____ NO. _____

TIME _____

COMPANY _____

TIME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

GROSS _____

TARE _____

NET _____

M6 DESTRUCTION CAMP MINDEN
AREA I DESTRUCTION SITE
PHOTOGRAPH LOG

DATE _____

PHOTO NO.	SUBJECT/DESCRIPTION

APPENDIX B

AIR MONITORING SAMPLE PLAN

(Will be submitted at a later date.)