

## **Appendix K**

### **Pan-Scraping/Trommel Screening Work Plan**

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## K.1 Introduction

This Pan-scraping/Trommel Screening Work Plan describes the goals, methods, procedures, and personnel that will be used at the Munitions and Explosives of Concern (MEC) Removal Action (RA) for the Elkton Farm Firehole Project (EFPF). This work plan specifically addresses mechanical excavation and screening of remaining high density soils (other than the Burn Pits), and other remaining areas which EPA elects to utilize this work plan approach for. Guardian Environmental Services Company, Inc (GESC) including team subcontractors Reactives Management Corporation (RMC) and USA Environmental Incorporated (USA) will conduct onsite activities, including Trommel Screening operations, MEC/DMM identification/screening, MEC/DMM/MD separation. Pan-scraping operations will be conducted by the property owner, under the direction of EPA. The Pan-scraping/Trommel Screening Work Plan incorporates elements of the current United States Army Engineering and Support Center, Huntsville (USAESCH) Data Item Descriptions (DID MR-005-01 Type II Work Plan) and the Scope of Work (SOW). This work plan supplements Appendix H, revision 5, *Phase II work Plan, MEC Removal Action, Elkton Farm Firehole Site, Elkton, Maryland* (Master Work Plan)(GESC, 2007) Additional tasks may be addressed in the Addendums as required. The following details the format of this Phase II Work Plan:

- Section K.1:**                    **Introduction:** This section discusses the project authorization, and provides a general scope for the Pan-scraping/Trommel Screening Operations.
- Section K.2:**                    **Technical Management Plan:** This section provides procedures for pan-scraping, laydown, visual clearance, Trommel Screening, MEC/DMM/MD separation, asbestos containing materials (ACM) separation, and disposal of MEC/DMM/MD.
- Section K.3:**                    **Quality Control Plan:** The section details quality control (QC) procedures for the Pan-scraping/Trommel Screening operations.
- Section K.4:**                    **Environmental Protection Plan:** This section describes the approach, methods, and operational procedures used to minimize pollution, protect and conserve natural resources, restore damage, and control noise and dust/particulates during this RA.

## K.2 Pan-Scraping/Trommel Screening Technical Management Plan

This section documents the approach, methods and operational procedures the GESC Team and property owner contractor will employ to execute the tasks required for Pan-scraping/Trommel Screening operations the existing SOW and Master Work Plan. The Pan-scraping/Trommel Screening operations Technical Management Plan is prepared for the Environmental Protection Agency (EPA) Region III. Although not required by the EPA, all GESC Team activities involving work in areas potentially containing unexploded hazards will follow USAESCH, Department of the Army, and Department of Defense (DoD) guidelines regarding personnel, equipment, and procedures to the greatest extent practicable. Occupational Safety and Health Administration (OSHA) Standard 29 Code of Federal Regulation (CFR) 1910.120 will apply to all actions taken during Pan-scraping/Trommel Screening operations.

### K.2.1                    **General Purpose and Scope**

This Work Plan outlines the procedures the GESC Team and property owner contractor will use to perform Pan-scraping/Trommel Screening operations include: mobilization/site setup, site preparation; construction (pad for Trommel Screen and MEC/MD segregation area), pan-scraping, laydown area visual clearance, Trommel Screening, MEC/MD separation, ACM

separation, and MEC/MD disposal operations. Pan-scraping/Trommel Screening operations will involve pan-scraping of soils in approximately 35 subgrids (100 ft. x 100 ft.) which contain high density anomaly soils. These subgrids do not include the burn-pit areas. The pan-scraped soil will have large caliber MEC separated from the soil using visual clearance methods. Large pieces of asbestos containing materials (ACM) will also be separated to the greatest extent practicable. The soil remaining from the Trommel Screening operation will be placed in clean grids located near the Trommel Screening operation. MEC handling operations, potential demolition operations, and Site Safety and Health Plan requirements are briefly discussed in this work plan appendix, but are described in greater detail in the Master Work Plan.

The objective of the Pan-scraping/Trommel Screening Operation is to remove 2-inch Tracers and larger MEC/MD from the pan-scraped soils and to segregate/stage debris and ACM within the SOW-designated areas. If additional hazardous substances are encountered, they will be secured and staged independently. The disposition of all non-MEC waste, debris, and ACM will be addressed at the end of Pan-scraping/Trommel Screening Operations.

## **K.2.2 Project Organization**

For successful implementation of the RA, close coordination and cooperation between the project team members must occur. The project team consists of the EPA Region III, MDE, GESC, RMC, USA, START, and property owner contractors. Property Owner contractors report directly to EPA and are not under the direct supervision/control of GESC. The roles of the project team members for Phase II Operations are described, but not limited to, the responsibilities noted in the subsections below.

### **K.2.2.1 U.S. Environmental Protection Agency**

EPA Region III is the project management and funding agency for this project. EPA responsibilities may include review and approval of project plans and documents, providing day-to-day directions of actions agreed upon in the work plan, conducting oversight of all actions, working with the news media and the public, and coordinating with state and local regulatory agencies on issues pertaining to public safety and the environment.

### **K.2.2.2 Guardian Environmental Services Company, Inc.**

GESC is the Prime Contractor for this project. GESC responsibilities include: management of subcontractors; day-to-day coordination with the OSC; Trommel Screening operation, mechanical excavation and transport from laydown areas, ; and transportation/disposal of debris, ACM and MEC/MD(if required).

### **K.2.2.3 Reactives Management Corporation**

RMC is a team-subcontractor to GESC to provide MEC oversight for the project. RMC will provide technical support to the on-site project teams and perform quality assurance (QA) for GESC to ensure all aspects of the effort are being met. RMC also provides a Certified Safety Professional to visit the site periodically and conduct on-site audits.

### **K.2.2.4 USA Environmental, Inc.**

USA is the prime munitions response team-subcontractor to GESC for this project. USA will provide UXO Technicians and other personnel as necessary for the safe conduct of support activities. The mix of UXO Technician positions will vary, depending on conditions discovered as Pan-scraping/Trommel Screening Operations commence.

#### **K.2.2.5 Tetra Tech, Inc.**

Tetra Tech is the EPA START contractor and will assist EPA with ERRS oversight, sampling and analysis support, final grid (government) clearance and health and safety. Tetra Tech will utilize certified UXO Level III technicians to perform contractor oversight during field related activities. Tetra Tech will implement the approved Air Monitoring and Sampling Plan. Tetra Tech will also clear and certify the pan-scraped areas to be clear of MEC anomalies

#### **K.2.2.6 Property Owner Contractor**

The property owner, property owner's employees, or designated contractor will conduct pan-scraping operations in the areas designated by EPA. These personnel will be under the direct supervision of EPA, and will not report through any other members of the project team.

### **K.2.3 General Site Practices**

All operational activities involving explosives handling at the EFPF will be performed under the supervision and direction of qualified UXO personnel.

Work Hours: Pan-scraping/Trommel Screening Operations are anticipated to be nine hours/day over a five-day workweek schedule. All inquiries from outside sources will be referred to the OSC. No single workday is expected to exceed ten hours, except in case of emergency. If needed, the work schedule can be adjusted as required based upon site conditions.

### **K.2.4 Pan-Scraping/Trommel Screening Site Setup**

The following sections describe the major components of the Pan-scraping/Trommel Screening operations. A detailed process description for the Pan-scraping/Trommel Screening operations is found in Section K.2.5.

#### **K.2.4.1 Trommel Screening Pad**

Additional materials not currently located on-site will be needed to construct the cribbing required for the Trommel operations. It is estimated that six 6-in x 8-in x 8-ft treated timbers will be needed to complete the cribbing. It is currently anticipated that the Trommel Screen will be located in grids J4c and K4D.

#### **K.2.4.2 MEC Separation Area**

MEC will be separated as it passes off the Trommel Conveyor. If necessary, a tent enclosure with sorting tables and storage containers for the metal debris will be erected. Recovered munitions debris (MD) will be transported with a backhoe or other suitable equipment from the debris checking pads to an on-site area for storage. The MD will be managed depending upon the type and quantity recovered. The separated MD will be placed into a container and transported to the storage area for final disposition. A more detailed description of MEC separation can be found in Section 2 of the Master Work Plan.

#### **K.2.4.3 Debris/ACM Stockpile Area**

This area will be located in grid J6d. It will be lined with plastic and be surrounded by silt fence. Debris and suspect ACM will be placed in separate stockpiles located in the stockpile area as it is accumulated, including separated metal debris. Pre- and post- soil samples will be collected by START from this area to identify any possible cross-contamination resulting from the Pan-scraping/Trommel Screening operations, as noted in the SAP.

#### **K.2.4.4 Soil Erosion & Sediment Control**

Silt fence, if required, will be placed around the pan-scraped area prior to commencing operations. A magnetometer assisted surface clearance will be conducted by qualified UXO

Technicians in the areas where silt fence will be placed, prior to the placement of the silt fence. In areas where anomaly density makes the magnetometer assisted surface clearance impracticable, a visual surface clearance (direct visual observation only) will be conducted.

Silt fence will also be placed around any pan-scraped laydown soils, and staged Trommel Screened soils. All soil erosion and sediment control operations will be performed in adherence to applicable sediment and erosion control laws.

#### **K.2.4.5 Pan-scraping/Trommel Screening Operations Procedures Training**

After the site has been setup and prior to commencing Pan-scraping/Trommel Screening operations, all site personnel will participate in a walk through of all procedures and a review of project roles and job responsibilities. This training will ensure that each worker understands what tasks will be performed on the site and will review the safety protocols.

The purpose of this training is to ensure that personnel fully understand the procedures and methods that will be used to perform operations at site areas, their individual duties and responsibilities, and all safety and environmental practices/procedures associated with operations. Training topics/issues and training responsibilities are as follows:

- Prior to the start of operations, the Team will receive ordnance recognition and UXO safety precautions training. This training will be performed by USA.
- Field personnel will receive training on the individual equipment they will operate while on site.
- Personnel operating in the Pan-scraping/Trommel Screening operations area will receive instructions on heavy equipment operations and safety.

#### **K.2.5 Pan-Scraping/Trommel Screening Operations Work Detail**

Pan-scraping/Trommel Screening Operations will involve soil excavation in the subgrid identified by EPA. This will not include the burn pit areas. The pan-scraped soils placed in the designated laydown areas will have MEC, MD, debris, and suspect ACM removed from the soil to the greatest extent practicable using physical separation methods including the Trommel Screen. The separated soil will be placed in designated clean grids. The following sections provide additional detail of the sequence of Pan-scraping/Trommel Screening operations. Figure K-1 provides the flowchart for the Pan-scraping/Trommel Screening operations. Pan-scraping/Trommel Screening operations process optimization will be ongoing throughout operations

##### **K.2.5.1 Trommel Screening Pad Installation**

Prior to beginning operations, a MEC Team will perform a magnetometer assisted and/or visual clearance of the area selected for Trommel Screening Operations (K4d and J4c), depending on anomaly densities. This surface clearance will identify any MEC/MPPEH hazards that may exist and detect any MEC that may have migrated from another area. Clearance operations and procedures are discussed in greater detail in the Master Work Plan. Utilizing materials located on-site, a pad will be established for the Trommel Screen, to provide safe operations and to minimize dust emissions during operations. The pad will also be emplaced to accommodate the FEL or backhoe traffic carrying soils from the Laydown Area (J4a, J4b, J3c, J3d, I3c, and I4b) to the Trommel Screen. The Trommel Screen Pad will also have designated points marked for air sampling operations as directed by the SAP.

### **K.2.5.2 Pan-Scraping**

The property owner contractor will conduct pan-scraping in the subgrids (approximately 35) identified by EPA. Each subgrid will be pan-scraped in 6 to 8-inch lifts, and transported to the Laydown Area located in subgrids J4a, J4b, J3c, J3d, I3c, and I4b. Soils will be placed in windrow layers within the Laydown Area. Depending on Laydown Area MEC clearance operations, multiple windrows may be established. The pan-scraper will return to the identified subgrid to complete the initial pan-scraping of the specific subgrid soils. At the completion of a subgrid, a MEC clearance QC check will be performed by START. The START UXO personnel will certify the scraped subgrid as clear of MEC, or will notify EPA that another scraping lift from the subgrid will be required. Pan-scraping operations are expected to require 25 operational days to complete.

### **K.2.5.3 Laydown Area Soil MEC Clearance**

Soils will be placed in windrows in the Laydown Area (located in J4a, J4b, J3c, J3d, I3c, and I4b). The windrow will be 12 ft x 150 ft. with a depth of 4 inches. Prior to beginning excavations, a MEC Team will perform a magnetometer assisted/visual clearance of the windrow, depending on anomaly densities. The surface clearance will identify any large (greater than 2-inch tracer elements) MEC/MPPEH hazards that may exist within the windrow soil. The surface clearance will be repeated as additional windrows or windrow layers are added. Clearance operations and procedures are discussed in greater detail in the Master Work Plan. It is currently anticipated that a 5-person UXO team will conduct screening of the Laydown Area soils.

### **K.2.5.4 Trommel Screening Operations**

Upon completion of the Laydown Area soil MEC clearance, a FEL or backhoe will transport and place the pan-scraped windrow soils on the Trommel Screen. Three UXO Technicians will be present to observe the process to identify any large MEC, such as 40mm projectiles, on the screen. The Trommel Screen will be operated by a qualified GESC operator. Debris/MC/MD retained on the Trommel Screens will be examined by qualified UXO personnel, prior to separation and staging. Clean soils from the Trommel Screen will be deposited onto near-by clean grids. Any suspect MEC, or unidentifiable metal debris will be segregated and transported to the MEC Separation Area located in grid J6c using the backhoe or other appropriate equipment. A description of the MEC Separation process is further detailed in Section 2 of the Master Work Plan.

If suspect friable ACM such as pipe wrap is discovered, operations will stop, and personnel will withdraw from the area. GESC personnel wearing appropriate PPE will wet the suspect friable ACM (if not already wet) using a low pressure water spray and double bag the suspect friable ACM per asbestos handling requirements. Recovered suspect friable ACM will be staged to the Suspect-Friable ACM Stockpile Area located in grid I6c using a backhoe or other appropriate equipment. Suspect friable ACM are not anticipated to be encountered during Pan-scraping/Trommel Screening Operations.

START will conduct real-time monitoring for dust/particulates during Trommel Screening operations using a Data-RAM or equivalent. START will implement the Air Monitoring and Sampling Plan for particulate monitoring. Asbestos samples, if required, will be sent off site for analytical with a quick turnaround requested (less than 24-hours), as noted in the Air Monitoring and Sampling Plan.

**NOTES:** In the event that fused UXO is discovered on the Trommel Screen or the debris checking pads, the SUXOS and the UXOQCS will be called immediately for identification and disposition.

### **K.2.5.5 MEC Separation Area**

Metal debris collected and MD identified will be brought to the MEC separation area for segregation. The MEC Separation Area will be located in grid J6c. The materials will be moved to the MEC separation area with a backhoe or other appropriate equipment. At least two UXO Technicians will separate the MD from the other metal debris through visual inspection. MD will be transported to a designated area for storage (conex currently located in L4c) if it is safe to do so. The remaining debris will be transported to the Debris Stockpile Area located in a grid TBD. START will collect pre and post confirmation soil samples from this area to ensure that the MEC separation operations have not concentrated contaminants in this area. A more detailed description of the MEC handling and separation operations can be found in Section 2 of the Master Work Plan.

**NOTE:** All MEC/UXO should be discovered and disposed of prior to reaching the MEC Separation area. In the event that fused UXO is discovered at this process table, the SUXOS and the UXOQCS will be called immediately for identification and disposition.

### **K.2.5.6 Soil Management**

During the Trommel Screening Operation, the separated soils will be placed onto a clean grid located in proximity to the Trommel Screen. Sediment and erosion controls will be emplaced as required around these staged soils. The property owner will utilize these soils as determined at a later date.

## **K.2.6 Engineering Controls and Evacuations**

Depending on the area, the munitions with the greatest fragmentation distance (MGFD, see ESS Amendment 1, Revision 1) and the Minimum Separation Distance (MSD) it may be necessary to use engineering controls such as barricades and/or evacuations to protect non-essential personnel. The following paragraphs outline the use, maintenance, and precautions for their use. The Fragmentation Data Review form lists the proper engineering controls and sandbag mitigations for ordnance found at the site. If the MEC team discovers UXO other than that currently listed in the Work Plan, Appendix E, an additional Fragmentation Data Review form can be added to the appendix. Engineering Controls and Evacuations are described in more detail in the Master Work Plan.

### **K.2.6.1 Use of Barricades**

All personnel, to ensure safe and proper use of engineering controls will adhere to the following warnings and precautions:

- Only trained and authorized personnel will utilize this equipment;
- Safe separation distances will be observed at all times;
- Site control measures will be instituted and maintained at all times during operations;
- Operations will cease upon entry by any unauthorized personnel;
- Violations will be reported immediately for correction; and
- All appropriate ordnance and explosive safety precautions will be observed at all times.

### **K.2.6.2 Personnel Protective Equipment**

PPE will be in accordance with (IAW) the APP/SSHP (Appendix D). Personnel will use footwear meeting ANSI Z41 requirements, protection against impact and compression hazards rated as I75 and C754, when involved with Material Handling Equipment. The anticipated level of protection for the Trommel Screening Operation is Level D.



### **K.2.7      *Demolition Support***

The GESC team will coordinate with all on-site agencies for specific requirements to include fire protection support, security support, and explosive services including coordination with county and local requirements. Demolition Support is described in more detail in the Master Work Plan.

### **K.2.8      *Debris Disposal***

Debris will be staged and covered.

### **K.2.9      *Project Communications***

Communications for this project will generally flow along the lines established by the organization depicted in Figure 2-1 of the Work Plan. Communication directly between GESC team-subcontractors USA, RMC, and other government entities associated with this project will only occur when directed by GESC. All communications to the property owner contractor will be made through EPA. See Section 2.13 of the Master Work Plan for additional details.

### **K.2.10     *Project Deliverables***

The GESC Team will incorporate field findings and data from Trommel Screening Operations in the Final Report. Additional deliverables include project reporting, meeting minutes, and records of project correspondence. See Section 2.14 of the Master Work Plan for additional details.

## **K.3    Quality Control Plan**

The QC process starts with top management commitment and involvement. The process provides a permanent and workable system that allows each employee to understand the job performance expected. The QC and improvement process ensures that site actions, procedures, and tools directly support every employee in fulfilling his/her job performance requirements. In addition, the QC process ensures that training required to perform a specific job according to the requirements is adequate.

The Trommel Screening Operation is currently designed to recover/detect assembled MEC components that are equivalent to a 2-inch tracer element or larger. Individual sub-assemblies may also be detected and removed by the UXO Technicians during the evaluation of the debris caught on the Trommel Screens

Quality control checks within the excavation clearance areas will be conducted as currently described in Section 7 of the Master Work Plan. In addition, Section 7 of the Master Work Plan addresses organization responsibilities, equipment testing and calibration, QC inspections and audits, and reporting procedures. Additional QC measures will be addressed in individual sampling and analysis plans as appropriate.

The completed grids will need to be reacquired by GPS after completion. EPA, START, and the property owner will reacquire each grid after completion of each grid.

## **K.4    Environmental Protection Plan**

This Environmental Protection Plan was prepared to describe the approach, methods, and operational procedures to minimize pollution, protect and conserve natural resources, and control noise and dust/particulates during Trommel Screening Operations at the Elkton Firehole Site, Elkton Maryland. Project activities will comply with all Applicable or Relevant and Appropriate Regulations (ARARs).

### **K.4.1      *Scope***

The Trommel Screening Operations will include preparation; intrusive investigation, excavation, soil processing, MEC removal and detonation operations; disposal of MD; disposal of debris; and

implementation of ICs as required. If the presence of MEC is confirmed, on-site disposal/detonations may be required to ensure the safety of the public and project personnel. During disposal operations, The Team will implement reasonable mitigation strategies to minimize impacts to environmental resources.

There are no known archaeological resources or sensitive environmental habitats. If potential cultural artifacts are encountered during intrusive investigation, The Team will cease excavation and notify the OSC of the archaeological find.

#### ***K.4.2 Dust/Particulate and Emission Control***

During intrusive activities, if fugitive dust/particulates are encountered, a water spray will be utilized to control the dust/particulates. Monitoring will be conducted by START for fugitive dust/particulates including PM<sub>10</sub>. During very dry periods, a water spray will be utilized before dust/particulates become visible. If total dust/particulate concentrations attributable to site operations reach 2 milligrams per cubic meter (mg/m<sup>3</sup>), as measured on a Data-RAM, operations will be halted until dust/particulate control measures are implemented.

#### ***K.4.3 Soil and Erosion Control***

Silt Fence will be erected and maintained around all open excavation areas, if required, to minimize soil/sediment transport during rain events. Soil stockpiles will also be protected with silt fencing and will be covered when not currently in use.

#### ***K.4.4 Water Run On/Run Off Control***

Site run on water will be diverted to the greatest extent practicable to the water supply pit located in grid F6c. Runoff water from excavation areas will be diverted to the water supply pit, or will be contained by secondary berms as the terrain/elevations dictate.

#### ***K.4.5 Noise Abatement***

Noise levels will be monitored by GESC throughout operations to ensure that OSHA standards are not exceeded. When operational noise levels reach a consistent 85 decibels, hearing protection procedures will be implemented for workers conducting operations. If noise levels at the site perimeter exceed municipal regulations, modifications to the process and/or engineering controls (e.g., sound barrier/diverter) will be utilized to reduce noise levels.