

**Draft**  
**Accident Prevention Plan**  
**Remedial Action Construction**  
**Remediation of Contaminated Soil and Sediment**  
**Plum Brook Ordnance Works – TNT Area C**  
**Sandusky, Ohio**

*Contract Number: W91237-10-C-0002*

*Prepared for:*

**Department of the Army**  
**Huntington District, Corps of Engineers**  
**502 Eighth Street**  
**Huntington, West Virginia 25701**

*Prepared by:*



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*TMG Project Number: TMG 09-22*

**May 2010**

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## ACRONYMS AND DEFINITIONS

<b>APP</b>	<b>Accident Prevention Plan</b>
<b>CFR</b>	<b>Code of Federal Regulations</b>
<b>COC</b>	<b>Contaminant of Concern</b>
<b>CPR</b>	<b>Cardio-Pulmonary Resuscitation</b>
<b>CY</b>	<b>Cubic Yards</b>
<b>DERP</b>	<b>Defense Environmental Restoration Program</b>
<b>HAZWOPER</b>	<b>Hazardous Waste Operations and Emergency Response</b>
<b>NASA</b>	<b>National Aeronautics and Space Administration</b>
<b>OEPA</b>	<b>State of Ohio Environmental Protection Agency</b>
<b>OSHA</b>	<b>Occupational Safety and Health Administration</b>
<b>PBOW</b>	<b>Plum Brook Ordnance Works</b>
<b>POC</b>	<b>Point of Contact</b>
<b>PPE</b>	<b>Personal Protective Equipment</b>
<b>QCO</b>	<b>Quality Control Officer</b>
<b>QCP</b>	<b>Quality Control Plan</b>
<b>OSHA</b>	<b>Occupational Safety and Health Administration</b>
<b>RA-C</b>	<b>Remedial Action Construction</b>
<b>RI/FS</b>	<b>Remedial Investigation/Feasibility Study</b>
<b>SSHO</b>	<b>Site Safety and Health Officer</b>
<b>SSHP</b>	<b>Site-Specific Safety and Health Plan</b>

**TMG**

**TMG Services, Inc.**

**TNTC**

**TNT Area C**

**USACE**

**United States Army Corps of Engineers**

# 1.0 SIGNATURE SHEET

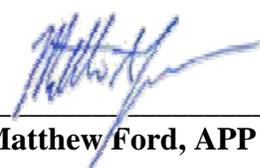
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**May 2010**

This Accident Prevention Plan has been reviewed and accepted for implementation by TMG Services, Inc. Applicability extends to all employees, subcontractors, and visitors. This plan assigns responsibilities and establishes standard operating procedures for field personnel working on this United States Corps of Engineers project.

## PLAN ACCEPTANCE

 _____	5/6/2010 _____
<b>Rodney Bumgardner, Vice President</b>	<b>Date</b>
Helen J. Owens _____	5/6/2010 _____
 _____	5/6/2010 _____
<b>Matthew Ford, APP Preparer</b>	<b>Date</b>





### **3.0 BACKGROUND INFORMATION**

#### **3.1 Contractor**

TMG Services, Inc. (TMG)

#### **3.2 Contract Number**

W91237-10-C-0002

#### **3.3 Project Name**

Remedial Action Construction (RA-C)  
Remediation of Contaminated Soil and Sediment  
Plum Brook Ordnance Works (PBOW) – TNT Area C (TNTC)  
Sandusky, Ohio

#### **3.4 Project Description**

The purpose of this contract is for the remediation of soil and sediment within TNTC of the PBOW site, located in Sandusky, Ohio. USACE is the responsible authority under the Defense Environmental Restoration Program (DERP) at the former TNTC. Based on the results of the completed Remedial Investigation/Feasibility Study (RI/FS) for soils and sediment, the USACE will conduct a RA-C in the TNTC. The remediation will be performed to prevent human exposure to the site soil and sediment containing any of the 13 contaminants of concern (COCs) for soils and 3 COCs for sediment at concentrations that exceed remediation goals. The remediation goals are chemical- and receptor-specific risk based remedial criteria that capture all the exposure assumptions and toxicological data used in the risk assessment.

The RA-C will consist of the excavation of approximately 9,205 cubic yards (cy) of material, backfilling of the excavation pit with clean material, treatment by alkaline hydrolysis and/or composting (if necessary), ex situ chemical stabilization (if necessary), and on-site/off-site disposal. The remediation is protective of human health and the environment, complies with Federal and State of Ohio Environmental Protection Agency (OEPA) requirements that are either applicable or relevant and appropriate to the remedial action, is cost effective, utilizes permanent solutions and treatment of resource recovery technologies to the maximum extent practicable, and satisfies the requirement for treatment as a principle element of the remedy. No soil or sediment contaminants will be left at levels to which direct exposure would be considered unacceptable by the OEPA. The remediation of soil and sediment represents the removal of a potential source of future groundwater contamination.

The Plan of Operations (TMG, May 2010) provides complete details of the activities that are to be performed.

#### **4.0 STATEMENT OF SAFETY AND HEALTH POLICY**

Protecting the safety and health of our employees, customers and subcontractors is a core value of TMG. Safety is more important than any other objective, including cost, schedule or customer satisfaction. TMG is committed to providing a safe and healthful workplace for all employees.

#### **TMG's SAFETY MISSION**

Employees of TMG are our most valuable asset. We consider accident prevention an integral and important part of our efficient operation. It is TMG's goal to build and foster a corporate safety culture that will implement a safe and healthy workplace.

#### **TMG's SAFETY POLICY**

Safety will be given primary importance in planning and operating all TMG activities in order to protect our employees against job related injuries and occupational disease. *We believe that caring for each of you will allow you to care for us.*

Refer to Appendix D for a copy of the TMG Safety Manual which provides further discussion and greater detail of TMG's corporate safety policies, programs, and procedures.

#### **SAFETY VISION**

Every project is qualified, estimated, sold, planned and constructed with safe operation and zero incidents as the primary criterion.

Qualified: We bid or accept the awards of projects when we can implement a zero incident approach to project execution.

Estimated: All provisions for zero incident operation are included in the project estimate.

Sold: Customer insists on a zero incident approach to project execution.

Planned: All potential hazards have been considered and provisions are made to prevent all incidents on the project.

Constructed: Through the leadership of project managers and field supervision, all TMG's and subcontractors' employees are trained for, dedicated to and

held accountable for executing every activity with 100% safe behaviors and 100% safe conditions resulting in zero incidents.

## **5.0 RESPONSIBILITY AND LINES OF AUTHORITIES**

### **5.1 Responsibility**

All levels of management and supervision, through their actions and choices actively demonstrate a visible commitment to zero incidents. In doing so,

- Management and supervision understand that the safety of our employees, customers, and subcontractors is a core value of our company.
- Management and supervision hold themselves responsible and accountable for achieving zero incidents.
- Management clearly defines their expectations and assures that they are well communicated and understood by all employees.

**Nicole Perkins as Chief Executive Officer of TMG is** responsible for insuring active participation in the Safety and Health Program by all employees.

**Rodney Bumgardner as Vice President and Senior Project Manager of TMG** will provide corporate level oversight of the Safety and Health Program including, but not limited to, the following activities:

- Approval, implementation, oversight, and enforcement of TMG's Health and Safety Program and the Accident Prevention Plan (APP)
- Assist in providing training and other health and safety resources, as required
- Visit the project site, as required, to audit the effectiveness of the APP
- Provide on-site consultation as needed to ensure that the APP is implemented.

**Matthew Ford as Health and Safety Manager of TMG** will provide oversight of the Safety and Health Program including, but not limited to, the following activities:

- Providing technical and administrative guidance and assistance to the project team; and
- Preparing reports and recommendations pertaining to the overall Safety and Health Program.

**Helen Owens as On-Site Project Manager of TMG** is responsible for establishing this APP and maintaining the Corporate Safety and Health Program in accordance with all established corporate safety policies and procedures and visiting projects and analyzing data, records and programs.

**Dan Cashbaugh as Site Safety and Health Officer (SSHO) and On-Site Project Superintendent of TMG** is responsible for the implementation and enforcement of this APP and the Corporate Safety and Health Program at the project site in accordance with all established corporate policies and procedures for all TMG employees and subcontractors. In addition, to meet unusual conditions or circumstances, additional regulations may be required on specific jobs at the discretion of the SSHO and the SSHO has the authority to stop work in progress if a safety hazard exists. The SSHO will serve as the competent safety person at this job site and has completed the OSHA Construction 30-Hour Training and has 5 years of construction safety experience. Documentation of SSHO training and experience is provided as an attachment to the Site-Specific Safety and Health Plan (SSHP) located in Appendix A of this APP.

Other responsibilities of SSHO include:

- Monitor all subcontractors for compliance with this APP, 29 Code of Federal Regulations (CFR) 1910 and 1926, and EM 385-1-1 dated 15 September 2008.
- Authorize necessary action to correct, "undesirable acts and/or conditions" reported or observed involving TMG employees or subcontractors.
- Make individual contacts with contractors and subcontractors supervisors regarding safety when necessary.
- Authority to stop work of TMG or any TMG subcontractor when an unsafe condition or behavior is identified.
- Make periodic audits of work areas to monitor TMG employees and subcontractors compliance with this APP, 29 CFR 1910 and 1926, and EM 385-1-1 dated 15 September 2008.
- Provide and enforce use of appropriate personal protective equipment.
- Hold weekly "tool box" training meetings with all employees. The SSHO will also notify the USACE point of contact (POC) of all scheduled safety meetings in advance and invite the USACE POC to attend. Records of such meetings shall be forwarded weekly to the home office.
- Take immediate action to correct undesirable work practices or conditions of

TMG or our subcontractors.

- Maintain a clean work area and good housekeeping at all times.
- Follow up on all safety recommendations submitted by TMG.
- Ensure all employees have a negative drug test within the last 12 months or have a drug test in progress.

The SSHO serves as the Occupational Safety and Health Administration (OSHA) Competent/Qualified Person, therefore no work shall be performed unless the SSHO or their designee is present on the job site.

## **Employees**

All employees are required to comply with all applicable, project and safety rules and regulations. Other responsibilities, rights and privileges include:

- Have the right to refuse to work in unsafe conditions or perform unsafe acts.
- All employees have the authority to stop and correct (if possible) any unsafe act or condition they encounter.
- Contact their supervisor with any safety concerns.
- When in doubt of how to safely perform an assigned task, request instruction.
- Promptly report all incidents to their supervisor.

## **5.2 Lines of Authority**

TMG's Senior Project Manager has overall responsibility for this project. The On-Site Project Manager, On-Site Project Superintendent, Quality Control Officer (QCO), Safety and Health Manager, and the SSHO have the authority to suspend the project in order to address quality control and safety issues. Please refer to Appendix C for an organizational chart which details the chain-of-command for this project.

## **5.3 Enforcement and Disciplinary Actions**

Protecting the safety and health of TMG's employees, customers and subcontractors is a core value of TMG. All managers, supervisors, and employees are responsible and held accountable for translating TMG's safety program into positive, productive actions. In TMG's company culture, only safe behaviors and safe conditions are acceptable. Through TMG's actions, we achieve the only acceptable outcome: Zero incidents and

ensuring that each employee goes home every day in the same condition in which he or she arrived at work.

The success each project performed under this contract depends on employee cooperation and strict compliance with established safety rules, regulations and policies. All employees are required to comply with the safety rules pertaining to the task they are assigned.

The purpose of discipline is not to penalize the employee, but to assist in changing undesirable work habits into good ones, thereby eliminating the potential for injury or damage. The individuals responsible for reporting non-compliance will be all personnel. Those individuals bearing witness to unsafe behaviors or conditions will notify the TMG On-Site Project Manager after having corrected the situation if it is flagrant.

In order to be effective, the disciplinary program must be enforced in a fair and consistent manner, taking into account the severity of the undesirable act or condition and any previous disciplinary problems.

To ensure compliance, infractions of the safety rules or acts committed by an employee should be handled according to the following progressive discipline guidelines. A copy of the disciplinary notice will be provided to the employee and filed in the individual's personnel file.

#### Enforcement Procedure

First Offense - Written Warning

Second Offense - Three day suspension without pay

Third Offense - Discharge

Serious safety violation: A safety violation that could result in a serious injury or fatality. May or may not also be a flagrant violation.

Serious safety violations include but are not limited to:

Flagrant safety violation: Knowing the safety requirement and intentionally not complying. May or may not also be a serious violation.

Examples may include but are not limited to:

- Not using fall protection at six (6) feet or above: walking beams without fall protection, climbing in/out of aerial lifts without 100% fall protection.

- Removing a lockout device without following the proper procedure.
- Speeding/reckless operation of a motor vehicle, cart, lift or similar mobile equipment.
- Blatant refusal to use proper personal protective equipment or follow other safety requirements.
- Failure to report incidents and or accidents, damage to any TMG or other contractor property.
- Willful destruction of TMG or other contractor property.
- Not using the lockout procedure when required.

Any TMG employee refusing to comply with the requirements established in the TMG Project Safety Program or any applicable State or Federal regulation may be subjected to disciplinary action up to and including termination.

Any subcontractor employees refusing to comply with the requirements established in the project safety program or any applicable State or Federal regulation are not acceptable. Such employees who are removed from the project for non-compliance with the project safety program will not be eligible for re-employment on the project.

Subcontractor supervisors who are unable or unwilling to secure personnel performance in compliance with the contractual obligations of safety shall not be acceptable as supervisors and shall be removed from the project.

## **6.0 SUBCONTRACTS AND SUPPLIERS**

### **6.1 Identification of Subcontractors and Suppliers**

Subcontractors and suppliers are identified in the Plan of Operations (TMG, May 2010)

### **6.2 Subcontractor and Supplier Safety Coordination**

Before beginning work at the site, each subcontractor and supplier must attend a preconstruction meeting to insure they fully understand USACE's and TMG's expectations to actively work to achieve safe behaviors and maintain safe conditions, which will result in completion of the project with zero incidents.

At the preconstruction meeting they will be required to submit a copy of their company safety program to the SSHO. At a minimum the safety policies and procedures pertaining to each subcontractor's scope of work shall be included. A copy of all

subcontractor safety plans will be kept on site and used in tandem with 29 CFR 1910 and 1926, EM 385-1-1 dated 15 September 2008, this APP, and the Corporate Safety and Health Program. The name of the corporate individual responsible for the implementation and enforcement of each contractor's safety program shall be forwarded to the Senior Project Manager. TMG is responsible for implementation and enforcement of 29 CFR 1910 and 1926, EM 385-1-1, this APP, and the Corporate Safety and Health Program at the project site. In the case of variation between these documents, the strictest standard shall be enforced.

Subcontractor and supplier's management and employees are an extension of TMG's zero-incident culture and will be held accountable for executing all work with safe behaviors and conditions. Subcontractor and supplier personnel who are unable or unwilling to secure compliance with the contractual obligation of safety are not acceptable personnel and shall be removed from the project.

### **6.3 Safety Responsibilities of Subcontractors and Suppliers**

Subcontractors are required to provide, implement, and enforce safe work practices and behavior as mandated by the subcontractor's safety program, this APP, 29 CFR 1910 and 1926, EM 385-1-1 dated 15 September 2008, and all Federal and State safety and health regulations during each phase of the work. Each subcontractor is responsible for the safety of its employees, the employees of its lower-tier subcontractors, and any other individuals exposed to hazards that they create or of which become aware.

Responsibilities of the subcontractors include:

- Make periodic audits of work areas to monitor their employees and subcontractors compliance with this APP, 29 CFR 1910 and 1926, and EM 385-1-1 dated 15 September 2008.
- Authorize necessary action to correct undesirable acts and/or conditions reported or observed.
- Make individual contacts with contractors and subcontractors supervisors regarding safety when necessary.
- Communicate safety information to the SSHO regarding hazards that may affect their operations.
- Establish a permanent and formal record relating to safety for all activities for the duration of the project.

The subcontractor shall ensure all work activities are completed with 100% safe behaviors in 100% safe conditions by:

- Planning and conducting all work in compliance with this APP, 29 CFR 1910 and 1926, and EM 385-1-1 dated 15 September 2008.
- Providing and enforce use of appropriate Personal Protective Equipment (PPE).
- Attending weekly "tool box" safety meeting conducted by TMG. Records of such meetings shall be kept by the SSHO.
- Taking immediate action to correct undesirable work practices or conditions.
- Immediately reporting to the On-Site Project Manager any observed undesirable practices and conditions that are not within the jurisdiction of TMG or its' subcontractors' which affect the safety of TMG or subcontractor employees.
- Maintaining a clean work area and good housekeeping at all times.
- Following up on all safety recommendations submitted by TMG.
- Providing investigation reports on all incidents to the SSHO.
- Immediately notifying the SSHO of any incident that causes injury or damage to property. Within 24 hours, conduct an immediate investigation and forward a written report to the SSHO.

## **7.0 TRAINING**

### **7.1 Safety Education**

TMG and subcontractor personnel will receive instructional and training information regarding potential job site hazards; emergency action plans and new substances, processes procedures or equipment introduced to the project through their attendance at pre-construction orientation meetings, weekly subcontractor safety/schedule meetings, and through written communications.

All TMG and subcontractor personnel will receive training and instruction prior to beginning new job assignments for which training has not previously been received or whenever the contractor is made aware of a new or previously unrecognized hazard.

If new substances, processes, procedures, or equipment that presents new hazard(s) are introduced to the workplace, training and/or instructions will be provided to TMG and subcontractor personnel.

TMG will maintain a copy of the 29 CFR 1910 and 1926, EM 385-1-1 dated 15

September 2008, and this APP at the project site. Updates and recommendations will be forwarded from the Corporate Health and Safety Manager regarding these documents as they relate to current and future operations.

A system of training and re-training programs has been developed for the purpose of insuring that TMG personnel are aware of specific Federal, State and Corporate safety regulations, policies and procedures and that compliance with it is mandatory.

## **7.2 Mandatory Training and Certificates**

TMG and its subcontractors are required to train their employees in accordance with OSHA standards, EM 385-1-1 dated 15 September 2008, and this APP. Subcontractor personnel shall retain full responsibility for providing instructions and training regarding safety and health hazards those personnel under their direction and control may encounter. In addition, TMG will review all personnel training documentation submitted by the subcontractors and suppliers. If in any case the training is not appropriate or adequate for the activities that will be performed on site, the personnel will not be allowed to work on site until the proper training is received, documented, submitted to and approved by TMG and USACE.

*\* First Aid and CPR training certification must be held by a minimum of two individuals on each work shift.*

All training must be current. Documentation of all training shall be kept on site as an attachment to this APP for the duration of the project.

## **7.3 Emergency Response Training**

In addition to Hazardous Waste Operations and Emergency Response (HAZWOPER) training, all employees will receive project-specific emergency response training prior to entering PBO. During the emergency response training, each employee will be notified of the project-specific procedures and emergency contacts. In general, all employees will gather at the TMG office trailer in case of emergency. Further instructions will be given and a head count taken at that time. If deemed necessary by the SSHO, the site may be evacuated. No one is to re-enter the site until the all clear is given by the SSHO.

Current First Aid and Cardiopulmonary Resuscitation (CPR) training certification must be held by a minimum of two individuals on each work shift. Names of designated individuals as well as copies of their current training certificates will be posted in the office trailer located at the site. First Aid Kits conforming to OSHA standards as well as EM 385-1-1 dated 15 September 2008, Section 03.B will be kept, fully stocked according to EM 385-1-1, Table 3-1, in the office trailer at all times. First Aid Kit locations will be made known to all personnel working at the site.

In the event of a medical emergency the SSHO or designee shall the National Aeronautics and Space Administration (NASA) Guard House at (419) 621-3222. Additional emergency contact numbers and a map to the nearest hospital will be posted in the office trailer and discussed at the weekly safety meetings.

## **8.0 SAFETY AND HEALTH INSPECTIONS**

Section 5 of this APP describes the personnel assigned to this project as well as their duties, including safety and health inspections. Inspections and project personnel are also outlined in the Quality Control Plan (QCP) and Plan of Operations prepared for this project. The following individuals are qualified to perform daily safety and health inspections:

- Rodney Bumgardner – TMG Vice President and Senior Project Manager
- Matthew Ford – TMG Health and Safety Manager
- Helen Owens – TMG On-Site Project Manager
- Dan Cashbaugh – TMG SSHO

## **9.0 ACCIDENT REPORTING**

Subcontractors and suppliers shall immediately notify the On-Site Project Manager and SSHO of any incident that caused injury, damage to property, equipment or material, or a near miss incident. TMG shall follow the accident reporting procedure established in EM 385-1-1 Section 01.D.01. with emphasis on the following:

- TMG must immediately notify the USACE POC.
- In the case of a death, OSHA shall also be notified immediately.
- USACE form ENG 3394 must be carefully completed and submitted in a timely manner to the USACE POC. Refer to Appendix B for a copy of this form.
- Ensure that the OSHA 300 log is completed in a timely manner and maintained on site.
- Timely reporting of exposure data and man hours is required. All man-hours worked must be documented and reported to the USACE POC monthly.

- Accidents resulting in injury to personnel or property damage of \$2,000 or more must be investigated and reported on form ENG 3394 form within 24 hours of incident.

A "near miss" (defined as an incident that had the potential of resulting in injury to personnel, extensive property damage, and serious disruption of operations and/or substantial third-party liability claims) will be investigated as thoroughly as an actual incident.

Each Subcontractor and lower-tier subcontractors are required to complete an incident report to be submitted to the SSHO no later than 12 hours following the incident. A Monthly Injury Summary shall also be completed and provided to the TMG Senior Project Manager by the fourth day of each month.

TMG will thoroughly investigate each accident and submit the findings of the investigation along with appropriate corrective actions to the USACE POC in the prescribed format as soon as possible but no later than five working days following an accident. TMG will implement corrective actions as soon as possible.

## **10.0 PLANS (PROGRAMS, PROCEDURES) REQUIRED BY THE SAFETY MANUAL**

### **10.1 Layout Plans**

TMG has developed a layout plan for proposed storage of equipment and personnel, and included it in the Plan of Operations (TMG, May 2010). The layout of temporary facilities has been coordinated with the USACE POC.

### **10.2 Emergency Response Plans**

#### **10.2.1 Procedures and Tests**

Emergency response procedures and tests are detailed in Section 8 of the SSHP (TMG, May 2010). Refer to Appendix A of this APP for a copy of the SHHP.

#### **10.2.2 Spill Plans**

All operations, materials, and equipment to be used for this project have been evaluated by a competent person to determine if hazardous or toxic agents could be released into the work environment. TMG's Spill Plan has been incorporated into the Plan of Operations (TMG, May 2010) where the potential for release of hazardous or toxic agents exists, as required in Section 01.E.01 and 06.A.02 of EM 385-1-1 dated 15 September 2008.

### **10.2.3 Firefighting Plans**

A Fire Fighting Plan is included in Section 8.7 of the SSHP (TMG, May 2010). Refer to Appendix A of this APP for a copy of the SSHP.

Additional information regarding fire prevention and protection is included in Section 13 of the TMG Safety Manual. Refer to Appendix D of this APP for a copy of the TMG Safety Manual.

### **10.2.4 Posting of Emergency Telephone Numbers**

Emergency telephone numbers and reporting instructions for ambulance, physician, hospital, fire, and police shall be clearly and conspicuously posted in the on-site construction trailer. All emergency telephone numbers are listed in Section 8.5 of the SSHP. Refer to Appendix A of this APP for a copy of the SSHP.

### **10.2.5 Man Overboard/Abandon Ship**

No maritime tasks are associated with this project, therefore a Man Overboard/Abandon Ship Plan has not been prepared as required in Section 19.A.04 of EM 385-1-1 dated 15 September 2008.

### **10.2.6 Medical Support**

On-Site medical support and off-site medical arrangements including rescue and medical duties for those employees who are to perform them, and the names of on-site TMG personnel trained in first aid and CPR will be clearly and conspicuously posted in the on-site construction trailer. TMG will ensure that a minimum of two on-site personnel are trained in first aid and CPR as required in Section 03.A.02 and 03.D of EM 385-1-1 dated 15 September 2008. Additional medical and first aid information and requirements are included in Section 8 of the SSHP located in Appendix A and Section 10 of the TMG Safety Manual located in Appendix D of this APP.

### **10.3 Plan for Prevention of Alcohol and Drug Abuse**

Details on TMG's Drug and Alcohol Free Workplace including plans for prevention of alcohol and drug abuse are provided in Section 7 of the TMG Safety Manual located in Appendix D.

### **10.4 Site Sanitation Plan**

TMG will provide and maintain hygienic sanitation provision for all employees in all places of employment as required in Section 2 of EM 385-1-1 dated 15 September 2008.

The location and type of sanitation provisions has been coordinated with the USACE's COR and detailed in the Plan of Operations (TMG, May 2010).

### **10.5 Access and Haul Road Plan**

TMG's Access/Haul Road Plan has been provided in the Plan of Operations (TMG, May 2010). The Access/Haul Road Plan has been developed in accordance with Section 4.B of EM 385-1-1 dated 15 September 2008.

### **10.6 Respiratory Protection Plan**

It is not expected, based on the result of air monitoring performed during the initial excavations at the PBOW site, that permissible exposure limits (PELs) will be exceeded for any of the chemicals listed in Section 3.2 of the SSHP, therefore TMG has not developed a respiratory protection plan.

### **10.7 Health Hazard Control Program**

TMG shall comply with all applicable standards and regulations to reduce contaminant concentration levels as low as reasonably achievable. A Health Hazard Control Program has been incorporated into this APP and consists of various administrative and engineering controls, as required by Section 06.A of EM 385-1-1 dated 15 September 2008.

### **10.8 Hazard Communication Program**

TMG has incorporated its written hazard communication program in the SSHP developed for this project. Refer to Appendix A for a copy of the SSHP.

### **10.9 Process Safety Management Program**

This project does not involve the use of highly hazardous chemicals, therefore a Process Safety Management Program has not been developed as in accordance with Section 06.B.04 of EM 385-1-1 dated 15 September 2008.

### **10.10 Lead Abatement Plan**

This project does not involve the disturbance of lead-based paint, therefore a Lead Abatement Plan has not been prepared in accordance with Section 06.B.05 of EM 385-1-1 dated 15 September 2008. However, lead contaminated soils will be treated during this project. Safety considerations and process management procedures have been incorporated into the SSHP and Plan of Operations prepared for this project.

### **10.11 Asbestos Abatement Plan**

It is not anticipated that asbestos-containing materials will be encountered during this project, therefore an Asbestos Abatement Plan has not been prepared in accordance with the requirements contained within Section 06.B.05 of EM 385-1-1 dated 15 September 2008.

### **10.12 Radiation Safety Program**

Radiation hazards are not present at TNTC, therefore a Radiation Safety Program has not been developed in accordance with Section 06.E.02.a of EM 385-1-1 dated 15 September 2008.

### **10.13 Abrasive Blasting Plan**

Abrasive blasting will not be performed during this project, therefore an Abrasive Blasting Program has not been developed in accordance with Section 06.H.01 of EM 385-1-1 dated 15 September 2008.

### **10.14 Heat/Cold Stress Monitoring Plan**

TMG's Heat/Cold Stress Monitoring Plan is included in the SSHP prepared for this project. Refer to Appendix A for a copy of the SSHP.

### **10.15 Crystalline Silica Monitoring Plan**

TMG does not anticipate exposure to crystalline silica during completion of this project, therefore a Crystalline Silica Monitoring Plan has not been developed in accordance with Section 06.M of EM 385-1-1 dated 15 September 2008.

### **10.16 Night Operations Lighting Plan**

All on-site work will be performed during daylight hours only, therefore a Night Operations Lighting Plan has not been prepared in accordance with Section 07.A.08 of EM 385-1-1 dated 15 September 2008.

### **10.17 Fire Prevention Plan**

TMG's Fire Prevention Plan is included in Section 8.7 of the SSHP and in Section 13 of the TMG Safety Manual.

### **10.18 Wild Land Fire Management Plan**

Exposure to wild land fires, whether prescribed or planned is not anticipated during completion of this project, therefore a Wild Land Fire Management Plan has not prepared for this project in accordance with Section 9.K of EM 385-1-1 dated 15 September 2008.

### **10.19 Hazardous Energy Control Plan**

TMG will survey all excavation areas and obtain digging permits from NASA prior to performing excavation activities. Additional information regarding TMG's Hazardous Energy Control Plan is included in Section 15 of the TMG Safety Manual.

### **10.20 Critical Lift Plan**

A critical lift will not be performed during this project, therefore a Critical Lift Plan has not been prepared in accordance with Section 16.H of EM 385-1-1 dated 15 September 2008EM 385-1-1 dated 15 September 2008.

### **10.21 Contingency Plan for Severe Weather**

A floating plant will not be used during this project, therefore a Contingency Plan for Severe Weather has not been developed in accordance with Section 19.A.03 of EM 385-1-1 dated 15 September 2008.

### **10.22 Float Plan**

A floating plant or other maritime vessel will not be used during this project, therefore a Float Plan has not been developed in accordance with Section 19.F.04 of EM 385-1-1 dated 15 September 2008.

### **10.23 Site-Specific Fall Protection and Prevention Plan**

TMG's Site-Specific Fall Protection and Prevention Plan has been incorporated into the SSHP located in Appendix A of this APP.

### **10.24 Demolition Plan**

TMG will not perform demolition during this project, therefore a Demolition Plan has not been developed in accordance with Section 23.A.01 of EM 385-1-1 dated 15 September 2008.

### **10.25 Excavation/Trenching Plan**

TMG's Excavation/Trenching Plan has been incorporated into the SSHP (TMG, May 2010) and Plan of Operations (TMG, May 2010).

### **10.26 Emergency Rescue Plan**

TMG personnel will not perform work underground or in a shaft or caisson during this project, therefore an Emergency Rescue Plan has not been developed in accordance with Section 26.A of EM 385-1-1 dated 15 September 2008. However, emergency rescue and response planning has been incorporated into the SSHP located in Appendix A of this APP.

### **10.27 Underground Construction Fire Prevention and Protection Plan**

TMG will not perform underground construction during this project, therefore an Underground Construction Fire Prevention and Protection Plan has not been developed in accordance with Section 26.D.01 of EM 385-1-1 dated 15 September 2008.

### **10.28 Compressed Air Plan**

TMG will not use compressed air during completion of this project, therefore a Compressed Air Plan has not been developed in accordance with Section 26.I.01 of EM 385-1-1 dated 15 September 2008.

### **10.29 Formwork and Shoring Erection and Removal Plans**

TMG will not be erecting formwork or shoring during this project, therefore a Formwork and Shoring Erection and Removal Plan has not been developed in accordance with the provisions of American Concrete Institute Publication 347 and Section 27.C of EM 385-1-1 dated 15 September 2008.

### **10.30 Pre-Cast Concrete Plan**

This project does not involve pre-cast concrete, therefore a Pre-Cast Concrete Plan has not been developed in accordance with Section 27.D of EM 385-1-1 dated 15 September 2008.

### **10.31 Lift Slab Plan**

Lift slab operations will not be performed during completion of this project, therefore a Lift Slab Plan has not been developed in accordance with Section 27.E of EM 385-1-1 dated 15 September 2008.

### **10.32 Steel Erection Plan**

TMG will not perform steel erection during this project, therefore a Steel Erection Plan has not been developed in accordance with Section 27.F.01 of EM 385-1-1 dated 15 September 2008.

### **10.33 Site Safety and Health Plan**

TMG's SSHP is included in Appendix A of this APP.

### **10.34 Blasting Safety Plan**

TMG will perform blasting during this project, therefore a Blasting Plan has not been performed in accordance with Section 29.A.01 of EM 385-1-1 dated 15 September 2008.

### **10.35 Diving Plan**

TMG will not performing dive operations during this project, therefore a Dive Plan has not be prepared in accordance with Section 30.A.13 of EM 385-1-1 dated 15 September 2008.

### **10.36 Confined Space Program**

TMG personnel will not be required to enter confined spaces during this project, therefore a Confined Space Plan has not been developed in accordance with Section 27.E of EM 385-1-1 dated 15 September 2008.

## **11.0 RISK MANAGEMENT PROCESSES**

An Activity Hazard Analysis (AHA) has been preformed for this project in accordance with the requirements of EM 385-1-1 to evaluate project-specific hazards and controls. The AHA prepared for this project is attached to the SSHP located in Appendix A of this APP.

**Appendix A      Site-Specific Safety and Health Plan**

**Draft**  
**Site-Specific Safety and Health Plan**

**Remedial Action Construction**  
**Remediation of Contaminated Soil and Sediment**  
**Plum Brook Ordnance Works – TNT Area C**  
**Sandusky, Ohio**

***Contract Number: W91237-10-C-0002***

*Prepared for:*

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*Prepared by:*



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***TMG Project Number: TMG 09-22***

**May 2010**

A handwritten signature in black ink, appearing to read 'Matthew', is written over a horizontal line.

SSHP Developer

A handwritten date '5/6/2010' is written in black ink above a horizontal line.

Date

**Draft**  
**Site-Specific Safety and Health Plan**

**Remedial Action Construction**  
**Remediation of Contaminated Soil and Sediment**  
**Plum Brook Ordnance Works – TNT Area C**  
**Sandusky, Ohio**

**Contract No. W91237-10-C-0002**

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## DEFINITIONS AND ACRONYMS

<b>2-ADNT</b>	<b>2-amino-4,6-dinitrotoluene</b>
<b>4-ADNT</b>	<b>4-amino-2,6-DNT</b>
<b>ACGIH</b>	<b>American Conference of Government Industrial Hygienists</b>
<b>AHA</b>	<b>Activity Hazard Analysis</b>
<b>ANSI</b>	<b>American National Standards Institute</b>
<b>AOC</b>	<b>Area of Contamination</b>
<b>APP</b>	<b>Accident Prevention Plan</b>
<b>CFR</b>	<b>Code of Federal Regulations</b>
<b>COC</b>	<b>Contaminant of Concern</b>
<b>CPR</b>	<b>Cardio-Pulmonary Resuscitation</b>
<b>CERCLA</b>	<b>Comprehensive Environmental Response, Compensation, and Liability Act</b>
<b>cy</b>	<b>Cubic Yard</b>
<b>DD</b>	<b>Decision Document</b>
<b>DERP</b>	<b>Defense Environmental Restoration Program</b>
<b>DOD</b>	<b>Department of Defense</b>
<b>DNT</b>	<b>2,4-Dinitrotoluene and 2,6-Dinitrotoluene</b>
<b>HAZWOPER</b>	<b>Hazardous Waste Operations and Emergency Response</b>
<b>HI</b>	<b>Hazard Index</b>
<b>HTRW</b>	<b>Hazardous, Toxic, and Radioactive Waste</b>
<b>IDLH</b>	<b>Immediately Dangerous to Life and Health</b>

<b>IDW</b>	<b>Investigative Derived Waste</b>
<b>IQCT</b>	<b>Independent Quality Control Team</b>
<b>LDR</b>	<b>Land Disposal Restrictions</b>
<b>MSDS</b>	<b>Material Safety Data Sheet</b>
<b>NASA</b>	<b>National Aeronautics and Space Administration</b>
<b>NIOSH</b>	<b>National Institute for Occupational Safety and Health</b>
<b>OEPA</b>	<b>State of Ohio Environmental Protection Agency</b>
<b>OSHA</b>	<b>Occupational Safety and Health Administration</b>
<b>PAH</b>	<b>Polynuclear Aromatic Hydrocarbon</b>
<b>PBOW</b>	<b>Plum Brook Ordnance Works</b>
<b>PBS</b>	<b>Plum Brook Station</b>
<b>PCB</b>	<b>Polychlorinated Biphenyl</b>
<b>POC</b>	<b>Point of Contact</b>
<b>PPE</b>	<b>Personal Protective Equipment</b>
<b>QA</b>	<b>Quality Assurance</b>
<b>QAP</b>	<b>Quality Assurance Plan</b>
<b>QAR</b>	<b>Quality Assurance Report</b>
<b>QC</b>	<b>Quality Control</b>
<b>QCFOCs</b>	<b>Quality Control Field Oversight Checklists</b>
<b>QCO</b>	<b>Quality Control Officer</b>
<b>QCP</b>	<b>Quality Control Plan</b>
<b>QCR</b>	<b>Quality Control Review</b>

<b>QSM</b>	<b>Quality Systems Manual</b>
<b>RA-C</b>	<b>Remedial Action Construction</b>
<b>RCRA</b>	<b>Resource Conservation and Recovery Act</b>
<b>RG</b>	<b>Remedial Goal</b>
<b>RI/FS</b>	<b>Remedial Investigation/Feasibility Study</b>
<b>SOW</b>	<b>Scope of Work</b>
<b>SSHO</b>	<b>Site Safety and Health Officer</b>
<b>SSHP</b>	<b>Site-Specific Safety and Health Plan</b>
<b>STP</b>	<b>Safety Training Passport</b>
<b>TCLP</b>	<b>Toxicity Characteristic Leaching Procedure</b>
<b>T&amp;E</b>	<b>Threatened and Endangered</b>
<b>TLV</b>	<b>Threshold Limit Value</b>
<b>TMG</b>	<b>TMG Services, Inc.</b>
<b>TNT</b>	<b>2,4,6-Trinitrotoluene</b>
<b>TNTA</b>	<b>TNT Area A</b>
<b>TNTB</b>	<b>TNT Area B</b>
<b>TNTC</b>	<b>TNT Area C</b>
<b>USACE</b>	<b>United States Army Corps of Engineers</b>
<b>USEPA</b>	<b>United States Environmental Protection Agency</b>

**Draft**  
**Site-Specific Safety and Health Plan**

**Remedial Action Construction**  
**Remediation of Contaminated Soil and Sediment**  
**Plum Brook Ordnance Works – TNT Area C**  
**Sandusky, Ohio**

**Contract No. W91237-10-C-0002**

**1.0 Introduction**

**1.1 Purpose**

The purpose of this Site-Specific Safety and Health Plan (SSHP) is to establish mandatory safety practices and procedures for all work conducted for the United States Army Corps of Engineers (USACE). Applicability extends to all employees, subcontractors, and visitors. This plan assigns responsibilities and establishes standard operating procedures for field personnel working on this project. During development of this plan, consideration was given to safety standards as defined by the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), and the USACE Manual, EM 385-1-1, September 2008 Edition.

**1.2 Visitors**

TMG Services, Inc. (TMG) personnel, the USACE and National Aeronautics and Space Administration (NASA) points of contacts (POC) listed in Section 4.1 of this plan, personnel from TetraTech are not considered visitors, they are considered project personnel who have the necessary safety training (Hazardous Waste Operations and Emergency Response (HAZWOPER) training) to enter a potentially contaminated area. The surveyors (John Hancock and Associates, Inc.) and transportation companies (Midwest Environmental Services, Inc., Eco First, and Barnes Nursery) employees are also considered project personnel; however, they are limited to performing non-intrusive activities that are not likely to result in exposure; therefore, they are not required to have HAZWOPER training. All project personnel are required to review this SSHP. All others will be considered visitors to the site. All visitors entering the work area at the site will be required to sign in with the Site Safety and Health Officer (SSHO) or the On-Site Project Manager and review this SSHP. Appendix C contains a copy of the visitor log form to be used on-site. Visitors that do not meet the training requirements of 29 CFR 1910.120 will not be allowed to perform intrusive activities. In the event that a visitor does not adhere to the provisions of this plan, that person will be asked to leave the work area.

### **1.3 Safety Policy Enforcement**

TMG field personnel and subcontractors are required to familiarize themselves with this plan, as well as NASA and Plum Brook Safety provisions, policies and procedures, so that they may adhere to its safety provisions. The provisions of this site specific safety policy will be enforced. Failure to comply will be grounds for disciplinary action for employees, and non-compliant visitors will be required to leave the work zone. A copy of the TMG Safety Manual is included in Appendix D of the Accident Prevention Plan (TMG, May 2010).

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

## **2.0 Project Description**

### **2.1 Background and Purpose**

The purpose of this contract is for the remediation of soil and sediment within TNTC of the PBOW site, located in Sandusky, Ohio. USACE is the responsible authority under the Defense Environmental Restoration Program (DERP) at the former TNTC. Based on the results of the completed Remedial Investigation/Feasibility Study (RI/FS) for soils and sediment, the USACE will conduct a RA-C in the TNTC. The remediation will be performed to prevent human exposure to the site soil and sediment containing any of the 13 contaminants of concern (COCs) for soils and 3 COCs for sediment at concentrations that exceed remediation goals. The remediation goals are chemical- and receptor-specific risk based remedial criteria that capture all the exposure assumptions and toxicological data used in the risk assessment.

The RA-C will consist of the excavation of approximately 9,205 cubic yards (cy) of material, backfilling of the excavation pit with clean material, treatment by alkaline hydrolysis and/or composting (if necessary), ex situ chemical stabilization (if necessary), and on-site/off-site disposal. The remediation is protective of human health and the environment, complies with Federal and State of Ohio Environmental Protection Agency (OEPA) requirements that are either applicable or relevant and appropriate to the remedial action, is cost effective, utilizes permanent solutions and treatment of resource recovery technologies to the maximum extent practicable, and satisfies the requirement for treatment as a principle element of the remedy. No soil or sediment contaminants will be left at levels to which direct exposure would be considered unacceptable by the OEPA. The remediation of soil and sediment represents the removal of a potential source of future groundwater contamination.

The Plan of Operations (TMG, May 2010) provides complete details of the activities that are to be performed.

## **2.2 Site Location and History**

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 the PBOW site is primarily situated 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-trinitrotoluen (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 three explosive manufacturing areas were designated TNT Area A (TNTA), TNT Area B (TNTB), and TNTC. Twelve process lines were used in the manufacture of TNT, four lines at TNTA, three lines at TNTB, and five lines at TNTC. The scope of work (SOW) for this contract deals primarily with the TNTC area.

The TNTC area occupies approximately 119 acres of land in the western portion of PBOW. Currently, the area is heavily vegetated and overgrown with trees and brush. Several aboveground features that indicate former PBOW facilities were present are still evident at TNTC. These include roads, fire hydrants, water valves, a water valve control well, railroad beds, and former building pad foundations. Below-ground features are also present, including manholes, drains, and underground utility lines (indicated by aboveground water valves). NASA does not currently use the areas, and no NASA buildings exist on TNTC. One building present on the site was constructed and used by the United States Environmental Protection Agency (USEPA) to perform noise abatement testing in the 1980s. This building is located near a former Wash House (Building 606) along former Process Line 10. Based on this use, there is no reason to expect that USEPA contributed in any way to contamination at TNTC.

The TNTC manufacturing site consisted widely of scattered buildings of wood frame construction with asbestos and sheet metal coverings. It also included a series of buried and/or overhead flumes and pipes used to transport various liquids associated with the manufacturing process.

After plant operations ceased, TNTC's manufacturing lines were decontaminated by the War Department in later 1945. During decontamination, all structures, equipment, and manufacturing debris were either removed and salvaged or removed and burned. After the property was certified as decontaminated, 3,230 acres were initially transferred to the Ordnance Department, then to the War Assets Administration in 1946. This transfer did not include the Plum Brook Depot area, which consists of 2,800 acres. The Department of the Army reacquired the 3,230

acres in 1954 and performed cleanup efforts from the mid-1950s until 1963. In 1955, the Army specifically completed further decontamination of TNTC. This effort included removal of contaminated surface and subsurface soil around the buildings and wooden and ceramic waste disposal lines containing TNT. Thousands of pounds of TNT were discovered in catch basins; this TNT was removed and burned at the burning grounds.

Two property use agreements were entered into by the Army and the National Advisory Committee of Aeronautics, the predecessor of NASA, in 1956 and 1958, respectively. On March 15, 1963, accountability and custody of the entire PBOW property was transferred to NASA by the Department of the Army. NASA performed further decontamination efforts during 1964. The NASA decontamination process included removing contaminated surface soil above the drain tiles, flumes, etc., destruction of all buildings by fire, then removal of all soils, debris, sumps, and above-grade portions of concrete foundations. Portions of the concrete foundations located below grade were left buried, and some that had been previously slightly above grade were likewise buried. All materials, including the soil in those areas, were flashed; the area was then rough graded. The decontamination process was also to have included burning of nitroaromatic-filled flumes that were excavated.

NASA has operated and maintained the former PBOW property since 1963, and the facility is currently known as the NASA Glenn Research Center, Plum Brook Station. NASA operates the property as a space research facility in support of their John Glenn Research Center at Lewis Field, Cleveland, Ohio. Most of the aerospace testing facilities built in the 1960s at the site are currently on 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 the area as a bus transportation area. The General Services Administration (GSA) retains ownership of the remaining excess acreage and currently has a use agreement with the Ohio National Guard for 604 acres of this land. NASA presently controls approximately 6,400 acres.

Currently, TNTC consists mostly of early and late old field combined with shrubby thicket vegetation and is less than 10 percent wooded. Some wetland vegetation was found along TNTC drainage ditches and streams. During rain events, drainage from the ditches flows into any of three small streams that eventually flow to Pipe Creek, located northwest of TNTC. Areas east of TNTC are primarily old field and shrub, while to the south, southeast, northeast, north, and west, it is primarily forested, and to the southwest, it is old field and early shrub thicket.

### **2.3 Overview of Remedy and Proposed Action**

To provide a basis for taking an action at this site, RI activities were conducted for TNTC soils (415 samples), surface water (10 samples), and sediment (to be evaluated under project 1826) and therefore not addressed in the RI. During the RI, TNTC soil was investigated by process line or process type, and the associated 29 building areas. As part of the RI, human health and ecological risk assessments was conducted for TNTC. Out of the 29 building areas investigated, 14 building areas and 1 drainage ditch area (total of 15 areas) were identified as having contaminants above the identified Remedial Goals (RGs). Thirteen COCs were identified in

surface soils, subsurface soil and sediment. Five of those COCs are nitroaromatics (2-amino-4,6-dinitrotoluene (2-ADNT), 4-amino-2,6-DNT (4-ADNT), 2,4-DNT, 2,6-DNT, and 2,4,6-TNT) and are clearly site related. The remaining eight COCs are polychlorinated biphenyls (PCBs) (Aroclor 1254 and 1260), polynuclear aromatic hydrocarbons (PAHs) (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenze(a,h)anthracene, and indeno(1,2,3-c,d)pyrene) and lead. Sediment has only 3 COCs: nitroaromatics (2-DNT, 4-ADNT, and 2,4,6-TNT). The proposed approach for this RA-C is to excavate all the areas in which the concentration of the COCs in soil exceed the RGs. The estimated volume of contaminated soil from all over TNTC is 9,205 cy. Following excavation of the contaminated soil, representative soil samples from each area of contamination (AOC) (walls and floor) will be analyzed for "totals" to ensure the AOC has been remediated to meet the "clean-up" requirements set forth in the FS. Additional soil excavation may be required laterally if indicated by a comparison of the confirmation samples to the RGs and OEPA's cancer and noncancer risk goals. However, additional removal of soil to a greater depth is not anticipated as virtually all of the excavations are expected to extend to either bedrock or the water table, whichever is encountered first.

Based on the FS data which defined the AOC limits, contamination and RG levels as well as the Decision Document (DD), which details the selected remedy (Alternative #5) as approved by USACE and OEPA, the estimated volume of excavated soil is 9,205 cy. Of this, an estimated 6,805 cy is targeted for disposal, without treatment, at a regulated nonhazardous waste landfill. The landfill used for the disposal of nonhazardous soils will be approved in advance by OEPA as appropriate facilities to receive Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) waste. The remaining 2,310 cy are anticipated to be a characteristic hazardous waste based on toxicity as determined by Toxicity Characteristic Leaching Procedure (TCLP) testing. This hazardous soil will require treatment prior to disposal at a nonhazardous waste landfill or on-site placement. Approximately 2,103 cy of this contaminated soil are estimated to be hazardous prior to treatment based on elevated 2,4-DNT concentrations. Thus nearly half of the lead soil is also expected to contain concentrations of 2,4-DNT sufficiently high to require treatment. The estimated volumes were calculated using the "20 times rule". This is a conservative approach and the actual volumes of hazardous and nonhazardous soil could be less or more depending on the disposal analyses results.

The technologies outlined in the approved DD were not designed to treat PCBs. Generally, areas with elevated concentrations of PCBs in TNTC soil are collocated with elevated nitroaromatic concentrations. Where this is the case, the nitroaromatic-contaminated soil will be treated and disposed of off-site at an approved Resource Conservation and Recovery Act (RCRA) hazardous waste treatment, storage, disposal facility (TSDF). If areas with elevated PCBs are encountered that do not have elevated nitroaromatics, then this soil will be excavated and disposed of at a nonhazardous waste landfill without treatment. Disposal at a Toxic Substances Control Act-approved landfill is not expected to be required because none of the soil or sediment samples in the RI had PCB concentrations that approached the concentration of 50 mg/kg that would result in a classification as a PCB remediation waste.

Based on the results of the TCLP tests, non-hazardous soil above RG levels may either be treated and used as backfill (pending Land Disposal Restrictions (LDRs) are met) or disposed of in an

off-site, non-hazardous waste landfill (Erie County Landfill). Any soil identified as hazardous waste would require treatment (i.e., alkaline hydrolysis, windrow composting, metals stabilization) to achieve non-hazardous status prior to onsite or offsite disposal. TMG will use hazardous waste disposal as a last resort.

Based on the results of the human health risk assessment, the following RGs were selected for soil (14 building areas) and sediment (1 ditch area). No RGs were developed for groundwater because groundwater will be evaluated on a site-wide basis at a later date under Project 1826.

**Table 1: Contaminants of Concern**

<b>COCs for Soils</b>	<b>RGs (mg/kg)</b>
<b>Nitroaromatics</b>	
2-ADNT	1.7
4-ADNT	1.3
2,4-DNT	6.5
2,6-DNT	1.0
2,4,6-TNT	8.0
<b>Polychlorinated Biphenyls</b>	
Aroclor 1254	1.0
Aroclor 1260	1.0
<b>Polynuclear Aromatic Hydrocarbons</b>	
Benzo( a )anthracene	1.0
Benzo(a)pyrene	1.0
Benzo(a)fluoranthene	1.0
Dibenz( a,h )anthracene	1.0
Indeno( 1 ,2,3-cd)pyrene	1.0
<b>Metals (Lead)</b>	400

<b>COCs for Sediment</b>	<b>RGs (mg/kg)</b>
<b>Nitroaromatics</b>	
2-ADNT	5.0
4-ADNT	5.0
2,4,6-TNT	41.0

## 2.4 Overview of Tasks

TMG will provide all equipment, labor, materials, and supervision necessary for the RA-C as described by the SOW for TNTC. Activities generally consist of the excavation, backfilling of each excavation pit with clean material, treatment by alkaline hydrolysis and/or composting (if necessary), ex situ chemical stabilization (if necessary), and on-site/off-site disposal.

The following tasks are required to be performed under this SOW:

- Task 1** Preparation/Submittal of a SSHP
- Task 2** Preparation/Submittal of a Quality Control Plan (QCP)
- Task 3** Preparation/Submittal of a Plan of Operations
- Task 4** Field Activities/Utilities
- Task 5** Site Survey
- Task 6** Excavation
- Task 7** Treatment (Alkaline Hydrolysis and/or Windrow Composting, if necessary)
- Task 8** Stabilization, if necessary
- Task 9** Disposal/Investigative Derived Waste (IDW)
- Task 10** Confirmation Sampling
- Task 11** Preparation/Submission of Draft and Final Construction Completion Report
- Task 12** Public Meeting Support
- Task 13** Threatened and Endangered (T&E) Species Survey

The tasks outlined in this section are described in detail in the Plan of Operations (TMG, May 2010). This work will be conducted by TMG in an environmentally acceptable manner conforming to existing federal, state, and local regulations under USACE, Huntington District (CELRH) supervision.

### **3.0 Hazard/Risk Analysis**

#### **3.1 Activity Hazard Analysis**

Appendix A summarizes field activities that may create or contribute to a hazard and the actions that can be taken to eliminate or minimize hazards at the site. A nuclear reactor is located at PBS. This reactor is currently being decommissioned. Exposure to radiation on-site is not expected to be an issue; however, personnel must be cognizant that radioactive material is present at the PBS site and that exposure, while highly unlikely, is possible. Therefore, TMG Project Management must ensure that TMG personnel and subcontractors work only in the areas designated and that all instructions provided by the PBS security and safety personnel is strictly

adhered to. TMG personnel and subcontractors are required by NASA to review a safety video prior to performing any on-site activities.

### **3.2 Chemical Hazards**

The primary chemical hazards associated with investigations and remedial actions at PBOW are exposure to nitroaromatic compounds, polynuclear aromatic hydrocarbons, polychlorinated biphenyls, and lead. Personnel will be potentially exposed to products brought on the site by TMG. Products that TMG might bring on-site include Tornado-50 cleaner, hexane, nitric acid, acetone, lime, and fertilizer. Additionally, Sodium Hydroxide, Citric Acid, and Ferrous Chloride may be brought on site by TetraTech to perform Alkaline Hydrolysis if necessary. Material safety Data Sheets (MSDS) will be provided on-site for all chemicals used at PBOW. Sections 3.2.1 through 3.2.15 give specific information concerning the chemicals that may be encountered during this project. The following standard safety precautions shall be adhered to for this project.

- Keep work areas clean and well ventilated.
- Clean up spills quickly and carefully.
- Personnel in the work zone shall not eat, drink, smoke, or apply cosmetics.
- Only personnel meeting the training requirements of 29 CFR 1910.120 may perform this work. Personnel shall, at a minimum, be wearing Level D Personal Protective Equipment (PPE) as listed in Section 5.1. If site conditions so warrant, the On-Site Project Manager/SSHO shall require personnel to upgrade to a higher level of PPE.
- Any unnecessary contact with potentially contaminated substances shall be avoided.
- No horseplay.
- No matches or lighters shall be used in the work zone.
- During activities that present a risk to personnel, the buddy system as described in Section 6.1 will be implemented.

It is not expected, based on the result of the air monitoring performed during the initial excavations at the PBOW site, that permissible exposure limits (PELs) will be exceeded for any of the chemicals listed in this section. The following Table 1 contains a list of the potential chemical contaminants and their applicable OSHA PEL. These PELs are given as general information only and will not be utilized unless site conditions change.

PELs are time weighted average concentrations that must not be exceeded during any 8- hour work shift of a 40-hour workweek. An 8-hour time weighted average concentration is calculated by taking the concentration of an air contaminant and multiplying it by the duration in hours of exposure and then dividing it by 8 hours. PEL concentrations were developed for normal healthy workers exposed on the job to air contaminants. Exposures in excess of a PEL value trigger certain requirements (emission and exposure controls), depending on the particular OSHA standard being exceeded. OSHA ceiling concentrations, designated by a "c" preceding the concentration value, must not be exceeded during any part of the workday. When instantaneous monitoring is not feasible, the ceiling limit may be assessed as a 15-minute TWA exposure.

PEL and ceiling concentration standards are legally enforceable air contaminant concentration limits. An acceptable peak concentration is the acceptable maximum concentration above the established ceiling concentration that is allowed during an 8-hour shift. An Immediately Dangerous to Life and Health (IDLH) exposure condition is defined by NIOSH as a situation "that poses a threat of exposure to airborne contaminants when that exposure is likely to cause death or immediate or delayed permanent adverse health effects or prevents escape from such an environment." OSHA has established IDLH exposure concentrations for over 300 substances. OSHA's purpose in establishing IDLH values was to ensure that a worker could escape without injury or irreversible health effects from an IDLH exposure in the event of the failure of respiratory protection.

**Table 2: OSHA Permissible Exposure Limits**

<b>Compound</b>	<b>PEL<sup>1</sup></b>	<b>IDLH<sup>1</sup></b>
o-Dinitrobenzene	1 mg/m <sup>3</sup>	200 mg/m <sup>3</sup>
m-Dinitrobenzene	1 mg/m <sup>3</sup>	200 mg/m <sup>3</sup>
p-Dinitrobenzene	1 mg/m <sup>3</sup>	200 mg/m <sup>3</sup>
Nitrobenzene	1 ppm	200 ppm
Nitrotoluene	5 ppm	200 ppm
Dinitrotoluene	1.5 mg/m <sup>3</sup>	200 mg/m <sup>3</sup>
o-Dinitrotoluene	2 ppm	200 ppm
p-Dinitrotoluene	2 ppm	200 ppm
2,4,6-Trinitrotoluene	1.5 mg/m <sup>3</sup> (skin)	500 mg/m <sup>3</sup>
Lead	50 ug/m	N/A <sup>2</sup>
Hexane	500 ppm	1100 ppm
Tornado-50 cleaner	N/A <sup>2</sup>	N/A <sup>2</sup>
Lime	5 mg/m <sup>3</sup>	N/A <sup>2</sup>
Fertilizer	N/A <sup>2</sup>	N/A <sup>2</sup>
Acetone	1000 ppm	N/A <sup>2</sup>
Nitric Acid	2 ppm	N/A <sup>2</sup>
Aroclor 1254	0.5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Aroclor 1260	0.5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Sodium Hydroxide	2 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Ferrous Chloride	N/A <sup>2</sup>	N/A <sup>2</sup>
Citric Acid	N/A <sup>2</sup>	N/A <sup>2</sup>
Benzo( a )anthracene	N/A <sup>2</sup>	N/A <sup>2</sup>
Benzo(a)pyrene	N/A <sup>2</sup>	N/A <sup>2</sup>
Benzo(a)fluoranthene	N/A <sup>2</sup>	N/A <sup>2</sup>
Dibenz( a,h )anthracene	N/A <sup>2</sup>	N/A <sup>2</sup>
Indeno( 1,2,3-cd)pyrene	N/A <sup>2</sup>	N/A <sup>2</sup>

<sup>1</sup> PEL and IDLH values were taken from the NIOSH Pocket Guide to Chemical Hazards

<sup>2</sup>N/A=not applicable, there is not a OSHA PEL or IDLH value for this compound

### 3.2.1 Nitrotoluene (all isomers)

Nitrotoluene presents danger from the formation of methemoglobinemia, which is the oxidation and inactivation of hemoglobin in the blood. Some of the chemical and physical properties of nitrotoluene are as follows:

- Nitrotoluene has a molecular weight of 137.1 g/mol.
- Nitrotoluene is a yellow liquid or solid with a weak aromatic odor.
- Nitrotoluene has a boiling point of 432 °F.
- Nitrotoluene has a vapor pressure of 0.12 to 0.15 mm Hg at 68 °F.
- Nitrotoluene has a solubility of 0.04 to 0.06 grams per 100 grams of water.
- Nitrotoluene is incompatible with strong oxidizers, and sulfuric acid.

Specific routes of exposure are:

- Skin absorption
- Eye contact
- Ingestion
- Inhalation

Symptoms a worker may exhibit when exposed to nitrotoluene include, but are not limited to the following:

- Skin irritation
- Cyanosis
- Irritability
- Drowsiness
- Nausea
- Rapid pulse
- Headache
- Shortness of breath
- Heart irregularities
- Weakness
- Dizziness
- Unconsciousness

The target organs affected are:

- Skin
- Blood
- Cardiovascular system
- Central nervous system
- Gastrointestinal tract

Emergency First Aid procedures are:

*Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eye lids occasionally.
- Get medical attention immediately.
- Contact lenses shall not be worn when working with this chemical.

*Skin Absorption*

- Promptly wash contaminated skin using soap or a mild detergent and water.
- If nitrotoluene has penetrated through clothing, remove the clothing immediately and wash the skin with soap and water.
- Get medical attention immediately.

*Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.
- Get medical attention immediately.

*Ingestion*

- If conscious, give affected person large quantities of water immediately. Induce vomiting after water consumption for conscious persons. (*Do not induce vomiting if affected person loses consciousness.*)
- Get medical attention immediately.

### **3.2.2 Dinitrotoluene**

Dinitrotoluene (DNT) presents danger from the formation of methemoglobinemia, which is the oxidation and inactivation of hemoglobin in the blood. Dinitrotoluene has been shown to be a carcinogen and neoplastigens in laboratory experiments with animals. Some of the chemical and physical properties of DNT are as follows:

- DNT has a molecular weight of 182.2 g/mol.
- DNT is an orange-yellow crystalline solid.
- DNT has a boiling point of 572 °F.
- DNT has a vapor pressure of 1 mm Hg at 68 °F.
- DNT has a solubility of 0.03 grams per 100 grams of water.
- DNT is incompatible with strong oxidizers, caustics, and metals such as tin and zinc.

Specific routes of exposure are:

- Skin absorption
- Eye contact
- Ingestion
- Inhalation

Symptoms a worker may exhibit when exposed to DNT include, but are not limited to the following:

- Skin irritation
- Cyanosis
- Irritability
- Drowsiness
- Nausea
- Rapid pulse
- Headache
- Shortness of breath
- Heart irregularities
- Weakness
- Dizziness
- Unconsciousness

The target organs affected are:

- Skin
- Blood
- Cardiovascular system
- Liver
- Reproductive system

Emergency First Aid procedures are:

*Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eye lids occasionally.
- Get medical attention immediately.
- Contact lenses shall not be worn when working with this chemical.

*Skin Absorption*

- Promptly wash contaminated skin using soap or a mild detergent and water.

- If DNT has penetrated through clothing, remove the clothing immediately and wash the skin with soap and water.
- Get medical attention immediately.

#### *Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.
- Get medical attention immediately.

#### *Ingestion*

- If conscious, give affected person large quantities of water immediately. Induce vomiting after water consumption for conscious persons. (*Do not induce vomiting if affected person loses consciousness.*)
- Get medical attention immediately.

### **3.2.3 2,4,6-Trinitrotoluene**

Trinitrotoluene (TNT) presents danger from the formation of methemoglobinemia, which is the oxidation and inactivation of hemoglobin in the blood. Some of the chemical and physical properties of trinitrotoluene (TNT) are as follows:

- TNT has a molecular weight of 227.1 g/mol.
- TNT is a colorless to pale yellow, odorless solid.
- TNT has a boiling point (it explodes) of 464 °F.
- TNT has a vapor pressure of 0.053 mm Hg at 68 °F.
- TNT has a solubility of 0.013 grams per 100 grams of water.
- TNT is a Class A explosive. Rapid heating may cause an explosion.
- TNT may affect the ability of blood to carry oxygen.
- TNT is incompatible with strong oxidizers, ammonia, strong alkalies, and combustible materials.

Specific routes of exposure are:

- Skin absorption
- Eye contact
- Ingestion
- Inhalation

Symptoms a worker may exhibit when exposed to TNT include, but are not limited to the following:

- Skin irritation
- Irritation to the eyes, throat, and nose
- Jaundice (skin, hair, and nails)
- Cyanosis
- Sneezing
- Coughing
- Sore throat
- Muscular pain
- Weakness
- Drowsiness
- Shortness of breath
- Heart irregularities
- Unconsciousness
- Cataracts

The target organs affected are:

- Skin
- Eyes
- Respiratory system
- Blood
- Cardiovascular system
- Liver
- Kidneys
- Central nervous system

Emergency First Aid procedures are:

#### *Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eye lids occasionally.
- Get medical attention immediately.
- Contact lenses shall not be worn when working with this chemical.

#### *Skin Absorption*

- Promptly wash contaminated skin using soap or a mild detergent and water.
- If contaminant has penetrated through clothing, remove the clothing immediately and wash the skin with soap and water.
- Get medical attention immediately.

### *Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.
- Get medical attention immediately.

### *Ingestion*

- If conscious, give affected person large quantities of water immediately. Induce vomiting after water consumption for conscious persons. (*Do not induce vomiting if affected person loses consciousness.*)
- Get medical attention immediately.

## **3.2.4 Lead**

Some of the chemical and physical properties of lead are as follows:

- Lead has a molecular weight of 207.2 and a molecular formula of Pb.
- Lead is a heavy, gray solid, which is ductile and soft.
- Lead begins to melt at 621 °F.
- Lead is incompatible and/or reactive with strong oxidizers, hydrogen peroxide and acids.

Specific routes of exposure to lead are:

- Inhalation
- Ingestion
- Skin contact

Symptoms a worker may exhibit when exposed to lead include, but are not limited to the following:

- Eye irritation
- Insomnia
- Nausea
- Malnutrition
- Constipation
- Colic
- Anemia
- Tremors
- Abdominal pain
- Hypotension
- Paralysis of wrist and/or ankles

- Pallor
- Gingival lead line
- Encephalopathy
- Will severely aggravate pre-existing conditions of gout

The target organs affected by lead are:

- Eyes
- Gastrointestinal tract
- Central nervous system
- Kidneys
- Blood
- Gingival tissue

Lead can cause diseases of the central and peripheral nervous system, the kidney and the blood. The OSHA PEL is 0.050 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ) or  $50 \text{ ug}/\text{m}^3$ .

Emergency First Aid procedures are:

#### *Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eyelids occasionally.
- Seek medical attention immediately.
- Contact lenses shall not be worn when working with this chemical.

#### *Skin Absorption*

- Promptly wash contaminated skin using soap or a mild detergent and water.
- Seek medical attention immediately.

#### *Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.
- Seek medical attention immediately.

#### *Ingestion*

- Seek medical attention immediately.

### 3.2.5 Hexane

Hexane will be used for decontamination of sampling equipment. Some of the chemical and physical properties of hexane are as follows:

- Hexane is a colorless liquid with a gasoline like odor.
- Hexane has a molecular weight of 86.2.
- Hexane is a flammable liquid. It has a lower explosive limit of 1.1% and an upper explosive limit of 7.5%.

The specific routes of exposure for hexane are:

- Inhalation
- Skin absorption
- Ingestion
- Skin and/or eye contact

Symptoms a worker may exhibit when exposed to hexane include, but are not limited to the following:

- Dermatitis
- Respiratory irritation
- Muscle weakness
- Dizziness
- Headache
- Drowsiness
- Eye irritation

The target organs affected by hexane are:

- Eyes
- Skin
- Respiratory System
- Central Nervous System
- Peripheral Nervous System

Emergency First Aid procedures are:

*Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eye lids occasionally.
- Seek medical attention immediately.
- Contact lenses shall not be worn when working with this chemical.

### *Skin Absorption*

- Promptly wash contaminated skin using soap or a mild detergent and water.
- If methanol have penetrated through clothing, remove the clothing immediately and wash the skin with soap and water.
- Seek medical attention immediately.

### *Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.
- Seek medical attention immediately.

### *Ingestion*

- Seek medical attention immediately.

### **3.2.6 Tornado-50 Cleaner**

Tornado-50 cleaner is a heavy-duty multi-purpose biodegradable, alkaline cleaner that will be used to clean the equipment. Some of the chemical and physical properties of Tornado-50 cleaner are as follows:

- Tornado-50 cleaner is a green-yellow liquid.
- Tornado-50 cleaner has a boiling point of 180 °F.
- Tornado-50 cleaner is incompatible and/or reactive with acids.

Specific routes of exposure to Tornado-50 cleaner are:

- Inhalation
- Dermal absorption
- Ingestion (Do not induce vomiting, if swallowed)

Symptoms a worker may exhibit when exposed to Tornado-50 cleaner include, but are not limited to the following:

- Eye and skin irritation
- Throat and nose irritation
- Skin redness
- Dizziness

The target organs affected by Tornado-50 cleaner are:

- Eyes
- Skin
- Respiratory system

Emergency First Aid procedures are:

*Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eyelids occasionally.
- Seek medical attention immediately.

*Skin Absorption*

- Promptly wash contaminated skin using soap or a mild detergent and water.
- Seek medical attention immediately.

*Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.
- Seek medical attention immediately.

*Ingestion*

- Seek medical attention immediately.

### **3.2.7 Lime**

Lime will be applied to soil to facilitate the alkaline hydrolysis of nitro aromatics in the soil. In addition, lime may be applied during re-seeding activities. Some of the chemical and physical properties of agricultural lime are as follows:

- Lime is a white powder with little if any odor.
- Lime does not have a flash point.
- Lime is incompatible and/or reactive with boric oxide, acids, fluorine, and many organic materials
- Hydrated lime is a strongly alkaline material

The specific routes of exposure for lime are:

- Inhalation

- Skin and/or eye contact
- Ingestion

Symptoms a worker may exhibit when exposed to lime include, but are not limited to the following:

- Eye and skin irritation
- Burns to the skin
- Chemical pneumonitis (if inhaled)
- Respiratory irritation
- Irritation to the digestive tract (if ingested)
- Will severely aggravate pre-existing conditions of bronchitis, emphysema and asthma

The target organs affected by lime are:

- Eyes
- Skin
- Gastrointestinal tract
- Respiratory tract

Lime does not pose any fire hazards. The OSHA PEL for lime is 5 mg/m<sup>3</sup>. The American Conference of Government Industrial Hygienists (ACGIH) threshold limit values (TLV) for lime is 5 mg/m<sup>3</sup>.

Emergency First Aid procedures are:

#### *Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eyelids occasionally. Wash eyes for a minimum of 15 minutes.
- Seek medical attention immediately.
- Contact lenses shall not be worn when working with this chemical.

#### *Skin Absorption*

- Promptly wash contaminated skin with large amounts of water.
- Remove any contaminated clothing.
- Seek medical attention immediately.

#### *Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.

- Seek medical attention immediately.

### *Ingestion*

- Dilute by giving 2 glasses of milk or water to drink, followed by fruit juices or dilute vinegar to neutralize the alkali.
- Seek medical attention immediately.

### **3.2.8 Fertilizer**

Fertilizer may be applied during re-seeding operations. Some of the chemical and physical properties of fertilizer are as follows:

- Fertilizer is a multi-colored granular substance with an ammonia odor.
- Fertilizer does not have a flash point.
- Fertilizer is incompatible and/or reactive with nitrates, strong alkalis, reducing agents, and active metals (such as aluminum & magnesium).

The specific routes of exposure for fertilizer are:

- Inhalation
- Skin and/or eye contact
- Ingestion

Symptoms a worker may exhibit when exposed to fertilizer include, but are not limited to the following:

- Eye and skin irritation
- Respiratory irritation
- Dermatitis
- Coughing
- Headaches
- Muscular weakness
- Irritation to the digestive tract (if ingested)
- Cyanosis
- Depression
- Inhalation of dust may aggravate existing respiratory conditions like asthma

The target organs affected by fertilizer are:

- Eyes
- Skin
- Gastrointestinal tract
- Respiratory tract

- Kidneys

Fertilizer itself is not flammable. However, fertilizer is comprised of materials, which are oxidizers in their pure, unmixed forms. Therefore, fertilizer will not burn but can provide oxygen for existing fires. OSHA has not set PELs for fertilizer. The ACGIH has not set TLV for fertilizer.

Emergency First Aid procedures are:

*Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eyelids occasionally. Wash eyes for a minimum of 15 minutes.
- Seek medical attention immediately.
- Contact lenses shall not be worn when working with this chemical.

*Skin Absorption*

- Promptly wash contaminated skin with soap and large amounts of water.
- Remove any contaminated clothing.
- Seek medical attention immediately.

*Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.
- Seek medical attention immediately.

*Ingestion*

- Have conscious person drink 1-2 glasses of water, and then induce repeated vomit until vomit is clear. Seek medical attention immediately.
- Seek medical attention immediately.

### **3.2.9 Acetone**

Acetone will be used to extract the soil samples for the field-testing of nitroaromatics. Some of the chemical and physical properties of acetone are as follows:

- Acetone is a colorless liquid with a mint-like odor.
- Acetone has a molecular weight of 58.08.
- Acetone is a flammable liquid. It has a vapor density of 2.0 (air =1.0).

- Acetone is incompatible or reactive with concentrated nitric and sulfuric acid mixtures, oxidizing materials, chloroform, alkalis, chlorine compounds, and acids.

The specific routes of exposure for acetone are:

- Inhalation
- Skin absorption
- Ingestion
- Skin and/or eye contact

Symptoms a worker may exhibit when exposed to acetone include, but are not limited to the following:

- Dermatitis
- Respiratory irritation
- Dullness
- Dizziness
- Headache
- Eye irritation
- Unconsciousness
- Abdominal pain
- Nausea

The target organs affected by acetone are:

- Eyes
- Skin
- Respiratory System
- Central Nervous System
- Peripheral Nervous System

The OSHA PEL for acetone is 1000 ppm. The ACGHI threshold limit value for acetone is 500 ppm (TWA) and 750 STEL.

Emergency First Aid procedures are:

*Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eye lids occasionally.
- Seek medical attention immediately.
- Contact lenses shall not be worn when working with this chemical.

### *Skin Absorption*

- Promptly wash contaminated skin using soap or a mild detergent and water.
- If acetone has penetrated through clothing, remove the clothing immediately and wash the skin with soap and water.
- Seek medical attention immediately.

### *Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.
- Seek medical attention immediately.

### *Ingestion*

- If swallowed, vomiting may occur spontaneously, but **DO NOT INDUCE** vomiting. If vomiting occurs, keep head below hips to prevent aspiration into lungs.
- Seek medical attention immediately.

## **3.2.10 Polychlorinated Biphenyls**

Polychlorinated Biphenyls (PCBs) are a series of synthetic chemicals that contain 209 individual compounds with varying toxicity. Commercial formulations of PCBs enter the environment as mixtures consisting of a variety of PCBs and impurities. Some PCBs are known in the United States by their industrial trade name, Aroclor. The chemical and physical properties of the two PCBs detected at TNTC (Aroclor 1254 and Aroclor 1260) are as follows:

- Aroclor 1254 is a clear colorless, viscous liquid with a mild hydrocarbon odor. Aroclor 1260 is a light yellow, soft sticky resin

The specific routes of exposure for hexane are:

- Inhalation
- Dermal absorption
- Ingestion

Symptoms a worker may exhibit when exposed to PCB isomers include, but are not limited to the following:

- Eye and skin irritation
- Nausea
- Vomiting

- Loss of weight
- Jaundice
- Edema
- Abdominal pain
- Chloracne

The target organs affected by PCB isomers are:

- Eyes
- Skin
- Respiratory System
- Liver

Both isomers (Aroclor 1254 and 1260) have an PEL of 1 mg/m<sup>3</sup> and an IDLH value of 5 mg/m<sup>3</sup>.

Emergency First Aid procedures are:

#### *Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eye lids occasionally.
- Seek medical attention immediately.
- Contact lenses shall not be worn when working with this chemical.

#### *Skin Absorption*

- Promptly wash contaminated skin using soap or a mild detergent and water.
- If PCBs have penetrated through clothing, remove the clothing immediately and wash the skin with soap and water.
- Seek medical attention immediately.

#### *Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.
- Seek medical attention immediately.

#### *Ingestion*

- Seek medical attention immediately.

### 3.2.11 Polynuclear Aromatic Hydrocarbons

PAHs are chemical compounds that consist of fused aromatic rings and do not contain heteroatoms or carry substituents. PAHs are produced as byproducts of fuel burning. The USEPA has classified seven PAH compounds as probable human carcinogens: benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenz(a,h)anthracene, and Indeno(1,2,3-cd)pyrene have been identified as COCs at the TNTC site. The chemical and physical properties of the PAH COCs are as follows:

- benzo[a]anthracene is a yellow-blue solid with a molecular weight of 228.29 g/mol, boiling point of 400°C, and a vapor pressure of 0.00000022 mm Hg at 20°C.
- benzo[a]pyrene is a pale yellow solid with a molecular weight of 252.3 g/mol, boiling point of 310-312°C at 10 mm Hg, and a vapor pressure of 0.000000056 mm Hg.
- benzo[b]fluoranthene is a colorless solid with a molecular weight of 252.3 g/mol and a vapor pressure of 0.0000005 mm Hg at 20-25°C.
- dibenz(a,h)anthracene is a colorless solid with a molecular weight of 278.35 g/mol and a vapor pressure of 0.000000001 mm Hg at 20°C.
- Indeno(1,2,3-c,d)pyrene is a greenish-yellow solid with a molecular weight of 276.3 g/mol, boiling point of 530°C, and a vapor pressure of  $\sim 10^{-11}$ - $10^{-6}$  mm Hg at 20°C.

The specific routes of exposure for hexane are:

- Inhalation
- Skin absorption
- Ingestion

Symptoms a worker may exhibit when exposed to PAHs include, but are not limited to the following:

- Redness
- Blistering
- Peeling

The target organs affected by PAHs are:

- Lungs
- Liver
- Skin
- Kidneys

Emergency First Aid procedures are:

*Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eye lids occasionally.
- Seek medical attention immediately.
- Contact lenses shall not be worn when working with this chemical.

*Skin Absorption*

- Promptly wash contaminated skin using soap or a mild detergent and water.
- If methanol have penetrated through clothing, remove the clothing immediately and wash the skin with soap and water.
- Seek medical attention immediately.

*Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.
- Seek medical attention immediately.

*Ingestion*

- Seek medical attention immediately.

### **3.2.12 Sodium Hydroxide**

Sodium hydroxide pellets will be used for during Alkaline Hydrolysis:

- Sodium hydroxide is a white solid (pellet form will be used)
- Sodium hydroxide has a molecular weight of 40 g/mole.
- Sodium hydroxide is a non-flammable.

The specific routes of exposure for sodium hydroxide are:

- Inhalation
- Skin absorption
- Ingestion
- Skin and/or eye contact

Symptoms a worker may exhibit when exposed to sodium hydroxide include, but are not limited to the following:

- Skin irritation and burns
- Ulcers of the skin
- Severe eye irritation and burns
- Irritation of respiratory tract and mucous membranes.
- Perforation of the digestive tract.

The target organs affected by sodium hydroxide are:

- Eyes
- Skin
- Respiratory System
- Digestive System

Emergency First Aid procedures are:

#### *Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eye lids occasionally.
- Seek medical attention immediately.
- Contact lenses shall not be worn when working with this chemical.

#### *Skin Absorption*

- Promptly wash contaminated skin using soap or a mild detergent and water.
- Wash the skin with soap and water.
- Seek medical attention immediately.

#### *Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.
- Seek medical attention immediately.

#### *Ingestion*

- DO NOT INDUCE VOMITING unless directed by medical personnel.
- Seek medical attention immediately.

### 3.2.13 Ferric Chloride

Ferric Chloride will be used as a catalyst during Alkaline Hydrolysis, if necessary. Some of the chemical and physical properties of ferric chloride are as follows:

- Ferric chloride is a dark reddish-brown color with an oily texture.
- Ferric chloride has a molecular weight of 162.21 g/mole, pH of <1, and has a boiling point of 225°F.
- Ferric chloride is not considered a fire hazard.
- Ferric chloride may generate hydrogen gas on contact with metals. Corrosive to stainless steel, mild steel, bronze, iron, aluminum, copper, and concrete.

The specific routes of exposure for ferric chloride are:

- Inhalation
- Skin absorption
- Ingestion
- Skin and/or eye contact

Symptoms a worker may exhibit when exposed to ferric chloride include, but are not limited to the following:

- Irritation of mucous membranes, respiratory tract, and lung tissues.
- Altered respiratory rates may occur.
- Stomach irritation
- Blistering and staining.
- Burns and severe irritation of mucous membrane lining of inner surfaces of the eyelids.

The target organs affected by ferric chloride are:

- Eyes
- Skin
- Respiratory System
- Digestive System

Emergency First Aid procedures are:

*Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eye lids occasionally.
- Seek medical attention immediately.
- Contact lenses shall not be worn when working with this chemical.

### *Skin Absorption*

- Promptly wash contaminated skin using soap or a mild detergent and water.
- If methanol have penetrated through clothing, remove the clothing immediately and wash the skin with soap and water.
- Seek medical attention immediately.

### *Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.
- Seek medical attention immediately.

### *Ingestion*

- If victim is conscious, have drink large quantities of water or milk to reduce concentration and neutralize acid.
- DO NOT INDUCE VOMITING.
- Seek medical attention immediately.

### **3.2.14 Citric Acid**

Citric acid will be used as a pH reducer and denitrifying agent during Alkaline hydrolysis. Some of the chemical and physical properties of citric acid are as follows:

- Citric acid is a white odorless powder and/or granual.

The specific routes of exposure for citric acid are:

- Inhalation
- Skin absorption
- Ingestion
- Skin and/or eye contact

Symptoms a worker may exhibit when exposed to citric acid include, but are not limited to the following:

- Irritation of skin and respiratory tract
- Eye irritation
- GI irritation
- Hypocalcemia

The target organs affected by hexane are:

- Eyes
- Skin
- Respiratory System

Emergency First Aid procedures are:

*Eye Contact*

- Wash eyes immediately with large amounts of water, lifting the lower and upper eye lids occasionally.
- Seek medical attention immediately.
- Contact lenses shall not be worn when working with this chemical.

*Skin Absorption*

- Promptly wash contaminated skin using soap or a mild detergent and water.
- If methanol have penetrated through clothing, remove the clothing immediately and wash the skin with soap and water.
- Seek medical attention immediately.

*Inhalation*

- Immediately move exposed person to fresh air.
- If breathing has stopped, perform artificial respiration.
- Keep the affected person warm and at rest.
- Seek medical attention immediately.

*Ingestion*

- Seek medical attention immediately.
- Consult physician before inducing vomiting.

### **3.3 Physical Hazards**

Activities performed during the project present dangers from physical hazards such as strains from lifting activities, hazards from walking and working surfaces, heat stress, harmful plants/animals/insects, excavation hazards, utility hazards, noise hazards, cuts, and injury from heavy equipment use. Personnel training, increased awareness through daily safety meetings, proper use of PPE and attention to site conditions will serve to mitigate these potential hazards from the activities listed in this section. Further information regarding training, safety procedures and PPE can be found in Sections 4.0 and 5.0.

### 3.3.1 Heavy Equipment Hazards

Heavy equipment (trucks, dozers, backhoe, end loader, etc.) operations present inherent safety hazards. Operators qualified to operate this type of equipment have a minimum of 2 years experience. Every operator holds a Safety Training Passport (STP) that includes OSHA 10 hr plus 8 additional hours of craft specific training. Safeguards to follow when working around heavy equipment include, but are not limited to the following:

- Only qualified personnel will operate heavy machinery.
- Getting on or off of any equipment while it is in motion is prohibited.
- Machinery shall be operated in accordance with the manufacturer's recommendations.
- The use of headphones for entertainment purposes (such as radio or cassette) while operating equipment is prohibited.
- All machinery shall be inspected weekly (when in use) by a competent and knowledgeable person to ensure safe operating conditions. A copy of the inspection form that must be used to document this inspection is found in Appendix C.
- Personnel shall not operate heavy equipment in areas where the utilities have not been properly marked.
- All heavy equipment shall be equipped with working audible reverse signal alarms or motion alarms.
- Personnel shall wear hearing protection when working near heavy equipment.
- Personnel shall wear safety belts and only equipment with roll over protection will be used.

Physical hazards associated with heavy equipment operations that may be encountered on this project include, but are not limited to the following:

- Sharp objects may cause cuts or punctures.
- Falls from uneven terrain or slippery surfaces may occur.
- Sprains and strains from lifting activities are possible.
- Moving vehicles may injure personnel.
- Electrical shock/electrocution hazard exist if underground or above ground power lines are encountered.
- Noise levels may be high which are both a health hazard and a hindrance to communication.
- Field ground personnel shall not work near moving equipment. The heavy equipment operator shall ensure that other personnel are not performing work in the area where excavation work is occurring.

Only employees with proper training and experience are permitted to operate heavy equipment.

### **3.3.2 Utility Lines**

A digging permit must be obtained from NASA PBS for all 15 sites where subsurface intrusive work will be performed. Under no circumstances will intrusive work be performed in areas not pre-approved by NASA PBS. Work will not proceed until all utilities have been marked or identified by NASA PBS. Work will stop immediately if any underground utilities are detected and the NASA POC will be notified immediately.

### **3.3.3 Slips, Trips, and Falls**

Due to the locations of this project, the walking and working surfaces present inherent dangers. Personnel will adhere to the following safety rules concerning walking and working surfaces:

- When possible, personnel will avoid walking through or working in water or mud.
- Personnel will avoid climbing over site debris or over equipment.
- Personnel shall ensure that equipment not in use will be put in a place where it will not create a tripping hazard.
- Personnel will not walk on or attempt to crawl over stockpiles.
- Personnel will not walk or stand near the edges of the excavation areas.
- Personnel will be careful when walking in heavily vegetated areas. They will avoid traveling in the heavily vegetated areas whenever possible.

### **3.3.4 Lifting Techniques**

Lifting and moving equipment improperly can place a great deal of stress on the back possibly resulting in severe injury. Lifting objects is inherent in performing field investigations; therefore, it is important to use good lifting techniques. Personnel shall adhere to the following basic rules when performing work that requires lifting:

- If a load is heavy or bulky, get help
- Remember to lift with your legs and keep your back straight.
- Keep the load as close to your body as you can.
- Do not jerk the load. Lift slowly and carefully.
- Make sure the area you will be carrying the load through is clear of obstacles.
- Do not twist or turn your spine when lifting or carrying the load.
- Be sure to have a good grip on your load at all times.
- Be careful when lowering your load (get help, if necessary).

Proper lifting techniques and back injury prevention techniques are addressed during annual safety training for TMG personnel. Field personnel shall review the above rules for proper lifting prior to beginning fieldwork.

### 3.3.5 Inclement Weather

Work shall not be scheduled when inclement weather (heavy rains, strong winds, tornado, floods, extreme temperatures, and so forth) is predicted that could cause or contribute to an accident or exposure incident. If a change in the weather poses a health or environmental threat, the site shall be secured, and work shall cease. Extremes in temperature can pose serious physical hazards to personnel. Personnel shall be aware of appropriate steps that can be taken to minimize the effects of temperature extremes.

#### 3.3.5.1 Heat Stress

Personnel who work outdoors during the summer to early fall months may be subject to heat stress. Heat stress may occur when protective clothing decreases natural body ventilation and/or when working in areas having elevated temperatures. The heat stress work/rest standards as outlined in the heat stress section of the ACGIH TLV & Biological Exposure Indices (BEI) Handbook, and Section 6 of the EM 385-1-1 Safety and Health Requirement Manual will be followed.

Heat stress is any series of conditions where the body is under stress from overheating. It can include heat cramps, heat exhaustion, heat rash, or heat stroke. The victim often overlooks the signs of heat stress. The employee may at first be confused or unable to concentrate. Heat stress can produce bodily symptoms, which may include profuse sweating, dizziness, cessation of sweating, and collapse. Refer to Table 2 on the following page for common forms of heat stress.

**Table 3: Heat Stress**

<b>Condition</b>	<b>Signs/Symptoms</b>	<b>First Aid</b>
Heat cramps	Heavy sweating Painful muscle spasms	Sport drink intake (Gatorade) Rest in cool environment Salt water intake (0.5% solution)
Heat Syncope	Brief fainting Blurred vision	Water intake Lie down in cool environment
Dehydration	Fatigue and reduced movement	Fluid and salted food intake
Heat Exhaustion	Pale and clammy skin, possible fainting, weakness, fatigue, nausea, dizziness, heavy sweating, blurred vision, body temperature slightly elevated	Lie down in cool environment, water intake, loosen clothing
Heat Stroke	Skin hot and dry, red face, high body temperature, unconsciousness, collapse, convulsions, confusion or erratic behavior	Immediate total cooling Transport to hospital

The following precautions will be taken to prevent injury from heat stress:

- The work schedule will be adjusted, if possible, to schedule heavy work during the cooler part of the day.
- The work will be paced to include adequate rest periods. Five to fifteen minute rest periods will be scheduled hourly or every 2 hours depending upon the workload, temperature, and relative humidity. The frequency and time of rest periods will be increased, if the SSSHO believes that it is necessary to protect the workers' safety.
- Drinking water and ice will be provided in the clean zone. Personnel will be encouraged to drink plenty of water.
- The weather conditions shall be monitored and work halted if the temperature (including humidity) rises to levels that present a danger to worker safety.

### 3.3.5.2 Cold Stress

Exposure to extreme cold can result in severe injury or even death. Areas of the body that are most susceptible to the effects of cold stress are fingers, toes, nose, and ears. Precautions a worker may take to prevent injury from the cold include, but are not limited to the following:

- Extremities shall be protected from extreme cold by protective clothing.
- The work area shall be shielded or employees shall be given an outer windbreak garment when the wind chill is a factor at a field site.
- Outer garments must provide ventilation to prevent wetting of inner clothing by sweat.
- Employees who are prone to getting their clothes wet shall be issued an outer protective garment that is water repellent.
- The weather conditions shall be monitored and work halted if the temperature drops to levels that present danger to worker safety.

**Table 4—Cold Stress**

<b>Condition</b>	<b>Signs/Symptoms</b>	<b>First Aid</b>
Hypothermia	Shivering Slurred speech Loss of coordination Loss of consciousness	Mild Cases: Move to warm area and stay active, remove wet clothes and replace with dry clothes or blankets, cover the head, drink warm sugary drink. Severe Cases: Follow all first aid for mild cases and call emergency medical personnel.
Frost Bite	Frozen skin and loss of water	Do not rub area. Wrap the area in soft cloth, move the worker to a warm area, and contact medical personnel.
Trench Foot	Tingling, itching or burning sensation Blisters may be present	Soak feet in warm water. Wrap with dry bandages. Drink a warm, sugary drink.

### **3.3.6 Noise**

Noise may be generated when heavy equipment (trucks, backhoes, and so forth) is used. Hearing protection is mandatory when working in areas where the noise levels exceed 85-dBA steady state or 120-dBA impulse.

### **3.3.7 Harmful Plants, Animals, and Insects**

Personnel working in the field must be aware of the physical hazards posed by coming into contact with harmful plants, animals, and insects. Of the potential exposures to plants presented by this group, field personnel are likely to be most affected by exposure to poison ivy and poison oak, which are very common in this area. Both of these plants have greenish white flowers with berries that grow in clusters. The leaves are composed of three (3) leaflets each. These plants can cause a severe rash, which is characterized by redness, blisters, swelling, intense burning and itching. If these plants are required to be removed from the work area, precautions shall be taken and appropriate clothing shall be worn to protect field personnel from dermal contact with these plants.

Copperheads (Northern Copperhead) and rattlesnakes (Eastern Massasauga) are the predominant poisonous species of snakes in Ohio. Rattlesnakes have horny sheaths towards the end of the tail, which make a rattling sound. Copperheads are brown in color with a V-shaped head characteristic of poisonous snakes.

Mosquitoes, ticks, chiggers, and bees are likely to be encountered during the work being performed under this SOW. Personnel shall take care to avoid these stinging/biting insects. The following steps shall be considered in preventing these hazards.

- Field personnel are required on this project to wear personal protective equipment (PPE) at all times while in the work zone. This should be helpful in limiting skin exposure to harmful plants and insects.
- Insect repellants may not be used when sampling for nitroaromatics because they can interfere and cause false hits in subsequent analysis.
- A 16-unit first aid kit shall be available at the site and shall contain a variety of ointments for skin afflictions.
- Water and soap shall be provided on-site for personnel to wash affected skin areas.
- Personnel shall report all known allergies to plants, insects, and medication to the Project Manager and SSHO prior to work.

### **3.3.8 Excavation Hazards**

TMG will be performing excavation in the area. A long reach excavator will be used to excavate the contaminated soil. All excavation activities will comply with the requirements found in Chapter 35, NASA Glenn Safety Manual and will adhere to the following safety precautions. In the event of any discrepancies, the most restrictive requirements shall be met.

- Areas being excavated to a depth of 4 feet or more required sloped sides of 1:1.5, if personnel will be entering the excavation. TMG does not anticipate entering the excavation pits. Samples of the walls and floor of all of the pits will be collected out of the backhoe bucket, which will be swung around away from the excavation area to prevent personnel from accidentally falling into the pit.
- Equipment shall not be parked or operated within 10 feet of any excavation. Additionally, soil or debris will not be stockpiled within 10 feet of the perimeter of the excavation area.
- Personnel are not allowed to work under raised loads.
- Personnel are required to stand away from the equipment being loaded or unloaded.
- Personnel are not to enter any excavation that is 4 feet or more in depth.
- Personnel shall not enter any excavation area that has obvious infiltration of water, regardless of depth.
- Safety fencing will be erected at a minimum distance around the perimeter of the pit at a minimum of ten feet from the edge of the excavation pit.
- Excavation areas shall be inspected daily while personnel are working in the area and then twice weekly until the pits are backfilled. Furthermore, the excavation areas shall be inspected after measurable amounts of rainfall.

### **3.3.9 Cuts**

Materials with sharp edges are likely to be encountered and may pose a potential cutting hazard. Preventative measures shall be taken to prevent cuts and scrapes. Personnel shall wear leather gloves to protect them from potential cuts whenever possible.

A 16-unit first aid kit will be available on-site in the event personnel are cut. Cut areas will be decontaminated and first aid rendered. If personnel are cut, they will be taken to the hospital for a tetanus shot if they have not recently had one.

### **3.4 Accident Prevention**

TMG is committed to ensuring the safety of its employees, contractors, and visitors. The company believes that occupational injuries and illnesses can be prevented, that exposures to hazardous materials and hazardous work situations can be controlled, and that prevention of injuries and illnesses are equal in importance to production, quality, cost and morale. For this reason, TMG has established a Safety & Health Plan complete with annual refresher training, monthly safety meetings, and "tailgate" safety meetings prior to each job. Before each new phase of a job, a safety meeting is to be held to review the activity hazard analysis for that specific job. The Activity Hazard Analysis for this project can be found in Appendix A. The hazard analysis provides a description of potential hazards and the actions to be taken to eliminate or minimize each of these hazards.

## 4.0 CONTRACTOR PROJECT ORGANIZATION AND TRAINING

### 4.1 Project Organization

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 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 POC representing NASA.

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

- C. Contractor's Senior Project Manager** - TMG's Senior Project Manager provides technical insight and provides corporate level supervision for the project. The Project Manager has overall responsibility to see that the project is completed in accordance with the Scope of Work.

<u>TMG Services, Inc. Senior Project Manager</u>	<u>Phone Number</u>
Rodney Bumgardner	(304) 722-6015
Cellular phone	(304) 545-4481

- D. On-Site Project Manager** - The On-Site Project Manager will be in charge of on-site field activities in coordination with the Contractor's Senior Project Manager.

<u>On-Site Project Manager</u>	<u>Phone Number</u>
Helen Owens	(304) 722-6015
Cellular Phone	(419) 504-8008

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

<u>On-Site Project Superintendent</u>	<u>Phone Number</u>
Dan Cashbaugh	(304) 722-6015
Cellular Phone	(216) 404-8109

**F. Site Safety and Health Officer** - The SSHO is responsible for safety on site. This person has the authority to stop work if unsafe conditions warrant.

<u>TMG Services, Inc. SSHO</u>	<u>Phone Number</u>
Dan Cashbaugh	(304) 722-6015
Cellular Phone	(216) 404-8109

**G. Quality Control Officer** - This person is responsible QC at the site. This person has the authority to stop the work if QC is not being met. The QC Officer shall be responsible for sampling activities.

<u>TMG Services, Inc. QC Officer</u>	<u>Phone Number</u>
James Russell	(304) 722-6015
Cellular Phone	(216) 857-1112

**H. Health and Safety Manager** - The Health and Safety Manager provides oversight of the Safety and Health Program. Additionally, the Health and Safety Manager will perform all Hazard Index (HI) calculations for this project.

<u>TMG Services, Inc. Health and Safety Manager</u>	<u>Phone Number</u>
Matthew Ford	(304) 722-6015
Cellular Phone	(304) 389-5112

**I. Field Personnel** - These personnel are responsible for assisting the Project Manager in completing the tasks required under this contract.

<u>TMG Services, Inc. Field Personnel</u>	<u>Phone Number</u>
Dan Cashbaugh	(304) 722-6015
James Russell	
Delmar Hartness	

**H. TMG Services, Inc.'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>TMG Services, Inc.'s Independent Quality Control Team</u>	<u>Phone Number</u>
Kimberlie Bumgardner	(304) 201-2205
Cellular Phone	(304) 215-0099
Richard Armstrong	(304) 201-2205
Cellular Phone	(304) 932-5490

- I. TestAmerica, Inc.** - Samples will be sent to the following USACE certified laboratory. TestAmerica, Inc. located in North Canton, Ohio.

<u>TestAmerica Contact</u>	<u>Phone Number</u>
Kenneth Kuzior	(330) 966-9374
Deborah Dunn	(330) 966-9292

- 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 Dubbert – Landfill Superintendent	(419) 433-3624
Bob Sennish – Waste Approvals	(419) 656-0554

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

<u>Barnes Nursery Contact</u>	<u>Phone Number</u>
Jarrett Barnes	(419) 433-3624

- L. John Hancock and Associates, Inc.** - Personnel from John Hancock and Associates, Inc. will perform a survey of the excavations and measure the volume of material excavated from the excavations.

<u>John Hancock and Associates, Inc. Contact</u>	<u>Phone Number</u>
Alex Etchill	(419) 625-7838

- M. TetraTech** - Personnel from TetraTech will perform lead stabilization and alkaline hydrolysis, as necessary. The TetraTech contact is Mikael Spangburg. Mr. Spangburg is not expected to be on-site; however, one or more of the other personnel listed from TetraTech will be on-site.

<u>TetraTech Project Manager</u>	<u>Phone Number</u>
Mikael Spangburg	(860) 461-0189
Cellular Phone	(860) 478-9658

<u>TetraTech On-Site Representatives</u>	<u>Phone Number</u>
Bobby Bobo	(865) 384-5469
Bryn Howze	(865) 771-9398

- N. Midwest Environmental Services, Inc.** - Midwest will be the primary provider of waste characterization, waste profiling, transportation and disposal services for hazardous (soil and liquid), non-hazardous wastes, and if necessary, PCB-contaminated soils (>50 mg/kg).

<u>Midwest Environmental Services, Inc. Contact</u>	<u>Phone Number</u>
Greg Wilfong	(513) 681-9990
	Cellular Phone (513) 368-4105
Doug Gronauer	(513) 681-9990
	Cellular Phone (513) 535-5047

- O. 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

- P. Enviro-Clean Inc.** - Non-hazardous 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

- Q. Eco First** - This company will be responsible for the transportation of any hazardous IDW to EQ Environmental for disposal.

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

- R. 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 available for the transportation of material to EQ Environmental located in Michigan. Dart is a backup transportation contractor.

<u>Dart Trucking Contact</u>	<u>Phone Number</u>
Debbie Celli	(800) 541-8206, extension 192

- S. McTech Corp** - TMG will rent heavy equipment from McTech Corp during this project. McTech Corp will also provide logistical support to the project.

<u>McTech Corp Contact</u>	<u>Phone Number</u>
Kimberlie Bumgardner	(304) 201-2205
	Cellular Phone (304) 215-0099

**T. Tuffman Equipment and Supply** - TMG will rent equipment from Tuffman Equipment and Supply.

<u>Tuffman Equipment and Supply Contact</u>	<u>Phone Number</u>
Mike Spear	(800) 622-7052
Cellular Phone	(419) 656-3683

#### **4.1.1 Lines of Authority**

The TMG Senior Project Manager has overall responsibility for this project. The On-Site Project Manager, QCO, and the SSHO have the authority to suspend the project in order to address quality control and safety issues. Refer to Appendix B of the QCP for a copy of the letter authorizing the On-Site Project Manager, QCO, and SSHO to perform their duties.

#### **4.2 Training**

All field personnel performing soil treatment and/or intrusive work on this project have received forty (40) hour HAZWOPER training. All field personnel performing soil sampling and/or intrusive work meet the training requirements as cited in 29 CFR 1910.120. At least two personnel at each work site will have received first aid and CPR training. Appendix B contains copies of all training certifications and dates of refresher training for employees that may work on this project.

##### **4.2.1 Site Specific Training**

All field personnel shall receive training and guidance concerning the provisions of this SSHP. Training will specifically address the activities, procedures, equipment, and hazard analysis for site operations. This training will allow personnel to ask questions, clarify misunderstandings, and reinforce their previous safety and health training.

##### **4.2.2 Safety Meetings**

In general, company safety meetings are conducted at least weekly for all personnel and monthly for Project Managers. Field personnel shall be briefed by the On-Site Project Manager or SSHO prior to daily field operations, and on an as needed basis. The On-Site Project Manager/SSHO shall hold daily “tailgate” safety meetings. Before each new phase of a job, a safety meeting is to be held to review the activity hazard analysis for that specific job. Additional briefings will be performed when work practices change, if site conditions change, or if a deficiency has been found. The SSHO or the On-Site Project Manager conducting the meeting shall record the following information on a Daily Safety Meeting form. A copy of this form is located in Appendix C. This form, to be filled out daily and signed by the SSHO or On-Site Project Manager, will include the following:

- All personnel attending the safety meeting
- The date of the safety meeting

- Topics discussed in the safety meeting
- Discussion of work conditions and task expected to be completed that day
- Personnel comments and On-Site Project Manager / SSHO notes concerning the meeting
- The On-Site Project Manager / SSHO shall record any safety related incidents noticed by field personnel

### **4.2.3 CPR and First Aid**

TMG field personnel have received first aid and CPR training that meets course requirements as set forth by the American Red Cross and/or American Heart Association. Appendix B contains copies of field personnel's first aid and CPR certifications. At a minimum, two employees with CPR and first aid certifications will be on-site at all times.

## **5.0 SAFETY PROCEDURES/PPE PROGRAM**

### **5.1 Personal Protective Equipment**

Personnel will wear protective equipment meeting appropriate American National Standards Institute (ANSI) requirements when their activities involve known or suspected contaminated materials. Level D personal protective equipment (PPE) will be used for all site activities.

Based on the site conditions observed and the results of the air monitoring performed during the initial excavations at the PBOW site, it is not anticipated that Level C PPE will be required. However, as with any contamination clean up, site conditions may change. Therefore, information is provided in this section if an upgrade to Level C PPE is necessary.

#### **Level D PPE will consist of:**

- Steel-toed safety shoes/boots
- Safety glasses with side shields
- Leather gloves (general site work)
- Chemical resistant inner/outer gloves (used when performing sampling, decontamination activities, and running screening tests)
- Hard hat
- Hearing protection (when working around heavy equipment)
- Long trousers and sleeved shirt

#### **Level C PPE will consist of:**

- Tyvek overalls
- Full Face or Half-face Respirator (NIOSH approved which meets OSHA and USACE requirements)
- Appropriate chemical cartridges and/or filters
- Chemical resistant inner and outer work gloves

- Steel-toed safety boots/shoes
- Face shield or safety glasses with side shields to be used with half-faced respirator
- Hard hat

Appendix C contains a sample PPE inspection form. These inspection forms will be included in the daily safety inspection logs.

### **5.1.1 Respiratory Protection**

Level D PPE will be used for this project and if site conditions change there is a possibility of an upgrade to Level C PPE. In addition, any employee may request the use of respiratory protection, even if site conditions do not warrant its use. The following information is provided for personnel using respirators.

#### Fitting a Respirator

Any respirator that does not fit properly can allow contaminants to slip through cracks and between the face piece and the skin. The negative-pressure and the positive-pressure fit tests shall always be performed just before entering any hazardous atmosphere.

To perform the negative-pressure fit test:

- Place your palms over the inhalation inlets.
- Inhale gently so the face piece collapses slightly.
- Hold your breath for about ten seconds.
- If the face piece holds the suction inside and no leaks are felt, the respirator fits well.

To perform the positive-pressure fit test:

- Block off the exhalation valve.
- Blow outward gently and hold for about ten seconds.
- If the positive pressure is maintained and no leaking is felt, you have a good fit.

#### Respirator Inspection

Personnel shall inspect their respirator before and after each use. Personnel shall inspect for:

- Holes in filters
- Loss of elasticity or tears in straps and hoses
- Broken or loose connectors and fittings
- Cracks or scratches on the face piece
- Detergent residue or dirt on valves
- General cleanliness

## Respirator Cleaning and Storage

Personnel shall clean and disinfect their respirator after each use. The following is an acceptable cleaning procedure:

- Remove filters, screens, and headbands
- Scrub the respirator in detergent and warm water
- Rinse the respirator and treat it with disinfectant
- Rinse the respirator again, making sure to remove all detergent and disinfectant
- Air-dry the respirator
- Do not dry rubber parts under heat or sunlight
- Never use solvents to clean plastic or rubber
- Respirators must be stored away from dust, sunlight, heat, cold, moisture, and chemicals
- Respirators shall be placed in individual plastic bags and sealed

## Selection of Respirator Cartridges/Filters

Personnel wishing to use respirators shall seek the advice of the SSHO on which canister would be most appropriate for the site conditions. Respirator selection takes into account health and safety factors, such as nature of hazard, intended use and limitations of respiratory protective devices, movement and work-rate limitations. Since there is a potential for unknown contaminants, it is possible that a change in respirator cartridge selection may occur if additional information would become available. Each respirator canister is painted a distinctive color or combination of colors as indicated by Table 3 on the following page:

**Table 3: Respirator Cartridges**

<b>Atmospheric Contaminants</b>	<b>Colors Assigned<sup>1</sup></b>
Acid gases	White
Chlorine gas and Mercury vapor	Orange
Organic vapors	Black
Ammonia gas	Green
Formaldehyde and organic vapors	Olive green with black stripe
Acid gases and organic vapors	Yellow
Multigas	Olive Green
Particulates (dusts, fumes, mists, fogs, or smokes) lead asbestos arsenic.	P-100 (Magenta)

## **5.2 Safety Equipment**

There shall be at minimum two fire extinguishers, a portable eyewash station, a 16-unit first aid kit, and personnel decontamination materials. The On-site Project Manager/ SSHO/ or the QCO will perform a daily check to assure that the safety equipment is present and in good working condition. Appendix C contains a copy of the safety equipment checklist to be used.

## **5.3 Medical Surveillance Program**

TMG field personnel undergo annual medical surveillance examinations and random drug testing. Appendix D contains a brief medical data sheet that all TMG personnel working on-site will complete. A description of the employee medical monitoring program is located in Appendix D.

## **5.4 Standard Orders for Work Zone**

All field sampling will be performed using the level of protection described in Section 5.1 of this SSHP. General safety procedures to be followed by all field personnel are:

- All workers and visitors entering the exclusion zone shall sign that they have read and will comply with the SSHP.
- All site workers and visitors shall follow the contents of this SSHP.
- All visitors to the site must sign in with the Project Manager/SSHO.
- Personnel will not be allowed to work on-site during periods of inclement weather that would endanger their lives.
- Personnel in the work zone shall not eat, drink, smoke, or apply cosmetics.
- Only personnel meeting the training requirements of 29 CFR 1910.120 may enter into the exclusion zone. Personnel shall adhere to the PPE requirements as listed in Section 5.1. If site conditions so warrant, the On-Site Project Manager/SSHO may require personnel to change their level of PPE.
- Any unnecessary contact with potentially contaminated substances shall be avoided.
- No horseplay.
- No matches or lighters shall be used in the work zone.
- During activities that present a risk to personnel, the buddy system as described in section 6.1 will be implemented.

## **5.5 Illumination**

Work will be performed during daylight hours only.

## **5.6 Sanitation**

An office trailer will be set-up on-site and sanitary requirements for water and toilet facilities will be provided. Potable water will be properly labeled and disposable cups will be available

for personnel use. A receptacle for disposal of cups shall be available. Washing facilities for decontamination will be available on-site.

## 6.0 SITE CONTROL MEASURES

Site control is an essential component in the implementation of the site-specific safety and health program. This section defines the procedures for maintaining site control. Personnel shall isolate the work area to prevent public access. Personnel may use tape or other barrier guards to prevent unauthorized persons from wandering into a work area.

### 6.1 Buddy System

When conditions present a risk to personnel, the implementation of the buddy system is mandatory. A buddy system requires that at least two people work as a team; each looking out for the other. People utilizing the buddy system are required to use the same level of PPE. All site activities require the use of the buddy system.

### 6.2 Site Communication Plan

Successful communications between field personnel and support personnel is essential. The following hand signals shall be used during field activities at the site.

<u>Distress Signals</u>	<u>Definition</u>
Hands clutching throat	Out of air/cannot breath
Hands on top of head	Need assistance
Thumbs up	OK/I am all right/ I understand
Thumbs down	No/Negative
Arms waving upright	Send backup support
Grip partners wrist	Exit area immediately
<u>Construction Operation Signals</u>	<u>Definition</u>
Thumbs up	Lifting object/moving bucket upward
Thumbs down	Lowering object/moving bucket down
Pointing toward eyes	Watch out
Pointing towards a direction	Move in that direction
Operator beeping horn without moving	Operator needs laborer's attention

In the event of an emergency, the signal for personnel to evacuate will be by sounding three blasts on a vehicle horn. If this occurs, personnel shall stop work immediately, evacuate the site and report to a predetermined offsite location so that all personnel may be accounted for. All personnel shall proceed with their buddy to a safe distance from the work area. Personnel will

remain in the predetermined safe meeting area until the Project Manager provides them with further instructions.

## **7.0 DECONTAMINATION PLAN**

All personnel and equipment exiting the work zone shall go through decontamination procedures. These procedures may be modified to suit site conditions and protective ensembles in use.

### **7.1 Personnel Decontamination**

Decontamination involves the controlled removal of contaminants. All site personnel shall minimize contact with contaminants in order to minimize the need for extensive decontamination procedures. Personnel shall wear a disposable suit and booties when they are likely to come into contact with contaminants. The general procedures for personnel decontamination for this project is as follows:

The procedures for personnel decontamination for Level D PPE used for this project are as follows:

- **Equipment drop**  
The equipment drop is located as you enter the decontamination zone. Personnel will place all equipment here for later decontamination. Equipment shall be deposited on plastic or in plastic lined containers for subsequent cleaning.
- **Leather Boot Wash/Rinse**  
Remove gross contamination with scraper or brush. Wash boots with water and detergent and rinse with water.
- **Glove Wash/Rinse**  
Scrub gloves with detergent and water. Rinse off gloves with copious amounts of water.
- **Glove Removal**  
Remove gloves.
- **Field wash**  
Soap, water, and towels will be available for field washing. Wash hands and face with soap and water. Rinse with copious amounts of water.

The procedures for personnel decontamination for Level C PPE used for this project are as follows:

- **Equipment drop**  
The equipment drop is located as you enter the decontamination zone. Personnel will place all equipment here for later decontamination. Equipment shall be deposited on plastic drop cloths or in plastic lined containers for subsequent cleaning.
- **Boot Cover/Outer Glove/Safety Suit Removal**  
Remove foot cover, outer gloves, and safety suit and deposit them in a plastic container or a plastic lined container that has been designated for potentially contaminated PPE.
- **Inner Glove Wash/Rinse**  
Wash inner gloves with detergent and water. Rinse off gloves with copious amounts of water.
- **Face piece Removal**  
Remove face piece. Avoid touching face with gloves. Deposit face piece in container with plastic liner for subsequent cleaning.
- **Inner Glove Removal**  
Remove inner gloves and deposit in a plastic container or a plastic lined container that has been designated for potentially contaminated PPE.
- **Field wash**  
Soap, water, and towels will be available for field washing. Wash hands and face with soap and water. Rinse with copious amounts of water.

## 7.2 Equipment Decontamination

Stainless steel sampling spoons/trowels, a stainless steel mixing bowl, and a backhoe bucket will be used for sampling. Laboratory equipment (pipets, cuvettes, beakers, and so forth), as appropriate, associated with the field screening will be decontaminated. Also, the stainless steel sampling spoons/trowels, mixing bowl, and backhoe bucket will require decontamination. Stainless steel sampling spoons/trowels will be used to collect samples from the backhoe bucket for the field screening tests and the confirmation sampling. A mixing bowl may be used for sample compositing prior to performing field screening tests.

All non-disposable sampling equipment will be thoroughly cleaned. Decontamination of all of the sampling equipment will be accomplished prior to and between sampling. All decontamination activities for the backhoe bucket will be set up at a temporary decontamination pad. The steps of the decontamination process for the backhoe bucket will be as follows:

- Brush off the backhoe bucket to remove gross contamination
- Wash equipment with soap and water
- Rinse equipment with distilled water

Refer to Table 4 for general decontamination procedures for sampling equipment that will be reused at the site.

**Table 4: Decontamination Procedures**

Parameter	Detergent Wash	Tap Water Rinse	Inorganic Desorbing Agents	Tap Water Rinse	Organic Desorbing Agents	Deionized Water Rinse	Air Dry
Nitroaromatics	Yes	Yes	no	no	Hexane	yes	Yes
PCBs	Yes	Yes	no	no	Hexane	yes	Yes
PAHs	Yes	Yes	no	no	Hexane	yes	Yes
Metals (Lead)	Yes	Yes	no	no	Hexane	yes	Yes

In cases of gross contamination on sampling equipment, a tap water wash may first be performed to remove clumps of dirt in order to make the detergent wash more effective. The detergent wash shall be a non-phosphate detergent solution, which will be used with brushing or circulating techniques to remove gross contamination. Potable tap water will be used as a rinse for the equipment. A solvent rinse using hexane will be used as an organic desorbing agent. The analytical laboratory performing the analysis shall be consulted prior to sampling to ensure that decontamination procedures do not affect the subsequent analysis. It is recommended that all solvent rinses be made from an appropriate grade of chemical, such as pesticide or purge-and-trap grade quality. A triple rinse with deionized organic-free water shall follow all other decontamination reagents.

All rinsates will be collected and properly disposed. Drums, buckets, water, detergent, and brushes will be located in the work area. Drums will be available for containerizing the decontamination waste.

### **7.3 Investigation Derived Waste**

Personnel shall wear appropriate PPE when drumming IDW. TMG shall collect any used PPE, decontamination liquids, waste from field test kits, and all waste/media generated from the investigation activities. This media shall be containerized and placed in the most secure on-site area available until the results of the analyses are known. Potentially contaminated media shall remain in the area it was used or extracted and may not be combined with potentially contaminated media from another site. All drums containers shall be labeled as to project name, contents, and date of collection. The drums shall be secured with tarps and ropes and placed on pallets. TMG will be responsible for laboratory analyses and proper disposal of the IDW in accordance with applicable state and federal laws. All manifest will be provided to the USACE for signature prior to disposal. The USACE will be provided with copies of documentation showing disposal, which will include manifest (hazardous or non-hazardous) and waste characterization profiles.

## **8.0 EMERGENCY RESPONSE AND CONTINGENCY PLAN**

This section describes contingencies and emergency planning procedures to be implemented at the site. The provisions of this emergency response plan will be reviewed with all field personnel prior to beginning work at the site. NASA PBS protocol must be followed during emergency response activities. TMG personnel and subcontractors are required by NASA to review a safety video and orientation prior to performing any on-site activities. Field personnel are to contact the main gate and the guards will make all other contacts for emergency response. Field personnel can contact the main gate by using the SSHO or QCO's cellular telephone.

### **8.1 Pre-Emergency Planning**

Field personnel will be briefed concerning emergency response procedures, contingency plans, lines of authority as well as their role in the plan. The plan will be reviewed and revised, if necessary, on a regular basis by the SSHO and/or the On-Site Project Manager. This will ensure that the plan is adequate and consistent with site conditions.

### **8.2 Personnel Roles and Lines of Authority**

The SSHO has the primary responsibility for responding to and correcting emergency situations. This includes taking appropriate measures to ensure the safety of site personnel, visitors, and the public. Possible actions may involve evacuation of personnel from the site area. The SSHO is additionally responsible for ensuring that corrective measures have been implemented and that the NASA PBS authorities have been notified. The On-Site Project Manager shall allow the NASA PBS personnel to contact outside emergency personnel unless authorized otherwise. A follow-up report concerning any emergency activities and corrective action shall be submitted to the NASA PBS. The On-Site Project Manager/SSHO has the authority to stop work in cases of an emergency. The SSHO and/or the On-Site Project Manager will direct responses to any medical emergency. All personnel are responsible for reporting potential safety hazards and shall assist the SSHO and/or On-Site Project Manager within the scope of their training and knowledge.

### **8.3 Emergency Recognition**

Personnel will be familiar with techniques of hazard recognition from pre-assignment training and site specific briefings. Emergency situations include, but are not limited to, chemical release, fire, serious injury or illness. Conditions that may lead to such events will be identified and preventive measures will be implemented prior to an emergency occurring. The SSHO and/or the On-site Project Manager will brief the personnel concerning the hazard assessment associated with this project.

### **8.4 Evacuation Procedures**

In the event of an emergency, the signal for personnel to evacuate will be by sounding three blasts on a vehicle horn. If this occurs, personnel shall stop work immediately, evacuate the site

and report to a predetermined offsite location so that all personnel may be accounted for. Personnel will be expected to proceed with their buddy to a safe distance from the work area. Personnel will remain in the predetermined safe meeting area until the SSHO and/or the On-site Project Manager provides them with further instructions. Appendix E contains a map showing the route to the nearest hospital and the general routes of evacuation from the project area.

## 8.5 Emergency Contacts

In the event of a medical emergency, the On-Site Project Manager will notify the appropriate emergency organization. The On-Site Project Manager will notify the NASA PBS in the event of a fire or spill. NASA PBS may contact the appropriate local, state, and federal agencies or may request the TMG On-Site Project Manager to do so. NASA PBS will require NASA issued walkie-talkies for emergency contact during on-site activities. Emergency contact numbers will be posted in the clean/support zone and a copy will be given to all personnel during the daily safety meetings. Emergency contact numbers are listed below:

<b>Contact</b>	<b>Organization Telephone</b>	
NASA Guard House Main Gate	NASA	(419) 621-3222
Police	---	(419) 621-3222
Ambulance	---	(419) 621-3222
Fire	---	(419) 621-3222
Hospital	Firelands Community Hosp.	(800) 342-1177
Poison Control	Poison Control Center	(800) 642-3625
National Response Center	National Response Center	(800) 424-8802
Lisa Humphreys	USACE	(304) 399-5953
	<i>(cellular phone)</i>	(304) 617-1461
Bob Lallier	NASA POC	(419) 621-3234
Rodney Bumgardner	TMG Service, Inc.	(304) 215-0099
	<i>(cellular phone)</i>	(218) 330-6436
Helen Owens	TMG Service, Inc.	(304) 215-0099
	<i>(cellular phone)</i>	(218) 330-6436
Dan Cashbaugh	TMG Service, Inc.	(304) 215-0099
	<i>(cellular phone)</i>	(218) 330-6436

## 8.6 First Aid Response

At least two members of the field crew on-site will have valid first aid and CPR certificates. Each employee attempting to render first aid is performing the service as a Good Samaritan. To minimize contact with body fluids, personnel shall use disposal gloves when rendering first aid and use mouth guards when performing CPR.

Any person who becomes ill or injured in the work zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination shall be

completed and first aid administered prior to transport. Personnel shall not move an injured or seriously ill person unless it is essential to prevent further injury. Non-designated employees, except in the case of severe bleeding or cessation of breathing, shall not administer first aid. While waiting for an ambulance or paramedics, designated personnel shall administer first aid. If the situation allows, a person who has already been through the decontamination step shall render first aid.

The Project Manager shall be notified of all emergencies. Victims of medical emergencies will be transported to the hospital. Upon entering the area to set up for work, field personnel shall familiarize themselves with the route to the hospital and general evacuation routes.

## **8.7 Fire or Explosion**

In the event of a fire or explosion, the guards at the main gate will be contacted for coordination of outside emergency contacts. Personnel have been provided fire extinguisher training according to OSHA 1910.157(g). Training records can be found in Appendix B. The SSHO and/or On-Site Project Manager will advise the NASA PBS of the location, nature, and identification of hazardous materials on-site.

If it is safe to do so, site personnel may:

- Use fire-fighting equipment available on-site to control and/or extinguish the fire.
- Remove or isolate flammable or other hazardous materials, which may contribute to the fire.

Potential sources of ignition for this project include:

- Heavy Equipment Exhausts

Smoking will not be permitted on the within the project areas.

## **8.8 Accident Reporting**

In the event of an accident, employees are responsible for reporting all injuries or illnesses as soon as possible to the SSHO or the On-site Project Manager. The On-site Project Manager and the SSHO is responsible for investigating and reporting accident information and maintaining exposure data. The On-site Project Manager is also responsible for reporting accidents to the guard house at the main gate.

The SSHO shall report his findings to Senior Project Manager along with a plan to correct whatever deficiency resulted in the accident. Any accident resulting in a serious injury or a fatality must be reported to OSHA within 24 hours and the accident scene shall not be disturbed until it has been released by the investigating authority, except for rescue and emergency measures. The SSHO or the On-site Project Manager will notify the USACE POC immediately in the event of an accident or incident and they will file form ENG 3394 with the USACE within 2 working days for all reportable accidents. An ENG 3394 will be submitted any time there is an

occupational illness/injury resulting in lost work days, a fatality, permanent disability, or 3 or more persons are hospitalized. Also, a copy of ENG Form 3394 will be completed for property damage of \$2,000.00 or more. A copy of form ENG 3394 is located in Appendix C.

### **8.8.1 Investigation and Reporting**

Report all accidents immediately to the USACE POC. Additionally, the contractor shall thoroughly investigate the accident and submit the findings of the investigation along with appropriate corrective actions to the USACE POC on ENG Form 3394 as soon as is possible but no later than two (2) working days following the accident. Corrective actions will be implemented as soon as is reasonably possible.

### **8.8.2 On-Site Project Managers Responsibility**

For job related injuries which require medical treatment, a On-Site Project Manager of the injured employee shall accompany the injured employee to the medical treatment facility and explain the employee's regular duties and the availability of "Light Duty" so that the injured employee can return to work as soon as medically possible.

### **8.9 Emergency Equipment**

Emergency equipment will be checked daily by the SSHO. The daily checks will be documented using the Safety Equipment Checklist found in Appendix C. The following emergency equipment shall be used on-site:

#### **Equipment**

Fire Extinguisher	Eye Wash Bottle
16-unit first aid kit	Cellular phone

### **9.0 RECORD KEEPING**

Implementation of the provisions of this SSHP shall be documented. The SSHO or the Project Manager will be responsible for documenting steps taken to be in full compliance with this plan. The SSHO or the Project Manager shall keep the following records:

- Copy of this SSHP
- ENG Form 3394 (USACE Accident Investigation Report Form)
- Records of safety violations and remedial actions taken
- Records of safety meetings
- Visitor register
- PPE checklist
- Other pertinent safety and health related observations or documents

## 10.0 REFERENCES

The following reference materials were used in compiling the information contained in this report and/or were be used in other documents associated with this project.

40 CFR Part 261, *Identification and Listing of Hazardous Waste*, United States Environmental Protection Agency

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

Cornell University Composting Science and Engineering web site at  
[http://www.cfe.cornell.edu/compost/Composting\\_Homepage.html](http://www.cfe.cornell.edu/compost/Composting_Homepage.html)

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

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

EM 385-1-1, *Safety and Health Requirements Manual*, September 2008

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

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

*“Final Quality Control Plan”*, WTI, December 2002

*“Final Quality Control Plan for Interim Soil Removal Action Continuation at PRRWP”*, McTech Corp, September 2007

*“Final Plan of Operations for Stabilization, Excavation, and Disposal of Contaminated Soil for Pentolite Road Red Water Ponds”*, WTI, December 2002

*“Final Plan of Operations for Interim Soil Removal Action Continuation at PRRWP”*, McTech Corp, September 2007

*“Final Site-Specific Safety and Health Plan for Pentolite Road Red Water Ponds”*, WTI, December 2002

*“Final Site-Specific Safety and Health Plan for Interim Soil Removal Action Continuation at PRRWP”*, McTech Corp, September 2007

*“Final Plan of Operations Addendum for Stabilization, Excavation and Disposal of Contaminated Soil for Pentolite Road Red Water Ponds”*, WTI, December 2002

*“Final Action Memorandum for Interim Removal Action for Pentolite Road Red Water Ponds”*,  
WTI, June 2003

*“General Quality Control Plan”*, WTI, August 2004

*“General Safety and Health Plan”*, WTI, August 2004

Irishearthworm Company, “Windrow Composting, an Introduction,” web site at  
<http://www.irishearthworm.com/windrow.html>

UFGS 02191A, *Unified Facilities Guide Specification*, U. S. Army Corps of Engineers

University of Missouri-Columbia, Department of Horticulture web site at  
<http://muextension.missouri.edu/xplor/agguides/hort/g06956.htm>

United States Environmental Protection Agency, web site at  
<http://www.epa.gov>

## **APPENDIX A    ACTIVITY HAZARD ANALYSIS**

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Site Reconnaissance/Surveying

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
<p>Personnel will perform site reconnaissance, initial clearing and grubbing necessary for surveying, and the excavation areas will be surveyed.</p>	<p>Surfaces may be muddy or uneven creating a tripping and slipping hazard.</p> <p>Heat stress can occur</p> <p>Cold stress can occur</p>	<p>-Be alert and observe terrain while walking to minimize slips and falls -Wear Appropriate footwear.</p> <p>-When possible, personnel will avoid walking through or working in water or mud -Personnel shall ensure that equipment not in use will be put in a place where it will not create a tripping hazard.</p> <p>-The work schedule will be adjusted, if possible, to schedule heavy work during the cooler part of the day.</p> <p>-The work will be paced to include adequate rest periods. Five to fifteen minutes rest periods will be scheduled hourly or every 2 hours depending upon the workload, temperature, and relative humidity. -Drinking water and ice will be provided. Personnel will be encouraged to drink plenty of water.</p> <p>-The weather conditions shall be monitored and work halted if the temperature (including humidity) rises to levels that present a danger to worker safety.</p> <p>-Extremities shall be protected from extreme cold by protective clothing. -The work area shall be shielded or employees shall be given outer windbreak garmet when the wind chill is a factor at a field site.</p> <p>-Outer garmets must provide ventilation to prevent wetting of inner clothing by sweat.</p> <p>-Employees who are prone to getting their clothes wet shall be issued an outer protective garmet that is water repellent.</p> <p>-The weather conditions shall be monitored</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Site Reconnaissance/Surveying

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>Can become exposed to on-site chemical hazards depending on contaminant location and type.</p> <p>Personnel will be potentially exposed to harmful animals, insects, and poisonous plants.</p> <p>Personnel may be injured by lifting or moving heavy objects.</p>	<p>and work halted if the temperature drops to levels that present danger to work safety.</p> <p>-Minimize exposure by being properly dressed and taking basic PPE on-site walk throughs. Do not enter an area that is thought to be contaminated without the proper PPE.</p> <p>-Field personnel are required on this project to wear personal protective equipment at all times while in the work zone. This should be helpful in limiting skin exposure to harmful plants and insects.</p> <p>-Insect repellants may be used.</p> <p>-A 16-unit first aid kit will be available at the site and shall contain a variety of ointments for skin afflictions.</p> <p>-Water and soap shall be provided on-site for personnel to wash affected skin areas.</p> <p>-Personnel shall report all known allergies to plants, insects, and medication to the Project Manager and SSHO prior to work.</p> <p>-Personnel shall attempt to stay away from all wildlife that they encounter.</p> <p>-If a load is heavy or bulky, get help</p> <p>-Remember to lift with your legs and keep your back straight.</p> <p>-Keep the load as close to your body as you can</p> <p>-Do not jerk the load. Lift slowly and carefully.</p> <p>-Make sure the area you will be carrying the load through is clear of obstacles.</p> <p>-Do not twist or turn your spine when lifting or carrying the load.</p> <p>-Be sure to have a good grip on your load at all times.</p> <p>-Be careful when lowering your load (get</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Site Reconnaissance/Surveying

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>Personnel may be exposed to noise levels that will potentially harm their hearing.</p> <p>Personnel may be injured by heavy equipment during clearing required for surveying.</p>	<p>help, if necessary).</p> <p>-Personnel shall wear hearing protection when working near heavy equipment.</p> <p>-Heavy machinery will be operated only by designated qualified personnel.</p> <p>-Getting on or off of any equipment while it is in motion is prohibited.</p> <p>-The use of headphones for entertainment purposes (such as radio or cassette) while operating equipment is prohibited.</p> <p>-Machinery shall be operated in accordance with the manufacturer's recommendations.</p> <p>-All machinery shall be inspected daily (when in use) by a competent and knowledgeable person to ensure safe operating conditions.</p> <p>-Personnel shall not operate heavy equipment in area where the utilities have not been properly marked.</p> <p>-All heavy equipment shall be equipped with working audible reverse signal alarms.</p> <p>-Personnel shall wear hearing protection when working near operating equipment.</p>
<p><b>Equipment to be used</b></p> <p>-Personnel shall, at a minimum wear level D PPE during reconnaissance/surveying.</p>	<p><b>Inspection Requirements</b></p> <p>Refer to PPE Checklist in Appendix C .</p>	<p><b>Training Requirements</b></p> <p>Review APP, CPR/First Aid</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Excavation of Contaminated Soil

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
<p>Personnel will perform site clearing and contaminated soil excavation.</p>	<p>Surfaces may be muddy or uneven creating a tripping and slipping hazard.</p> <p>Personnel may be injured by falling into an excavation pit.</p>	<ul style="list-style-type: none"> <li>-Be alert and observe terrain while walking to minimize slips and falls</li> <li>-Wear Appropriate footwear.</li>   <li>-When possible, personnel will avoid walking through or working in water or mud</li> <li>-Personnel shall ensure that equipment not in use will be put in a place where it will not create a tripping hazard.</li>   <li>-Equipment shall not be parked or operated within 10 feet of any excavation. Additionally, soil or debris will not be stockpiled within 10 feet of the perimeter of the excavation area.</li> <li>-Personnel are not allowed to work under raised loads.</li>   <li>-Personnel are required to stand away from the equipment being loaded or unloaded.</li>   <li>-Personnel are not to enter an excavation that is 4 feet or more in depth.</li>   <li>-Personnel shall not enter any excavation that is 4 feet or more in depth unless the excavation pit is equipped with a fixed means of ingress and egress.</li>   <li>-Personnel shall not enter any excavation area that has obvious infiltration of water. Additionally, personnel shall not enter or remain in within a pit during periods of rain.</li> <li>-Safety fencing will be erected at a minimum distance around the perimeter of the pit at a minimum of ten feet from the edge of the excavation pit.</li> <li>-Diversion ditches shall be constructed around the excavation area to inhibit run-off water from entering the pit.</li> <li>-Excavation areas shall be inspected daily while personnel are working in the area and</li> </ul>



## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Excavation of Contaminated Soil

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>with or inhale potentially high concentrations of contaminants during contaminated soil removal.</p> <p>Materials with sharp edges are likely to be encountered and may pose a potential cutting hazard.</p> <p>Personnel will be potentially exposed to harmful animals, insects, and poisonous plants.</p>	<p>shall shall be reviewed prior to sampling and then personnel shall be notified of appropriate PPE to use.</p> <ul style="list-style-type: none"> <li>-Personnel are required to wear the assigned level of PPE while performing sampling and decontamination activities.</li> <li>-Personnel shall be careful when containerizing the decontamination wast so as not to further expose them.</li> <li>-Preventative measures shall be taken to prevent cuts and scrapes.</li> <li>-Personnel shall wear leather gloves to protect them from potential cuts whenever possible.</li> <li>-A 16-unit first aid kit will be available on-site in the event personnel are cut.</li> <li>-Cut areas will be decontaminated and first aid rendered.</li> <li>-Personnel will be taken to the hospital for a tetanus shot if they are cut and have not had a recent shot.</li> <li>-Field personnel are required on this project to wear personal protective equipment at all times while in the work zone. This should be helpful in limiting skin exposure to harmful plants and insects.</li> <li>-Insect repellants may be used.</li> <li>-A 16-unit first aid kit will be available at the site and shall contain a variety of ointments for skin afflictions.</li> <li>-Water and soap shall be provided on-site for personnel to wash affected skin areas.</li> <li>-Personnel shall report all known allergies to plants, insects, and medication to the Project Manager and SSHO prior to work.</li> <li>-Personnel shall attempt to stay away from all wildlife that they encounter.</li> </ul>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Excavation of Contaminated Soil

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>Personnel may be injured by lifting or moving heavy objects.</p> <p>Personnel may be exposed to noise levels that will potentially harm their hearing.</p> <p>Personnel may be injured by heavy equipment required for excavation.</p>	<p>-If a load is heavy or bulky, get help</p> <p>-Remember to lift with your legs and keep your back straight.</p> <p>-Keep the load as close to your body as you can</p> <p>-Do not jerk the load. Lift slowly and carefully.</p> <p>-Make sure the area you will be carrying the load through is clear of obstacles.</p> <p>-Do not twist or turn your spine when lifting or carrying the load.</p> <p>-Be sure to have a good grip on your load at all times.</p> <p>-Be careful when lowering your load (get help, if necessary).</p> <p>-Personnel shall wear hearing protection when working near heavy equipment.</p> <p>-Heavy machinery will be operated only by designated qualified personnel.</p> <p>-Getting on or off of any equipment while it is in motion is prohibited.</p> <p>-The use of headphones for entertainment purposes (such as radio or cassette) while operating equipment is prohibited.</p> <p>-Machinery shall be operated in accordance with the manufacturer's recommendations.</p> <p>-All machinery shall be inspected daily (when in use) by a competent and knowledgeable person to ensure safe operating conditions.</p> <p>-Personnel shall not operate heavy equipment in area where the utilities have not been properly marked.</p> <p>-All heavy equipment shall be equipped with working audible reverse signal alarms.</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Excavation of Contaminated Soil

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>Personnel may be injured by equipment and falling trees/debris will clearing</p>	<p>-Personnel shall wear hearing protection when working near operating equipment.                      -Only trained employees shall operate chainsaws.                      -Proper PPE should be worn during tree/brush removal.                      -Area shall be clear of non-essential personnel during tree/debris removal.</p>
<p><b>Equipment to be used</b>                      -Personnel shall, at a minimum wear level D PPE during excavation. Heavy equipment (excavator, trucks, backhoe, etc.) will be used during excavation. A chainsaw will be used to remove trees and debris that is too large to be cleared with heavy equipment.</p>	<p><b>Inspection Requirements</b>                      Refer to PPE Checklist in Appendix C .</p>	<p><b>Training Requirements</b>                      Review APP , CPR/First Aid, 40 Hour HAZWOPER</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Construction of the staging/storage/treatment area

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
<p>Construction of the staging/storage/treatment area for soil prior to disposal, transport to the compost area for treatment, or backfilling.</p>	<p>Surfaces may be muddy or uneven creating a tripping and slipping hazard.</p> <p>Personnel may be injured by falling into an excavation pit.</p>	<ul style="list-style-type: none"> <li>-Be alert and observe terrain while walking to minimize slips and falls</li> <li>-Wear Appropriate footwear.</li>   <li>-When possible, personnel will avoid walking through or working in water or mud</li> <li>-Personnel shall ensure that equipment not in use will be put in a place where it will not create a tripping hazard.</li>   <li>-Equipment shall not be parked or operated within 10 feet of any excavation. Additionally, soil or debris will not be stockpiled within 10 feet of the perimeter of the excavation area.</li> <li>-Personnel are not allowed to work under raised loads.</li>   <li>-Personnel are required to stand away from the equipment being loaded or unloaded.</li>   <li>-Personnel are not to enter an excavation that is 4 feet or more in depth.</li>   <li>-Personnel shall not enter any excavation that is 4 feet or more in depth unless the excavation pit is equipped with a fixed means of ingress and egress.</li>   <li>-Personnel shall not enter any excavation area that has obvious infiltration of water. Additionally, personnel shall not enter or remain in within a pit during periods of rain.</li> <li>-Safety fencing will be erected at a minimum distance around the perimeter of the pit at a minimum of ten feet from the edge of the excavation pit.</li> <li>-Diversion ditches shall be constructed around the excavation area to inhibit run-off water from entering the pit.</li> <li>-Excavation areas shall be inspected daily while personnel are working in the area and</li> </ul>



## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Construction of the staging/storage/treatment area

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>with or inhale potentially high concentrations of contaminants during contaminated soil removal.</p> <p>Materials with sharp edges are likely to be encountered and may pose a potential cutting hazard.</p> <p>Personnel will be potentially exposed to harmful animals, insects, and poisonous plants.</p>	<p>shall shall be reviewed prior to sampling and then personnel shall be notified of appropriate PPE to use.</p> <p>-Personnel are required to wear the assigned level of PPE while performing sampling and decontamination activities.</p> <p>-Personnel shall be careful when containerizing the decontamination wast so as not to further expose them.</p> <p>-Preventative measures shall be taken to prevent cuts and scrapes.</p> <p>-Personnel shall wear leather gloves to protect them from potential cuts whenever possible.</p> <p>-A 16-unit first aid kit will be available on-site in the event personnel are cut.</p> <p>-Cut areas will be decontaminated and first aid rendered.</p> <p>-Personnel will be taken to the hospital for a tetanus shot if they are cut and have not had a recent shot.</p> <p>-Field personnel are required on this project to wear personal protective equipment at all times while in the work zone. This should be helpful in limiting skin exposure to harmful plants and insects.</p> <p>-Insect repellants may be used.</p> <p>-A 16-unit first aid kit will be available at the site and shall contain a variety of ointments for skin afflictions.</p> <p>-Water and soap shall be provided on-site for personnel to wash affected skin areas.</p> <p>-Personnel shall report all known allergies to plants, insects, and medication to the Project Manager and SSHO prior to work.</p> <p>-Personnel shall attempt to stay away from all wildlife that they encounter.</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Construction of the staging/storage/treatment area

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>Personnel may be injured by lifting or moving heavy objects.</p> <p>Personnel may be exposed to noise levels that will potentially harm their hearing.</p> <p>Personnel may be injured by heavy equipment required for construction of the staging/storage/treatment area.</p>	<p>-If a load is heavy or bulky, get help</p> <p>-Remember to lift with your legs and keep your back straight.</p> <p>-Keep the load as close to your body as you can</p> <p>-Do not jerk the load. Lift slowly and carefully.</p> <p>-Make sure the area you will be carrying the load through is clear of obstacles.</p> <p>-Do not twist or turn your spine when lifting or carrying the load.</p> <p>-Be sure to have a good grip on your load at all times.</p> <p>-Be careful when lowering your load (get help, if necessary).</p> <p>-Personnel shall wear hearing protection when working near heavy equipment.</p> <p>-Heavy machinery will be operated only by designated qualified personnel.</p> <p>-Getting on or off of any equipment while it is in motion is prohibited.</p> <p>-The use of headphones for entertainment purposes (such as radio or cassette) while operating equipment is prohibited.</p> <p>-Machinery shall be operated in accordance with the manufacturer's recommendations.</p> <p>-All machinery shall be inspected daily (when in use) by a competent and knowledgeable person to ensure safe operating conditions.</p> <p>-Personnel shall not operate heavy equipment in area where the utilities have not been properly marked.</p> <p>-All heavy equipment shall be equipped with working audible reverse signal alarms.</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Construction of the staging/storage/treatment area

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>Personnel may be injured by equipment and falling trees/debris will clearing</p>	<p>-Personnel shall wear hearing protection when working near operating equipment.                      -Only trained employees shall operate chainsaws.                      -Proper PPE should be worn during tree/brush removal.                      -Area shall be clear of non-essential personnel during tree/debris removal.</p>
<p><b>Equipment to be used</b>                      -Personnel shall, at a minimum wear level D PPE during staging/treatment area construction. Heavy equipment (excavator, trucks, backhoe, etc.) will be used during construction of the staging/storage/treatment area. A chainsaw will be used to remove trees and debris that is too large to be cleared with heavy equipment.</p>	<p><b>Inspection Requirements</b>                      Refer to PPE Checklist in Appendix C .</p>	<p><b>Training Requirements</b>                      Review APP , CPR/First Aid, 40 Hour HAZWOPER</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Backfilling of Excavation Pits

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
<p>Backfill of the excavation pits.</p>	<p>Surfaces may be muddy or uneven creating a tripping and slipping hazard.</p> <p>Personnel may be injured by falling into an excavation pit.</p>	<p>-Be alert and observe terrain while walking to minimize slips and falls -Wear Appropriate footwear.</p> <p>-When possible, personnel will avoid walking through or working in water or mud -Personnel shall ensure that equipment not in use will be put in a place where it will not create a tripping hazard.</p> <p>-Equipment shall not be parked or operated within 10 feet of any excavation. Additionally, soil or debris will not be stockpiled within 10 feet of the perimeter of the excavation area. -Personnel are not allowed to work under raised loads.</p> <p>-Personnel are required to stand away from the equipment being loaded or unloaded.</p> <p>-Personnel are not to enter an excavation that is 4 feet or more in depth.</p> <p>-Personnel shall not enter any excavation that is 4 feet or more in depth unless the excavation pit is equipped with a fixed means of ingress and egress.</p> <p>-Personnel shall not enter any excavation area that has obvious infiltration of water. Additionally, personnel shall not enter or remain in within a pit during periods of rain. -Safety fencing will be erected at a minimum distance around the perimeter of the pit at a minimum of ten feet from the edge of the excavation pit. -Diversion ditches shall be constructed around the excavation area to inhibit run-off water from entering the pit. -Excavation areas shall be inspected daily while personnel are working in the area and</p>



## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Backfilling of Excavation Pits

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>likely to be encountered and may pose a potential cutting hazard.</p> <p>Personnel will be potentially exposed to harmful animals, insects, and poisonous plants.</p> <p>Personnel may be injured by lifting or moving heavy objects.</p>	<p>prevent cuts and scrapes.</p> <ul style="list-style-type: none"> <li>-Personnel shall wear leather gloves to protect them from potential cuts whenever possible.</li> <li>-A 16-unit first aid kit will be available on-site in the event personnel are cut.</li> <li>-Cut areas will be decontaminated and first aid rendered.</li> <li>-Personnel will be taken to the hospital for a tetanus shot if they are cut and have not had a recent shot.</li> <li>-Field personnel are required on this project to wear personal protective equipment at all times while in the work zone. This should be helpful in limiting skin exposure to harmful plants and insects.</li> <li>-Insect repellants may be used.</li> <li>-A 16-unit first aid kit will be available at the site and shall contain a variety of ointments for skin afflictions.</li> <li>-Water and soap shall be provided on-site for personnel to wash affected skin areas.</li> <li>-Personnel shall report all known allergies to plants, insects, and medication to the Project Manager and SSHO prior to work.</li> <li>-Personnel shall attempt to stay away from all wildlife that they encounter.</li> <li>-If a load is heavy or bulky, get help</li> <li>-Remember to lift with your legs and keep your back straight.</li> <li>-Keep the load as close to your body as you can</li> <li>-Do not jerk the load. Lift slowly and carefully.</li> <li>-Make sure the area you will be carrying the load through is clear of obstacles.</li> <li>-Do not twist or turn your spine when lifting</li> </ul>



## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Backfilling of Excavation Pits

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
-Personnel shall, at a minimum wear level D PPE during excavation. Heavy equipment (excavator, trucks, backhoe, etc.) will be used to backfill the excavation areas and grade as necessary.	Refer to PPE Checklist in Appendix C .	Review APP , CPR/First Aid, 40 Hour HAZWOPER

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Seeding and Mulching

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
<p>Seeding and mulching of disturbed areas.</p>	<p>Surfaces may be muddy or uneven creating a tripping and slipping hazard.</p> <p>Personnel can be exposed to fertilizer and lime.</p> <p>Heat stress can occur</p> <p>Cold stress can occur</p>	<p>-Be alert and observe terrain while walking to minimize slips and falls -Wear Appropriate footwear.</p> <p>-When possible, personnel will avoid walking through or working in water or mud -Personnel shall ensure that equipment not in use will be put in a place where it will not create a tripping hazard.</p> <p>-The personnel performing this work shall review the APP/SSHP prior to performing the work. Personnel shall wear PPE whenever in the work area and when working with chemicals.</p> <p>-The work schedule will be adjusted, if possible, to schedule heavy work during the cooler part of the day.</p> <p>-The work will be paced to include adequate rest periods. Five to fifteen minutes rest periods will be scheduled hourly or every 2 hours depending upon the workload, temperature, and relative humidity. -Drinking water and ice will be provided. Personnel will be encouraged to drink plenty of water.</p> <p>-The weather conditions shall be monitored and work halted if the temperature (including humidity) rises to levels that present a danger to worker safety.</p> <p>-Extremities shall be protected from extreme cold by protective clothing. -The work area shall be shielded or employees shall be given outer windbreak garmet when the wind chill is a factor at a field site.</p> <p>-Outer garmets must provide ventilation to prevent wetting of inner clothing by sweat.</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Seeding and Mulching

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>Materials with sharp edges are likely to be encountered and may pose a potential cutting hazard.</p> <p>Personnel will be potentially exposed to harmful animals, insects, and poisonous plants.</p> <p>Personnel may be injured by</p>	<p>-Employees who are prone to getting their clothes wet shall be issued an outer protective garmet that is water repellent.</p> <p>-The weather conditions shall be monitored and work halted if the temperature drops to levels that present danger to work safety.</p> <p>-Preventative measures shall be taken to prevent cuts and scrapes.</p> <p>-Personnel shall wear leather gloves to protect them from potential cuts whenever possible.</p> <p>-A 16-unit first aid kit will be available on-site in the event personnel are cut.</p> <p>-Cut areas will be decontaminated and first aid rendered.</p> <p>-Personnel will be taken to the hospital for a tetanus shot if they are cut and have not had a recent shot.</p> <p>-Field personnel are required on this project to wear personal protective equipment at all times while in the work zone. This should be helpful in limiting skin exposure to harmful plants and insects.</p> <p>-Insect repellants may be used.</p> <p>-A 16-unit first aid kit will be available at the site and shall contain a variety of ointments for skin afflictions.</p> <p>-Water and soap shall be provided on-site for personnel to wash affected skin areas.</p> <p>-Personnel shall report all known allergies to plants, insects, and medication to the Project Manager and SSHO prior to work.</p> <p>-Personnel shall attempt to stay away from all wildlife that they encounter.</p> <p>-If a load is heavy or bulky, get help</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Seeding and Mulching

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	lifting or moving heavy object and shoveling/racking.	<ul style="list-style-type: none"> <li>-Remember to lift with your legs and keep your back straight.</li> <li>-Keep the load as close to your body as you can</li> <li>-Do not jerk the load. Lift slowly and carefully.</li> <li>-Make sure the area you will be carrying the load through is clear of obstacles.</li> <li>-Do not twist or turn your spine when lifting or carrying the load.</li> <li>-Be sure to have a good grip on your load at all times.</li> <li>-Be careful when lowering your load (get help, if necessary).</li> </ul>
<p><b>Equipment to be used</b></p> <p>-Personnel shall, at a minimum wear level D PPE during seeding and mulching.</p>	<p><b>Inspection Requirements</b></p> <p>Refer to PPE Checklist in Appendix C .</p>	<p><b>Training Requirements</b></p> <p>Review APP , CPR/First Aid, 40 Hour HAZWOPER</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Confirmation/Disposal Sampling

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
<p>Personnel will perform confirmation/disposal sampling</p>	<p>Surfaces may be muddy or uneven creating a tripping and slipping hazard.</p> <p>Personnel may be injured by falling into an excavation pit.</p>	<ul style="list-style-type: none"> <li>-Be alert and observe terrain while walking to minimize slips and falls</li> <li>-Wear Appropriate footwear.</li>   <li>-When possible, personnel will avoid walking through or working in water or mud</li> <li>-Personnel shall ensure that equipment not in use will be put in a place where it will not create a tripping hazard.</li>   <li>-Equipment shall not be parked or operated within 10 feet of any excavation. Additionally, soil or debris will not be stockpiled within 10 feet of the perimeter of the excavation area.</li>   <li>-Sampling will not be performed in excavation pits, samples will be collected from directly from excavator bucket.</li> <li>-Personnel are not allowed to work under raised loads.</li>   <li>-Personnel are required to stand away from the equipment being loaded or unloaded.</li>   <li>-Personnel are not to enter an excavation that is 4 feet or more in depth.</li>   <li>-Personnel shall not enter any excavation that is 4 feet or more in depth unless the excavation pit is equipped with a fixed means of ingress and egress.</li>   <li>-Personnel shall not enter any excavation area that has obvious infiltration of water. Additionally, personnel shall not enter or remain in within a pit during periods of rain.</li> <li>-Safety fencing will be erected at a minimum distance around the perimeter of the pit at a minimum of ten feet from the edge of the excavation pit.</li> <li>-Diversion ditches shall be constructed</li> </ul>



## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Confirmation/Disposal Sampling

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>Personnel may come into contact with or inhale potentially high concentrations of contaminants during sampling.</p> <p>Materials with sharp edges are likely to be encountered and may pose a potential cutting hazard.</p> <p>Personnel will be potentially exposed to harmful animals, insects, and poisonous plants.</p>	<p>and work halted if the temperature drops to levels that present danger to work safety.</p> <p>-Potential chemical contaminants at a site shall be reviewed prior to sampling and then personnel shall be notified of appropriate PPE to use.</p> <p>-Personnel are required to wear the assigned level of PPE while performing sampling and decontamination activities.</p> <p>-Personnel shall be careful when containerizing the decontamination waste so as not to further expose them.</p> <p>-Preventative measures shall be taken to prevent cuts and scrapes.</p> <p>-Personnel shall wear leather gloves to protect them from potential cuts whenever possible.</p> <p>-A 16-unit first aid kit will be available on-site in the event personnel are cut.</p> <p>-Cut areas will be decontaminated and first aid rendered.</p> <p>-Personnel will be taken to the hospital for a tetanus shot if they are cut and have not had a recent shot.</p> <p>-Field personnel are required on this project to wear personal protective equipment at all times while in the work zone. This should be helpful in limiting skin exposure to harmful plants and insects.</p> <p>-Insect repellants may be used.</p> <p>-A 16-unit first aid kit will be available at the site and shall contain a variety of ointments for skin afflictions.</p> <p>-Water and soap shall be provided on-site for personnel to wash affected skin areas.</p> <p>-Personnel shall report all known allergies to plants, insects, and medication to the</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Confirmation/Disposal Sampling

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>Personnel may be exposed to noise levels that will potentially harm their hearing.</p> <p>Personnel may be injured by heavy equipment required for excavation.</p>	<p>Project Manager and SSHO prior to work.</p> <p>-Personnel shall attempt to stay away from all wildlife that they encounter.</p> <p>-Personnel shall wear hearing protection when working near heavy equipment.</p> <p>-Heavy machinery will be operated only by designated qualified personnel.</p> <p>-Getting on or off of any equipment while it is in motion is prohibited.</p> <p>-The use of headphones for entertainment purposes (such as radio or cassette) while operating equipment is prohibited.</p> <p>-Machinery shall be operated in accordance with the manufacturer's recommendations.</p> <p>-All machinery shall be inspected daily (when in use) by a competent and knowledgeable person to ensure safe operating conditions.</p> <p>-Personnel shall not operate heavy equipment in area where the utilities have not been properly marked.</p> <p>-All heavy equipment shall be equipped with working audible reverse signal alarms.</p> <p>-Personnel shall wear hearing protection when working near operating equipment.</p>
<p><b>Equipment to be used</b></p> <p>-Personnel shall, at a minimum wear level D PPE during sampling.</p>	<p><b>Inspection Requirements</b></p> <p>Refer to PPE Checklist in Appendix C .</p>	<p><b>Training Requirements</b></p> <p>Review APP , CPR/First Aid, 40 Hour HAZWOPER</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Windrow Composting

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
<p>Windrow composting of contaminated soil, if necessary.</p>	<p>Surfaces may be muddy or uneven creating a tripping and slipping hazard.</p> <p>Personnel can be exposed to chicken manure and straw.</p> <p>Heat stress can occur</p> <p>Cold stress can occur</p>	<p>-Be alert and observe terrain while walking to minimize slips and falls -Wear Appropriate footwear.</p> <p>-When possible, personnel will avoid walking through or working in water or mud -Personnel shall ensure that equipment not in use will be put in a place where it will not create a tripping hazard.</p> <p>-The personnel performing this work shall review the APP/SSHP prior to performing the work. Personnel shall wear PPE (including dust mask or respirator) when working with composting amendments.</p> <p>-The work schedule will be adjusted, if possible, to schedule heavy work during the cooler part of the day.</p> <p>-The work will be paced to include adequate rest periods. Five to fifteen minutes rest periods will be scheduled hourly or every 2 hours depending upon the workload, temperature, and relative humidity. -Drinking water and ice will be provided. Personnel will be encouraged to drink plenty of water.</p> <p>-The weather conditions shall be monitored and work halted if the temperature (including humidity) rises to levels that present a danger to worker safety.</p> <p>-Extremities shall be protected from extreme cold by protective clothing. -The work area shall be shielded or employees shall be given outer windbreak garmet when the wind chill is a factor at a field site.</p> <p>-Outer garmets must provide ventilation to prevent wetting of inner clothing by sweat.</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Windrow Composting

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>Materials with sharp edges are likely to be encountered and may pose a potential cutting hazard.</p> <p>Personnel will be potentially exposed to harmful animals, insects, and poisonous plants.</p>	<p>-Employees who are prone to getting their clothes wet shall be issued an outer protective garmet that is water repellent.</p> <p>-The weather conditions shall be monitored and work halted if the temperature drops to levels that present danger to work safety.</p> <p>-Preventative measures shall be taken to prevent cuts and scrapes.</p> <p>-Personnel shall wear leather gloves to protect them from potential cuts whenever possible.</p> <p>-A 16-unit first aid kit will be available on-site in the event personnel are cut.</p> <p>-Cut areas will be decontaminated and first aid rendered.</p> <p>-Personnel will be taken to the hospital for a tetanus shot if they are cut and have not had a recent shot.</p> <p>-Field personnel are required on this project to wear personal protective equipment at all times while in the work zone. This should be helpful in limiting skin exposure to harmful plants and insects.</p> <p>-Insect repellants may be used.</p> <p>-A 16-unit first aid kit will be available at the site and shall contain a variety of ointments for skin afflictions.</p> <p>-Water and soap shall be provided on-site for personnel to wash affected skin areas.</p> <p>-Personnel shall report all known allergies to plants, insects, and medication to the Project Manager and SSHO prior to work.</p> <p>-Personnel shall attempt to stay away from all wildlife that they encounter.</p> <p>-If a load is heavy or bulky, get help</p>



## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Windrow Composting

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
		-Personnel shall wear hearing protection when working near operating equipment.
<p><b>Equipment to be used</b> -Personnel shall, at a minimum wear level D PPE during excavation. Heavy equipment (excavator, trucks, backhoe, windrow turner, etc.) will be used to place soil in windrows and turn windrows during composting.</p>	<p><b>Inspection Requirements</b> Refer to PPE Checklist in Appendix C .</p>	<p><b>Training Requirements</b> Review APP , CPR/First Aid, 40 Hour HAZWOPER</p>

## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Alkaline Hydrolysis

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
<p>TetraTech personnel will perform Alkaline Hydrolysis of contaminated soils, if necessary.</p>	<p>Surfaces may be muddy or uneven creating a tripping and slipping hazard.</p> <p>Personnel may be injured by falling into treatment depression.</p>	<ul style="list-style-type: none"> <li>-Be alert and observe terrain while walking to minimize slips and falls</li> <li>-Wear Appropriate footwear.</li>   <li>-When possible, personnel will avoid walking through or working in water or mud</li> <li>-Personnel shall ensure that equipment not in use will be put in a place where it will not create a tripping hazard.</li>   <li>-Equipment shall not be parked or operated within 10 feet of any excavation. Additionally, soil or debris will not be stockpiled within 10 feet of the perimeter of the excavation area.</li> <li>-Personnel are not allowed to work under raised loads.</li>   <li>-Personnel are required to stand away from the equipment being loaded or unloaded.</li>   <li>-Personnel are not to enter an excavation that is 4 feet or more in depth.</li>   <li>-Personnel shall not enter any excavation that is 4 feet or more in depth unless the excavation pit is equipped with a fixed means of ingress and egress.</li>   <li>-Personnel shall not enter any excavation area that has obvious infiltration of water. Additionally, personnel shall not enter or remain in within a pit during periods of rain.</li> <li>-Safety fencing will be erected at a minimum distance around the perimeter of the pit at a minimum of ten feet from the edge of the excavation pit.</li> <li>-Diversion ditches shall be constructed around the excavation area to inhibit run-off water from entering the pit.</li> <li>-Excavation areas shall be inspected daily while personnel are working in the area and</li> </ul>



## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Alkaline Hydrolysis

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>with or inhale potentially high concentrations of contaminants during contaminated soil treatment.</p> <p>-Personnel may be exposed to sodium hydroxide, ferrous chloride, and citric acid during alkaline hydrolysis.</p> <p>Materials with sharp edges are likely to be encountered and may pose a potential cutting hazard.</p> <p>Personnel will be potentially exposed to harmful animals, insects, and poisonous plants.</p>	<p>shall shall be reviewed prior to sampling and then personnel shall be notified of appropriate PPE to use.</p> <p>-Personnel are required to wear the assigned level of PPE while performing sampling and decontamination activities.</p> <p>-Personnel shall be careful when containerizing the decontamination wast so as not to further expose them.</p> <p>-Personnel are required to wear the assigned level of PPE while working with alkaline hydrolysis chemicals.</p> <p>-Personnel shall be carefull when transporting and adding alkaline hydrolysis chemicals to contaminated soil piles.</p> <p>-Preventative measures shall be taken to prevent cuts and scrapes.</p> <p>-Personnel shall wear leather gloves to protect them from potential cuts whenever possible.</p> <p>-A 16-unit first aid kit will be available on-site in the event personnel are cut.</p> <p>-Cut areas will be decontaminated and first aid rendered.</p> <p>-Personnel will be taken to the hospital for a tetanus shot if they are cut and have not had a recent shot.</p> <p>-Field personnel are required on this project to wear personal protective equipment at all times while in the work zone. This should be helpful in limiting skin exposure to harmful plants and insects.</p> <p>-Insect repellants may be used.</p> <p>-A 16-unit first aid kit will be available at the site and shall contain a variety of ointments for skin afflictions.</p> <p>-Water and soap shall be provided on-site for personnel to wash affected skin areas.</p>



## ACTIVITY HAZARD ANALYSIS

**Job/Task:** Alkaline Hydrolysis

**Conducted by/Date:** Matt Ford / 3/22/10

**Location:** TNTC, PBOW, Sandusky, OH

**Reviewed by/Date:** Kimberlie Chambers / 4/30/10

Principle Steps	Potential Hazards	Recommended Controls
	<p>Personnel may be injured by equipment and falling trees/debris will clearing</p>	<p>-Personnel shall not operate heavy equipment in area where the utilities have not been properly marked.</p> <p>-All heavy equipment shall be equipped with working audible reverse signal alarms.</p> <p>-Personnel shall wear hearing protection when working near operating equipment.</p> <p>-Only trained employees shall operate chainsaws.</p> <p>-Proper PPE should be worn during tree/brush removal.</p> <p>-Area shall be clear of non-essential personnel during tree/debris removal.</p>
<p><b>Equipment to be used</b>                      -Personnel shall, at a minimum wear level D PPE during alkaline hydrolysis. Tyvek suits, respirator, gloves, and face shield/goggles should be used when working with alkaline hydrolysis chemicals. Heavy equipment (excavator) will be used during alkaline hydrolysis.</p>	<p><b>Inspection Requirements</b>                      Refer to PPE Checklist in Appendix C .</p>	<p><b>Training Requirements</b>                      Review APP , CPR/First Aid, 40 Hour HAZWOPER</p>

**APPENDIX B    TRAINING CERTIFICATES**



## CERTIFICATE OF COURSE COMPLETION

Rodney Bumgardner      Hazwoper 8 Hour Annual Refresher Course      05/06/2010 14:50 CST

Student's Name      Course Title      Course Completion Date  
MM / DD / YYYY

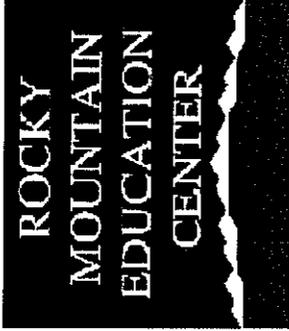
1546136  
Certificate Number

  
Student's Signature

8  
Approved # of Hours

I hereby attest and certify that I personally took the above named safety lesson in accordance to Osha Campus guidelines. I further state that I have paid for the course and that I did not use another's work (Plagiarism). Students should retain certificates and refer to course instructions to receive official certification where necessary.

**360training**  
**Corporate Headquarters**  
13801 N. Mo-Pac, Suite 100  
Austin, Texas 78727  
tel: 888-360-8764  
fax: 512-727-7683  
email: support@360training.com



## Certificate of Course Completion

Rodney Bumgardner

Student's Name

A handwritten signature in black ink, appearing to read "Rodney Bumgardner", written over a horizontal line.

Student's Signature

A handwritten signature in black ink, appearing to be a stylized name, written over a horizontal line.

Instructor Signature

OSHA - Course 500 Trainer Course in Occupational Safety & Health Standards for Construction

Course Title

30

# of hours approved

08/06/2007 10:43 CST

Course Completion Date  
MM / DD / YY

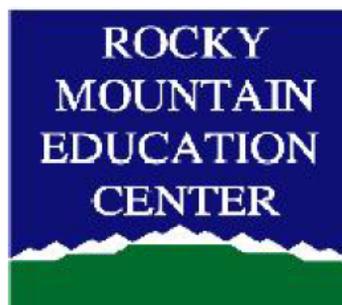
991145

Certificate Number

Fraudulent course completion is subject to prosecution and reporting to employers. Student should retain certificates and refer to course instructions to receive official certification.

**Red Rocks Community College**  
13300 West 6<sup>th</sup> Avenue,  
Campus Box 41,  
Lakewood, CO, 80228-1255  
Tel: 800-933-8394  
Fax: 303-980-8339

OSHA Training Institute Education Center  
Region VIII Rocky Mountain Education Center



## Certificate of Course Completion

Rodney Bumgardner

Student's Name

OSHA - Course 500 Trainer Course in Occupational Safety & Health Standards for Construction

Course Title

08/06/2007 10:43 CST

Course Completion Date  
MM / DD / YY

30

# of hours approved

991145

Certificate Number

Student's Signature

A handwritten signature in black ink, appearing to read "Rodney Bumgardner", is written over a light-colored rectangular background.

Instructor Signature

Fraudulent course completion is subject to prosecution and reporting to employers. Student should retain certificates and refer to course instructions to receive official certification.

**Red Rocks Community College**

13300 West 6<sup>th</sup> Avenue,

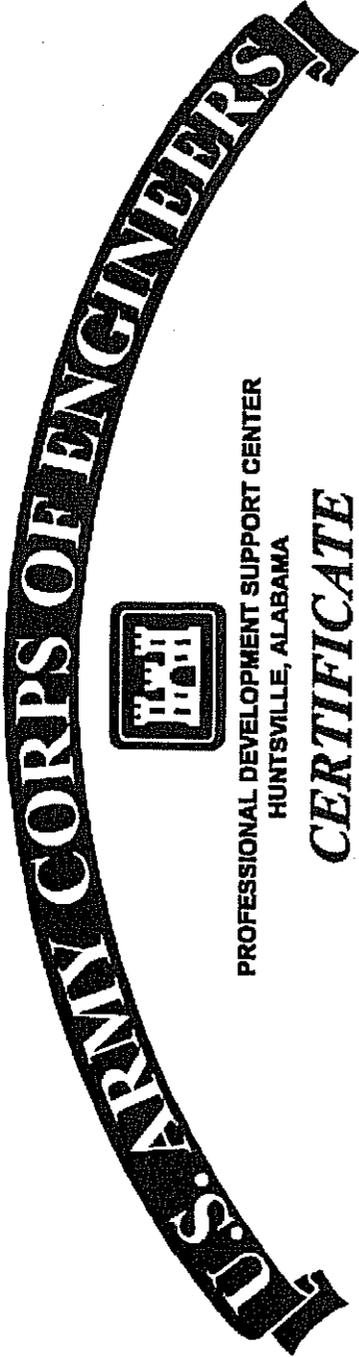
Campus Box 41,

Lakewood, CO, 80228-1255

Tel: 800-933-8394

Fax: 303-980-8339

OSHA Training Institute Education Center  
Region VIII Rocky Mountain Education Center



PROFESSIONAL DEVELOPMENT SUPPORT CENTER  
HUNTSVILLE, ALABAMA

# CERTIFICATE

**RODNEY R. BUMGARDNER**

*has completed the Corps of Engineers Training Course*

## CONSTRUCTION QUALITY MANAGEMENT FOR CONTRACTORS

*is awarded continuing education credits as indicated for 16 hours of organized instruction*



Given at Huntington, WV By Huntington District 03/11/08  
Location Instructional District Date

*S. J. [Signature]*  
Facilitator

*[Signature]*  
Chief, Engineering/Construction Division

**THIS CERTIFICATE EXPIRES FIVE YEARS FROM DATE OF ISSUE**

PEEL  
HERE



# Heartsaver® First Aid

Rodney Bumgardner

This card certifies that the above individual has successfully completed the objectives and skills evaluations in accordance with the curriculum of the AHA for Heartsaver First Aid Program.

Modules Completed: (A) (B) (C) (D) (E)

November, 2009

November, 2011

Issue Date

Recommended Renewal Date

Training Center West Virginia Region

TC Address Contact Info K.C.E.A.A.

Course Location K.C.E.A.A.

Instructor Bridget Perry

Holder's Signature

© 2006 American Heart Association Tampering with this card will alter its appearance. 80-1202

Fill in the circles of the modules NOT completed. This card contains unique security features to protect against forgery.

OSHA

600334385

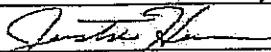


U.S. Department of Labor  
Occupational Safety and Health Administration

**MATTHEW FORD**

has successfully completed a 30-hour Occupational Safety and Health  
Training Course in

Construction Safety & Health

  
(Trainer)

07/17/2008

(Date)

OSHA recommends Outreach Training courses as an orientation to occupational safety and health for workers. Participation is voluntary. Workers must receive additional training on specific hazards of their job. This course completion card does not expire.

For further information see our web site at [www.osha.gov/outreach.html](http://www.osha.gov/outreach.html)

This is to certify that

**Matthew Ford**

has met the attendance requirements and successfully completed the

**40-Hour HAZWOPER**

(Hazardous Waste Operations and Emergency Response)

(Inclusive of Levels A, B, C, & D)

class in accordance with OSHA 29 CFR 1910.120



**R T C**  
Regulatory Training Center

157 2nd Avenue, South Charleston, WV 25303  
(304) 348-1346

10/20/2005

Date

*Gary Vance*

Instructor

PEEL  
HERE



American Heart  
Association  
*Learn and Live*

# Heartsaver® First Aid

Matthew Ford

This card certifies that the above individual has successfully completed the objectives and skills evaluations in accordance with the curriculum of the AHA for Heartsaver First Aid Program.

Modules Completed: (A) (B) (C) (D) (E)

November, 2009

November, 2011

Issue Date

Recommended Renewal Date

West Virginia Region

Training  
Center

TC Address  
Contact Info

K.C.E.A.A.

Course  
Location

K.C.E.A.A.

Instructor

Bridget Perry

Holder's  
Signature

© 2006 American Heart Association Tampering with this card will alter its appearance. 80-1202

Fill in the circles of the modules NOT completed. This card contains unique security features to protect against forgery.



# CERTIFICATE OF COURSE COMPLETION

**Matthew Ford**  
Student's Name

Hazwoper 8 Hour Annual Refresher Course  
in compliance with the 29 CFR 1910.120 Standard

05/20/2009 13:04 CST  
Course Completion Date  
MM / DD / YYYY

Course Title

Course Completion Date

*[Handwritten Signature]*  
Student's Signature

1220665  
Certificate Number

8  
Approved # of Hours



360training.com, Inc. has been reviewed and approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 8405 Greensboro Drive, Suite 800, McLean, VA 22102-5120. 360training.com, Inc. has awarded .8 CEUs to participants who successfully complete this program.

I hereby attest and certify that I personally took the above named safety lesson in accordance to OshaCampus guidelines. I further state that I have paid for the course and that I did not use another's work (Plagiarism). Students should retain certificates and refer to course instructions to receive official certification where necessary.

.5 Safety CM Points  
.8 CEU

**360training  
Corporate Headquarters**  
13801 N. Mo-Pac, Suite 100  
Austin, Texas 78727  
tel: 888-360-8764  
fax: 512-727-7683  
email: support@360training.com

# Certificate of Completion

[T]his certificate was presented to

**HELEN J. OWENS**

for successful completion of the

**40-HOUR HEALTH & SAFETY TRAINING COURSE**

In accordance with the

**OSHA Hazardous Waste and Emergency Response Operations Standard  
29 CFR 1910.120**

**JANUARY 16, 1988**      **605216180178**  
Date                      Certificate number

  
**Ronald G. Wooley**  
President  
Urgent & Associates Educational Services, Inc.

# THE NATIONAL ENVIRONMENTAL TRAINERS

*Helen Owens*

has satisfactorily passed an exam and completed an 8-hour annual refresher training course entitled  
**Hazardous Waste Operations and Emergency Response**  
meeting the requirements identified in Title 29 CFR 1910.120.

This course has been awarded 1.0 Industrial Hygiene CM Points by the American Board of Industrial Hygiene-Approval Number 13334. This course is also eligible for .66 Continuance of Certification (COC) points from the Board of Certified Safety Professionals



June 12, 2009

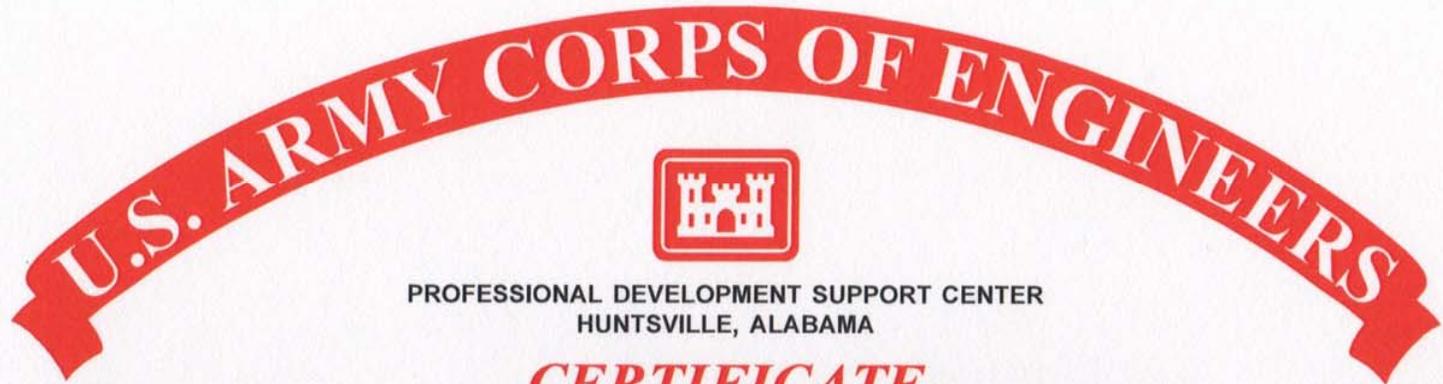
Course Number 1001, Awarded 8 PDH's  
Florida Board of Professional Engineers  
CEU Provider Number 0004284

[www.nationalenvironmentaltrainers.com](http://www.nationalenvironmentaltrainers.com)

Signature of Instructor

A handwritten signature in black ink, appearing to read 'Clay A. Bednarz', written over a light gray grid background.

Clay A. Bednarz, MS, RPIH



PROFESSIONAL DEVELOPMENT SUPPORT CENTER  
HUNTSVILLE, ALABAMA

**CERTIFICATE**

*This is to certify that*

*Helen Owens*

*has completed the Corps of Engineers Training Course*

**CONSTRUCTION QUALITY MANAGEMENT FOR CONTRACTORS**

Given at Dayton, OH By CELRL-CD April 22-23, 2008  
Location Instructional District Date

*Wesley Barber*  
Facilitator

*Sponsored by: Associated General Contractors*

**THIS CERTIFICATE EXPIRES FIVE YEARS FROM DATE OF ISSUE**

*Gary Z Anderson*  
Chief, USAACE Professional Development Support Center



**American  
Red Cross**

*Together, we can save a life*

This recognizes that  
**HELEN OWENS**

has completed the requirements for  
**ADULT CPR and AED**

conducted by

**Northern Miami Valley Chapter**

Date completed **June 19, 2009**

The American Red Cross recognizes this certificate  
as valid for **1** year(s) from completion date.



**American  
Red Cross**

*Together, we can save a life*

This recognizes that

**Helen Owens**

has completed the requirements for  
**Standard First Aid**

conducted by

**ARC of the Northern Miami Valley**

Date completed **4/14/2007**

The American Red Cross recognizes this certificate  
as valid for **3** year(s) from completion date.

CERTIFICATE OF COMPLETION

Daniel Cashbaugh

has successfully completed the 30 Hour OSHA Construction Safety Course in accordance with 29CFR 1926

September 4, 2007 Date

C&K Industrial Services, Inc. John P. Yakovich Safety Instructor

CERTIFICATE OF COMPLETION

Daniel Cashbaugh

Has successfully completed the 40 Hour HAZWOPER Course in accordance with 29 CFR 1910.120

June 22, 2006 Date

C&K Industrial Services, Inc. John P. Yakovich Safety Instructor

OSHA 600141826

U.S. Department of Labor Occupational Safety and Health Administration

Daniel Cashbaugh

has successfully completed a 30-hour Occupational Safety and Health Training Course in

Construction Safety & Health

Trainer: [Signature]

12/5/2006 (Date)

Successful Completion Card

Basic TRAINING PROGRAMS

Name: DAN CASHBAUGH Issued: 1-26-10 Expires: 1-26-12

This certifies that the individual named above has successfully demonstrated the knowledge and skill objectives for:

- BasicPlus CPR, AED, and First Aid for Adults
Basic CPR and First Aid for Adults

Card not valid if more than one box is checked.



Instructor: LORI SAXTON

Registry Number: 40397

Training Center Phone No.:

Training Center ID: 130902

MEDIC FIRST AID® BasicPlus follows ILCOR, AHA, and ASTM recommendations and guidelines for CPR, first aid, and emergency care.

Continued proficiency as a MEDIC FIRST AID Provider requires frequent retraining. This card expires as documented on the front of the card or within 24 months of issue.

# TRAINING ACKNOWLEDGMENT

TYPE OF TRAINING: New Hire  Hazwhoper  Refresher

Other Sub-Contractor Training and/or Basic Contractor

Total Hours Trained 8

I James B. Russell acknowledge that I have received instruction and understand the following subjects (initial all that apply):

### C&K Safety Training Programs:

YBR Hazard Communication

YBR Lockout/Tagout

YBR Confined Space

YBR Fire Extinguisher/Emergency Action

YBR Respiratory Protection

NIA Forklift

YBR Confined Space Communication

NIA Asbestos Awareness

YBR Personal Protective Equipment

NIA Drug Free Workplace

YBR General Company Safety Policies\*

NIA Vac Truck Safety & Operations

NIA Waterblast Safety & Operations

NIA Manlift

NIA Lead Abatement

NIA Inorganic Arsenic Awareness

### Site Specific Trainings:

NIA Alcoa- Contractor/Stand-down

NIA Charter Steel

NIA Reliant Energy

Other \_\_\_\_\_

YBR  Other Fall Protection

YBR  Other Fits-Testing

Other Monitoring Equipment

Other \_\_\_\_\_

\* I have received a copy of C&K Abridged Safety Policy Manual.

James B. Russell 4-7-10  
Employee Signature Date

John P. Gabriel 4-7-2010  
Instructor Signature Date

C&K INDUSTRIAL SERVICES, INC.

**Certificate of Completion**

*This certifies that*

***James B. Russell***

Has successfully completed the  
40 Hour HAZWOPER Course  
in accordance with 29 CFR 1910.120



Chuck Hawes

May 19, 2006

Date of Completion



## Certificate of Course Completion

**James Russell**

Student's Name

OSHA - 30 Hour Construction Industry Outreach Training Program

Course Title

**09/03/2009 15:10 CST**

Course Completion Date

Student's Signature

**30**

# of hours approved

**1321172**

Certificate Number

I hereby attest that I have completed the above named safety course  
in accordance with the ethical guidelines defined by, **Osha Pro's, Inc.**  
I acknowledge that I consumed all information and took all Pertinent  
quizzes and/or final tests.

**Osha Pro's, Inc.**  
4101 West Green Oaks Blvd., Suite # 305-267  
Arlington, TX, 76016  
Tel: 866-442-6742



PROFESSIONAL DEVELOPMENT SUPPORT CENTER  
HUNTSVILLE, ALABAMA

**CERTIFICATE**

*This is to certify that*

**James Russell**

*has completed the Corps of Engineers Training Course*

**CONSTRUCTION QUALITY MANAGEMENT FOR CONTRACTORS**

Given at Dayton, OH By CELRL-CD September 23, 2009  
Location Instructional District Date

*William Smith*  
Facilitator

THIS CERTIFICATE EXPIRES FIVE YEARS FROM DATE OF ISSUE

Sponsored by: *Associated General Contractors  
West Central Ohio Division*



*George S. Anderson*  
Chief, USAFCEB Professional Development Support Center

American  
Red Cross



This recognizes that  
**James Russell**  
has completed the requirements for  
CPR/AED - Adult

conducted by  
Greater Cleveland Chapter

Date Completed 4/22/2010

The American Red Cross recognizes this certificate  
as valid for 1 year(s) from completion date.

American  
Red Cross



This recognizes that  
**James Russell**  
has completed the requirements for  
Standard First Aid

conducted by  
Greater Cleveland Chapter

Date Completed 4/22/2010

The American Red Cross recognizes this certificate  
as valid for 3 year(s) from completion date.

www.RedCross.org

Instructor's Signature

Chapter

**Greater Cleveland Chapter**

Holder's Signature

Stock No. 653998 (Rev. 5/08)

www.RedCross.org

Instructor's Signature

Chapter

**Greater Cleveland Chapter**

Holder's Signature

Stock No. 653998 (Rev. 5/08)

# TRAINING ACKNOWLEDGMENT

TYPE OF TRAINING:      *New Hire*       *Hazwhoper*       *Refresher*

Other *Sub-Contractor Training and/or Basic Contractor*

Total Hours Trained     8    

I *Delmar Hines* acknowledge that I have received instruction and understand the following subjects (initial all that apply):

### C&K Safety Training Programs:

- Hazard Communication
- Lockout/Tagout
- Confined Space
- Fire Extinguisher/Emergency Action
- Respiratory Protection
- Forklift
- Confined Space Communication
- Asbestos Awareness

- Personal Protective Equipment
- Drug Free Workplace
- General Company Safety Policies\*
- Vac Truck Safety & Operations
- Waterblast Safety & Operations
- Manlift
- Lead Abatement
- Inorganic Arsenic Awareness

### Site Specific Trainings:

- Alcoa- Contractor/Stand-down
- Charter Steel
- Other *Fall Protection*
- Other *Monitoring Equipment*

- Reliant Energy
- Other \_\_\_\_\_
- Other *Fits-Testing*
- Other \_\_\_\_\_

\* I have received a copy of C&K Abridged Safety Policy Manual.

*Delmar Hines*  
Employee Signature      Date 4-7-10

*John P. Gabriel*      Date 4-7-2010  
Instructor Signature

# CERTIFICATE OF TRAINING

## *Ohio Laborers' Training and Upgrading Trust Fund*

25721 Coshocton Rd., Howard, Ohio 43028

(740) 599-7915



***Delmar S Hartness***

*This is to certify that \_\_\_\_\_ has successfully completed*

# SAFETY TRAINING PASSPORT

A 16-hour OSHA Awareness Program which includes awareness training in the following topics:

- Personal Protective Equipment
- Equipment De-Energizing/Lockout
- Rigging and Material Handling
- Power Operated Tools
- Confined Space Hazards
- General Safety
- Asbestos/Lead
- Electrical Hazards
- Traffic Control
- Manlifts
- Fire Prevention
- Mobile Cranes
- Welding/Cutting
- Excavations
- Concrete Masonry
- Housekeeping

And Comprehensive Training In:

- Hazard Communication
- Fall Protection

\* The STP Program includes requirements for certification of the OSHA 500 Safety 10-Hour Outreach Program.

2/10/07

**EMPLOYEE FILE**

*Paul J. Warden*

XXX-XX-6663

Date

*Delmar S Hartness*  
Executive Director

Social Security Number

# TRAINING ACKNOWLEDGMENT

TYPE OF TRAINING:

New Hire

Hazwoper

Refresher

Other Sub-Contractor Training and/or Basic Contractor

Total Hours Trained 8

I Don Casanova acknowledge that I have received instruction and understand the following subjects (initial all that apply):

### C&K Safety Training Programs:

- OPC Hazard Communication
- OPC Lockout/Tagout
- OPC Confined Space
- OPC Fire Extinguisher/Emergency Action
- OPC Respiratory Protection
- NIA Forklift
- OPC Confined Space Communication
- NIA Asbestos Awareness

- OPC Personal Protective Equipment
- NIA Drug Free Workplace
- OPC General Company Safety Policies\*
- NIA Vac Truck Safety & Operations
- NIA Waterblast Safety & Operations
- NIA Manlift
- NIA Lead Abatement
- NIA Inorganic Arsenic Awareness

### Site Specific Trainings:

- NIA Alcoa- Contractor/Stand-down
- NIA Charter Steel

- NIA Reliant Energy
- Other \_\_\_\_\_

- OPC  Other Fall Protection
- Other Monitoring Equipment

- OPC  Other Fits-Testing
- Other \_\_\_\_\_

\* I have received a copy of C&K Abridged Safety Policy Manual.

[Signature] 4-7-2010  
Employee Signature Date

[Signature] 4-7-2010  
Instructor Signature Date

**APPENDIX C PPE CHECKLIST, MISC. FORMS**

## PPE CHECKLIST

All personnel shall perform an inspection of their PPW prior to performing activities on-site. The following items shall be checked.

- \_\_\_\_\_ Determine that the clothing material is that which has been designated for this project.
- \_\_\_\_\_ Visually inspect clothing for: imperfect seams, non-uniform coatings, tears, malfunctioning closures.
- \_\_\_\_\_ Hold up to light and check for pinholes.
- \_\_\_\_\_ Flex product and make observations for cracks or other signs of shelf deterioration.
- \_\_\_\_\_ If the product has been used before, inspect inside and out for signs of chemical attack, discoloration, swelling, or stiffness.
- \_\_\_\_\_ Visually inspect gloves for imperfect seams, tears, and non-uniform coating.
- \_\_\_\_\_ Pressurize gloves with air, listen for pinhole leaks.
- \_\_\_\_\_ Check hardhat for cracks or other signs of stress
- \_\_\_\_\_ Check the suspension of your hardhat. Look for loose or torn cradle straps, loose rivets, broken sewing lines or other defects.
- \_\_\_\_\_ If using earmuffs, check the muffs for cracks, cuts or missing gaskets.
- \_\_\_\_\_ If using earplugs, check the plugs for cracks and or cuts.
- \_\_\_\_\_ Check safety glasses for scratches
- \_\_\_\_\_ If using a respirator, check for holes in filters.
- \_\_\_\_\_ If using a respirator, check or crack or scratches on the face piece
- \_\_\_\_\_ If using a respirator, check for loss of elasticity or tears in straps.
- \_\_\_\_\_ If using a respirator, check for general cleanliness.
- \_\_\_\_\_ If using an air purifying respirator, check for proper fit by performing the positive-pressure and negative pressure tests

## **SAFETY EQUIPMENT CHECKLIST**

- \_\_\_\_\_ Fire Extinguisher (in office trailer)
- \_\_\_\_\_ Fire Extinguisher (on heavy equipment)
- \_\_\_\_\_ 16-unit first aid kit
- \_\_\_\_\_ Eye wash bottle
- \_\_\_\_\_ Cellular phone

## VISITOR LOG

Everyone entering the exclusion zone and the contamination reduction zone shall meet the training and medical requirements of 29 CFR 1910.120. Visitors not meeting these requirements are only allowed in the support/clean zone. All visitors to the project site are required to adhere to the Site Specific Health and Safety Plan.

### Compliance Agreement

**I have read and understand this Site Specific Health and Safety Plan. I will comply with the provisions contained herein.**

**Project Site:** \_\_\_\_\_

Name (Printed)

Signature

Date

\_\_\_\_\_

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**DAILY SAFETY MEETING**

**Project:** \_\_\_\_\_

**Date:** \_\_\_\_\_

Discussion of work conditions and task expected to be completed today:

Topics to be discussed: (list below)

Task related to Safety Topic (list below)

Comments from Project Manager or SSHO concerning the meeting:

Notes concerning any safety related incidents that occurred:

**Safety Meeting Attendance:**

**I have attended the daily safety meeting. I have been briefed on today's job tasks and fully understand the safety issues associated with each task.**

Name (Printed)

Signature

Date

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**APPENDIX D    MEDICAL DATA SHEET/MEDICAL MONITORING**

## MEDICAL DATA SHEET

This medical data sheet is to be completed by all on-site personnel and will be kept on-site during field operations. This data sheet shall accompany any personnel who need medical assistance.

**Project:** \_\_\_\_\_

**Name:** \_\_\_\_\_ **Home Phone:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Name and telephone number of Person to notify in case of an Emergency:**

\_\_\_\_\_

**Drug or other Allergies:** \_\_\_\_\_

\_\_\_\_\_

**Do you wear contact lenses:** \_\_\_\_\_ **Are you wearing contacts on this job?(if so, notify SSHO)** \_\_\_\_\_

**What medications are you presently taking?**

\_\_\_\_\_

\_\_\_\_\_

**Name, Address, and Phone Number of your Personal Physician:**

\_\_\_\_\_

\_\_\_\_\_

**Summary of the  
Medical Monitoring Program  
for TMG Services, Inc.**

TMG Services, Inc. requires employees to submit to routine medical examinations prior to job assignment, annually thereafter, and upon reassignment or termination of employment. McTech will provide information to the examining physician concerning the employee's job duties and anticipated exposures. The contents of the routine medical examination include the following:

Medical and work history

Pulmonary function test

Drug screen and breathe alcohol

Audiograms

Blood work/Urinalysis

EKG

A physician will examine personnel exposed to hazardous substances above the permissible exposure limits as soon, as is possible. The examining physician will determine what actions are necessary, including follow-up examinations or consultations.

Concentra Medical Centers (Ohio)

4660 Hinckley Industrial Pkwy CLEVELAND, OH 44109  
Phone: (216) 749-2730 Fax: (216) 749-2735

PLHCP<sup>1</sup> WRITTEN STATEMENT for RESPIRATORS (EMPLOYEE)

Service Date: 04/06/2010

Employee Name: Cashbaugh, Daniel P.

Employee SSN: XXX-XX-1919

Address: 1551 Price Rd.

YOUNGSTOWN OH 44509

Employer: TMG Services Inc

You were evaluated in this office of your medical status related to your physical capability to wear a respirator. (Check  one that applies)

- There were no abnormal findings that would hamper your ability to perform your job duties while wearing a respirator.
- The abnormal findings listed below were not related to wearing a respirator but should be reported to your personal physician for further evaluation.

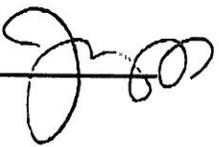
Based upon the results of this evaluation it is my opinion that you: (Check  ALL that apply)

- ARE qualified to wear a respirator.
- Have the following restrictions concerning respirator usage: NO SCBA
- ARE NOT qualified to wear a respirator.
- Require further testing by your private physician who must submit a written report of his/her findings to Concentra Medical Centers (Ohio) so that a final decision on your ability to wear a respirator can be made.
- Must wear Special prescription eye-wear needed to accommodate respirator.
- Must use an Eye glass conversion kit.
- May need to shave Facial hair to assure tight seal on certain face masks.
- Need to stop smoking.

(Check  ALL that apply)

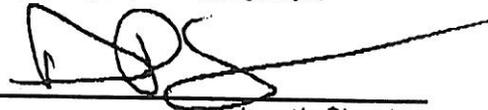
- The above individual HAS been examined for respirator fitness in accordance with 29 CFR 1910.134. This limited evaluation is specific to respirator use only. Employees should be instructed to report any difficulties in using respirators or change of any physical status to their supervisor or physician. This evaluation included the Respiratory Questionnaire outlined in 29 CFR 1910.134.
- The above individual HAS NOT been examined by me for respirator fitness. The employee's medical evaluation consisted of a review of OSHA's Medical Evaluation Questionnaire in Appendix C Part A Section 2. In accordance with 29 CFR 1910.134, this limited evaluation is specific to respirator use only. Employees should be instructed to report any difficulties in using respirators or change of any physical status to their supervisor or physician. This evaluation included the Respiratory Questionnaire outlined in 29 CFR 1910.134.
- In accordance with specific OSHA requirements, I have informed the above named individual of the results of this evaluation and of any medical conditions resulting from exposures that may require further explanation or treatment. Where applicable, the above named individual has been informed of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos, lead and/or other chemical exposure(s).

*Respirators must be properly selected based on the containment and concentration levels to which the worker will be exposed. Failure to follow the use and fitting instruction and warnings for proper use contained on the respirator packaging and/or failure to wear the respirator during all times of exposure can reduce the respirator's effectiveness and result in sickness or death. Wearer must be trained in the proper care of any respirator. Refer to product literature and packaging for specific information regarding fit, use and/or limitations.*

PLHCP Signature 

PLHCP Name (printed)

<sup>1</sup>Physician or other Licensed Healthcare Professional

Employee's Signature   
4/6/2011  
Expiration Date

To be maintained in the employee's file with a copy to the employee

Concentra Medical Centers (Ohio)

4660 Hinckley Industrial Pkwy CLEVELAND, OH 44109  
Phone: (216) 749-2730 Fax: (216) 749-2736

PLHCP<sup>1</sup> WRITTEN STATEMENT for RESPIRATORS (EMPLOYEE)

Service Date: 04/06/2010

Employee Name: \_\_\_\_\_

Employee SSN: XXX-XX-6578

Russell, James B.

Address: \_\_\_\_\_

2901 Hampton

SHAKER HEIGHTS OH 44120

Employer: TMG Services Inc

You were evaluated in this office of your medical status related to your physical capability to wear a respirator. (Check  one that applies)

- There were no abnormal findings that would hamper your ability to perform your job duties while wearing a respirator.
- The abnormal findings listed below were not related to wearing a respirator but should be reported to your personal physician for further evaluation.

Based upon the results of this evaluation it is my opinion that you: (Check  ALL that apply)

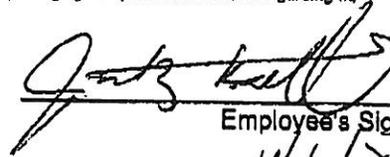
- ARE qualified to wear a respirator.
- Have the following restrictions concerning respirator usage: \_\_\_\_\_
- ARE NOT qualified to wear a respirator.
- Require further testing by your private physician who must submit a written report of his/her findings to Concentra Medical Centers (Ohio) so that a final decision on your ability to wear a respirator can be made.
- Must wear Special prescription eye-wear needed to accommodate respirator.
- Must use an Eye glass conversion kit.
- May need to shave Facial hair to assure tight seal on certain face masks.
- Need to stop smoking.

(Check  ALL that apply)

- The above individual HAS been examined for respirator fitness in accordance with 29 CFR 1910.134. This limited evaluation is specific to respirator use only. Employees should be instructed to report any difficulties in using respirators or change of any physical status to their supervisor or physician. This evaluation included the Respiratory Questionnaire outlined in 29 CFR 1910.134.
- The above individual HAS NOT been examined by me for respirator fitness. The employee's medical evaluation consisted of a review of OSHA's Medical Evaluation Questionnaire in Appendix C Part A Section 2. In accordance with 29 CFR 1910.134, this limited evaluation is specific to respirator use only. Employees should be instructed to report any difficulties in using respirators or change of any physical status to their supervisor or physician. This evaluation included the Respiratory Questionnaire outlined in 29 CFR 1910.134.
- In accordance with specific OSHA requirements, I have informed the above named individual of the results of this evaluation and of any medical conditions resulting from exposures that may require further explanation or treatment. Where applicable, the above named individual has been informed of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos, lead and/or other chemical exposure(s).

*Respirators must be properly selected based on the containment and concentration levels to which the worker will be exposed. Failure to follow the use and fitting instruction and warnings for proper use contained on the respirator packaging and/or failure to wear the respirator during all times of exposure can reduce the respirator's effectiveness and result in sickness or death. Wearer must be trained in the proper care of any respirator. Refer to product literature and packaging for specific information regarding fit, use and/or limitations.*

PLHCP Signature 

Employee's Signature 

PLHCP Name (printed) \_\_\_\_\_

4/6/2011  
Expiration Date

<sup>1</sup>Physician or other Licensed Healthcare Professional

To be maintained in the employee's file with a copy to the employee

**Concentra Medical Centers (Ohio)**

4660 Hinckley Industrial Pkwy CLEVELAND, OH 44109  
Phone: (216) 749-2730 Fax: (216) 749-2735

**PLHCP<sup>1</sup> WRITTEN STATEMENT for RESPIRATORS (EMPLOYEE)**

Service Date: 03/23/2010

Employee Name: Hartness, Delmar S.

Employee SSN: XXX-XX-6663

Address:  
23561 Spague rd  
apt. 5  
COLUMBIA STATION OF 44028

Employer: TMG Services Inc

**You were evaluated in this office of your medical status related to your physical capability to wear a respirator. (Check  one that applies)**

- There were no abnormal findings that would hamper your ability to perform your job duties while wearing a respirator.
- The abnormal findings listed below were not related to wearing a respirator but should be reported to your personal physician for further evaluation.

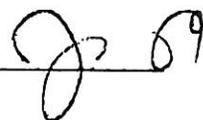
**Based upon the results of this evaluation it is my opinion that you: (Check  ALL that apply)**

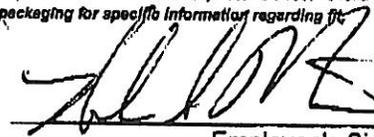
- ARE qualified to wear a respirator.
- Have the following restrictions concerning respirator usage: \_\_\_\_\_
- ARE NOT qualified to wear a respirator.
- Require further testing by your private physician who must submit a written report of his/her findings to Concentra Medical Centers (Ohio) so that a final decision on your ability to wear a respirator can be made.
- Must wear Special prescription eye-wear needed to accommodate respirator.
- Must use an Eye glass conversion kit.
- May need to shave Facial hair to assure tight seal on certain face masks.
- Need to stop smoking.

**(Check  ALL that apply)**

- The above individual HAS been examined for respirator fitness in accordance with 29 CFR 1910.134. This limited evaluation is specific to respirator use only. Employees should be instructed to report any difficulties in using respirators or change of any physical status to their supervisor or physician. This evaluation included the Respiratory Questionnaire outlined in 29 CFR 1910.134.
- The above individual HAS NOT been examined by me for respirator fitness. The employee's medical evaluation consisted of a review of OSHA's Medical Evaluation Questionnaire in Appendix C Part A Section 2. In accordance with 29 CFR 1910.134, this limited evaluation is specific to respirator use only. Employees should be instructed to report any difficulties in using respirators or change of any physical status to their supervisor or physician. This evaluation included the Respiratory Questionnaire outlined in 29 CFR 1910.134.
- In accordance with specific OSHA requirements, I have informed the above named individual of the results of this evaluation and of any medical conditions resulting from exposures that may require further explanation or treatment. Where applicable, the above named individual has been informed of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos, lead and/or other chemical exposure(s).

*Respirators must be properly selected based on the containment and concentration levels to which the worker will be exposed. Failure to follow the use and fitting instruction and warnings for proper use contained on the respirator packaging and/or failure to wear the respirator during all times of exposure can reduce the respirator's effectiveness and result in sickness or death. Wearer must be trained in the proper care of any respirator. Refer to product literature and packaging for specific information regarding fit, use and/or limitations.*

PLHCP Signature 

  
Employee's Signature  
3/23/2011  
Expiration Date

PLHCP Name (printed) \_\_\_\_\_

<sup>1</sup>Physician or other Licensed Healthcare Professional

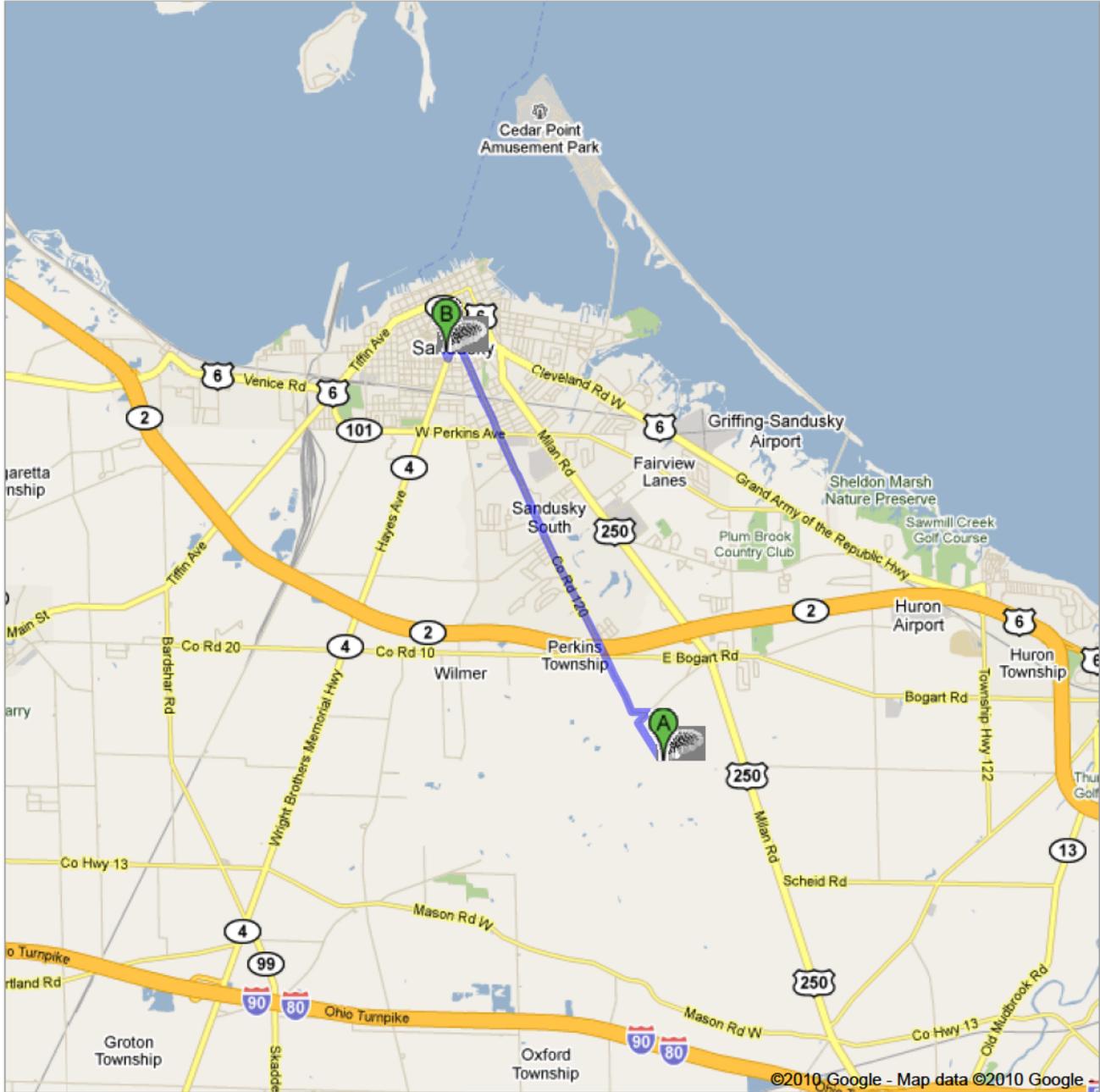
To be maintained in the employee's file with a copy to the employee

**APPENDIX E    ROUTE TO NEAREST MEDICAL FACILITY**



**Directions to Firelands Community Hospital**  
1101 Decatur Street, Sandusky, OH 44870-3335 -  
(800) 342-1177  
5.9 mi – about 14 mins

**Save trees. Go green!**  
Download Google Maps on your phone at [google.com/gmm](http://google.com/gmm)



6100 Columbus Ave, Sandusky, OH 44870

1. Head northwest on **Columbus Ave** toward **Maintenance Rd** go 0.5 mi  
About 2 mins total 0.5 mi



2. Turn right at **Taylor Rd** go 0.2 mi  
total 0.7 mi



3. Sharp left at **Clark Rd** go 0.2 mi  
total 0.8 mi



4. **Clark Rd** turns slightly right and becomes **Columbus Ave/Co Rd 120** go 4.7 mi  
Continue to follow Columbus Ave total 5.6 mi  
About 10 mins



5. Turn left at **Hayes Ave** go 0.3 mi  
About 1 min total 5.8 mi



6. Turn right at **Decatur St** go 446 ft  
Destination will be on the left total 5.9 mi



**Firelands Community Hospital**  
1101 Decatur Street, Sandusky, OH 44870-3335 - (800) 342-1177

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2010 Google

Directions weren't right? Please find your route on [maps.google.com](http://maps.google.com) and click "Report a problem" at the bottom left.

**APPENDIX F      QUALITY CONTROL DOCUMENTATION**

# Quality Control Certification

## Draft Site-Safety and Health Plan

### Remedial Action Construction Remediation of Contaminated Soil and Sediment Plum Brook Ordnance Works – TNT Area C Sandusky, Ohio

Contract No. W91237-10-C-0002

<u>Assignment</u>	<u>Name</u>	<u>Signature</u>	<u>Date</u>
<b><u>Senior Review</u></b>	Kimberlie Bumgardner		<u>5.6.10</u>
<b><u>Peer Review</u></b>	Richard Armstrong		<u>5/3/10</u>

**Comments on**  
**Draft**  
**Site-Safety and Health Plan**  
  
**Remedial Action Construction**  
**Remediation of Contaminated Soil and Sediment**  
**Plum Brook Ordnance Works – TNT Area C**  
**Sandusky, Ohio**

**Contract No. W91237-10-C-0002**

The following comments were provided by TMG's Independent Quality Control Team. All comments resulting from this review have been resolved and/or incorporated.

TMG IQCT Comment: Section 1.2, fifth sentence, capitalize "site safety and health officer".

TMG Response: Concur, "Site Safety and Health Officer" has been capitalized as suggested.

TMG IQCT Comment: Section 2.3, fourth sentence, "surface" should read as "surface soils".

TMG Response: Concur, change has been made as suggested.

TMG IQCT Comment: Section 4.1.J, Remove "Corporate Level" from description. Mr. Ford will provide program oversight, but is not responsible for the safety and health program at the corporate level.

TMG Response: Concur, change has been made as suggested.

TMG IQCT Comment: Section 4.1.K, Mr. Dubberts name is spelled incorrectly.

TMG Response: Concur, corrected "Dobbert" misspelling.

TMG IQCT Comment: Section 8.7, Identify potential ignition sources.

TMG Response: Concur, the potential ignition source is hot equipment exhaust. This has been listed in Section 8.7. Smoking will not be permitted in the project area.

**Appendix B      USACE Required Forms**

**SAFETY INSPECTION CHECKLIST FOR CRAWLER TRACTORS, DOZERS, SCRAPERS, MOTOR GRADERS, BACKHOES,  
HEAVY HAULAGE UNITS**

U.S. Army Engineers, Huntington District

**INSTRUCTIONS**

**SECTION 1 -- GENERAL INFORMATION:**

- a. *Date* : enter month, day and year of Safety Inspection.
- b. *Owner/User* : Enter designated ownership of equipment (Corps leased or Contractor by name).
- c. *Contract Number* : Contractors enter the respective contract number.
- d. *Type of Equipment* : Enter *Ford 515 Backhoe , ID 450 Bulldozer , etc.*
- e. *Number* : Enter equipment number which Contractor has issued on large scale operations.
- f. *Inspected By* : Enter signature and of Corps or Contractor Inspector (Corps Inspector may be a maintenance leader, maintenance mechanic or operator and a Contractor Inspector may be a mechanic, operator or service person)
- g. *Reviewed By* : Enter signature and title of Corps or Contractor reviewer (Corps reviewer may be the mechanic, shift leader, forman or superintendent). Before a signature and title of Corps or Contractor reviewer is entered, the checklist must be reviewed by the next level of direct supervision and the equipment spot checked unannounced to insure inspections are performed.

**SECTION 2 -- SAFETY INSPECTION CHECKLIST: Check YES, NO or N/A if question or statement does not apply.**

**SECTION 3 -- RECEIPT OF ACKNOWLEDGEMENT:** Sign, provide title and date checklist. If Corps personnel was the inspector and reviewer, a Corps manager, supervisor or responsible employee will sign the receipt of acknowledgement. If a Contractor personnel was the inspector and reviewer the checklist becomes a part of the official project title and a copy is furnished to the Contracting Officer Representative (COR). The COR will then sign the receipt of acknowledgement. The COR may request a copy of the checklist at any time. The COR or a representative may perform an unannounced spot check inspection to ensure compliance of safety inspection requirements. To determine if inspector and reviewer are Corps or Contractor personnel, see SECTION 1, Items f. and g.

**SECTION 1 GENERAL INFORMATION**

a. Date	b. Owner/User	c. Contract Number
d. Type of Equipment		e. Number
f. Inspected by <i>(signature)</i> (title)		g. Reviewed by: <i>(signature)</i> (title)

**SECTION 2 SAFETY INSPECTION CHECKLIST**

NOTE: Reference USACE Manual EM 385-1-1, April 1981, as revised. Equipment must be in full compliance with checklist and contract requirements.

1. Is protection (grills, screen, canopies) provided to shield the operator from falling or flying objects?			
2. Are adequate rollover protection and seat belts provided?			
3. Is a safe means of 3 point contact access to cab or operator's compartment provided -- steps, grab bars, non-slip surfaces, etc.?			
4. Are required head and tail lights, flashing lights and slow moving vehicle signs provided and properly positioned?			
5. Is the parking and service brake system capable of holding the equipment fully loaded on the grade of operation?			
6. Does the unit have an emergency brake system?			

<b>SECTION 2, CONT.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
7. Does the emergency brake systems work automatically when regular brakes fail?			
8. Can the emergency brake system be activated from the cab or operator's position?			
9. Are fuel tanks located so that spills or overflows do not run on the engine or electrical systems?			
10. Is the reverse alarm signal operable?			
11. Are cabs equipped with distortion free, shatterproof or safety glass?			
12. Are exhausts located so that discharges do not endanger or obstruct the view of the operator?			
13. Are moving parts, shafts, pulleys and belts adequately guarded?			
14. Are any of the units structured members bent, cracked or otherwise showing signs of physical damage?			
15. Are track rails, grousers, truck rollers, idlers and sprockets in good condition free from excessive wear, cracks, loose bolts or pins?			
16. Are hydraulic lines and cylinders adequately guarded and free of physical damage?			
17. Are tires on tire-mounted equipment free from excessive wear, breaks and of proper and equal size?			
18. Is the manufacturer recommended tire inflation pressure maintained?			
19. Are all towing devices properly mounted and in good condition?			
20. Does the equipment have at least one dry chemical or CO2 fire extinguisher with minimal rating of 5 b:C available? (Corps owned or leased equipment must have extinguisher installed on the equipment)			
21. Is a 16 unit (minimum) first aid kit readily available in the equipment or on the job site? Corps owned or leased equipment must have first aid kits installed.			
22. Are all instruments, ammeters, pressure gauges, temperature gauges, tachometers or other critical systems operable and in good condition?			
23. Are all operating levers, pedals, etc., in good operating condition?			
24. Do all modifications, replacement parts and/or repairs to the equipment maintain the same safety factor as originally designed and manufactured?			
25. Is the equipment equipped with outriggers or leveling devices and are they in operable condition?			
26. Is the equipment operations manual available to the operator?			

27. Remarks

**SECTION 3 RECEIPT OF ACKNOWLEDGMENT**

---

Reciept Acknowledged by: *(Signature)* *(Title)* *(Date)*



<b>11. CAUSAL FACTOR(S) (Read Instruction Before Completing)</b>					
<p>a. (Explain YES answers in item 13)</p> <p>DESIGN: Was design of facility, workplace or equipment a factor? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>INSPECTION/MAINTENANCE: Were inspection &amp; maintenance procedures a factor? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>PERSON'S PHYSICAL CONDITION: In your opinion, was the physical condition of the person a factor? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>OPERATING PROCEDURES: Were operating procedures a factor? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>JOB PRACTICES: Were any job safety/health practices not followed when the accident occurred? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>HUMAN FACTORS: Did any human factors such as, size or strength of person, etc., contribute to accident? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>ENVIRONMENTAL FACTORS: Did heat, cold, dust, sun, glare, etc., contribute to the accident? <input type="checkbox"/> YES <input type="checkbox"/> NO</p>			<p>a. (CONTINUED)</p> <p>CHEMICAL AND PHYSICAL AGENT FACTORS: Did exposure to chemical agents, such as dust, fumes, mists, vapors or physical agents, such as, noise, radiation, etc., contribute to accident? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>OFFICE FACTORS: Did office setting such as, lifting office furniture, carrying, stooping, etc., contribute to the accident? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>SUPPORT FACTORS: Were inappropriate tools/resources provided to properly perform the activity/task? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>PERSONAL PROTECTIVE EQUIPMENT: Did the improper selection, use or maintenance of personal protective equipment contribute to the accident? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>DRUGS/ALCOHOL: In your opinion, was drugs or alcohol a factor to the accident? <input type="checkbox"/> YES <input type="checkbox"/> NO</p>		
			<p>b. WAS A WRITTEN JOB/ACTIVITY HAZARD ANALYSIS COMPLETED FOR TASK BEING PERFORMED AT TIME OF ACCIDENT?</p> <p><input type="checkbox"/> YES (If yes, attach a copy.) <input type="checkbox"/> NO</p>		

<b>12. TRAINING</b>		
<p>a. WAS PERSON TRAINED TO PERFORM ACTIVITY/TASK?</p> <p><input type="checkbox"/> YES <input type="checkbox"/> NO</p>	<p>b. TYPE OF TRAINING.</p> <p><input type="checkbox"/> CLASSROOM <input type="checkbox"/> ON JOB</p>	<p>c. DATE OF MOST RECENT FORMAL TRAINING.</p> <p>(Month) (Day) (Year)</p>

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

<b>14. ACTION(S) TAKEN, ANTICIPATED OR RECOMMENDED TO ELIMINATE CAUSE(S).</b>	
DESCRIBE FULLY:	

<b>15. DATES FOR ACTIONS IDENTIFIED IN BLOCK 14.</b>					
a. BEGINNING (Month/Day/Year)			b. ANTICIPATED COMPLETION (Month/Day/Year)		
c. SIGNATURE AND TITLE OF SUPERVISOR COMPLETING REPORT		d. DATE (Mo/Da/Yr)	e. ORGANIZATION IDENTIFIER (Div, Br, Sect)	f. OFFICE SYMBOL	
CORPS _____					
CONTRACTOR _____					

<b>16. MANAGEMENT REVIEW (1st)</b>		
a. <input type="checkbox"/> CONCUR    b. <input type="checkbox"/> NON CONCUR    c. COMMENTS		
SIGNATURE	TITLE	DATE

<b>17. MANAGEMENT REVIEW (2nd - Chief Operations, Construction, Engineering, etc.)</b>		
a. <input type="checkbox"/> CONCUR    b. <input type="checkbox"/> NON CONCUR    c. COMMENTS		
SIGNATURE	TITLE	DATE

<b>18. SAFETY AND OCCUPATIONAL HEALTH OFFICE REVIEW</b>		
a. <input type="checkbox"/> CONCUR    b. <input type="checkbox"/> NON CONCUR    c. ADDITIONAL ACTIONS/COMMENTS		
SIGNATURE	TITLE	DATE

<b>19. COMMAND APPROVAL</b>	
COMMENTS	
COMMANDER SIGNATURE	DATE

**10. ACCIDENT DESCRIPTION (Continuation)**

**13a. DIRECT CAUSE (Continuation)**

13b.

**INDIRECT CAUSES** *(Continuation)*

14.

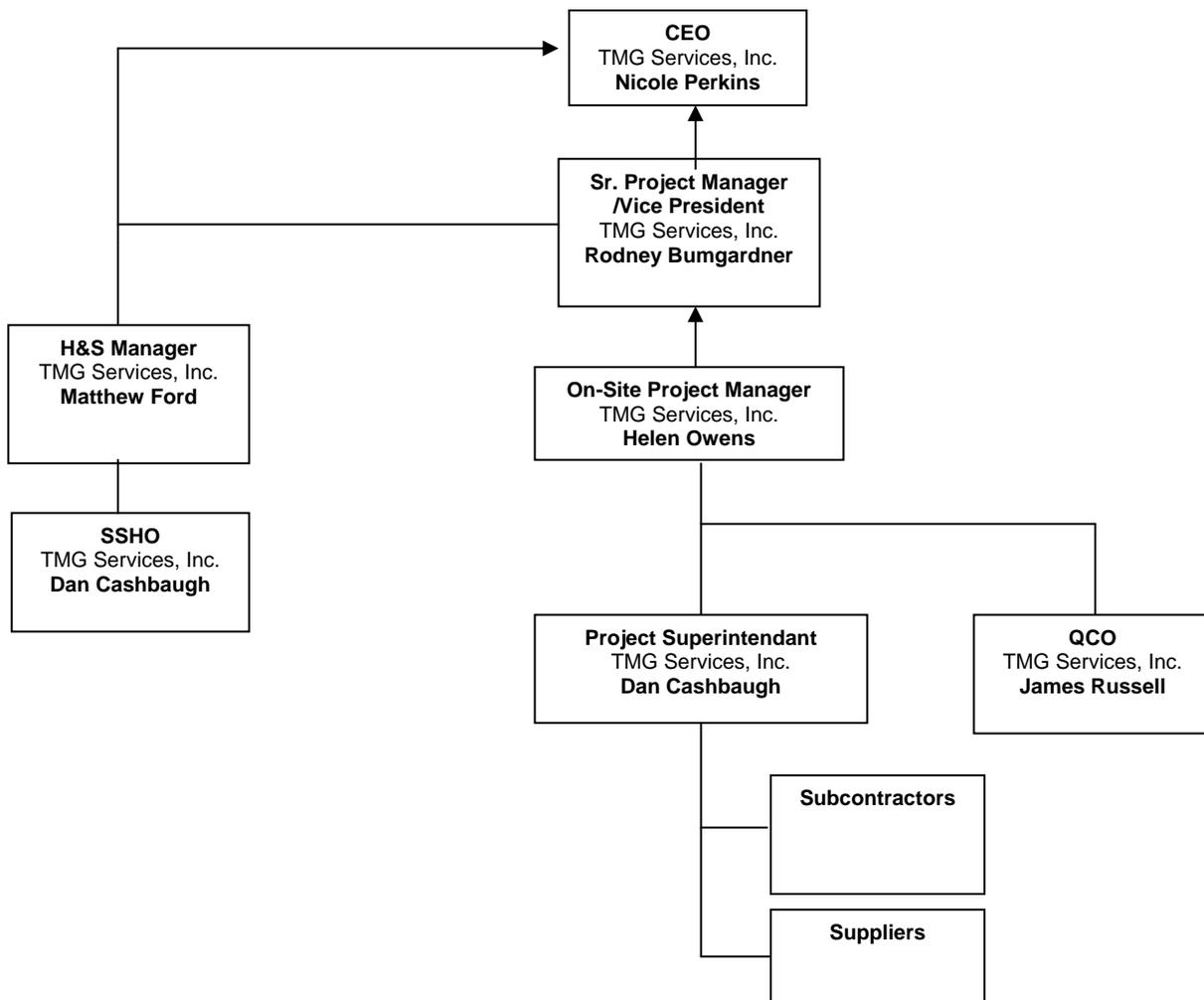
**ACTION(S) TAKEN, ANTICIPATED, OR RECOMMENDED TO ELIMINATE CAUSE(S)** *(Continuation)*

**Appendix C      TMG Organizational Chart**



TMG Organizational Chart  
Remedial Action Construction  
Remediation of Contaminated Soil and Sediment  
Plum Brook Ordnance Works – TNT Area C  
Sandusky, Ohio

Contract No. W91237-10-C-0002



**Appendix D      TMG Safety Manual**



[www.tmgservicesusa.net](http://www.tmgservicesusa.net)

# SAFETY MANUAL

Corporate Safety Director:

Santina Milczewski  
Phone: (216) 391-7700

Revised June 2009

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## **APPENDICES**

### **Appendix A           Checklists, Forms, and Logs**

# SAFETY MANUAL

## 1.0 INTRODUCTION

The employees of TMG Services, Inc. (TMG) are our most valuable assets. We consider accident prevention an integral and important part of our efficient operation. It is our goal to build and foster a corporate safety culture that will facilitate a safe and healthy workplace. This Safety Manual is the resource training and work guide that is used by all company personnel to comply with all Occupational Safety and Health Administration (OSHA) and Company standards of safety. TMG ensures adherence to current occupational health and safety laws by providing the best safe work practices and specialized training to company employees. It is the policy of this company to maintain a comprehensive Occupational Health and Safety Management Program that will reduce and keep to a minimum, manpower and monetary losses resulting from accidental events, or events precipitated by adverse environmental or occupational factors. TMG places its Safety Manual goals at an equal level with those of productivity, quality and cost controls, with the understanding that improved safety performance is related directly to improved cost and employee performance.

### 1.1 Statement of Policy

Safety will be given primary importance in planning and operating all Company activities in order to protect our employees against job related injuries and occupational disease.

To carry out this policy, TMG will:

- Maintain safe and healthful working conditions to the best of its ability.
- Furnish the best available mechanical safeguards and personal protective equipment, where in the Company's judgment it is mandatory, required, or voluntarily requested.
- Maintain an active and aggressive program in which all members of management and supervision will work toward the promotion of safety awareness among our employees.
- Provide adequate first aid equipment and fire extinguishers to insure emergency action as needed, and provide a method of communication to secure medical assistance, if required.
- Insist that all employees observe established safety regulations and practices and use the personal protective equipment provided by TMG.
- Assist each employee in attaining "Safety Training Passport" trade specific certification that includes OSHA 10-Hour, Comprehensive Fall Protection, Confined Space, and Haz-Com training as it applies to the job responsibilities.



- Implement a fairly managed and equally applied Drug Free Workplace Program (DFWP) for all employees and provide an Employee Assistance Program (EAP) for those who need treatment.
- Insist that all employees acknowledge receipt of the three-part Safety Plan that includes the General Safety Rules, Drug and Alcohol Policy, and the Haz-Com Right to Know Program.
- Provide an “Open Door” to listen to each employee’s concerns and valued opinions.

## **1.2 Applicability**

This Safety Manual is applicable to all TMG employees and operations. It is the responsibility of all TMG personnel to be familiar with and to implement the requirements of this Safety Manual.

## **1.3 Objectives**

The primary objectives of TMG are to provide for a continuous, comprehensive effort that will create and maintain safe and healthful conditions for employees; develop in each employee a desire and determination to work and live in a manner that will keep him/her and others free of injury and illness, both on and off the job. These objectives are based on the concept that safety and health is the individual responsibility of everyone, management and employees alike.

### **Specific objectives are:**

- Direct each manager to use maximum initiative in communication, training, motivation and monitoring techniques to ensure that every precaution is taken to prevent accidents.
- Provide system of communication between workmen, supervisory personnel and management that will effectively permit the exchange of information with goal attainment being zero incidents and 100% safety compliance.
- Provide a means of accountability that will permit effective evaluation of our safety performance.
- Provide safety orientation and on-going training at all company levels.
- Reduce accident and injury losses by implementing a well-planned system of accident prevention controls at all locations.



## **2.0 PROGRAM MANAGEMENT**

### **2.1 Management Responsibilities**

Accident prevention is a primary responsibility of all levels of management and employees. Each manager is directed to use maximum initiative in communicating, training, motivation, and monitoring techniques to ensure that every reasonable precaution is taken to prevent accidents.

Management at all operational levels are to ensure that a continuously improving safety and health process is established and functioning properly. Through the utilization of best safe work practice, innovative safety management, and development of people's knowledge and skills, a consistently applied and cost effective safety, health, and environmental process shall be implemented. Managers will ensure that:

- TMG's Safety Philosophy and Safety Culture is established, communicated, and understood by all employees on project sites and at all offices.
- Company safety performance goals and objectives are communicated, tracked, and visibly displayed at all TMG locations.
- A progressive accountability and disciplinary process is established and utilized at all TMG locations.
- Regular lines of communications are established with all employees, supervisors, subcontractors, and clients.
- Necessary resources are available to ensure an ongoing safety training and education process.
- A Site-Specific Accident Prevention Plan (APP) is in place prior to the inception of work on construction or maintenance projects. A project alignment process shall be utilized to assist with the establishment of the APP.
- A competent safety representative, Site Safety and Health Officer (SSHO) is identified for each project and office location.
- Formal and frequent safety inspections are conducted at all office and project locations.
- All incidents/accidents are investigated in a timely manner. Incident/accident causes will be determined, and corrective measure will be applied immediately.
- All employees at all project and or office locations utilize best safe work practices.

- That subcontractors are selected utilizing safety performance as part of the decision making process. Subcontractors shall be expected to execute all work utilizing best safety work practices as identified by TMG.

### **2.1.1 Corporate Safety Communication**

To aid in the implementation and continuing maintenance of the policy, the following will be issued as required:

- Accident Prevention Standards that communicate objectives and establish guidelines and procedures necessary to maintain the Accident Prevention Program. Accident Prevention Standards are issued by the TMG Safety Director.
- Safety Bulletins contain current OSHA directives, company directives related to accident prevention, and other applicable safety regulations and guidelines that line managers and their employees should be aware of. The Safety Bulletin is issued by the Corporate Safety Department.
- Safety alerts and special bulletins depict actual accident occurrences that are issued to all company operations as a learning and accident prevention tool.

### **2.1.2 Supervisor Responsibilities**

#### **Supervisor's responsibilities:**

- Must possess a comprehensive knowledge of all accident prevention standards and safety rules pertaining to his/her job.
- Accept responsibility for compliance with the procedures required by TMG's Safety Manual and has signed and acknowledgment of the receipt of such manual.
- Explain all applicable safe practice rules and regulations to all employees under his/her direct supervision and ensure each employee understands the rules and regulations.
- Consistently enforce safety regulations and rules and maintain a zero tolerance for unsafe acts.
- Supervise the instruction and training of new employees either personally or through delegated experienced craftsmen until the new employee satisfactorily demonstrates his/her ability to perform his/her work in a safe and efficient manner and periodically monitor employee performance regarding safe work practices.
- Be responsible for housekeeping in his/her department and for the use and maintenance of all personal protective devices, equipment and safeguards.



- Promptly notify his/her direct supervisor and/or the safety representative concerning work areas where he/she believes protective devices are required or where potential hazards exist.
- Promptly report to his/her direct supervisor all cases of employees who, in their opinion, are not qualified for the work to which they have been assigned or who engage in unsafe practices.
- Perform routine safety inspection tours of his/her respective work area and ensure the timely correction of noted deficiencies.
- Attend and participate in all supervisors meeting.
- Conduct toolbox accident prevention meetings for all employees under his/her supervision by project procedures.
- Report immediately all accidents in which personal injury or property damage occurs.
- Assist in accident investigation and submit a report promptly on required forms.
- Periodically analyze work methods in detail for the purpose of ob simplification and for the establishment of safe work methods.
- Assist the Corporate Safety Department in the preparation of departmental or project safe practice rules.

## 2.2 Employee Responsibilities

TMG employee's have the responsibility to:

- Work safely to the best of their knowledge. TMG employees will be subject to disciplinary action by their supervisor for committing an unsafe act, which may include termination of employment. Taking chances or risks concerning safety is not tolerated!
- To immediately report unsafe conditions to their supervisor and/or safety advisor.
- Obey the TMG Safety Manual rules, regulations and safety instructions.
- Wear safety equipment properly.
- Take an interest in the safety of all crewmembers, especially helpers.



- Discuss any assignment that they feel is unsafe with their foreman. Discuss the issue with the next supervisor or the safety advisor up the chain of command (all the way to the project manager) until someone convinces the TMG employee that the assignment or work procedure is safe.

It is project management's responsibility to ensure that TMG craft employees are aware of their safety responsibilities.

## **2.3 Safety Task Assignments**

Safety Task Assignment (STA) is a basic procedure for establishing a safe method to perform a job. It involves showing or explaining to each employee the safety application that pertains to the job he or she is to do.

It is the responsibility of management down through foreman to give safety task assignments to all employees, either individually or in a group before they actually begin an assigned task. The STA may only require a few words, but in many cases it will require the actual demonstration of how the job can be done safely and educate employees on the hazards that may or will be encountered in any task.

Supervisors can eliminate potential problems by ensuring that every employee thoroughly understands every STA given to them on every job they are to perform.

All tasks can be reviewed for hazards/risks. A properly analyzed task will indicate what safety measures must be taken. STA instructions provide the needed safety measures to ensure each employee understands their job function, and can perform it safely.

Project management shall ensure that field superintendants and supervisors incorporate safety task assignments into their daily field responsibilities. Supervisors shall give safety task assignment instructions to employees prior to work assignments. STA instructions should be completed at the specific area where the task is being performed.

### **2.3.1 Site Safety and Health Officer**

The TMG Site Safety and Health Officer (SSHO) coordinates accident prevention as it applies to all areas of each project's safety and health program. The SSHO reports directly to the site manager and is not a part of the project's line of organization. With the exception of work performed within their office, they do not exercise direct operational control of any project work.

The SSHO shall monitor the safe work practices used by supervisors and employees to prevent safety violations. They have the authority to stop work and correct and instruct employees concerning the violation of safety rules and shall stop work in situations of imminent danger. Should the SSHO witness an unsafe work situation which requires application of the project's disciplinary program, they must bring this to the attention of the appropriate project supervisor, and the supervisor is responsible for carrying out the necessary corrective measures.



## 2.4 Physical Qualification of Employees

### 2.4.1 Off-Site Medical Treatment

Employees whose job-related injuries/illnesses require off-site medical treatment will be subject to the following standard policies:

- Upon arrival of project management, injured employee will be transported to an approved medical facility via a project vehicle, or emergency vehicle (ambulance). The employee will also remain on the payroll for the duration of the regular scheduled shift for the described injury/illness.
- In those cases, in which an injury or illness occurs on the job during the course of work, the employee(s) will be transported to the nearest approved medical facility. The medical facility should be notified by telephone (prior to the arrival of the emergency vehicle or company vehicle) so that necessary preparation can be made to properly receive and treat the injured or ill employee.
- Concerning re-treatment of injuries or illnesses, employees shall be scheduled for appointments with approved medical facilities by the SSHO, nurse, or other responsible company employee during regular scheduled work hours.
- All follow-up visits should be coordinated with the Safety Department. The employee may not return to work following any visit without presenting a completed Return to Work Notice to the Corporate Safety Department.

**Note: All non-work related injuries require a Return to Work Notice.**

Employees scheduled for return visits must keep their appointments until released by the physician. Assistance and support in terminating treatment should be provided by the Safety Department if the employee feels treatment is unnecessary and the treating physician is in agreement.

### 2.4.2 Modified Duty

Overtime will not be approved for employees working on modified duty unless the project's normal work schedule encompasses overtime, in which case the employee would work his/her normal shift.

**Note: The project shall provide the medical facility with a letter explaining the availability of modified work and a brief description of the job(s) available to the injured employee. Modified duty in the procedure relates only to job-related injury/illness.**



### 3.0 ACCIDENT REPORTING AND RECORDKEEPING

#### 3.1 Reporting Recordable Injuries/Illnesses

This procedure establishes a uniform method to report an employee occupational illness or injury that results in a recordable case classification. Each Company field project/office must report all occupational illnesses or injuries to the TMG Safety Director.

**Note: Any injury/illness that is classified as recordable requires the appropriate Company President, or their designee to address the incident as a part of their quarterly reviews. The report should summarize the causes of the accident and the corrective measures implemented to minimize the likelihood of recurrence. These reviews are designed to elevate management's accountability for accidents.**

All injuries/illnesses that are likely to result in a recordable case are to be immediately reported to the TMG Safety Director and the respective operating company President.

Primary Contributing Factor(s) are explained as follows:

- Execution. Was the work being done properly; that is, were the bolts on the flange being tightened by pushing or pulling on the wrench? Was a cheater being applied to get more torque?
- Knowledge. Did the employee have enough experience to know what and how to accomplish the task at hand?
- Mechanical. Was there a mechanical fault with the tool being used?
- Procedure. Did project procedure(s) cover the work being done?
- Human error. Improper work practice. Were unnecessary risks taken?
- Electrical. Was equipment properly locked and tagged? Was equipment fault-free?
- Other. Specify if the contributing factor does not fall within the other categories.

All reports of work-related injuries/illnesses must be accompanied by the *TMG Injury and Illness Report Form* and *OSHA's Form, 301, Injury or Illness Incident Report* that corresponds to the *OSHA's Form 300, Log of Work-Related Injuries and Illnesses*. Refer to Appendix A of this Safety Manual for a copy the *TMG Injury and Illness Report Form* and *OSHA's Forms for Reporting Work-Related Injuries and Illnesses* including *OSHA's Form, 301, Injury or Illness Incident Report* and the *OSHA's Form 300, Log of Work-Related Injuries and Illnesses*.

Non-recordable first aid treatment administered by a company medic or other authorized employee need not be recorded or reported on the attached forms.



## **3.2 Employee Hospitalization/Fatality Reporting**

This procedure outlines the steps to be followed in the event of a serious accident or disaster at a TMG project or office facility involving a fatality and /or hospitalization of an employee.

### **3.2.1 Internal Notification**

Serious accidents involving a death and /or the hospitalization of three or more employees at an office facility or project site must be reported immediately to the Operating Company President, the TMG Safety Director and the TMG CEO/President. Details of the incident must be explained at the time, followed by a written report to the TMG Safety Director and the TMG CEO/President.)

### **3.2.2 External Notification**

Reference OSHA Standard 29 CFR 1904.8 or applicable standards.

For example, OSHA requirements, in part, follow:

- Employers must report employee fatalities or the hospitalizations of three or more workers within eight hours to OSHA.
- OSHA regulations require employers to verbally report such incidents by telephone or in person to the nearest OSHA area office or by using the OSHA toll-free line (1-800-321-OSHA).
- Employers who do not learn immediately of such job-related incidents must still report them to the agency within eight hours of having learned of the hospitalizations or fatalities.
- Refer to the OSHA standard for further clarifications.

## **3.3 Employer's First Report of Injury or Illness**

The insurance carrier provides state specific forms that must be used to report all occupational illnesses or injuries requiring medical attention. Copies of these forms may be obtained from the following sources:

- Insurance carrier for the project.
- The state agency responsible for the administration of the program.
- The applicable regional safety office.

An Employer's First report of Injury or Illness must be filed on any employee who:



- has a compensable injury or
- has a job-related illness or disease, if the employee is treated by a physician, a hospital, or a clinic. A *TMG Injury and Illness Report Form* and *OSHA Form, 301, Injury or Illness Incident Report* must also be filed.

### **3.4 Employee's Report of Occupational Injury/Illness**

All details of each actual or alleged occupational illness/injury/incident are documented. This procedure provides the standard format for such documentation. Upon proper completion, it will provide a report that serves the following purposes:

- As a source of information for completing forms required by state or regulatory agencies regarding occupational illnesses or injuries.
- As a source of information for analyzing causes and determining corrective action.
- As a record of first aid treatment administered.
- As the initial documentation of any occurrence that may require medical treatment other than, or in addition to, first aid.

#### **3.4.1 Supervisor's Responsibilities**

The following steps should be taken by the project supervisor following an employee's report of occupational injury/illness:

- A. Receive reports from employees of actual or alleged individual involved illnesses, injuries, or incidents.
- B. Determine whether the extent of the incident requires immediate transport to a medical facility or first aid treatment at the project site.
- C. Follow the project's off-site emergency medical procedure, if applicable, or direct the employee to report immediately to the project first aid station.

#### **3.4.2 Nurse/First Aid Attendant/SSHO Responsibilities**

The following steps should be taken by the Nurse/First Aid Attendant/SSHO following an employee's report of occupational injury/illness:

- A. Ensure that each employee receives the first aid or other medical treatment required.



- B. Complete the First Aid Log File if first aid or medical treatment has been administered. Initiate the case file if physicians or hospital treatment has been administered. The medical case file must be retained in a separate, secured file.

## **4.0 ACCIDENT/INCIDENT INVESTIGATION**

### **4.1 Witness Evidence**

Several aspects of human behavior must be considered when identifying, interviewing, and examining witness evidence. In most cases, the people involved or present during an accident do not really observe all that happened. Information will vary depending on the location of the witness with respect to the accident. In most cases, the people involved or present during an accident do not really observe all that happened.

Information will vary depending on the location of the witness with respect to the accident.

Finding the witness to interview

- Prompt arrival of the investigator is essential.
- Question the front-line supervisors to identify the people present during the accident.
- Workers in adjacent areas may have information on sights, sounds, weather conditions, noise, and other environmental factors related to an accident.

When a witness is located, the investigator must:

- Determine the credibility of the witness.
- Limit contact between witnesses until the interview is completed.
- Assure the witness that he/she will have the opportunity to tell the whole story.

### **4.2 Interview Process**

Before conducting any interviews, the investigator should survey the scene to get the “big picture” of the accident. This will help the investigator understand the information being provided by a witness.

An interview shall consist of the following steps:

- Select an interview location.
- Establish open communication with the witness.
- Take an initial statement.
- Expand testimony in areas of interest.



- Evaluate the credibility of the witness.
- Schedule follow-up interviews, if necessary.

**Note: Interview the most knowledgeable witnesses first.**

#### **4.2.1 Interview Location**

Interview locations should be the most suitable place, not the most convenient. An interview at the scene of the accident is advantageous if the noise, damages, and the degree of privacy will not compromise the interview. If an interview at the accident scene is undesirable, then a neutral or non-threatening location should be selected. The witness must be psychologically comfortable if he or she is to give a statement.

#### **4.2.2 Interview Procedure**

During the interview, the investigator should introduce control questions that include the following:

- Time and location of the accident.
- Environment, weather, temperature, noise, and/or distractions.
- Positions of people, equipment, material, and their relationship to the accident.
- Ask the witness to identify other witnesses, if known.
- Was anything moved, repositioned, turned off, or taken from the scene?
- Observation of the emergency response teams and supervisory personnel at the scene.
- What attracted the witnesses' attention to the accident?

Close the interview by questioning the witness for suggestions on preventing this type of accident from reoccurring. Take notes during the interview regarding the witness's statement.

#### **4.3 Diagrams and Maps**

Measure all distances of applicable evidence from a reference point. Triangulation measurements should be used when recording evidence measurements. Measure distances from at least two fixed permanent points to the object being documented. The intersection of the measurements will be the location of the object being measured. Other measurement methods may be used but be sure to provide accurate measurements that can be reproduced after an accident scene is cleared.

#### **4.4 Accident Reenactment**

Used properly, accident reconstruction can aid in validating the victim's or witnesses, accounts of an incident. In questionable injury cases, credibility of statements or accounts can be challenged.

## **4.5 Photography**

Used properly, photographs can record what the eye misses. A photograph can record large amounts of detail that may be helpful in the accident analysis.

### **4.5.1 Uses of Photography**

Photographs help with the following information:

- Serve as orientation to the scene of the accident.
- Record the detail of injury and damage.
- Depict the witnesses' view of the scene.
- Record disassembly of parts for analysis by examination.

The entire area should be photographed from all directions, before photographing detail.

### **4.5.2 Photo Log**

A photo log should be created to document all photographs. Explain the subject in the photograph, and its importance to the scene.

## **4.6 Accident Report**

All accident reports are to be submitted to the TMG Safety Director and appropriate business unit management.

- Do not release any accident report to outside entities without appropriate approval.
- Do not speak to any outside insurance representative or outside attorney unless approved by appropriate management.
- Secure the scene of an accident and do not permit any photographs to be taken outside the scope of the investigation.
- Do not speak with the media. Instruct them to call the project manager for information.

## **4.7 Supervisor's Incident Investigation**

Reports of incident/injury/illness must be initiated by the responsible supervisor of the person or equipment involved in an incident or who has been injured as a result of being involved in an incident during working hours. This also applies to an employee working additional hours authorized by management: nights, weekends, and holidays; this also includes an employee traveling on business or working on an assignment away from the assigned project. Project management will be responsible for notifying the TMG Safety Director of the incident/injury/illness.



Immediately after the incident/injury/illness occurs, an Accident Investigation Team must conduct a fact-finding meeting. At a minimum, the team will consist of the project manager or designee (not less than a salaried area superintendent), who will chair the meeting, the employee's immediate supervisor, the SSHO, who will facilitate the team, the individual involved, witnesses, and any other individuals deemed necessary to complete the investigation.

The Accident Investigation Team will meet when and where designated by the safety representative initiating the investigation.

An injury requiring the filing of an Employer's First Report of Injury (FRI), will be the responsibility of the safety representative or designee under the direction of the project manager. The safety representative will file the FRI form with the appropriate insurance carrier and act as a custodian for all records related to the health and welfare of all TMG employees.

## **5.0 ENFORCEMENT AND DISCIPLINARY ACTIONS**

TMG is committed to uniform application of disciplinary actions for safety violations throughout the company. The following guidelines will be used to address violations of TMG safety policy.

### **5.1 Procedures**

#### **5.1.1 Preconditions to Enforcement Activity**

Prior to disciplinary actions for safety violations, Supervisors shall

- Know and support established rules and procedures.
- Abide by rules and procedures.
- Ensure that all subordinates are made aware of these rules and procedures.
- Document all training that employees receive concerning rules and procedures; i.e., tool box meetings, STA, Special Task Associated Training etc.
- Enforce safety rules and procedures consistently and predictably.



### **5.1.2 Investigation Phase**

#### *Investigation Phase*

Safety violations will be investigated by TMG's Safety Director. During the investigation phase the employee may be suspended for normal duties or temporarily removed from the work place during an investigation without pay.

### **5.1.3 Enforcement Activity**

All disciplinary actions taken will be documented and will be incorporated into the employee's permanent file. The safety advisor will be informed of reprimand issued due to safety infractions so that appropriate training/re-training can take place.

## **5.2 Safety Violation Classification**

### **5.2.1 Serious Safety Violation**

Serious safety violations involve a substantial probability that death, serious physical harm, major equipment damage, or work stoppage could result. Employees who commit serious safety violations will be subject to a written reprimand or immediate termination. A documented oral reprimand cannot be issued in this case. The second violation categorized as serious will result in an automatic termination, provided the second violation occurs within one (1) year of the first.

### **5.2.2 Safety Violation**

Safety violations have a direct relationship to work place safety and health where the exposure is not likely to cause death, serious physical harm, or major equipment damage. Safety violations call for a documented oral reprimand for the first violation noted. The second violation noted will require a formal written reprimand. Termination will occur for the third violation noted, provided the violation occurred within one (1) year of the first. It is not necessary for safety violations to be identical for the progressive steps of discipline to apply.

## **6.0 INDOCTRINATION AND TRAINING**

Regularly scheduled safety meetings will be conducted by the project manager/superintendent, area superintendents, and foreman for the employees they supervise. Reports and attendance records will be submitted by the foreman for the toolbox safety meetings held by them.



## **6.1 Procedures**

### **6.1.1 Project Manager/Superintendent**

Project Managers/Superintendents must:

- Conduct regularly scheduled safety meetings at least once a month with the area superintendents.
- Conduct safety meetings at least once a week with supervisors.

### **6.1.2 Foreman**

Project Foremen must:

- Conduct toolbox safety meetings at least once a week with employees under his/her supervision.
- Maintain the attendance record by having employees sign each toolbox safety meeting record.

**Note: Safety proctors may or may not be utilized, site depending.**

## **7.0 DRUG AND ALCOHOL FREE WORKPLACE**

To help insure a safe, healthy and productive work environment for the employees of TMG Corp and others, on our work sites or Company property, to protect Company property and to insure efficient operations, TMG has adopted a Drug and Alcohol Free Workplace Policy (DFWP) to assure maintenance of a work place free of drugs and alcohol abuse. This DFWP restricts certain items and substances from being brought on or being present on Company premises or work sites, prohibits our employees and other working on Company premises or work sites from reporting to work or working with measureable levels of illegal and nonprescription drugs, alcohol, and other controlled substances which affect the employee's ability to perform work safely.

Employees under the influence of drugs or alcohol on the job pose serious safety and health risks not only to the user, but also to all those who surround or come in contact with the user. Consistent with the spirit and intent of this commitment, TMG has established this comprehensive/definite policy regarding drug and alcohol abuse.



## 7.1 Drug and Alcohol Free Workplace Policy

This DFWP Program is designed to protect employees from the behaviors of substance users. Some of the protections built into the program are:

- Care is being taken to ensure confidentiality of the employee records such as drug/alcohol testing results and referrals for assistance. Information will be kept confidential and on a need-to-know basis. Any violation of confidentiality rights is subject to disciplinary action up to including termination of employment.
- All supervisors will be trained in their duties related to referrals for testing so that it is done fairly and consistently. Initial training will be 4-hours mandatory by a third-part substance abuse professional with annual 2-hour refresher training. New supervisors will be trained within six (6) weeks of employment.
- Employees will receive substance awareness education from a qualified person to overview the program, help identify problems, and learn where to turn for help. This 2-hour training will be provided within four (4) weeks of employment.

## 7.2 Elements of the Drug and Alcohol Free Workplace Policy Plan

The elements of the TMG DAFWP Plan include:

- Possessing, manufacturing, distributing, dispensing, and/or use of illegal drugs, or drug paraphernalia, unauthorized controlled substances, or other intoxicants on or in company property or work sites is prohibited and will result in disciplinary action up to and including suspension and/or termination. TMG cannot and will not condone or tolerate behaviors on the part of the employees that relate to substance abuse, such as:
  - Use of illegal drugs;
  - Misuse of legal drugs (prescription or over-the-counter medications);
  - Misuse of alcohol;
  - Sale, purchase, transfer, use or possession of any illegal drugs, or prescription drugs illegally;
  - The arrival to work or return to work with any drug (legal or illegal) or alcohol in the person's system to the extent that job performance is affected.;
  - Violation may result in immediate termination of employment.
- Legally prescribed drugs will be permitted on or in company property or work sites provided the drugs are prescribed by an authorized medical practitioner for current use by the person in possession of the drugs. Reporting to and being at work with a quantity of



prescribed or over-the-counter drugs where such use prevents the employee from performing the duties of the job or imposes a safety risk to the employee and/or other persons or property is prohibited. If the employee knows of any possible hazardous effects from taking the drugs, they will notify their immediate supervisor.

- Any employee convicted of a felony attributable to the sale, possession, or sale of intoxicants, illegal drugs, or controlled substances on or off the company premises will be subject to discipline, including separation.
- All applicants for employment with the Company will be tested for usage of drugs and alcohol. In the area of commercial driver license (CDL) holders, testing is mandatory by state law as defined further in this policy. Pre-employment and/or new hire positive test results will be considered in the employment decision as medical disqualification.
- Any employee who fails to report a work-related vehicular accident to the designated Company official which would mandate post accident testing, or who fails to report the post accident testing requirements of this policy, will be considered to have tested positive for the presence of one or more of the prohibited controlled substances or other drug use or alcohol use in violation of this policy. This will result in the immediate medical disqualification of the employee, resulting in termination of employment.
- The possession or use of alcohol on or in Company property or work sites is prohibited except for special circumstances or events, which are officially a Company-sanctioned event.
- This policy shall be applied equally to all employees of the Company including owners/officers/directors, administrative staff, and supervisory staff.
- TMG reserves the right to search any person entering on the work site or Company property to search property, equipment and storage areas for illegal drugs, drug paraphernalia, unauthorized controlled substances, alcohol, or other intoxicants. This shall include, but is not limited to, clothing, personal effects, and vehicles including cabinets, lockers, closets, lunch, toolboxes, gang boxes, and equipment.
- This policy shall apply to all individuals entering a work site or TMG property including; but not limited to, full and part-time personnel, consultants, and employees of other companies or contractors/second-tier subcontractors working on a project site on which TMG is the prime contractor or agent of the owner.



- TMG will report information concerning possession, distribution, or use of any illegal drugs, unauthorized controlled substances, alcohol, or other intoxicants to law enforcement officials and will turn over to the custody of law enforcement officials any such substance found during search of an individual or property. TMG will cooperate fully in the prosecution and/or conviction of any violators of the law.

## **7.3 Drug and Alcohol Testing**

### **7.3.1 General Information**

An employee may be required to have a physical examination including at time of hire, upon return to work from an extended absence due to injury or layoff of more than 30 days, or pursuant to state regulations. Henceforth, all such physical examinations will include testing the employee's urine for use of drugs and alcohol. A refusal to submit to a drug test will be considered insubordination and subject the employee to discipline up to and including refusal to hire or discharge.

### **7.3.2 Random Testing**

Random drug and alcohol testing is required as a part of the Company's overall program to ensure a drug-free workplace, protect public safety and ensure that the Company maintains confidence in its employees' abilities to perform their duties. In order to implement random testing, the contractor shall select Company employees at random for drug testing at any time during each calendar year, to a level at a minimum of 25% of its workforce. TMG has contracted with an outside vendor, to perform the periodic selection of employees for inclusion in the random testing pools. This is done by assignment of a number to each employee; the outside vendor is not exposed to employee names or social security numbers. The outside contractor shall, in turn, furnish TMG's Safety Director with the list of the individuals to be tested at the beginning of each random selection period. When notified, it shall be the responsibility of the individual employee to provide a urine specimen for drug testing and/or submit to breathe alcohol testing. An employee's failure to comply with this request within the time-window provided will result in immediate medical disqualification of the employee, which may in turn result in loss of employment/discharge.

The CDL holder is subject to a mandatory physical including a drug and alcohol testing accordance with current applicable laws, as defined further in this policy.

### **7.3.3 Post Accident/Incident Testing**

Any employee who has been involved in an incident or accident while on the job will be required to provide both urine and blood samples for laboratory testing. For the purpose of the policy an "incident" is defined as:

- On the job chargeable motor vehicle accident.



- The employee's destruction of or substantial damage to the Company's property or owner's property.
- A fight or physical altercation involving the employee. A refusal to provide blood or urine specimen will constitute a presumption of drug and/or alcohol intoxication and the employee will be subject to discharge.
- If a driver or other employee of a subcontractor owner/operator is involved in an accident and carrying a TMG load, TMG will serve a notice to that subcontractor of the presumed need for testing.
- All individuals injured at work, in the performance of duties will be tested by the emergency care center for controlled substances and alcohol.

#### **7.3.4 Reasonable Suspicion Testing**

Reasonable suspicion testing will be performed with Company management and/or supervisor has reasonable suspicion through direct observation that an employee of the Company may be under the influence of an unacceptable substance (i.e., drugs and alcohol). This suspicion must be documented in writing within 24 hours of the event or prior to the release of the test findings. Reasonable suspicion testing may be based, upon other things including:

- Observable phenomena, such as direct observation of consumption or, use or possession;
- Pattern of abnormal conduct or erratic behavior;
- Arrest or conviction for a drug-related offense; or the identification of an employee as the focus of a criminal investigation into illegal drug possession, use, or trafficking. An employee is responsible for notifying the Company of such action within five (5) days of any drug-related conviction.
- Newly discovered evidence that an employee has tampered with a previous drug or alcohol test.

#### **7.3.5 Testing Procedures**

It is anticipated that all testing or Company ordered physical examinations will be done through Company Health Care or Concentra Medical Centers. Prior to the beginning of the testing procedures, the employee shall execute a consent form if requested by the center personnel.



Although center personnel will have a right to administer the urine drug tests in a manner which will detect tampering or substitution, the employee's right to privacy is guaranteed.

Testing must take place in the specified time frames for both drug and alcohol or the test will be considered not conducted. An employee attempting to adulterate a specimen, substitute a specimen, or otherwise manipulate the testing process will result in termination of employment, as will a refusal to produce/provide a specimen.

If requested by center personnel, the employee shall provide additional urine specimens. The split specimen container of urine to be tested shall be sealed in the presence of the employee and if requested by employee, he/she shall have the right to initial the label on the specimen bottle. In the event of a positive test result, the employee shall have the right to have the second portion of the split specimen tested by another certified DHHS-Certified facility at the employee's expense and this must be done so within seventy-two (72) hours of notification to the employee of a positive test.

### **7.3.6 Cost of Initial Testing**

If an employee of TMG is requested by an authorized representative of the Company to submit to a drug test, the cost of that test and the confirmatory test of the same specimen will be paid for by TMG. All subcontractors, self-employed owner operators or other on-site personnel will be subject to testing at their own expense.

### **7.3.7 Specifics of Drug Testing Process**

The Company has certified that the laboratories performing testing are Department of Health and Human Services (DHHS) certified also considered National Institute of Drug Abuse (NIDA) Certified. With respect to DOT testing all CDL holders, the following 5-panel drug test will be performed:

- Cocaine and its derivatives, including crack cocaine
- Cannabinoids (THC/marijuana, hash)
- Opiates (heroin, codeine, etc.)
- Amphetamine (including methamphetamine/central nervous system stimulates)
- Phencyclidine (PCP)

Non-CDL employed persons will be tested for 9-panel drug test:

- Above 5-panel plus:
- Barbiturates (central nervous system depressants)



- Propoxyphene (Darvon and Darvoset)
- Methadone
- Benzodizephones (Valium, Librium, etc.)

Screening for adulterants is part of this testing.

Alcohol testing practices will include breath or saliva initial screen using:

- Prescribed technical machinery utilizing standardized protocol to safeguard against human error occurring during the testing process. Testing will only be performed and documented by a qualified breath alcohol technician (BAT).

Testing shall be confirmed positive at 0.04 percent blood alcohol content (BAC). At 0.02 percent a confirmatory test must be done within 30 minutes. This cut-off is consistent with the DOT/FMCSA.

### **7.3.8 Protocols and Chain of Custody**

To minimize potential for errors, the technicians are trained to follow DHHS protocols that apply to all stages of the testing procedure. Examples are: picture ID required before giving the specimen; temperature of specimen taken within 4 minutes to ensure coming from donor; specimen clearly sealed in tamper-resistant packaging, and prepared for shipping in front of donor.

### **7.3.9 Review of Test Results**

To ensure that every employee who is tested is treated in a fair and impartial manner, the Company has retained the services of a Medical Review Officer(s) (MRO). The MRO is the medical doctor or doctor of osteopathic medicine with a specialized knowledge of substance abuse disorders. This professional will be able to determine whether there are any valid reasons for the presence in the employee's system of the substance that was tested positive. A positive test will be reported only after the MRO has exhausted all legitimate reasons for a positive test result. The MRO will make three (3) documented attempts within a 36-hour period to notify the donor. Based on a "need to know" requirement of this policy, the MRO may contact the employer if results to reach the donor are unsuccessful. CDL holders' positive results will be reported to the "need to know" person, the Company Safety Director immediately upon available in order that the driver may "stand down" from any safety sensitive work duties.

## 7.4 Disciplinary Action

Any employee who tests positive for drugs or alcohol as a result of drug or alcohol test given because the employee was involved in an incident as previously defined will be subject to disciplinary action up to and including discharge.

- While undergoing treatment, the employee shall not receive any of the benefits provided by his collective bargaining agreement or supplements thereto except continued accrual of seniority and health and welfare benefits to the extent provided by his collective bargaining agreement.
- Upon being reinstated, the employee will be subjected to six (6) additional tests for drugs without prior notice, with three (3) tests occurring within three (3) months of the employee's return to employment and the balance of the test to occur within six (6) months to twelve (12) months after the employee's return to employment. A positive test result or a refusal to submit to testing shall result in discharge

## 7.5 Employee Assistance Program

Employee assistance is the cornerstone of this drug-free program. Offering help to employees is our way of showing them that they are valued to the company. We have implemented the following EAP as a vital part of this program.

The EAP does not imply that TMG will provide the employee with the treatment for a cure, but identifies the resources available for the employee to seek help on their own.

For the purpose of this program, TMG has retained for initial assessment of all employees who test positive:

**In Ohio:** Cleveland Clinic's wellness-oriented Lifestyle EAP (LEAP), (800) 989-3277. Specific locations are on file with the TMG Safety Director.

**Outside of Ohio:** Contact HR for local EAP referrals.

TMG will provide a written referral of an employee to the program. The employee seeking medical attention or counseling for dependence/addiction will be entitled to the specific medical benefits pursuant to the applicable health and welfare benefits plan or hospitalization/medical plan to which the employee is enrolled.

Concern counselors are available for each employee when they need them, day or night, and will assist each employee in coordinating the treatment and care required as well as coordinating to each employee's specific Health Care benefits available.

Requests for assistance will be treated with the utmost confidence. If, however, an employee does not complete their requisite drug or medical rehabilitation program, TMG will be notified



and the employee will not be allowed to return to a work status. We are bound to accept the EAP recommendation in terms of the employee's return to work.

The cost of initial assessment consultation of up to \$150.00 will be funded by TMG. Additional treatment, referrals to short or long term care facilities are entirely at the employees expense and/or funded by their specific health care plan. All TMG employees have substance abuse program benefits as part of their administrative benefits package.

The cost for in-depth treatment program required in accordance with the DOT CDL requirements is borne by the employee/driver.

## **7.6 Employee Cooperation**

All employees, as a condition of continued employment, have an obligation to cooperate with any company investigation of drug or alcohol abuse in the work place. Failure to cooperate in any such investigation will result in disciplinary action up to and including suspension and/or termination.

TMG's Safety Director will meet with any employee in confidence with respect to concerns relative to the drug testing, or any concern relative to the administration of this plan. Further, TMG will hold in confidence any referral for breach of this policy, concerns for inappropriate behavior by co-workers, or any other safety sensitive concern of the employee. We have an open door policy for discussion.

Changes and amendments to this Program will be communicated in writing to every employee thirty (30) days in advance of implementation. This Policy is non-discriminatory and applies equally to all employees and officers of TMG

## **8.0 PLANNING AND INSPECTIONS**

### **8.1 Pre-project Planning**

Prior to the commencement of project operations, a Site-Specific Accident Prevention Plan (APP) shall be developed. The purpose of the APP will be to define the project-specific health and safety policy and to define a framework and road map for ensuring successful implementation and execution of all company operations. It shall be the responsibility of the TMG project manager to ensure that an APP is developed prior to the start of construction or maintenance operations. The plan will give direction and establish "how to" methods for the scope of work to be performed. The SSHO will assist with the development of the APP and will monitor its application and compliance performance. All TMG and subcontractor employees will be responsible for complying with the applicable safe work practices that are contained within the APP. The guidelines, rules, and regulations contained in this Safety Manual and the additional guidelines presented in each APP are mandatory for all TMG employees. APP's will



differ according to the scope of work to be conducted and the primary crafts that will be involved.

### **8.1.1 Site-Specific Accident Prevention Plan**

TMG is committed to the belief that injuries can and should be prevented. It is the Policy of TMG to provide a working environment free of hazards and to protect the health and welfare of all of our employees, visitors and property.

The purpose of an APP is to assist TMG in accomplishing goals by identifying:

- The components of a safety program.
- Responsible parties for the development of listed components.
- A schedule for completion or implementation.

### **8.1.2 Site-Specific Safety and Health Plan**

Some works sites may contain hazardous materials that pose a threat to employees and the environment. A Site-Specific Safety and Health Plan (SSHP) must be developed for sites that contain potentially hazardous materials to provide information regarding anticipated site health and safety matters, and to establish policies and procedures adequate to protect workers, the public and the environment from the predicted site hazards. This plan is prepared to inform all field personnel, including subcontractors, of the potential hazards on the site. All employees performing work at potentially hazardous sites must be trained according to 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER).

### **8.1.3 Job Hazard Analysis**

Prior planning of job tasks and associated hazards is critical to eliminating workplace hazards. A Job Hazard Analysis (JHA) will be completed in cooperation with project management and the safety representative. The JHA will outline the tasks associated with each project, the hazards associated with each task, and the controls that will be used to eliminate the potential hazard. The JHA must be reviewed and updated frequently during each project to ensure proper consideration of all on-site hazards. Refer to Appendix A for a copy of the *TMG JHA form*.

### **8.1.4 Hazard Communication Program**

TMG is firmly committed to providing all of its employees with a safe and healthy work environment. It is a matter of company policy to provide our employees with information about hazardous chemicals on the worksite through our Hazard Communication Program, which includes container labeling, Material Safety Data Sheets (MSDS) and employee information and training.



Santina Milczewski, TMG Safety Director, will have overall responsibility for coordinating the Hazard Communication Program for TMG. The TMG Safety Director will make the Hazard Communication Program available, upon request, to the employees, their designated representatives, all Safety and Health Enforcement Agencies or their representatives, and medical treating facility, TMG subcontractors, and/or owner operators including Project Managers and Owners.

#### **8.1.4.1 List of Hazardous Chemicals**

The TMG Safety Director will compile a list of all hazardous chemicals that will be used on the worksite by reviewing container label and MSDSs. The list will be updated as necessary. It will be kept at the construction trailer.

#### **8.1.4.2 Physical and Health Hazards of Workplace Chemicals**

Each employee will be trained about the hazards of chemicals in each work area. The training will include the following information:

- The measures each employee can take to protect themselves from hazards.
- TMG's procedures that provide each employee with protection, such as work practices, personal protective equipment, engineering controls, etc.
- The physical and health effects of the chemicals and groups of chemicals.
- How to detect the presence of a chemical.
- General first aid and emergency procedures.

#### **8.1.4.3 Container Labeling**

It is the policy of this company to ensure that each container of hazardous chemicals on a jobsite is properly labeled. The labels will list:

- The contents of the container.
- Appropriate hazard warnings.
- The name and address of the manufacturer, importer, or other responsible party.

To further ensure that employees are aware of the chemical hazards of materials used in their work area, it is our policy to label all secondary containers. Secondary containers will be labeled



with either an extra copy of the manufacturers label, or with a sign or generic label that list the containers contents and appropriate hazard warnings.

You should read product labels before working with a hazardous substance. Each label will have the identity of the hazardous chemical and a hazard warning. Original container labels will also have the name and address of the manufacturer.

To obtain labels, please contact the TMG Safety Director.

#### **8.1.4.4 Material Safety Data Sheets**

Copies of Material Safety Data Sheets (MSDS) for all hazardous chemicals to which employees may be exposed are kept in the construction trailer and are readily accessible to employees in the work area during each work shift. The TMG Safety Director is responsible for obtaining, maintaining, and updating the MSDS file.

#### **8.1.4.5 Accident Prevention Signs and Labeling**

Signs and labeling must be provided to give adequate warning and caution of hazards. They are provided to instruct and direct workers and the public. The signs and labeling must be visible at all times when a hazard or problem exists, and shall be removed or covered when the hazard or problem no longer exists. Signs and labeling can be obtained from the TMG Safety Director.

#### **8.1.4.6 Employee Training**

Employees are to attend a training session on hazardous chemicals in their work area at the time of their initial work assignment. The training session will cover the following:

- An overview of the Hazard Communication requirements
- A review of the chemicals present in their workplace operations
- The location and availability of the TMG written Hazard Communication Program, a list of hazardous chemicals in the work area.
- The health hazards of the chemical in the work area, including signs and symptoms of exposure and any medical condition known to be aggravated by exposure to the chemical.
- How to lessen or prevent exposure to hazardous workplace chemicals by using good work practices, personal protective equipment, etc.
- Emergency procedures to follow if employees are exposed to hazardous chemicals.

- An explanation of our Hazard Communication Program, including how to read labels and MSDSs to obtain appropriate hazard information.

When a new type of product is introduced into a work area or the chemical composition of a product changes, the TMG Safety Director will review the above items as they are related to the new chemicals.

#### **8.1.4.7 Non-Routine Tasks**

Periodically employees are required to perform non-routine tasks. Prior to starting work on such projects, each affected employee will be informed by the TMG Safety Director about such hazards to which they may be exposed and appropriate protective and safety measures.

#### **8.1.4.8 Informing Other Employees**

To ensure that the employees of other contractors have access to information on the hazardous chemicals at the jobsite, it is the responsibility of the TMG Safety Director to provide the other contractors with the following information:

- Where the MSDSs are available.
- The name and location of the hazardous chemical to which their employees may be exposed and any appropriate protective measures required to minimize their exposure and an explanation of the labeling system used at the jobsite. Each contractor bringing chemicals onto a jobsite must provide us with the appropriate hazard information on those substances to which TMG employees may be exposed to on a jobsite.

### **Overview of the Hazard Communication Requirements**

The Hazard Communication Standard (HazCom) is intended to ensure that both employers and employees are aware of potential hazards associated with chemicals in their workplace.

## **8.2 Regulatory Inspections**

All TMG locations must provide a place of employment free from recognized hazards. The company also has the duty of complying with safety and health standards required under all applicable regulatory bodies.

Each location manager must designate two representatives from the management team to participate in regulatory inspections. One of the representatives must be the safety advisor.

As soon as the OSHA or other regulatory compliance officer (CSHO) arrives at the project/office site, notify the site manager, the safety manager, and the client, when applicable.



TMG has the right to know who is entering their premises. Upon presenting appropriate credentials to a member of management, the CSHO shall be allowed to enter the premises without delay. This means that the highest official management, the CSHO shall be allowed to enter the premises without delay. This means that the highest official available within management is entitled to determine whether this person is really a bona fide government safety inspector before he or she has to allow him/her to inspect the premises. OSHA inspectors should not be unduly delayed from entering the premises. However, they can be asked to wait a few minutes while a member of management is notified. In the event the CSHO is accompanied by another person or persons, TMG is equally entitled to examine their credentials to determine whether they are appropriate representatives of the U.S. Department of Labor.

In the situation where a person wishing to participate in the inspection is neither a CSHO nor a representative authorized by TMG, management shall carefully question this person to determine their affiliation or capacity and why they are present for the safety inspection. Outside parties have no apparent right to participate in inspections without TMG's consent. The best rule to follow is one of common sense and reasonableness.

CSHO(s) are authorized by OSHA to perform the following:

- Upon presentation of credentials, enter any work area without delay, at any reasonable time, and without advance notice.
- To inspect the place and conditions of employment, equipment, machinery, devices, and the processes or methods being utilized.
- To check record keeping procedures and to investigate accidents.
- To take photographs and to collect samples or evidence.

### **8.3 Deficiencies**

Each safety deficiency shall be discussed with site management. Responsibility for correcting each safety deficiency shall be assigned to an appropriate manager or supervisor who will begin and complete the necessary corrective action as a top-priority item.

After the deficiency is corrected, the responsible supervisor shall immediately notify the SSHO. The SSHO shall follow up to ensure that the corrective action is satisfactory.

## **9.0 EMERGENCY OPERATIONS**

### **9.1 Evacuation Notices**

After an evacuation notice has been given, management should immediately state the nature of the emergency and communicate this to all personnel. The evacuation message should specify



the type of evacuation (partial or full) and the personnel to whom it applies. For example, a message calling for the evacuation of the maintenance building would only apply to the people in that building.

## **9.2 Evacuation Assembly Areas**

Personnel in the affected area at the time of the incident should go to the per-designated assembly area, which can be reached in a safe manner. It is important that everyone familiarize themselves with all assembly area locations.

**Note: Personnel temporarily assigned to areas other than their normal work location are to report to the evacuation point called for at their temporary work area.**

## **10.0 MEDICAL AND FIRST AID REQUIREMENTS**

### **10.1 First Aid Kits**

Fully-stocked first aid kits conforming to ANSI Z308.1 must be readily available at each job site. First aid kits must be easily accessible to all workers and protected from the weather. The individual contents of the first aid kits shall be kept sterile. First aid kits shall be clearly marked and distributed throughout each job site.

### **10.2 Personnel Requirement and Qualifications**

At least two first aid attendants will be assigned to each project site. Each first aid attendant is required to be certified in first aid and CPR by the American Red Cross or the American Heart Association.

### **10.3 First Reports of Injury/Illness**

At the first report of injury or illness, the trained first aid attendants will administer necessary first aid treatment to the injured employee. It is the responsibility of the SSHO and first aid attendants to determine the necessity for transportation of the employee to an off-site medical facility for additional treatment of an injured or ill employee beyond first aid treatment.

### **10.4 Transporting Employees to Medical Facilities**

Prior to the start of work, arrangements must be made for medical facilities and personnel to provide prompt attention to injured employees and for consultation concerning occupational safety and health matters. Injured employees will be transported to a preapproved medical facility via a project vehicle, or emergency vehicle (ambulance).

## **11.0 PERSONAL PROTECTIVE AND SAFETY EQUIPMENT**

This procedure provides guidance on the requirement for using personal protective equipment (PPE) and on hazard assessment of the workplace to determine the need for PPE. This procedure also describes requirements for certifying the assessment, communicating it to employees, eliminating defective PPE, and training employee in proper use.

### **11.1 Hazard Assessment and Equipment Selection**

At the start of a new project or maintenance operation, a hazard assessment should be performed to determine any hazards that require the use of PPE. This assessment identifies hazards to foot, head, eye, face, and hand. The assessment consists of a walk-through survey that examines the following:

- Sources of motion (i.e., machinery, tool processes, personnel movement).
- Sources of high temperature that could result in burns, eye injury, or ignition of PPE.
- Sources of chemical exposure.
- Sources of harmful dust.
- Sources of light radiation (i.e., welding, brazing, cutting, etc.).
- Sources of falling objects or potentially dropped objects.
- Sources of sharp objects with potential to puncture feet or hands.
- Sources of rolling or pinching objects that could crush feet.
- Electrical hazards.
- Layout of workplace and worker placement.

Upon completion of the walk-through, determine if hazards exist. Where hazards exist, identify the type, level of risk, and seriousness of potential for injury for each hazard. Review any hazards identified and consider the use of guards or engineering controls that will eliminate or minimize the hazards. For any remaining hazards, select PPE based on the degree of protection required for the hazard and the protection provided by PPE.

This hazard assessment must be documented with a written certification (see Attachment 01). This certification is maintained by the SSHO.

## **11.2 Communication and Training**

Communicate PPE requirements to all affected employees at the site. Enforce the use of PPE for protection against the hazards identified. Train employees who are required to wear PPE. This training must include.

- When PPE is required.
- What PPE is required.
- How to wear, adjust, and maintain PPE.
- How to determine if PPE is damaged or defective.
- The limitations of PPE.

Employees must demonstrate understanding of this training and the ability to use PPE properly before beginning work that requires PPE. If a trained employee later demonstrates a lack of understanding or skill in PPE, they must be retained.

A written certification is required to document training. This certification is maintained by the SSO.

## **11.3 Defective or Damaged PPE**

Defective or damaged PPE must be immediately removed from use. Employees must inspect PPE prior to use to insure it is fit for use.

## **11.4 Eye and Face Protection**

Employees shall wear approved ANSI Z87.1-1989 (or equivalent standards) safety glasses with side shields during work hours. Additional eye and /or face protection, such as goggles, face shields, and welding shields, may be required when engaged in operations such as welding; burning; grinding; chipping; handling chemicals, corrosive liquids, or molten materials; drilling; driving nails; and pouring concrete.

Employees and visitors may wear photo-gray safety lenses anywhere on the jobsite, but permanently tinted lenses may be worn only in outside work areas. Wearing of contact lenses shall be addressed in the site-specific safety rules.

Prescription glasses must meet the approved applicable regulatory standards. Cover-all goggles shall be required for prescription glasses that do not meet the standard.



Employees engaged in welding shall use filter lenses or plates specified by the applicable regulatory standards. Employees engaged in helping welders should not look directly at the welding process and shall use approved eye protection.

Employees engaged in operations using laser shall use laser safety goggles suitable for the density of the laser beam being used. Such goggles shall be marked showing the visible light transmission, the laser wavelength for which such goggles were intended, and their optical density.

The exact location of eye wash stations should be identified.

### **11.5 Hearing Protection**

Hearing protection is required where high levels of noise are present.

### **11.6 Head Protection**

Employee shall wear hard hats that are in good condition and meet applicable regulatory standards (i.e., ANSI Z89.1-1981 and ANSI Z 89.2-1971) (hard hats shall not be altered). The hat shall be worn in the proper manner (brim to the front). The only exception will be welders whose hats may have to be reversed to accommodate welding shields. When not welding, hard hats shall be worn properly.

### **11.7 Hand Protection**

Gloves shall be worn when handling material that could burn, cut, tear or cause injury to the skin. Use caution when wearing gloves around certain machinery. Protect hands from nip or pinch points.

### **11.8 Protective Footwear**

Work shoes shall be constructed of hard leather and suitable for the project working conditions. Shoes that cover the ankle are recommended. Shoes with protective toe boxes (i.e., steel toe) are recommended. Additional foot protection shall be worn when operating tamps, jackhammers, or when there is potential for a foot injury. No tennis shoes or sandals shall be worn at sites requiring protective footwear.

### **11.9 High Visibility Apparel**

High visibility apparel meeting, at minimum ANSI/ISEA 07-2004 Performance Class 2 requirements, shall be worn by workers whenever:

- Workers are exposed to vehicular or equipment traffic;

- There is limited visibility of workers exposed to mobile/heavy equipment operations, vehicles, load handling, or other hazardous activities;
- Reduced visibility conditions exist due to weather conditions, illumination, or visibly complex backgrounds;
- Workers are involved in activities in close proximity to vehicular traffic with no protective barriers.

In addition, all shirts are required to have a 3-inch sleeve and no tank tops are to be worn at project sites.

### **11.10 Respiratory Protection**

Employees shall be medically cleared, trained, and fit tested before being issued a respirator to wear. Respirator wearer's qualification shall be reviewed annually.

### **11.11 Fall Protection**

All TMG employees and subcontractors exposed to a potential fall hazard of 6 feet or greater must follow the fall protection provisions of this Safety Manual and each Site-Specific APP. Each employee must be trained in the proper use and application of fall protection equipment. It is the responsibility of the SSHO to ensure that each employee is properly wearing and using fall protection equipment at each project site. A Fall Protection Program will be developed for each project site where employees may be exposed to fall hazards. The Fall Protection Program will provide site-specific procedures for inspection and use of fall protection equipment. It will also outline the procedures necessary to rescue an employee which has fallen from a suspended platform and has been suspended by fall protection equipment.

#### **11.11.1 Safety Harnesses, Lanyards, Lifelines, and other Fall Protection Devices**

Safety harnesses, lanyards, lifelines, and other fall protection devices shall be used in accordance with the site's Fall Protection Policy. Each employee will be trained on the proper use of the fall protection equipment provided by TMG.

#### **11.11.2 Fall Protection Rescue**

TMG will provide prompt rescue to all fallen workers. A rescue plan will be included in each project's Fall Protection Program in accordance with ANSI Z359.2 when workers will be working at heights and using fall protection equipment.



## **12.0 HAZARDOUS MATERIALS AND ENVIRONMENTS**

TMG is committed to preventing exposure, through inhalation, ingestion, skin absorption, or physical contact, to any chemical, biological, or physical agent in excess of acceptable limits. TMG will comply with all applicable standards and regulations to reduce contaminant concentration levels As Low As is Reasonably Achievable (ALARA). TMG will develop a SSHP for all projects where exposure to potentially hazardous materials or environments exists.

### **12.1 Hazardous Waste Operations and Emergency Response**

All TMG and employees performing work in potentially hazardous environments and potentially exposed to hazardous materials must be trained in accordance with 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER).

### **12.2 Hazardous or Toxic Agents**

A written hazard communication program (HazCom) will be developed for all TMG projects where employees may potentially be exposed to hazardous materials or environments. The hazcom program will address the following in project-specific detail:

- Hazardous or Toxic Agent Inventory;
- Hazardous or Toxic Agent Labeling;
- MSDS Management; and
- Employee Information and Training.

### **12.3 Harmful Plants, Animals, and Insects**

Personnel working on the site must be aware of the physical hazards posed by coming into contact with harmful plants, animals, and insects. The SSHP will identify potentially harmful plants, animals, and insects that pose a threat to employees and subcontractors at each project site.

### **12.4 Inclement Weather and Heat/Cold Stress**

Work shall not be scheduled when inclement weather (heavy rains, strong winds, tornado, floods, extreme temperatures, and so forth) is predicted that could cause or contribute to an accident or exposure incident. If a change in the weather poses a health or environmental threat, the site shall be secured, and work shall cease. Extremes in temperature can pose serious physical hazards to personnel. Personnel shall be aware of appropriate steps that can be taken to minimize the effects of temperature extremes.



## *Heat Stress*

Personnel who work outdoors during the summer to early fall months may be subject to heat stress. Heat stress may occur when protective clothing decreases natural body ventilation and/or when working in areas having elevated temperatures. The heat stress work/rest standards as outlined in the heat stress section of the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV) & Biological Exposure Indices (BEI) Handbook will be followed.

Heat stress is any series of conditions where the body is under stress from overheating. It can include heat cramps, heat exhaustion, heat rash, or heat stroke. The victim often overlooks the signs of heat stress. The employee may at first be confused or unable to concentrate. Heat stress can produce bodily symptoms, which may include profuse sweating, dizziness, cessation of sweating, and collapse.

**Table 1--Heat Stress**

<b>Condition</b>	<b>Signs/Symptoms</b>	<b>First Aid</b>
Heat cramps	Heavy sweating Painful muscle spasms	Sport drink intake (Gatorade) Rest in cool environment Salt water intake (0.5% solution)
Heat Syncope	Brief fainting Blurred vision	Water intake Lie down in cool environment
Dehydration	Fatigue and reduced movement	Fluid and salted food intake
Heat Exhaustion	Pale and clammy skin, possible fainting, weakness, fatigue, nausea, dizziness, heavy sweating, blurred vision, body temperature slightly elevated	Lie down in cool environment, water intake, loosen clothing
Heat Stroke	Skin hot and dry, red face, high body temperature, unconsciousness, collapse, convulsions, confusion or erratic behavior	Immediate total cooling Transport to hospital

The following precautions will be taken to prevent injury from heat stress:

- The work schedule will be adjusted, if possible, to schedule heavy work during the cooler part of the day.
- The work will be paced to include adequate rest periods. Five to fifteen minute rest periods will be scheduled hourly or every 2 hours depending upon the workload, temperature, and relative humidity. The frequency and time of rest periods will be increased, if the SSHO believes that it is necessary to protect the workers' safety.

- Drinking water and ice will be provided in the clean zone. Personnel will be encouraged to drink plenty of water.
- The weather conditions shall be monitored and work halted if the temperature (including humidity) rises to levels that present a danger to worker safety.

### ***Cold Stress***

Personnel who work outdoors during winter months are subject to cold stress. Exposure to extreme cold can result in severe injury or even death. Areas of the body that are most susceptible to the effects of cold stress are fingers, toes, nose, and ears. Precautions a worker may take to prevent injury from the cold include, but is not limited to the following:

- Extremities shall be protected from extreme cold by protective clothing.
- The work area shall be shielded or employees shall be given an outer windbreak garment when the wind chill is a factor at a field site.
- Outer garments must provide ventilation to prevent wetting of inner clothing by sweat
- Employees who are prone to getting their clothes wet shall be issued an outer protective garment that is water repellent.
- The weather conditions shall be monitored and work halted if the temperature drops to levels that present danger to worker safety.

**Table 2—Cold Stress**

<b>Condition</b>	<b>Signs/Symptoms</b>	<b>First Aid</b>
Hypothermia	Shivering Slurred speech Loss of Coordination Loss of Consciousness	Mild Cases: Move to warm area and stay active, remove wet clothes and replace with dry clothes or blankets, cover the head, drink warm sugary drink. Severe Cases: Follow all first aid for mild cases and call emergency medical personnel
Frost Bite	Frozen Skin and lose of water	Do not rub area. Wrap the area in soft cloth, move the worker to a warm area, and contact medical personnel
Trench Foot	Tingling, itching or burning sensation Blisters may be present	Soak feet in warm water Wrap with dry bandages Drink a warm, sugary drink.

## 13.0 FIRE PREVENTION AND PROTECTION

This procedure provides guidance for the protection of personnel from fires and for the prevention of fires. Control measures; i.e., hot work permits and fire protection program, shall be developed for each site.

### 13.1 Fire Extinguisher Types

**2A Extinguisher** - contains water, soda acid or foam, and is of the pump or pressure type with a discharge capacity of not less than 2-1/2 gallons per minute.

**10B Extinguisher** - contains foam, CO<sub>2</sub> or a dry chemical with a discharge capacity of not less than 17 gallons or 30 pounds.

### 13.2 Fire Classifications

Fires are classified as Class A, B, C, D, or Special, depending upon the types of materials involved. These classifications are defined as follow:

- Class A: Fires in ordinary combustible materials such as wood, cloth, paper, trash, rubber, and plastic.
- Class B: Fires in flammable liquids, oil, grease, tar, oil-base paint, lacquer, and flammable gas.
- Class C: Fires involving energized electrical equipment or system, resulting in the extinguishing media conducting electricity. (When electrical equipment or systems are de-energized, extinguisher for Class A or B fires can be used safely.)
- Class D: Fires in combustible metals, such as magnesium, titanium, zirconium, sodium, lithium, and potassium.
- Special: Fires in certain reactive chemicals that fall outside the other four classifications and that, in some cases, require special extinguishing agents or techniques.

### 13.3 Fire Prevention and Protection Requirements

An alarm system at the site shall be established for notification of all employees of an emergency. The alarm system should include lights, horns, sirens, or other appropriate devices to ensure that every employee is aware of project emergencies. An emergency plan shall be established for each site.

To prevent ignition hazards, electrical wiring and equipment shall be installed in accordance with the applicable regulatory guidelines. Smoking shall be prohibited in areas where fire hazards may exist, and “No Smoking” signs shall be posted.



A fire extinguisher rated not less than 5 A shall be provided for each 3,000 square feet of building area and in each yard storage area. Travel distance to any fire extinguisher shall not exceed 75 feet from any protected area inside or outside a building.

One or more extinguisher rated not less than 5 A shall be located on each floor of a multi-stored building. Extinguisher rated not less than 10B shall be provided within 50 feet of any area in which more than five (5) gallons of flammable or combustible liquids or five (5) pounds of flammable gas are being used.

**Note: This does not apply to fuel tanks or motor vehicles.**

Carbon tetrachloride extinguishers are prohibited. Extinguisher shall be conspicuously located where they shall be readily accessible and immediately available in case of fire, and their locations shall be conspicuously marked. Extinguishers shall be installed on hangers or in the brackets provided.

Client emergency plans shall be studied, if they are applicable, to ensure that they shall adequately protect TMG employees. If they do not offer adequate protection, the Client and TMG shall mutually agree upon protection measures.

#### **13.4 Fire Watch and Fire Extinguisher Training**

Where the employer has provided portable fire extinguishers for employee use in the work place, the employer shall also provide an educational program to familiarize employee with the general principle of fire extinguishers use and the hazards involved with incipient-stage fire fighting.

#### **13.5 Inspections**

Extinguisher shall be inspected monthly or more often when circumstances warrant, to ensure that they have not been actuated or tampered with, and to detect any damage. Inspection tags shall be placed on them, and the date of inspection shall be indicated after each inspection. Records should be maintained for one (1) year. Testing or weighting in accordance with applicable regulatory agency (i.e., NFPA) requirements should include the following:

<b><u>TYPE</u></b>	<b><u>Frequency</u></b>
<b>Water Pump</b>	<b>No test required</b>
<b>Cartridge</b>	<b>5 years</b>
<b>Soda Acid</b>	<b>5 years</b>
<b>Pressure</b>	<b>5 years</b>
<b>Foam</b>	<b>5 years</b>
<b>Co2</b>	<b>5 years</b>
<b>Dry Chemical</b>	<b>12 years</b>



Each extinguisher shall have a durable tag, standard for the industry, securely attached to show the maintenance test and recharge date and the initials or signature of the person who performed the services. A discharged fire extinguisher shall be removed from service immediately and replaced. Each site shall maintain a well-documented inspection report.

### **13.6 Recharging**

A written plan shall be established for the prompt recharging and testing of fire extinguishers in accordance with the applicable regulatory (i.e., NFPA) standards.

### **13.7 Substitutions**

In areas where 2 A extinguishers are required, the following may be substituted for each extinguisher.

- One 55-gallon drums of water with three pails
- One water hose of not less than ½ inch diameter, of not more than 100 feet in length, and with a discharge capacity of five (5) gallons per minute
- One fire hose of not less than 1-1/2 inch diameter, of not more than 100 feet in length, and with a discharge capacity of 225 gallons per minute.

**Note: The hoses referred to above must be a sufficient length and have a stream range so as to reach all points in the protected are. These substitutions shall not apply where the possibility of freezing exists.**

### **13.8 Flammable and Combustible Liquids**

#### **Flammable liquids**

A flammable liquid is any liquid having a flashpoint below 100° F. flammable liquids will be known as Class 1 Liquids.

Class 1 liquids are divided into three (3) categories as follows:

- 1A: Liquids having a flashpoint less than 73° F and a boiling point below 100° F.
- 1B: Liquids having a flashpoint less than 73°F and a boiling point at or above 100°F.
- 1C: Liquids having a flashpoint at or above 73°F and a boiling point below 100°F.

## Combustible Liquids

A combustible liquid is any liquid having a flashpoint at or about 100°F. Combustible liquids are divided into two (2) categories as follows:

II: Liquids having flashpoint above 100°F and less than 140°F.

III: Liquids having a flashpoint at or above 140°F.

Category III liquids are subdivided as follows:

IIA: Liquids having a flashpoint at or above 140°F but below 200°F.

IIIB: Liquids having a flashpoint at or above 200°F.

### 13.8.1 Storage

Only approved containers and portable tanks will be used for storage of flammable or combustible liquids. No more than 25 gallons will be stored in a room outside of an approved storage cabinet. Storage cabinets will be labeled with conspicuous lettering, “FLAMMABLE – KEEP FIRE AWAY,”

Not more than 60 gallons of flammable or 120 gallons of flammable or 120 gallons of combustible liquids will be stored in any one storage cabinet or container. Not more than three (3) such cabinets may be located in a single storage area. Materials that react with water to create a fire hazard will not be stored with flammable or combustible liquids. Outside portable tank storage will be located no closer than 20 feet to any building. Tanks and dispensing units will be protected against collision damage.

Storage areas will be kept free of weeds, debris, and combustible material not necessary to the storage. Dispensing units will be protected against collision damage. Tanks and containers should be capaciously marked with the name of the product they contain and “FLAMMABLE-KEEP FIRE AWAY.” “No smoking” signs will be posted in hazardous areas. Approved smoking areas will be designated and properly posted.

Static grounding lines should be provided for all storage containers.

### 13.8.2 Handling

Transfer of flammable liquids from one container to another will be done only when containers are electrically interconnected (bonded). Drawing or transferring will be done only through a closed piping system from safety cans by means of a device drawing through the top or by gravity or pump through an approved self-closing valve. Transferring by cans or air pressure is prohibited.



Dispensing devices and nozzles for flammable liquids will be or of the approved type. Flammable and combustible liquids will not be used within 50 feet of open flame or other source of ignition. "No Smoking" signs will be posted in appropriate areas. Flammable and combustible liquids will be kept in closed containers when not actually in use.

### **13.8.3 Disposal**

Disposal of flammable and combustible liquids will be in accordance with governing regulatory agency (i.e., EPA) requirements.

### **13.8.4 Fire Control**

At least one (1) portable fire extinguisher having a rating of not less than 20B will be located outside of, but not more than 10 feet from, the door of the room used for storage of more than 60 gallons of liquids.

At least one (1) portable fire extinguisher having a rating of not less than 20B will be located not less than 25 feet or more than 5 feet from any flammable liquids storage area.

At least one (1) portable fire extinguisher having a rating of not less than 20b:C will be provided on any vehicle loading, transporting, or dispensing flammable or combustible liquids; in all service and refueling areas; and within 75 feet of each pump or dispenser.

## **14.0 MOTORIZED VEHICLE AND EQUIPMENT OPERATION**

### **14.1 Motorized Vehicles**

This procedure provides guidance for the protection of personnel engaged in motor vehicle operations or working in the area of such operations. This standard applies to company motor vehicles that operate on or off the highway. Company vehicles used for business reasons on public roads or highways must meet all state requirements for the state in which it is operated. Motor vehicles are defined as self-propelled vehicles designed for transportation on the public road or highways, such as an automobile or truck.

#### **14.1.1 Motorized Vehicle Policy**

TMG assigns Motor Vehicles (Cars and Trucks) on a Permanent Assignment and Temporary Assignment Basis. To insure the safe operation and prudent cost management of our Fleet, TMG requires that each employee driving a vehicle follow the practices established in accordance with good business practices.

Every operator of a TMG vehicle shall possess a valid Drivers License issued by the state in which the employee resides. The Drivers License number will be provided to TMG's Safety Director and in providing same, the employee hereby acknowledges that, in accordance with



allowable State law, TMG and its insurance carrier will obtain the employee's driving record. Drivers of TMG vehicles may have up to 6 points; however, no more than 4 of these points shall be incurred during the last 12 months prior to hire. No points can be derived as a result of Reckless Operation or Driving Under the Influence of Drugs or Alcohol (DUI). Review of ones drivers license, for insurability goes beyond the Ohio Points System 36-month window (or applicable state points system); our Insurance Carriers review license history for 4 years for accidents and 5 years for DUI and or reckless operation. Information received with regard to an individual drivers license shall remain confidential and shared only with the TMG's "need to know" individual. Any individual denied Company driving privileges has the right to a conference with TMG's carrier to review their driving history and reason for refusal to insure.

Drivers whose job involves a Commercial Drivers License (CDL) will maintain a current physical card and meet all other standards as required the Department of Transportation for Class A or Class B CDL holders. A copy of the physical card shall be maintained by the Safety Director. The "Need to know" individual shall be construed as the Safety Director for TMG and in the instance of the need for "stand-down" of any truck driver whereby they are removed immediately from active duty, the "Need to know" individual(s) shall be construed as the individual's managing TMG Officer or General Superintendent for TMG who dispatches and supervises that driver.

Any individual operating a Personal vehicle in the course of their work for the TMG business must provide proof of insurance. Any individual transporting tools, other employees, or himself between TMG projects during the workday must also provide proof of insurance. *The workday is defined as hours following the arrival at the first job site to end of shift and is not construed as transportation to and from the employee's home.* No personal vehicle will be used within TMG projects without the Supervisor's full knowledge and authorization for its use. To protect TMG's insurance policies, our carrier has requested that all employees file a copy of their personal insurance card with the Safety Director. This will insure that, as you travel between projects, or may carry even simple hand tools, or give another employee a ride; you are insured personally, removing the right to TMG as "first in line" coverage.

Any driver receiving a DUI, regardless of whether operating a TMG or personal vehicle must report same within *72 hours of receipt*. Any driver having their license withdrawn must also report this to the Safety Director *immediately*.

Accident reporting involving a TMG vehicle, regardless of who is at fault, will be reported immediately to the Safety Director. Remember, we post accident drug test. DOT standards for post-accident Drug and Alcohol Testing will apply.

Drivers under the age of 21 will not be permitted. to operate TMG vehicles. No minor children of assigned drivers will drive a TMG vehicle at any time. Spouses of drivers of company vehicles who may drive or move vehicles on public or private property must be registered on the TMG approved drivers list and are subject to the same License checks as a TMG employee.



Ultimate decision to remove a driver's right to drive a TMG vehicle will be made in cooperation with our Insurance Carrier's standards. TMG is bound to implement the Insurance Carriers decision for removal of any driver from active driving status.

A Police Report will be obtained at the time of every accident. **DO NOT LEAVE THE SCENE OF AN ACCIDENT. Leaving the scene of the accident without stopping will be cause for immediate dismissal.**

In accordance with State Law, we urge all employees to BUCKLE UP. Urge all passengers to wear their seat belts also.

Vehicles garaged at TMG will be locked when parked. An extra key for every vehicle will be kept in the locked key bank maintained by TMG's Equipment Manager. Vehicles garaged at home will be locked when parked. An extra key for every vehicle will be kept in the locked key bank. Under no circumstances will parked vehicles, on TMG projects or properties be left unlocked or with windows down. There will be no exceptions to this policy.

All fueling will be at company owned pumps, whenever practical. There will be NO SMOKING at or near the company gasoline island. All fueling will be done in accordance with fueling policy established separate from this policy. Fuel carried in containers will be stored in OSHA approved containers only. If any container is deemed questionable, please see the TMG Equipment Superintendent for inspection.

TMG vehicles will be kept clean, with minimum weekly exterior washing. No litter or debris will be tolerated in the vehicles. Vehicles with temporary driver assignments (those not driven home) will be maintained clean on a daily basis. Leave your truck free of garbage for the next user.

Report all mechanical failures as they become apparent. Communicate with our shop regularly in scheduling all Preventative Maintenance. Maintain all oil changes at 4000 miles. Schedule no vehicle repairs outside of our shop unless emergency and with knowledge of the Equipment Superintendent. All vehicles which require a CDL will be operated in accordance with Department of Transportation guidelines for pre-trip and regular safety inspections.

The disciplinary policy for TMG, as contained in the employee handbook, is incorporated as a binding part of this policy. The General Safety Rules and Drug and Alcohol Free Workplace are hereby incorporated as a part of this Motor Vehicle Policy. This extends to housekeeping, maintenance of vehicle, and use of drugs or alcohol while operating a TMG vehicle and/or alcohol or drugs found in any part of the vehicle and all areas involving Safe Operations. The Disciplinary Policy 3-warning rules apply to all breaches of the Motor Vehicle Policy including discharge for "major infractions."

All loads will be secure and tarped. Tools and equipment being transported will be chained or locked to deter theft. Vehicles taken home should be locked at night and loads/tools secure. "Driveway theft" is increasingly common.



Restrict the use of cellular phones when driving a motor vehicle. If you must talk and drive, try to keep your conversations brief. Don't try writing, talking and driving! Remember: you can be cited in many communities for using a cell phone when the vehicle is moving. Do not wear stereo headsets or ear phones when operating a TMG vehicle.

The bed of all trucks is to be utilized for transporting items pertinent to your work. Any private use of a Company vehicle for transportation or hauling must be preauthorized by your Supervisor. DO NOT transport anyone - employees or family - *in the bed of a TMG truck*.

Company vehicles may not be loaned to employees that are not on TMG's approved driving list. Don't hesitate to ask a Supervisor before you allow another employee to drive a vehicle assigned specifically to you.

Incidents of road rage or disrespect to the traveling public will be in no way tolerated. Treat all individuals you encounter with the safety and courtesy you expect to receive.

TMG's Drug Free Workplace Policy is hereby incorporated as a part of the MVR Policy as it relates to post accident testing and CDL/DOT requirements.

**Occasionally, a driver may be granted conditional privileges and placed on driver watch. Driver watch means that the Company will run your license every 90 days for one year. Should any violation occur, privileges will be withdrawn.**

The company runs drivers licenses on hire, re-hire, at policy renewal, and randomly throughout the season for all drivers. **It is in your best interest to report any accident, or serious altercation such as DUI or suspension. We don't like surprises!**

As stated previously, good judgment should always prevail. Be alert and attentive to the travelers and road conditions around you and, please, BUCKLE UP!

This procedure provides guidance for the protection of personnel engaged in motor vehicle operations or working in the area of such operations. This standard applies to company motor vehicles that operate on or off the highway. Company vehicles used for business reasons on public roads or highways must meet all state requirements for the state in which it is operated. Motor vehicles are defined as self-propelled vehicles designed for transportation on the public road or highways, such as an automobile or truck.

#### **14.1.2 Management Responsibilities**

Project management is responsible for ensuring that the guidelines in this procedure are adhered to when an employee is assigned as principle operator of a motor vehicle.



### **14.1.3 Driver's Requirements and Responsibilities**

Candidates must meet the following minimum requirements to operate a motor vehicle:

- Having a valid state driver's license. Photo copy in personnel file.
- Be mentally alert and possess the physical ability to drive a motor vehicle safely.
- Display a responsible attitude.
- Become familiar with the motor vehicle to be operated.

All restrictions of the employee's driver's license are automatically applicable to operating company motor vehicles. An employee must carry his/her driver's license on his/her person at all times while operating a motor vehicle and must display it upon request to authorized persons.

The employee shall not operate a company/client vehicle on or off the project after his/her driver's license is suspended, revoked, or otherwise affected.

### **14.1.4 Inspections**

All vehicles or equipment in use will be checked at the beginning of each shift to ensure that the following parts, equipment, and accessories, where applicable, are in safe operating condition and free from apparent damage that could cause failure while in use:

- Service brake
- Trailer brake connections
- Parking brake
- Emergency brake
- Tires
- Horn
- Steering mechanisms
- Coupling devices
- Operating controls
- Seat belts
- Headlights (two)
- Day Running lights
- Tail and brake lights (two)
- Reflectors
- Windshield glass
- Windshield wipers
- Defrosters
- Fire extinguishers
- Safety devices
- Reverse signal alarm, when required



- All glass
- Cab shield and/or canopy (haulage vehicles)

All defects will be corrected before the vehicle is placed in service. During inspection or maintenance, latches or operating levers that control hoisting or dumping devices will be engaged to prevent accidental starting or tripping of the mechanism. Complete all applicable motor vehicle inspection forms, i.e. *USACE Motorized Vehicle Inspection Form* located in all Site-Specific APPs prepared for the United States Corps of Engineers (USACE).

#### **14.1.5 Safety Restraints**

Shoulder harnesses and /or seat belts must be worn at all times whether you are a driver or a passenger in the vehicle. No more than three employees will be permitted to ride on bench0type front seats (both on and off a project).

#### **14.1.6 Transporting Employees on a Project**

Vehicles will have seats that are firmly secured and adequate for the number of employees to be carried. Tools and materials will be secured to prevent movement when they present a hazard.

#### **14.1.7 Motor Vehicle Operation**

Motor vehicles having an obstructed rear view because of the load or the construction of the vehicle will not be operated in reverse gear unless the following conditions are met:

- The vehicle has a reverse signal alarm audible above the surrounding noise level.
- An observer, who has been specifically notified of his/her designation as an observer, signals that it is safe to operate in reverse gear.

### **14.2 Motorized Equipment**

This procedure provides guidance to protect personnel engaged in motorized equipment operation or who work in the area of such operations. Motorized equipment is defined as self-propelled equipment not designed and licensed for transportation on the public roads or highways. Such equipment includes, but is not limited to, material handling equipment such as forklifts, loader, or backhoes.

#### **14.2.1 Operator Licensing and Training**

The operator's ability to safely operate his assigned equipment may be verified by written examination, by a manipulative test, and by observation of his/her performance during the first month of operation. A qualified person designated at each project by the project manager, such as a superintendent, will conduct the manipulative test to determine the applicant's operating ability. A manipulative test will be conducted on each type of model of equipment to be

operated. Training will be provided to each operator in compliance with TMG's Equipment Operator Training.

Candidates for a motorized equipment permit must meet the following minimum requirements:

- The candidate must be mentally alert and physically capable of driving motorized equipment safely.
- The candidate must display a responsible attitude.
- The candidate must be familiar with the motorized equipment to be operated or be able to adapt quickly with proper training.

### **14.2.2 Inspections**

Preoperational inspection of motorized equipment will be conducted and recorded in the equipment records file.

### **14.2.3 Rollover Protection Structures**

All equipment equipped with rollover protective structures will also be equipped with seat belts/restraints to be worn by the operator while the machine is in operation. Forklift trucks with rollover protection will be equipped with seat belts/restraints to be worn by the employee while operating the forklift.

## **15.0 HAZARDOUS ENERGY**

### **15.1 Locks and Tags**

Locks and tags are used by authorized employees to ensure that systems and equipment are de-energized and shut down to perform maintenance or repairs. All locks and tags must be capable of withstanding the environment that they are exposed to for the maximum period of time the exposure is expected, and indicate the identity of the employee applying the device. Locks and tags are only to be removed by authorized employees. Prior to removing locks or tags and energy restored to the system or equipment, the authorized individual must ensure that the work area has been inspected and that all affected individuals have been notified that the locks and tags are about to be removed.

### **15.2 Assured Equipment Grounding**

This procedure provides the standard method for implementing and maintaining an Assured Equipment Grounding Conductor (AEGC) program for all construction activity. This is the preferred method, although there is an alternated Ground Fault Circuit Interrupters (GFCI) procedure. Either one or both are acceptable.



This procedure outlines specific electrical inspection procedures and the frequency of inspection for construction electrical tools and electrical equipment.

**Note: This procedure does not supersede the requirements to visually inspect all hand tools before and after each use.**

### **15.2.1 Responsibilities**

The electrical superintendent or designee shall maintain a record of all construction electrical equipment on the site.

Requisitions for electrical tools and equipment should originate with, or be checked by; the electrical superintendent or designee shall inspect construction electrical tools and electrical equipment as outlined in this procedure and shall keep records of all inspections and repairs performed throughout the duration of each project.

Only qualified electricians shall repair the electrical components of construction electrical tools and electrical equipment.

Each project shall establish a procedure to ensure that contractors inspect their construction electrical tools and electrical equipment.

### **15.2.2 Procedures**

Electrical tools or electrical equipment are to be tagged “defective” until inspected.

Electrical tools and electrical equipment determined by inspection to be in need of repair to remain tagged “defective” until repaired. Following repair, the tool or equipment must be inspected before it can be used in the field.

Under no circumstances may tools or equipment in need of inspection or repair remain in service.

Each craft shall ensure that electrical tool and equipment it has, or is using, bear the current inspection tape or wraps. Before using any electrical tools and equipment, the craftsperson shall visually inspect such equipment for defects. If any defect is found or the equipment does not bear a current inspection sticker, the equipment shall be delivered to the electrical superintendent or designee for inspection. Contractors shall remove their “defective” electrical tools and equipment from the site.

### 15.2.3 Inspection/Marking System

The frequency for periodic inspection of construction electrical tools and electrical equipment shall be indicated by attached color-coded tape or color –coded wraps. The craftsperson using the tools and equipment shall ensure that the markings remain on between inspections. The color code and their corresponding scheduled inspection dates are:

<b>Color Code</b>	<b>Months</b>
<b>Yellow</b>	<b>January through March 31</b>
<b>Orange</b>	<b>April through June 30</b>
<b>White</b>	<b>July through September 31</b>
<b>Red</b>	<b>October through December 31</b>

### 15.2.4 Quarterly Inspections

Portable electrical hand tools, all portable electrical equipment, cord sets, and adapters shall be inspected quarterly using an approved tester in conjunction with a visual inspection. For example:

- Model B-2500 tester made by Pow-R-Safe division of Multi-Amp Corporation, 4271 Bronze Way, Dallas TX 75237
- Model 1020 ECOS electrical safety analyzer made by ECOS Electronics Corporation, 205 West Harrison Street, Oak Park, IL 60304

As a minimum, the visual inspection must include the following:

- Checking the cord for worn or cracked insulation.
- Checking the cord entry to plug and tool housing for frayed or worn insulation and strain relief.
- Checking the plug prongs for damage.
- Checking the plug for exposed connectors.
- Checking the equipment housing for damage.

Voltage testers or measurement devices shall be inspected quarterly. The electrical test for inspecting voltage testers or measurement devices should include testing live AC and DC voltage. Personal protective equipment shall be worn while testing.

As a minimum, the visual inspection shall include:

- checking the leads for signs of wear, poor connection at probes, etc.; and
- checking the housing and the readout window for cracks, loose screws. Etc.

### **15.2.5 Double Insulated Tools**

Double-insulated, portable hand tools may be used provided they bear the Underwriters Laboratories “double-insulated” label. Double-insulated tools shall be inspected quarterly.

## **16.0 EXCAVATING AND TRENCHING**

### **16.1 General Requirements**

Excavations and trenches as well as adjacent areas shall be inspected and a *Daily Excavation Inspection Form and Checklist* completed by a competent person daily; after every rainfall; as soil conditions change; and as needed throughout the shift. If there is evidence of potential slides or cave-ins; indications of failure of protective systems; hazardous atmosphere; or other hazardous conditions; necessary safety precautions must be taken before any additional work in that section of the excavation begins. Refer to Appendix A for a copy of the *Daily Excavation Inspection Form and Checklist*.

Employees shall not work in excavations where water is accumulating unless adequate precautions have been taken to protect employees against the hazard posed by the water accumulation. If water accumulation is controlled or prevented by water removal equipment, the competent person must monitor the removal activities to ensure proper operation.

If the stability of buildings or walls is endangered by an excavation or trench, shoring, bracing, or underpinning will be provided. Excavations and trenches that are adjacent to backfilled excavations or trenches, or which are subject to vibrations from railroad traffic, highway traffic, or the operation of machinery (e.g., shovels, derricks, cranes, trucks), will be secured by support systems, shield systems or other protective systems; i.e., sheet piled shored, and braced.

#### **16.1.1 Access**

In trenches four (4) feet or more in depth, ladders, steps, ramps, or other safe means of access and egress shall be provided and located at intervals of 25 feet or less of lateral travel. If a ladder is used, the ladder will extend three (3) feet above the original surface of the ground and must be secured.

Walkways, ramps, or bridges with standard guardrails will be provided at all excavations and trenches where employees are required or permitted to cross over. The crossing will be made of tightly secured uniformly sized planking.



### **16.1.2 Set Back**

Employees shall be protected from excavated dirt or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least two (2) feet from the edge of the excavation, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations or by combination of both if necessary.

### **16.1.3 Equipment**

When mobile equipment of any type is utilized or permitted to operate adjacent to excavations or trenches, barricades or “stop” logs will be provided. All wells, pits, shafts, trenches, or other similar ground fall hazards will be barricaded or covered.

No one will be allowed under loads handled by shovels, derricks, or hoists or near vehicles being loaded by such equipment. Employees exposed to vehicular traffic operating in the area of excavations or trenches will be provided with and instructed to wear warning vests or other personal protective equipment marked with or made of reflectorized or highly visible material.

### **16.1.4 Dust**

Dust conditions should be kept at a minimum level by the use of water or other safe means.

### **16.1.5 Confined Space**

Every trench or excavation four (4) feet or deeper shall be tested at least daily in accordance to TMG’s confined space procedure in locations where employees enter the trench, prior to employees entering the trench. In locations where employees may be subjected to hazardous dusts, gases, fumes, or an atmosphere deficient in oxygen, employees will be provided with proper respiratory protections, instructed in its use, and required to use such protection. Rescue equipment will be immediately available in such circumstances for use by competent personnel.

### **16.1.6 Filing**

A copy of all trench/excavation designs by the registered professional engineer is to be maintained with the Safety files on the project until project completion. Applicable Regulatory Trenching and Excavation Standards (i.e., the 1926 OSHA Trenching and Excavation Standards) should be consulted for other items and circumstances some of which include:

- Structural ramp requirements for access and egress (personnel or equipment).
- Water removal from excavation.
- Protective system damage.

- Manufacturers' approval to deviate from standards.
- Support system removal.

### **16.1.7 Excavation Protective System**

Each employee in an excavation shall be protected from cave-ins by an adequate protective system. Protective systems shall have the capacity to resist all loads that are intended or could reasonably be expected to be applied or transmitted to the system.

Sides, slopes, and faces of all excavations will be scaled, benched, rock-bolted, wire-meshed, or secured by some other equally effective means. Portable trench boxes or sliding trench shield may be used instead of shoring or sloping. Such boxes or shields must be of strength at least equivalent to the sheeting or shoring that would be required for the composition of the soil or material in which the trench is made. The requirements below for the appropriate option must be followed and properly documented. Exceptions to these include:

- Excavations that are made entirely in stable rock. (Natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed. *First* it must be classified by a competent person.)
- Excavations that are less than five (5) feet in depth where examination of the ground by a competent person provides no indication of a potential cave-in.

### **16.1.8 Soil Classification**

When using protective systems requiring soil classification each soil and rock deposit shall be classified by a competent person as "Stable Rock, Type A, Type B, or Type C." The classification shall be made based on the results of at least one (1) visual and at least one (1) manual analysis. Such analysis shall be conducted by a competent person using acceptable visual and manual test or other recognized methods of soil classification. The manual test consists of soil plasticity dry strength, thumb penetration, pocket penetrometer or result from a hand operated shearvane.

### **16.1.9 Slope/Benching System**

The slopes and configuration of sloping and benching systems for excavation 5 feet to 20 feet in depth must be selected and constructed by the employer or his/her designee and shall be in accordance with the following requirements. Soil analysis must be done to determine the soil or rock type by a competent person.

<u>Soil or Rock Type</u>	<u>Maximum Allowable Slope (Horizontal Allowable Slope)</u>
Stable Rock	Vertical 90 Degrees
Type A	3/4 foot : 1 foot 53 Degrees
Type B	1 foot : 1 foot 45 Degrees
Type C	1-1/2 foot : 1 foot 34 Degrees

**Note:** Simple slope excavation in Type A soil, which are open 24 hours or less (short term) and which are 12 feet or less in depth shall have a maximum allowable slope of 1/2 H:1V(63 Degrees). Simple slope excavations in Type A soil, which are open 24 hours or less (short term) and which are greater than 12 feet in depth shall be 3/4 H:1V(54 Degrees). The soil must be classified as Type A by the competent person. The required permit and classification must be filed on the project. No soil classification is required if 1-1/2 foot : 1 foot (Horizontal:Vertical) or 34 Degree slope is used. If a 1-1/2 foot : 1 (Horizontal:Vertical) 34 Degrees is not used a soil classification must be made.

#### **16.1.10 Support System, Shield System, and Other Protective Systems**

Designs of support systems, shield systems, and other protective systems shall be selected and constructed by the employer or designee and shall be in accordance with applicable regulatory standards.

### **17.0 WORK PLATFORMS, SCAFFOLDING, AND LADDERS**

Manufactured work platforms shall be erected, used, inspected, tested, maintained, and repaired in accordance with ANSI A10.8 and the manufacturer's recommendations. Work platforms and scaffolding must comply with fall protection measures outline in this Safety Manual and each site-specific APP. Scaffolding must be capable of supporting without failure at least 4 times their anticipated load. The construction, installation, and use of ladders shall conform to ANSI A14.1-4, as applicable.

### **18.0 WELDING, CUTTING, AND BRAZING**

Welders, cutters, and their supervisors must be trained in the safe operation of their equipment, safe welding/cutting/brazing practices, and welding/cutting/brazing respiratory and fire protection. All welding equipment must be inspected before use. All defective equipment must be removed from service. A *Hot Work Permit Form* must be completed prior to all welding, cutting, and brazing activities. Refer to Appendix A for a copy of the *Hot Work Permit Form*.

## **19.0 CONCRETE, MASONRY, AND STEEL ERECTION**

### **19.1 Concrete and Masonry Construction**

All concrete pour operations must be conducted under the direct supervision of a competent supervisor. This includes an on-site pre-safety briefing to all employees, inspection of forms and of reinforcing bars, compliance with blueprints and building structural details, bracing and troughs, and the inspection of all PPE that will be used during the operation

No construction loads shall be placed on a concrete structure or portion of a concrete structure unless the employer determines, based on information received from a person who is qualified in structural design, that the structure or portion of the structure is capable of supporting the loads. All protruding reinforcing steel, onto and into which employees could fall, shall be guarded to eliminate the hazard of impalement.

No employee (except those essential to the post-tensioning operations) shall be permitted to be behind the jack during tensioning operations. Signs and barriers shall be erected to limit employee access to the post-tensioning area during tensioning operations. Riding concrete buckets. No employee shall be permitted to ride concrete buckets. No employee shall be permitted to work under concrete buckets while buckets are being elevated or lowered into position. To the extent practical, elevated concrete buckets shall be routed so that no employee, or the fewest number of employees, is exposed to the hazards associated with falling concrete buckets. No employee shall be permitted to apply a cement, sand, and water mixture through a pneumatic hose unless the employee is wearing protective head and face equipment.

### **19.2 Structural Steel Erection**

#### **19.2.1 Safety Planning Meeting**

A safety planning meeting will be held prior to the placement of structural steel. The meeting shall be scheduled prior to the placement of structural steel members. In attendance will be the site manager, site civil engineer, construction manager, ironworker superintendent, site-equipment-superintendent, site-safety-representative, and appropriate contractor/subcontractor personnel as required. Structural drawings to assist in establishing sequence of placement of structural members and logistics of material and personnel should be made available. Topics discussed during the meeting should include the following as a minimum:

- Storage (lay down areas) sequence of deliver and off loading
- Tools
- Sequence of Placement (stability of all stages)
- Temporary guying and alignment

- Temporary flooring
- Static lines, lifelines, and safety nets
- Crane capabilities (also ground bearing capacities)
- Access (ladders, stairways, temporary platforms)
- Bolting and fitting
- Release of temporary guying
- Permanent flooring
- Safety, harness, lanyards
- Enforcement
- Qualifications and training of personnel involved
- Safety of other operations and personnel
- Fall protection plan
- Rigging
- Anchorage points
- Deviation from plan

Applicable regulatory standards (i.e., OSHA Standards 1926.750 through 1926.752) should be used as a guide when reviewing these topics.

### **19.2.2 Steel Erection Plan**

A final steel erection plan shall include the action to be taken on the above items, which details the safe work methods to be adopted. This should be in written form and kept on file in the project safety office, the ironworker's superintendent office, and/or the appropriate contractor/subcontractor office.

### 19.2.3 Steel Erection Procedure

Permanent floors shall be installed as the erection of structure members' progresses.

At no time shall there be more than four floors or 48 feet of unfinished bolting or welding above the foundation or uppermost permanently secured floor. The intent of this paragraph is to insure the integrity and stability of the steel structure.

In all structural steel erection temporary and/or permanent flooring will be maintained within two (2) stories or 30 feet, whichever is less, below and directly under the portion of each tier of beams on which any work (such as bolting, riveting, welding, or painting) is being performed.

Planking or metal decking in temporary floors will be of the proper strength and thickness to carry the working load, but the planking will not be less than two inches full-sized and undressed or of equivalent material.

Permanent flooring requires a standard guardrail (top rail, midrail, and toe board) guarding on all open sides.

Temporary floors will be tightly planked and secured to prevent movement

In structures not adaptable to temporary and/or permanent floors, and where the potential fall distance exceeds two (2) stories or 25 feet, safety nets shall be provided where the use of scaffolds, ladders, catch platforms, safety lines, mobile access platforms or safety harnesses is impractical. During structural steel assembly, a safety railing (cable) of ½ inch diameter shall be installed approximately 42 inches high around the periphery of all temporary planked or metal decked floors.

**Note: When wire rope is installed for safety railings or standard guardrail, it shall be recessed into the interior of the floor to the most practicable extent; i.e., run from the inside of columns rather than the outside and kept taut by use of a turnbuckle or other means.**

### 19.2.4 Bolting, Fitting-Up, and Plumbing-Up

When connecting steel, do not release the hoisting line until the steel member is secured with not less than two bolts, or the equivalent at each connection and drawn up tight.

Containers shall be provided for storing or carrying bolts and drift pins and shall be secured against accidental displacement when aloft.

Impact wrenches shall be provided with a locking device for retaining the socket. When temporary rigging such as wire rope lashing, come-alongs, chain falls, etc., are used for support during all erection sequences of machines, piping, platforms, walkways, and steel members, the rigging shall not be removed until all leveling and alignment is complete and the item is secured in its permanent location. At that time rigging may be removed.

### **19.2.5 Personal Protection**

In all structures, safety harnesses will be worn by all employees exposed to a fall hazard of six (6) feet or more. Static lines will be installed as needed to facilitate tying-off. Connectors will be required to tie off at all times when installing or erecting steel.

Safety nets are only acceptable substitutes for safety harnesses when the use of safety harnesses is impractical. Static lines will be installed along the perimeters and within the structure whenever employees are exposed to a fall from the structure, and the employees will tie-off whenever they are so exposed.

For the protection of other crafts, signs and barricades will be installed at the area where erection of steel is in progress. Overhead protection must be made available in areas where employees have to stand or walk under overhead work, and there is no other passage possible.

## **19.3 Pre-Engineered Building Erection**

### **19.3.1 Procedure**

Prior to the start of steel erection a survey will be made of the conditions to determine the hazards and the kind and number of safeguards that are required to be installed and used. The survey shall include, but will not be limited to, safe access and movement, work procedures, tools and equipment.

Scaffolds, ladders, catch platforms, personnel hoists static lines, and/or safety harnesses will be used in pre-engineered building because there are no temporary or permanent floors available.

### **19.3.2 Bolting, Fitting-Up, and Plumbing-Up**

Containers shall be provided for storing or carrying bolts and drift pins. Containers shall be secured against accidental displacement when aloft. Impact wrenches shall be provided with a locking device for retaining the socket.

### **19.3.3 Personal Protection**

In all pre-engineered building structures, safety harnesses and/or scaffolds and personnel hoists will be used by all employees exposed to a fall hazard of six 6 or more. Static lines and lifelines will be installed as needed within the structure to facilitate tying-off. Employees will tie off whenever they are exposed to a fall from the structure.

When gathering, stacking and installing roof decking, personnel shall be protected by safety harnesses with lanyards attached to a catenary line, life line or other substantial anchorage or by providing work platforms or scaffolds.

Ladders, stairways, will be erected to provide safe access to and egress from work areas.



## **20.0 HAND AND POWER TOOLS**

Hand and power tools shall be used, inspected, and maintained in accordance with the manufacturer's instructions and recommendations and shall be used only for the purpose for which designed. Hand and power tools shall be inspected, tested, and determined to be in safe operating condition before use. Continued periodic inspections shall be made to assure safe operating condition and proper maintenance. Hand and Power tools shall be in good repair and with all required safety devices installed and properly adjusted. Tools having defects that impair their strength or render them unsafe shall be removed from service.

## **21.0 CONFINED SPACE ENTRY**

Confined space work performed in permanent facilities and/or constructions sites must be performed in accordance with 29 CFR 1910.146 and ANSI Z117.1. All confined spaced must be identified at each project site. A Confined Space Entry Permit must be obtained and entry procedures must be developed in accordance with all applicable federal, state, and, local regulations prior to entry of a confined space. Refer to Appendix A for a copy of the *Confined Space Entry Form*.

## **22.0 ENVIRONMENTAL AFFAIRS**

The use of incentives, awards, and recognition to motivate employees to perform safely is an important feature of TMG's Health and Safety Program. On direct hire, construction management projects and in operational offices TMG encourages the development of safe work habits by setting individual safe work hour goals. When these goals are attained and an award level is reached TMG recognizes the achievement with the presentation of specified safety awards.

There are three primary levels of safety recognition: the "Award of Merit", the "Star Award Level" and the "Safety Excellence Award Level". Whenever a project or office reaches a safe award level, it must contact the TMG Safety Department for verification and issuance of the appropriate award.

The achievement of a safe work hour goal and the issuance of a Health and Safety Achievement Award are usually recognized.

### **22.1 Responsibility**

The Corporate Safety Department will assist line management in the development of appropriate control procedures for those substances that are known to be hazardous to health or the environment. Specific precautions for the handling, use, storage, transportation, and disposal of such substances will be developed and communicated to management and the necessary



employees. Safety or other designated staff functions at the corporate, regional, or project level will directly assist managers in the implementation of procedures.

## **22.2 Environmental Surveys**

A key element of the implementation and success of the Environmental Affairs Program is the environmental survey. These surveys will be conducted to verify compliance with federal and state hazardous waste regulation and to ensure that company environmental standards are properly implemented and maintained.

The TMG Safety Director is responsible for the determination and execution of environmental surveys. Surveys may be requested or may be based on need and established by analysis of project environmental data.

## **22.3 Internal Communications**

To aid in the implementation and continuing maintenance of this procedure, the following will be issues by the Corporate Safety Department as required:

Environmental Affairs Standard Operating Procedures

Directive that communicate objectives and establish guidelines and procedures necessary to maintain the correctness of the Environmental Affairs Program.

## **23.0 OFFICE SAFETY**

This procedure establishes the necessary guidelines for providing safety in both the general office and project office locations. It includes the basic safety practices that are to be expected in an office environment and are to be used only as a basis for establishing office safety rules that will made site-specific for a given location.

### **23.1 Responsibilities**

Responsibility, for administering these guidelines and for complying with regulatory standards will rest with each business unit and each site manager.

### **23.2 Guidelines for All Locations**

Office and workstation layout should be established by following the guidelines for efficiency, convenience, and safety as listed below.

### *Exits*

Every building designed for human occupancy shall be provided with exits sufficient to permit the prompt escape of occupants in case of emergency.

Exits and the way of approach and travel from exits shall be maintained so they are unobstructed and are accessible at all times.

All exits shall discharge directly to the street or other open space, which gives safe access to a public way.

**Note: For further clarification check your local fire codes and OSHA or equivalent Regulatory Agency requirements.**

### *Passageways/Aisles*

A minimum width of 4 feet should be established for aisles. Obstructions such as wastebaskets, telephone and electrical outlets, low tables, and office equipment must be placed where they do not present tripping hazards. Doors should not open into the path of employee travel; however, if they do, the floor should be marked indicating the swing of the door.

### *Floors, General Conditions*

- All floors surfaces shall be kept clean, dry, and free from obstructions.
- Where wet processes are used, drainage shall be maintained.
- All floor finishes and/or carpets should be selected for anti-slip qualities. Well-maintained floors/carpets will provide protection against slips and falls. Defective tile or carpet should be repaired immediately.

### *Office Traffic*

- Walk - never run
- Avoid reading while walking
- High heels increase the risk of a fall; low heel shoes are preferable
- Shoes shall be worn at all times in the work area

### *Stairways*

- Stairways should be protected with anti-slip material



- Use handrails, take one step at a time, keep to the right, and do not hurry
- Don't store or throw anything on steps or stairways
- It is recommended that you do not descend stairways in high heel shoes in an emergency situation

### *Elevators*

- Walk, don't run for an elevator
- On automatic elevators do not attempt to stop doors with your hands. Wait for the next elevator
- Watch your step when entering or exiting an elevator because the car may not be completely level with the floor when the doors open
- Call buttons in elevators used. Know the location of emergency

### *Portable Fire Extinguishers*

- Portable fire extinguishers suitable to the conditions and hazards involved shall be provided and maintained in an effective operating condition.
- Portable fire extinguishers shall be conspicuously located and mounted where they will be readily accessible. Extinguishers shall not be obstructed or obscured from view and shall be identified by way of signs, etc.
- Where the employer has provided portable fire extinguishers for employee use in the workplace, the employer shall also provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting

### *File Cabinets*

- File cabinets should be placed far enough away from doors or passageways so that they do not interfere with exits.
- Place heaviest load in lower drawers
- Open only one file drawer at a time
- File drawers (as well as desk and cabinet drawers) should be closed when not in use
- When closing a drawer, grasp the handle to avoid finger injuries



- Do not lean, sit or stand on open drawers
- Do not store computers, keyboards, monitors, or objects on cabinets that can become unstable.

### ***Electrical Office Equipment***

- Computers, typewriters, and printers will not be placed on stands until the locking latch has been checked to see if it has been properly bolted. All electrical equipment will be electrically disconnected in the following instances:
  - Staplers: Whenever unjamming, loading, unloading, or adjusting
  - Computers/printers/copiers: When changing ribbons, unjamming, or adjusting (not when changing the typewriter element)
  - All electrical devices shall be inspected for safe operation prior to use and periodically thereafter

### ***Sharp Objects***

- Use caution when folding or handling paper to avoid paper cuts
- When stapling an item to a folder, the piercing part of the staple must be directed to inner portion of the folder
- Use a staple remover to remove staples
- Paper cutters of proper construction and in good condition require two common sense precautions: Keep your fingers away from the blade when it comes down, and keep the blade in a down and locked position when not in use. Report any needed repairs immediately

### ***Miscellaneous***

- Turn lights on before entering a dark room or dark corridor. Report locations that are inadequately lighted
- To avoid falling, do not tilt back in a straight chair, do not lean back too far in a swivel chair, and do not overreach
- Do not lift beyond your strength. When lifting, let your legs do the work, not your back. When heavy items are to be moved, arrange for necessary help or equipment needed. If an object to be handled could cause cuts or splinters, wear gloves to protect your hands
- Broken glass should be wrapped in paper and placed in a wastebasket or in a special

container provided for this purpose

- Furniture and equipment, which is defective or hazardous, shall be removed from service and reported to supervision immediately
- All sharp edges, splinters, splinters, burrs on furniture or equipment shall be removed promptly
- Do not remain at your desk when overhead work is being performed
- Horseplay can cause injury and is not tolerated
- Make certain you know what to do in the event of a fire, the presence of smoke or fumes, or other emergencies. Follow the instructions provided by your supervisor
- Follow instructions on labels when using any type of chemical
- Smoking is permitted only in designated areas
- Clean up spills immediately, especially on stairs or tile floors
- In passageways that present a collision hazard at blind corners, the use of wall mounted mirrors shall be instituted

### **23.3 Training**

All personnel working in an office environment will be provided training in office safety hazards.

## **24.0 TRAVEL SAFETY**

This procedure outlines general practices to ensure safety while traveling by car and airplane, both domestically and internationally, on company business. Safety during travel is of the utmost importance to TMG; Therefore, each site and office is responsible for establishing procedures and guidelines that will ensure safe travel.

### **24.1 Automobile**

- Use only those vehicles equipped with inflatable restraints (where available), shoulder harnesses and/or seat belts, and wear these restraints at all times, whether you are a driver or a passenger in the vehicle.
- Before operating a vehicle, make sure it is mechanically sound and properly equipped for



safety. Visibly check for fluid leaks, lights, tires and tools, dashboard controls, brakes, and wipers to make sure they are in good working condition. To assure yourself of its safety, check out a rental vehicle even more carefully than your own. You do not know how well it has been maintained.

- Obey all traffic signs, laws, rules and regulations.
- Do not pick up hitchhikers. Never pick up motorists whose vehicles are disabled; go to the nearest telephone and call for assistance.
- Each site should develop an accident reporting plan to assure that the proper site personnel are notified of an accident and that appropriate emergency procedures are arranged.

## **24.2 Air Transportation**

- Employees are prohibited from piloting personal or rented aircraft on company business unless they are employed by TMG as pilots.
- Prepare for a potential flight emergency by listening carefully to the flight attendant's safety orientation.
- Locate the emergency exit nearest you.
- Use care when entering or exiting the airplane.
- Use handrails and be cautious of low head room conditions and overhead storage compartments at eye level.
- Open overhead storage compartments carefully because their contents may shift during flight.
- Keep your seat belt fastened at all times when you are in your seat.
- If you have a known pre-existing medical condition, be prepared to communicate this and any required action to the flight attendant.
- In case of injury, insist that a crew member fill out an accident report.
- Make all reservations for approved carrier and routing through the company travel department or an approved provider.

### 24.3 Hotel

- Locate the nearest exit.
- In case of a fire:
  - Stay close to the floor
  - Feel the door; if it is hot, do not open it
  - Wet a towel and place it at the bottom of the door still to keep smoke out
  - Use the stairs, not the elevator
- Place a mat or towel on the bath floor to step on when exiting the shower/tub
- Do not smoke in bed
- Do not allow strangers access to your room number

APPENDIX A

CHECKLISTS, FORMS, AND LOGS

# OSHA

## Forms for Recording Work-Related Injuries and Illnesses

### Dear Employer:

This booklet includes the forms needed for maintaining occupational injury and illness records for 2004. These new forms have changed in several important ways from the 2003 recordkeeping forms.

In the December 17, 2002 Federal Register (67 FR 77165-77170), OSHA announced its decision to add an occupational hearing loss column to OSHA's Form 300, Log of Work-Related Injuries and Illnesses. This forms package contains modified Forms 300 and 300A which incorporate the additional column M(5) Hearing Loss. Employers required to complete the injury and illness forms must begin to use these forms on January 1, 2004.

In response to public suggestions, OSHA also has made several changes to the forms package to make the recordkeeping materials clearer and easier to use:

- On Form 300, we've switched the positions of the day count columns. The days "away from work" column now comes before the days "on job transfer or restriction."
- We've clarified the formulas for calculating incidence rates.
- We've added new recording criteria for occupational hearing loss to the "Overview" section.
- On Form 300, we've made the column heading "Classify the Case" more prominent to make it clear that employers should mark only one selection among the four columns offered.

The Occupational Safety and Health Administration shares with you the goal of preventing injuries and illnesses in our nation's workplaces. Accurate injury and illness records will help us achieve that goal.

Occupational Safety and Health Administration  
U.S. Department of Labor

### What's Inside...

In this package, you'll find everything you need to complete OSHA's *Log* and the *Summary of Work-Related Injuries and Illnesses* for the next several years. On the following pages, you'll find:

- ▼ **An Overview: Recording Work-Related Injuries and Illnesses** — General instructions for filling out the forms in this package and definitions of terms you should use when you classify your cases as injuries or illnesses.
- ▼ **How to Fill Out the Log** — An example to guide you in filling out the *Log* properly.
- ▼ **Log of Work-Related Injuries and Illnesses** — Several pages of the *Log* (but you may make as many copies of the *Log* as you need.) Notice that the *Log* is separate from the *Summary*. 
- ▼ **Summary of Work-Related Injuries and Illnesses** — Removable *Summary* pages for easy posting at the end of the year. Note that you post the *Summary* only, not the *Log*. 
- ▼ **Worksheet to Help You Fill Out the Summary** — A worksheet for figuring the average number of employees who worked for your establishment and the total number of hours worked.
- ▼ **OSHA's 301: Injury and Illness Incident Report** — A copy of the OSHA 301 to provide details about the incident. You may make as many copies as you need or use an equivalent form. 

Take a few minutes to review this package. If you have any questions, **visit us online at [www.osha.gov](http://www.osha.gov) OR call your local OSHA office.** We'll be happy to help you.



# An Overview: Recording Work-Related Injuries and Illnesses

The Occupational Safety and Health (OSH) Act of 1970 requires certain employers to prepare and maintain records of work-related injuries and illnesses. Use these definitions when you classify cases on the Log. OSHA's recordkeeping regulation (see 29 CFR Part 1904) provides more information about the definitions below.

The *Log of Work-Related Injuries and Illnesses* (Form 300) is used to classify work-related injuries and illnesses and to note the extent and severity of each case. When an incident occurs, use the *Log* to record specific details about what happened and how it happened. The *Summary* — a separate form (Form 300A) — shows the totals for the year in each category. At the end of the year, post the *Summary* in a visible location so that your employees are aware of the injuries and illnesses occurring in their workplace.

Employers must keep a *Log* for each establishment or site. If you have more than one establishment, you must keep a separate *Log* and *Summary* for each physical location that is expected to be in operation for one year or longer.

Note that your employees have the right to review your injury and illness records. For more information, see 29 Code of Federal Regulations Part 1904.35, *Employee Involvement*.

Cases listed on the *Log of Work-Related Injuries and Illnesses* are not necessarily eligible for workers' compensation or other insurance benefits. Listing a case on the *Log* does not mean that the employer or worker was at fault or that an OSHA standard was violated.

## When is an Injury or Illness considered work-related?

An injury or illness is considered work-related if an event or exposure in the work environment caused or contributed to the condition or significantly aggravated a preexisting condition. Work-relatedness is

presumed for injuries and illnesses resulting from events or exposures occurring in the workplace, unless an exception specifically applies. See 29 CFR Part 1904.5(b)(2) for the exceptions. The work environment includes the establishment and other locations where one or more employees are working or are present as a condition of their employment. See 29 CFR Part 1904.5(b)(1).

## Which work-related injuries and illnesses should you record?

Record those work-related injuries and illnesses that result in:

- ▼ death,
- ▼ loss of consciousness,
- ▼ days away from work,
- ▼ restricted work activity or job transfer, or
- ▼ medical treatment beyond first aid.

You must also record work-related injuries and illnesses that are significant (as defined below) or meet any of the additional criteria listed below.

You must record any significant work-related injury or illness that is diagnosed by a physician or other licensed health care professional. You must record any work-related case involving cancer, chronic irreversible disease, a fractured or cracked bone, or a punctured eardrum. See 29 CFR 1904.7.

## What are the additional criteria?

You must record the following conditions when they are work-related:

- ▼ any needlestick injury or cut from a sharp object that is contaminated with another person's blood or other potentially infectious material;
- ▼ any case requiring an employee to be medically removed under the requirements of an OSHA health standard;
- ▼ tuberculosis infection as evidenced by a positive skin test or diagnosis by a physician or other licensed health care professional after exposure to a known case of active tuberculosis.
- ▼ an employee's hearing test (audiogram) reveals 1) that the employee has experienced a Standard Threshold Shift (STS) in hearing in one or both ears (averaged at 2000, 3000, and 4000 Hz) and 2) the employee's total hearing level is 25 decibels (dB) or more above audiometric zero (also averaged at 2000, 3000, and 4000 Hz) in the same ear(s) as the STS.

## What is medical treatment?

Medical treatment includes managing and caring for a patient for the purpose of combating disease or disorder. The following are not considered medical treatments and are NOT recordable:

- ▼ visits to a doctor or health care professional solely for observation or counseling;

## What do you need to do?

1. Within 7 calendar days after you receive information about a case, decide if the case is recordable under the OSHA recordkeeping requirements.
2. Determine whether the incident is a new case or a recurrence of an existing one.
3. Establish whether the case was work-related.
4. If the case is recordable, decide which form you will fill out as the injury and illness incident report.

You may use *OSHA's 301: Injury and Illness Incident Report* or an equivalent form. Some state workers compensation, insurance, or other reports may be acceptable substitutes, as long as they provide the same information as the OSHA 301.

## How to work with the Log

1. Identify the employee involved unless it is a privacy concern case as described below.
2. Identify when and where the case occurred.
3. Describe the case, as specifically as you can.
4. Classify the seriousness of the case by recording the **most serious outcome** associated with the case, with column G (Death) being the most serious and column J (Other recordable cases) being the least serious.
5. Identify whether the case is an injury or illness. If the case is an injury, check the injury category. If the case is an illness, check the appropriate illness category.



- ▼ diagnostic procedures, including administering prescription medications that are used solely for diagnostic purposes; and
- ▼ any procedure that can be labeled first aid. (See below for more information about first aid.)

### **What is first aid?**

If the incident required only the following types of treatment, consider it first aid. Do NOT record the case if it involves only:

- ▼ using non-prescription medications at non-prescription strength;
- ▼ administering tetanus immunizations;
- ▼ cleaning, flushing, or soaking wounds on the skin surface;
- ▼ using wound coverings, such as bandages, BandAids™, gauze pads, etc., or using SteriStrips™ or butterfly bandages.
- ▼ using hot or cold therapy;
- ▼ using any totally non-rigid means of support, such as elastic bandages, wraps, non-rigid back belts, etc.;
- ▼ using temporary immobilization devices while transporting an accident victim (splints, slings, neck collars, or back boards).
- ▼ drilling a fingernail or toenail to relieve pressure, or draining fluids from blisters;
- ▼ using eye patches;
- ▼ using simple irrigation or a cotton swab to remove foreign bodies not embedded in or adhered to the eye;
- ▼ using irrigation, tweezers, cotton swab or other simple means to remove splinters or foreign material from areas other than the eye;

- ▼ using finger guards;
- ▼ using massages;
- ▼ drinking fluids to relieve heat stress

### **How do you decide if the case involved restricted work?**

Restricted work activity occurs when, as the result of a work-related injury or illness, an employer or health care professional keeps, or recommends keeping, an employee from doing the routine functions of his or her job or from working the full workday that the employee would have been scheduled to work before the injury or illness occurred.

### **How do you count the number of days of restricted work activity or the number of days away from work?**

Count the number of calendar days the employee was on restricted work activity or was away from work as a result of the recordable injury or illness. Do not count the day on which the injury or illness occurred in this number. Begin counting days from the day after the incident occurs. If a single injury or illness involved both days away from work and days of restricted work activity, enter the total number of days for each. You may stop counting days of restricted work activity or days away from work once the total of either or the combination of both reaches 180 days.

### **Under what circumstances should you NOT enter the employee's name on the OSHA Form 300?**

You must consider the following types of injuries or illnesses to be privacy concern cases:

- ▼ an injury or illness to an intimate body part or to the reproductive system,
- ▼ an injury or illness resulting from a sexual assault,
- ▼ a mental illness,
- ▼ a case of HIV infection, hepatitis, or tuberculosis,
- ▼ a needlestick injury or cut from a sharp object that is contaminated with blood or other potentially infectious material (see 29 CFR Part 1904.8 for definition), and
- ▼ other illnesses, if the employee independently and voluntarily requests that his or her name not be entered on the log.

You must not enter the employee's name on the OSHA 300 Log for these cases. Instead, enter "privacy case" in the space normally used for the employee's name. You must keep a separate, confidential list of the case numbers and employee names for the establishment's privacy concern cases so that you can update the cases and provide information to the government if asked to do so.

If you have a reasonable basis to believe that information describing the privacy concern case may be personally identifiable even though the employee's name has been omitted, you may use discretion in describing the injury or illness on both the OSHA 300 and 301 forms. You must enter enough information to identify the cause of the incident and the general severity of

the injury or illness, but you do not need to include details of an intimate or private nature.

### **What if the outcome changes after you record the case?**

If the outcome or extent of an injury or illness changes after you have recorded the case, simply draw a line through the original entry or, if you wish, delete or white-out the original entry. Then write the new entry where it belongs. Remember, you need to record the most serious outcome for each case.

### **Classifying injuries**

An injury is any wound or damage to the body resulting from an event in the work environment.

*Examples:* Cut, puncture, laceration, abrasion, fracture, bruise, contusion, chipped tooth, amputation, insect bite, electrocution, or a thermal, chemical, electrical, or radiation burn. Sprain and strain injuries to muscles, joints, and connective tissues are classified as injuries when they result from a slip, trip, fall or other similar accidents.

## Classifying illnesses

### **Skin diseases or disorders**

Skin diseases or disorders are illnesses involving the worker's skin that are caused by work exposure to chemicals, plants, or other substances.

*Examples:* Contact dermatitis, eczema, or rash caused by primary irritants and sensitizers or poisonous plants; oil acne; friction blisters, chrome ulcers; inflammation of the skin.

### **Respiratory conditions**

Respiratory conditions are illnesses associated with breathing hazardous biological agents, chemicals, dust, gases, vapors, or fumes at work.

*Examples:* Silicosis, asbestosis, pneumonitis, pharyngitis, rhinitis or acute congestion; farmer's lung, beryllium disease, tuberculosis, occupational asthma, reactive airways dysfunction syndrome (RADS), chronic obstructive pulmonary disease (COPD), hypersensitivity pneumonitis, toxic inhalation injury, such as metal fume fever; chronic obstructive bronchitis, and other pneumoconioses.

### **Poisoning**

Poisoning includes disorders evidenced by abnormal concentrations of toxic substances in blood, other tissues, other bodily fluids, or the breath that are caused by the ingestion or absorption of toxic substances into the body.

*Examples:* Poisoning by lead, mercury,

cadmium, arsenic, or other metals; poisoning by carbon monoxide, hydrogen sulfide, or other gases; poisoning by benzene, benzol, carbon tetrachloride, or other organic solvents; poisoning by insecticide sprays, such as parathion or lead arsenate; poisoning by other chemicals, such as formaldehyde.

### **Hearing Loss**

Noise-induced hearing loss is defined for recordkeeping purposes as a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more in either ear at 2000, 3000 and 4000 hertz, and the employee's total hearing level is 25 decibels (dB) or more above audiometric zero (also averaged at 2000, 3000, and 4000 hertz) in the same ear(s).

### **All other illnesses**

All other occupational illnesses.

*Examples:* Heatstroke, sunstroke, heat exhaustion, heat stress and other effects of environmental heat; freezing, frostbite, and other effects of exposure to low temperatures; decompression sickness; effects of ionizing radiation (isotopes, x-rays, radium); effects of nonionizing radiation (welding flash, ultra-violet rays, lasers); anthrax; bloodborne pathogenic diseases, such as AIDS, HIV, hepatitis B or hepatitis C; brucellosis; malignant or benign tumors; histoplasmosis; coccidioidomycosis.

## When must you post the Summary?

You must post the *Summary* only — not the *Log* — by February 1 of the year following the year covered by the form and keep it posted until April 30 of that year.

## How long must you keep the Log and Summary on file?

You must keep the *Log* and *Summary* for 5 years following the year to which they pertain.

## Do you have to send these forms to OSHA at the end of the year?

No. You do not have to send the completed forms to OSHA unless specifically asked to do so.

## How can we help you?

If you have a question about how to fill out the *Log*,

- visit us online at [www.osha.gov](http://www.osha.gov) or
- call your local OSHA office.

## Optional

# Calculating Injury and Illness Incidence Rates

### What is an incidence rate?

An incidence rate is the number of recordable injuries and illnesses occurring among a given number of full-time workers (usually 100 full-time workers) over a given period of time (usually one year). To evaluate your firm's injury and illness experience over time or to compare your firm's experience with that of your industry as a whole, you need to compute your incidence rate. Because a specific number of workers and a specific period of time are involved, these rates can help you identify problems in your workplace and/or progress you may have made in preventing work-related injuries and illnesses.

### How do you calculate an incidence rate?

You can compute an occupational injury and illness incidence rate for all recordable cases or for cases that involved days away from work for your firm quickly and easily. The formula requires that you follow instructions in paragraph (a) below for the total recordable cases or those in paragraph (b) for cases that involved days away from work, and for both rates the instructions in paragraph (c).

(a) To find out the total number of recordable injuries and illnesses that occurred during the year, count the number of line entries on your OSHA Form 300, or refer to the OSHA Form 300A and sum the entries for columns (G), (H), (I), and (J).

(b) To find out the number of injuries and illnesses that involved days away from work, count the number of line entries on your OSHA Form 300 that received a check mark in column (H), or refer to the entry for column

(H) on the OSHA Form 300A.

(c) The number of hours all employees actually worked during the year. Refer to OSHA Form 300A and optional worksheet to calculate this number.

You can compute the incidence rate for all recordable cases of injuries and illnesses using the following formula:

*Total number of injuries and illnesses X 200,000 ÷ Number of hours worked by all employees = Total recordable case rate*

(The 200,000 figure in the formula represents the number of hours 100 employees working 40 hours per week, 50 weeks per year would work, and provides the standard base for calculating incidence rates.)

You can compute the incidence rate for recordable cases involving days away from work, days of restricted work activity or job transfer (DART) using the following formula:

*(Number of entries in column H + Number of entries in column I) X 200,000 ÷ Number of hours worked by all employees = DART incidence rate*

You can use the same formula to calculate incidence rates for other variables such as cases involving restricted work activity (column (I) on Form 300A), cases involving skin disorders (column (M-2) on Form 300A), etc. Just substitute the appropriate total for these cases, from Form 300A, into the formula in place of the total number of injuries and illnesses.

### What can I compare my incidence rate to?

The Bureau of Labor Statistics (BLS) conducts a survey of occupational injuries and illnesses each year and publishes incidence rate data by

various classifications (e.g., by industry, by employer size, etc.). You can obtain these published data at [www.bls.gov/iif](http://www.bls.gov/iif) or by calling a BLS Regional Office.

### Worksheet

Total number of injuries and illnesses									
<input type="text"/>	X	200,000	÷	<input type="text"/>	=	<input type="text"/>			

Number of hours worked by all employees

Total recordable case rate

Number of entries in Column H + Column I									
<input type="text"/>	X	200,000	÷	<input type="text"/>	=	<input type="text"/>			

Number of hours worked by all employees

DART incidence rate



# How to Fill Out the Log

The *Log of Work-Related Injuries and Illnesses* is used to classify work-related injuries and illnesses and to note the extent and severity of each case. When an incident occurs, use the *Log* to record specific details about what happened and how it happened.

If your company has more than one establishment or site, you must keep separate records for each physical location that is expected to remain in operation for one year or longer.

We have given you several copies of the *Log* in this package. If you need more than we provided, you may photocopy and use as many as you need.

The *Summary* — a separate form — shows the work-related injury and illness totals for the year in each category. At the end of the year, count the number of incidents in each category and transfer the totals from the *Log* to the *Summary*. Then post the *Summary* in a visible location so that your employees are aware of injuries and illnesses occurring in their workplace.

**You don't post the Log. You post only the Summary at the end of the year.**

## OSHA's Form 300 (Rev. 01/2004) Log of Work-Related Injuries and Illnesses

**Attention:** This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 20\_\_  
U.S. Department of Labor  
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name XYZ Company  
City Anywhere State MA

Identify the person			Describe the case			Classify the case CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "Injury" column or choose one type of illness:					
(A) Case no.	(B) Employee's name	(C) Job title (e.g. Welder)	(D) Date of injury or onset of illness	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	Remained at Work				Away from work (K)	On job transfer or restriction (L)	(M)					
						Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other recordable cases (J)			Injury (1)	Skin disorders (2)	Respiratory conditions (3)	Neurosis (4)	Hearing loss (5)	All other illnesses (6)
1	Mark Bagin	Welder	5 / 25 month/day	basement	fracture, left arm and left leg, fell from ladder	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12 days	15 days	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Shana Alexander	Foundry man	7 / 2 month/day	pouring deck	poisoning from lead fumes	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	— days	30 days	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Sam Sauder	Electrician	8 / 5 month/day	2nd floor storeroom	broken left foot, fell over box	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7 days	30 days	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Ralph Bocella	Laborer	9 / 17 month/day	packaging dept	Back strain lifting boxes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3 days	— days	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Jarrold Daniels	Machine opr.	10 / 23 month/day	production floor	dust in eye	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	— days	— days	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
—	—	—	—	—	—	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	— days	— days	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Be as specific as possible. You can use two lines if you need more room.

Revise the log if the injury or illness progresses and the outcome is more serious than you originally recorded for the case. Cross out, erase, or white-out the original entry.

Choose ONLY ONE of these categories. Classify the case by recording the most serious outcome of the case, with column G (Death) being the most serious and column J (Other recordable cases) being the least serious.

Note whether the case involves an injury or an illness.



# Log of Work-Related Injuries and Illnesses

**Attention:** This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Form approved OMB no. 1218-0176

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_

Identify the person			Describe the case			Classify the case				Enter the number of days the injured or ill worker was:		Check the "Injury" column or choose one type of illness:					
(A) Case no.	(B) Employee's name	(C) Job title <i>(e.g., Welder)</i>	(D) Date of injury or onset of illness	(E) Where the event occurred <i>(e.g., Loading dock north end)</i>	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill <i>(e.g., Second degree burns on right forearm from acetylene torch)</i>	CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Away from work	On job transfer or restriction	(M) Check the "Injury" column or choose one type of illness:					
						Remained at Work				(K)	(L)	(1)	(2)	(3)	(4)	(5)	(6)
						Death	Days away from work	Job transfer or restriction	Other recordable cases			Injury	Skin disorder	Respiratory condition	Poisoning	Hearing loss	All other illnesses
						(G)	(H)	(I)	(J)	_____ days	_____ days	(1)	(2)	(3)	(4)	(5)	(6)
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# Summary of Work-Related Injuries and Illnesses



All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the Log. If you had no cases, write "0."

Employees, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these forms.

## Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
_____	_____	_____	_____
(G)	(H)	(I)	(J)

## Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
_____	_____
(K)	(L)

## Injury and Illness Types

Total number of . . . (M)	
(1) Injuries _____	(4) Poisonings _____
(2) Skin disorders _____	(5) Hearing loss _____
(3) Respiratory conditions _____	(6) All other illnesses _____

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection of information is estimated to average 58 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

### Establishment Information

Your establishment name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Industry description (e.g., *Manufacture of motor truck trailers*)  
 \_\_\_\_\_

Standard Industrial Classification (SIC), if known (e.g., 3715)  
 \_\_\_\_\_

OR

North American Industrial Classification (NAICS), if known (e.g., 336212)  
 \_\_\_\_\_

**Employment Information** (If you don't have these figures, see the Worksheet on the back of this page to estimate.)

Annual average number of employees \_\_\_\_\_

Total hours worked by all employees last year \_\_\_\_\_

### Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive \_\_\_\_\_ Title \_\_\_\_\_

( ) / /  
 Phone \_\_\_\_\_ Date \_\_\_\_\_

## Optional

# Worksheet to Help You Fill Out the Summary

At the end of the year, OSHA requires you to enter the average number of employees and the total hours worked by your employees on the summary. If you don't have these figures, you can use the information on this page to estimate the numbers you will need to enter on the Summary page at the end of the year.

### How to figure the average number of employees who worked for your establishment during the year:

**1 Add** the total number of employees your establishment paid in all pay periods during the year. Include all employees: full-time, part-time, temporary, seasonal, salaried, and hourly.

The number of employees paid in all pay periods = **1** \_\_\_\_\_

**2 Count** the number of pay periods your establishment had during the year. Be sure to include any pay periods when you had no employees.

The number of pay periods during the year = **2** \_\_\_\_\_

**3 Divide** the number of employees by the number of pay periods.

$\frac{\mathbf{1}}{\mathbf{2}}$  \_\_\_\_\_ = **3** \_\_\_\_\_

**4 Round the answer** to the next highest whole number. Write the rounded number in the blank marked *Annual average number of employees*.

The number rounded = **4** \_\_\_\_\_

For example, Acme Construction figured its average employment this way:

For pay period...	Acme paid this number of employees...		
1	10	Number of employees paid =	830 <b>1</b>
2	0	Number of pay periods =	26 <b>2</b>
3	15		
4	30		
5	40	$\frac{830}{26} =$	31.92 <b>3</b>
▼	▼		26
24	20	31.92 rounds to	32 <b>4</b>
25	15		
26	+10	32 is the annual average number of employees	
	830		

### How to figure the total hours worked by all employees:

Include hours worked by salaried, hourly, part-time and seasonal workers, as well as hours worked by other workers subject to day to day supervision by your establishment (e.g., temporary help services workers).

Do not include vacation, sick leave, holidays, or any other non-work time, even if employees were paid for it. If your establishment keeps records of only the hours paid or if you have employees who are not paid by the hour, please estimate the hours that the employees actually worked.

If this number isn't available, you can use this optional worksheet to estimate it.

### Optional Worksheet

\_\_\_\_\_ **Find** the number of full-time employees in your establishment for the year.

**X** \_\_\_\_\_ **Multiply** by the number of work hours for a full-time employee in a year.

\_\_\_\_\_ This is the number of full-time hours worked.

**+** \_\_\_\_\_ **Add** the number of any overtime hours as well as the hours worked by other employees (part-time, temporary, seasonal)

\_\_\_\_\_ **Round** the answer to the next highest whole number. Write the rounded number in the blank marked *Total hours worked by all employees last year*.

# OSHA's Form 301

## Injury and Illness Incident Report

**Attention:** This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.



U.S. Department of Labor  
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

This *Injury and Illness Incident Report* is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with the *Log of Work-Related Injuries and Illnesses* and the accompanying *Summary*, these forms help the employer and OSHA develop a picture of the extent and severity of work-related incidents.

Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form.

According to Public Law 91-596 and 29 CFR 1904, OSHA's recordkeeping rule, you must keep this form on file for 5 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy and use as many as you need.

Completed by \_\_\_\_\_

Title \_\_\_\_\_

Phone (\_\_\_\_) \_\_\_\_\_ -- \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

### Information about the employee

- 1) Full name \_\_\_\_\_
- 2) Street \_\_\_\_\_
- City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_
- 3) Date of birth \_\_\_\_/\_\_\_\_/\_\_\_\_
- 4) Date hired \_\_\_\_/\_\_\_\_/\_\_\_\_
- 5)  Male  
 Female

### Information about the physician or other health care professional

- 6) Name of physician or other health care professional \_\_\_\_\_
- 7) If treatment was given away from the worksite, where was it given?
- Facility \_\_\_\_\_
- Street \_\_\_\_\_
- City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_
- 8) Was employee treated in an emergency room?  
 Yes  
 No
- 9) Was employee hospitalized overnight as an in-patient?  
 Yes  
 No

### Information about the case

- 10) Case number from the Log \_\_\_\_\_ (Transfer the case number from the Log after you record the case.)
- 11) Date of injury or illness \_\_\_\_/\_\_\_\_/\_\_\_\_
- 12) Time employee began work \_\_\_\_\_ AM / PM
- 13) Time of event \_\_\_\_\_ AM / PM  Check if time cannot be determined
- 14) **What was the employee doing just before the incident occurred?** Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific. *Examples:* "climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; "daily computer key-entry."
- 15) **What happened?** Tell us how the injury occurred. *Examples:* "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."
- 16) **What was the injury or illness?** Tell us the part of the body that was affected and how it was affected; be more specific than "hurt," "pain," or "sore." *Examples:* "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."
- 17) **What object or substance directly harmed the employee?** *Examples:* "concrete floor"; "chlorine"; "radial arm saw." *If this question does not apply to the incident, leave it blank.*
- 18) **If the employee died, when did death occur?** Date of death \_\_\_\_/\_\_\_\_/\_\_\_\_

# If You Need Help...

If you need help deciding whether a case is recordable, or if you have questions about the information in this package, feel free to contact us. We'll gladly answer any questions you have.

▼ Visit us online at [www.osha.gov](http://www.osha.gov)

▼ Call your OSHA Regional office and ask for the recordkeeping coordinator

or

▼ Call your State Plan office

## Federal Jurisdiction

Region 1 - 617 / 565-9860  
**Connecticut; Massachusetts; Maine; New Hampshire; Rhode Island**

Region 2 - 212 / 337-2378  
**New York; New Jersey**

Region 3 - 215 / 861-4900  
**DC; Delaware; Pennsylvania; West Virginia**

Region 4 - 404 / 562-2300  
**Alabama; Florida; Georgia; Mississippi**

Region 5 - 312 / 353-2220  
**Illinois; Ohio; Wisconsin**

Region 6 - 214 / 767-4731  
**Arkansas; Louisiana; Oklahoma; Texas**

Region 7 - 816 / 426-5861  
**Kansas; Missouri; Nebraska**

Region 8 - 303 / 844-1600  
**Colorado; Montana; North Dakota; South Dakota**

Region 9 - 415 / 975-4310

Region 10 - 206 / 553-5930  
**Idaho**

## State Plan States

Alaska - 907 / 269-4957

Arizona - 602 / 542-5795

California - 415 / 703-5100

\*Connecticut - 860 / 566-4380

Hawaii - 808 / 586-9100

Indiana - 317 / 232-2688

Iowa - 515 / 281-3661

Kentucky - 502 / 564-3070

Maryland - 410 / 767-2371

Michigan - 517 / 322-1848

Minnesota - 651 / 284-5050

Nevada - 702 / 486-9020

\*New Jersey - 609 / 984-1389

New Mexico - 505 / 827-4230

\*New York - 518 / 457-2574

North Carolina - 919 / 807-2875

Oregon - 503 / 378-3272

Puerto Rico - 787 / 754-2172

South Carolina - 803 / 734-9669

Tennessee - 615 / 741-2793

Utah - 801 / 530-6901

Vermont - 802 / 828-2765

Virginia - 804 / 786-6613

Virgin Islands - 340 / 772-1315

Washington - 360 / 902-5601

Wyoming - 307 / 777-7786

\*Public Sector only



### ***Have questions?***

If you need help in filling out the *Log* or *Summary*, or if you have questions about whether a case is recordable, contact us. We'll be happy to help you. You can:

- ▼ Visit us online at: **[www.osha.gov](http://www.osha.gov)**
- ▼ Call your regional or state plan office. You'll find the phone number listed inside this cover.

## PPE CHECKLIST

All personnel shall perform an inspection of their PPE prior to performing activities on-site. The following items shall be checked.

- \_\_\_\_\_ Determine that the clothing material is that which has been designated for this project.
- \_\_\_\_\_ Visually inspect clothing for: imperfect seams, non-uniform coatings, tears, malfunctioning closures.
- \_\_\_\_\_ Hold up to light and check for pinholes.
- \_\_\_\_\_ Flex product and make observations for cracks or other signs of shelf deterioration.
- \_\_\_\_\_ If the product has been used before, inspect inside and out for signs of chemical attack, discoloration, swelling, or stiffness.
- \_\_\_\_\_ Visually inspect gloves for imperfect seams, tears, and non-uniform coating.
- \_\_\_\_\_ Pressurize gloves with air, listen for pinhole leaks.
- \_\_\_\_\_ Check hardhat for cracks or other signs of stress
- \_\_\_\_\_ Check the suspension of your hardhat. Look for loose or torn cradle straps, loose rivets, broken sewing lines or other defects.
- \_\_\_\_\_ If using earmuffs, check the muffs for cracks, cuts or missing gaskets.
- \_\_\_\_\_ If using earplugs, check the plugs for cracks and or cuts.
- \_\_\_\_\_ Check safety glasses for scratches
- \_\_\_\_\_ If using a respirator, check for holes in filters.
- \_\_\_\_\_ If using a respirator, check for crack or scratches on the face piece
- \_\_\_\_\_ If using a respirator, check for loss of elasticity or tears in straps.
- \_\_\_\_\_ If using a respirator, check for general cleanliness.
- \_\_\_\_\_ If using an air purifying respirator, check for proper fit by performing the positive-pressure and negative pressure tests

## **SAFETY EQUIPMENT CHECKLIST**

- \_\_\_\_\_ Fire Extinguisher (in office trailer)
- \_\_\_\_\_ Fire Extinguisher (on heavy equipment)
- \_\_\_\_\_ 16-unit first aid kit
- \_\_\_\_\_ Eye wash bottle
- \_\_\_\_\_ Cellular phone

## VISITOR LOG

Everyone entering the exclusion zone and the contamination reduction zone shall meet the training and medical requirements of 29 CFR 1910.120. Visitors not meeting these requirements are only allowed in the support/clean zone. All visitors to the project site are required to adhere to the Site Specific Health and Safety Plan.

### Compliance Agreement

**I have read and understand this Site Specific Health and Safety Plan. I will comply with the provisions contained herein.**

**Project Site:** \_\_\_\_\_

Name (Printed)

Signature

Date

\_\_\_\_\_

\_\_\_\_\_

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**DAILY SAFETY MEETING**

**Project:** \_\_\_\_\_

**Date:** \_\_\_\_\_

Discussion of work conditions and task expected to be completed today:

Topics to be discussed: (list below)

Task related to Safety Topic (list below)

Comments from Project Manager or SSHO concerning the meeting:

Notes concerning any safety related incidents that occurred:

**Safety Meeting Attendance:**

**I have attended the daily safety meeting. I have been briefed on today's job tasks and fully understand the safety issues associated with each task.**

Name (Printed)

Signature

Date

\_\_\_\_\_

\_\_\_\_\_

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**TMG SERVICES, INC.**  
**240 OLIVER ST., SUITE 1, ST. ALBANS, WV 25177 (304) 722-6015**  
**SAFETY DIRECTOR – CELL (216) 214-4978**

<b>OCCUPATIONAL INJURY AND ILLNESS REPORT</b>
---

<b>This form must be completed only by SUPERVISOR or JOB FOREMAN and returned to the TMG office within 24 hours of injury/illness</b>
---

<b>INJURED EMPLOYEE</b>	
NAME:	
ADDRESS:	
CITY, STATE, COUNTY:	ZIP:
AGE:	DATE OF BIRTH:
SEX:	OCCUPATION:
PHONE:	MARITAL STATUS:
DATE OF HIRE:	DEPENDANTS:

<b>LOCATION WHERE INJURY OCCURRED</b>
NAME OF JOB:
STREET ADDRESS:
PLACE IN OR ABOUT BUILDING OR ON SITE WHERE INJURY OCCURRED:
SUPERINTENDENT OR FOREMAN NAME:

<b>DESCRIPTION OF ACCIDENT AND CIRCUMSTANCES</b>
<b>1. WAS PLACE OF ACCIDENT ON EMPLOYER'S PREMISES?</b>
<b>WHAT WAS THE EMPLOYEE DOING WHEN INJURED? (BE SPECIFIC) IF HE WAS USING TOOLS OR EQUIPMENT OR HANDLING MATERIALS, THEN NAME THEM AND TELL WHAT HE WAS DOING WITH THEM</b>
<b>2. HOW DID THE ACCIDENT OCCUR? DESCRIBE FULLY THE EVENTS WHICH RESULTED IN THE INJURY, TELL WHAT HAPPENED AND HOW IT HAPPENED. NAME ANY OBJECTS OR SUBSTANCES INVOLVED AND TELL HOW THEY WERE INVOLVED AND TELL HOW THEY WERE INVOLVED. GIVE FULL DETAIL ON ALL FACTS WHICH LED OR CONTRIBUTED TO THE ACCIDENT, USE SEPARATE SHEET IF MORE SPACE IS NEEDED.</b>
<b>3. DESCRIBE THE INJURY IN DETAIL AND INDICATE THE PART OF THE BODY AFFECTED. (E.G., AMPUTATION, FRACTURE, POISONING, ETC.)</b>

**\*\*\*PLEASE COMPLETE SECOND PAGE OF FORM\*\*\***

<b>DESCRIPTION OF ACCIDENT AND CIRCUMSTANCES</b>	
<b>4. NAME THE OBJECT OR SUBSTANCE WHICH DIRECTLY INJURED THE EMPLOYEE, (E.G., STRAINS, IRRITATION TO SKIN, THE VAPOR OR POISON INHALED OR SWALLOWED, SOMETHING STRUCK HIM, ETC.)</b>	
<b>NAME AND ADDRESS OF PHYSICIAN:</b>	
<b>5. WAS EMPLOYEE PERFORMING HIS/HER USUAL OCCUPATION/ANY UNUSUAL EXERTION:</b>	

<b>NAME AND ADDRESS OF WITNESSES: (WITNESSES MUST SIGN!)</b>	
X _____	X _____
X _____	X _____
X _____	X _____

<b>WHAT I SUGGEST TO PREVENT A SIMILAR ACCIDENT OR CORRECT A POOR SAFETY PRACTICE.</b>

<b>IF A THIRD PARTY (NOT TMG) CAUSED THIS INJURY WHO WAS INVOLVED:</b>

<b>COMMENTS:</b>

**SUPERVISOR SIGNATURE**

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
SAFETY OFFICER – ONSITE

\_\_\_\_\_  
SAFETY DIRECTOR

**PLEASE REPORT ALL ACCIDENTS TO THE SAFETY OFFICE IMMEDIATELY  
PHONE (216) 214-4978 FAX (216) 391-4175**

**SANTINA MILCZEWSKI, SAFETY DIRECTOR**



240 Oliver St., Suite 1, St. Albans, West Virginia 25177 (304) 722-6015 FAX (304) 722-6017 [www.tmgservicesusa.net](http://www.tmgservicesusa.net)

Contract No.:		Project No.:	
To:			

Tasks to be planned at a minimum:

1. Excavation
2. Isolated Work Tasks
3. Asbestos / Lead Work
4. Scaffolding
5. Crane Lifts to Roof
6. Demolition Work
7. Other High Risk Jobs

Additional Safety Process Must be followed:

Permit systems must be used.

- |                                 |                              |
|---------------------------------|------------------------------|
| 1. Confined Space Entry Permits | 5. Fire System Shutdown      |
| 2. Hot Work Permits             | 6. Combustion Equip. lockout |
| 3. Free Climbing                | 7. Excavation                |
| 4. Helicopter Lifts             |                              |

Dept./ Company	TMG Services, Inc.	Date		Location			
Main Activity							
Duration of Work		AM	To		AM	In Case of Emergency Contact  Phone	1) <b>911</b>
		PM			PM		2) Onsite Safety Office 3) TMG Safety Office

Job Steps of Primary Activity	Potential Hazards	Hazard Solution	Verified

Approved by Safety Rep:		Date		Field Audit by Safety:		Date	
Field Audit by Cont. Safety Rep:		Date		Field Audit by Cont. Safety Rep:		Date	



**EMPLOYEE DISCIPLINARY NOTICE**

Employee Name \_\_\_\_\_ Social Security # \_\_\_\_\_

Date(s) of Violation \_\_\_\_\_

**Violation**

- Failure to report; no call off
- Repeated failure to report; poor attendance
- Tardy; repeated
- Safety infraction
- Other (explain) \_\_\_\_\_

**Disciplinary Action taken as a result of this incident:**

First Offense Written Warning delivered on Date \_\_\_\_\_

Second Offense - Three (3) day suspension without pay: Scheduled days off: \_\_\_\_\_

Third Offense - Discharge on \_\_\_\_\_

Supervisor Signature \_\_\_\_\_

Employee Signature \_\_\_\_\_

HR Signature \_\_\_\_\_

Copy to employee file

Copy to employee

*To our employees: The above disciplinary action was established on March 9, 2001, and is part of every employee hire packet. You are reminded that major infractions including theft, assault - verbal or physical, theft, fighting on the projects. Safety infraction, EEO or Sexual Harassment violation, may all result in immediate dismissal. Drug and or alcohol abuse disciplinary protocol is included in the Company Policy against Drug and Alcohol Abuse.*

## CONFINED SPACE ENTRY PERMIT

A Copy of this permit to be kept at the jobsite. (retained for one year from the date of issue)

Location and Description of Confined Space: \_\_\_\_\_  
 Date and Time Issued: \_\_\_\_\_ AM/PM      Date and Time Expires: \_\_\_\_\_ AM/PM  
 Purpose of Entry \_\_\_\_\_  
 Supervisor in Charge \_\_\_\_\_

### AUTHERIZED ENTRANTS

Print Name	Initials	Print Name	Initials
Print Name	Initials	Print Name	Initials
Print Name	Initials	Print Name	Initials

### AUTHERIZED ATTENDANTS

Print Name	Initials	Print Name	Initials
------------	----------	------------	----------

### RESCUE PROCEDURES

\_\_\_ In house      \_\_\_ Rescue 911      \_\_\_ Other: \_\_\_\_\_

### COMMUNICATIONS PROCEDURES

\_\_\_ Visual      \_\_\_ Radios      \_\_\_ Other: \_\_\_\_\_

### PERSONAL PROTECTIVE EQUIPMENT

\_\_\_ Fall Protection    \_\_\_ Radios    \_\_\_ Face protection    \_\_\_ Foot Protection    \_\_\_ Chemical Clothing    \_\_\_ Respiration  
 \_\_\_ Fire Protection    \_\_\_ Other: \_\_\_\_\_

Are the following complete?	Date	Time	Are the following complete?	Date	Time
Lockout/Tagout Implemented?			Lighting levels acceptable?		
Purge – Flush and Vent if needed?			Hot Work Permit issued?		
Ventilation in place?			Fire Extinguishers provided?		
Have the appropriate MSDS's been collected?			Area Secured? (Signs, etc.)		

Tests To Be Taken (Valid for one shift)	Permissible Exposure limits	Pre Entry				Periodic Monitoring Results			
		Time	Time	Time	Time	Time	Time	Time	Time
Oxygen	19.5% -23.5%								
Flammable	Under 10% LEL/LFL								
Carbon monoxide	35 ppm								
Hydrogen Sulfide	10ppm								
Sulfur Dioxide	2ppm								
Heat	°F/°C								
Other									
Testers Initials									

We have reviewed the work authorized by this permit, the information contained herein and the safety procedures/instructions received. We have also reviewed the appropriate MSDS information and the appropriate rescue plans for this confined space entry.

\_\_\_\_\_  
 Owner Representative Signature

\_\_\_\_\_  
 Date

\_\_\_\_\_  
 Owner Representative Signature

\_\_\_\_\_  
 Date

## Daily Excavation Inspection Form and Checklist

Competent Person: \_\_\_\_\_ Date: \_\_\_\_\_

Site location: \_\_\_\_\_ Time: \_\_\_\_\_ A.M. / P. M.

Weather Conditions:  Clear  Overcast  Rain  Other \_\_\_\_\_

Temperature: \_\_\_\_\_

Excavation Depth: \_\_\_\_\_ Width \_\_\_\_\_ Length: \_\_\_\_\_

Notes: 1) Excavation that are less than 5 feet deep and show signs of potential cave-in and all excavations greater than 5 feet are required to have a protective system in place.

2) A Registered Professional Engineer is required for all excavations greater than 20 feet.

Have all local utilities been contacted and all underground lines located?  Yes  No

Dated Contacted \_\_\_\_\_ Date Opened \_\_\_\_\_

Color codes for locating utility lines  Remember, The tolerance zone for Marked lines is the width of the Utility plus 18" on each side	Red Yellow Orange Blue Green Pink White	- - - - - - -	Electric power lines, cables conduit and lighting cables Gas, Oil, steam, Petroleum, or Gaseous Materials Communication, Alarm or Signal lines, Cables or conduit Water, irrigation, and Slurry Lines Sewers and drain lines Temporary survey markings Proposed excavation
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Are all surface encumbrances removed or supported?  Yes  No

SOIL CONDITION (Daily):	SOIL TYPE (Daily):
<input type="checkbox"/> Frost	<input type="checkbox"/> Soil Rock
<input type="checkbox"/> Partial Saturation	<input type="checkbox"/> Type B
<input type="checkbox"/> Dry	<input type="checkbox"/> Type A
<input type="checkbox"/> Saturation	<input type="checkbox"/> Type C
<input type="checkbox"/> Moist	

TEST USED TO DETERMINE SOIL TYPE ( Initially and as Conditions Warrant):

VISUAL TEST (At Least One) <input type="checkbox"/> Observation of soil particle size. <input type="checkbox"/> Observation of excavated soil for clumping. <input type="checkbox"/> Observation of excavation sides and adjacent area for cracks. <input type="checkbox"/> Observation of layered soils. <input type="checkbox"/> Observation of surface water and water seepage. <input type="checkbox"/> Observation of vibrations (Vehicular traffic or Blasting).	Cohesive (Type A or B) Fine Grain Remains in clumps Less than 4:1	Granular (Type C) Course Grain Breaks-up More than 4:1
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MANUAL TEST (At Least One)	Cohesive (Type A or B)	Fissured Cohesive (Type B)	Granular (Type C)
<input type="checkbox"/> Plasticity	<input type="checkbox"/> Pick-up 2" or more	<input type="checkbox"/> Pick-up 2" or more	<input type="checkbox"/> Pick-up <2"
<input type="checkbox"/> Dry strength	<input type="checkbox"/> Hard to break	<input type="checkbox"/> Moderate pressure	<input type="checkbox"/> Easily to break
<input type="checkbox"/> Thumb penetration	<input type="checkbox"/> 1/4" or less	<input type="checkbox"/> 1/4" to 1"	<input type="checkbox"/> 1" or more
<input type="checkbox"/> Drying test	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Shear vane	<input type="checkbox"/> Com. Str. > 1.5	<input type="checkbox"/> Com. Str. 1.5 > X > 0.5	<input type="checkbox"/> Com. Str. < 0.5
<input type="checkbox"/> pocket Penetrometer	<input type="checkbox"/> Com. Str. > 1.5	<input type="checkbox"/> Com. Str. > 1.5	<input type="checkbox"/> Com. Str. < 0.5

TYPE OF PROTECTIVE SYSTEM BEING USED (Daily):

- Sloping or benching System
- Shoring (Timber or Metal)
- Trench Box
- Registered Professional Engineer

Has the condition of the protective system changed since initial installation?  Yes  No

**GENERAL SAFETY CONDITIONS (Daily)**

**SURFACE CROSSING OF TRENCHES**

- Vehicle crossing must be designed by and installed under the supervision of registered professional engineer.
- Walkways or bridges must be provided for foot traffic. These structures shall:
  - have a safety factor of 4
  - have a minimum clear width of 20in. (0.51m).
  - be fitted with standard hand and guardrails, and
  - extend a minimum of 24 in (.61m) past the surface edge of the trench.

**INGRESS AND EGRESS**

- Trenches 4 ft or more in depth should be provided with a fixed means of egress.
- No more than 25 ft laterally travel to the nearest means of egress.
- Ladders must be secured and extend a minimum of 36 in (90.9m) above the landing.
- Metal ladders should be used with caution, particularly when electric utilities are present.

**EXPOSURE TO VEHICLES**

- Warning vests or other suitable garments marked with or made of reflectorized or high-visibility materials are being worn
- Designated, trained flag person along with signs, signals, and barricades when necessary.

**EXPOSURE TO FALLING LOADS**

- Employees are not permitted to work under raised loads.
- Employees are required to stand away from equipment that is being loaded or unloaded.
- Operators may stay in their equipment during loading and unloading if equipped with a cab shield.
- Barricades must be installed a least 5 feet from the sides of the excavation where necessary.
- Hand or mechanical signals must be used as required.
- Stop logs must be installed if there is a danger of vehicles falling into the trench.
- Soil should be graded away from the excavation; this will assist in vehicle control and channeling of run-off water.

**HAZARDOUS ATMOSPHERES AND CONFINED SPACES**

- Oxygen concentration between 19.5% and 23.5% oxygen.
- Combustible gas concentration less than 10% of the lower flammable limit.
- Toxic gas concentrations below the Threshold Limit values for airborne Contaminants.
- Are all operations not meeting these requirements being conducted in accordance with Confined Space procedures.
- Testing has be conducted before employees enter the trench.
- Testing is done regularly to ensure that the trench remains safe.
- Employees required to wear respiratory protection must be trained, fit-tested and have appropriate medical exams.

**EMERGENCY RESCUE EQUIPMENT**

- Appropriate respirators are available and employees are trained, fit-tested and have appropriate medical exams.
- Attendant and lifelines must be provided when employees enter bell-bottom holes or other confined spaces.
- Employees who enter confined spaces must be trained.

**STANDING WATER AND WATER ACCUMULATION**

- Use of special support or shield systems approved by a registered professional engineer.
- Water removal equipment, i.e., well pointing, used and monitored by a competent person.
- Safety harnesses and lifelines used in conformance with 29 CFR 1926.104.
- Surface water diverted away from the trench.
- Employees removed from the trench during rain storms.

**INSPECTIONS**

- Daily and before the start of each shift.
- As dictated by the work being done in the trench.
- After every rain storm.
- After other events that could increase hazards, e.g., snowstorm, windstorm, thaw, earthquake, etc.
- When fissures, tension cracks, water seepage, bulging at the bottom, or other similar conditions occur.
- When there is a change in the size, location, or placement of the spoil pile.
- When there is any indication of change or movement in adjacent structures.

**COMMENTS:**

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Competent Person Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## HOT WORK PERMIT-WELDING/CUTTING/BRAZING

- 
- |   |  |
|---|--|
| <input type="checkbox"/> Portable gas or Electric Cutting or Welding  | <input type="checkbox"/> Burning           |
| <input type="checkbox"/> Brazing or torch soldering   | <input type="checkbox"/> Abrasive grinding |
| <input type="checkbox"/> Other process generating heat, sparks, or flames that are potential ignition sources |  |

Date of Issue: \_\_\_\_\_

Time: \_\_\_\_\_

Permit Expires: \_\_\_\_\_

Time: \_\_\_\_\_

Hot Work Location: \_\_\_\_\_

Task description: \_\_\_\_\_

### Prewrite Inspection and Arrangements-before Starting Hot Work

Person performing Hot Work: \_\_\_\_\_

Person Authorizing Hot Work: \_\_\_\_\_

Designated Fire Watch: \_\_\_\_\_

### HOT WORK CHECKLIST

#### Required Precautions

- |   |                              |
|---|------------------------------|
| <input type="checkbox"/> Hoses and/or portable fire extinguishers available in the immediate area.  | <input type="checkbox"/> Yes |
| <input type="checkbox"/> Welding flash Screens in place when potential exposure to other workers  | <input type="checkbox"/> Yes |
| <input type="checkbox"/> Ventilation adequate to prevent exposure to airborne fumes, gases, or particles.   | <input type="checkbox"/> Yes |
| <input type="checkbox"/> Paint or coatings containing heavy metals (Lead, Cadmium, and Chromium) epoxy, and urethanes have been removed at least 4 inches back from area where heat is to be applied. |                              |

#### WITHIN 35 FEET OF WORK AREA

- Flammable gases, dusts, and chemical removed.
- Flammable or explosive atmospheres in area have been eliminated or never existed.
- All combustibles removed where possible and others protected with fire resistant tarps or other means.

#### ENCLOSED EQUIPMENT/AREAS

- Emptied, cleaned, purged, or otherwise safeguarded.
- Confined space identified and confined space entry permit issues, if applicable.

#### DESIGNATED FIREWATCH / HOT WORK AREA MONITORING

- Fire watch will be provided during and for 30 minutes after Hot Work ends.
- Fire watch is trained in the use of fire extinguishing methods and notification processes, including water sources.

#### FINAL CHECK

Work area and adjacent areas to which spark and/ or heat my have spread (above and below)  
after fire work was completed and were found to be safe from fire.

Person doing Hot Work: \_\_\_\_\_

Designated Fire Watch: \_\_\_\_\_

**IN CASE OF FIRE, MEDICAL OR OTHER EMERGENCY CALL -911**



MOTOR VEHICLES, TRAILERS AND TRUCKS			
Contract Name and Number:		Contractor/Subcontractor:	
Government Inspector:		Location:	
Contractor Inspector:		Date:	
Equipment name and number:			
Complete one checklist for each vehicle			
	Yes	No	N/A
1. Are records of safety inspections of all vehicles available?			
2. Are all vehicles to be operated between sunset and sunrise equipped with two headlights, one each side of the front; at least one red taillight and one red or amber stop light on each side of the rear; directional signal lights (both front and back); and three emergency flairs, reflective markers, or equipment potable warning devices?			
3. Are vehicles, except trailers or semi- trailers having a gross weight of 5000 lbs or less, equipped with service brakes and manually operated parking brakes?			
4. Are service brakes on trailers and sem1-trailers controlled from the driver's seat of the prime mover?			
5. does the vehicle have a speedometer; a fuel gage; an audible warning device (horn); a windshield and adequate windshield wiper; an operable defroster and defogging device; an adequate rearview mirror(s); a cab, cab shield, and other protection to protect the driver from the elements and falling of shifting materials; non-slip surfaces on steps; and power-operated starting device?			
6. Has all broken or cracked glass been replaced?			
7. Are all towing devices adequate for the weight drawn and properly mounted?			
8. Are locking devices or a double safety system provided on every fifth wheel mechanism and tow bar arrangement to prevent accidental separation?			
9. Are trailers couples with safety chains or cables to the towing vehicle?			
10. Are trailers with power brakes equipped with a break-away device which will lock-up the brakes in the event the trailer separates from the towing vehicle?			
11. Are the dump trucks equipped with a holding device to prevent accidental lowering of the body while maintenance or inspecting work is being done?			
12. Is vehicle exhaust controlled so as not to present a hazard to personnel?			
13. Are all rubber tired vehicles equipped with fenders and tires which do not extend beyond the fenders? Mud flaps may be used in lieu of fenders whenever motor vehicle equipment is not designed for fenders?			
14. Are all vehicles, except buses, equipped with seat belts?			
15. Employees are prohibited from getting between a towed and towing vehicle except when hooking and unhooking?			
16. Is a signal person used when the point of operation is not in full view of the vehicle, when vehicles are backed more than 30 feet, when terrain is hazardous, or when two or more vehicles are backing in the same direction?			
17. Are the loads on every vehicle distributed, chocked, tied down, or secured?			

18. Do all self-propelled construction and industrial equipment have a working reverse signal alarm?			
19. Are all hot surfaces of equipment, including exhaust pipes or other lines, guarded or insulated to prevent injury or fire?			
20. Are off road vehicles equipped with rollover protective structures?			
21. Does every all terrain vehicle (ATV) operator possess a valid state driver's license and has completed an ATV training course?			
22. Are ATVs operated off-road only and during daylight hours?			
23. Are all ATVs equipped with four or more wheels?			

Comments:

**Appendix E      Quality Control Documentation**

# Quality Control Certification

Draft

Accident Prevention Plan

Remedial Action Construction

Remediation of Contaminated Soil and Sediment

Plum Brook Ordnance Works – TNT Area C

Sandusky, Ohio

Contract Number: W91237-10-C-0002

Assignment

Name

Signature

Date

**Senior Review**

Kimberlie Bumgardner

 5.6.10

**Peer Review**

Richard Armstrong

 5/3/10

**Comments on**

**Draft**

**Accident Prevention Plan**

**Remedial Action Construction**

**Remediation of Contaminated Soil and Sediment**

**Plum Brook Ordnance Works – TNT Area C**

**Sandusky, Ohio**

*Contract Number: W91237-10-C-0002*

The following comments were provided by TMG's Independent Quality Control Team. All comments resulting from this review have been resolved and/or incorporated.

TMG IQCT: No Revisions Suggested.