REMOVAL ACTION WORKPLAN
REVISION 2

FOR THE

CHEVRON PIPE LINE
RED BUTTE RELEASE MP 174.5
LIBERTY PARK SEDIMENT CLEANUP
SALT LAKE CITY, UTAH

PREPARED BY

ENTACT LLC
3129 BASS PRO DRIVE
GRAPEVINE, TEXAS

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1.0 INTRODUCTION

This Removal Action Workplan (RA Workplan) has been prepared on behalf of Chevron Environmental Management Company (CEMC) for the Chevron Pipe Line Company (CPL) Red Butte Release Project (MP 174.5 Salt Lake Crude Pipeline) located near the intersection of Red Butte Canyon Road and North Campus Drive in Salt Lake City, Utah. This workplan covers the scope of work associated with the sediment removal at the Liberty Park Lake site.

This RA Workplan establishes requirements for the implementation of the removal action to remove sediments from the Lake base, impacted soils from the Lake perimeter, along with restoration requirements to return the park to pre-spill conditions, including restoration of the perimeter concrete wall. The performance standards associated with these activities will be addressed in this RA Workplan. All documents or deliverables required as part of this RA Workplan will be submitted to CEMC for review and approval with subsequent review and approval being conducted by Chevron Pipe Line (CPL), City of Salt Lake, Salt Lake City Department of Public Utilities, County of Salt Lake, and the Red Butte Creek Release Unified Command.

1.1 Site Location and Description

Liberty Park Lake (Lake) is located at the intersection of 700 East and 1300 South Streets in Salt Lake City, Utah. The site was constructed as a stormwater detention facility as part of a flood control project in the late 1970's. The Lake is approximately 7 acres in size with water being supplied by two inlet structures located at the northeast and southeast corners. There is an existing non-reinforced concrete wall approximately 6-inch by 18-inch that runs around the perimeter of the Lake and two small internal islands. Figure 1 provides the location of the site.

The Lake was constructed with a subdrain trench system consisting of open joint pipe installed in a trench approximately 1 foot below the existing grade. The trenches were backfilled with a granular aggregate to act as a subdrain filter. The entire Lake bottom was then covered with a polypropylene fabric overlain with 18 inches of 4-6 inch diameter cobble base rock.

1.2 Site History

Water from Red Butte Creek was bypassed to the Lake during the crude oil release of June 12, 2010 to prevent further downstream impacts. Due to this action the sediments, concrete walls, and soils behind/underlying the walls will require remediation. Following completion of soil/sediment removal temporary stabilization measures will be installed until the designs for the new concrete curb are finalized and work can be scheduled.

1.3 Purpose

The purpose of the action at the Liberty Park site is to remediate potential impacts to the sediments and surrounding soils followed by restoration of the concrete wall. Sediments will be removed down to the cobble base layer. Impacted soils will be removed to the agreed upon cleanup criteria that will be set forth in the Sampling and Analysis Plan.

Additional details regarding the sampling and analysis protocols for soils and sediments will be provided under separate cover.

1.4 Summary of the Removal Action

The removal action will address the potential petroleum impacted sediments, soils, and concrete within the Lake. The major components of this removal action will include the following:

- Excavation of all impacted soils within the Lake (and island perimeter) to the RALs;
- Removal, sizing and disposal of the existing concrete curb;
- Inspect and clean all existing concrete structures such as headwalls, bridge abutments and aprons impacted by the oil release.
- Excavation, stabilization and disposal of Lake sediments above the cobble layer;
- Water management;
- Backfill and compaction of excavated soil areas with imported fill to create a subgrade for the new concrete wall;
- Installation of concrete perimeter curb (design TBD)
- Removal of temporary stabilization measures installed and
- Restoration of non-Lake affected areas with topsoil and sod in areas that will not be re-disturbed during concrete curb installation.

2.0 PROJECT ORGANIZATION AND MANAGEMENT

The removal action management team will consist of the following components and personnel, as described below and shown in Figure 2. ENTACT's assigned management team identified below may change during the implementation of the required removal action activities. If there is a change in personnel, the modification will be communicated a minimum of 5 working days prior to change to the CEMC Project Manager and the team will be altered accordingly. The qualifications for ENTACT's assigned management team are also included in this section.

2.1 Project Management

2.1.1 CEMC Project Manager

The CEMC Project Manager is Ms. Marlea Harmon. Ms. Harmon will have oversight responsibility for all phases of the removal action.

2.1.2 Project Coordinator

The Project Coordinator will be Mr. Christopher Preston of ENTACT LLC. The Project Coordinator will report directly to the CEMC Project Manager and will ensure that all testing programs, removal action plans and quality assurance procedures that are proposed for the project are in compliance with applicable federal and state regulations. The responsibilities of the Project Coordinator will also include resolving issues, providing status reports of the progress of removal action activities to the CEMC Project Manager, updating the project implementation schedule, and contract administration. To the extent possible, the Project Coordinator will be readily available during the work and/or onsite during critical project stages.

2.1.3 Removal Action Contractor

The Removal Action Contractor will be ENTACT LLC (ENTACT). The Removal Action Contractor will be responsible for the construction and implementation of the removal action. The following ENTACT personnel will be assigned to perform the key duties described below.

2.1.3.1 Field Project Manager

ENTACT's Field Project Manager(s) will be Mr. Paul McCorvey The Field Project Manager will be responsible for directing all site personnel, equipment, subcontractors, and activities to ensure the successful implementation of the removal action in accordance with the approved-RA Workplan and federal, state and local regulations. Specific responsibilities of the Field Project Manager will include, but are not limited to, the following:

- Supervise field activities and ensuring that the construction activities are executed in accordance with the RA Workplan and in strict accordance with the *Site-specific Health and Safety Plan*;
- Ensure that adequate resources are available on-site to complete required tasks and meet the required performance standards, including personnel and equipment;

- Ensure ENTACT associates and qualified subcontractors are properly trained in the safe performance of the tasks which they are assigned;
- Ensure that required record-keeping and project record documents and other related documents are maintained on-site;
- Assist others in the planning, coordination of field activities and implementation of the remedial activities;
- In response to modified or unforeseen field conditions, redirecting the sequence of required site work and specifics of work procedures and protocols to accomplish task objectives in the most efficient and safe manner possible;
- Ensure that required quality assurance/quality control procedures are properly implemented and documented;
- Ensure that the removal action is completed according to the approved schedule;
- Ensure that all documents and reports that ENTACT is required to generate meet the requirements of the approved workplan;
- Communicate any request for modifications to the approved workplan to the Project Coordinator and CEMC Project Manager in writing; and
- Promptly notifying the Project Coordinator and CEMC Project Manager in the event of unforeseen field conditions and/or problems are encountered.

2.1.3.2 Corporate Health and Safety Director

The ENTACT Corporate Health and Safety Director will be Mr. Evan McShirley. The Corporate Health and Safety Director will be responsible for writing and reviewing the *Site-specific Health and Safety Plan* and overseeing ENTACT's health and safety program. He will provide direction to the ENTACT Field Project Manager and/or On-site Health and Safety Officer, as necessary, on issues related to health and safety. The Corporate Health and Safety Director will be responsible for conducting the health and safety orientation meeting prior to the start of construction activities, reviewing weekly health and safety updates and conducting health and safety inspections of the site.

2.1.3.3 On-site Health and Safety Officer

ENTACT's On-site Health and Safety Officer will be Mr. Pat Till. The On-site Health and Safety Officer will be responsible for the coordination of on-site health and safety issues with ENTACT's Corporate Health and Safety Director, Mr. Evan McShirley. Specific on-site health and safety duties will include, but are not limited to, the following:

- Monitor work at all times or designating a suitably qualified alternate;

- Ensure that site workers and other authorized personnel have read and understand the *Site-specific Health and Safety Plan*;
- Ensure that site workers and other authorized personnel possess the required documentation of their safety training and medical monitoring;
- Conduct daily safety meetings and more extensive safety meetings to be held at the start of new and/or potentially dangerous project activities;
- Ensure that required air monitoring is being conducted in accordance with the approved RA Workplan and the *Site-specific Health and Safety Plan*;
- Correct or discontinue any potentially unsafe work practices or site conditions, and, if necessary, stop work if unsafe conditions or practices are encountered and not corrected or discontinued;
- Prepare safety reports and other health and safety documentation; and
- Communicate any concerns or health and safety issues with the Field Project Manager and ENTACT's Corporate Health and Safety Officer.
- JSA Development
- Safe Work Permit issuance

2.2 Management Control Process

The Project Coordinator has the overall responsibility for successfully completing the removal action at the site. The Project Coordinator will accomplish these objectives by monitoring the progress of work activities, reviewing and planning each project task with experienced technical staff and the Field Project Manager, and ensuring that the appropriate and sufficient resources are available to the Field Project Manager and the On-site Health and Safety Officer.

The Field Project Manager will generate daily progress reports documenting the status of planned, ongoing and completed work, including QA/QC performance, health and safety and site-specific issues. In addition, the Field Project Manager will keep everyone apprised or resolve in the field any potential problems and recommend solutions and/or corrective actions, if necessary, for approval by the Project Coordinator and the CEMC Project Manager.

2.3 Project Organizational Chart

Figure 2 illustrates the lines of authority and communication of the removal action management team for overseeing and implementing the required removal action at the site. In an effort to facilitate effective communication within the field during the implementation of the removal action, the CEMC Project Manager will discuss issues concerning day-to-day field activities with ENTACT's Field Project Manager.

3.0 REMOVAL ACTION

3.1 Pre-construction Meeting

ENTACT will meet with the CEMC Project Manager for a pre-construction meeting at the site prior to the implementation of the removal action. The purpose of the meeting will be to:

- Introduce key personnel and define the authority and responsibility of each party;
- Review the Health and Safety Plan;
- Establish the administrative procedures to be implemented during the removal action, including unforeseen job conditions, construction surveys and procedures for claims and disputes;
- Review work area security and safety protocols;
- Review methods for distributing and storing documents and reports;
- Review the methods for documenting and reporting inspection data;
- Review traffic control plan and designated haul routes;
- Discuss any appropriate modifications of the workplan to ensure that site-specific considerations are addressed;
- Conduct a site walk to verify that the design criteria, plans and specifications are understood and to review material and equipment storage locations; and
- Hours and days of operations: this will include work around with any park activities/events that may be conducted proximate to the work site.

An ENTACT representative will document the pre-construction meeting and will transmit the minutes to all parties involved.

3.2 Mobilization and Site Preparation

ENTACT will mobilize to the site and prepare the site for the removal action activities. Mobilization and site preparation activities will include, but are not limited to, the following:

- Preparing the necessary notifications and submittals;
- Mobilizing personnel, equipment and temporary facilities;
- Implementing the *Site-specific Health and Safety Plan* for the removal work;

- Constructing work zones, equipment decontamination areas, material staging areas, and site haul routes;
- Identifying aeration system lines (with eventual reinstallation), utility lines, including gas, electric, telephone fiber and wire, storm and sanitary sewers, water, and cable; and
- Establishing support facilities and air monitoring systems.

The following sub-sections further describe the mobilization and site preparation activities. The location of facilities, work zones and interior traffic control features are depicted on Figure 3.

3.2.1 Notifications and Submittals

Prior to mobilization and site preparation activities, the necessary notifications will be filed with the appropriate agencies. Efforts will be coordinated with the following entities: Chevron Environmental Management Company, Chevron Pipe Line Company, Unified Command, City of Salt Lake, Salt Lake City Department of Public Utilities, and Salt Lake County Flood Control.

The following permits/notifications will be obtained for the project:

- Salt Lake County Flood Control Permit
- Utah DEQ GW Discharge Permit
- Traffic Control Permit from the SLC Transportation Department
- SWPPP (Sites less than 5 acres only require NOI, therefore full SWPPP will be developed)
- Waste Profiles for off-site disposal
- All other required permits

3.2.2 Health and Safety

A *Site-specific Health and Safety Plan* has been developed for the implementation of removal action activities at the site. All personnel involved in the removal action activities will thoroughly understand and acknowledge essential elements of the *Site-specific Health and Safety Plan* prior to the start of on-site activities. In accordance with the Plan an orientation session will be held at the site for all ENTACT associates and subcontractors working at the site at the initiation of removal activities. In addition, daily health and safety meetings will be held on specific topics, visitor protocols, and ongoing activities throughout the duration of the removal activities.

3.2.3 Support Facilities

Project mobilization and site preparation activities will include establishing administrative support facilities, supply storage areas, decontamination areas, and temporary staging areas for excavated materials.

A meeting area will be established that will have drinking water and a place for workers to rest and have their meals. Portable sanitary facilities will be provided for field personnel.

Equipment and supply storage areas will be established adjacent to the appropriate work areas or support facilities. Personnel and equipment decontamination areas will be constructed and identified in accordance with the *Site-specific Health and Safety Plan* requirements.

3.2.4 Removal Action Construction Equipment

The construction equipment to be used during the removal action will include long reach excavators, standard reach excavators, mini-excavators, skid steer loaders, water buffaloes, water treatment equipment, and perimeter misting equipment. The equipment will either be supplied by ENTACT or rented from a local vendor for use during the removal action.

3.2.5 Work Zones

Work zones will be established and enforced during the removal action activities. These zones will be demarcated using signs, barricade tape, fencing, and/or other physical barriers. The work zones will include the exclusion zone, contamination reduction zone and support zone. The location of the work zones, traffic barriers and the loadout traffic pattern are shown on Figure 3. The parking areas on the southern and eastern sections of the road will be closed off with water filled traffic barricades (Triton Barriers or equivalent) to allow for water treatment system setup and operation (south end) and construction staging/off-site disposal traffic (eastern end). General traffic (including construction traffic) will have single lane one way access on the non-lake side of the road.

The Exclusion Zone will consist of the excavation, and staging portions of the site, as applicable. Specific locations of the Exclusion Zone will be modified based on the progress of work activities to each portion of the site. Based upon the logistics of the work area, the entire footprint of the lake will be designated as an exclusion zone.

The Contamination Reduction Zone will consist of personnel and equipment decontamination areas constructed in a location adjacent to work. Vehicle inspection and decontamination areas will also be constructed at the site. These areas will be equipped with brooms, hand tools and/or high-pressure washers for the decontamination of vehicle tires and undercarriage members (see Section 3.2.6). The location of the Contamination Reduction Zone will be adjusted during certain phases of work to provide adequate protection of site personnel and proper decontamination of equipment and vehicles. All decontamination procedures will adhere to methods outlined in the *Site-specific Health and Safety Plan.*

The Support Zone will be recognized as the support/administrative facilities, sanitary facilities and parking areas. These areas will be clearly marked with appropriate signs for identification purposes.

3.2.6 Vehicle/Equipment Decontamination Stations

Dry decontamination methods using brooms and other hand tools will be used to remove soil/sediment residuals from the tires, tracks and undercarriage members. In the event that dry decontamination methods are not effective in removing the residuals, wet decontamination methods using high-pressure

washers will be employed as needed. Residuals will be collected and consolidated with the excavated materials for off-site disposal. If generated, rinse waters will be containerized and sampled for off-site disposal. The appropriate decontamination tools will be staged at each decontamination station for the duration of the applicable work. The main decontamination station will be located at the northeastern access road as depicted on Figure 3.

All construction equipment entering the site will have been decontaminated prior to delivery to prevent the introduction of seeds from noxious, invasive and non-native plant species.

3.2.7 Site Security

Site security measures will be established during mobilization and site preparation activities to prevent unauthorized access to the site and prevent the removal of materials, equipment or other items from the site that are not authorized. Additional security measures may be provided depending on work activities.

Access to the site will be controlled by the security firm currently working at the site. All personnel and visitors requiring access to the site will be required to sign the Visitor Logbook prior to entry to the site.

3.2.8 Utility Identification

The identification of site utilities will be conducted by the appropriate utility location services (Blue Stakes) and property owner, to demarcate the following utilities:

- Underground pipelines;
- Stormwater drains and systems;
- Electric lines;
- Water lines;
- Natural gas lines;
- Fiber optic lines; and
- Overhead utilities.
- Aeration System in Lake

Each utility will be identified with individual flags, signs or other devices. All identification devices will be visible.

3.2.9 Air Monitoring

ENTACT will implement three types of air monitoring to be protective of workers and to comply with state regulations during the removal action activities. These include:

- Real-time, direct reading air monitoring using direct-reading portable data RAMs (random air monitors) to monitor particulate concentrations in the air within the work zone;
- Draeger tubes for monitoring benzene; and
- VOC monitoring with a four gas meter/PID.

Real-time, direct reading air monitoring will be conducted during removal action activities to assess the effectiveness of engineering controls in reducing visible dust emissions. Real-time air monitoring readings will be continuously collected from an upwind and downwind location. The portable data RAMs will be set to log readings on a minute by minute basis and the readings will be downloaded at the end of each workday. A daily action level of 1.5 mg/m^3 (0.05 mg/m^3 during reagent addition) for real-time air monitoring of particulate concentrations in the air within the work zone and at the site perimeters will be observed.

The following table outlines the action levels and monitoring equipment:

Real-Time Action Levels for Personal Protection Equipment

Monitoring Equipment	Hazard	Action Level Above Background	Action
PID	Organic gas/vapor	< 25 ppm	Level D
		25 ppm – 50 ppm (alarm will sound on PID monitor)	Stop work, don Level C (pending further screening for benzene)
		> 50 ppm	Stop work, withdraw from operation until elevated readings subside.
LEL Monitor	Explosive atmosphere	< 10% LEL	Level D
		> 10% LEL	Stop work. Immediate withdrawal. Potential explosive hazard. Contact the PHSC for further instructions.
PDR	Nuisance Dust	0.5 mg/m^3	Increase application of water. Stop work and contact PHSC if level defy control.
Detector Tube	Benzene Exposure	> 0.5 PPM	Stop work until elevated reading subside. Contact PHSC for possible upgrade to Level C.

Initial VOC air monitoring will include continuous real time monitoring for a period of two days. Alarms will be set at 100 ppm (low) and 300 (high), the action level and permissible exposure limit total petroleum hydrocarbons, respectively. ENTACT personnel will be required to check the PID periodically and report readings > 5ppm sustained for 5 minutes to the HSC. When sustained levels above 5 ppm are

encountered, air monitoring for benzene will be initiated with the Draeger Accuro Pump and benzene specific colorimetric indicator tubes. In addition, PID monitoring will occur at least twice in each work area each day.

If a "stop work" condition is encountered (LEL>10%, PID>25ppm), Chevron will close the park road and walkways around the lake to keep park users further away from the site. Chevron will notify the City and will work with the City to determine if levels indicate that surrounding residents should be notified and/or evacuated.

Dust suppression methods will be used to control nuisance dust with the goal of dust suppression being the avoidance of any visible dust. If work site conditions indicate that other chemical hazards are present, the FPM or HSO will issue a stop work order and will contact the Project Health and Safety Coordinator to revise or amend this HASP.

Corrective actions will be implemented when daily air monitoring trigger levels are exceeded. The source will be evaluated to determine the adequacy and effectiveness of work practices and dust control measures. If the evaluation determines that additional measures are required to reduce fugitive dust emissions, then corrective action, i.e. additional dust control measures, will be implemented as described in Section 3.2.10. If necessary, ENTACT will modify the identified dust control measures to incorporate more aggressive dust control activities. The occurrence of the exceedance and the corrective measure implemented to reduce or eliminate the source of the exceedance will be documented by the ENTACT Field Project Manager.

3.2.10 Dust and Odor Suppression

During all phases of the removal action, airborne dust emissions and odors will be controlled. Dust and odor suppression systems will be installed in areas disturbed during the removal action to minimize or reduce the generation of visible dust emissions. Engineering controls for suppression may consist of the following methods: the use of water misting and spraying devices and water trucks; use of a decontamination station for equipment and vehicles; use of odor suppression systems; and reducing or stopping work during high wind conditions.

Mobile odor suppression systems will be employed during the work tasks. The decision to employ the odor suppression systems will be based upon several factors including, but not limited to, wind speed and direction, ambient temperature, judgment of field managers and personnel and complaints from citizens about odors. The portable odor suppression system consists of a trailer mounted tank, injection system and high pressure pump with discharge hose and wands for mobile application. The portable system will use ODEX CA-1000 as the odor suppressing agent. Attachment B includes the MSDS information and the toxicity study for the suppressant compound.

To ensure that dust suppression systems are effective, real-time air monitoring will be utilized during work activities. Work procedures and/or dust controls will be adjusted as needed to ensure that visible dust is reduced or eliminated at the site boundary and that the real-time particulate dust action level of 1.5 mg/m^3 is not exceeded. Corrective actions will be implemented when air monitoring action levels are exceeded for the monitored constituents. Dust monitors will be checked frequently throughout the workday to ensure compliance with the action level.

All transport trucks will go through the dry decontamination as discussed in Section 3.2.6 if necessary and will also be inspected prior to exiting the site to prevent tracking soils to paved roads per the City's Clean Wheel Ordinance with additional decontamination being performed as necessary.

3.2.11 Project Meetings

Daily morning meetings will be held with the work crews to discuss the days activities. Weekly meetings will be conducted with the CEMC and ENTACT to discuss the removal activities performed during the previous week, schedule updates/changes, next weeks activities and any problems or resolutions associated with previous or future work activities. A two week look ahead schedule will be provided and discussed during the meeting to ensure all stakeholders are aware and in agreement on future activities and sequencing.

3.3 Excavation & Stabilization of Sediments/Soils

The first step in the removal process is the re-routing of current inflows into the lake from the northern and southern inlet structures. Based upon conversations with the Department of Public Utilities, cutting off the inflow will allow the lake to drain within 1-2 days. However, artesian springs exist within the lake which will prevent complete draining. These springs are generally located in between the north and south islands. Water from these springs will need to be collected and managed as described in Section 3.3.1 to allow complete removal of the lake sediments.

An access ramp will be created in the northeastern corner of the lake to allow heavy equipment access and loadout point for stabilized sediments. The ramp will be constructed of a woven geotextile fabric overlain with aggregate base. The ramp will be at least 15 feet wide and overlain with a minimum lift of one foot of aggregate to accommodate construction equipment and off-site transport trucks. Additional aggregate will be added to the ramp during construction on an as-needed basis if rutting and/or the lift thickness decreases.

EarthFax on behalf of Chevron conducted sediment depth soundings in the month of August. Results of the soundings are presented in Figure 1-A. Sediment depths range from 0.2 feet to 2.0 feet throughout the Lake. The thickest depths are located in the vicinity of the Red Butte Creek and the Emigration Creek Inlets located at the northeastern and southeastern corners of the lake. Additional areas containing sediment depths greater the 0.5 feet include the vicinity of the 10" pipe located on the west central side of the lake and on the western side of the footbridge to the northern island.

The crude oil release resulted in staining of the concrete curb wall and underlying soils on the perimeter of the Lake and the islands. The curb and stained soils will be removed and confirmation samples will be collected in accordance with the Confirmation Sampling Plan included as Appendix A of this workplan. Lake sediment confirmation samples will not be collected as the removal is being performed on a visual basis.

The outer perimeter curb wall and impacted soils will be removed from the bank side to the extent practical. Rubber tracked equipment will be utilized to extent possible to minimize impacts to the existing landscape. Equipment will consist of an excavator equipped with a bucket and thumb, an

excavator with a hydraulic hammer and skid steer loaders. Concrete and soil will be transported by the skid steers to the staging areas at the northeast corner of the lake for off-site transportation and disposal. Alternatively, soils and concrete may be placed within the interim staging piles (as described below) at the lake banks. Concrete curb and impacted soils on the interior islands will be removed concurrently with the sediments.

Sediment removal will be conducted with long reach excavators operating on crane mats. Removal will begin in the southwestern section of the lake and proceed towards the northeast. Sediments will be removed to the cobble surface and placed along the lake banks to allow some gravity decanting of pore waters. The consolidation of the sediments to the lake banks will allow for more efficient transfer to the staging/stabilization area with the long reach excavators. Once the sediments have been placed in the northeastern staging area (consisting of the lake bottom) they will be stabilized to meet paint filter as necessary and loaded into tandem axle dump trucks for off-site transport and disposal.

The existing aeration system will be either be cleaned around, removed and inspected/repaired or if necessary replaced. Based upon information from the Salt Lake City Parks Department the system consists of a blower and airlines running to several bubble plate diffusers. A 2-inch schedule 80 PVC conduit provides electrical power from the transformer to the compressor located on the north island. The airlines (1.5-inch weighted rubber hose) were installed in the sediment to near the sediment /cobble interface. Following sediment removal it will be necessary to place aggregate or fill over the air lines to keep them secured to the Lake bed.

A stabilization reagent will be used to amend sediments not passing the paint filter test following excavation. The selected reagent is ZappaTec's ZapZorb Premium super absorbent polymer. The polymer is non-toxic to aquatic and terrestrial organisms at the typical dosage rates. Information regarding the reagent is included as Attachment C. The additive will be thoroughly mixed into the sediments and the resultant mixture will be staged within the northeastern access area for loadout. The location of the loadout access ramp is depicted on Figure 3.

The reagent will be delivered to the project site in supersacks which allow for more precise addition of the reagent to the sediments, reducing the overall potential for fugitive dust emissions. Personnel working with the reagent will be wearing a particulate monitor that will alarm at the 0.05 mg/m3 per 8 hours. A depressed area will be created within the sediments requiring stabilization , the reagent will be added into the "bowl" and will be thoroughly mixed. All reagent will be incorporated into the sediments within the mixing area and removed as part of the offsite transportation and disposal.

3.3.1 Water Collection, Management, Treatment and Discharge

The majority of the standing water within the Lake will free drain to the southwest outlet after the inflow valves have been closed. The artesian spring located in the east central portion of the Lake will continue to provide inflow to the Lake that will need to be collected, managed and discharged under a Temporary Construction Dewatering UPDES Permit issued by the storm water management section of the Utah Department of Water Quality.

Representatives from Salt Lake County have indicated that the general water flow from the spring is directed to the southern edge of the Lake towards the southwestern effluent point. Water management/collection during previous sediment removal efforts was accomplished by installing several trenches through the sediment to direct flow to sumps for collection. The general topography of the Lake allows for water to collect and pond in the southwest corner. Since the sediment removal will commence at the southwest corner of the lake and proceed towards the northeast, some small "trenches" will be created in the sediments to allow water to flow freely to the southwest. Based upon conversations with Mr. Rich Judson of Salt Lake County, these trenches will need to be installed along the eastern and western perimeter of the southern island and extend northwards to the approximate center of the Lake to capture the majority of the artesian flows. The water will be directed to the southwest headgate and inlet structure area which is the lowpoint of the lake.

A dry prime trash pump or diaphragm pump (if trash pump can not hold sufficient prime) will be installed near the headgate and the suction inlet will be staked above the sediment (or cobble) level to limit the amount of fines in the treatment system. Collected water will be transferred to a primary frac tank for storage and initial settling. The water will then be pumped through a bag filter system equipped with 25 micron bags and into a "clear" frac tank for holding/sampling prior to discharge. All discharge water quality parameters established in the DEQ Ground Water Discharge Permit will be met prior to discharge. Water will be discharged to the storm sewer manhole located at the southwestern edge of the Lake. A totalizing flow meter will be installed on the discharge line with discharge volumes and flow rates being recorded twice daily.

3.3.2 Off-Site Transportation and Disposal

Impacted soils and debris will be loaded into tandem axle trucks for transport to Republic Service's Wasatch Regional Landfill in North Skull Valley, Utah. A copy of the traffic control and transportation plan is provided as Appendix B of this workplan.

3.3.3 Lake Restoration

Restoration of the lake will include regrading as necessary the cobble bottom that is disturbed during sediment removal operations. The perimeter concrete curb will be replaced in accordance with the approved design provided under separate cover by EarthFax. All access ramps/roads will be removed and the affected areas will be restored to their original condition.

3.4 Removal Action Supporting Plans

3.4.1 Site-specific Health and Safety Plan

The *Site-specific Health and Safety Plan* describes all procedures and criteria necessary to protect on-site personnel and area residents from the physical, chemical and all other hazards potentially posed during the implementation of the removal action. The Plan includes detailed descriptions of employee training, levels of protection, personal protective equipment, medical surveillance requirements, decontamination procedures, and contingency procedures in accordance with the applicable requirements of 29 CFR §1910.120. The *Site-specific Health and Safety Plan* is in appendix C.

3.5 Demobilization

3.5.1 Pre-final Inspection

Upon the completion of removal action activities, ENTACT will schedule a pre-final inspection of the site. The pre-final inspection will be attended by the CEMC Project Manager, ENTACT, EarthFax, property owner and any other required stakeholders. The purpose of the pre-final inspection will be to determine whether all aspects of the removal action have been completed. A punchlist will be developed during the pre-final inspection to document the items to be reviewed or addressed prior to the final inspection. ENTACT will develop procedures to resolve deficient items listed on the punchlist upon completion of the pre-final inspection and will implement the procedures prior to the final inspection.

3.5.2 Final Inspection

A final inspection of the Site will be conducted upon the completion of punchlist item procedures. The final inspection will be attended by the CEMC Project Manager, ENTACT, EarthFax, property owner and any other required stakeholders.

4.0 WORK PRODUCTS

4.1 Daily and Weekly Reports

ENTACT will prepare and maintain daily fieldwork reports and other records to summarize all site activities performed during the completion of the removal action. At a minimum, the daily work reports will include a listing of personnel on-site, equipment utilized, work performed (including volume of soil removed from site, truck trips, etc), problems encountered, if any, and resolutions and related information.

4.2 Photographic Documentation

Photographs will be taken during the project in order to serve as a pictorial record of work progress, problems encountered and mitigation activities. Digital photographs will be saved to the computer file and labeled as appropriate. Photographic reporting data sheets, where used, will be cross-referenced with observation and testing data sheets and/or construction problem and solution data sheets.

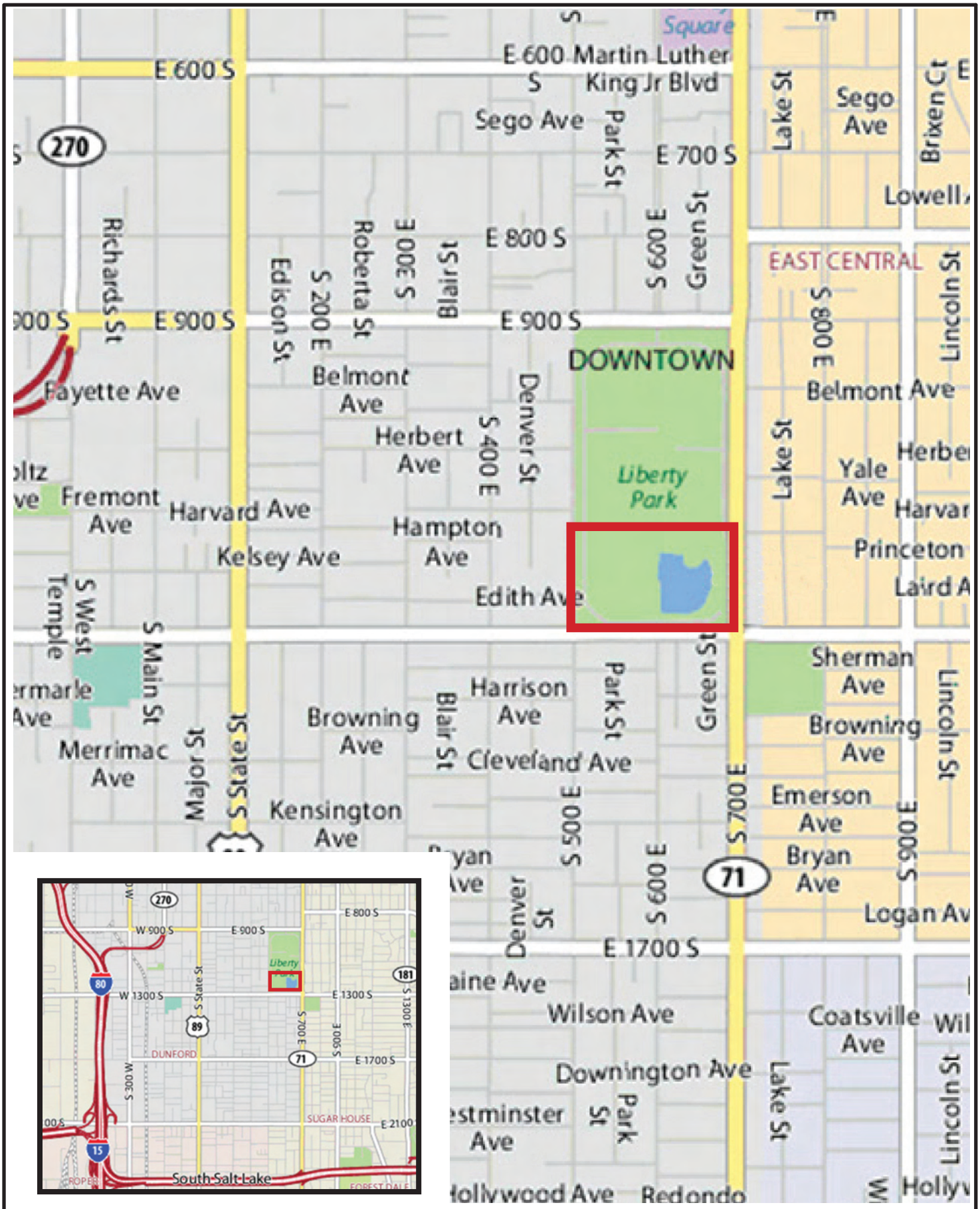
4.3 Project Schedule

The removal action activities described in Section 3.0 will require approximately 10-12 weeks to complete. The work schedule will be based on a 5-6 day, 55-65 hour workweek. The expected sequencing of work activities will be as follows:

- Conduct mobilization and site preparation activities;
- Install access ramps and setup traffic control features;
- Remove perimeter concrete curb and impacted soils;
- Excavate and stabilize sediments;
- Loading and off-site disposal of stabilized sediments, concrete and impacted soils;
- Water collection, management and treatment (ongoing);
- Dust and odor suppression (ongoing);
- Lake bottom and concrete restoration (pending design); and
- Demobilize personnel and equipment.

The sequencing of work activities may be modified in the field depending on site conditions, work procedures, health and safety protocols, weather, and similar factors.

FIGURES



LIberty Park Lake Restoration
Site Location Map

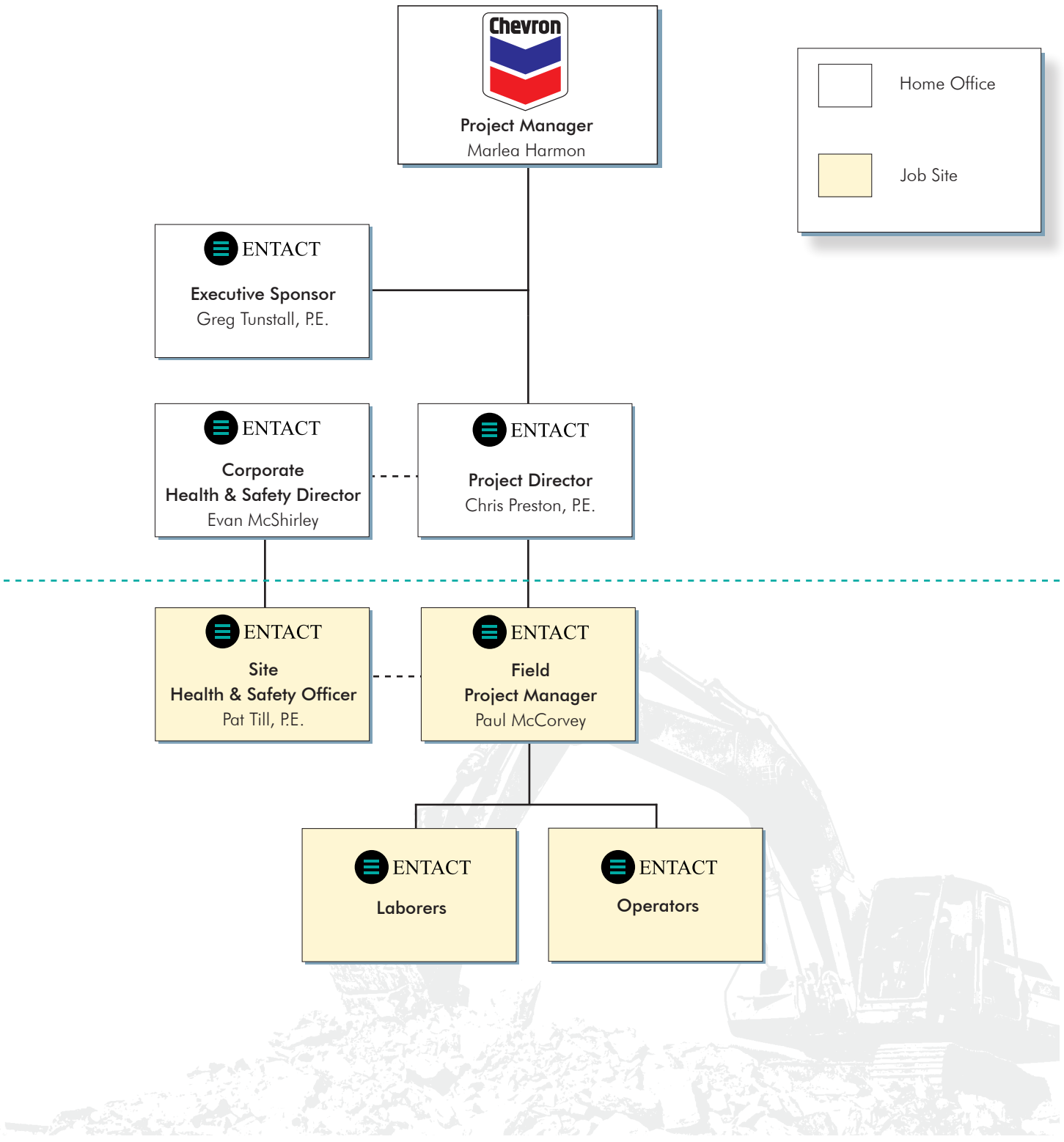
S 700 E & E 1300 S
Salt Lake City, UT 84105

Figure 1

NO.	DATE	REVISION	APP.

Scale: | Drawn By: | Checked By: | Date:

ENTACT environmental services
3129 Bass Pro Drive
Grapevine, TX 76051
972.580.1323 Office 972.550.7464 Fax



Liberty Park Lake Restoration

Figure 2

NO.	DATE	REVISION	APP.

Scale: | Drawn By: | Checked By: | Date:

ENTACT environmental services
3129 Bass Pro Drive
Grapevine, TX 76051
972.580.1323 Office 972.550.7464 Fax

LEGEND

- Perimeter Fence/Odor Suppression System
- Traffic Control Barrier
- Gate
- Odor Suppression Unit/LKD Storage

DATE	BY	CHK'D	APR'D	REVISIONS	NO
					0
					C
					B
					A

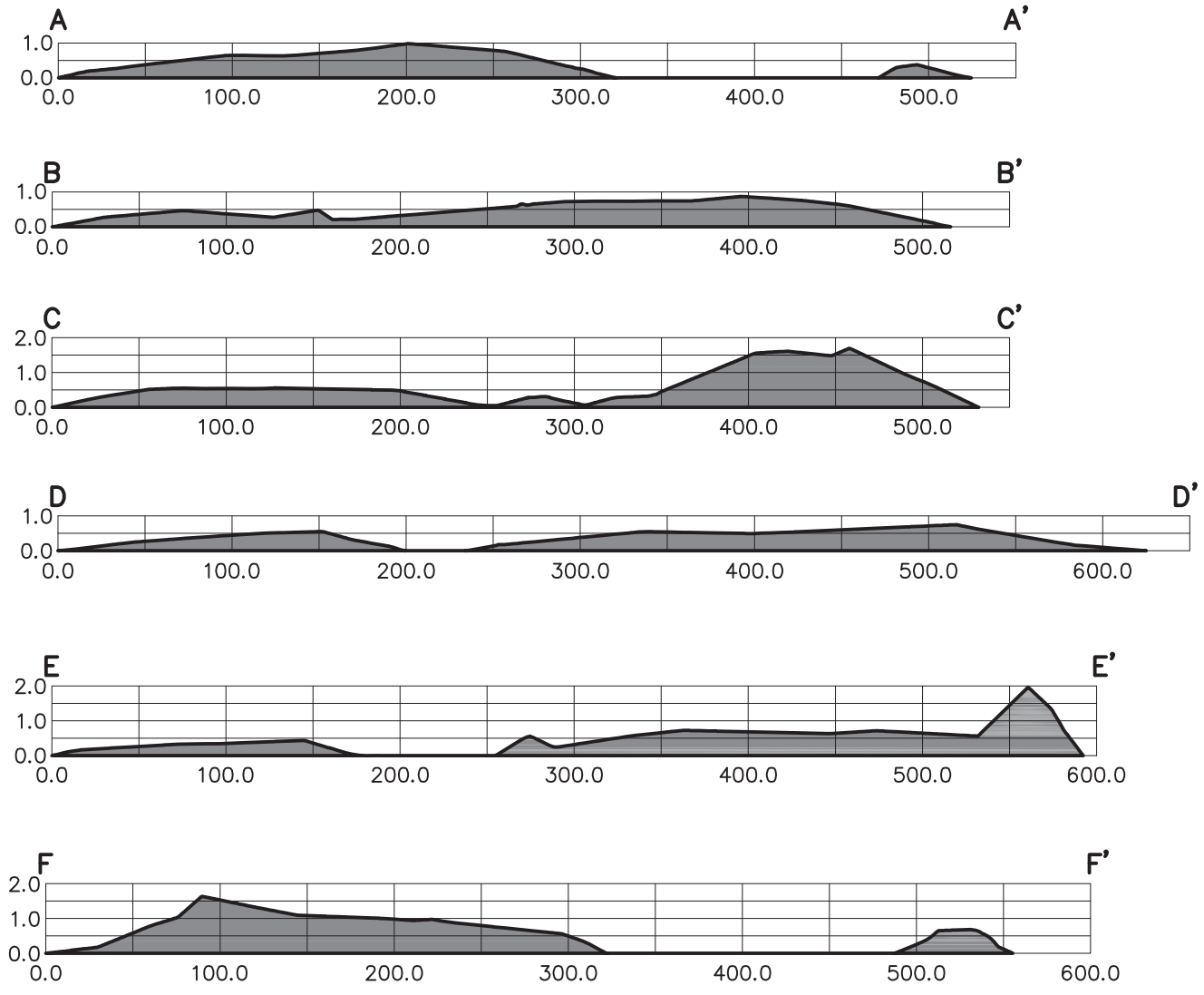
ENTACT
3129 Bass Pro Drive
Grapevine, Texas 76051
P: 972-580-1323 F: 972-550-7464

ENTACT

LIBERTY PARK LAKE RESTORATION

DESIGNED BY			CHECKED BY		
DRAWN BY			APPROVED BY		

SCALE:	PROJECT NO.		REVISION NO.
N.T.S.		**Figure 3**	



NOTES:

1. PLAN VIEW IS SHOWING THICKNESS OF SEDIMENT CONTOURS.
2. WATER ELEVATION = 4261.25 (AUGUST, 12 2010).
3. SEDIMENT VOLUME = 4477cy.

REVISIONS

DR SWF CH. GW
DR APP.
ENGR.
OPR'G. DEPT. APPROVED
ENG'R. DEPT.

EarthFax

Chevron Pipe Line

Red Butte Release

MP 174.5 RED BUTTE RELEASE
LIBERTY PARK POND RESTORATION
PLAN AND CROSS-SECTION SEDIMENT THICKNESS

SCALE HORZ: 1"=100' VERT: 1"=5' DATE 08/2010

C.C.
S.O.

Figure 4

G:\UC1390\12 Liberty Lake\FIGURE 1A.dwg, 8/20/2010 12:10:41 PM

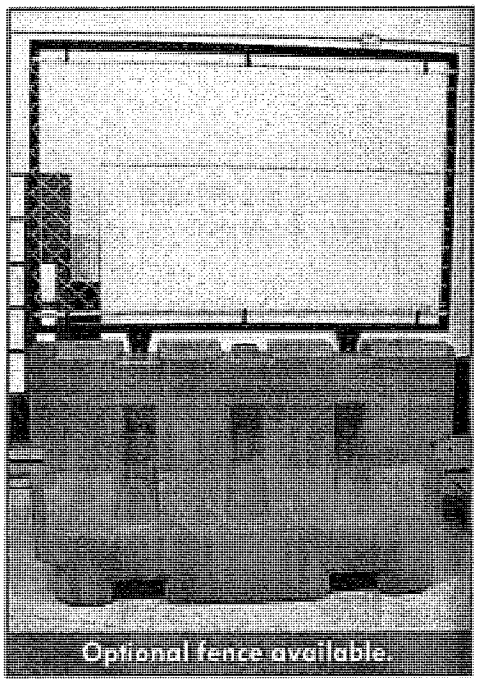
ATTACHMENT A – TRAFFIC BARRIER

OTW SAFETY

Innovators In Safety And Security

[redacted]

MB42x72 JSS LCD



Optional fence available.

COLORS:
Safety orange, white

COMPOSITION:
High impact, UV resistant, high density polyethylene

SIZE:
Height: 42" / 106.6 cm
Length: 72" / 182.8 cm
Width: 24" / 60.96 cm

WEIGHT:
Empty: 90 lbs. / 40.8 kg
Ballasted with 10.8 gallons: 177.5 lbs. / 80.5 kg
Full capacity (use on non-highway): 1426 lbs / 646.8 kg

WATER BALLAST:
10.8 gallons / 40.8 liters
Full capacity (use on non-highway): 165 gallons / 624.4 liters

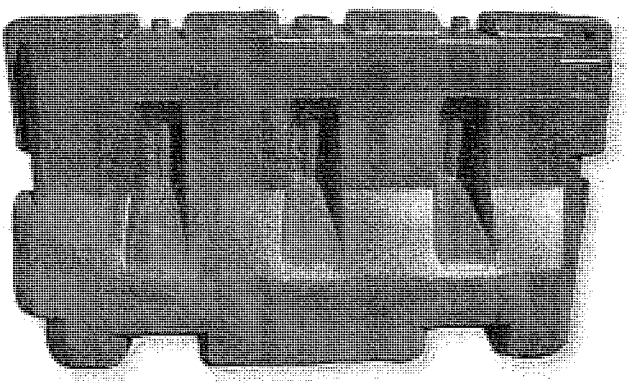
Federally Accepted – Federal Acceptance Letter WZ-277:

When you need a tough LCD for positive delineation, consider the MB42x72 JSS LCD. It's accepted by FHWA as a Longitudinal Channelizing Device at TL3.

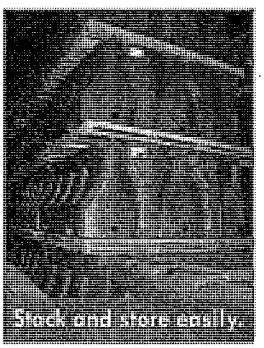
The MB42x72 JSS LCD fills the void between concrete barriers and cones, flasher barricades, and drums. Cones and drums can create unclear delineation and confusion for a driver trying to navigate through a work zone. When conrete barriers are used for the simple purpose of channelization, the concrete barriers become a collision hazard themselves, where the MB42x72 JSS LCD creates a defined direction of travel without the collision hazard. The MB42x72 JSS LCD will channel traffic clearly, prevent drivers and pedestrians from short cutting through construction zones, without the risk associated with impacting a concrete wall.

Features & Benefits:

- NCHRP-350 crash tested and accepted at TL3 (suitable for high speed work zones). Federal acceptance letter WZ-277.
- Barricades can hold battery-operated or solar safety lights.
- Water is filled through a topside aperture and emptied by removing a plug at the base.
- Requires no additional hardware or parts.
- Forms an interlocking wall in any configuration.
- Due to their visibility and imposing nature, drivers respect these devices which provide visual delineation by forming a wall.
- Clearly delineate work zones at night and in bad weather.
- Barricades are not damaged by freezing conditions. If water freezes, plastic will expand.



Patent No. D614,984



Stack and store easily.

GSA

Certifications:

- *Meets MUTCD specification 6F.66 for Longitudinal Channelizing Devices.*
- *Meets NCHRP-350 requirements for Longitudinal Channelizing Devices at TL3.*
- *Be sure to review the federal acceptance letter if you require an LCD on your job site. Many similar products may not be federally approved.*

ATTACHMENT B – ODOR SUPPRESSION

October 2005
KUMA Corporation

ODEX™ Odor Mitigating Agent

Product Description. ODEX Odor Mitigating Agent, a product used to safely neutralize malodors in dozens of applications during the last two decades, and having the following characteristics:

- Made from food grade flavorings and additives.
- Completely biodegradable, non-toxic, non-flammable, and water soluble.
- Effective in neutralizing malodors, even when diluted with water at 1,000:1.
- Cost-effective, at only 3 cents per gallon in typical use concentrations.
- Safe for human exposure, as determined by independent laboratory tests.
- Non-toxic to fathead minnows when tested by an independent laboratory in accord with State Definitive Testing Procedures, California Code of Regulations, Title 22.
- Does not contain constituents considered hazardous according to the Federal Hazard Communication Standard (29 CFR 1910.1200).
- Contains no volatile organic compounds (VOCs) as determined by EPA Method 8260.
- Is not an Insecticide, Fungicide, or Rodenticide, per the USEPA.
- Has compound authorization in accord with USDA guidelines.
- Has been used on numerous occasions with approval of the USEPA.
- Complies with the Toxic Substances Control Act.

ODEX Safety Testing. ODEX has been thoroughly tested by independent laboratories, and found safe for human exposure, though safe work practices should be employed whenever using ODEX or other industrial products. Personal protective equipment is often worn to protect against project hazards, but use of ODEX does not warrant special PPE. Test conducted in accord with protocols and guidelines established by the Consumer Product Safety Commission and Federal Hazardous Substance Act, the toxicology laboratory determined that ODEX is:

- Not an eye irritant
- Not a primary dermal irritant
- Not toxic by dermal application
- Not toxic by oral ingestion
- Not toxic by inhalation
- Not a skin sensitizer

ODEX is safely distributed in its most concentrated form, minimizing shipping costs. Product is typically shipped in 55 gallon containers having a gross weight of 485 pounds, with each gallon of ODEX making up to 1,000 gallons of odor mitigating solution. ODEX usage has no effect on dewatering and/or water treatment processes, as the small amount of solution needed is not significant. Kuma's MECs and Mitigating Mist systems have been specially designed for compatibility with ODEX.

Attachments: ODEX Non-hazardous Material Safety Data Sheet
Acute Toxicology Profile for ODEX
Acute Bioassay Report for ODEX
Analytical Report for ODEX, EPA Method 8260 (VOCs)

Material Safety Data Sheet	**U.S. Department of Labor**
May be used to comply with OSHA's Hazard Communication Standard 29 CFR 1910.1200. Standard must be consulted for specific requirements.	Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB No. 1218-0072
Identity (As used on Label and List): ODEX CA-1000	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

SECTION I: Manufacturer / Emergency Contact

Manufacturer: KUMA Corporation 19114 Halcon Crest Court Grass Valley, CA 95949-9052	Emergency Telephone Number: (530) 268-7070
	Information Telephone Number: (530) 268-7070
Distributor: KUMA Corporation	Date Prepared/ Last Revised: January 1, 1999

SECTION II: Hazardous Ingredients / Identity Information

Hazardous Components (Specific Chemical Identity: Common Name(s)):

OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
N/A	N/A		

All constituents are not considered hazardous according to the Federal Hazard Communication Standard (29 CFR 1910.1200).

SECTION III: Physical / Chemical Characteristics

Boiling Point:	212^{o} F	Specific Gravity (H_2O =1):	0.99
Vapor Pressure (mm Hg):	1	Melting Point:	N/A
Vapor Density (Air = 1):	Approximately as water	Solubility in Water:	Soluble
pH:	4.5 - 6.5	Evaporation Rate (H_2O = 1):	1
Appearance:	Milky Liquid	Odor:	Citrus/Almond

SECTION IV: Fire and Explosion Hazard Data

Flash Point (Method Used):
Will not burn.

Flammable Limits:
Non-flammable.

Lower Explosive Limit (LEL): N/A	Upper Explosive Limit (UEL): N/A

Extinguishing Media:
N/A

Special Fire Fighting Procedures:
None.

Unusual Fire and Explosion Hazards:
None.

SECTION V: Reactivity Data

Stability:	Conditions to Avoid (Stability):
Stable.	Storage at temperatures below freezing, and above 100°F.

Incompatibility (Materials to Avoid):

Strong oxidizing agents.

Hazardous Decomposition or By-products:

None known.

Hazardous Polymerization:	Conditions to Avoid (Polymerization):
Will not occur.	None known.

SECTION VI: Health Hazard Data

Route(s) of Entry:	Inhalation?	Ingestion?	Skin?
	Yes	Avoid	Eyes

Health Hazard (Acute and Chronic):

None known.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	No	No	No

Signs and Symptoms of Overexposure:	Medical Condition Aggravated by Exposure:
None known.	Allergies to flavoring ingredients.

Emergency First Aid Procedures:

In case of eye contact, flush thoroughly with tepid water for 15 minutes. Seek medical attention.

In case of respiratory irritation/allergic reaction, move to fresh air. Aid breathing if necessary. Seek medical attention.

If ingested, dilute with water. Do not induce vomitting. Do not give fluids if victim is unconscious or having convulsions. Seek immediate medical attention.

SECTION VII: Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled:

Contain, absorb, and collect spilled liquid. Dispose all wastes legally. Rinse spill surface with large quantities of water.

Waste Disposal Method:

Dispose of wastes in legal and proper manner. Product is biodegradable and non-hazardous.

Precautions to be Taken in Handling and Storing:

Product storage below 32 °F may cause layering.

Other Precautions:

Excessive pressure may result if containerized liquid stored near heat source.

SECTION VIII: Control Measures

Respiratory Protection (Specify Type):	Eye Protection:
None required.	Chemical goggles or safety glasses.
Ventilation:	Protective Gloves:
Good ventilation.	Not required.

Other Protective Clothing or Equipment:

None required.

Work/ Hygienic Practices:

Standard hygienic practices. Avoid splashing and spilling. Before eating, wash hands thoroughly.

Tox Monitor Laboratories, Inc.
33 West Chicago Avenue
Oak Park, Illinois 60302
(708) 345-6970

Kuma Corporation
19114 Halcon Crest Court
Grass Valley, California 95949

October 28, 1996

Acute Toxicology Profile
ODEX Odor Suppression Agent

TM Study 96-258-1 Primary Eye Irritation

No positive eye irritation reactions in any of the six test Subjects. Compound is not an eye irritant according to FHSA/CPSC Guidelines.

TM Study 96-258-2 Primary Dermal Irritation

The primary dermal irritation score was 2.17 indicating that the compound is not a primary dermal irritant according to FHAS/CPSC Guidelines

TM Study 96-258-3 Acute Oral Toxicity

The acute oral LD 50 was found to be greater than 5 Grams per Kilogram body weight. The Compound is not toxic by oral ingestion according to FHSA/CPSC Guidelines.

TM Study 96-258-4 Acute Dermal Toxicity.

The acute dermal LD 50 was found to be greater than 2 Grams per Kilogram body weight. The Compound is not toxic by dermal application according to FHSA/CPSC Guidelines.

TM Study 96-258-5 Acute Inhalation Toxicity

The acute inhalation LC 50 was found to be greater than a nominal concentration of 20 Milligrams per Liter of air for a one hour period. The compound is not toxic by inhalation according to FHSA/CPSC Guidelines.

TM Study 96-258-6 Acute Dermal Sensitization

Repeated topical exposure elicited no hypersensitivity reaction in any of the test subjects when compared to DCNB positive controls. The Compound is not a skin sensitizer.

Michael Kukulinski
Study Director

AQUATIC
BIOASSAY &
CONSULTING
LABORATORIES, INC.

TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

September 19, 2000

Ms. Carole Kawamoto
KUMA Corporation
19114 Halcon Crest Court
Grass Valley, CA 95949-9052

Dear Ms. Kawamoto:

We are pleased to present the enclosed acute bioassay report. The product was tested under guidelines prescribed in *Static Acute Bioassay Procedures for Hazardous Waste Samples,* California Department of Fish and Game, 1988. Results were as follows:

CLIENT:	KUMA Corporation
SAMPLE I.D.:	ODEX Odor Abatement Agent –(250:1)
DATE RECEIVED:	08 March- 00
ABC LAB. NO.:	KUM0801.945

DOHS (TITLE 22) Hazardous Waste Bioassay Definitive Test
Fathead Minnows

96 Hour LC50 = >1000 mg/l

STATUS = Pass (State of California limit is 500mg/L)

Yours very truly,

for Thomas (Tim) Mikel
Laboratory Director

CHEMICAL & ENVIRONMENTAL LABORATORIES, INC.

ANALYTICAL REPORT

--- EPA 8260 ---

Client Name: KUMA Corporation
Project Manager: Carole Kawamoto
Project Name: ODEX

Date Sampled: 01/01/99
Date Analyzed: 08/25/00
Date Reported: 08/28/00

C&E ID		K0824B-1
SAMPLE ID		ODEX
DF		10
COMPOUND	Detection Limit (ug/kg)	RESULT (ug/kg or ppb)
Benzene	5	ND
Bromobenzene	5	ND
Bromochloromethane	10	ND
Bromodichloromethane	10	ND
Bromoform	10	ND
Bromomethane	10	ND
n-Butylbenzene	5	ND
sec-Butylbenzene	5	ND
tert-Butylbenzene	5	ND
Carbon Tetrachloride	5	ND
Chlorobenzene	5	ND
Chloroethane	10	ND
Chloroform	5	ND
Chloromethane	10	ND
2-Chlorotoluene	5	ND
4-Chlorotoluene	5	ND
Dibromochloromethane	10	ND
1,2-Dibromo-3-chloropropane	10	ND
1,2-Dibromoethane	10	ND
Dibromomethane	10	ND
1,2-Dichlorobenzene	5	ND
1,3-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Dichlorodifluoromethane	10	ND
1,1-Dichloroethane	5	ND
1,2-Dichloroethane	5	ND
1,1-Dichloroethene	5	ND
cis-1,2-Dichloroethene	5	ND
trans-1,2-Dichloroethene	5	ND
1,2-Dichloropropane	5	ND
1,3-Dichloropropane	5	ND

To be continued on page 2

14148 E. Firestone Blvd., Santa Fe Springs, CA 90670 Tel: 562 921-8123, Fax: 562 921-7974

CHEMICAL & ENVIRONMENTAL LABORATORIES, INC.

ANALYTICAL REPORT

--- EPA 8260 ---

Client Name: KUMA Corporation
Project Manager: Carole Kawamoto
Project Name: ODEX

Date Sampled: 01/01/99
Date Analyzed: 08/25/00
Date Reported: 08/28/00

C&E ID		K0824B-1
SAMPLE ID		ODEX
COMPOUND	Detection Limit (ug/kg)	RESULT (ug/kg or ppb)
2,2-Dichloropropane	5	ND
1,1-Dichloropropene	5	ND
cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
Ethylbenzene	5	ND
Hexachlorobutadiene	5	ND
Isopropylbenzene	5	ND
4-Isopropyltoluene	5	ND
Methylene Chloride	10	ND
Naphthalene	5	ND
n-Propylbenzene	5	ND
Styrene	5	ND
1,1,1,2-Tetrachloroethane	5	ND
1,1,2,2-Tetrachloroethane	5	ND
Tetrachloroethene	5	ND
Toluene	5	ND
1,2,3-Trichlorobenzene	5	ND
1,2,4-Trichlorobenzene	5	ND
1,1,1-Trichloroethane	5	ND
1,1,2-Trichloroethane	5	ND
Trichloroethene	5	ND
Trichlorofluoromethane	10	ND
1,2,3-Trichloropropane	5	ND
1,2,4-Trimethylbenzene	5	ND
1,2,5-Trimethylbenzene	5	ND
Vinyl Chloride	10	ND
Total Xylenes	5	ND
MTBE	10	ND

ND = Not detected at the indicated detection limit.
DF = Dilution Factor
Reporting Limit = DF x Detection Limit

ATTACHMENT C – STABILIZATION ADDITIVE

ZappaTec

Material Safety Data Sheet

ZapZorb **MSDS ID: ZT/ZZ**

* * * Section 1 – Chemical Product and Company Identification * * *

Chemical Name: Sodium Polyacrylate, Crosslinked

Zappa Tec, LLC
828 Knox Road
McLeansville, NC 27301

Phone: (888) 369-8704

Emergency #: (800) 424-9300 CHEMTREC

* * * Section 2 – Composition / Information on Ingredients * * *

CAS #	Component	Percent
9003-04-7	Sodium polyacrylate	>99
Not Available	Post Treated – Trade Secret	0

Component Information/Information on Non-Hazardous Components

The components of this product are not regulated as hazardous under 29 CFR and 49 CFR. However, the manufacturer recognizes the potential for respiratory tract irritation as a result of inhalation of this material as a respirable dust. See Sections 8, 11, 14, and 15 for further regulatory information.

* * * Section 3 – Hazard Identification * * *

Emergency Overview

Sodium polyacrylate is a white, granular, odorless polymer that yields a gel-like material with the addition of water. It is insoluble in water and causes extremely slippery conditions when wet. Although not regulated as a hazardous material, the respirable dust is a potential respiratory tract irritant. The manufacturer recommends an eight-hour exposure limit of 0.05 mg/m^3.

Potential Health Effects: Eyes

Dust may cause burning, drying, itching and other discomfort, resulting in reddening of the eyes.

Potential Health Effects: Skin

Exposure to the dust, such as in manufacturing, may aggravate existing skin conditions due to drying effect.

Potential Health Effects: Ingestion

Although not a likely route of entry, tests have shown that polyacrylate absorbents are non-toxic if ingested. However, as in any instance of non-food consumption, seek medical attention in the event of any adverse symptoms.

Potential Health Effects: Inhalation

Exposure to respirable dust may cause respiratory tract and lung irritation and may aggravate existing respiratory conditions.

HMIS Ratings: Health: 1 Fire: 0 Reactivity: 0

Hazard Scale: 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe *=Chronic hazard

* * * Section 4 – First Aid Measures * * *

First Aid: Eyes

Immediately flush eyes with plenty of water for at least 15 minutes.

First Aid: Skin

Remove polyacrylate absorbent dust from skin using soap and water.

First Aid: Ingestion

Non-toxic by ingestion. However, if adverse symptoms appear, seek medical attention.

First Aid: Inhalation
If inhaled, move to source of fresh air. Seek medical attention if symptoms persist.

* * * Section 5 – Fire Fighting Measures * * *

General Fire Hazards
No recognized fire hazards associated with the finished product.

Upper Flammable Limit (UFL): NE
Lower Flammable Limit (LFL): NE
Method Used: None
Flash Point: None
Flammability Classification: None

Hazardous Combustion Products
None known.

Extinguishing Media
Dry Chemical, foam, carbon dioxide, water fog. Extremely slippery conditions are created if spilled product comes in contact with water.

Fire Fighting Equipment/Instructions
Firefighters should wear full protective clothing including self contained breathing apparatus.

NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0
Hazard Scale: 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

* * * Section 6 – Accidental Release Measures * * *

Containment Procedures
Sweep or vacuum material when possible and shovel into a waste container.

Clean-Up Procedures
Use caution after contact of product with water as extremely slippery conditions will result. Residuals may be flushed with water into the drain for normal wastewater treatment. This is a non-hazardous waste suitable for disposal in an approved solid waste landfill.

Evacuation Procedures
None Required.

Special Procedures
Avoid respirable dust inhalation during clean-up. Wear appropriate respirator.

* * * Section 7 – Handling and Storage * * *

Handling Procedures
Handle as an eye and respiratory tract irritant.

Storage Procedures
Store in a dry, closed container.

* * * Section 8 – Exposure Controls / Personal Protection * * *

Exposure Guidelines
A: General Product Information
This product is not regulated as a hazardous material. However, the manufacturer recognizes the potential for respiratory tract irritation and recommends an eight hour exposure limit of 0.05 mg/m^3.

B: Component Exposure Limits

No information is available.

Engineering Controls

Provide local exhaust ventilation to maintain worker exposure to less than 0.5 mg/m^3 over an eight-hour period.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields or goggles.

Personal Protective Equipment: Skin

Use impervious gloves when handling the product in the manufacturing environment.

Personal Protective Equipment: Respiratory

Wear respirator with a high efficiency filter if particulate concentrations in the work area exceed 0.05 mg/m^3 over an eight-hour period.

Personal Protective Equipment: General

Obey reasonable safety precautions and practice good housekeeping. Wash thoroughly after handling.

* * * Section 9 – Physical & Chemical Properties * * *

Appearance:	White granular Powder	**Odor:**	None
Physical State:	Solid	**PH:**	5.5-6.5 (1% in water)
Vapor Pressure:	<10 mm Hg	**Vapor Density:**	NE
Boiling Point:	NE	**Melting Point:**	>390 F
Solubility (H20):	Not soluble.	**Specific Gravity:**	0.4-0.7 g/ml
Evaporation Rate:	<1.0		

* * * Section 10 – Chemical Stability & Reactivity Information * * *

Chemical Stability

The product is stable.

Chemical Stability: Conditions to Avoid

None

Incompatibility

None

Hazardous Decomposition

None known.

Hazardous Polymerization

Will not occur.

* * * Section 11 – Toxicological Information * * *

Acute and Chronic Toxicity

A: General Product Information

Acute inhalation of respirable dust may cause irritation of the upper respiratory tract and lungs.

B: Acute Toxicity-LD50/LC50

Sodium polyacrylate (9003-04-7)

LD50: Oral LD50 Rat: 40gm/kg

Carcinogenicity

Component Carcinogenicity

No information is available.

Chronic Toxicity

Chronic inhalation exposure to rats for a lifetime (two years) using sodium polyacrylate that had been micronized to a respirable particle size (less than 10 microns) produced non-specific inflammation and chronic lung injury at 0.2 mg/m^3 and 0.8 mg/m^3. Also, at 0.8 mg/m^3, tumors were seen in some test animals. In the absence of chronic inflammation, tumors are not expected. There were no adverse effects detected at 0.05 mg/m^3.

Mutagenicity

Sodium polyacrylate had no effect in mutagenicity tests.

* * * Section 12 – Ecological Information * * *

Ecotoxicity

A: General Product Information

Composted polyacrylate absorbents are nontoxic to aquatic or terrestrial organisms at predicted exposure levels from current application rates.

B: Component Analysis – Ecotoxicity – Aquatic Toxicity

No information available.

Environmental Fate

Polyacrylate absorbents are relatively inert in aerobic and anaerobic conditions. They are immobile in landfills and soil systems (>90% retention), with the mobile fraction showing biodegradability. They are also compatible with incineration of municipal solid waste. Incidental down-the-drain disposal of small quantities of polyacrylic absorbents will not affect the performance of wastewater treatment systems.

* * * Section 13 – Disposal Considerations * * *

US EPA Waste Number & Descriptions

A: General Product Information

This product is a non-hazardous waste material suitable for approved solid waste landfills.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Dispose of in accordance with Local, State and Federal regulations.

* * * Section 14 – Transportation Information * * *

International Transportation Regulations

This product is not transport regulated.

* * * Section 15 – Regulatory Information * * *

US Federal Regulations

A: General Product Information

This product is not Federally regulated as a hazardous material.

B: Clean Air Act

No information is available.

C: Component Analysis

No information is available.

D: Food & Drug Administration

CFR references for the FDA regulated components in this product are listed.

Sodium polyacrylate (9003-04-7)

Direct Food Additives: 173.73, 173.310
Indirect Food Additives: 175.105

State Regulations

A: General Product Information

This product is not regulated by any State as a hazardous material.

B: Component Analysis - State

None of this product's components are listed on the state lists from CA, FL, MA, MN, NJ, or PA.

Component Analysis – WHMIS IDL

No components are listed in the WHMIS IDL.

Component Analysis – Inventory

Component	CAS#	TSCA	CAN	EEC
Sodium polyacrylate	9003-04-7	Yes	DSL	No

* * * Section 16 – Other Information * * *

Other Information

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

Key/Legend

Contact: Product Compliance Officer
Contact Phone: (888) 369-8704

APPENDIX A

STORM WATER POLLUTION PREVENTION PLAN
FOR REMEDIATION OF
LIBERTY PARK POND

Prepared for

CHEVRON PIPE LINE COMPANY
Salt Lake City, UT

October 2010

Prepared by

EARTHFAX ENGINEERING, INC.
Engineers/Scientists
Midvale, Utah
www.earthfax.com

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF ATTACHMENTS

1 - SITE EVALUATION, ASSESSMENT, AND PLANNING

1.1 Project/Site Information

A recent release of oil from a Chevron pipeline has resulted in hydrocarbon impacts to sediment, soil, and concrete curbing at Liberty Park Pond in Salt Lake City, Utah. The purpose of this document is to outline a storm-water pollution prevention plan that will be implemented during remediation of this site. This plan covers remediation of Liberty Park Pond including excavation, fill, curb removal and replacement and all other pipeline release work to occur at the site.

A *Notice of Intent for Storm Water Discharges Associated with Construction Activity* is provided in Attachment A. Any amendments to this SWPPP will be documented on the form contained in Attachment B. All contractors and subcontractors whose activities may result in the generation of sediment from the site will be required to sign the form in Attachment C before beginning on-site activities.

1.2 Contract Information/Responsible Parties

SITE OWNER/CONTACT	***PHONE***	***ADDRESS***
Chevron Pipe Line Marlea Harmon	805-546-6916 (office) 805-550-6574 (cell)	4051 Broad Street, Suite 230 San Luis Obispo, CA 93401
PROJECT CONTRACTOR		
Entact Environmental Services Christopher Preston	972-580-1323 (office) 630-675-9853 (cell)	3129 Bass Pro Drive Grapevine, TX 76051
SWPPP WAS PREPARED BY		
EarthFax Engineering, Inc. Timothy A. Jimenez	801-561-1555	7324 South Union Park Ave. Midvale, Utah 84047
SUBCONTRACTOR(S)		
EMERGENCY 24-HOUR CONTACT		
Entact Environmental Services Christopher Preston	972-580-1323 (office) 630-675-9853 (cell)	3129 Bass Pro Drive Grapevine, TX 76051
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY – SPILL CONTACT		
Division of Environmental Response and Remediation	801-536-4123	195 North 1950 West Salt Lake City, UT 84116

1.3 Nature and Sequence of Construction Activity

Remediation of the site will involve excavation and removal of contaminated materials including, but not limited to, sediment, soil, concrete, etc. This material will be hauled to an off-site location for disposal. The site is designed as a storm-water detention pond. Red Butte Creek and Emigration Creek contribute a majority of the water within the pond. Several seeps within the pond contribute a small amount of the water within the pond. During remediation Red Butte Creek and Emigration Creek will be diverted around the pond through and existing series of culverts and control gates. A series sumps, pipes and pumps will direct water from the seeps to be pumped to the existing outlet structure. Sumps will also be constructed at the outfall of Red Butte Creek and Emigration Creek to collect and pump any water that bypasses the control gates to the existing outlet structure for the pond. To prevent storm-water runoff from entering the sumps and transporting hydrocarbons to off-site areas, the sumps will be lined with silt fencing, berms, and absorbent boom.

1.4 Soils, Slopes, Vegetation, and Current Drainage Patterns

Sediment within the pond consists of native soils transported to the site from Red Butte Creek and Emigration Creek. The ground surrounding the site slopes toward the site. Therefore, no stormwater can leave the site. Vegetation at the pond consists of grass along the edge of the pond and water vegetation within the pond. As excavation occurs, vegetation will be removed.

1.5 Construction Site Estimates

It is currently anticipated that approximately 4,480 cubic yards of sediment will be excavated from the site and approximately 70 cubic yards of concrete curbing will be removed during the remediation effort. The final volume of material that is excavated and removed may vary from that stated above.

Site remediation is planned to begin in November 2010 and continue until completed. Only when an area is considered adequately remediated will storm-water control methods be removed from those areas.

It is anticipated that no impervious areas will be generated during this project. Runoff conditions are expected to remain the essentially same after remediation as they were prior to the oil release.

1.6 Receiving Waters

The drainage control that will be maintained during site remediation is designed to preclude substantial runoff from leaving the site boundary. It is unlikely runoff from the site will occur, due to the surrounding area and the site sloping toward the pond. No stream crossings, storm sewers, or wetlands will be affected by this project. Construction site management (i.e., stable

site entrances) as well as silt fences will be used as best management practices on this project to minimize the discharge of pollutants to receiving waters.

1.7 Site Features and Sensitive Areas to be Protected

There are no wetlands or sensitive vegetative species within the site.

1.8 Potential Sources of Pollution

It has not been verified that crude oil related contaminants exist at the site. However, sediment will be removed from the site as a precaution. Construction-related pollutants that may be associated with this project consist of petroleum products and reagents used to absorb water from the sediment. Sediment controls to be implemented at the site are discussed in more detail in Section 2 of this plan. The control of other construction-related pollutants is discussed in Section 3.

1.9 Endangered Species

No endangered species are known to exist on site. Tracy Aviary, adjacent to the site, currently houses several endangered species of birds. However, the aviary is approximately 100 feet west of the site and several feet above the elevation of the work area. A wide sidewalk also separates the work site from the aviary. As a result, remediation work will not effect the endangered species within the aviary.

1.10 Historic Preservation

Chase's Mill, a historic grist mill, is adjacent to the site. However, the mill is approximately 70 feet west of the site and several feet above the elevation of the work area. A wide sidewalk also separates the work site from the mill. As a result, remediation work will not effect the mill.

1.11 Applicable Federal, Tribal, State or Local Programs

The site is being remediated as part of a cleanup action under the review of Salt Lake City and the Utah Department of Environmental Quality.

2 - EROSION AND SEDIMENT CONTROL BMPS

2.1 Minimize Disturbed Area and Protect Natural Features and Soil

The contractor shall limit site disturbances to those areas required for remediation activities to proceed efficiently. The contractor shall inspect work areas frequently to ensure that areas not targeted for disturbance are not impacted by the construction equipment or debris.

2.2 Phase Construction Activity

This project will involve removing sediment from the bottom of Liberty Park Pond and transporting this material off-site for disposal at a facility that has been permitted by the Utah Department of Environmental Quality for acceptance of such waste.

2.3 Storm-Water Best Management Practices

Sediment generated from this project shall be controlled primarily at the source, thereby precluding off-site impacts. The contractor shall install and regularly inspect sediment controls and repair any damage to them. Best management practices ("BMPs") to be implemented on this project will include the following:

- Silt fences
- Berm
- Stable site entrances

Silt fences: Silt fences shall be installed, as indicated in Figure 2, around the seep sumps. Due to variations at the site the silt fence design may need to be altered. If this does occur a qualified engineer shall approve the redesign and Figure 2 shall be updated to reflect the redesign. These silt fences shall be maintained until remediation activities are finished in that area. Supports shall be installed along the silt fences on maximum 6-foot centers (for geotextile without wire backing) or 10-foot centers (for geotextile with wire backing). The supports shall be installed to a depth of at least 12 inches. The geotextile shall be attached on the upslope side of the supports in accordance with the manufacturer's recommendations. High-density polyethylene ("HDPE"), with a minimum thickness of 10 mil, shall be installed on the upslope side of the geotextile. The geotextile and HDPE at the bottom of the fence shall be buried in a trench to a minimum depth of 4 inches below the ground surface. All joints in the geotextile and HDPE shall be spliced at a support, with a minimum 6-inch overlap and both ends securely fastened to the support. Sediment that accumulates behind the fence shall be distributed over the disturbed area, if uncontaminated, or otherwise handled as being contaminated, prior to demobilization from the site.

Berms: A berm shall be constructed on the concrete aprons at the outfalls of both Red Butte Creek and Emigration Creek. The berm shall be constructed as indicated on Figure 4. However, this design may need to be modified in the field to better collect water that bypasses the control gates at both Red Butte Creek and Emigration Creek. Any modifications shall be approved by a qualified engineer and Figure 4 shall be updated to reflect the modifications.

Stable site entrances: Access to the site shall be from Belmont Road, which provides access to the park. A stable site entrance shall be constructed by placing 2- to 3-inch diameter stone, with a maximum of 10% fines, for a distance of at least 50 feet prior to Belmont Road (see Figures 1 and 3). Haul trucks shall be staged in such a manner that they do not traverse across contaminated soil. If wash down of equipment is required, equipment shall be washed in the contaminated area before leaving the site. If required to prevent tracking of sediment onto public streets, a periodic top dressing shall be added to the site entrance stone. If sediment is accidentally spilled or transported onto the street, the contractor shall remove this sediment from the street surface within 12 hours by shoveling, sweeping, or other appropriate manner. Sediment removed from the street shall be handled as though it is contaminated.

2.4 Slope Protection

All work shall be conducted in a manner that pays special attention to protect slopes from erosion and prevents sediment from entering the sump systems. Silt fencing and other BMPs shall be inspected at least daily during the remediation project to ensure that they are functioning properly and retaining sediment within the control area.

2.5 Storm Drain Inlet Protection

Both Red Butte Creek and Emigration Creek drain into Liberty Park Pond. An existing 3-foot by 4-foot concrete culvert shall be used to divert Red Butte Creek around Liberty Park Pond and into an existing 6-foot by 4-foot concrete culvert. This existing 6-foot by 4-foot culvert shall also be used to divert Emigration Creek around Liberty Park Pond and into the Jordan River. The control gates at these diversions are most likely not water tight. A sump shall be installed at the outfall of both the Red Butte Creek and Emigration Creek to collect any water that seeps through the control gates. The water collected within these sumps shall be pumped around the pond and into the existing pond outlet. The existing pond outlet shall have the sediment surrounding it excavated to allow the concrete outlet to be elevated above the surrounding ground level. This will prevent stormwater from entering the outlet.

2.6 Additional BMPs

No additional BMPs are planed for this site. See Section 2.3 for a description of the BMPs that will be used during the remediation project.

3 - GOOD HOUSEKEEPING BMPS

3.1 Material Handling and Waste Management

Consistent with requirements of the Utah Department of Environmental Quality Storm Water General Permit for Construction Activities, potential pollutants other than sediment shall be handled and disposed of in a manner that does not cause contamination of storm water. Sediment controls are discussed in more detail in Chapter 2 of this document. This chapter discusses handling of non-sediment pollutants that may be present during construction or remediation activities (e.g., fuel, lubricants, and hydraulic fluids).

Materials used during remediation with the potential to impact storm water shall be stored, managed, used, and disposed of in a manner that minimizes the potential for releases to the environment and especially into storm water. Emergency contacts for the project are included in Section 1.2 of this plan.

The following practices shall be used throughout the project to reduce the potential for spills:

- Potential pollutants shall be stored and used in a manner consistent with the manufacturer's instructions. Material storage areas shall be equipped with covers, roofs, or secondary containment as needed to prevent storm water from contacting stored materials. Chemicals that are not compatible shall be stored in segregated areas so that spilled materials cannot combine and react.
- Materials disposal shall be in accordance with the manufacturer's instructions and applicable Federal, State, and local regulations.
- Materials no longer required for construction shall be removed from the site as soon as practicable.
- Adequate garbage, construction waste, and sanitary waste handling and disposal facilities shall be provided to keep the site clear of obstruction.
- Maintenance and repair of all equipment and vehicles involving oil changes, fueling, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities that may result in the accidental release of contaminants, shall be conducted in a manner that minimizes the release of contaminants onto the ground. Materials spilled during maintenance operations shall be cleaned up immediately and properly disposed of at a State-approved off-site location.

If a petroleum or chemical spill occurs, the contractor shall quickly contain the spill and prevent or minimize the migration of pollutants into storm-water runoff and conveyance systems. If a spill of pollutants threatens storm water at the site, the spill response procedures outlined below shall be implemented in a timely manner to prevent the release of pollutants to receiving waters:

- The project contractor's site superintendent shall be notified immediately when a spill, or the threat of a spill, is observed. The superintendent shall assess the situation and determine the appropriate response.
- If spills represent an imminent threat of entering receiving waters, site personnel shall respond immediately to contain the release and notify the project contractor's site superintendent after the situation has been stabilized.
- Spill kits containing materials and equipment for spill response and cleanup shall be maintained at the site.
- Facility personnel with primary responsibility for spill response and cleanup shall receive training from the site superintendent. This training shall include identifying the location of spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment shall be inspected and maintained as necessary to replace any materials used in spill response activities.

3.2 Building Material Staging Areas

Materials other then those described above to be stored on site may include the following:

- Materials for construction of a temporary fence and berms around the remediation area.
- Stakes, geotextile, and other materials for construction of silt fences and berms.

These materials shall be stored in a laydown area that is outside of contaminated areas. All materials shall be stored according to manufacture's recommendations.

3.3 Allowable Non-Storm Water Discharge Management

The non-storm water discharge that may occur during remediation will consist of dust-control water and discharge from several natural seeps located within the bottom of the pond. Due to the arid nature of the area, this dust-control water should be absorbed into the soil where it is applied. The natural seeps will enter a pipe within a sump where the water will be pumped out in an approved manner.

4 - INSPECTIONS

During site remediation activities, the contractor shall conduct daily inspections of the work area to evaluate the functional operability of BMPs. Inspections shall occur before, during, and after rainfall. The results of these inspections and all maintenance and repair activities shall be recorded on an Inspection and Maintenance form, such as that provided in Attachment D. If BMPs appear deficient or damaged, changes and repairs shall be made immediately and recorded on the Inspection and Maintenance form.

The contractor shall be responsible for ensuring that all changes and repairs to BMPs are performed in a timely and adequate manner. These changes and repairs shall be recorded on a Corrective Action Log, such as that contained in Attachment D.

5 - RECORDKEEPING AND TRAINING

5.1 Recordkeeping

The contractor shall keep a copy of this SWPPP, together with its figures and attachments, on site at all times. Furthermore, copies of completed inspection logs, corrective action logs, training logs, etc. shall be maintained on site at all times. These documents shall be made immediately available to Chevron, its representatives, and representatives of the Utah Department of Environmental Quality or the U.S. Environmental Protection Agency upon request. All documentation related to the Liberty Park Pond remediation project shall be retained for at least three years after the permit is terminated.

5.2 Training

Implementation and management of this SWPPP are the responsibilities of Chevron and the remediation contractor. The contractor's superintendent shall be familiar with the major elements of the plan. Construction workers and others at the site shall be given appropriate training information by Chevron or its representatives during site safety meetings and on an as-needed basis. This training shall be documented on the form provided in Attachment E. The SWPPP shall also be addressed during pre-construction meetings. All contractors or subcontractors providing services on the project that may cause storm water pollution shall be given a copy of the SWPPP and shall be required to sign the form in Attachment C prior to beginning work on site.

Subcontractor oversight to ensure compliance with the SWPPP shall be provided by the prime contractor's superintendent or project manager. Informal, on-the-job tailgate training shall be the first level of communication, followed by onsite observation of training compliance. Non-compliance with SWPPP policies will trigger a more intensive training session to correct the problem(s). Chronic non-compliance with SWPPP requirements may require removal of offending personnel from the job site.

Erosion and sediment control inspections shall be the responsibility of the project contractor. Spill reports shall be completed and submitted to Chevron or its representative by the project contractor.

6 - FINAL STABILIZATION

No development of the site is planned to begin at this time. After contaminated materials have been removed, the remediated areas shall be graded and revegetated as required by the site owner.

7 - CERTIFICATION AND NOTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Richard B. White, P.E.
EarthFax Engineering, Inc.

8 - REFERENCES

Canyon Environmental October 5, 2010. Cultural and historic considerations for the Liberty Park Pond Reconstruction, Salt Lake City, Utah.

FIGURES

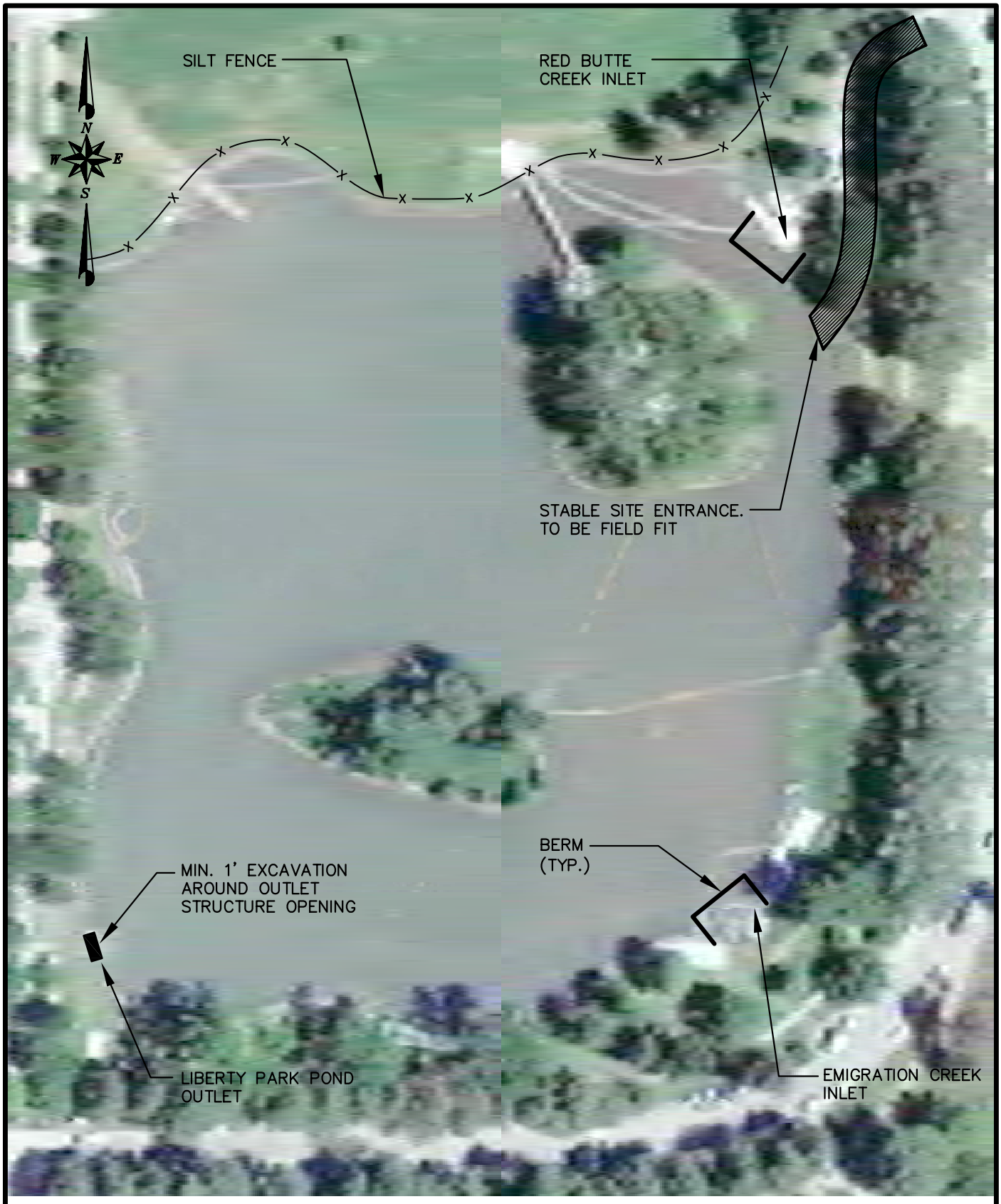


FIGURE 1. SITE PLAN

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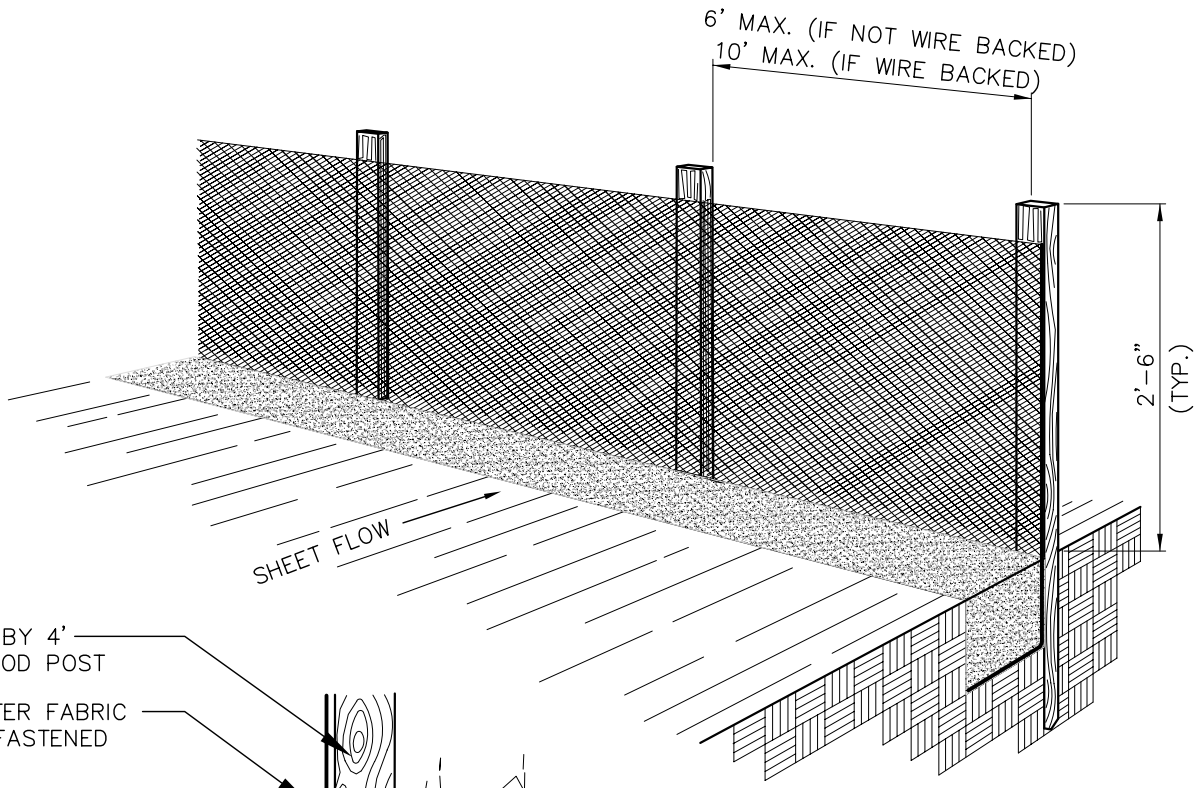
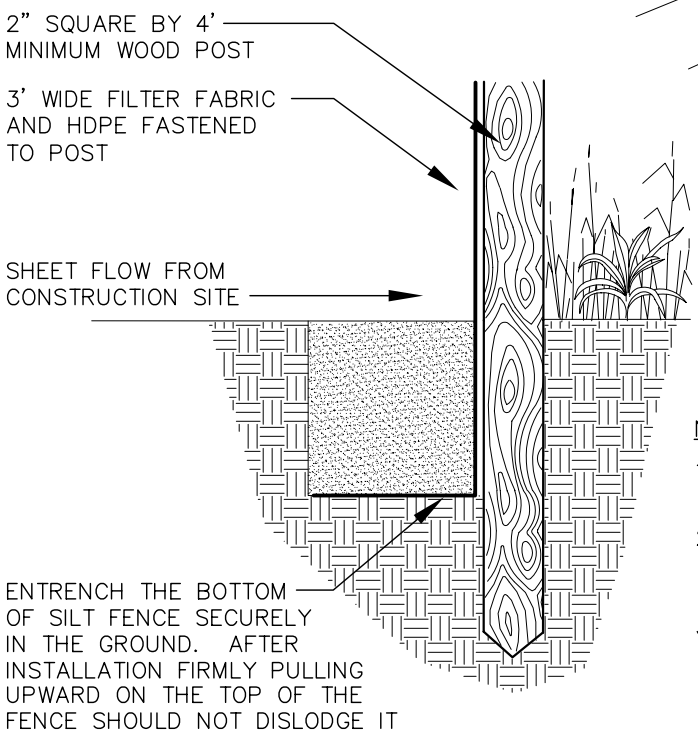


PERSPECTIVE VIEW
NO SCALE



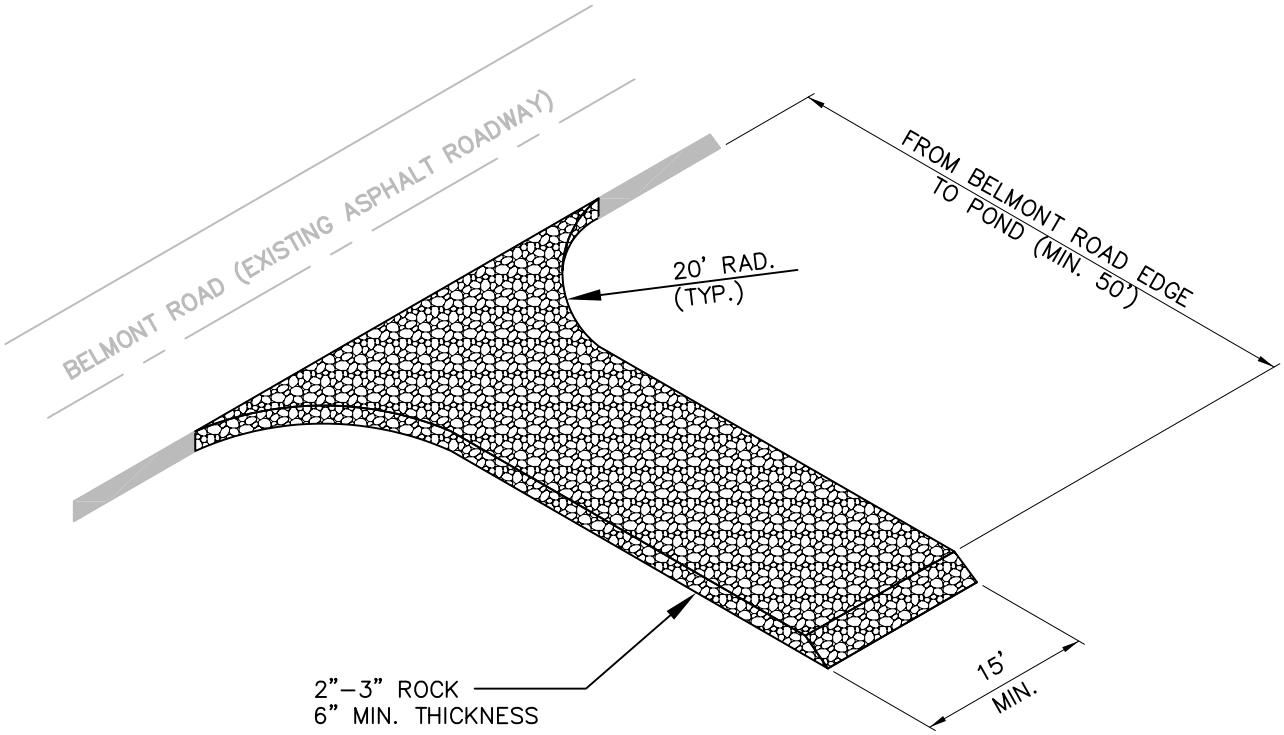
SECTION
NO SCALE

NOTES FOR SILT FENCE:

1. WHEN EXCAVATING THE TRENCH, USE MACHINERY THAT WILL MINIMIZE DISTURBANCE.
2. TO PREVENT RUNOFF FROM FLOWING AROUND THE ENDS OF THE SILT FENCE, RUN THE ENDS OF THE FENCE UP SLOPE.
3. AVOID USING SPLICES ALONG THE FENCE AS MUCH AS POSSIBLE. IF A SPLICE IS NECESSARY, BEFORE POUNDING IN THE END POSTS, OVERLAP THE END POSTS AND TWIST 180 DEGREES.
4. MAINTAIN A PROPERLY FUNCTIONING SILT FENCE THROUGHOUT THE DURATION OF THE PROJECT OR UNTIL DISTURBED AREAS HAVE BEEN VEGETATED.
5. WHEN A STORM EVENT DEPOSITS SEDIMENT BEHIND THE FENCE, REMOVE THE SEDIMENT AND PLACE IT IN A STABLE AREA APPROVED BY THE ENGINEER.
6. IN AREAS THAT HAVE BEEN SEEDED AND MULCHED, REMOVE SILT FENCE UNLESS THEY ARE PROTECTING A WETLAND OR WATER BODY.

FIGURE 2. SILT FENCE INSTALLATION DETAIL

EarthFax



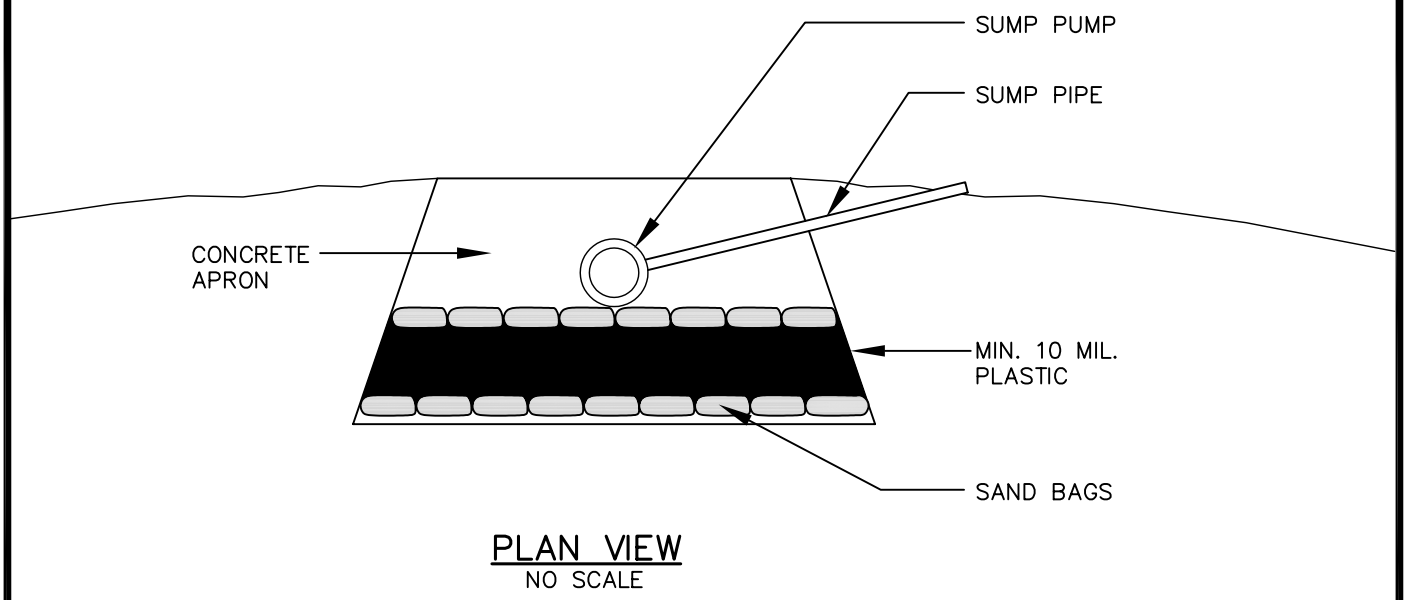
NOTES STABILIZED CONSTRUCTION ENTRANCE:

1. MAINTAIN A PROPERLY FUNCTIONING CONSTRUCTION ENTRANCE THROUGHOUT CONSTRUCTION OR UNTIL DISTURBED AREAS HAVE BEEN PAVED.

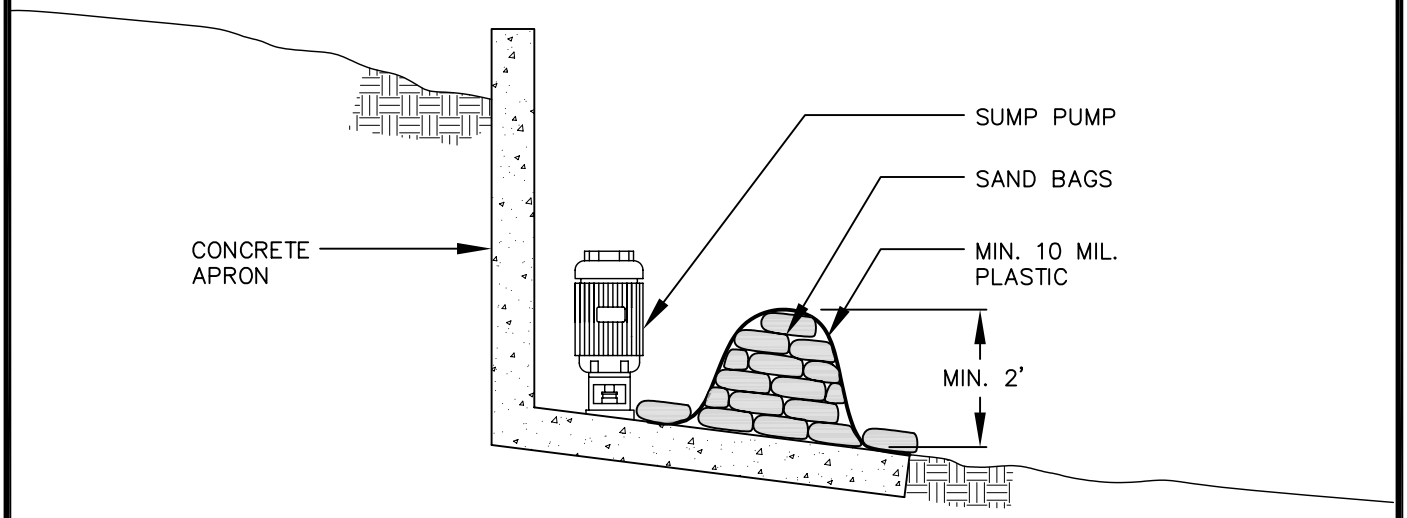
2. DO NOT ALLOW VEHICLES LEAVING THE CONSTRUCTION SITE TO TRACK MUD ONTO PAVED ROADS.

FIGURE 3. STABILIZED CONSTRUCTION ENTRANCE DETAIL

EarthFax



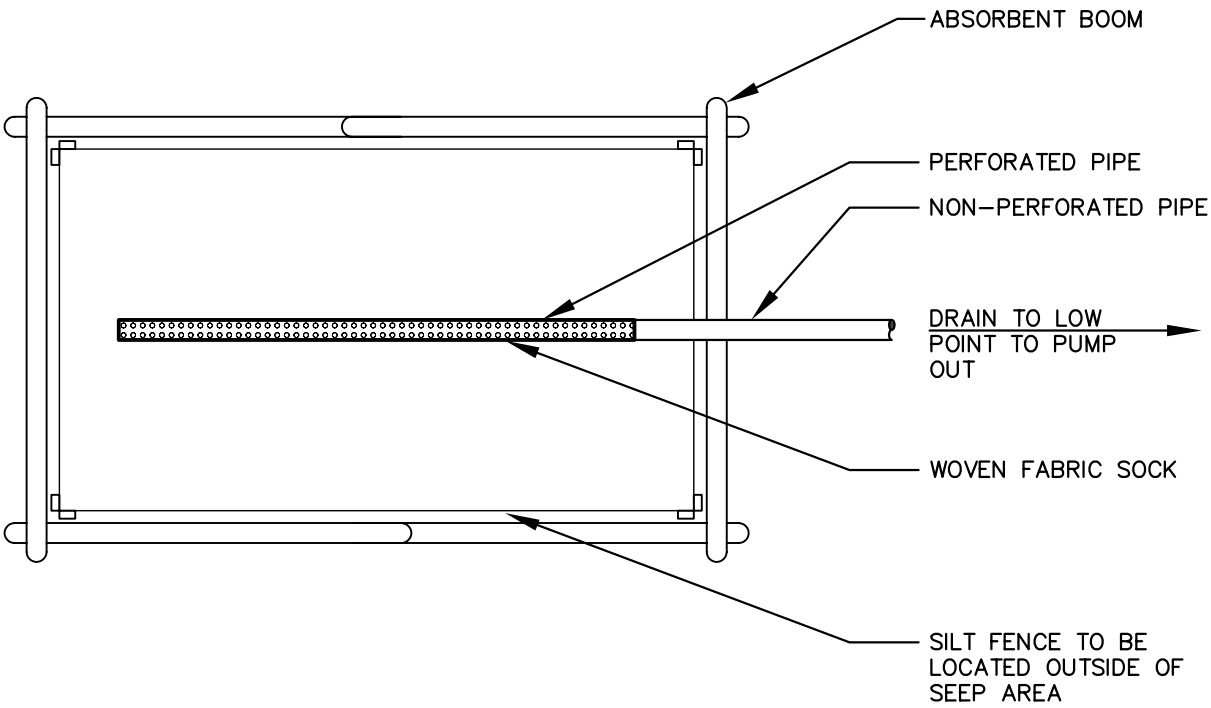
PLAN VIEW
NO SCALE



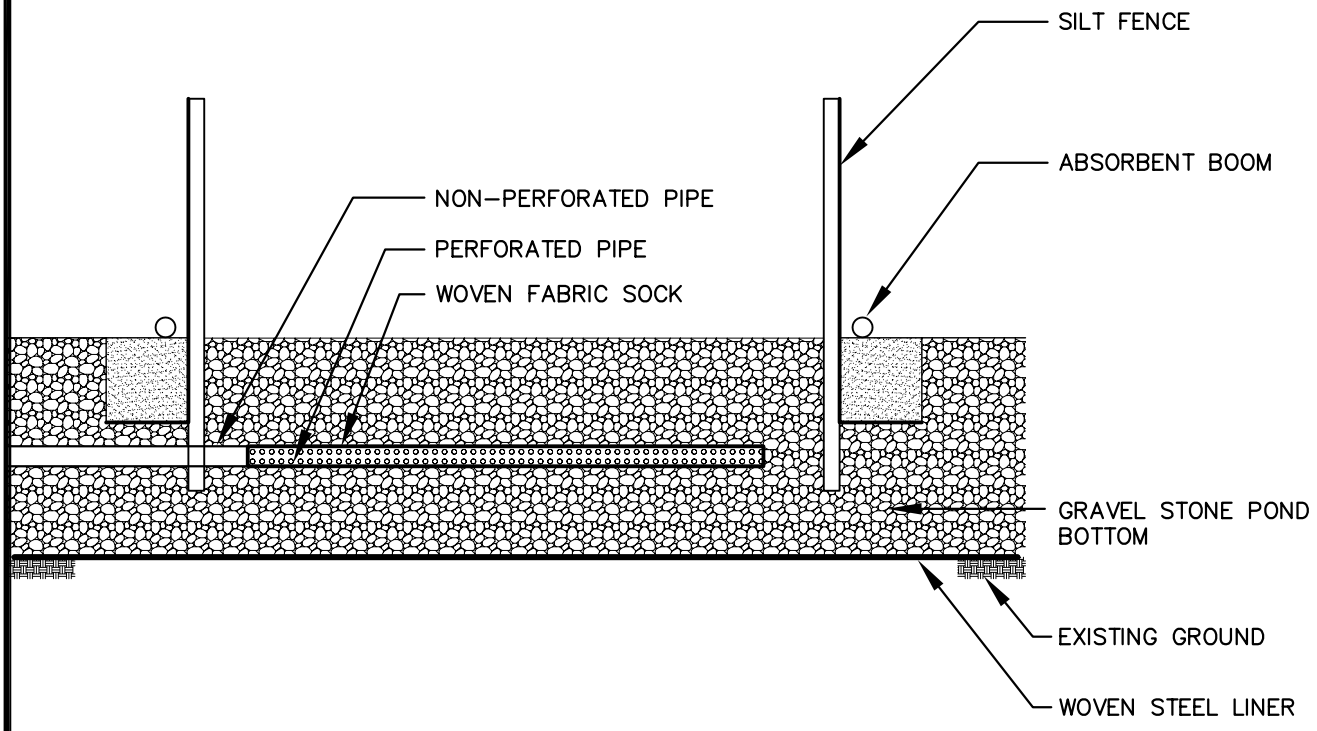
ELEVATION VIEW
NO SCALE

FIGURE 4. CULVERT SUMP DETAIL

EarthFax



PLAN VIEW
NO SCALE



ELEVATION VIEW
NO SCALE

FIGURE 5. SEEP SUMP DETAIL

EarthFax

ATTACHMENT A

Notice of Intent

ATTACHMENT B

SWPPP Amendment Log

Liberty Park Pond Remediation Project
SWPPP Amendment Log

Amendment Number	Description of the Amendment	Date of Amendment	Amendment Prepared by (Names and Affiliations)

ATTACHMENT C

Contractor/Subcontractor
SWPPP Certifications/Agreements

Liberty Park Pond Remediation Project
Contractor/Subcontractor SWPPP
Certifications/Agreements

Operator(s):_____

As a contractor or subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP shall be maintained on site by the contractor at all times.

Each contractor or subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the BMPs and practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company:_____

Address:_____

Telephone Number:_____

Type of service to be provided:_____

_____

_____

_____

_____

Signature:_____

Title:_____

Date:_____

ATTACHMENT D

Examples of Inspection and
Corrective Action Forms

Liberty Park Pond
Remediation Project
BMP Inspection and Maintenance Log

Date	BMP Description	Inspection Results and Maintenance Performed	Name/Affiliation of Inspector

ATTACHMENT E

Training Log

Liberty Park Pond Remediation Project
SWPPP Training Log

Instructor's Name(s):_____

Instructor's Title(s):_____

Course Location:_____ Date:_____

Course Length (hours):_____

Stormwater Training Topic: (check as appropriate)

- □ **Erosion Control**
- □ **Emergency Procedures**
- □ **Good Housekeeping BMPs**
- □ **Non-Stormwater BMPs**
- □ **Sediment Control BMPs**

This certification is hereby signed in reference to the above named project:

Specific Training Objective:_____

_____

No.	Signature of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

APPENDIX B

LIBERTY PARK REMEDIATION PROJECT

Salt Lake City, Utah

TRAFFIC CONTROL PLAN

TRAFFIC CONTROL PLAN

I. INTRODUCTION

The objective of the truck routing plan is to minimize the use of local streets. Trucks should follow the hierarchy of roadways (freeways, arterials, collectors, and local streets) in accessing the site. Local streets feature narrow widths, on-street parking, and short curb radii, resulting in difficult turning movements and potential blockage. For each phase, the likely origin and destination should be evaluated. The route options should be examined in terms of potential parking restrictions and turning movements to establish a prudent plan.

The intent of the traffic control plan (TCP) is to permit ENTACT to load out and transport impacted material efficiently and effectively while maintaining a safe, uniform flow of traffic. The excavation work and the public traveling through the work zone in vehicles, or as pedestrians must be given equal consideration when developing a traffic control plan.

Traffic Control Plan shall be required for all work performed within the public right-of-way. Each traffic control plan shall be developed consistent with both the Manual on Uniform Traffic Control Devices (MUTCD) .Data to be included on a traffic control plan will vary depending upon the complexity of the project, the volume of traffic affected and the roadway geometrics where the construction is being performed. The TCP must clearly depict the area where trucks will enter the roadway and the traveled way that will be utilized by all movements of traffic during each phase of trucking operations.

Experience has shown that the following principles will help promote safe and efficient movement for all road users (motorists, bicyclists, and pedestrians, through and around work zones while reasonably protecting workers and equipment.

1. Make traffic safety and temporary traffic control an integral and high-priority element of every Project from planning through design, construction, and maintenance.

2. Inhibit traffic movement as little as possible

3. Provide clear and positive guidance to drivers, bicyclists, and pedestrians as they approach and travel through the temporary traffic control zone.

4. Inspect traffic control elements routinely, both day and night, and make modifications when necessary.

5. Pay increased attention to roadside safety in the vicinity of temporary traffic control zones.

6. Train all persons that select, place, and maintain temporary traffic control devices.

I1. CVX-174 LIBERTY PARK SITE REMEDIATION PROJECT SPECIFIC TRAFFIC ROUTE

Impacted soils and debris will be loaded into dump trucks in the staging/laydown area for transport to the Wasatch Regional Non-Hazardous Waste Facility in Skull Valley, Utah.

Wasatch Regional Landfill	**USEPA ID:** NA
8833 North Rowley Road Skull Valley, UT 82029	**Phone:** (801) 924 8538 Scale House (801) 924 8540 Les Lemon, Operations Manager

See attached Maps and Directions

Initial Run to Landfill

Directions for Initial Run to Site and Landfill

2. Turn **RIGHT** onto **S 700 E / UT-71**.	go 2.1 mi
3. Merge onto **I-80 W**.	go 4.5 mi
4. Merge onto **I-80 W** via **EXIT 308** toward **RENO / S.L. INT'L AIRPORT**.	go 35.8 mi
5. Take **EXIT 84** toward **UT-138 / GRANTSVILLE**.	go 0.3 mi
6. Turn **LEFT** onto **SOLAR RD**.	go 0.3 mi
7. Turn **SLIGHT LEFT** onto **UT-138**.	go 7.3 mi
8. Turn **RIGHT**.	go 0.5 mi
9. Welcome to **SKULL VALLEY, UT**.	go 0.0 mi

B to **C** Travel Estimate: **50.82 mi - about 51 minutes**

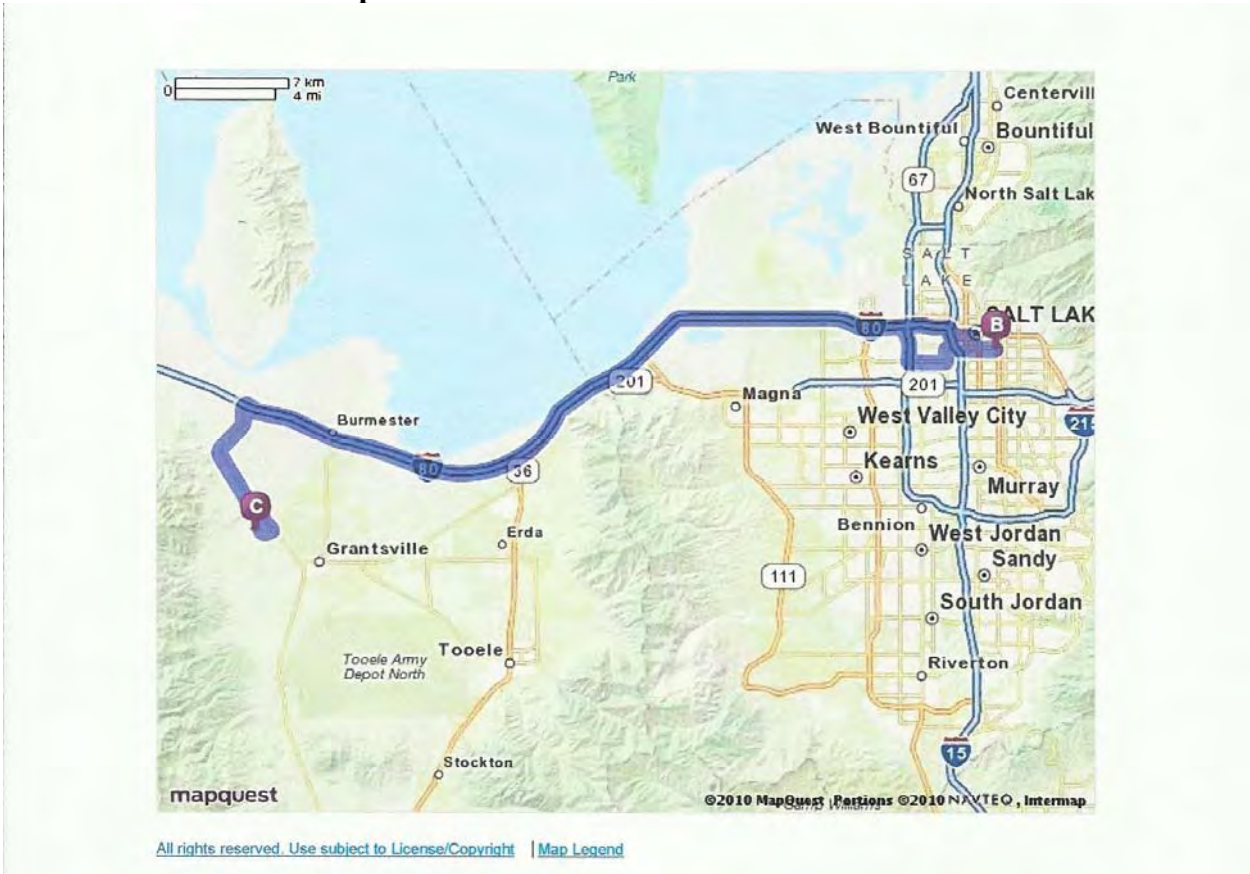
Skull Valley, UT

Total Travel Estimate : 53.91 miles - about 1 hour 1 minute

Route Map Hide

http://www.mapquest.com/print 10/20/2010

Map for Middle Runs from Landfill and Back



Directions for Middle Runs from Landfill and Back

MAPQUEST.

Notes

Trip to Skull Valley, UT
93.91 miles - about 1 hour 42 minutes

A Skull Valley, UT

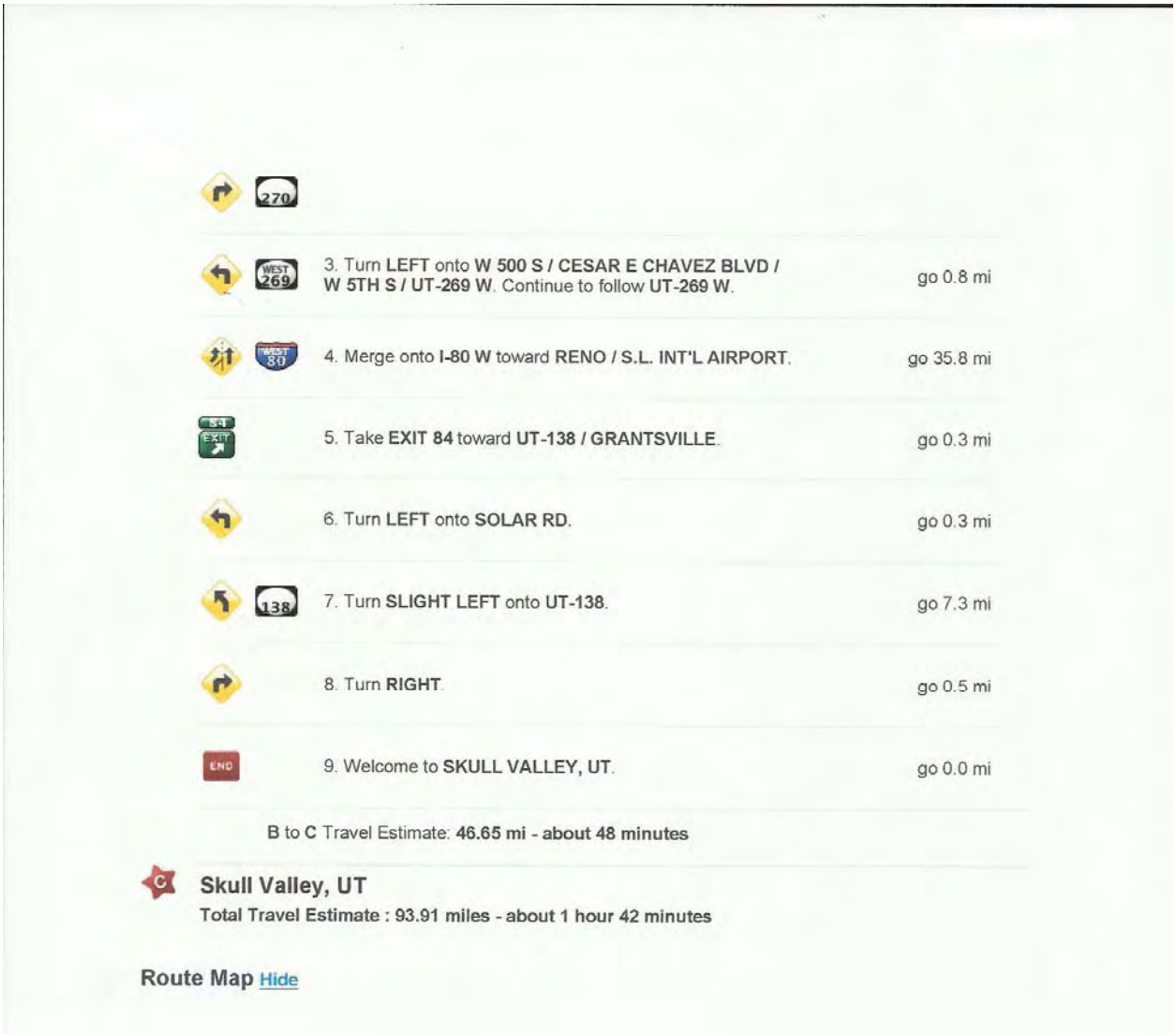
1.	Start out going **EAST** toward **UT-138**.	go 0.5 mi
2.	Turn **LEFT** onto **UT-138**.	go 6.8 mi
3.	Merge onto **I-80 E** toward **SALT LAKE CITY**.	go 33.4 mi
4.	Merge onto **I-215 S** via **EXIT 117** toward **PROVO**.	go 1.7 mi
5.	Take the **CALIFORNIA AVE** exit, **EXIT 21**.	go 2.1 mi
6.	Turn **LEFT** onto **S 900 W**.	go 0.6 mi
7.	Turn **RIGHT** onto **W 900 S**.	go 2.3 mi
8.	**1000 S 600 E**.	go 0.0 mi

A to B Travel Estimate: **47.26 mi - about 53 minutes**

B Liberty Park Green House - (801) 596-5037
1000 S 600 E, Salt Lake City, UT 84102

1.	Start out going **WEST** on **E 900 S** toward **PARK ST**.	go 1.1 mi
2.	Turn **RIGHT** onto **S WEST TEMPLE / UT-270**.	go 0.6 mi

http://www.mapquest.com/print 10/20/2010



	270	
	3. Turn **LEFT** onto **W 500 S / CESAR E CHAVEZ BLVD / W 5TH S / UT-269 W**. Continue to follow **UT-269 W**.	go 0.8 mi
	4. Merge onto **I-80 W** toward **RENO / S.L. INT'L AIRPORT**.	go 35.8 mi
84 EXIT	5. Take **EXIT 84** toward **UT-138 / GRANTSVILLE**.	go 0.3 mi
	6. Turn **LEFT** onto **SOLAR RD**.	go 0.3 mi
138	7. Turn **SLIGHT LEFT** onto **UT-138**.	go 7.3 mi
	8. Turn **RIGHT**.	go 0.5 mi
END	9. Welcome to **SKULL VALLEY, UT**.	go 0.0 mi

B to C Travel Estimate: **46.65 mi - about 48 minutes**

C **Skull Valley, UT**

Total Travel Estimate : 93.91 miles - about 1 hour 42 minutes

Route Map Hide

UTILIZE SPOTTER FOR ALL BACKING OPERATIONS

TRAFFIC CONTROL PLAN

TRAFFIC CONTROL PLAN

Journey Planning Checklist/Guideline

This Journey Planning Checklist/Guideline has been developed to assist drivers in assessing their journey and mitigating its hazards. Considerations for Journey Planning include:

1) Assess the Journey

- Conduct a quick risk assessment considering the value of the proposed journey. Ask yourself "Is this trip really necessary?" Could the issue be effectively handled via a conference call, e-mail note, or other means?
- Your first choice should be to eliminate any unnecessary trips. Your second choice should be to minimize the number of trips.
- When it is determined that a journey is necessary, consider potential hazards & take steps to mitigate them

2) Minimize Exposure/Travel Distance/Number of Trips

- Schedule meetings to minimize driving for yourself & others.
- Consider scheduling meetings for early morning or late afternoon to avoid additional trips to primary work locations. Scheduling two meetings back to back can help avoid unnecessary trips.
- Consider scheduling meetings to avoid peak traffic times
- If weather conditions are poor (fog) consider reporting to a CT location closer to your home & "hotel" until conditions improve.
- Be familiar with your local Area's Fog Policy and use it as appropriate to promote vehicle safety
- Where possible Car Pool to reduce the number of vehicles on the road. Suggest car pooling in your meeting announcement.
- If available consider public transportation.

3) Mitigate the Hazards

- Get plenty of sleep the night before you trip to ensure you will be well rested & alert.
- Do maintenance checks on your vehicle before you leave. Consider seasonal maintenance items such as coolant, wiper blades, snow/mud tires, etc.
- Remove distractions inside the vehicle, turn off cell phone
- Leave Early. Try to anticipate potential problems (e.g., fog, rain, traffic, etc.) & allow plenty of time. Don't try to make up for lost time.
- Adjust speed for conditions
- Where possible, plan trips for daylight hours
- Avoid construction zones
- Avoid heavy traffic areas. Consider time of day and journey route
- Avoid left turns across traffic
- Use familiar routes where you know the landmarks

- If you become lost, stop the vehicle in a safe location before attempting to check route/maps.
- Plan to park first move forward

There are four types of JMPs:

- Detailed JMP
- Basic JMP
- Non-Routine JMP for High-Risk Travel
- Basic Approach & Access Guidance

The table below describes when and how each JMP is to be used:

Types of Journey Management Plans

Vehicle Type	Journey Type	Examples	Journey Plan Type
Large Vehicles (>10,000 GVW) or small w/trailer	Routine journeys defined in the project work scope	• Waste haulers • Drill Rigs	Detailed JMP
	Others as determined by JMP Coordinator. Generally, those outside operational control (not directly working for us)	• Rental equipment delivery • Material delivery	Approach and Access Guidance
Small vehicle (<10,000 GVW)	Routine journeys defined in the project work scope	• Between airport & site • Between office & site • Between TSD and site	Basic JMP
	Non-routine, high-hazard trips	• High security risk areas • Extreme distances • Dangerous driving terrain • Severe weather	Non-Routine JMP for High-Risk Travel
	Non-routine, low-hazard trips	• Familiar roads, conditions	No specific JMP document is needed. However, drivers must always do the following: • Let their supervisor know of their driving plans, • Review route and maps prior to departure • Inspect vehicle condition • Review any relevant JSA's • Follow all company driving policies

ENTACT
Detailed Journey Management Plan

ENTACT Stop Work Authority: Personnel are empowered, are expected, and have the responsibility to stop their own work and the work of co-workers, or other contractors if any person's safety or the environment is at risk. NO repercussions will result from this action.

Supplier Company Name: • ENTACT/ Allied Waste/ Republic Services – Wasatch Regional Landfill 8833 North Rowley Road, North Skull Valley, UT 84029 Contact: Richard McMullin 801.253.1111 (office) ENVIRO CARE, INC. TO TRANSPORT	Supplier Contact Name and Phone: ENTACT: Kirk Gates (214) 415-2974 Paul McCorvey (630) 935-9543 Pat Till (630) 470-4581	
Address: Wasatch Regional Landfill 8833 North Rowley Road, North Skull Valley, UT 84029	Fax:	Email:
COMPANY REPRESENTATIVE PLEASE SIGN AND FAX OR E-MAIL A COPY OF THIS DOCUMENT TO THE ENTACT HEALTH AND SAFETY OFFICER/JMP COORDINATOR LISTED BELOW PRIOR TO DISPATCHING YOUR VEHICLES		

ENTACT Project Name and Number: CVX-174 Liberty Park Remediation	ENTACT Project Address/Entrance: 1000 S. 600 E. St. Salt Lake City, UT 84105	
ENTACT FPM and Phone: Kirk Gates (214) 415-2974 Paul McCorvey (630) 935-9543	ENTACT HSO/JMP Coordinator and Phone: Pat Till (630) 470-4581	
Emergency contact names and phone numbers: Kirk Gates (214) 415-2974 Paul McCorvey (630) 935-9543 Pat Till (630) 470-4581	ENTACT Fax: 912-550-7464	ENTACT E-mail: ptill@entact.com

JMP Creation Date: 9/23/10	JMP Revision Date: 10/20/10

TRAFFIC CONTROL PLAN

Commencement Point	Destination 1	Destination 2
Enviro Care Truck Yard 505 North Main St. Salt Lake City, UT 84103	Liberty Park Pond 1000 S. 600 E. St. Salt Lake City, UT 84102	Wasatch Regional Landfill 8833 North Rowley Road Skull Valley, UT 82029

Purpose and Scope of Journey

1. Transport to the designated waste management company location: Waste transporter will be Enviro Care, Inc.
    a. Allied Waste/ Republic Services – Wasatch Regional Landfill UT Facility (3 miles east 7.6 miles North of exit 84 I-80;
        i. contacts:
            1. Richard McMullin 801.253.1111 (office);
            2. Scale House 801.924.8538
    b. Enviro Care, Inc. 505 North Main, Salt Lake City
        i. Contact:
            1. Randy Betker
                - Voice: 801.299.1900
                - Cell: 801.309.7181
                - Fax: 801.299.1473

TRAFFIC CONTROL PLAN

Detailed Journey Management Plan

Personnel	
JMP Coordinator (owner of JMP) and phone: Kirk Gates (214) 415-2974 Paul McCorvey (630) 935-9543 Pat Till (630) 470-4581	Emergency contact names and phone numbers: Kirk Gates (214) 415-2974 Paul McCorvey (630) 935-9543 Pat Till (630) 470-4581
Instructions on who driver should talk to if issues or changes to the JMP. Include name and phone number: Kirk Gates (214) 415-2974 Paul McCorvey (630) 935-9543 Pat Till (630) 470-4581	

Route information
Site entrance instructions: Maintain posted speed limit or less for site conditions
When load out is complete, continue on access road, go right onto 600E to 900S, go east to 700E, right onto 1300S, enter ramp onto I-15 N to 80W. Take exit 84 to UT-138/Grantsville, take a left onto Solar Road, and a slight left back onto UT-138.

Route hazards and mitigation *(weather, construction zones, school zones (and inexperienced drivers), road conditions, blind curves or turns, pedestrian crossings, wildlife, traffic congestion, driver fatigue, crossing traffic, converging lanes, etc.):*	
Hazard	**Mitigation**
Urban and business traffic.	Maintain safe speed below rated speed limit
Possible uneven terrain on site access road	Maintain haul route in smooth condition
Backing of trucks for loading impacted material	(Goal) Get out and look prior to backing of trucks. UTILIZE SPOTTERS WITH PRE DETERMINED HAND SIGNALS PROVIDED IN TRAFFIC CONTROL PLAN
The traffic routes around Liberty Park are all one way. Traffic will be restricted with barriers to 1 lane.	Plan ahead have vehicles not park on curb during hauling events if possible

TRAFFIC CONTROL PLAN

Driver Hours on Duty (Fatigue)
Supervisors are to manage the hours on duty and the planned journey travel/driving time. Break/rest hours 1 Planned journey travel time: 0.75 hr each way, 2.5 hr rt with unloading Total hours on duty: 8 Maximum hours may not exceed 14 hours.

Detailed Journey Management Plan

Traffic Control
Site traffic control requirements, on-site routing, speed limits, traffic signs, etc., including managing site owner/operator operations:

Staging Areas On-Site
The staging area is at the northeast corner of the pond, and there will be a spotter at both the entrance ramp and at the staging/loadout area.

Site Requirements & Restrictions
Follow spotters' instructions at all times. If you leave your vehicle, required PPE is hard hat, reflective vest, long sleeves and pants, safety glasses, appropriate gloves, and safety shoes.

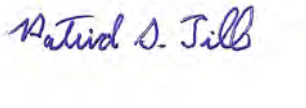
Vehicle Operating Standards
No smoking or cell phone use while being loaded out.

Site Map
See attached map.

Additional Information

TRAFFIC CONTROL PLAN

Detailed Journey Management Plan

Signatures	
JMP Coordinator (Reviewer)	
JMP Coordinator Signature: 	Date: 10-20-10

By signing below, you understand and agree to comply with this Detailed Journey Management Plan and will provide a copy to each driver providing services to ENTACT. Each driver is required to bring a copy of the entire Detailed Journey Management Plan upon arrival to the ENTACT site.

Supplier Representative Name (Printed): Randy Betker Account Executive	Supplier Representative Signature:	Date:
PLEASE SIGN AND E-MAIL, FAX, OR MAIL THIS FORM TO THE ENTACT HEALTH AND SAFETY OFFICER/JMP COORDINATOR PRIOR TO DISPATCHING YOUR VEHICLES (see ENTACT on page 1)		

Driver Signature – Please provide a copy of this entire document to ENTACT.		
Driver Name (Printed):	Driver Signature:	Date:

TRAFFIC CONTROL PLAN

Approach and Access Guidance
Utilize for site delivery or out of operational control

ENTACT Stop Work Authority: Personnel are empowered, are expected, and have the responsibility to stop their own work and the work of co-workers, or other contractors if any person's safety or the environment is at risk. NO repercussions will result from this action.

Supplier Company Name:	Supplier Contact Name and Phone:	
Address:	Fax:	Email:
COMPANY REPRESENTATIVE PLEASE SIGN AND FAX OR E-MAIL A COPY OF THIS DOCUMENT TO THE ENTACT HEALTH AND SAFETY OFFICER/JMP COORDINATOR LISTED BELOW PRIOR TO DISPATCHING YOUR VEHICLES		

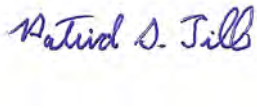
Project Name and Number: CVX-174 Liberty Park	Date: 10-20-10	
Facility Address/Entrance: 1000 S. 600 E. St. Salt Lake City, UT 84102	ENTACT HSO/JMP Coordinator and Phone:	
ENTACT FPM and Phone:	ENTACT Fax:	ENTACT E-mail:
Emergency contact names and phone numbers:		

Hazards Along Route From Main Road or Highway Exit
1. There is considerable local traffic exiting I 80 approaching the site. Use caution, especially during peak hours.

Specific Hazards of Ingress to the Site
1. There is significant pedestrian traffic in and around the site. ENTACT will provide security guards and barriers, but drivers are warned to look out for pedestrians.

Specific Hazards of Egress from the Site
1. Pedestrian and local traffic will be present at all times.

Approach and Access Guidance

Signatures	
JMP Coordinator (Reviewer)	
JMP Coordinator Signature: 	Date: 10-15-10

By signing below, you understand and agree to comply with the instructions contained in this Approach and Access Guidance document and will provide a copy to each driver providing services to ENTACT. Each driver is required to bring a copy of the entire Approach and Access Guidance document with signatures upon arrival to the ENTACT site.

Supplier Company		
Representative Name (Printed):	Representative Signature:	Date:

Driver Signature – Upon arrival to the site the driver must provide a copy of this Approach and Access Guidance document with his/her signature below.		
Driver Name (Printed):	Driver Signature:	Date:

10/2/07

JOB SAFETY ANALYSIS

JSA Type:	Trucking, Passenger, Motor, Off Road Vehicles
Work Type:	Driving: Personal, Rental or Company Vehicles
Personal Protective Equipment (PPE) needed – Seat Belts	

No	Job Steps	Potential Hazard(s)	Critical Action(s) / Responsible Person
1	PRE-TRIP - Perform LPSA. Review JMP and discuss route with team members.	Collisions, personal injury, property damage.	Perform LPSA before beginning any task. Assess the potential hazards. Analyze how to reduce the risk. Act to ensure safe operation of the vehicle. Assess YOUR physical condition and do not operate vehicle if you are too fatigued or otherwise not in shape to drive. Review JMP and discuss known hazards for route identified. New hazards discovered during drive will be discussed and JMP modified if appropriate. Discuss alternative routes if conditions change during work day. Anything in the bed of pick-up trucks should be secured DRIVER
2	Perform vehicle 'walk around' to check for damage, maintenance needs or unusual conditions. Assess the immediate area for driving hazards before pulling away.	Collisions, personal injury, property damage.	Perform perimeter 'walk around' to check vehicle for damage, obstructions, maintenance needs or unusual conditions. Assure tires are properly inflated and there is sufficient tread. Assure there are no cuts or bulges in the sidewalls. Ensure doors are locked, including the trunk, toolbox and tailgate pickup trucks. Ensure windshield and window glass is clean. Lift wiper arms and check wiper blades for damage or deterioration. Check under vehicle engine for evidence of fluid leaks. Report equipment problems to supervisor. Inspect fire extinguisher in vehicle. Ensure fire extinguisher is secured and accessible. DRIVER
3	Check and adjust seat and mirrors. Inspect headlights, turn signals, windshield washer and	Collisions, personal injury, property damage due to loss of control or poor vision.	Adjust seat so back is fully supported, upper arms close to body, pedals within easy reach. Adjust steering wheel so hands are below shoulders and shoulders are relaxed. Adjust mirrors if others have been driving vehicle. Locate and test operation of headlights, wiper and washer switches. Test operations of front and rear turn signals. Radio,

No	Job Steps	Potential Hazard(s)	Critical Action(s) / Responsible Person
	wipers.		CD's, or other music devices the driver should keep the volume at a level as to not interfere with hearing approaching emergency vehicles. DRIVER
4	Fasten seat belts.	Increased risk of serious injury or death in collision.	Inspect to confirm seat belt is in good condition and fastens securely. Confirm passenger seat belts are in good condition. Confirm all seat belts are fastened before starting vehicle. DRIVER
5	Lock doors.	Ejection from vehicle in collision. Unwanted intrusion.	Lock all doors to vehicle before driving off. DRIVER
6	Start vehicle.	Collisions, personal injury, property damage if vehicle unexpectedly lurches while starting engine.	Confirm that transmission is in 'Park' or 'neutral' prior to starting. Depress brake pedal with foot. DRIVER
7	Check gauges and warning lights.	Property damage if vehicle is operated with low fluids.	Confirm there is sufficient gas, oil and other critical fluids. If warning lights activate, address the needed maintenance before driving. DRIVER
8	Pull out of parking space.	Collision with other vehicles, pedestrians, or stationary objects.	Check mirrors and look over both shoulders in all directions prior to pulling out of parking space to confirm travel path is still clear. Signal your intention. Use spotter if not pulling forward out of spot. DRIVER
9	DURING TRIP - Keep your eyes moving, aim high, leave yourself an out, get the big picture, make sure other drivers see you. Pay attention to driving at all times	Collision, personal injury or property damage.	Keep eyes moving, and scan travel direction, mirrors and periphery. Scan intersections before entry (left-right-left). Check mirrors when slowing or stopping. Scan mirrors frequently, at least one mirror every 5-8 seconds. Avoid staring while evaluating road conditions. Do not use cell phones, 2-way radios, CB’s or other communication devices while driving. Maintain eye lead time (1 1/2 blocks in city traffic, 1/4 mile in highway traffic). Assess condition of traffic lights (fresh vs. stale). Assess information from distant objects. Adjust eye lead distance to speed. Maintain safety cushion around vehicle (front, sides, rear). At signal controlled intersections, stop 10 ft. behind crosswalks or

No	Job Steps	Potential Hazard(s)	Critical Action(s) / Responsible Person
			behind other vehicles. At stop sign controlled intersections, approach stop sign cautiously and ascertain if cross traffic has to stop. Stop at or just behind limit line or crosswalk. When stopped, allow vehicle in front to move for 2 seconds before accelerating. Observe approaching merge areas and choose lane of least resistance. Yield right of way and allow other vehicles to merge, change lanes, make turns, etc. Always maintain a way out in case of emergency. Avoid sudden acceleration and deceleration. Maintain a minimum 4 second following distance, adjust speed to traffic conditions, scan immediate and adjacent lanes before merging. Seek eye contact with other drivers. Cover or use horn when conditions warrant. Before changing lanes, signal well in advance, check mirrors and over shoulder, and allow adequate space before changing lanes. Break early to activate brake lights. Stay out of blind spots. Gently sound horn or flash lights if unsure other driver sees you. Turn on head lamps in high traffic areas, at dusk, and in inclement weather. Stop driving if you become distracted. Refrain from conducting involved or emotional discussions while driving. Stay attentive for changing speed limits and road hazard warning signs. Follow site speed limit. DRIVER
10	Exiting Liberty Park onto 900S	Collisions, physical injury, property damage. Watch for pedestrian and vehicular traffic. Pedestrians and cross traffic have right of way.	Provide spotter for this location. Plan ahead have vehicles not park on curb during hauling events Make sure to give plenty of lead time before entering intersection. If it appears that traffic is not going to stop, even though the light may indicate that it's not their right of way, do not pull into the intersection in front of the traffic, wait until they stop or drive through, then proceed cautiously. DRIVER
11	Backing up.	Collisions, physical injury, property	UTILIZE SPOTTER!

No	Job Steps	Potential Hazard(s)	Critical Action(s) / Responsible Person
		damage due to not observing obstacles or people in the path of the vehicle.	Make all backing maneuvers slowly and cautiously. Check mirrors and over shoulders. When parking, look for pull-through parking to avoid backing. Use spotter when available or step out of the vehicle to confirm no obstructions are present. Do not rely solely on backup alarm. DRIVER
12	Parking.	Collisions, physical injury or property damage.	Look for pull-through parking, or back into parking spot when safe. Park away from other cars. Maintain cushion of safety from fixed objects. If automatic transmission, ensure the transmission is in 'Park' and the parking-brake set. If manual, ensure the transmission is in gear and the parking-brake set. Report vehicle problems immediately to company representative. DRIVER

II1. SIGNS AND TRAFFIC CONTROL REQUIREMENTS

Signs used in work zone traffic control are classified as regulatory, guide, or warning. Regulatory signs impose legal restrictions and shall only be used with permission from the authority with jurisdiction over the roadway. Guide signs commonly show destinations, directions, and distances. Warning signs give notice of conditions along the roadway.

Temporary Warning Signs – With few exceptions, temporary warning signs for construction, maintenance, and utility work zones shall be diamond shaped, having a black symbol or message on an orange background. As a general rule, these signs should be located on the right-hand side of the roadway. Normally, the first advance warning sign used is WORKERS AHEAD or TRUCKS ENTERING ROADWAY.

Size – Advance warning signs where speed limits are 45 mph or greater shall be 48 inches by 48 inches. Where speed limits are 40 mph or less, 36 inch by 36 inch signs may be used.

Mounting – Temporary post-mounted signs shall be mounted at a height of at least 7 feet in urban areas and 5 feet in rural areas, measured from the bottom of the sign. Signs mounted on Type III barricades used to close any part of a road or lane should not cover more than 50 percent of the top two rails or 33 percent of the total area of the three rails. For signs mounted on other portable supports or on barricades used solely as a sign support, the bottom of the sign shall be not less than one foot above the traveled way. Sign supports shall be crashworthy.

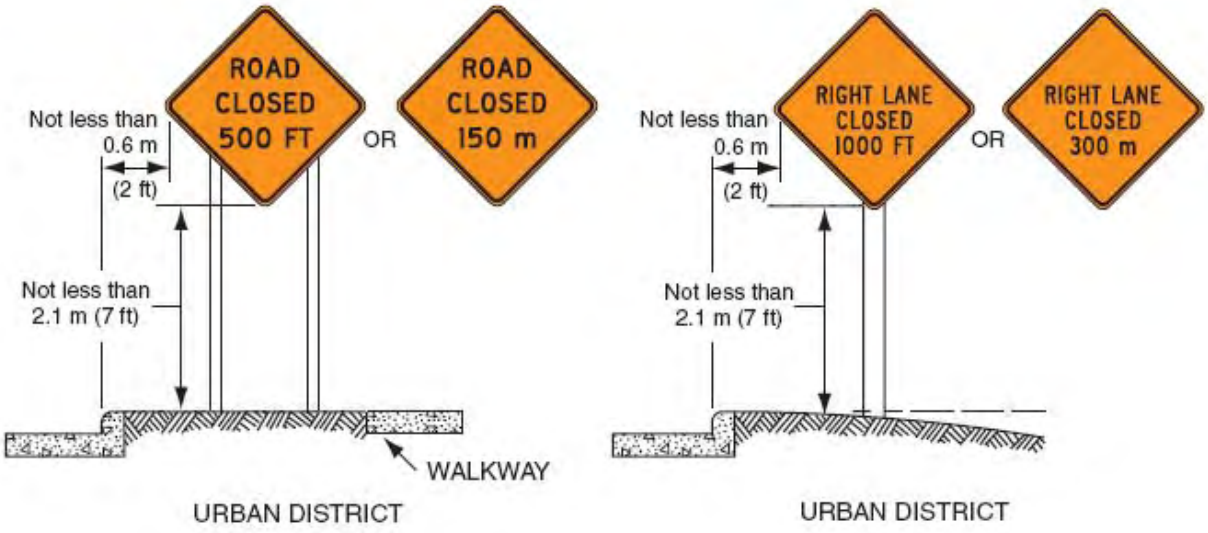
Spacing of signs:

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	30 (100)	30 (100)	30 (100)
Urban (high speed)*	100 (350)	100 (350)	100 (350)
Rural	150 (500)	150 (500)	150 (500)
Expressway / Freeway	300 (1,000)	450 (1,500)	800 (2,640)

* Speed category to be determined by highway agency

** Distances are shown in meters (feet). The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The third sign is the first one in a three-sign series encountered by a driver approaching a TTC zone.)

Height and Lateral Location of Signs—Typical Installations



IV. Use of Hand-Signaling Devices by Flaggers

Flagger stations shall be located such that approaching road users will have sufficient distance to stop at an intended stopping point.

The distances which provides information regarding the stopping sight distance as a function of speed, may be used for the location of a flagger station. These distances may be increased for downgrades and other conditions that affect stopping distance.

Flagger stations should be located such that an errant vehicle has additional space to stop without entering the work space.

Except in emergency situations, flagger stations shall be preceded by an advance warning sign or signs.

Except in emergency situations, flagger stations shall be illuminated at night.

The flagger should stand either on the shoulder adjacent to the road user being controlled or in the closed lane prior to stopping road users. A flagger should only stand in the lane being used by moving road users after road users have stopped. The flagger should be clearly visible to the first approaching road user at all times.

The flagger also should be visible to other road users. The flagger should be stationed sufficiently in advance of the workers to warn them (for example, with audible warning devices such as horns or whistles) of approaching danger by out-of-control vehicles. The flagger should stand alone, never permitting a group of workers to congregate around the flagger station.

At a spot constriction, the flagger may have to take a position on the shoulder opposite the closed section in order to operate effectively. At spot lane closures where adequate sight distance is available for the reasonably safe handling of traffic, the use of one flagger may be sufficient.

Stopping Sight Distance as a Function of Speed

Speed* (km/h)	Distance (m)
30	35
40	50
50	65
60	85
70	105
80	130
90	160
100	185
110	220
120	250

Speed* (mph)	Distance (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

Qualifications for Flaggers

Because flaggers are responsible for public safety and make the greatest number of contacts with the public of all highway workers, they should be trained in safe traffic control practices and public contact techniques.

Flaggers should be able to satisfactorily demonstrate the following abilities:

A. Ability to receive and communicate specific instructions clearly, firmly, and courteously;
B. Ability to move and maneuver quickly in order to avoid danger from errant vehicles;
C. Ability to control signaling devices (such as paddles and flags) in order to provide clear and positive guidance to drivers approaching a TTC zone in frequently changing situations;
D. Ability to understand and apply safe traffic control practices, sometimes in stressful or emergency situations; and
E. Ability to recognize dangerous traffic situations and warn workers in sufficient time to avoid injury.

High-Visibility Safety Apparel

For daytime and nighttime activity, flaggers shall wear safety apparel meeting the requirements of ISEA “American National Standard for High-Visibility Apparel” (see Section 1A.11) and labeled as meeting the ANSI 107-1999 standard performance for Class 2 risk exposure. The apparel background (outer) material color shall be either fluorescent orange-red or fluorescent yellow-green as defined in the standard. The reflective material shall be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 300 m (1,000 ft). The reflective safety apparel shall be designed to clearly identify the wearer as a person

Hand-Signaling Devices

Hand-signaling devices, such as STOP/SLOW paddles, lights, and red flags, are used to control road users through TTC zones.

The STOP/SLOW paddle should be the primary and preferred hand-signaling device because the STOP/SLOW paddle gives road users more positive guidance than red flags. Use of flags should be limited to emergency situations.

The STOP/SLOW paddle shall have an octagonal shape on a rigid handle. STOP/SLOW paddles shall be at least 450 mm (18 in) wide with letters at least 150 mm (6 in) high and should be

fabricated from light semi rigid material. The background of the STOP face shall be red with white letters and border. The background of the SLOW face shall be orange with black letters and border. When used at night, the STOP/SLOW paddle shall be reflectorized.

The STOP/SLOW paddle may be modified to improve conspicuity by incorporating either white or red flashing lights on the STOP face, or either white or yellow flashing lights on the SLOW face. The flashing lights may be arranged in any of the following patterns:

A. Two white or red lights, one centered vertically above and one centered vertically below the STOP legend; and/or two white or yellow lights, one centered vertically above and one centered vertically below the SLOW legend; or
B. Two white or red lights, one centered horizontally on each side of the STOP legend; and/or two white or yellow lights, one centered horizontally on each side of the SLOW legend; or
C. One white or red light centered below the STOP legend; and/or one white or yellow light centered below the SLOW legend; or
D. A series of eight or more small white or red lights no larger than 6 mm (0.25 in) in diameter along the outer edge of the paddle, arranged in an octagonal pattern at the eight corners of the border of the STOP face; and/or a series of eight or more small white or yellow lights no larger than 6 mm (0.25 in) in diameter along the outer edge of the paddle, arranged in a diamond pattern along the border of the SLOW face.
E. A series of white lights forming the shapes of the letters in the legend.

V. PEDESTRIAN AND WORKER SAFETY

Movement by work vehicles and equipment across designated pedestrian paths should be minimized and, when necessary, should be controlled by flaggers. Staging or stopping of work vehicles or equipment along the side of pedestrian paths should be avoided, since it encourages movement of workers, equipment, and materials across the pedestrian path. Access to the work space by workers and equipment across pedestrian walkways should be minimized because the access often creates unacceptable changes in grade, and rough or muddy terrain, and pedestrians will tend to avoid these areas by attempting non-intersection crossings where no curb ramps are available

VI. HAND SIGNALS FOR DIRECTING TRUCKS/EQUIPMENT

RESPONSIBILITIES

A. GENERAL

Drivers are responsible for the safe operation and movement of the vehicle. Drivers shall not permit anyone to ride on the running boards, fenders of any part of the vehicle except on the seats provided.

B. VEHICLE MOVEMENT

Whenever possible, the vehicle shall be positioned so as to minimize movement in reverse. Extreme caution shall be exercised when moving a vehicle. If another individual is available, they should be utilized to guide the driver.

C. SAFETY PRECAUTIONS

The guide must always be fully visible to the driver and if not fully visible the driver should stop. Wear high visibility clothing (i.e. reflective striping).

D. ACTIONS

Prior to moving:

Plan the move to reduce backing

Conduct a visual inspection of the desired path

The driver and the guide have a responsibility to identify potential hazards in the vehicles path, such as, overhead lines, ruts, wellhead, personnel, etc.

Hazard Control Measures:

o ensure driver and guide understand the signals to be used

o ensure driver and guide understand the rules to be used

o ensure driver and guide are both aware of hazards

o plan the movement to control or eliminate the hazard

When backing, drivers should:

Where possible, always use a guide

Stop backing immediately if:

o the guide is not fully visible

o visual contact is lost with other workers

o an emergency stop signal is received from anyone in the area

Resume backing only after visual contact is restored with the guide or workers on foot

Use a co-worker as a guide, and

Sound horn before starting to move the vehicle

Stop all vehicle movement while the guide is repositioning.

Other Workers should:

Remember large vehicles have significant blind spots

Remain clear of the vehicle unless needed to act as a guide, and

Never cross or step behind the vehicle when it is backing or when its backup signals are on.

Guides should:

Remain visible to the driver at all times

Wear high visibility clothing

Establish and maintain eye contact with the driver

Position yourself to maintain as clear a view as possible of the intended path of the vehicle

Stay clear of the vehicle's path

Avoid walking backward

Use standard hand signals to communicate with the driver

Be sure that no one is riding on the outside of the vehicle before signaling the driver to begin moving

Immediately signal the driver to stop if any person or object enters the vehicles intended path

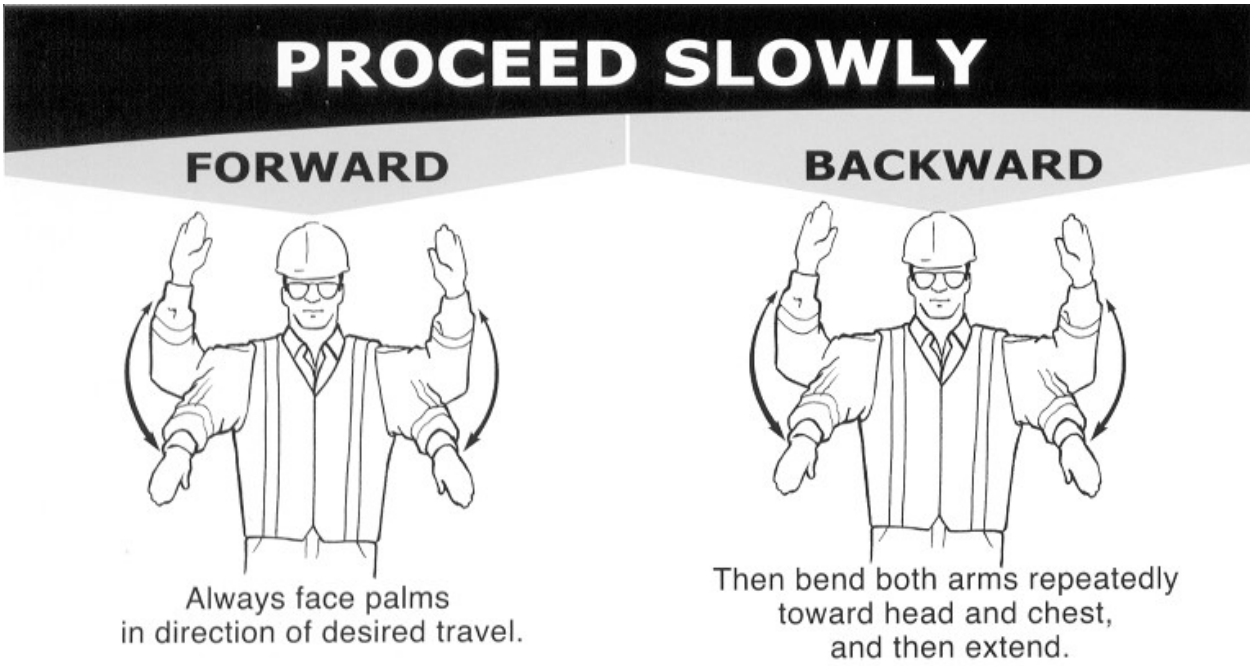
Signal the driver to stop if the guide must change positions; the guide should then reposition and when ready signal the driver to continue

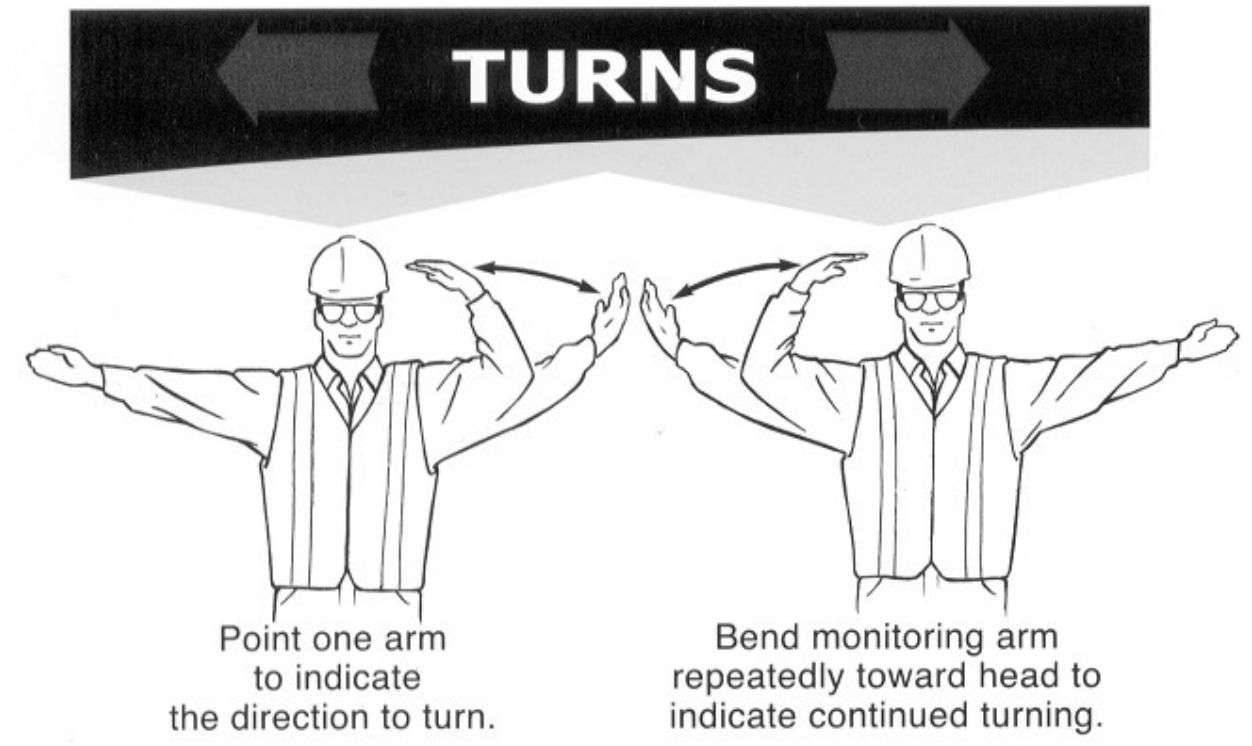
Use distinct and deliberate body movements

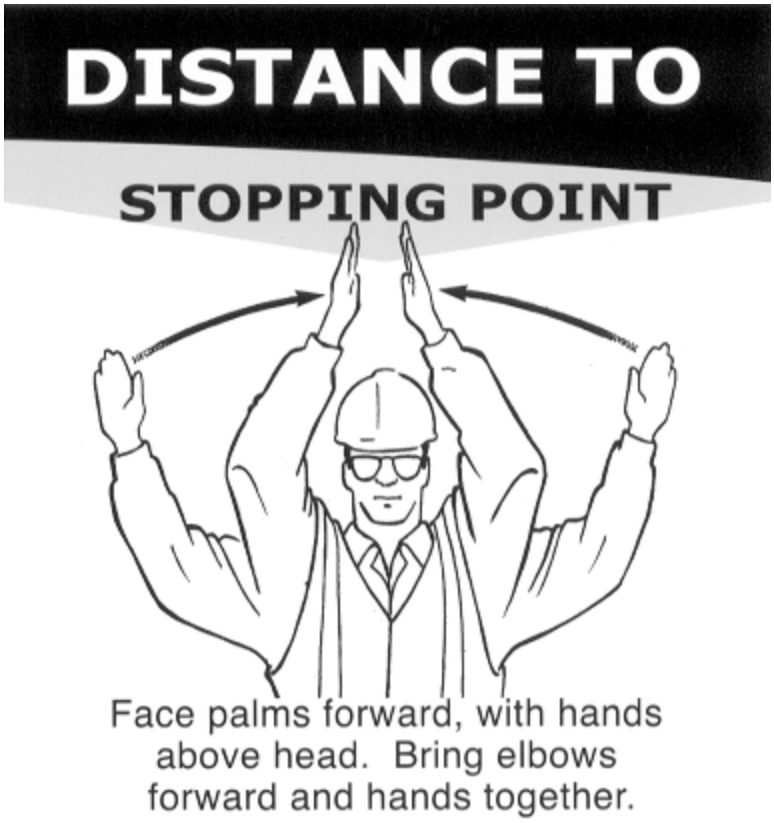
SIGNALS

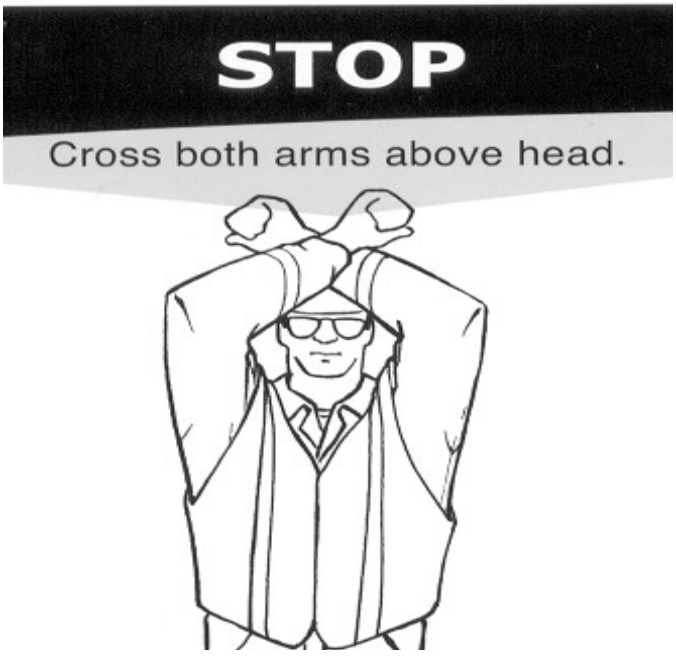
When it's necessary to move a vehicle, it is important that everyone understands exactly what's being done. This will ensure the safety of everyone involved in the operation. There should be no confusion about the hand signals to be used. Make sure workers involved understand who is directing the move and the procedures to be followed. Review all the hazards associated with this particular move and the precautions taken to minimize or eliminate them. It is also very important to designate one guide so there is no confusion in the signaling procedures. The following represent seven (7) basic signals to assist in vehicle repositioning.

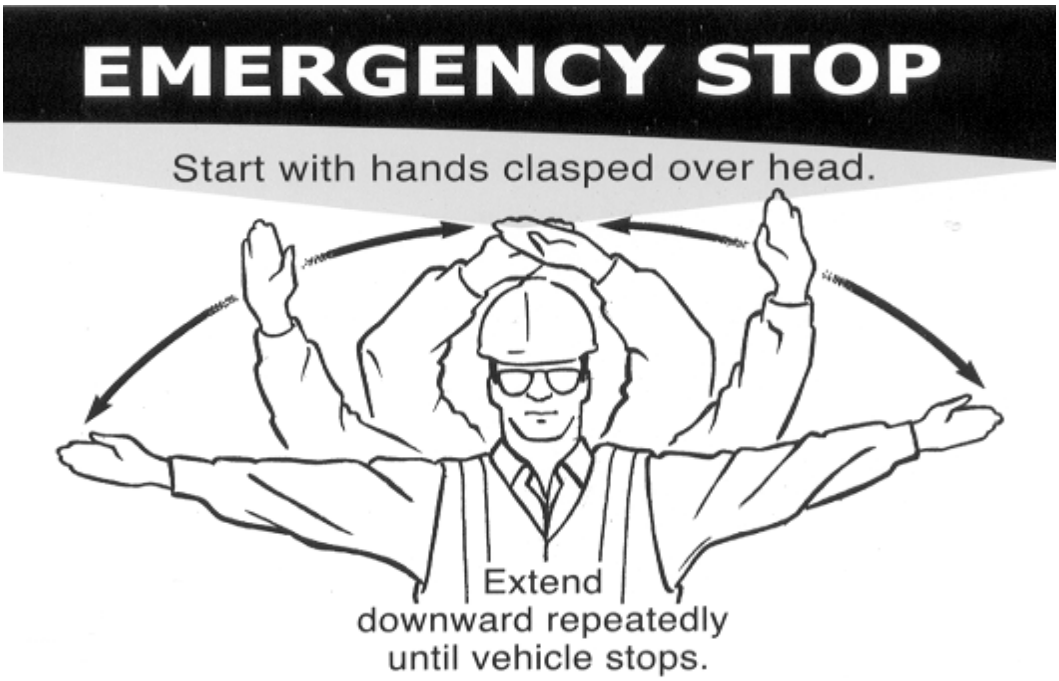
Purpose and Action Descriptions The driver and the guide share responsibility for safe vehicle movement during repositioning. The guide takes a leadership role during repositioning.


PROCEED SLOWLY
FORWARD
BACKWARD
Always face palms
in direction of desired travel.
Then bend both arms repeatedly
toward head and chest,
and then extend.


TURNS
Point one arm
to indicate
the direction to turn.
Bend monitoring arm
repeatedly toward head to
indicate continued turning.


DISTANCE TO
STOPPING POINT
Face palms forward, with hands above head. Bring elbows forward and hands together.


STOP
Cross both arms above head.


EMERGENCY STOP
Start with hands clasped over head.
Extend
downward repeatedly
until vehicle stops.


CLEAR TO LEAVE AREA
Point at the driver, and gain eye contact.
Turn and extend arms in desired direction.

APPENDIX C

LIBERTY PARK POND REMEDIATION PROJECT

Salt Lake City, Utah

HEALTH AND SAFETY PLAN

PREPARED FOR
Upstream Business Unit
Chevron Environmental Management Company

PREPARED BY

ENTACT
3129 Bass Pro Dr.
Grapevine, TX 76051
(972) 580-1323

September 12, 2010

TABLE OF CONTENTS

SECTION **PAGE**

POLICIES, PROCEDURES, AND OTHER GUIDANCE DOCUMENTS THAT ARE REFERENCED WITHIN THIS DOCUMENT ARE CONSIDERED PART OF THIS HEALTH AND SAFETY PLAN AND ARE COMPILED AND MAINTAINED UNDER SEPARATE COVER

HEALTH AND SAFETY PLAN (HASP)

ACKNOWLEDGEMENT AND ACCEPTANCE

Acknowledgements

Role	Name	Signature and Date
ENTACT Field Project Manager	Paul McCorvey	
ENTACT Project Health and Safety Coordinator	Evan McShirley	
ENTACT Health and Safety Officer	Pat Till	

Acceptance

Role	Name	Signature and Date
CEMC Project Manager	Marlea Harmon	

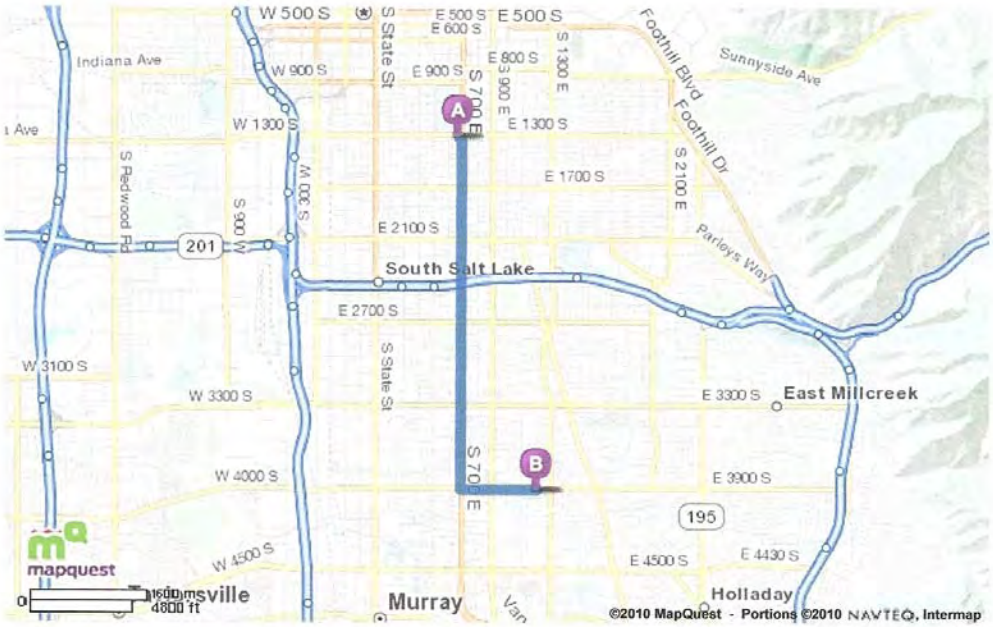
EMERGENCY CONTACTS	
Emergency Response Agencies	
Fire Department	911 – Emergency
Police Department	911 – Emergency
Emergency Medical Service	911
St. Marks Hospital 1200 E. 3900 S. Salt Lake City, UT 84124	(801) 268-7111
Concentra Urgent Care 1735 S. Redwood Rd. #115 Salt Lake City, Utah 84104	(801) 973-4434
Utah Department of Health Cannon Health Building 288 North 1460 West Salt Lake City, UT	(801) 538-6101
UT Dept. of Environmental Quality 168 North 1950 West Salt Lake City, UT 84116	800-458-0145 (801) 553-4097
National Response Center	(800) 424-8802
Center for Disease Control	(404) 488-4100
Chemtrec	(800) 424-9300
National Capital Poison Center	(800) 222-1222
Nationwide Underground Utility Locate Center	811
Blue Stakes of Utah For Utility Locate	(800) 662-4111
EPA Regional 8 Office 1595 Wynkoop St. Denver, CO 80202-1129	(800) 227-8917 (303) 312-6312

Project Personnel	
Chris Preston ENTACT Project Coordinator	Office: (972) 580-1323 Cell: (630) 675-9853 cpreston@entact.com
Don Self ENTACT Corporate Health and Safety Director	Office: (972) 580-1323 Cell: (630) 669-4259 dself@entact.com
Paul McCorvey ENTACT Field Project Manager	Cell: (630)935-9543 pmccorvey@entact.com

Project Personnel	
Evan McShirley ENTACT Project Health and Safety Coordinator	Office: (972) 580-1323 Cell: (630) 675-9975 emcshirley@entact.com
Pat Till ENTACT Site Health & Safety Officer	Office: (972) 580-1323 Cell: (630) 470-4581 ptill@entact.com
Marlea Harmon CEMC Project Manager	Office: (805) 546- 6916 Cell: (805) 550-65-74 MHarmon@chevron.com
Ralph Branning CFE	Office: (307) 690-8236 rbranning@chevron.com
Bob Butler CEMC	Office: (925) 543-2395
Jim Robbins CPL Command Center SLC Red Butte Incident Chevron Pipeline Co. 2875 S. Decker Lake Drive #150 Salt Lake City, Utah 84119	Office: (801) 975-2325
Richard McMullin Allied Waste/Republic Services	Office: (801) 253-1111

NEAREST EMERGENCY ROOM
St. Marks Hospital
1200 E. 3900 S.
Salt Lake City, UT 84124

(801) 268-7111
MAP MUST REMAIN IN ANY VEHICLE SUBJECT TO TRANSPORT INJURED OR ILL ASSOCIATE



Directions: To St. Marks Hospital

mapquest

Notes

Trip to:
St Mark's Hospital
1200 E 3900 S
Salt Lake City, UT 84124
(801) 268-7111
4.59 miles
9 minutes

		Miles Per Section	Miles Driven
A	**Adventure Liberty Park** 662 E 1300 S, Salt Lake City, UT 84105 (801) 973-0088		
	1. Start out going EAST on E 1300 S toward S 700 E / UT-71.	**go 0.04 mi**	0.04 mi
	2. Take the 1st RIGHT onto S 700 E / UT-71. *If you reach LAKE ST you've gone a little too far*	**go 3.8 mi**	3.8 mi
	3. Turn LEFT onto E 3900 S. *E 3900 S is 0.2 miles past SILVER MAPLE CIR*	**go 0.8 mi**	4.6 mi
	4. 1200 E 3900 S is on the RIGHT. *Your destination is 0.1 miles past S 1100 E* *If you reach S 1215 E you've gone a little too far*	**go 0.01 mi**	4.6 mi
B	**St Mark's Hospital** 1200 E 3900 S, Salt Lake City, UT 84124 (801) 268-7111	**4.6 mi**	**4.6 mi**

Total Travel Estimate: **4.59 miles9 minutes**

OCCUPATIONAL HEALTH CLINIC

Concentra
Urgent Care
1735 S. Redwood Rd. #115
Salt Lake City, Utah 84104
(801) 973-4434

MAP MUST REMAIN IN ANY VEHICLE SUBJECT TO TRANSPORT INJURED OR ILL ASSOCIATE

Directions To: Concentra Medical Center

mapquest

Notes

Trip to:
1735 S Redwood Rd
Salt Lake City, UT 84104-5101
6.83 miles
11 minutes

		Miles Per Section	Miles Driven
Salt Lake City, UT 84105			
	1. Start out going EAST on ROOSEVELT AVE toward S 1100 E.	**go 0.3 mi**	0.3 mi
181	2. Take the 2nd RIGHT onto S 1300 E / UT-181. *If you reach S 1400 E you've gone about 0.1 miles too far*	**go 1.2 mi**	1.6 mi
80	3. Merge onto I-80 W. *If you reach E PARKWAY AVE you've gone about 0.1 miles too far*	**go 1.8 mi**	3.4 mi
EXIT	4. Take the exit toward I-15 S / LAS VEGAS / UT-201 W / WEST VALLEY.	**go 0.5 mi**	3.9 mi
EXIT	5. Take the I-15 S / UT-201 W exit, EXIT 123B-A, on the LEFT toward LAS VEGAS / WEST VALLEY.	**go 0.2 mi**	4.1 mi
WEST 201	6. Merge onto UT-201 W via EXIT 123A toward WEST VALLEY.	**go 1.9 mi**	5.9 mi
EXIT	7. Take the UT-68 / REDWOOD RD exit, EXIT 15C.	**go 0.4 mi**	6.3 mi
68	8. Turn RIGHT onto S REDWOOD RD / UT-68.	**go 0.5 mi**	6.8 mi
	9. 1735 S REDWOOD RD is on the RIGHT. *Your destination is 0.2 miles past W 1900 S* *If you reach W 1700 S you've gone a little too far*	**go 0.01 mi**	6.8 mi
1735 S Redwood Rd Salt Lake City, UT 84104-5101		**6.8 mi**	**6.8 mi**

Total Travel Estimate: **6.83 miles11 minutes**

COMPREHENSIVE HEALTH AND SAFETY PLAN

1.0 INTRODUCTION

1.1 PURPOSE AND POLICY

The purpose for this site-specific health and safety plan (HASP) is to set forth, in an orderly and logical fashion, appropriate safety procedures to be followed during on-site activities at the Liberty Pond Remediation Site by ENTACT. This HASP will identify, evaluate, and provide control methods for safety and health hazards and provide for emergency response. It is ENTACT's policy to provide a safe, healthy, and incident free workplace for all employees. ENTACT is committed to performing day-to-day operations safely with all due regard for people, property, and the environment to achieve the goal of zero incidents.

Site specific policies, procedures, and forms are incorporated by reference in this HASP and are located in the separate HASP Attachments document. All other applicable policies, procedures, and forms are available in the on-site ENTACT Policies, Procedures, and Forms binder and/or are available online to ENTACT employees via the ENTACT intranet system or by contacting the Corporate Health and Safety Department at 972/580-1323.

1.2 REGULATORY FRAMEWORK

All work practices and procedures implemented on site will be designed to minimize associate contact with hazardous materials and to reduce the possibility of physical injury. All work will be performed in accordance with the following:

- Occupational Safety and Health Administration (OSHA) regulations found in Title 29 of the *Code of Federal Regulations* (CFR) Parts 1910 and 1926
- National Institute for Occupational Safety and Health (NIOSH) Publications 85-115
- American Conference of Governmental Industrial Hygienists (ACGIH) Publication Threshold Limit Values and Biological Exposure Indices
- Utah Department of Environmental Quality
- Salt Lake County
- Salt Lake Valley Health Department
- Salt Lake City
- US Environmental Protection Agency (EPA) Publication No. PB9285.1-03
- American National Standards Institute (ANSI) guidelines (various)
- Utah DOT

1.3 APPLICATION OF BBS

BBS is utilized to prevent or reduce losses and safety incidents using tools and management techniques to achieve a safe work environment with the ultimate goal of zero accidents. This is accomplished by focusing on work activities and behaviors, and identifying and eliminating

hazards before an incident occurs. BBS is implemented as follows:

- JTR (Job Task Review) – performed by all associates to briefly assess the hazards or risks of each work task prior to work beginning. In addition, associates will perform a self-assessment to determine if they are fit for duty to perform their tasks. If an associate feels he/she is not fit for duty, their supervisor must be notified immediately before work begins.
- JSAs (Job Safety Analysis) are reviewed and revised daily by walking and assessing the specific work location address changes in original conditions, personnel, the workplace, design, environment, or scope of work and will assign responsible person(s) to the mitigation activities. The JSA user (including subcontractor personnel) shall "dirty up" the JSA each day with new hazards and mitigation actions.
- The JSA development team shall consist of those performing the task (including subcontractor personnel) and job experts that are fully knowledgeable of the steps, risks, and mitigation activities. The Hazard Identification Energy Wheel shall be referenced during JSA development to identify hazards involving energy sources. The development team will prepare a JSA for:
    - Each planned high hazard task,
    - Each unplanned high hazard task, and
    - Each planned or unplanned low hazard tasks.
- During JSA development or review the individuals responsible for the work (including subcontractor personnel) shall walk the work location each day before work begins to identify hazards. A Job Hazard Assessment (JHA) Checklist shall be completed and attached to the JSA. It includes an assessment of job hazards, hazard controls, and required PPE and safety equipment.
- JSAs applicable to the scope of work are subject to continuous scrutiny and are reviewed twice daily before work begins in the morning and afternoon. Revisions are discussed at the next tailgate meeting at a minimum. After review of JSAs, the associates performing the work (including subcontractors) will sign-off on the JSA acknowledging they understand and will practice the content of the JSA. JSAs are also reviewed after completion of the job to determine if any changes need to be made.
- JSAs will comply with CEMC's JSA Standard.
- JTO (Job Task Observation) – conducted on a planned and regular basis, at least 1 for every 500 man hours worked.
- NLI/LI (Near Loss/Loss Investigation) – performed as needed to determine root causes and contributing factors of near loss and loss incidents.

1.4 MODIFICATIONS TO THE HASP

The procedures and guidelines contained herein were based upon the best available information at the time of the plan's preparation. Specific requirements will be revised when new information is received or conditions change. Any amendments to this plan will be documented on the form in Attachment A, Site Safety Plan Amendment, and will be approved by the Field Project Manager, Project Health and Safety Coordinator, and Health and Safety Officer. A hasp

amendment log will also be maintained in Attachment A.

1.5 STOP WORK AUTHORITY

1.5.1 Responsibilities

All on-site personnel will comply with ENTACT's Stop Work Authority Policy. Personnel are empowered, are expected, and have the responsibility to stop their own work and the work of co-workers, EMC employees, or other contractors if any person's safety or the environment is at risk. No repercussions will result from this action.

If anyone is discouraged from exercising the "Stop Work Authority" or if there are penalties for doing so, then affect individuals should report this action to the ENTACT health and safety director at (972) 580-1323. Refer to Attachment G – Stop Work Authority.

1.5.2 Using SWA

Site or project conditions that are possible reasons to stop work and to consider modifications to the HASP include:

- Recognition of new or unidentified hazards
- Off-site activities or conditions impacting site work
- Site temperatures outside the range predicted in this HASP (possibly resulting in greater risk of heat or cold stress)
- PPE breakthrough or unexpected degradation
- Unusual odors that can't be identified
- Unexplained, elevated readings on an organic vapor monitor
- Unexpected changes in soil coloration or texture that might indicate undisclosed contamination.

This list is not comprehensive and should be used only as guidance (also refer to Section 6.0 for emergency response procedures).

1.5.3 Restarting Work

The responsible supervisor for the assigned work and the stop-work initiator shall evaluate and/or inspect the stop-work condition to ensure all corrective actions have been completed and determine that it is safe to proceed. At that time, the supervisor may authorize the restart of work and notify the effected individuals or work *crew*. The supervisor will also notify the FPM and HSO. In the event the stop work/restart involves a subcontractor, the FPM or HSO will notify the subcontractor representative. The event may be logged in the daily project journal.

1.6 SUBCONTRACTORS

Supporting the ENTACT Behavior Based Health and Safety System is a requirement for all subcontractor personnel. ENTACT's Health and Safety Plan will be made available for review and be adopted by the subcontractor. This plan is applicable to the subcontractors insofar

as ENTACT will be directing the work. If subcontractor performs work not addressed in ENTACT's Heath and Safety Plan, a pre-task meeting shall be held to define the scope of work, hazards, mitigations, responsible personnel and safe work procedures. The subcontractor will provide ENTACT with a copy of their Health and Safety Plan and/or safe work procedures and JSAs applicable to the job tasks being performed.

All subcontractors will:

- Participate in ENTACT site safety meetings and the ENTACT BBS System and tool usage.
- Be enrolled in their company's medical monitoring program and will have an exam within the previous 12 months per OSHA regulations.
- Supply their own PPE and other safety equipment.
- Be responsible for the safety and well being of their personnel and the condition and maintenance of their equipment, vehicles, and tools.
- Sign the ENTACT Subcontractor Letter of Acceptance.
- Engage in pre-task meetings with the ENTACT FPM and HSO to establish scope of work, hazard assessment, mitigation actions, and responsible persons.

Refer to Section 1.3 for specific BBS tool usage. The ENTACT FPM and/or HSO shall provide continual supervision for all high hazard work.

1.7 CEMC OE PROCESSES

ENTACT will comply with Chevron EMC's OE Processes and guidelines as they apply to this site. These processes are listed below and are maintained under separate cover.

- Permit to Work
    - The Qualified PTW Approvers are Pat Till (ENTACT) (primary) and Paul McCorvey (ENTACT) (alternate) (see Section 3.10 for contact information)
    - Site specific high risk work (or high hazard work) to be performed by ENTACT will include, but is not limited to:
        - Hazardous Energy Sources (LO/TO) which include heavy equipment
        - Hot Work
        - Excavations
        - Work on or near water
        - Work involving equipment within 15 feet of active overhead electrical line or pole supporting an electric line
- Motor Vehicle Safety
    - ENTACT provides defensive driving training through in-house National Safety Council certified Defensive Driving instructors or equivalent
- Management of Change – The Chevron EMC MOC Process will be utilized at this site.
- Emergency Management – see Section 6.0 of this HASP
- Incident Reporting and Investigation
- Short Service Employee

1.8 ONE TEAM COMMUNICATIONS

CEMC, ENTACT, and subcontractors will follow a One Team Safety Communication process to communicate daily project work activities and associated hazards utilizing PTW, and overall safety information to their employees and subcontractors. The key elements of the One Team Safety Communication process are:

- Permit to Work process
- Field tailgate meetings
- Weekly site management team meetings
- Emergency communication plan
- Site orientation training
- Task kick-off meetings
- Management of Change Procedure
- Hazard Communication & One Team Documentation Station

See Section 3.10 for Key Personnel and Figure 3.3 for the One Team Organization Chart.

1.8.1 Permit to Work Process

A Permit to Work (PTW) is not placed into affect until it has been acknowledged by each applicable One Team supplier and signed by the site Permit authority. Approved permit signee's from each applicable supplier and subcontractor sign the PTW as acknowledgement of the work to be performed by the One Team members. If there are conflicting activities where safety may be compromised, those issues are resolved before the permit becomes valid. Copies of the PTW are provided to each of the One Team PTW signee's.

Permit signee's who are currently responsible for acknowledging the site permit conditions applicable each day are listed below in order of authority:

ENTACT
Name: Pat Till
Name: Paul McCorvey

Before a higher hazardous work permit is issued, notification is given to the Chevron Project Manager and his/her signature or approval via phone or email is required on the PTW as acknowledgement. If the Chevron PM is not available to sign the PTW, his manager would be notified to sign/authorize the high hazard work permit signing a higher hazard work permit:

1.8.2 Tailgate Meetings

Each day before the start of work in the morning and again after lunch (or as conditions change), a tailgate meeting is held. The documented tailgate meeting is to discuss each team's project activities, JLAs, traffic patterns, LPS, and safety concerns.

1.8.3 Weekly Site Management Team Meeting

Once per week, the One Team Project Managers and Health and Safety Personnel meet (via conference call) to discuss planned site activities, LPS, health and safety concerns, health and safety trends being observed, Chevron information rollouts to be conveyed to the employees and contractors, and other pertinent site information.

1.8.4 Emergency Communication Plan

All One Team personnel are equipped with cell phones and each team has a two way radio for communication. When there is a site emergency or information needs to be quickly disseminated to some or all site personnel (e.g. lightning shut down, traffic pattern modification) personnel are quickly notified by Health & Safety representatives from each of the One Team suppliers.

In the event of a site wide evacuation, personnel will not only be notified by two-way radio and/or cell phone, but also by three air horn blasts.

An Emergency Action Plan has been prepared for the Site, and is located in the One Team Document Sharing Area of the Main Office.

1.8.5 Site Orientation Training

Personnel, subcontractors, and visitors who are new to the site or have not been on site for over a year are required to review of the HASP with the Health & Safety Officer and complete a questionnaire demonstrating their understanding of the HASP.

1.8.6 Task Kickoff Meetings

When a new task is to be undertaken at the facility, a task kickoff meeting is conducted at the start of the new project. This meeting will go over the project scope, anticipated schedule, safety concerns, JLAs, the development of JLAs if not yet developed, and the permits that will be required during the project. In attendance for the meeting will be the health and safety manager, project manager(s), key project personnel, and other individuals or subcontractors who may be involved in the project.

1.8.7 Management of Change Procedure

In accordance with the Chevron Management of Change (MOC) process, the One Team addresses change using a team approach. Upon identification of a significant development or scope change that was not planned for, the One Team stops any work activities related to the event and develop an approach using the MOC process. Upon completion of the process, a copy of the associated paperwork and MOC form is kept on file in the MOC Binder in the One Team Document Station in the main office trailer.

1.8.8 Hazard Communication Station

In order to help insure that all employees are provided with easy access to information regarding

the chemicals and products that can be found at the Site, the One Team maintains a Haz-Com "Right to Know" station in the hallway of the main office trailer. The Haz Com Station includes a Material Safety Data Sheet Binder and list of chemicals that is used by all parties and updated as new chemicals or products are brought on site.

1.8.9 Lock-Out/Tag-Out

ENTACT will develop, document, implement, and enforce energy control procedures. [See the note to 29 CFR 1910.147(c)(4)(i) for an exception to the documentation requirements.]

1.9 CHEVRON EMC OE TENETS

Tenets are a code of conduct used by employees and contractors as a tool to guide daily decisions. Leaders play an important role in reinforcing behaviors consistent with the tenets.

Always:

- Operate within design and environmental limits.
- Operate in a safe and controlled condition.
- Ensure safety devices are in place and functioning.
- Follow safe work practices and procedures.
- Meet or exceed customer's requirements.
- Maintain integrity of dedicated systems.
- Comply with all applicable rules and regulations.
- Address abnormal conditions.
- Follow written procedures for high-risk or unusual situations.
- Involve the right people in decisions that affect procedures and equipment

1.10 HAZARD IDENTIFICATION

Site personnel will participate in ENTACT's Hazard Recognition Program. A hazard is a condition or action that has the potential for an unplanned release of, or unwanted contact with, a condition that may result in harm or injury to people, property, or the environment. Hazard identification will involve the use of the ENTACT Hazard Recognition Card and a complete review of:

- Chemical-specific hazards
- Physical-specific hazards
- Biological hazards
- Location-specific hazards

1.10.1 CEMC's Hazard Identification Tool (Energy Sources)

CEMC's Hazard Identification tool identifies what energy sources are present at the work place and analyze them to determine if they have any potential for causing harm. There are ten energy sources which include the following. These are included on ENTACT's Hazard Recognition Card.

- Gravity
- Electrical
- Chemical
- Sound
- Motion
- Pressure
- Biological
- Mechanical
- Temperature
- Radiation

1.11 OPERATIONAL DISCIPLINE

Operational discipline primarily embraces the concept of performing our work the correct way, every time. But it also includes consequence management. Personnel need to constantly afford positive recognition to people who are found doing the right things, and provide some constructive, negative reinforcement when we discover people not following procedures or not stopping to consider risks.

1.11.1 Expectations

- All site personnel are expected to know safe work practices and implement them.
- Acknowledge safe work practices of your co-workers. Encourage, praise, and recognize one another for doing the task according to established safe work practices.
- Use immediate Stop Work Authority if the JLA, SOP, or if the situation dictates a change in order to complete your task safely. Notify your supervisor BEFORE work proceeds. Do not proceed without re-planning your task. It's worth the time and money it takes to ensure that safe work practices are in place.
- Near Loss and Loss Investigations (RCF #2, #3, and #4) will identify the point where self-discipline of the associate failed. Knowingly and willingly disregarding safe work practices can result in disciplinary action.
- Associates should expect and require that co-workers will follow safe procedures.

1.12 DISCIPLINE

The cooperation of every associate is necessary to make your project site a safe place in which to work. Associates have the following responsibilities in order to achieve an incident free work place:

- Report unsafe conditions or hazards immediately to your supervisor, to your Field Project Manager or Health and Safety Officer.
- Full compliance with the rules of safety in the site-specific Health and Safety Plan, OSHA regulations, company policies and procedures, posters and signs, discussions in your daily safety meeting, JLAs, instructions given by your supervisor, and general safety rules.
- Think of safety as you perform your job, or as you learn a new one. Perform hazard recognition prior to beginning your task.
- Use Stop Work Authority if conditions or behaviors are unsafe.
- You are responsible for asking questions, following procedures and reporting safety hazards.

1.12.1 Violations

Safety violations may include, but are not limited to:

- Not following verbal or written safety procedures, guidelines, or rules
- Failure to wear selected PPE or abuse of selected PPE
- Failure to maintain PPE or tools and equipment in good working condition
- Failure to report hazards, injuries or incidents
- Horseplay

1.12.2 Disciplinary Action

Following the requirements of ENTACT's Violation of Health and Safety Policy, a Health and Safety Violation Form will be completed by the Field Project Manager and forwarded to the Health and Safety Director. A copy of this form will be sent to Dean Pisani, ENTACT Chief Executive Officer. Disciplinary action may include:

Three violations within a 12-month period on one or more project sites. Examples: not wearing required PPE, not following site-specific safety requirements, not reporting known safety hazards.	Three-month probationary period. Any additional violations during this time will result in suspension of pay incentives including monies earned through ENTACT's Health and Safety Incentive Program for the year.
Four or more violations within a 12-month period on one or more project sites.	Each violation will be reviewed resulting in probation or possible termination of employment.
Any willful or deliberate action resulting in injuries or potential injuries.	Immediate termination of employment.

2.0 SITE DESCRIPTION AND SCOPE OF WORK

2.1 SITE DESCRIPTION

Liberty Park Lake is located at the intersection of South 700 East and East 1300 South Streets in Salt Lake City. The site is adjacent to an aviary, residential community, and is a public park.

On June 12, 2010, crude oil was discovered in Red Butte Creek in Salt Lake City County, Utah, that was found to have originated from a leak in a pipeline in Red Butte Canyon. A preliminary review indicates that an electrical arc created a less than 1-inch hole in the top of the pipe. As a result, approximately 800 barrels of crude oil were released, traveling down Red Butte Creek and collecting in Liberty Park Pond. Chevron shut off the pipeline and took immediate steps to contain the spilled oil.

The site was constructed as a stormwater detention facility as part of a flood control project in the late 1970's. The lake is approximately 6 acres in size with water being supplied by two inlet structures located at the northeast and southeast corners. There is an existing non-reinforced concrete wall approximately 6-inch by 18-inch that runs around the perimeter of the lake and two small internal islands. Figure 1 provides the location of the site.

The lake was constructed with a subdrain trench system consisting of open joint pipe installed in a trench approximately 1 foot below the existing grade. The trenches were backfilled with a granular aggregate to act as a subdrain filter. The entire lake bottom was then covered with a polypropylene fabric overlain with 18 inches of 4-6 inch diameter cobble base rock.

2.2 SCOPE OF WORK

The scope of work includes the following:

- Excavation of all impacted soils within the release area to the RALs;
- Removal, sizing and disposal of the existing concrete retaining wall;
- Excavation and stabilization of pond sediments;
- Water management/treatment;
- Backfill and compaction of excavated soil areas with imported fill to create a subgrade for the new concrete retaining wall;
- Installation of new concrete retaining wall; and
- Restoration of non pond affected areas with topsoil and sod

2.3 WASTE MANAGEMENT

ENTACT will make ready and use several methods to neutralize and control odors on an escalating and contingency basis. Dust and odor suppression via water misting and spraying will use a quantity of water that will be sufficient enough to control dust, but not enough to leave residual water accumulations on the ground surface. Odor mitigating agents such as KUMA Corporations ODEX and/or BioSolve will be added to control hydrocarbon and naturally occurring organic odors during the removal action. Misting and spraying devices may be installed in various portions of the exclusion zone and will assist in reducing visible dust emissions in work areas. Particular attention will be paid to the prevailing wind direction and installing odor suppression systems in downwind areas to prevent adverse impacts to local residents.

Impacted soil, concrete and sediments will be disposed of at the following:

- Allied Waste/Republic Services - Wasatch Regional Landfill
  8833 North Rowley Road, North Skull Valley, UT 84029
  Contact: Richard McMullin 801.253.1111 (office)

Transporters will either be Envirocare or M P Environmental Services, Inc.

2.4 SITE MAP

Additional site map will be developed upon mobilization to show locations of emergency meeting points, first aid, eye wash stations, places of refuge, fire extinguishers, emergency evacuation routes, parking areas, traffic routes (designate flow of traffic with arrows). Site maps will be reviewed and discussed in documented tailgate meetings or personnel orientations.

LIBERTY PARK POND SITE MAP

3.0 PROJECT TEAM ORGANIZATION AND RESPONSIBILITIES

3.1 ENTACT PROJECT COORDINATOR

The Project Coordinator will report directly to the client and ensure all project members strive for zero accidents and incidents. The responsibilities of the Project Coordinator will be the successful completion of the total project, but the number one goal will be a safe and healthy work site with zero accidents.

3.2 ENTACT PROJECT HEALTH AND SAFETY COORDINATOR

The Project Health and Safety Coordinator (PHSC) is responsible for writing, reviewing, and approving the site-specific HASP and implementing ENTACT's Health and Safety Program. The PHSC will serve as the primary contact to review health and safety matters and provide direction to the ENTACT Field Project Manager and On-site Health and Safety Officer(s) as necessary on issues related to health and safety. The PHSC will be responsible for conducting the health and safety orientation meeting prior to the start of field activities, reviewing monthly project safety reports, and conducting health and safety inspections and audits at the site project. The PHSC will also review all LPS reports generated by the project. The alternate PHSC will be the Health and Safety Director.

3.3 ENTACT PROJECT MANAGER

The ENTACT Project Manager will have the overall responsibility for the project and will ensure compliance with the approved work plan and applicable Federal, state, and local regulations. The Project Manager will ensure all operations at the site are performed in the safest manner possible following the site-specific HASP and promoting ENTACT's safety culture. Specific responsibilities will be to observe, promote, and facilitate a safe environment that will achieve zero incidents. The alternate PM will be the FPM.

3.4 ENTACT FIELD PROJECT MANAGER

The ENTACT Field Project Manager (FPM) will be responsible for directing all site personnel, equipment, subcontractors, and activities to ensure a safe and successful implementation of the on-site activities. The FPM will have overall responsibility for the health and safety of site personnel. The FPM will ensure adequate resources are provided to carry out established health and safety responsibilities and will enforce the site-specific HASP. He will ensure proper communications is established for emergency response and is the Emergency Response Coordinator with primary responsibility for responding to and correcting emergency situations. The FPM will coordinate with the on-site Health and Safety Officer in the planning and implementation of all site activities and ensure site personnel are knowledgeable of site hazards and assists with the development of JLA. The alternate FPM will be the Administrative Project

Manager.

3.5 ENTACT HEALTH AND SAFETY OFFICER

The ENTACT Health and Safety Officer (HSO) will be assigned to the site on a full-time basis with functional responsibility for implementing the site-specific HASP. The ENTACT HSO will conduct site audits. Specific duties include, but are not limited to:

- Will be the alternate Emergency Response Coordinator (FPM has primary responsibility).
- Assume responsibility for health and safety of ENTACT personnel and promote ENTACT's safety culture
- Document safety concerns reported by the field crew and subcontractors
- Supervise decontamination of personnel and equipment
- Ensure air monitoring equipment is calibrated and operational
- Conduct personal air monitoring on all ENTACT personnel as outlined in 29 CFR 1910.120 (h) (4) and this plan
- Perform respiratory fit tests
- Inventory and inspect PPE prior to personnel entering work area
- Prepare summary letter of personal air sampling results
- Select levels of personal protective equipment (PPE) based upon the site-specific HASP, chemical properties, and air sample results
- Ensure that all on-site ENTACT personnel have had medical exam and are fit for duty
- Inspect first aid kits and fire extinguishers
- Assist with the preparation and review of JLAS
- Ensure that all associates have required health and safety training
- Utilize "Stop Work Authority" if required
- Report and investigate all near losses and loss incidents
- Schedule LPOs
- Coordinate safety orientation as well as daily safety meetings
- Work with the FPM daily regarding work activities and identification of related hazards
- Complete Monthly Project Safety Report and forward it to ENTACT's Project Health and Safety Coordinator
- Ensure all site personnel (ENTACT field crew and subcontractors) have taken the HASP written test to document understanding of site-specific risks
- Ensure visitors receive an orientation and test
- Perform Journey Management Plan Coordinator responsibilities

The HSO and the FPM will work together to promote a safety goal of zero accidents and zero incidents. The alternate HSO will be the Field Project Manager.

3.6 ENTACT FIELD CREW

Each ENTACT associate (field crew member) is responsible for asking questions and

understanding the site-specific HASP as well as the following:

- Comply with emergency response guidelines as set forth in Section 6.0 Emergency Response of this HASP.
- Satisfy required training as specified in Section 4.0 of this HASP
- Report any unsafe or potentially hazardous conditions to the FPM or the HSO
- Comply with rules, regulations, and procedures as set forth in this HASP
- Express safety ideas or concerns in the daily safety meetings
- Perform all tasks safely every time
- Perform an LPSA before performing any task
- Identify and report hazards
- Perform LPO under the direction of the HSO
- Utilize "Stop Work Authority" if required
- Take a written HASP test to document understanding of site-specific risks
- Follow ENTACT's General Site Safety Rules
- Abide by the terms of the ENTACT Drug and Alcohol Policy and Driver Safety and Cell Phone Policy

By signing the Safety Plan Acknowledgment Form (Attachment B) individuals are recognizing the potential hazards present on-site and the policies and procedures required to minimize exposure and/or adverse effects of these hazards.

3.7 SUBCONTRACTORS

ENTACT will provide basic LPS training and/or CEMC Orientation training as required by CEMC. Subcontractors will complete a site orientation that will establish safety expectations, will participate in tailgate safety meetings, LPS tool usage, permit to work, and site safety inspections. Subcontractors must take a written HASP test to document understanding of site-specific risks and will comply with Emergency Response requirements in Section 6.0.

3.8 SHORT SERVICE EMPLOYEES

ENTACT personnel with less than 6 months experience in the same job type, or who have less than 6 months employment with ENTACT, will participate in the CEMC Short Service Employee (SSE) program and will be visibly identified by wearing an orange hard hat. SSE's will be assigned a mentor. The maximum numbers of SSE's on a field project are as follows:

- Crews of more than 5 will not have more than 20% SSE
- Crews with less than 5 will have no more than 1 SSE

At least 24 hours prior to the job mobilization, contractors will submit the completed SSE Form to the PM/Work Owner and the on-site supervisor for all jobs containing SSE personnel. If job mobilization is within 24 hours of the request for work, the contractor will fax this form to the PM/Work Owner prior to arrival. Each SSE will be assigned a mentor to ensure that the SSE is appropriately supervised, trained, and managed to prevent incidents. Refer to Attachment H –

Short Service Employee for additional information.

3.9 OTHER PERSONNEL

"Site guests" may include various Federal, State and Local agency, as well as client representatives. Although site guests typically visit a job site in an observational capacity, they will be expected to read, understand and abide by the HASP. Each site guest will receive a visitor's site safety orientation and will be required to complete a quiz documenting their understanding of basic job site activities and safe work practices. If a site guest does not abide by site safety requirements, work WILL BE STOPPED in any active work area they may be required to access. Every site guest has the authority and obligation to stop work in order to prevent incidents and injuries. Any site guest who observes unsafe conditions or behaviors should stop work and immediately report their concerns to the appropriate ENTACT site personnel. Site guests are required to be escorted while on-site.

3.10 KEY PROJECT PERSONNEL AND ENTACT ORGANIZATION CHARTS

Table 3.1
Key ENTACT Personnel

Principle Contractor: ENTACT 699 S. Friendswood Drive Friendswood, TX 77546	(281) 996-9892
Chris Preston ENTACT Project Coordinator	Office: (972) 580-1323 Cell: (630) 675-9853 cpreston@entact.com
Don Self ENTACT Corporate Health and Safety Director	Office: (972) 580-1323 Cell: (630) 669-4259 dself@entact.com
Evan McShirley ENTACT Project Health and Safety Coordinator	Office: (972) 580-1323 Cell: (630) 675-9975 emcshirley@entact.com
Paul McCorvey ENTACT Field Project Manager	Cell: (630) 935-9543 pmccorvey@entact.com
Pat Till ENTACT Health and Safety Officer	Cell: (630) 470-4581 ptill@entact.com

Table 3.2 Key Chevron Personnel	
Contact Name and Title	**Phone and Email**
Marlea Harmon CEMC Project Manager	Office: (805) 546- 6916 Cell: (805) 550-65-74 MHarmon@chevron.com
Ralph Branning Chevron Facilities & Inspections	Office: (307) 690-8236
Bob Butler CEMC	Office: (925) 543-2395

Figure 3.1
ENTACT Health and Safety Organization Chart

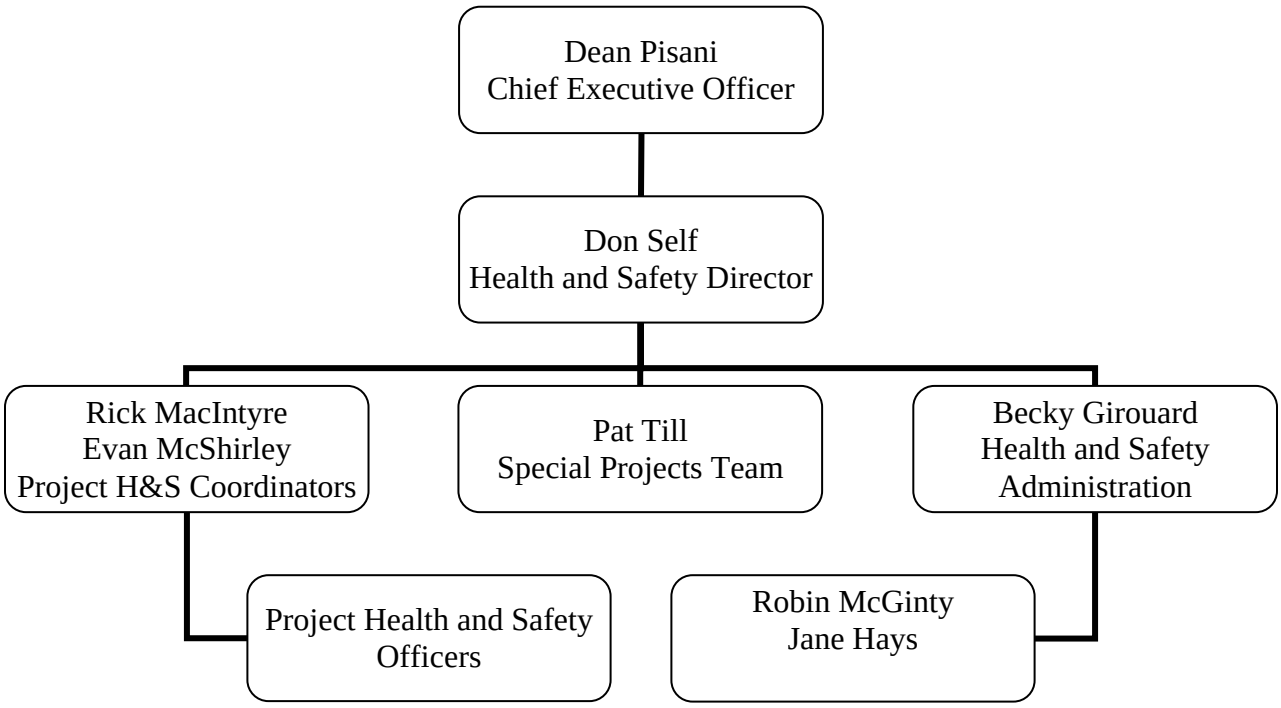
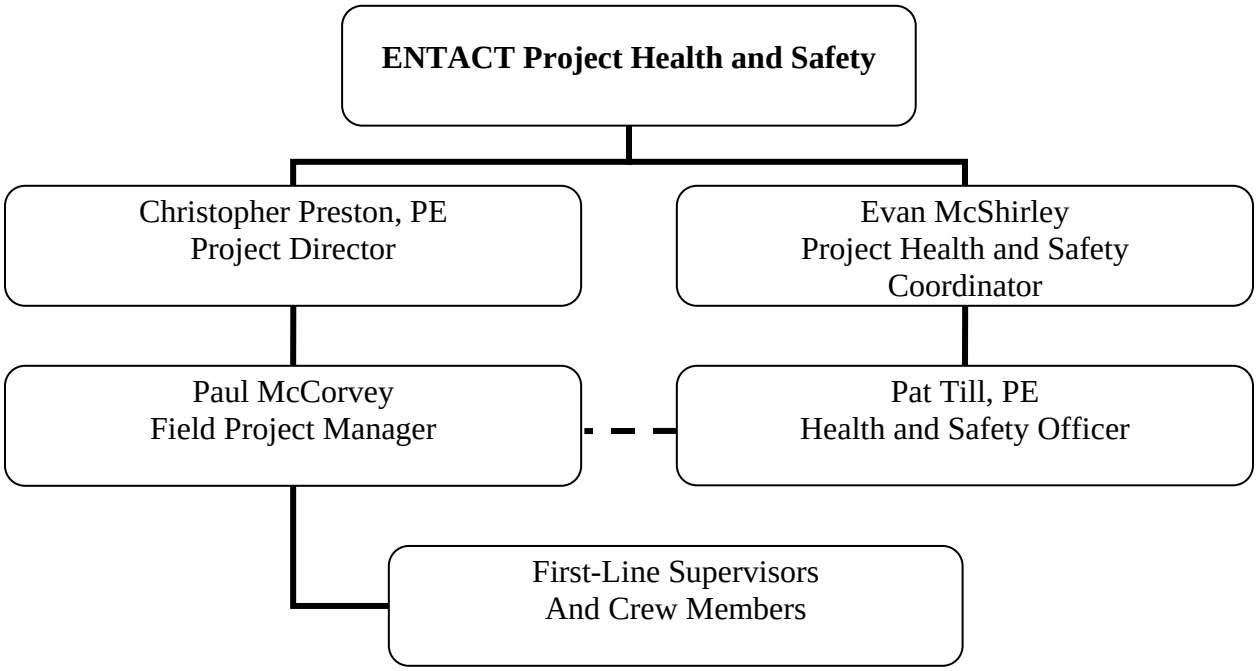


Figure 3.2
Site Specific Health and Safety Organization Chart



4.0 TRAINING AND MEDICAL MONITORING REQUIREMENTS

This section describes the general and site-specific training requirements as well as medical monitoring requirements.

4.1 GENERAL TRAINING

All ENTACT associates are required to attend 40 hours of classroom training in accordance with 29 CFR 1910.120. All field personnel receive 8 hours of refresher training on an annual basis covering the initial 40 classroom topics beginning within the 12 months of the individual's initial 40-hour class. FPMs are required to have 8 hours of training on safe management of hazardous waste sites, also in compliance with 29 CFR 1910.120. ENTACT personnel receive first aid/CPR training. Site personnel will have completed Chevron's LPS training prior to beginning work. ENTACT LPS instructors are required to be CEMC Authorized LPS Trainers. In addition, the following criteria shall be met:

- All assigned personnel will receive site-specific training on routes of exposure and adverse health effects associated with the chemicals listed on the table of hazards in Section 5.
- All site assigned personnel will complete LPS training.
- At least one member of each work crew shall have training in the use of portable fire extinguishers in accordance with 29CFR 1910.157 (g)
- Personnel newly assigned to hazardous waste work will receive 3 days of on the job training by a FPM.
- Each person entering the site shall sign a statement attesting to the fact that they have read and understand this site-specific HASP. Refer to Attachment B for sign in sheet.
- All subcontractors entering the decontamination zone and exclusion zone will have adequate training satisfying 29 CFR 1910.120 and other training necessary to their particular task.
- Daily health and safety tailgate meetings will be held each morning prior to work beginning. Specific safety topics will be discussed including prior days' activities. All site discussions will be documented.
- All associates will follow the General Site Safety Rules
- All ENTACT associates are expected to abide by the terms of the Drug and Alcohol Policy and Driver Safety and Cell Phone Policy (part of new associate hiring packet and Employee Handbook)
- Hazard Communication (Right-to-Know)
- Traffic routes and hazards as identified in JMPs
- Excavation competent person (usually FPM or his/her designee)
- Hand safety and defensive driving

Training certifications for all associates is maintained on site.

4.2 SITE-SPECIFIC TRAINING

All field team members and subcontractors are required to attend the pre-mobilization safety briefing held before field work begins. The safety briefing will cover the contents of this HASP including roles and responsibilities, a review of job hazard analysis, and safe work practices. The site's emergency response and evacuation practices will be reviewed in detail. A tour of the site and work area will also be included in the pre-mobilization briefing.

Specifically, the pre-mobilization safety briefing will include information on the following:

- Heavy equipment and vehicle inspection requirements.
- Hazardous chemicals present at the site. The location and availability of the written ENTACT HazCom Program, chemical list, and MSDSs. How to read labels and review material safety data sheets (MSDS) to obtain information. Physical and health effects of the hazardous chemicals on-site.
- Methods of preventing or eliminating exposure. Emergency procedures to follow if exposed.
- Site emergency response plan. Emergency evacuation
- Locations of fire extinguishers, eye wash stations, and first aid kits.
- Incident and near loss reporting requirements including vehicle and equipment damage.
- Tools and equipment being used.
- Site layout and surrounding community/areas.
- All required PPE including hand protection.
- Respirator fit test.
- Equipment and personnel decontamination.
- Requirements for driving company vehicles, weekly inspections, and maintenance.
- Task analysis – discussion of hazards and mitigation activities.
- Air monitoring protocol and location of results.
- Daily safety meetings.
- Completion of personnel orientations.
- Anyone signing a shipping paper for DOT hazardous material, which includes hazardous waste manifests, will have completed Chevron Manifest Training, DOT Basic Hazmat, and RCRA Hazardous Waste Training as required by Chevron.
- CEMC Contractor orientation.
- Policy on use of tobacco products.
- Truck Rollover Avoidance
- GFCI/Electrical Safety
- Spotter/Vehicle Backing
- Construction Ergonomics
- Lock-out/Tag-out
- Hot Work/Fire Watch
- Ergonomics/RSI/Material Handling

4.2.1 Daily Tailgate Meetings

Attendance at tailgate safety meetings, which are held each morning and afternoon, is also required. Topics of the tailgate safety meetings will include a discussion of that day's activities and the potential hazards which may be encountered. The ENTACT HSO or designee will lead the meetings and record the topic(s) discussed. All field team members are required to sign-in to document their attendance. Meeting topics will include ENTACT's behavior-based safety system and other pertinent safety information.

If a crew member is added or changed, they shall receive a review of the health and safety plan and site orientation before they begin work at the site.

4.3 SSE AND MENTOR PROGRAM

The purpose of this SSE policy is to ensure that ENTACT associates working on Chevron projects that have less than six months experience are identified, adequately supervised, trained and managed so as to prevent injury to themselves or others, property damage, or environmental harm. All SSE personnel must attend a site specific orientation prior to beginning work on the location. Each SSE will be assigned a specific mentor knowledgeable of the site and familiar with the duties of the SSE.

SSE associates will work with the assigned experienced mentor to ensure that they are appropriate supervised, trained and managed to prevent accidents before starting work. Documentation of the SSE associate must be maintained by the FPM.

4.4 MEDICAL MONITORING AND RECORDKEEPING

Pursuant to 29 CFR 1910.120, all ENTACT field personnel are required to have a pre-employment medical examination and annual update physicals. All associates must pass a pre-established physical including heavy metals blood work before being assigned to the work site. A copy of the medical pass or fail sheet will be kept on file at the site ENTACT field personnel are routinely monitored for blood lead, cadmium, and arsenic levels. Although exposure to these metals is not anticipated at the site, following any accidental or suspected exposure personnel will be scheduled for a special physical examination. The physical examination will focus on the specific contaminants and the associated target organs as well as test for blood lead, cadmium, and arsenic levels for comparison to previously established baselines.

A copy of the associate's medical fitness and other pertinent medical information will be filed maintained site.

5.0 SITE HAZARD ANALYSIS

Physical, chemical, and biological hazards exist at the work site. While all potential site hazards cannot be identified during HASP development, many can be anticipated. This section discusses the anticipated hazards and offers controls to minimize risk. Task safety assessments are provided at the end of this section.

5.1 CHEMICAL HAZARDS

Project activities performed by ENTACT could encounter hazardous waste in environmental media. Particulates (nuisance dust) will represent a general site hazard. The exposure limits for chemical hazards of concern and nuisance dust are listed in Table 5.1.

TABLE 5.1
CHEMICAL HAZARDS

Chemical	PEL REL TLV IDLH	UEL LEL Flash Point IP	Routes of Exposure	Acute and Chronic Health Hazards
Total Petroleum Hydrocarbons (TPH)	PEL: NE REL: 100 TLV: 300	7.0% 0.8% -40^0	Inh., Ing., Con.	Inhalation may cause resp. irritation or toxicity, skin contact may cause dermatitis
Aromatic Hydrocarbon (Benzene)	PEL: 1.0 ppm REL: 0.1 ppm TLV: 0.5 ppm IDLH: 500 ppm	7.8% 1.2% 12^0F 9.24 eV	Inh., Ing., Con.	Carcinogen (leukemia) Eye & respiratory irritant
Aromatic Hydrocarbon (Toluene)	PEL: 200 ppm REL: 100 ppm TLV: 50 ppm IDLH: 500 ppm	7.1% 1.1% 40^0F 8.82 eV	Inh., Ing., Con.	Eye irritant, dermatitis, liver damage
Aromatic Hydrocarbon (Ethyl Benzene)	PEL: 100 ppm REL: 100 ppm TLV: 100 ppm IDLH: 800 ppm	N/A N/A N/A N/A	Inh., Ing., Con.	GI disturbance, anemia, tremors. Plumbism.
Xylenes	PEL 100 ppm TLV 100 ppm REL 100 ppm IDLH 900 ppm	1.0 to 7.0	Inhalation, dermal, ingestion, eyes	Eyes, respiratory tract, skin, CNS, blood, kidneys, liver.
Nuisance dust	PEL:15 total/5 resp	Varies	Inh.	Irritates eyes, skin, throat,

TABLE 5.1 CHEMICAL HAZARDS				
Chemical	PEL REL TLV IDLH	UEL LEL Flash Point IP	Routes of Exposure	Acute and Chronic Health Hazards
(particulates NOR)	mg/m^3 REL: NE TLV: 10 total/3 resp		Con.	upper respiratory system

Key of Abbreviations			
Carc.	Carcinogen	LEL	Lower Explosive Limit
Con.	Contact	PEL	Permissible Exposure Limit
IDLH	Immediately Dangerous to Life and Health	SA	Skin Absorption
F.Pt.	Flash Point	TLV	Threshold Limit Value
Inh.	Inhalation	UEL	Upper Explosive Limit
Ing.	Ingestion	VP	Vapor Pressure
IP	Ionization Potential	f/cc	Fiber per cubic centimeter

5.1.1 MSDS and Right–To-Know

ENTACT maintains its own HazCom Station at the ENTACT office trailer. ENTACT will communicate the hazards of chemicals to all associates through the Hazard Communication Program as outlined by Title 29 Code of Federal Regulations 1910.1200. The use of chemicals is anticipated to be minimal at the site. A brief list is included below of certain chemicals that may be necessary. Any additional chemicals used will be added to the list and the MSDS will be added to the Hazard Communication folder or binder located at the ENTACT project trailer or administrative offices.

- Gasoline
- Diesel
- Hydraulic Oil
- Motor Oil
- Lime Kiln Dust (LKD)
- ODEX/BioSolve

OSHA and the EPA have established a chemical safety data bank for quick reference to over 800 chemicals. While this does not replace the need for MSDS it is a quick reference for chemical safety and PEL information.

http://www.osha.gov/web/dep/chemicaldata/#target

5.2 NON-CHEMICAL HAZARDS

Physical hazards, such as those associated with excavation, heavy equipment, debris removal,

and other construction activities, will likely pose the greatest potential for injury at the site because chemical exposure shouldn't exist. Physical hazards can be caused by the following:

- Underground And Overhead Utilities
- Trenching And Excavation
- Weather
- Fire And Flammable Liquids
- Traffic And Motor Vehicles
- Hazardous Energy Sources (LOTO)
- Shock Or Electrocution
- Repetitive Stress Injuries
- Hot Work
- Earthquake
- Steep Slopes
- Animal droppings
- Unauthorized personnel
- Poison ivy, oak, and sumac
- Heavy Equipment
- Noise
- Slip, Trip, And Fall Hazards from uneven terrain
- Debris Removal And Material Handling
- Hand Injuries
- Locally Fabricated And/Or Modified Equipment
- Off-Site, Non-Work Related Injuries Or Illnesses
- Hauling Trailers
- Water Hazards
- Active oil lines
- Truck traffic loading out material
- Red bag wastes
- Deer
- Ticks, spiders, mosquitoes and other biohazards

5.2.1 Underground and Overhead Utilities

Before heavy equipment is used, all utilities (electricity, natural gas lines, water lines, sewer lines, etc.) must be identified. ENTACT will contact Blue Stakes of Utah @ 800-662-4111 and/or the Nationwide Underground Utility Locate Center at 811 for locating utilities and pipelines on the property. Blue Stakes will notify you by email confirmation once it has received and processed your locate request. Blue Stakes will at the same time notify underground utility operators of your pending excavation who are allowed by law 48 hours (2 business days) to locate and mark their facilities before you may begin your excavation project. A locate request is valid for 14 calendar days from the date the request is submitted. If excavation on a specific locate request continues beyond the initial 14 calendar day period, an excavator must update the locate request at least 2 business days prior to the expiration date and time of the request being updated to ensure a valid locate request will exist beyond the expiration time frame of the request being updated. Locate requests updated in this manner will be valid for 14 calendar days from the day on which the request being updated expires. An update notice must be given in like manner for each succeeding 14 calendar day period excavation activity continues. Each day before work begins, utility locations will be discussed as they relate to planned activities. Deviation from planned activities must be discussed and approved by the FPM and the HSO. Additional training that addresses working around high voltage overhead electrical lines will be completed in the site orientation.

CALL BEFORE YOU DIG
YOU MUST CALL FOR A FREE MARKOUT THREE FULL BUSINESS DAYS BEFORE YOU DIG
1—800-662-4111

Requirements for working around power lines:

- Equipment shall be operated no closer than 15 feet to a power line except when the lines have been de-energized, visibly grounded and LO/TO procedures have been implemented or barriers are present to prevent physical contact with the lies. (The 10 foot ruling is for lines 50 kV or less; above 50 kV requires 10 feet plus 0.4 inches for each 1 kV over 50 kV.)
- Where spacing does not provide 15 feet of clearance in the fall radius area for the height of the equipment plus appendages, de-energize or ensure that work crews are trained in recognizing the extraordinary electrical hazards prior to starting work.
- Post "CAUTION – ENERGIZED OVERHEAD POWER LINE" sign to warn against potential overhead power line hazards or unsafe practices.
- Conduct tailgate safety meeting on electrical and rig safety. Identify hazardous energy sources and proper lock-out/tag-out procedures (i.e., electrical, mechanical, hydraulic, pneumatic, chemical, and therma0).
- Conduct tailgate safety meeting on electrical safety. Identify hazardous energy sources and proper lock-out/tag-out procedures.
- Review emergency response plan.

Table 5.2
Requirements for Equipment Operation
Near Power Lines (29 CFR 1926.550)

ACTIVITY	LINE RATING	MINIMUM CLEARANCE
Equipment Operation	< 50 kV	10* feet
	> 50 kV	10* feet + 0.4 inches per each kV over 50 kV, or 2 times the length of the line insulator (minimum of 10* feet)
In transit with no load and boom lowered	< 50 kV	4 feet
	> 50 kV to 345 kV	10* feet
	345 kV to 750 kV	16 feet

Note: kV = kilovolts *CEMC requires 15 feet

Abandoned utilities slated for removal must be verified as de-energized or out of service prior to attempted removal. Also see ENTACT's Utility Locate Policy and guidelines for Working Near Overhead and Underground Utilities.

5.2.2 Heavy Equipment

Heavy equipment and its operation can represent a significant safety hazard if proper experience is not combined with site-required procedures. Only trained and experienced personnel will perform operation of heavy equipment. Personal protective equipment (PPE) such as steel-toed shoes, safety glasses or goggles, hearing protection, hard hats, and high visibility vests must be worn whenever such equipment is present. Equipment will have a fire extinguisher on board and a working backup alarm. See ENTACT's Heavy Equipment safety policy for additional requirements for heavy equipment.

Safety rules for operators and ground based workers:

1) *Good communication is essential*. A standardized set of hand signals should be used by the operator and spotter. Operators should always know exactly where all spotters are located, and the wearing of high visibility vests will help the operator to locate them quickly. The equipment shall have a back up warning alarm that can be heard by all nearby workers. Two-way radios may also be used.
2) *Heavy equipment must have a rollover protective structure* (ROPS) meeting OSHA requirements. The ROPS is designed to protect the operator if the machine tips over. A seat belt must be worn so that the operator will not be thrown out of the seat during a rollover or upset situation. If working on slopes, avoid moving across the face of the slope. Operate up and down the slope face if possible.
3) *Wear hearing protection when required.* If it has been determined that noise levels around the equipment could potentially cause hearing loss, protective plugs or muffs will be used around the equipment.
4) *Never jump onto or off the equipment*. Operators should always use the three-point contact rule when climbing onto or off heavy equipment. The three-point rule means having both feet and one hand, or one foot and both hands in contact with the ladder access at all times.
5) *Inspect and service the equipment regularly.* Complete equipment service in accordance with the manufacturer's recommendation. Daily safety inspections on all components of the equipment shall be done by qualified personnel. Inspect the steering system and brake systems carefully. A pre-use walk around inspection by the operator is required.

- Restrict entry onto site of non-essential personnel.
- Establish Controlled Entry Points to site.
- Coordinate Operations of Various Trades Working in the Same Areas.
- Provide Fundamental Site Rules and Training to all Persons at Risk.
- Adequate Lay-Down Areas Established.
- All employees who are at risk must receive basic indoctrination.
- Absolute need to address problem with employees on a regular basis. (Toolbox Safety Meetings).
- Employees must learn, follow, and obey established rules.
- Realize that they must see, and be seen.
- Identify Potential Known Hazards.
- Job Conditions: Haul Roads, Access Points.
- Lay down/Storage Areas.
- Office, Tool, Storage and Change Trailers.

- Methods of Construction, (increases Risk?)
- Also, Consider: Unwanted side effects of the Job Schedule.
- Perimeter Fencing, Enclosures, signs.
- Spotters provided for in-the-blind, backing machines and/or equipment.
- Poor Planning Forces Workers to Commit Unsafe Acts! (office trailers, change trailers, haul roads, parking areas).
- Be Alert; Stay Clear; Hear Warnings.
- Temporary Barricades around Hazards
- Machine in Proper Working Order.
- Back-up Alarm, Horn, Lights, and Mirrors.
- Cab Glass not Cracked or Broken.
- Machine Windows, Mirrors, kept Clean.
- Pre-Operational Inspection conducted by Operator.
- Prompt Repair of Any Noted Deficiencies!
- The Most Dangerous Movement is Backing!
- Know Where your Blind Spots Are.
- Look For People on Foot Around You.
- **STOP!** When Signaled; When Waived at Violently; Or If You Are In Doubt….
- Maintain a Safe Operating Speed

5.2.3 Trenching and Excavation

Excavation and trenching activities shall comply with OSHA 29 CFR 1926.650 Subpart P. ENTACT's Excavation and Trenching Policy provides excavation and trenching requirements that will be followed if site activities or conditions warrant. Excavation inspections are only required when employee exposure can be reasonably anticipated.

There are several protective systems for trench safety to choose from, including sloping, benching, shoring and shielding. Sloping and benching each protect workers by cutting back the trench wall at an angle inclined away from the excavation. Shoring is used when the location or depth of the cut makes sloping back to the maximum allowable slope impractical. Aluminum hydraulic shoring protects workers by preventing soil movement. Hydraulic shoring provides a safety advantage over timber shoring because workers do not have to enter the trench to install them.

- Trench boxes, or shielding, are different from shoring because it is primarily intended to protect workers from cave-ins rather than support the trench wall. The excavated area between the outside of the trench box and the wall of the trench should be as small as possible. This space between the trench box and the excavation side must be backfilled to prevent lateral movement of the box. The box must extend at least 18 inches above the surrounding area if there is sloping toward the excavation or if the spoils pile is closer than two feet from the edge of the excavation. Likewise, shields may ride two feet above the bottom of the excavation, provided they are calculated to support the full depth of the excavation and there is no sloughing or raveling under or behind the shield. OSHA standards require that the "competent person" inspect the jobsite daily or as conditions change to eliminate any excavation hazards. According to OSHA's definition, ma

competent person "is an individual who is capable of identifying existing and predictable hazards or working conditions that are hazardous, unsanitary or dangerous to associates, and who has authorization to take prompt corrective measures to eliminate or control these hazards and conditions. Shielding should always be used according t manufacturer's tabulated data.

5.2.3.1 Shield Systems

1. Shield systems shall not be subjected to loads greater than their design capacity.

2. Shields shall be installed to restrict lateral or other hazardous movement of the shield that could occur during cave-in or unexpected soil movement.

3. Associates shall be protected from cave-ins when entering or exiting the shield.

4. Associates shall not be allowed in shields when shields are being installed, removed, or moved vertically.

5. Additional requirements for shields used in trenches:

- Excavation of material to a level no greater than 2 feet below the bottom of the shield system is allowed, but only if the system is designed to resist the forces calculated for the full depth of the trench. There shall be no indications while the trench is open of a possible loss of soil from behind or below the bottom of the shield system.

5.2.4 Noise

Heavy equipment and other construction activities may produce noise levels above acceptable standards. Personnel shall comply with ENTACT's Noise Prevention and Hearing Conservation Policy, 29 CFR 1910.95, and 1926.52. High noise levels (85 dBA or higher) can contribute to hearing loss as well as interfere with communication between associates. Exposure to noise can be expected when working around equipment and machines such as heavy equipment, shears, generators, compressors, jackhammers, and the like. All personnel shall wear hearing-protective devices with a minimum noise reduction rating (NRR) of at least 25 (either earplugs or muffs) if they are within 25 feet of such operating equipment or when noise levels interfere with normal speech. Hand signals will be established by on-site personnel as appropriate to facilitate communications while involved in high-noise activities.

- Place generators, compressors, and other noisy equipment at a distance or behind a barrier.
- Move noisy operations to isolated areas or away from other tasks or operations.
- Locate work areas such as office trailers, and break areas away from noisy operations.
- Keep unnecessary associates out of areas near noisy operations.
- Provide enclosed cabs on heavy equipment.
- Collect noise monitoring data to determine if employees are exposed to noise levels that exceed 90 dBA.

- Use hearing protection as required when working around potential noise sources such as heavy equipment, debris chippers, and chainsaws. Hearing protection must be worn when noise levels exceed 90 dBA. (When hurricane recovery tasks or operations are covered by OSHA's General Industry Standards, OSHA requires that individuals who have standard threshold shifts use hearing protection when noise levels exceed 85 dBA.)
- A useful "rule of thumb:" if you cannot hold a conversation in a normal speaking voice with a person who is standing at arms length (approximately 3 feet), the noise level may exceed 90 dBA.
- Implement a hearing conservation program when noise levels exceed permissible levels in the workplace.

5.2.5 Weather

Hot and cold weather may be encountered as well as thunderstorms and lightning. A break trailer equipped with air conditioning and heating will be part of the site setup. First aid procedures will address precautions and treatment of heat and cold stress. See the first aid kit reference guide, and Heat Stress Prevention and Cold Stress Prevention Policies

Month	Avg. High	Avg. Low	Avg. Precip	Rec. High	Rec. Low
January	39.0 °F	25.0 °F	1.58 in	61.0 °F (01/09/1990)	8.0 °F (01/03/1988)
February	44.0 °F	30.0 °F	1.63 in	67.0 °F (02/25/1986)	-3.0 °F (02/07/1989)
March	53.0 °F	37.0 °F	2.02 in	76.0 °F (03/10/1989)	16.0 °F (03/04/1989)
April	61.0 °F	43.0 °F	2.18 in	86.0 °F (04/27/2000)	26.0 °F (04/11/1991)
May	70.0 °F	51.0 °F	2.31 in	93.0 °F (05/31/1997)	30.0 °F (05/01/1988)
June	82.0 °F	60.0 °F	0.84 in	100.0 °F (06/30/1990)	39.0 °F (06/01/1990)
July	89.0 °F	67.0 °F	0.71 in	101.0 °F (07/17/1998)	50.0 °F (07/02/1992)
August	88.0 °F	66.0 °F	0.64 in	102.0 °F (08/04/1994)	45.0 °F (08/25/1989)
September	78.0 °F	57.0 °F	1.24 in	96.0 °F (09/12/1990)	37.0 °F (09/23/2000)
October	65.0 °F	46.0 °F	1.69 in	86.0 °F (10/10/1996)	23.0 °F (10/30/1991)
November	50.0 °F	35.0 °F	1.65 in	75.0 °F (11/06/1999)	12.0 °F (11/25/1993)
December	40.0 °F	27.0 °F	1.26 in	68.0 °F (12/01/1995)	-6.0 °F (12/23/1990)

5.2.5.1 Thunderstorms and Lightning

Thunderstorms and lightning pose a threat to safety for personnel working outdoors. ENTACT follows the 30 – 30 Rule for lightning safety; at any time when there is less than 30 seconds between a lightning flash and the following thunder work will be suspended and personnel will seek shelter. Work will not resume until 30 minutes after the last lightning strike with an interval less than 30 seconds.

5.2.5.2 Tornado Related Weather

Thunderstorms often produce hail, strong winds, and tornadoes. The damage from a tornado is a result of the high wind speeds and wind-blown debris. Tornado season is generally March through May, although tornadoes can and do occur at any time of the year. They tend to occur in the afternoons and evenings with 50% occurring between 3 p.m. and 7 p.m.

Tornado Watch

A tornado watch defines an area where tornadoes and other kinds of severe weather are possible in the next several hours. It does not mean tornadoes are imminent -- just that you need to be alert, and to be prepared to go to safe shelter if tornadoes do happen or a warning is issued. This is the time to:

- turn on NOAA radio
- verify location of fellow workers and subcontractors
- watch the sky
- make sure you have ready access to safe shelter
- contact your Project Manager so they are aware of the weather conditions

Tornado Warning

A tornado warning means that a tornado has been spotted, or that Doppler radar indicates a thunderstorm circulation which can spawn a tornado. When a tornado warning is issued take immediate cover.

In the event that weather conditions turn dangerous and you need to take immediate cover, use your Site two-way radio to inform the team where you will be seeking shelter.

During a Tornado Warning, if you are:

In the Job Trailer: Get out! You are probably safer outside, even if the only alternative is to seek shelter out in the open. Lie flat on low ground (base of tank berm, ditches) away from vehicles and buildings. Lie flat and face-down, protecting the back of your head with your arms. If possible, use open ground away from trees and cars, which can be blown onto you.

In a car or truck: Vehicles are extremely dangerous in a tornado. If the tornado is visible, far away, and the traffic is light, you may be able to drive out of its path by moving at right angles to

the tornado. Otherwise, park the car as quickly and safely as possible -- out of the traffic lanes. [It is safer to get the car out of mud later if necessary than to cause a crash.] Get out and seek shelter in a sturdy building. If in the open country, run to low ground away from any cars (which may roll over on you). Lie flat and face-down, protecting the back of your head with your arms. Avoid seeking shelter under bridges, which can create deadly traffic hazards while offering little protection against flying debris.

In the open outdoors: If possible, seek shelter in an interior room of a sturdy building. If not, lie flat and face-down on low ground, protecting the back of your head with your arms. Get as far away from trees and cars as you can; they may be blown onto you in a tornado.

After a Tornado: Render aid to those who are injured. Stay away from power lines and puddles with wires in them; they may still be carrying electricity! Watch your step to avoid broken glass, nails, and other sharp objects. Stay out of any heavily damaged structures; they could collapse at any time. Stay away from trees with hanging, broken limb as they may fall. Do not use matches or lighters, in case of leaking natural gas pipes or fuel tanks nearby. Remain calm and alert, and listen for information and instructions from emergency crews or local officials.

5.2.5.6 Flash Flood Conditions

Project location is prone to flash flood conditions. ENTACT will address this issue as a major safety concern for the duration of the project.

Several factors contribute to flash flooding. The two key elements are rainfall intensity and duration. Intensity is the rate of rainfall, and duration is how long the rain lasts. Topography, soil conditions, and ground cover also play an important role.

Flash floods occur within a few minutes or hours of excessive rainfall, a dam or levee failure, or a sudden release of water held by an ice jam. Flash floods can roll boulders, tear out trees, destroy buildings and bridges, and scour out new channels. Rapidly rising water can reach heights of 30 feet or more. Furthermore, flash flood-producing rains can also trigger catastrophic mud slides. You will not always have a warning that these deadly, sudden floods are coming. Most flood deaths are due to **FLASH FLOODS**.

Most flash flooding is caused by slow-moving thunderstorms, thunderstorms repeatedly moving over the same area, or heavy rains from hurricanes and tropical storms.

Occasionally, floating debris or ice can accumulate at a natural or man-made obstruction and restrict the flow of water. Water held back by the ice jam or debris dam can cause flooding upstream. Subsequent flash flooding can occur downstream if the obstruction should suddenly release.

Stay informed about the storm by listening to NOAA Weather Radio, commercial radio, and television for the latest flash flood/flood WATCHES, WARNINGS, and ADVISORIES.

NOAA WEATHER RADIO IS THE BEST MEANS TO RECEIVE WARNINGS FROM THE NATIONAL WEATHER SERVICE. The National Weather Service continuously broadcasts updated weather warnings and forecasts that can be received by NOAA Weather Radios. Average range is 40 miles, depending on topography. Your National Weather Service recommends purchasing a radio that has both a battery backup and a tone-alert feature which automatically alerts you when a watch or warning is issued.

What to Listen For...

- FLASH FLOOD OR FLOOD WATCH: Flash flooding or flooding is possible within the designated WATCH area be alert.
- FLASH FLOOD OR FLOOD WARNING: Flash flooding or flooding has been reported or is imminent take necessary precautions at once.
- URBAN AND SMALL STREAM ADVISORY: Flooding of small streams, streets, and low-lying areas, such as railroad underpasses and urban storm drains, is occurring.
- FLASH FLOOD OR FLOOD STATEMENT: Follow-up information regarding a flash flood/flood event.
- The rule for being safe in a flooding situation is simple: HEAD FOR HIGHER GROUND AND STAY AWAY FROM FLOOD WATERS!

When you receive a ***FLOOD WARNING***:

- If advised to evacuate, do so immediately.
- Move to a safe area before access is cut off by flood water.
- Continue monitoring NOAA Weather Radio, television, or emergency broadcast station for information.

During the flood:

- Avoid areas subject to sudden flooding.
- If you come upon a flowing stream where water is above your ankles, STOP! Turn around and go another way.
- Do not attempt to drive over a flooded road. The depth of water is not always obvious. The road bed may be washed out under the water, and you could be stranded or trapped.

5.2.6 Slip, Trip, and Fall Hazards

Protection from slip, trip and fall hazards will be provided through properly locating equipment, removing trash and debris, and maintaining good housekeeping. Associates will be apprized of any potential trip hazards through regularly scheduled health and safety meetings. Whenever possible, trip and fall hazards will be eliminated or clearly identified with yellow “caution” tape. Impalement hazards to associates will be neutralized as soon as they are identified. ENTACT and subcontractors will be responsible for the use of safety harnesses, lifelines, lanyards, safety nets, etc., for safeguarding their employees when performing elevated work in compliance with 29 CFR 1926.500 Subpart M and ENTACT’s Fall Protection Policy. Fall and slip prevention when fueling heavy equipment is achieved by utilizing hand rails and placement of anti-skid tape

or knurled corrugated metal surfaces. Falls on walking and working surfaces

- Tripping over materials or debris including rocks, stumps, branches and vegetation
- Falling on hills or embankments
- Stepping in holes or walking on irregular ground
- Stumbling while carrying loads that block vision
- Slips or trips in muddy, wet, or icy conditions

Some remedies include

- If possible, avoid walking on muddy, wet, or icy surfaces
- Clear walking/working surfaces of tripping hazards
- Use footwear with ankle support and soles that grip
- Don't carry heavy loads, use hauling equipment
- Practice good housekeeping
- Fill in or mark hidden holes in ground
- Establish travel paths or walkways through work areas. Keep them clear to minimize trip hazards. Remove dropped objects from pathways immediately.
- Ensure that additional equipment brought to the location does not create or pose additional slip, trip, and fall hazards.
- Keep electric cords and cables and pneumatic lines out of travel paths and walkways. If this is not feasible, protect the cord to avoid creating trip hazards and to prevent damage to the cords, cables, and lines.
- Establish barriers and/or mark areas around known hazards such as holes and overhead hazards.
- Take extra care when stepping onto unstable or uneven surfaces, and onto surfaces where the hazard cannot be seen (e.g., underwater surfaces).
- Clean up spilled material as soon as practical to avoid creating a slip hazard.
- Install steps and ramps and properly maintain them. Include slip-resistant treads and smooth handrails that will not cause punctures or lacerations.
- Provide sufficient lighting to safely illuminate work areas.

5.2.7 Fire and Flammable Liquids

Fire extinguishers shall be provided in fuel areas, storage areas, portable buildings and equipment. All extinguishers will be inspected, serviced, and maintained. No burning of materials will take place at the project site. All flammable liquids will be marked and stored in a manner to conform to NFPA and OSHA 29 CFR 1910.39 requirements. Personnel shall comply with ENTACT's Fire Prevention Policy.

Since flammable liquids will be handled during fueling and other project activities, controls must be in place to avoid the generation of static electricity which could spark a fire or explosion. The following controls will be implemented:

- Minimize the free-falling of flammable liquids, since an increase in velocity results in an increase in static electricity;

- Utilize metal containers (steel containment basins, steel buckets, steel frac-tanks, etc.);
- Bonding and grounding.

5.2.8 Debris Removal and Material Handling

Debris removal will be accomplished with equipment and manual labor. Proper PPE, daily work requirements, and good housekeeping (see ENTACT Housekeeping and Manual Handling Policy) must be discussed and maintained. Debris removal will be an ongoing process that has many slip, trip, and fall hazards that must be addressed. Nails, metal panels, sharp edges, heavy loads, and biological hazards are some of the hazards associated with this job. Daily work activities will be discussed each day. Associates will be coached on the importance of stretching to avoid muscle strains.

- Benefits of stretching:
    - Increases flexibility/elasticity of muscles
    - Increases circulation to warm the muscles, improving mental alertness, reducing fatigue
    - Decreases muscle tension and stress

- When to Stretch:
    - Prior to starting your day
    - During short breaks (at least once per hour)
    - After breaks or lunch to prevent fatigue
    - If tension or stress is apparent
    - After a lengthy task duration or an extended awkward posture

5.2.9 Traffic and Motor Vehicle Safety

Site personnel will maintain reasonable dust-free traffic and dust suppression will occur. All traffic will follow typical construction safety practices. Specific on-site and off-site traffic routes will be established to accommodate construction activities. The on-site speed limit is 15 mph?. Traffic routes, parking areas, and pedestrian traffic routes are identified on the site map. There is no public access to the site.

Journey Management Plans will be completed according to Chevron Operational Control requirements as determined by the CEMC PM before work begins and will be updated or revised as necessary for ongoing work activities by the Journey Management Plan Coordinator. Refer to Attachment D – Journey Management Planning for additional information.

Light motor vehicles will be inspected weekly using ENTACT's Company Vehicle Weekly Inspection form. Heavy vehicles will be inspected daily and according to DOT and/or manufacturer requirements.

ENTACT associates must comply with the ENTACT Driver Safety and Cell Phone Policy which states that associates may not talk on cell phones while the vehicle is in motion. This also applies to the use of 2-way radios, GPS, and other electronic equipment that may cause

distraction. Driver and passengers must wear seat belts, no one is allowed to ride in the back of pickup trucks, all cargo must be secured (in cab, on trailer, in bed, etc.).

To avoid injury or equipment/property damage:

- Stay to primary roads and established routes.
- Areas to avoid (i.e. closed road or paths) have traffic precautions posted (road closed signage).
- Always consider using your vehicle as a barrier from hazards.
- Review of Driving JLA and comply with MVS Process.
- Using flaggers and spotters in high hazard areas and conditions (trucking operations, backing up, areas of low or reduced visibility).
- All heavy equipment movements must be coordinated and discussed in PTW meeting to avoid incidents.
- Park in designated areas only.

5.2.10 High-Pressure Cleaning

Decontamination activities may involve pressure washing of truck tires. Decontamination using high-pressure water cleaning above 1,000 PSI can be extremely dangerous and requires specific procedures and training that must be followed. Pressure below 1,000 PSI does not mean that it cannot cause injury or requires any less attention to basic procedures. Precautions are required at all pressures. The use of high-pressure water can cause severe injuries and extreme caution and strict compliance with operating procedures must be followed.

- Only trained personnel will be allowed to use the equipment.
- No portion of the body shall ever be placed in front of the water jet. The jets of water can easily puncture and tear the skin or penetrate deeper causing infection or serious internal damage.
- A job review will be made prior to high-pressure water being used.
- Manufacturer's recommendations and requirements will be followed.
- PPE will include full face piece and metatarsal protection
- Only essential personnel will be allowed in the work area.
- Zero tips are not permitted to be used without authorization by the HSO or FPM

5.2.11 Hand Injuries

The hand is used in every job performed in the field and associates are exposed to the potential for hand injuries while performing various job tasks as described in Section 5. To control this potential loss, ENTACT will educate associates on the site specific hazards that can cause hand injuries (HASP and JLAs) and the hand protection provided, will utilize LPS tools, apply OE Tenets, associates will participate in the development of JLAs, and will perform LPSA's. Hand injuries may be encountered in various ways at this job site:

- Absorption of harmful substances;
- Severe abrasions
- Severe cuts or lacerations
- Punctures

- Pinch points
- Crushing
- Thermal burns
- Repetitive stress
- Chemical burns
- Harmful temperature extremes

Hand hazards and protection specific to the job task will be discussed in the daily tailgate meetings, identified in JLAs, and LPSA's will be performed prior to beginning every job task in order to prevent hand injuries.

Associates will know and understand the hazards that exist while performing their job task. Hazards will be mitigated by:

- Applying the correct level of hand protection as described in Section 7 – Personal Protective Equipment.
- Reviewing the hasp and signing the Acknowledgement Form in Attachment B acknowledging they understand the scope of work and hazards involved.
- Inspecting hand protection PPE prior to use and are responsible for immediate replacement of damaged or worn PPE.
- Perform an LPSA before the hand is to be used.
- Following the "Rules for Safe Use of Hand Tools" located in ENTACT's Hand Safety Policy.
- Performing "Work Commentary" – Associates verbally communicate with each other what is going on and what your co-worker(s) will be doing next.
- Performing "Stop and Lock" – Associates will stop all moving parts before placing hands on them, let the energy out of moving parts, make sure hands are away from potentially moving parts before adding energy. Follow site specific lock-out/tag-out procedures.
- Use Stop Work Authority should any unsafe condition exist.
- Fixed open blade knives are prohibited to be used as a tool. Exceptions can be made, but must be approved by the Chevron Project Manager and ENTACT HSO, and complete the Fixed Open Blade Knife (FOBK) Exception Permit located in ENTACT's Hand Protection Policy.
- Hand stickers will be placed on equipment to remind everyone of pinch points.
- Depending on the job task, brightly colored gloves may be utilized. The HSO, FPM and Chevron PM will make this determination.

All associates will comply with Chevron's Hand Safety requirements and ENTACT's Hand Protection Policy.

GLOVE SELECTION	
DUTY/HAZARD	**TYPE OF GLOVE MATERIAL**
Light Duty Abrasions/loss of grip/absorption	Cotton, Leather, Rubber Coated or Kevlar separately or in combination with nylon / Nitrile / Teflon®

GLOVE SELECTION	
DUTY/HAZARD	**TYPE OF GLOVE MATERIAL**
Medium Duty Laceration/absorption	Leather or Kevlar separately or in combination with nylon / Nitrile / Teflon®
Heavy Duty Laceration/puncture	Kevlar (exposure to sharp or jagged metal, glass, box cutters, etc), stainless core (stainless steel woven into material), HexArmorTM
High Temperature	Kevlar / Nomex / Fiberglass
Low Temperature	Insulating Gloves
Puncture	Aramid, HexArmorTM

5.2.12 Hazardous Energy Sources (Lock-out/Tag-out)

The control of hazardous energy sources is considered a CEMC high risk work activity. Personnel shall comply with ENTACT's Lock-Out/Tag-Out Policy, Permit to Work procedures, and 29 CFR 1910.147 regulations. Sources of hazardous energy on site include:

- Excavators
- Long reach excavators
- Articulating End Dumps
- Wheel loader
- Dozer

5.2.12.1 Daily Routine Pre-Operation Procedures

Each morning before the equipment is ever turned on the operator should pick up the ignition key from their supervisor and proceed to the equipment location. Upon entering the cab of equipment, the operator will manipulate the levers in the cab to ensure there is no stored energy. After this has been verified, exit and lock the cab door, place the key in the operator's pocket, and continue with the heavy equipment pre-use inspection (i.e. check oil, filters, etc.). The key may not be given to any other person. Each operator is responsible for their assigned piece of equipment. At the end of the day, the operator will turn the ignition key over to the FPM and will pick up the key the next day after the morning tailgate meeting. The operator will perform an LPSA to identify any potential hazards and will utilize stop work authority if conditions are identified as unsafe or questionable.

5.2.12.2 Site Specific Procedures (Out of Service Equipment or Machines)

Site specific lock-out/tag-out procedures cover the servicing and maintenance of machines and equipment in which the unexpected energization or start up of the machines or equipment, or release of stored energy could cause injury to employees. Site specific lock-out/tag-out procedures are located in the Lock-Out/Tag-Out binder.

5.2.12.3 Identification of Authorized Personnel

Authorized personnel for lock-out/tag-out activities at the site include:

- Primary authorized person – Operators (see training matrix for identification of these individuals by name); third-party mechanic shall be identified by name when on-site.
- Alternate authorized person – Ross DeAmbrogio, HSO

5.2.12.4 Designation of Locks

If designed hasps are present, locks will be applied. Locks may only be removed by authorized personnel. Locks will be distinguished as follows:

- Red – primary authorized person (third-party mechanic)
- Blue – alternate authorized person (HSO)

5.2.12.5 Usage of Tags

"Do Not Operate" tags identifying the authorized person, purpose, date and time applied will be affixed to the starter switch or steering controls of the equipment or machinery.

5.2.12.6 Responsibilities

An authorized employee is the individual who uses the lock-out/tag-out procedure on a vehicle or piece of equipment that is to be serviced or maintained. An affected employee is the individual whose job requires him/her to operate or use a vehicle or piece of equipment on which servicing or maintenance is being performed under the lock-out/tag-out procedure. This also pertains to any employee whose job requires him/her to work in an area where servicing or maintenance is being performed.

An authorized employee and an affected employee can be the same person when the affected employee's duties also include performing maintenance of service on a machine or equipment that requires the lock-out/tag-out procedure.

The authorized employee will:

- Plan the activity.
- Notify all affected employees in the area of work.
- Shut down the equipment at the operating controls.
- Isolate all energy sources to equipment.
- Dissipate all stored or residual energy sources.
- Verify the isolation.
- Operating start controls, engaging levers, inspecting lock-out devices, disconnect switches, etc. to make sure that all energy sources have been isolated and controlled.
- Terminate the lock-out/tag-out event.
- Update the log book.

The affected employee will protect their safety and the safety of others by:

- Staying clear of the area as much as possible.
- Never attempting to assist.
- Reporting all unusual situations to their supervisor.
- Never bypass or remove lock-out/tag-out devices.

5.2.12.7 Primary Authorized Person Not Available

If the primary authorized person is not available to remove a lockout tag out device, that device may be removed under the direction of the alternate authorized person. The alternate authorized person will perform the following:

- Verify that the primary authorized employee who applied the device is not at the project site;
- Make all reasonable efforts to contact the primary authorized employee to inform him/her that his/her lockout or tag out device has been removed; and
- Ensure that the primary authorized employee has this knowledge before he/she resumes work.

5.2.13 Locally Fabricated and/or Modified Equipment

Locally fabricated or modified pieces of equipment can expose the workforce to unacceptable risks. The use of locally fabricated and/or modified equipment is be prohibited unless it meets appropriate requirements for design, manufacture, certification, and maintenance as defined by applicable industry standards, local standards, and/or company standards. Proper authorization must be obtained to modify equipment.

Locally fabricated or adapted fit-for-purpose devices can fail. The consequences can include fatalities, injuries, and equipment down time.

- Do not modify or manufacture any equipment without proper authorization.
- Ensure clear instructions on the design, manufacture, certification, and maintenance of locally fabricated or modified equipment are provided.
- Remove from service equipment found to be damaged, not appropriate for the intended task, with unauthorized modifications or without certifications.
- Do not accept workplace modifications to equipment without proper authorization.

5.2.14 Shock or Electrocution

Workforce protection from shock or electrocution requires highly sensitive and fast ground-fault protection. The Ground-Fault Circuit-Interrupter (GFCI) or Sensitive Residual Current Device (RCD) can protect personnel from shocks and prevent electrocutions. Personnel will use GFCIs or RCDs on all cord-connected electric power tools and other cord-connected devices.

GFCI or RCD devices will be inspected prior to use to ensure they are in proper working order. If the device does not trip during a test, it will be replaced before performing any work. Personnel shall comply with ENTACT's Electrical Safety and GFCI Policies.

5.2.15 Off-Site, Non-Work Related Injuries or Illnesses

If an associate suffers an injury or illness that occurs off-site and is not work related, the associate must report this immediately to the HSO or FPM. Depending on the circumstances, the associate may be referred to the occupational clinic to ensure the associate is fit for duty and does not present a risk to his/her self or others in the work environment.

5.2.16 Repetitive Stress Injuries

Repetitive stress injuries occur when an associate performs the same motion over and over throughout the day. Typing, lifting, bending, and repetitive use of levers and controls are all repetitious motions that, performed repeatedly, can lead to repetitive motion injuries. There are ways to prevent these types of injuries.

- Ergonomics training.
- Perform conditioning exercises before performing a repetitive task. Stretch the body part that will be used for the task to prevent repetitive motion injuries.
- Take breaks from a repetitive motion to avoid injury.
- Use tools designed to ease the tension of repetitive motions. Use wrist pads or wrist braces when typing, or use dollies or hand carts when lifting and moving heavy objects.
- Make sure the back is straight at all times when lifting. In addition, good posture helps to prevent repetitive stress injuries.
- Exercise on a regular basis to strengthen and tone joints and muscles.
- Utilize mechanical means to move heaving objects.

5.2.17 Hauling Trailers

The hauling of trailers is limited to vendor delivery and pickup of the office and supply trailers during project mobilization and demobilization.

Care will be exercised to ensure that hitches and coupling mechanisms are inspected prior to use and are properly sized for the load. Trailers will be inspected for serviceability, rated capacity, electrical wiring, tires, and brakes. Operators of the tow vehicle will be experienced with trailer hauling and will posses the skills necessary to safely tow and maneuver the trailer. When hitches are not in use, they are to be removed and properly stored.

- Determine how much weight is needed to tow and compare with the vehicle's tow rating. Overloading a vehicle reduces braking capability, places undue stress on components and can lead to shortened service life or failure.
- For optimum handling, the trailer must be properly loaded and balanced. Keep the center-of-gravity low for best handling. Approximately 60% of the cargo weight should be in the front half of the trailer and 40% in the rear.
- When towing a trailer, drive at approximately half the speed that you would normally be going. When you are braking, allow for much more time to stop. When changing lanes or turning, go slower and allow for greater room. Always be sure to check tire pressure.
- When hitches are not used on a daily basis, they will be removed and properly stored to eliminate potential hazard.

5.2.18 Hot Work

Hot work is considered a CEMC high risk work activity and will comply with OSHA 1910.252(a)(2)(III), National Fire Protection Association requirements, and ENTACT's Hot Work Policy. Work activities that involve ignition sources such as heat, spark or flame and are used in sufficient intensity to cause the ignition of any flammable or combustible material will require a Hot Work Permit. These work activities may include, but are not limited to:

- Welding, brazing, or soldering
- Grinding
- Abrasion blasting, high pressure hydro-jet
- Torch cutting

If at any time during the hot work operation a change in conditions at the work area is suspected, such as release of flammable gases or vapors, work will be stopped immediately and the supervisor will be notified. Such work stoppage invalidates the Hot Work Permit, and a new permit will be completed after inspections and atmospheric tests have been performed by a supervisor as applicable.

5.2.18.1 Compressed Gas Cylinders (Construction Industry (29 CFR 1926)

- 1926 Subpart D, Occupational health and environmental controls
- 1926.65, Hazardous waste operations and emergency response
- 1926 Subpart J, Welding and cutting
- 1926.350, Gas welding and cutting
- Cylinders stored inside of buildings shall be stored in well protected, well ventilated, dry location at least twenty **(20)** feet from highly combustible materials such as oil or excelsior.
- Cylinders shall be stored only in assigned areas and secured to prevent tipping.
- Assigned storage spaces shall be located where cylinders will not be knocked over or damage by passing or falling objects or subject to tampering by unauthorized persons.
- Empty cylinders shall have their valves closed.
- Acetylene cylinders shall be stored valve end up.
- Valve protection caps (where the cylinder is designed to accept a cap) shall always be in place, hand tight, except when cylinders are in use or connected for use.
- Fuel gas cylinder storage (LP gas) inside a building , except for those cylinders in actual use or attached ready for use, shall be limited to a total gas capacity of 2,000 cubic feet or 300 pounds of liquefied petroleum gas.
- Cylinders shall be kept away from radiators and other sources of heat.
- Full cylinders of oxygen and fuel gas should be used in rotation as received from the supplier.

5.2.18.2 Safety Precautions

Oxygen, nitrogen, argon, helium, carbon dioxide, hydrogen, acetylene, Linde FG-2, ethylene

oxide, sterilant mixtures and specialty gases, have properties that can cause serious accidents, injuries, and even death if proper precautions and safety practices are not followed. Therefore, be certain to use the applicable safety precautions described in this procedure during handling and use of these gases. Gas equipment manufacturers-operating instructions are to be followed exactly.

- Read the label on all cylinders before use to identify the cylinder contents. If the label is not legible or is missing, do not assume that the cylinder contains a particular gas, but return the cylinder to the gas supplier. Observe all safety precautions set forth on the cylinder label.
- Secure all cylinders to suitable cylinder carts, benches, walls, posts or racks so that they cannot be knocked or pulled over accidentally.
- Cylinders must not be tipped over or dropped and must be moved with a cylinder hand truck.
- Persons preparing cylinders for use shall wear gloves constructed of impervious materials, rubber aprons, safety glasses with side shields and if deemed necessary, a complete face shield.

5.2.18.3 Transportation and Handling of Compressed Gas Cylinders

When transporting cylinders by a crane or derrick, a cradle, boat or suitable platform shall be used. Slings or electric magnets shall not be used for this purpose. Valve protection caps (where cylinder is designed to accept a cap) shall always be in place.

- Cylinders should be moved by tilting and rolling them on their bottom edges. Dragging and sliding cylinders should be avoided. When cylinders are transported by vehicle, they must be secured in position. Cylinders shall not be dropped or struck or permitted to strike each other violently.
- Valve protection caps shall not be used for lifting cylinders from one vertical position to another. Bars shall not be used under valves or valve protection caps to pry cylinders loose when frozen to the ground or otherwise fixed; the use of warm (not boiling) water is recommended. Valve protection caps are designed to protect cylinder valves from damage. Before raising cylinders provided with valve protection caps from a horizontal to a vertical position, the cap should be properly in place. The cap should be turned clockwise to insure that the cap is hand tight.
- A suitable cylinder truck, chain or other steadying device shall be used to keep cylinders from being knocked over while in use.
- Unless cylinders are secured on a special truck, regulators shall be removed and valve protection caps, when provided for, shall be put in place before cylinders are moved.
- Cylinders not having fixed hand wheels shall have keys, handles or non adjustable wrenches on valve stems while these cylinders are in service. In multiple cylinder installations, only one key or handle is required for each manifold.
- Cylinder valves shall be closed before moving cylinders.
- Cylinder valves shall be closed when work is finished.
- Valves of empty cylinders shall be closed.

- Cylinders shall be kept far enough away from welding or cutting operation so that sparks, hot slag or flames will not reach the cylinder. If this not possible, a fire resistant shield shall be provided.
- Cylinders shall not be placed in an area where they might come in contact with or become part of an electric circuit. Contacts with third rails, trolley wires, etc. shall also be avoided. Cylinders shall be kept away from radiators, piping systems, layout tables, etc. that may be used for grounding electric circuits such as the tapping of an electrode against a cylinder to strike an arc.
- Cylinders shall never be used as rollers or supports, whether full or empty.
- The numbers and markings stamped into cylinders shall not be tampered with or changed.
- Empty cylinders should be marked "Empty" or "MT" segregated from full cylinders and promptly returned to the supplier with valve protection caps in place. All valves shall be closed.
- No person, other than the gas supplier, shall attempt to mix gases in a cylinder. No one, except the owner of the cylinder or person(s) authorized the owner, shall refill a cylinder.
- No one shall tamper with or remove cylinder or valve safety devices.

Use - Oxygen Cylinders

- Cylinders shall not be dropped or otherwise roughly handled.
- Unless connected to a manifold, oxygen from a cylinder shall not be used without first attaching an oxygen regulator to the cylinder valve. Before connecting the regulator to the cylinder valve, the valve shall be opened slightly for an instant and then closed. Note: This action is generally termed "cracking" and is intended to clear the valve of dust or dirt that otherwise might enter the regulator.
- A hammer or wrench shall not be used to open cylinder valves. If valves cannot be opened by hand, the supplier shall be notified.
- Cylinder valves shall not be tampered with nor should any attempt be made to repair them. If a problem or potential safety hazard is experienced, the supplier should be called or sent a report promptly indicating the character of the problem/hazard and the cylinder's serial number. The instructions given by the supplier as to the disposition of the cylinder shall be followed.
- After a regulator is attached, an oxygen cylinder valve should be opened slightly at first so that the regulator cylinder pressure gage hand moves up slowly; then the valve can be opened all the way. If the high pressure is suddenly released, it is liable to damage the regulator pressure gages. Always stand to one side of the regulator (not in front of the glass covered gage faces) when opening the cylinder valve.
- When the oxygen cylinder is in use, the valve should be opened fully in order to prevent leakage around the valve stem. Complete removal of the stem from a diaphragm type cylinder valve shall be avoided.

Use - Fuel. Gas Cylinders

- Fuel gas cylinders shall be placed with valve end up whenever they are in use. Liquefied gases shall be stored and shipped with the valve end up.

- Cylinders shall be handled carefully. Rough handling, knocks, or falls are liable to damage the cylinder, valve or safety devices and cause leakage.
- Before connecting a regulator to cylinder valve, the valve shall be opened slightly and closed immediately. This action is generally termed 'cracking" and is intended to clear the valve of dust or dirt that otherwise might enter the regulator. The valve shall be opened while standing to one side of the outlet; never in front of the cylinder.. Never crack a fuel gas cylinder valve near other welding work or near sparks, flame or other possible sources of ignition.
- Before a regulator is removed from a cylinder valve, the cylinder valve shall be closed and the gas released from the regulator.
- Nothing shall be placed on top on an acetylene cylinder when in use which may damage the safety device or interfere with the quick closing of the valve.
- If the valve on a fuel gas cylinder is opened and there is found to be a leak around the valve stem, the valve should be closed and the gland nut tightened. If this does not stop the leak, the use of the cylinder should be discontinued. The cylinder should be removed to the outdoors, properly tagged and the supplier advised of the problem. In case the fuel gas should leak from the cylinder valve, and cannot be shut off with the valve stem, the cylinder should be removed to the outdoors, properly tagged and the supplier notified. A regulator may be attached to a cylinder valve to temporarily stop a leak through the valve seat.
- If a leak should develop at a fuse plug or other safety device, the cylinder should be removed to the outdoors well away from any source of ignition. The cylinder valve should be opened slightly and the fuel gas allowed to escape slowly.
- A warning sign or tag shall be placed near cylinders having leaking safety devices the caution persons not to approach the area with an ignited cigarette or other source of ignition. The supplier shall be promptly notified and the tank returned according to the instructions given by the suppler.
- Safety devices shall not be tampered with or removed..
- Fuel gas shall never be used from cylinders through torches or other devices equipped with shut-off valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.
- The cylinder valve shall always be opened slowly.
- An acetylene cylinder valve shall not be opened more than 1 and 1/2 turns of the spindle and preferably no more than 3/4's of a turn.
- Where a special T-wrench is required, the wrench shall be left in position on the stem of the valve while the cylinder is in use so that the fuel gas flow can be quickly turned off in case of emergency. In the case of manifold or coupled cylinders, at least one wrench shall always be available for immediate use.

5.2.18.4 Cylinder Makings

Compressed gas cylinders shall be legibly marked for the purpose of identifying the gas content with either the chemical or the trade name of the gas. These markings shall be by means of stenciling, stamping or labeling and shall not be readily removable. Whenever practical, the markings shall be located on the shoulder of the cylinder.

Compressed gas cylinders will be inspected twice per calendar year in accordance with the following guidelines. Any cylinders failing to meet these guidelines will be removed from service.

Dents - Dents are deformations caused by the cylinder coming in contact with a blunt object in such a way that the thickness of metal is not normally impaired. Only cylinders that have major dents that do impair the metal wall will be removed form service.
Cuts - gouges and digs - These are deformations caused by contact with a sharp object in such a way as to cut into or upset the metal of the cylinder, decreasing the wall of thickness at that point. Cylinder that have cuts, gouges and digs that decrease the thickness of the metal wall will be removed from service.
Corrosion and pitting - Cylinder that have corrosion and pitting in the cylinder involving the loss of wall thickness caused by a corrosive media will be removed from service.
Bulges - Cylinders which have definite bulges will be removed from service.
Neck - The cylinder neck will be examined for serious cracks, folds and flows. Neck cracks are determined by testing with a soap solution. Cylinders found to have a serious neck crack will be removed from service.
Foot-Ring and Head-Ring - Cylinders will be removed from service when the head-ring and/or foot-ring becomes so distorted that they no longer 1) maintain the cylinder in a normal upright position or 2) when the head-ring becomes so distorted it no longer adequately protects the valve and the neck area of the cylinder. Cylinders valves, couplings, regulators, hoses and other apparatuses shall be kept free from oily or greasy substances.

5.2.19 Water Hazards

Work within 5 feet of a water body is a CEMC high risk work activity and will follow appropriate safety precautions. Personnel flotation devices (PFD) are required and must meet U.S. Coast Guard requirements. The buddy system will be enforced at all times. No one will work alone. In addition to PFDs, life rings with suitable lengths of rope will be made available when working near swiftly moving water or that of depths greater than 3 feet. Work near water is primarily defined as that work which involves a potential danger of drowning.

5.2.19.1 Throwing Rings

Type IV Personal Flotation Devices (PFDs) are U.S. Coast Guard approved "ring life buoys" typically referred to as "life rings" or “throwing rings” are required for work near water.

- The interval between rings shall not exceed 200 feet and/or throwing rings must be within 100 feet of work.
- Maintain 90 feet of retrieval line attached to throwing rings.
- These devices or equivalent length rescue throwing bags shall also be used where there are potential entrapment hazards such as bogs, lagoons, quick sands, or deep mud.

5.2.19.2 PFD Vests

- Only Coast Guard approved work vests will be used. Vests will be inspected before each use.
- PFDs used as work vests may be Type I, II, III, or V PFDs. A Type V PFD, including Type V Hybrid PFDs, is acceptable only if it is U.S. Coast Guard approved and marked for use as a work vest, for commercial use, or for use on commercial vessels.
- Do not use recreational boating PFDs such as ski jackets for work applications.

5.2.20 Earthquake

Reducing and/or eliminating hazards ahead of time throughout site work areas can greatly reduce the risk of injury or death. Associates will perform LPSA's to help identify and mitigate hazards such as unsecured equipment or tools, computers, bookcases, furniture, unstrapped water heaters or appliances, etc. Securing these items ahead of time will help to protect personnel.

The following may be performed for protection:

- Check for and repair if necessary defective electrical wiring, leaky gas lines, and inflexible utility connections. Get appropriate professional help.
- Bolt down and secure to the wall studs the water heater, refrigerator, furnace, and gas appliances. If recommended by your gas company, have an automatic gas shut-off valve installed that is triggered by strong vibrations.
- Place large or heavy objects on lower shelves. Fasten shelves, mirrors, and large picture frames to walls. Brace high and top-heavy objects.
- Store glass materials and other breakables on low shelves or in cabinets that fasten shut.
- Anchor overhead lighting fixtures.
- Be sure building structures are firmly anchored to its foundation.
- Install flexible pipe fittings to avoid gas or water leaks. Flexible fittings are more resistant to breakage.
- Locate safe spots in each room under a sturdy table or against an inside wall. Reinforce this information by moving to these places during each drill.
- Hold earthquake drills.
- During an Earthquake
    - Minimize your movements during an earthquake to a few steps to a nearby safe place. Stay indoors until the shaking has stopped and you are sure exiting is safe.

If you are	Then:
Indoors	• Take cover under a sturdy desk, table, or bench or against an inside wall, and hold on. If there isn't a table or desk near you, cover your face and head with your arms and crouch in an inside corner of the building. • Stay away from glass, windows, outside doors and walls, and anything that could fall, such as lighting fixtures or furniture.

	• Use a doorway for shelter only if it is in close proximity to you and if you know it is a strongly supported, load bearing doorway. • Stay inside until shaking stops and it is safe to go outside. Most injuries during earthquakes occur when people are hit by falling objects when entering into or exiting from buildings. • Be aware that the electricity may go out or the sprinkler systems or fire alarms may turn on. • DO NOT use the elevators.
Outdoors	• Stay there. • Move away from buildings, streetlights, and utility wires.
In a moving vehicle	• Stop as quickly as safety permits and stay in the vehicle. Avoid stopping near or under buildings, trees, overpasses, and utility wires. • Proceed cautiously once the earthquake has stopped, watching for road and bridge damage.
Trapped under debris	• Do not light a match. Do not move about or kick up dust. • Cover your mouth with a handkerchief or clothing. • Tap on a pipe or wall so rescuers can locate you. Use a whistle if one is available. Shout only as a last resort - shouting can cause you to inhale dangerous amounts of dust.

After An Earthquake

Be prepared for aftershocks. These secondary shockwaves are usually less violent than the main quake but can be strong enough to do additional damage to weakened structures.

- Open cabinets cautiously. Beware of objects that can fall off shelves.
- Stay away from damaged areas unless your assistance has been specifically requested by police, fire, or relief organizations.
- Be aware of possible tsunamis if you live in coastal areas. These are also known as seismic sea waves (mistakenly called “tidal waves”). When local authorities issue a tsunami warning, assume that a series of dangerous waves is on the way. Stay away from the beach.

5.2.21 Local Municipal Hazards

If available, 3-1-1 service is generally implemented at the local level, and in some cities it is also used for various municipal calls. Examples of calls intended for 3-1-1:

- dead animal removal
- debris in roadway
- illegal burning
- non-working streetlamps, parking meters, traffic lights
- noise complaints

- potholes, sinkholes and utility holes in streets

5.2.22 Trucking Activities

This section applies to impacted material transported from the site and materials delivered from off-site.

5.2.22.1 Dumping Locations

Designated dumping locations shall be approved as follows:

- Identified in the project specific subcontract Field Conditions
- Documented and approved through a subcontractor Project Specific Safety and Heath
- Plan submittal.

Designated dumping locations shall meet the following requirements:

- A flat and level surface constructed such as an improved secondary road, parking lot, paved area (concrete, pavement, or similar solid surface).
- An improved flat, level, earthen area adequately compacted and maintained.
- And surface improvement of previously disturbed or unknown soil conditions.

5.2.22/2 Truck Stability

Stability is adversely affected by one or more of the following factors:

- The unit is not on a level surface when dumping.
- A large amount of material is in the upper portion of the raised box.
- Material does not flow out of the top portion of the box, or does not flow out of one side of the top portion.
- The rear wheels settle unevenly as the load moves to the rear during dumping.
- Wind may exert lateral loads, especially if the box is long, as is the case with end-dump semi-trailers.

Stability may also be affected by the unit's mechanical condition:

- Poor rear suspension systems on one side of the vehicle.
- Uneven tire pressures in rear wheels.
- Worn or inadequate components of the lifting system such as pins.
- Worn or inadequate lifting cylinders.

5.2.22.3 Hazard Control and Tipping

Because of stability problems with semi-trailers, they should not be used for haulage to rough grading or fill areas where surfaces are often uneven or loosely compacted. Straight trucks or

straight trucks and pup trailers are more appropriate for highway haulage to these dump areas. Where haulage and dumping are all on site, straight trucks or off-highway vehicles are even better choices.

Where aggregates are being spread for road construction, belly-dump semi-trailers are more appropriate than end-dump semi-trailers.

Sometimes vehicle selection is not an option for the contractor. Material suppliers or haulers do not always use equipment appropriate to a particular site. However, when contractors do have a choice they should select equipment in accordance with these recommendations to reduce tip-over.

Cold weather may cause materials to freeze to the box and stick when dumping. Using heated boxes will reduce the problem. During winter, loads should not be left in dump boxes overnight.

Maintenance can play an important role in preventing tip-over.

- Check tire pressures daily. Tire pressures should be equal on each side of the vehicle.
- Examine and lubricate pins and bushings regularly.
- Inspect suspension systems under load to ensure that they work properly and provide even suspension. Weak suspension systems should be replaced immediately.
- Inspect hoist cylinders regularly. Worn cylinders should not be replaced with smaller cylinders or with cylinders rated at lower operating pressure.
- Make sure that repairs to boxes leave bottom and sides clear and unrestricted. Rough patchwork repairs near the top of the box can catch and hold sticky materials.

Loading of the box front-to-back must meet allowable gross weight and axle weight limitations set by the Ministry of Transportation. From side to side, it is best to load as evenly as possible.

If material is likely to flow poorly, lighten up the load in the top end of the box. A slightly smaller load will be better than a full load that causes a tip-over.

Box liners will help most materials flow well during dumping. Liners also help to keep the box in good condition.

Operators should be trained to recognize areas hazardous to dumping, such as soft or uneven surfaces and inadequately compacted fill.

Before dumping, operators should ensure that the tailgate is unlocked and that the vehicle is on a reasonably level surface. Dumping on surfaces that are not level is one of the main causes of tip-over.

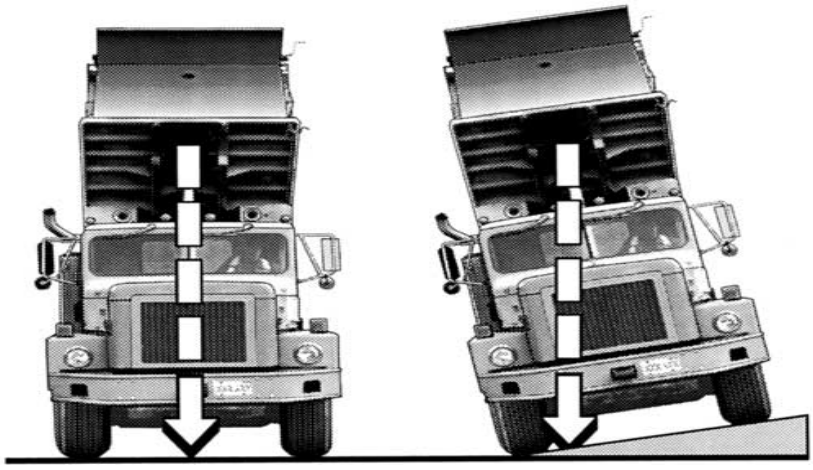
Before spreading material by dumping it from a moving truck, make sure that the entire length of travel is reasonably level.

Trucks should not dump when they are parked side by side with another vehicle. When a dump

unit tips over, it is often the operator in the adjoining vehicle that is injured. Dumping operations should be spread out.

Other personnel such as dozer operators, surveyors, and spotters should be warned not to work near a dumping truck in case it tips over.

Workers on foot should not congregate in areas where dumping is under way.



Slight slope can be enough to cause tipping if material sticks in the top of the box.

5.2.22.4 Hand Signals

 COME TO ME	 MOVE TOWARD ME	 THIS FAR TO GO	 MOVE OUT
Raise the arm vertically overhead, palm to the front, and rotate in large horizontal circles.	Point toward person(s), vehicle(s), unit(s); beckon by holding the arm horizontally to the front, palm up, and motioning toward the body.	Place palms at ear level, facing head, and move laterally inward to indicate remaining distance to go	Face the desired direction of movement; hold the arm extended to the rear; then swing it overhead and forward in the direction of desired movement until it is horizontal palm down.

	**LOWER EQUIPMENT** Make circular motion with either hand pointing to the ground.		**RAISE EQUIPMENT** Make circular motion with either hand at head level.
	**SLOW DOWN** Extend the arm horizontally sideward, palm down, and wave arm downward 45 degree minimum several times, keeping the arm straight. Do not move arm above horizontal.		**START ENGINE** Simulate cranking of vehicles by moving arm in circular motion at waist level.
	**STOP** Raise the hand upward to the full extent of the arm, palm to the front. Hold that position until the signal is understood.		**SPEED UP** Raise the hand to the shoulder, fist closed; thrust the fist upward to the full extent of the arm and back to the shoulder rapidly several times.

5.2.23 Loose Clothing and Jewelry, Proper Attire

Loose clothing, jewelry, or other personal items will not be worn on site. Care must be taken to have an individual's hair pulled back and out of the way of equipment that could catch or entangle the hair. Sufficient space will be maintained around operating machinery to prevent accidental contact that may result from mechanical or human error. Hard-hats must be worn to protect against bumps or falling objects. Safety glasses must be worn y all workers in all areas of the Site except the support zone. Goggles face shields or other forms of eye protection must be worn when necessary to protect against chemicals or other hazards. Steel-toed safety boots with metatarsal protection are also required. The boots must be chemically resistant or protected with appropriately selected boots/coverings where necessary. Unless otherwise specified, normal work clothes must be worn. Long sleeves and gloves are also required whenever necessary to protect against hazardous contact, cuts, abrasions or other possible skin hazards. A daily tailgate safety meeting is conducted to provide information and training necessary to void accidental injury, including assuring that the Site is maintained in such a way that slip, trip and fall hazards are recognized and eliminated or controlled. Additionally, the use of standard OSHA Level D or D+ PPE will be enforced at the Site.

5.2.24 Active Oil and Gas Facilities and Pipelines

How to Identify Pipelines

Pipelines are buried for safety reasons. Since most pipelines are underground, pipeline markers are used to show their approximate location. Installed pipeline markers are usually located at

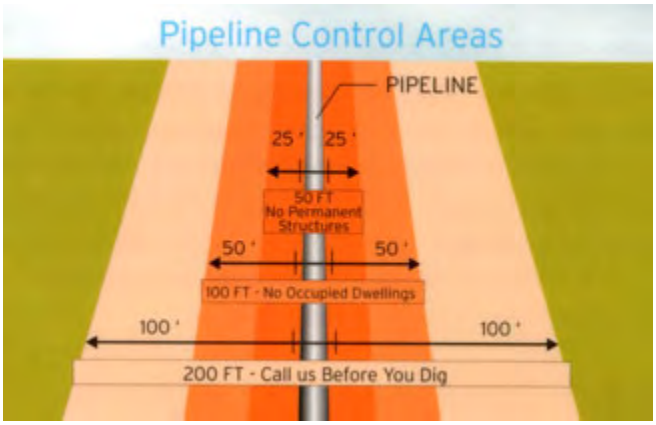
public road, rail and river crossings, and various other places along the pipeline's path. However, you should never assume the exact location of the line. Someone may have moved or removed the marker. It is a criminal offense to willfully deface, damage, remove or destroy a pipeline sign.

Call Before You Dig!

To protect pipelines, other underground utilities, the public and the environment, the state of Utah has developed an excavation notification system. When you call the number listed below, their system will notify all subscribing facilities. The appropriate company will send a representative to the proposed excavation site to mark the location of the buried pipeline.

Watch for Pipeline Signs

In the course of your work, you might encounter our pipeline markers. Pipeline markers identify the general area where our natural gas pipelines run and show our name and phone number. However, it's still important to call the pipeline owner before you dig. Markers indicate the general, but not exact, location of a pipeline. Not all pipelines follow a straight path between two markers and the markers don't indicate how deep the lines are buried.



Reporting an Incident

All scrapes or dents to a pipeline must be inspected. If not properly repaired, such damage could result in a future leak or serious accident. Regardless of how minor the damage appears, don't cover it up! Call the pipeline operator.

How to Identify a Petroleum Pipeline Leak

Often you can see or smell a pipeline leak. The following signs might indicate a petroleum leak:

- A strange or pungent odor near the pipeline
- A hissing or roaring sound (from escaping petroleum)

- A patch of dead or discolored vegetation in an otherwise green setting along a pipeline
- Continuous bubbling in wet, flooded areas or marshlands, rivers, creeks and bayous

If you suspect a leak, please do not attempt to stop the pipeline's flow by closing any valves or operating any of the pipeline equipment. Pipelines are normally operated under high pressure regulated by the product that they transport. Attempting to close valves or the operation of equipment could endanger lives and property.

What to Do if You Suspect a Leak!

The first concern should be for the personal safety of people. Turn off any machinery and/or equipment in the immediate area. Do not create any sparks or heat sources, which could ignite escaping petroleum. For example, do not start a car, turn a light switch on or off, or light a match or cigarette. Turn off any lit gas pilots. Immediately leave the area by foot in a direction away from the vapors or fumes. Warn others to stay away from the leak. Do not drive into or go near the area around the leak. The vehicles engine might ignite the vapor cloud or deplete the oxygen in the cars engine causing it to stall trapping you in the vapors.

5.2.25 Steep and Narrow Roads

1. Do not exceed 20-25 mph.
2. Braking is tricky on gravel and dirt roads since the van can skid easily. Consider using a lower gear to keep your speed down and save the brakes.
3. Look out for washboard (rough, ripple-like conditions) surfaces in the road. These can decrease your control. Slower speeds are required.
4. Consider using the horn on blind curves. At night, you may see the headlights of oncoming vehicles before you meet them. Flash your headlights (high to low and back) as you enter a sharp curve to let oncoming vehicles know you are in the curve.
5. Make U turns only at safe turnarounds, not in the middle of a narrow road.
6. If you can hear the transmission constantly switching in and out of overdrive while driving on hilly terrain, turn the overdrive function OFF.
7. Turn the overdrive function OFF if you downshift to control your speed.

5.2.25.1 Check Operating Conditions

All employees use tools, from office equipment to industrial machinery. Handle a vehicle like you would any tool - use it with respect and keep it in good condition. Check the vehicle frequently - at least once a week - to be sure that brakes, accelerator, belts, radiator, oil, battery, tires, headlights, wipers and brake lights are in good working condition. If you notice anything abnormal in the way the vehicle sounds or operates, have it repaired immediately.

5.2.25.2 Drive Defensively

You cannot assume that everyone on the road is as good a driver as you are. Steer clear of drivers who swerve in and out of lanes, respond slowly to traffic signals, or appear to be driving

erratically. Pay special attention at intersections. Wait before accelerating when a red light turns green, never accelerate through a yellow signal, and always yield the right of way. Pass only in designated passing zones, and only after checking blind spots for clearance. Use the three-second rule for establishing a safe following distance, (when the vehicle in front of you passes a fixed object, like a signpost, begin counting until your vehicle reaches the same object). If you can't count to two before passing the same object, you're too close.

5.3 BIOLOGICAL HAZARDS

Personnel will be cautioned not to disturb insects or animals. First aid kits should include remedies for possible encounters, including equipment for bee or wasp stings and poisonous snakebites. Insect repellents will be available on the site at all times. Personnel with particular allergies to such compounds will be cautioned prior to their application of the chemical makeup. See Attachment C for illustrations of Common Biological Hazards.

Personnel with particular allergies to insect bites and stings will not work in areas where contact is possible unless they notify the HSO of the allergy and carry appropriate allergy intervention kits (EpiPen® etc.) as necessary.

5.3.1 Insect Bites and Stings

Common stinging and biting insects include honeybees, yellow jackets, and ticks. Others include hornets, bumblebees, fire ants, wasps, mosquitoes, brown recluse spiders, and black widow spiders. Insect bites and stings are different due to the nature of the bite or sting. Venomous insects attack as a defense mechanism, injecting painful, toxic venom through their stingers. Non-venomous insects bite and usually inject anti-coagulant saliva in order to feed on blood. Although local irritation and "allergic" reactions do occur from non-venomous bites, severe reactions such as anaphylactic shock only happen from venom stings.

Venomous stings are always very painful, red, and swollen up to 12 inches around the sting site (local reaction). In sensitive individuals, a systemic or "whole body" reaction occurs, with redness, hives (itchy raised skin lumps), and swelling far away from the sting site. These systemic reactions can progress to involve the airways and circulation and may be life-threatening. First aid care and guidance is available in all first aid kits. Symptoms include:

- wheezing or difficulty breathing
- swelling of the lips, eyes, or face
- nausea or vomiting
- tightness in throat or chest
- dizziness or fainting
- swollen and itchy welts, hives or pustules

Some biting insects spread diseases like Lyme, Rocky Mountain Spotted Fever, encephalitis, and malaria, but for most of us their bites cause terrible itching.

The following is a list of preventive measures for insect bites and stings:

- If possible, avoid areas where stinging or biting insects exist.

- Insect repellant prior to fieldwork and/or as often as needed throughout the work shift (insect repellant does not protect against angry stinging insects).
- Wear proper protective clothing (work boots, socks, and light colored pants) and cover as much exposed skin as possible. Tape cuffs of pants and sleeves.

Ticks such as the American dog tick, lone star tick, blacklegged (deer) tick, brown dog tick and winter tick can be encountered at the site. Rocky Mountain Spotted Fever and Lyme Disease can be contracted from tick bites. The best way to protect yourself against tick-borne illness is to avoid tick bites. This includes avoiding known tick- infested areas. However, if you work in areas with trees, tall grass and weeds, follow these precautions:

- Wear protective clothing such as long-sleeved shirts, long trousers, boots or sturdy shoes and a head covering.
- Apply insect repellent containing DEET primarily to clothes.
- Walk in the center of trails so weeds do not brush against you
- Check yourself frequently for ticks.
- If ticks are crawling on the outside of clothes, they can be removed with masking tape or cellophane tape.
- Remove any tick promptly. Do not burn the tick with a match or cover it with petroleum jelly or nail polish. Do not use bare hands to remove the tick because tick secretions may carry disease. Firmly grasp the tick with tweezers as close to the skin as possible and gently, but firmly, pull it straight out. Do not twist or jerk the tick.
- Wash the bite area and your hands thoroughly with soap and water and apply an antiseptic to the bite site.
- If you have an unexplained illness with fever, contact a physician. Be sure to tell the physician if you have been outdoors in areas where ticks were present or traveled to areas where tick-borne diseases are common.

After a tick bite, individuals may develop any of these symptoms:

- feeling as if you have the flu,
- numbness,
- confusion,
- pain and swelling in joints,
- shortness of breath, and
- fever,
- rash,
- weakness,
- palpitations,
- nausea and vomiting.

5.3.2 Wildlife

Construction activities may disturb wildlife resulting in unexpected contact. Use care when entering normally unoccupied areas and avoid cornering a wild animal. Employees are prohibited from hunting, disturbing or capturing native birds, fish or other animals in the vicinity or the work site.

5.3.2.1 Coyotes

Coyotes are mostly active at night and during the early morning and late evening hours. In areas

where they are not disturbed by human activities, and during cooler times of the year, they may be active throughout the day. Urban coyotes are becoming very tolerant of human activities. Young coyotes tend to be more active during daylight hours than adults.

- Never Feed a Coyote - Deliberately feeding a coyote puts you and other personnel at risk. Coyotes are attracted to food, water, and shelter. By leaving food or garbage outside where they can get to it, you may be inadvertently feeding coyotes.
- Use the Proper Type of Trash Can - Use a trash can that closes and/or can clamp shut. If you leave garbage outside, don't use garbage bags as trash containers.
- Clear Brush & Dense Weeds - By clearing these areas, this will reduce protective cover for coyotes and make the area less attractive to rodents. Coyotes may be attracted to areas where rodents are concentrated, such as wood and brush piles and seed storage areas.

In the event that you should ever encounter a coyote, here are several tips from experts:

- Use Negative Reinforcement - If coyotes begin frequenting your area, let them know they're not welcome. Make loud noises, throw rocks, or spray them with a garden hose. For everyone's safety, it is essential that coyotes retain their natural wariness of humans.
- If Coyote Problems Persist - Contact local city government or 911 for assistance.

5.3.2.2 Deer

Most automobile collisions with deer occur between dusk and dawn. Watch for deer where roads pass through wooded or rural areas. The most important thing drivers can do to reduce the chances of an accident with a deer is to drive the speed limit. At night, reduce speeds below the limit, especially in rain, snow or fog. Defensive driving tips to avoid hitting a deer:

- Keep a close watch for deer at dawn and dusk. Deer are most active during these times.
- Be especially alert and drive with caution. Be on the lookout for deer crossing signs and slow down.
- Be aware of your surroundings, just because you don’t see a deer crossing sign posted, it doesn’t mean deer won’t unexpectedly appear.
- Flash your lights or honk your horn to frighten deer away from the side of the road.
- When you encounter deer along the roadside, turn on your emergency lights to let other motorists know about the potential danger.
- Use your high-beam headlights when there is no opposing traffic. The headlight beam will illuminate the eyes of deer and provide greater driver reaction time.
- Upon seeing a deer, immediately slow down. Do not swerve - because this can confuse deer as to where to run. It could also cause you to lose control and hit a tree or another car.
- If you can’t avoid the accident, maintain control of your vehicle. Some experts say that if such a collision is inevitable, you should avoid braking at impact so that the deer may pass underneath your car as opposed to hitting the windshield.
- Look for other deer after one has crossed the road. Deer commonly travel in groups, so

the probability is high that other deer will be in front of or behind the one you've seen.
- Don't rely on hood-mounted deer whistles and other devices to scare away deer.
- Always wear your seatbelt. Most people injured and/or killed in deer - automobile collisions were not wearing their seat belt.
- Finally, remember to ... **SLOW DOWN FOR WILDLIFE!**

If you are unable to avoid a collision with a deer, take the following steps:

- Do not touch the animal! The deer, in attempting to move or get away, could hurt you or itself.
- Remove your automobile from the roadway, if possible.
- Call the police.

5.3.3 Plants

The potential for contact with poisonous plants exists when performing fieldwork at the site. Poison ivy, sumac, oak, and stinging nettle may be present on site. Poison ivy can be found as vines on tree trunks or as upright bushes (poison oak is another name for the bush form of poison ivy). Poison ivy consists of three leaflets with notched edges. Two leaflets form a pair on opposite sides of the stalk, and the third leaflet stands by itself at the tip. Poison ivy is red in the early spring and turns shiny green later in the spring.

Poison sumac can be present in the form of flat-topped shrub or tree. It has fern-like leaves that are velvety dark green on top and pale underneath. The branches of immature trees have a velvety "down." Poison sumac is white and has "hairy" berry clusters.

The stinging nettle grows to 1-2 meter tall in the summer and dying down to the ground in winter. It has very distinctively yellow, widely spreading roots. The soft green leaves are 3-15 cm long, with a strongly serrated margin, a cordate base and an acuminate tip. Both the leaves and the stems are covered with brittle, hollow, silky hairs as a defense against grazing animals. The cause of the sting is from three chemicals - a histamine to irritate the skin, acetylcholine to bring on a burning sensation and hydroxytryptamine to encourage the other two chemicals. Bare skin brushing up against a stinging nettle plant will break the delicate defensive hairs and release the trio of chemicals, usually resulting in a temporary and painful skin rash similar to poison ivy, though the nettle's rash and duration are much weaker.

Contact with poison ivy, sumac, oak, or stinging nettle may lead to a skin rash, characterized by reddened, itchy, blistering skin that needs first aid treatment. If you believe you have contacted one of these plants, immediately wash skin thoroughly with soap and water, taking care not to touch your face or other body parts.

The following is a list of preventive measures:

- Know what the plants look like and avoid them.
- Use OTC poison ivy blocker.
- Wear appropriate protective clothing (long sleeves, pants, gloves, etc.)

If you are exposed, according to the FDA, you should quickly (within 10 minutes):

- First, cleanse exposed areas with rubbing alcohol.
- Next, wash the exposed areas with water only (no soap yet, since soap can move the urushiol, which is the oil from the poison ivy that triggers the rash, around your body and actually make the reaction worse).
- Now, take a shower with soap and warm water.
- Lastly, put gloves on and wipe everything you had with you, including shoes, tools, and your clothes, with rubbing alcohol and water.

5.3.4 Snake Bites

The most common venomous snakes are: the copperhead, the cottonmouth, timber rattlesnake, and the eastern massasauga.

If bitten by a snake, remain calm, keep the affected area below the level of the heart and walk, do not run, to the nearest aid station for assistance. The FPM will immediately transport the victim to the closest medical facility for treatment or send for appropriate medical assistance, whichever is faster. The following precautions should be used when working in areas with snakes:

- Wear appropriate protection equipment (work boots).
- Be alert and aware of surroundings.
- Avoid walking in wooded areas and through bushes, tall grass or brush as much as possible.

The following is a list of preventive measures:

- Be familiar with your surroundings.
- If you see a snake, back away slowly and do not touch it.
- Leave snakes alone. Many people are bitten because they try to kill a snake or get a closer look at it.
- Stay out of tall grass unless you wear thick leather boots or chaps.
- Keep hands and feet out of areas you can't see.
- Be cautious and alert when working around brush and debris.

The American Red Cross recommends the following first aid treatment:

- Wash the bite with soap and water.
- Immobilize the bitten area and keep it lower than the heart.
- Get medical help.

HAZARD ANALYSIS AND MITIGATIONS BY TASK

This section assesses the risks of each major project task, as listed in Table 5.3. A Task Safety Assessment has been prepared and is designed to develop awareness of chemical and physical hazards specific to each task. Information in this section should be discussed in prior to the scheduled start of each new task to be performed and during daily tailgate safety meetings. It is the responsibility of each associate to assess their task and analyze potential risk reduction procedures before performing their job by conducting an LPSA.

It would be impractical to repeat in complete detail each control measure for each job task. Sources and hazards will be addressed for job tasks with reference made to applicable control measures in the following tables and site-specific plans. Tables 5.4 to 5.10 should be posted at the ENTACT Trailer. When the Task Safety Assessment is discussed additional hazards may need to be addressed. In addition to reviewing the Task Safety Assessments, associates and the ENTACT HSO will prepare a JLA for each work process.

Table 5.3
OVERVIEW OF JOB TASKS

Table	Job Task	Hazard Rating	PPE Level
5.4	Mobilization and Site Preparation	Low	D
5.5	Drain the pond	Med to High	D
5.6	Remove existing pond aeration system	Med to High	D
5.7	Remove retaining walls, impacted soils, excavate & stabilize sediments	Med to High	D
5.8	Decontamination of equipment and decontamination waste management	Med to High	D
5.9	Rebuild retaining walls (possible deferred activity)	Med to High	D
5.10	Demobilization and site close-out	Med	D

TASK 5.4 MOBILIZATION AND SITE PREPARATION

Table 5.4 MOBILIZATION AND SITE PREPARATION		
PPE: Level D		Hazard Rating: Med
Hazard	Sources	Control Measures
Soft tissue strains or sprains	Lifting, pulling Handling Materials and Equipment during fence removal and silt fence installation.	Stretching and proper lifting techniques and possible use of mechanical equipment or hand trucks. Working in minimum groups of two.
Vehicles crossing	Utility trucks Dump Trucks Truck trailer to deliver heavy equipment	Utilize flagger at site entrance.
Loss of balance or footing, stumble	Uneven terrain, rocks, unseen tripping hazards.	Housekeeping rules shall be established and followed. Pre-existing slip, trip, and fall hazards will be marked, barricaded, or eliminated. Areas will be discussed in safety orientation.
Electrocution, electrical burns	Contact with electrical utilities	ENTACT will assure that all work conducted for utility disconnect will follow strict Lock-out Tag-out requirements. Only qualified electrician will be allowed to hook-up circuits. Extension cords will be inspected prior to use. GFCI will be used. Verification that electrical services have been disconnected from the exclusion zone or properly marked and identified.
Fire	Buildings, brush, equipment	All equipment will have extinguishers. Extinguisher will be positioned as to be ready for utilization if needed.
Hot and cold stress injuries or illnesses	Weather Conditions	See Section 5.2.5.
Biological Hazards Workers may be exposed to a wide array of biological hazards, including	Plants, including snakes, bees, wasps, ticks, hornets, and rodents during any	See Section 5.3. Periodic inspections of the site should be performed to identify bee hives and wasp nests, and for the presence of snakes. Professional exterminating companies should be consulted for removal. Tick and insect repellents

Table 5.4 MOBILIZATION AND SITE PREPARATION		
PPE: Level D		Hazard Rating: Med
Hazard	Sources	Control Measures
snakes, bees, wasps, ticks, hornets, and rodents during any phase of remediation. The symptoms of exposure vary from mild irritation to anaphylactic shock and death	phase of remediation	may be used for exposure control. However, workers should check their skin and clothing for ticks periodically throughout the work day
Explosion, Burns, Asphyxiation	Contact with underground or overhead utilities	Verify utilities have been disconnected by utility company and tagged. All utilities will be marked and noted on a facility map. Underground utilities must be verified as de-energized/de-pressured prior to work beginning.
Absorption of harmful substances; Severe cuts or lacerations Severe abrasions Punctures Pinch points Repetitive stress Crushing Chemical burns Thermal burns Harmful temperature extremes	Hand tools, off-loading of heavy equipment, and heavy equipment utilization during mobilization activities.	Follow task specific JLA. Perform LPSA before starting work. Task specific use of gloves. Work commentary. Stop and lock.
Caught between, struck by	Contact with heavy equipment	Qualified operators, daily inspection of equipment, follow equipment or task JLA. Utilize 3-point mount and dismount procedures at all times. Identify or barricade swing radius. Eye contact with equipment operator. Access to work area limited to authorized personnel only.
Crush by equipment	Equipment delivery	Administrative controls: Develop JMP for the safe delivery of equipment Develop JLA for removing heavy equipment materials and flumes. Follow ENTACT procedures for delivery of heavy equipment Physical Controls:

Table 5.4 **MOBILIZATION AND SITE PREPARATION**		
PPE: Level D		Hazard Rating: Med
Hazard	Sources	Control Measures
		(1) load and unload only on level ground; (2) block the transport vehicle's wheels; (3) use ramps with sufficient strength, height and angle; (4) ensure the trailer bed is free of all slippery substances, such as clay, oil, or snow; (5) know the manufacturer's recommended procedure for loading and unloading the machine; (6) only load and unload a machine with the assistance of a ground guide. (7) ensure the machine is properly secured before moving the trailer. **Danger:** If your machine comes in contact with a charged line, stay in the cab. Do not allow anyone close to the machine until the power has been cut off or until contact with the line has been broken.
Potential hearing loss	Noise generated by heavy equipment or other machinery	Hearing protection with a NRR of at least 25 will be worn.
Sunburn	Working outdoors	Wear sunscreen SPF of 15 or higher.

TASK 5.5 DRAIN POND

PROJECT ACTIVITIES

This activity will be conducted by Salt Lake City Public Works personnel, and initially, should not involve any ENTACT personnel. ENTACT personnel will be responsible for the collection and management of water from the artesian springs and rain events.

TABLE 5.5
DRAIN POND

PPE: Level D+/C Hazard Rating: Med to High

Hazard	Source	Control Measures
Water hazards	Pumping activities	Engineering controls – pumps and berms.
Exposure to TPH	TPH impacted water	Wear correct air purifying respirator if needed and required PPE including Tyvek, boot covers and utilize correct decontamination procedures
Drowning	Water	ENTACT and CEMC require personal flotation devices for all individual working within 5 feet of a water body
Contact with overhead power line causing electrocution	Overhead power-line in area	However, under no circumstance can any equipment or worker be closer than Chevron's line clearance distance (15 feet) unless the utility has de-energized, visibly grounded the power lines, To prevent power line contacts, Have utility de-energize and visibly ground power lines. Have utility move power lines beyond the safe working distance. Use barrier protection.
Rigging hazards	Lifting and positioning of pumps	Use proper rigging technique, and ensure that all equipment, shackles, and slings are rated for the anticipated loads
Heavy equipment operations to place or transport pumps dig trenches/sumps	Heavy equipment utilized to lift pumps and install trenches/sumps	Use forms of communication such as hand signals, radios, maintain eye contact. Operators shall: be familiar with the operator's manual and operate the machine within its capabilities and limits; Be familiar with the work site - above ground (e.g. Weather conditions and obstructions), at ground level (e.g. Presence of obstacles) and below ground (e.g. Underground utilities);

TABLE 5.5 DRAIN POND		
PPE: Level D+/C		Hazard Rating: Med to High
Hazard	Source	Control Measures
		Conduct a walk around inspection of the machine to check for: (1) coolant, fuel and hydraulic line leaks, (2) debris left in the engine compartment, (3) the condition of attachments (cutting edges and teeth), (4) damaged components both inside and outside of the operator's cab, (5) clear visibility (windows, mirrors and running lights), and (6) Personnel in the machine's immediate area. use seatbelts; obey hand signals and ground guide; check for warning tags (servicing and non-serviceable) on the steering wheel or starter switch indicating that the machine should not be used or even moved; test all controls for proper operation prior to moving the machine; ensure that unattended equipment is shut off and all attachments lowered to the ground; park equipment (utilizing the parking brake) on level ground when possible, otherwise at right angles to any slope with wheels blocked; never allow riders on the outside of the machine or personnel to stand in the pivot area of an articulated machine while the engine is running; shut off the machine during refueling; never move a load over personnel or vehicles; carry the attachments low for good stability and visibility while traveling; allow clearance for overhead dangers, such as overhanging trees and banks and overhead wire, especially high voltage lines; keep the equipment back from the edges of banks and excavations, or if it cannot be avoided, face the machine towards the bank's edge while operating; on haul roads, give loaded vehicles the right-of-way; and t. when loading and unloading a machine for transport:

TABLE 5.5 DRAIN POND		
PPE: Level D+/C		Hazard Rating: Med to High
Hazard	Source	Control Measures
		(1) load and unload only on level ground; (2) block the transport vehicle's wheels; (3) use ramps with sufficient strength, height and angle; (4) ensure the trailer bed is free of all slippery substances, such as clay, oil, or snow; (5) know the manufacturer's recommended procedure for loading and unloading the machine; (6) only load and unload a machine with the assistance of a ground guide. (7) ensure the machine is properly secured before moving the trailer. Danger: If your machine comes in contact with a charged line, stay in the cab. Do not allow anyone close to the machine until the power has been cut off or until contact with the line has been broken.
Soft tissue strains or sprains	Lifting, pulling Handling Materials and Equipment	Stretching and proper lifting techniques and possible use of mechanical equipment or hand trucks. Working in minimum groups of two.
Loss of balance or footing, stumble	Uneven terrain, rocks, unseen tripping hazards.	Housekeeping rules shall be established and followed. Pre-existing slip, trip, and fall hazards will be marked, barricaded, or eliminated. Areas will be discussed in safety orientation.
Electrocution, electrical burns	Contact with electrical utilities	ENTACT will assure that all work conducted for utility disconnect will follow strict Lock-out Tag-out requirements. Only qualified electrician will be allowed to hook-up circuits. Extension cords will be inspected prior to use. GFCI will be used. Verification that electrical services have been disconnected from the exclusion zone or properly marked and identified.
Fire	Buildings, brush, equipment	All equipment will have extinguishers. Extinguisher will be positioned as to be ready for utilization if needed.
Cold stress injuries or illnesses	Weather Conditions for Salt Lake City Utah	Monitor ambient conditions (ambient temperature and wind velocity) and plan work activities so that outside work is conducted during the warmer parts of the day or

TABLE 5.5 DRAIN POND		
PPE: Level D+/C		Hazard Rating: Med to High
Hazard	Source	Control Measures
		rescheduled for days that are predicted to be warmer. When possible, move work indoors or to an area that is protected from the wind/precipitation. Wear layers of clothing that are windproof and waterproof. Consider keeping additional clothing with you and changing into dry clothing as soon as possible after work clothing becomes wet. Take frequent rest breaks in warm, sheltered spaces. Drink plenty of fluids to prevent dehydration and limit the intake of caffeinated beverages. Know the signs and symptoms of cold stress (pain and numbness in extremities, excessive fatigue, severe uncontrollable shivering, drowsiness, irritability) and use the buddy system to monitor one another for these signs/symptoms. If someone shows signs of cold stress (frostbite or hypothermia), request immediate medical attention, move the individual to a warmer area in a sheltered space, remove cold or wet clothing, provide warm fluids, and monitor the person.
Biological Hazards Workers may be exposed to a wide array of biological hazards, including snakes, bees, wasps, ticks, hornets, and rodents during any phase of remediation. The symptoms of exposure vary from mild irritation to anaphylactic shock and death	Plants, including snakes, bees, wasps, ticks, hornets, and rodents during any phase of remediation	Periodic inspections of the site should be performed to identify bee hives and wasp nests, and for the presence of snakes. Professional exterminating companies should be consulted for removal. Tick and insect repellents may be used for exposure control. However, workers should check their skin and clothing for ticks periodically throughout the work day
Explosion, Burns, Asphyxiation	Contact with underground or	Utilities have been disconnected by utility company and tagged. All utilities will be

TABLE 5.5 DRAIN POND		
PPE: Level D+/C		Hazard Rating: Med to High
Hazard	Source	Control Measures
	overhead utilities	marked and noted on a facility map. Underground utilities must be verified as de-energized/de-pressured prior to work beginning.

TASK 5.6 REMOVE EXISTING POND AERATION SYSTEM

PROJECT ACTIVITIES
This task will be performed either by hand or using equipment during the sediment removal activities.

Table 5.6 **REMOVE EXISTING POND AERATION SYSTEM**		
PPE: Level D Hazard Rating: MED		
Hazard	Sources	Control Measures
Hot/ Cold Temperatures	Weather Conditions for Salt Lake City Area for the months of September-December time frame	See Section 5.2.5.
Direct contact with crude oil	Oil involved with initial spill	Rubber type steel toe/shank footwear will protect your feet from injury and from oil exposure. Wear oil resistant gloves and Tyvek or Tychem suits when in contact with oil and oil waste and outer durable gloves when handling debris. Do not stand or come in contact with unknown liquids or substances
Slips/Trips/Falls	Debris Mud	Remove excess material. Identify pre-existing problems. Housekeeping must be maintained. See Fall Protection and Housekeeping Policies.
Lifting pipes, hoses, and components of aeration system	Hoisting using excavators and rigging	Ensure that rigging and equipment are rated for anticipated loads Ensure rigging is properly secured before making lift Utilize spotters for positioning picks.
Water hazards - drowning	Vehicles crossing to main highway to gain access to site and exit to disposal facility	Utilize flagger at site entrance.

Table 5.6 **REMOVE EXISTING POND AERATION SYSTEM**		
PPE: Level D Hazard Rating: MED		
Hazard	Sources	Control Measures
Heavy Equipment Injury	Machinery	Use forms of communication such as hand signals, radios, maintain eye contact Operators shall: be familiar with the operator's manual and operate the machine within its capabilities and limits; Be familiar with the work site - above ground (egg. Weather conditions and obstructions), at ground level (egg. Presence of obstacles) and below ground (egg. Underground utilities); Conduct a walk around inspection of the machine to check for: (1) coolant, fuel and hydraulic line leaks, (2) debris left in the engine compartment, (3) the condition of attachments (cutting edges and teeth), (4) damaged components both inside and outside of the operator's cab, (5) clear visibility (windows, mirrors and running lights), and (6) personnel in the machine's immediate area. use seatbelts; obey hand signals and ground guide; check for warning tags (servicing and non-serviceable) on the steering wheel or starter switch indicating that the machine should not be used or even moved; test all controls for proper operation prior to moving the machine; ensure that unattended equipment is shut off and all attachments lowered to the ground; park equipment (utilizing the parking brake) on level ground when possible, otherwise at right angles to any slope with wheels blocked; never allow riders on the outside of the machine or personnel to stand in the pivot area of an articulated machine while the engine is running; shut off the machine during refueling; never move a load over personnel or vehicles; carry the attachments low for good stability and visibility while traveling; allow clearance for overhead dangers, such as overhanging trees and banks and overhead wire,

Table 5.6 REMOVE EXISTING POND AERATION SYSTEM		
PPE: Level D Hazard Rating: MED		
Hazard	Sources	Control Measures
		especially high voltage lines; keep the equipment back from the edges of banks and excavations, or if it cannot be avoided, face the machine towards the bank's edge while operating; on haul roads, give loaded vehicles the right-of-way; and t. when loading and unloading a machine for transport: (1) load and unload only on level ground; (2) block the transport vehicle's wheels; (3) use ramps with sufficient strength, height and angle; (4) ensure the trailer bed is free of all slippery substances, such as clay, oil, or snow; (5) know the manufacturer's recommended procedure for loading and unloading the machine; (6) only load and unload a machine with the assistance of a ground guide. (7) ensure the machine is properly secured before moving the trailer. Danger: If your machine comes in contact with a charged line, stay in the cab. Do not allow anyone close to the machine until the power has been cut off or until contact with the line has been broken.
Biological Hazards Workers may be exposed to a wide array of biological hazards, including snakes, bees, wasps, ticks, hornets, and rodents during any phase of remediation. The symptoms of exposure vary from mild irritation to anaphylactic shock and death	Plants, including snakes, bees, wasps, ticks, hornets, and rodents during any phase of remediation	Periodic inspections of the site should be performed to identify bee hives and wasp nests, and for the presence of snakes. Professional exterminating companies should be consulted for removal. Tick and insect repellents may be used for exposure control. However, workers should check their skin and clothing for ticks periodically throughout the work day
Manual Labor	Materials Equipment	Stretching and proper lifting techniques and possible use of mechanical equipment or hand

Table 5.6 REMOVE EXISTING POND AERATION SYSTEM		
PPE: Level D Hazard Rating: MED		
Hazard	Sources	Control Measures
		trucks. Working in minimum groups of two.
Utilities	Underground and Overhead Utilities	Confirm with Operations Manager the locations and depth of all utilities.
Hand Injuries	Pinch Points	Follow appropriate JLA. Perform LPSA before starting this task. Task specific use of gloves. Work commentary. Stop and lock.

TASK.5.7 EXCAVATE AND TREAT SEDIMENTS AND RETAINING WALLS

PROJECT ACTIVITIES

Using long stick excavators, skid steers, and a regular reach excavator to remove, stage, and stabilize sediments remaining in the pond after it has been drained. Sediments must meet paint filter test in order to be shipped out as solids.

TABLE 5.7 EXCAVATE AND TREAT SEDIMENTS AND RETAINING WALLS		
PPE: Level D/D+ Hazard Rating: Medium to High		
Hazard	Sources	Control Measures
Inhalation of treatment chemical dust from treatment of sediments	Treatment activities	Dust suppression with pressure washer and/or water truck. Evaluate dust generation with PDR. PPE shall be used at the appropriate level and as air monitoring dictates
VOC Vapors, LEL atmosphere	Residual product from lines and tanks scheduled for demolition and removal	Utilization of Multi-Rae with PID to evaluate conditions during debris removal
High Pressure Water Hazards	Pressure washer utilized to eliminate dust during excavation and treatment activities	See Section 5.2.10 Only trained personnel will be allowed to use the equipment. No portion of the body shall ever be placed in front of the water jet. The jets of water can easily puncture and tear the skin or penetrate deeper causing infection or serious internal damage. A job review will be made prior to high-pressure water being used. Manufacturer's recommendations and requirements will be followed. PPE will follow guidelines outlined in Section 7, Level D+ requirements. PPE will include full face piece and metatarsal protection. Only essential personnel will be allowed in the work area.
Loss of balance or footing, stumble	Uneven terrain, rocks, unseen tripping hazards.	Housekeeping rules shall be established and followed. Pre-existing slip, trip, and fall hazards will be marked, barricaded, or eliminated. Areas will be discussed in safety orientation.
Vehicle tip over or	High center of	Reduced speed. Defensive driving techniques.

TABLE 5.7 EXCAVATE AND TREAT SEDIMENTS AND RETAINING WALLS		
PPE: Level D/D+ Hazard Rating: Medium to High		
Hazard	Sources	Control Measures
roll over	gravity vehicles; vehicles with sloshing liquids (i.e. water trucks)	Vehicle maintenance.
Vehicle collision, vehicle in unauthorized areas	Vehicle traffic, multiple routes	Identify and discuss established site traffic routes. Proper signage to direct traffic flow and identify unauthorized areas.
Flying concrete chips	Concrete demolition of retaining walls. It is common for concrete chips to become airborne in the process of hammer activity	Keep ground personnel away from work area. Place wire screen over windshield of excavator It should be emphasized that this area be considered a high hazard and treated as such. Signs and demarcation of area will be implemented Proper PPE for task to be worn at all times
Spill or release of fluids from equipment	Ruptured hydraulic lines on equipment	Portable spill kits maintained on equipment. Larger spill kits maintained near operation to intercept any large spills
Hot and cold stress injuries or illnesses	Weather Conditions	See Section 5.2.5.
Biological Hazards Workers may be exposed to a wide array of biological hazards, including snakes, bees, wasps, ticks, hornets, chiggers and rodents during any phase of remediation. The symptoms of exposure vary from mild irritation to anaphylactic shock and death	Plants, including snakes, bees, wasps, ticks, hornets, and rodents during any phase of remediation	See Section 5.3. Periodic inspections of the site should be performed to identify bee hives and wasp nests, and for the presence of snakes. Professional exterminating companies should be consulted for removal. Tick and insect repellents may be used for exposure control. However, workers should check their skin and clothing for ticks periodically throughout the work day
Potential hearing loss	Noise generated by heavy equipment or other machinery	Hearing protection with a NRR of at least 25 will be worn.
Soft tissue strains or sprains	Lifting, pulling Handling	Stretching and proper lifting techniques and possible use of mechanical equipment or hand

TABLE 5.7 EXCAVATE AND TREAT SEDIMENTS AND RETAINING WALLS		
PPE: Level D/D+ Hazard Rating: Medium to High		
Hazard	Sources	Control Measures
	Materials and Equipment	trucks. Working in minimum groups of two.
Caught between, struck by	Contact with Machinery	Qualified operators, daily inspection of equipment, follow equipment or task JLA. Utilize 3-point mount and dismount procedures at all times. Identify or barricade swing radius. Eye contact with equipment operator. Access to work area limited to authorized personnel only.

TASK.5.8 DECONTAMINATION OF EQUIPMENT AND DECONTAMINATION WASTE MANAGEMENT

PROJECT ACTIVITIES

Dry decontamination methods using brooms and other hand tools will be used to remove soil residuals from the tires, tracks and undercarriage members. In the event that dry decontamination methods are not effective in removing the residuals, wet decontamination methods using high-pressure washers will be employed as needed. Residuals will be collected and consolidated with the excavated materials for off-site disposal. If generated, rinse waters containerized and sampled for off-site disposal. The appropriate decontamination tools will be staged at each decontamination station for the duration of the applicable work.

TABLE 5.8
DECONTAMINATION OF EQUIPMENT AND DECONTAMINATION WASTE MANAGEMENT

PPE: Level D/D+ Hazard Rating: Medium to High

Hazard	Sources	Control Measures
Hazardous Atmosphere	Nuisance Dust TPH,	Dust suppression. Air monitoring. Utilization of correct respirator with filters if required
Heavy equipment	Working within the radius of excavator	Use forms of communication such as hand signals, radios, maintain eye contact
Flying debris	Mud, debris	Inspect area prior to decontamination activities Utilize face shield
High pressure spray	Pressure washer	Proper PPE including metatarsal protection
Contact with utilities	Overhead power lines underground	Utilize spotter for correct positioning of equipment prior to decontamination.
Biological Hazards	Insects, Snakes, Ticks, Plants	See Section 5.3.
Falls from equipment	Excavators dozers/Hammers	Utilize 3 point stance, clean steps and platforms of mud and grease
Manual Labor	Materials Equipment Moving pressure washing equipment	Stretching and proper lifting techniques and possible use of mechanical equipment or hand trucks. Working in minimum groups of two.

TASK 5.9 REBUILD RETAINING WALLS (POSSIBLE DEFERRED TASK)

PROJECT ACTIVITIES

The Salt Lake City municipality will establish specifications and design the new retaining walls for the pond. aThis task may be deferred until a later date, and may require re-mobilization.

Table 5.9
REBUILD RETAINING WALLS

PPE: Level D Hazard Rating: MED

Hazard	Sources	Control Measures
Hazardous Atmosphere	Nuisance dust	Dust suppression.
Hot/Cold Temperatures	Weather Conditions	See Section 5.2.5.
Slips/Trips/Falls	Debris Mud	Remove excess material. Identify pre-existing problems. Housekeeping must be maintained. Refer to ENTACT's Comprehensive Health and Safety Manual for Fall Protection and Housekeeping.
Traffic	Trucks	All drivers will be given site orientation. Specific routes will be established with site speed limits and directional traffic signs. Journey management plans will be developed from site to disposal site. Plan will capture all hazards associated with route selected and mitigation steps will be included for each hazard. Drivers will have JMP, JLA, and documentation of truck inspection including tire pressures.
Driving parking on inclines	Area terrain	Slow speed use low gear, maintain safe distance. Plan driving route, establish hazards and mitigate, chock wheels with designed chocks when parking, set brake. Follow mine operation on property
Dump truck/ concrete mixer turnover	The unit is not on a level surface when dumping	Operators should be trained to recognize areas hazardous to dumping, such as soft or uneven surfaces and inadequately compacted fill.
Heavy Equipment Injury	Machinery	Use forms of communication such as hand signals, radios, maintain eye contact Operators shall: be familiar with the

Table 5.9 REBUILD RETAINING WALLS		
PPE: Level D	Hazard Rating:	MED
Hazard	Sources	Control Measures
		operator's manual and operate the machine within its capabilities and limits; Be familiar with the work site - above ground (e.g. Weather conditions and obstructions), at ground level (eg. Presence of obstacles) and below ground (e.g. Underground utilities); Conduct a walk around inspection of the machine to check for: (1) coolant, fuel and hydraulic line leaks, (2) debris left in the engine compartment, (3) the condition of attachments (cutting edges and teeth), (4) damaged components both inside and outside of the operator's cab, (5) clear visibility (windows, mirrors and running lights), and (6) personnel in the machine's immediate area. use seatbelts; obey hand signals and ground guide; check for warning tags (servicing and non-serviceable) on the steering wheel or starter switch indicating that the machine should not be used or even moved; test all controls for proper operation prior to moving the machine; ensure that unattended equipment is shut off and all attachments lowered to the ground; park equipment (utilizing the parking brake) on level ground when possible, otherwise at right angles to any slope with wheels blocked; never allow riders on the outside of the machine or personnel to stand in the pivot area of an articulated machine while the engine is running; shut off the machine during refueling; never move a load over personnel or vehicles;

Table 5.9 REBUILD RETAINING WALLS		
PPE: Level D	Hazard Rating:	MED
Hazard	Sources	Control Measures
		carry the attachments low for good stability and visibility while traveling; allow clearance for overhead dangers, such as overhanging trees and banks and overhead wire, especially high voltage lines; keep the equipment back from the edges of banks and excavations, or if it cannot be avoided, face the machine towards the bank's edge while operating; on haul roads, give loaded vehicles the right-of-way; and t. when loading and unloading a machine for transport: (1) load and unload only on level ground; (2) block the transport vehicle's wheels; (3) use ramps with sufficient strength, height and angle; (4) ensure the trailer bed is free of all slippery substances, such as clay, oil, or snow; (5) know the manufacturer's recommended procedure for loading and unloading the machine; (6) only load and unload a machine with the assistance of a ground guide. (7) ensure the machine is properly secured before moving the trailer. Danger: If your machine comes in contact with a charged line, stay in the cab. Do not allow anyone close to the machine until the power has been cut off or until contact with the line has been broken.
Biological Hazards	Insects, Snakes, Ticks	See Section 5.3.
Manual Labor	Materials Equipment	Stretching and proper lifting techniques and possible use of mechanical equipment or hand trucks. Working in minimum groups of two.

Table 5.9 **REBUILD RETAINING WALLS**		
PPE: Level D	Hazard Rating:	MED
Hazard	Sources	Control Measures
Traffic	Trucks	All drivers will be given site orientation. Specific routes will be established with site speed limits and directional traffic signs.
Utilities	Underground and Overhead Utilities	Confirm with Operations Manager the locations and depth of all utilities.
Hand Injuries	Pinch Points	Follow appropriate JLA. Perform LPSA before starting this task. Task specific use of gloves. Work commentary. Stop and lock.

TASK 5.10 DEMOBILIZATION AND SITE CLOSEOUT

PROJECT ACTIVITIES

Table 5.10
RECOGNIZED HAZARDS DURING DEMOBILIZATION AND SITE CLOSEOUT

PPE: Level D Hazard Rating: MED

Hazard	Sources	Control Measures
Soft tissue strains or sprains	Lifting, pulling Handling Materials and Equipment	Stretching and proper lifting techniques and possible use of mechanical equipment or hand trucks. Working in minimum groups of two.
Loss of balance or footing, stumble	Uneven terrain, rocks, unseen tripping hazards.	Housekeeping rules shall be established and followed. Pre-existing slip, trip, and fall hazards will be marked, barricaded, or eliminated. Areas will be discussed in safety orientation.
Electrocution, electrical burns	Contact with electrical utilities	ENTACT will assure that all work conducted for utility disconnect will follow strict Lockout Tag out requirements. Only qualified electrician will be allowed to disconnect circuits. Extension cords will be inspected prior to use. GFCI will be used. Verification that electrical services have been disconnected from the exclusion zone or properly marked and identified.
Fire	Buildings, brush, equipment	All equipment will have extinguishers. Extinguisher will be positioned as to be ready for utilization if needed.
Hot and cold stress injuries or illnesses	Weather Conditions	See Section 5.2.5.
Biological Hazards Workers may be exposed to a wide array of biological hazards, including snakes, bees, wasps, ticks, hornets, and rodents during any phase of remediation. The symptoms of exposure vary from mild irritation to anaphylactic shock and death	Plants, including snakes, bees, wasps, ticks, hornets, and rodents during any phase of remediation	See Section 5.3. Periodic inspections of the site should be performed to identify bee hives and wasp nests, and for the presence of snakes. Professional exterminating companies should be consulted for removal. Tick and insect repellents may be used for exposure control. However, workers should check their skin and clothing for ticks periodically throughout the work day
Explosion, Burns,	Contact with	Utilities have been disconnected by utility

Table 5.10 RECOGNIZED HAZARDS DURING DEMOBILIZATION AND SITE CLOSEOUT		
PPE: Level D		Hazard Rating: MED
Hazard	Sources	Control Measures
Asphyxiation	underground or overhead utilities	company and tagged. All utilities will be marked and noted on a facility map.
Severe cuts or lacerations Severe abrasions Punctures Pinch points Repetitive stress Crushing Harmful temperature extremes	Hand tools, off-loading of heavy equipment, and heavy equipment utilization during mobilization activities.	Follow task specific JLA. Perform LPSA before starting work. Task specific use of gloves. Work commentary. Stop and lock.
Caught between, struck by	Contact with heavy equipment	Qualified operators, daily inspection of equipment, follow equipment or task JLA. Utilize 3-point mount and dismount procedures at all times. Identify or barricade swing radius. Eye contact with equipment operator. Access to work area limited to authorized personnel only.
Truck/Vehicle collision	Vehicles access and leave the site for the purpose of picking up heavy equipment and trailers	Utilize flagger at site entrance.
Crush by equipment	Equipment return	Administrative controls: Develop JMP for the safe return of equipment Develop JLA for removing heavy equipment materials Follow ENTACT procedures for pick up of heavy equipment Physical Controls: (1) load and unload only on level ground; (2) block the transport vehicle's wheels; (3) use ramps with sufficient strength, height and angle; (4) ensure the trailer bed is free of all slippery substances, such as clay, oil, or snow; (5) know the manufacturer's recommended procedure for loading and unloading the

Table 5.10 RECOGNIZED HAZARDS DURING DEMOBILIZATION AND SITE CLOSEOUT		
PPE: Level D		Hazard Rating: MED
Hazard	Sources	Control Measures
		machine; (6) only load and unload a machine with the assistance of a ground guide. (7) ensure the machine is properly secured before moving the trailer. **Danger:** If your machine comes in contact with a charged line, stay in the cab. Do not allow anyone close to the machine until the power has been cut off or until contact with the line has been broken.
Sunburn	Working outdoors	Wear sunscreen SPF of 15 or higher.

6.0 EMERGENCY RESPONSE PLAN

The FPM and HSO are responsible for discussing ENTACT site-specific emergency response requirements with on-site safety representatives and then informing ENTACT associates of unique procedures.

ENTACT's Emergency Response Plan complies with 29 CFR 1910.120(l) and Chevron EMC's Emergency Management OE Process. Emergency response procedures are explained in the site safety orientation, tailgate meetings, emergency response drills, and apply to all site personnel including visitors and subcontractors.

The site description is located in Section 2.1 and general climate conditions are discussed in Section 5.2.5.

6.1 PRE-EMERGENCY PLANNING

Site management personnel will prepare for an emergency before it happens. Based on site location, hazards, weather, etc., potential emergencies will be identified and a site specific Emergency Response Plan will be developed. Local emergency authorities will be notified, personnel trained in First Aid/CPR will be identified, emergency phone numbers will be confirmed, etc.

6.2 INITIAL RESPONSE PROCEDURES

The following issues should be addressed in the initial response:

a) Stop work as soon as the incident is recognized and follow initial emergency response and reporting requirements for the specific facility or job site where the incident occurs.

b) Work shall remain stopped at the work location while the hazards and the incident situation are reviewed. Depending on the incident, the work stoppage may range from an hour to several days. Work cannot resume without Area Manager/Team Leader concurrence.

c) Ensure that an appropriate emergency response occurs, and provide any necessary first aid or medical treatment. First aid or medical treatment may be provided by emergency responders, on-site medical clinics, or medical providers designated by the facility or the HASP.

d) On-site personnel who are injured at a Chevron facility/job site and need immediate assistance should dial the Chevron emergency telephone number for that facility (if applicable) or the emergency telephone number cited in the HASP (see Emergency Notification Hierarchy in Section 6.4.2). Emergency responders will report to the incident scene, assist with initial assessment and treatment, and call for other assistance, as necessary.

e) The community emergency response organization identified in the facility emergency response plan or the job site HASP (see Section 6.13) should be contacted if the Chevron facility does not have on-site emergency response capability or if the job-site is not a Chevron facility.

f) For injuries that do not require emergency responders, the injured personnel should seek medical attention at a company medical clinic or the medical service provider identified in the HASP.

g) An ambulance must be called for any individual experiencing the following:
   - Head Trauma,
   - Fall from height,
   - Chest pains,
   - Loss of consciousness or
   - Obvious signs of distress

At no time should anyone experiencing the above conditions drive themselves to get medical attention.

6.3 EMERGENCY RECOGNITION AND PREVENTION

A job site emergency is an unforeseen situation that threatens site personnel or the local community, disrupts or shuts down operations, or causes physical or environmental damage. Emergencies may be natural or manmade and may include the following:

- Train derailment
- Floods
- Fires or explosions
- Releases or spills

- Radiological accidents
- Civil disturbances or workplace violence
- Bomb threats
- Unplanned chemical exposure

Preventing emergencies can be accomplished through the identification and elimination of hazards through the use of behavior based safety tools, discussion of potential hazards or situations in the daily tailgate meetings, being aware of surroundings and forecasted weather conditions, utilizing Stop Work Authority, following mitigation of hazards as identified in JLAs, etc.

6.4 COMMUNICATION, EMERGENCY ALERTING, AND NOTIFICATION

6.4.1 General Requirements

A mobile phone or two-way radio stays with the FPM, HSO, and front-line supervisors at all times and will be utilized to communicate emergency situations directly to the FPM. Emergency signals will be conveyed through use of an air horn. Three (3) short blasts will signal an emergency. Site personnel are responsible for following this Emergency Response Plan and moving directly to the emergency meeting point.

The locations of the emergency meeting points are identified in Section 6.10. Air horns are available at the project trailer and in the work zone and at the decon pad. The site map also includes the locations of fire extinguishers, first aid kits, eye wash stations, evacuation routes, shelters, and places of refuge.

ENTACT will comply with notification requirements in the CEMC Incident Reporting and Investigation OE Process for contractor incidents. See Attachment E for a summary of these requirements. Details are located in the CEMC IRIP Process:

- ENTACT personnel reporting the incident must report the incident per company reporting requirements.
- The ENTACT HSO/FPM must notify the CEMC Project Manager. The CEMC Project Manager notifies the Area Manager (or Team Leader), GM of the BU and other notifications required by the CEMC Incident Notifications and Reporting Guide in the CEMC IRIP OE Process.
- Generally, the notification procedure follows the organization hierarchy. The purpose of the notification is to ensure some other authority in CEMC is aware of the incident and can provide guidance on appropriate emergency response and initial incident investigation. ***Notifications to CEMC require speaking to persons in authority either by phone or in person.*** For incidents which occur after normal working hours, or for which the medical condition worsens during after-hours, inform immediate Supervisor as soon as possible of the situation.

6.4.2 Emergency Notification Hierarchies

CEMC EMERGENCY NOTIFICATION HIERACHY	
1. Marlea Harmon CEMC Project Manager	Office: (805) 546- 6916 Cell: (805) 550-65-74
2. Ralph Branning Chevron Facilities & Inspections	Cell: (307) 690-8234
3. Bob Butler CEMC	Office: (925) 543-2395

ENTACT EMERGENCY NOTIFICATION HIERACHY	
1. Immediate Supervisor	Verbal or radio
2. Pat Till Health and Safety Officer	Cell: (630) 470-4581
3. Paul McCorvey Field Project Manager	Cell: (630) 935-9543
4. Chris Preston Project Director	Cell: (630) 675-9853
5. Evan McShirley Project Health and Safety Coordinator	Office: (972) 580-1323 Cell: (630) 675-9975
6. Don Self Health and Safety Director	Office: (972) 580-1323 Cell: (630) 669-4259

The Emergency Contact section in the front of this health and safety plan provides emergency phone numbers for governmental agencies. The FPM is responsible for making these notifications.

6.4.3 Additional Notification Requirements

6.4.3.1 Serious Incidents

Serious incidents (resulting in a fatality or hospitalization) must be reported to the state or Fed-OSHA local office within 8 hours. For incidents involving ENTACT personnel, ENTACT shall follow our company reporting procedures (see Attachment E – Incident Reporting). Chevron personnel must not make this notification but can ensure ENTACT leadership understands their obligation under the applicable laws.

6.4.3.2 Workplace Fatalities

Work place fatalities that are caused by heart attacks must be reported by phone to Fed-OSHA. Contact the CEMC OE Manager for guidance on notification requirements, recordability issues, and to determine who will make the notification.

6.4.3.3 Spills

Spill (with spill being defined as an unplanned release of a liquid from a container, line or reservoir to 'land' surface whether or not covered by visqueen, cement, wood, etc. including

secondary containments and/or water.) Reports are required for:

- Petroleum spills to land < 1gal or Chemical spill to land < 16 kg
- Petroleum spills ≥ 1 gal to ≤ 1 barrel to land or
- Petroleum spills >1 bbl to land or
- Petroleum spills of any amount to water or
- Chemical spills > 16 kg to land
- Inadvertent Release of Hazardous Vapor (IRHV)
    1. Flammable Gas or Vapor ≥500 kgs (1,100 lbs.). Note: 1,100 lbs. of CH4 is approximately 24,750 scf of CH4; 1,100 lbs. of propane is approximately 8,800 scf of propane.
    2. Toxic Gas, Vapor or Aerosol.
        - ≥ 5 kgs (11 lbs) Extremely toxic (IDLH <10 ppm).
        - ≥ 50 kgs (110 lbs) Highly Toxic (IDLH > 10 ppm but < 100 ppm).
        - ≥ 500 kgs (1,100 lbs) Moderately Toxic (IDLH > 100 ppm).
        - Or, otherwise activate an on-site Shelter-In-Place, or public protective measures.

*__NOTE:__ Spills of mixtures – such as an oil/water mixture or chemical contaminated soil – should exclude water or soil volume; ***only the volume of oil or chemical should be reported.***

Also see ENTACT's Spill Control Policy in Attachment F.

6.4.3.4 Fires

All Fires are reportable (Chevron Form GO-106).

- Only fires that have a dollar loss greater than $1,000 and/or result in an injury to an employee or contractor are considered recordable for statistical purposes and for inclusion in the annual loss report.
- Fire is a rapid oxidation process that creates lights, heat, smoke and releases energy in varying intensities. For reporting purposes, fires are defined as any occurrence of combustion, explosion, or spread of fire involving Company properties, products, operations, or employees, not intentionally ignited for a useful purpose, irrespective of resulting deaths, injuries, or damages.
    - Types of hydrocarbon fires are Jet fires, Unconfined vapor cloud fires or flash fires, Pool fires (two-dimensional fires), Running liquid fires (three-dimensional fires), Boiling liquid expanding vapor explosions (BLEVE) or fire balls.
    - Other types are Solid material fires, e.g., fires involving wood, paper, dust, plastic, etc., Warehouse fires, Electrical equipment fires e.g., transformer fires, Fires involving combustible metals, e.g., sodium, Fires involving pyrophoric materials, e.g., aluminum alkyls.

6.4.3.5 Property Damage

Property is usually considered as a Chevron Asset (e.g., building, CEMC owned equipment, etc.). Damage value in association with a specific incident would be recorded with that incident and therefore, not be a stand-alone "Property Damage" event.

6.5 EMERGENCY ROLES AND RESPONSIBILITIES

The ENTACT FPM has primary responsibility for responding to and correcting emergency situations.

- If you are the only other individual around in a medical emergency, contact your FPM or HSO immediately, or dial 9-1-1 before you administer CPR/First aid to the individual to ensure help is on the way.
- The on-site HSO for ENTACT will ensure that a documented emergency drill is performed at the start of the project and every 6 months thereafter or if there is a noticeable increase of new personnel to the site.
- All personnel are responsible for notifying their immediate supervisor of all emergency situations via cell phone, radio or emergency alerting (3 blasts). Supervisors will notify the HSO and Field Project Manager.
- The FPM and HSO will evaluate the emergency for appropriate levels of response.
- FPM will announce evacuation to site personnel and contact emergency services as required.
- Site personnel will proceed to the emergency meeting point (see Section 6.10).
- FPM will supervise all efforts in the area, including evacuating personnel. Once the evacuation is initiated, the FPM will conduct a roll call from the daily PTW to ensure all contractor personnel have made it to the emergency meeting point. If all personnel are not accounted for, depending on the severity of the situation, either the FPM or HSO will locate these individuals and transport them to the emergency meeting point to ensure a full head count, or emergency services will be notified so the individuals can be accounted for.
- Site personnel will evacuate as instructed and meet at the designated off-site meeting point if necessary, to be selected upon mobilization
- The FPM will direct the shutdown of site operations when required and will take appropriate measures to protect personnel including:
  - Withdrawal from the exclusion zone
  - Total evacuation and securing of the site
  - Upgrading or downgrading the level of protective clothing and respiratory protection
- The FPM will take appropriate measures to protect the public and the environment including:
  - Isolating and securing the site
  - Preventing run-off to surface waters
  - Ending or controlling the emergency to the extent possible
- The FPM will ensure that appropriate federal, state, and local agencies are informed, and emergency response plans are coordinated. In the event of a fire or explosion, the local

fire department should be summoned immediately. In the event of an air release of toxic materials, the local authorities should be informed in order to assess the need for evacuation. In the event of a spill, sanitary districts and drinking water systems may need to be alerted.

- HSO will ensure that appropriate decon treatment or testing for exposed or injured personnel is obtained. Local ambulance service and hospital have decon capabilities.
- FPMs, HSO, and PHSC will develop an investigation team and will perform an investigation to determine the cause of the incident making recommendations to prevent the recurrence and sharing lessons learned. Although emergencies will be handled as One Team, the reporting of incidents will strictly follow the respective company's reporting process for which the incident occurred.
- The FPM and HSO will ensure that all reports have been prepared.

The FPM must immediately report emergency situations and take appropriate measures to protect site personnel.

The FPM and HSO are responsible for discussing site-specific emergency response requirements with on-site safety representatives and then informing ENTACT associates of unique procedures.

6.6 TRAINING AND EMERGENCY DRILLS

Emergency response training is included as part of safety tailgate meetings and emergency response drills. Training includes awareness about the types of emergencies that could occur, the size of the job site and workforce (including visitors, subcontractors, truck drivers, and oversight), the availability of outside emergency resources, and the site specific Emergency Response Plan. General training includes:

- Roles and responsibilities
- Threats, hazards, and protective actions
- Notification, warning, and communication procedures
- Emergency response procedures
- Evacuation, shelter, and accountability procedures
- Location and use of emergency equipment
- Emergency shutdown procedures

Documented training or retraining will occur under the following circumstances:

- Development of initial Emergency Response Plan
- Arrival of new hire personnel, visitors, subcontractors, or oversight
- New equipment, materials, or processes into the workplace that affect evacuation routes
- Change in the scope of work or site layout
- Revision of the Emergency Response Plan

Emergency drills will be performed prior to the project beginning to ensure associates understand what is expected during an emergency, ensure that the nearest exits are known, places

of refuge or storm shelters are known, all exit routes and storm shelter areas are accessible, and to ensure associates understand their emergency assignments. The FPM and HSO will coordinate and plan site emergency drills. All site associates will participate. Drills will be documented and critiqued utilizing the LPO. If applicable, lessons learned, improvement ideas, and corrective actions will be developed and incorporated into the Emergency Response Plan.

6.7 HOSPITAL AND CLINIC

ENTACT will use the Concentra Occupational Clinic as needed for hazmat physicals, heavy metals blood testing, drug screens, and minor injuries. The Concentra Medical Clinic will be utilized to provide care for more significant injuries should they occur. Maps to the clinics are located in the front of this HASP.

The St. Marks Hospital will be used for all medical emergencies. A map and alternate routes to the hospital are located at the front of this HASP. Copies of these maps should be posted in the decon area, command post, and break area. The use of an ambulance service to the hospital is available for an emergency by dialing 911. The hospital shall be notified of ENTACT's activities and to supply insurance information at the start of job site activities to expedite admission into the trauma center in the event of an emergency situation.

The route to these medical facilities will be driven and verified by the FPM or HSO prior to work beginning. Modifications will be made as needed to the directions to these facilities prior to work beginning.

Any person transporting an injured/exposed person to a clinic or hospital for treatment should take with them directions to the hospital and information on the chemical(s) they may have been exposed to. Any vehicle used to transport contaminated personnel will be cleaned or decontaminated as necessary.

6.8 FIRST AID KITS, EYE WASH, AND FIRE EXTINGUISHERS

First aid kits are located on site and in work vehicles. The site map or posters will indicate the locations of each first aid kit not in a vehicle. An eye wash station will be located near the decontamination area but no more than 100 feet from the exclusion zone. First aid kits contain guidance on first aid procedures and will be inventoried on a monthly basis and materials found to be missing will be replaced. The First Aid Kit Monthly Inventory form should be used to track needed materials. At least one ENTACT associate for every 10 crew members will have first aid/CPR training and are identified during tailgate meetings and emergency response drills.

6.9 FIRE OR EXPLOSION

During site mobilization, the fire department will be notified by the HSO and briefed about the potential hazards at the site. In the event of a fire or explosion, the local fire department should be summoned immediately. Upon their arrival, the ENTACT FPM will advise the fire commander of the location, nature, and identification of the hazardous materials on site and that ENTACT has a Spill Control program (see Attachment F – Spill Control).

ENTACT shall provide fire protection in the form of portable fire extinguishers. This protection shall meet or exceed the requirements of NFPA-10-1984. Fire extinguishers must be tested annually and inspected monthly. The Fire Extinguisher Monthly Inspection form should be used to document inspections.

In the event of a fire that cannot be controlled with available equipment, the local fire department will be summoned immediately by the FPM or his designee. The FPM shall inform the fire department of the situation and any site hazards upon their arrival. If firefighters have to enter the Exclusion Zone, decontamination will be required upon leaving.

In the event of fire or explosion, or if vapor concentrations of explosive vapors or gasses approach or exceed 10 percent of the LEL as indicated by an explosion meter, personnel will evacuate the area immediately.

6.10 EVACUATION, EMERGENCY MEETING POINTS, AND SHELTERS

Evacuation routes will be established by work zones and all outside work areas will be provided with designated exit points. Evacuation should be conducted immediately, without regard to equipment under conditions of extreme emergency. Evacuation notification will be through the use of radios or by verbal communication on radios.

The primary and secondary emergency meeting points for ENTACT emergencies will be established upon mobilization.

- Evacuation notification will be three (3) blasts on a vehicle or air horn, or by verbal communication on radios.
- Keep upwind of smoke, vapors, or spill location.
- Exit through the decontamination corridor if possible.
- If evacuation is not via the decontamination corridor, site personnel should remove contaminated clothing once they are in a location of safety and leave it near the exclusion zone.
- All site personnel will move to the emergency meeting point. The ENTACT FPM will conduct a head count of ENTACT personnel to ensure all personnel have been evacuated safely.
- In the event of an emergency site evacuation, all personnel should escape from emergency situation, decontaminate to the maximum extent practical, and meet at their pre-determined off-site location.
- If required to shelter in place the ETP shelter in place/assembly point will be utilized by ENTACT during work in the North Field Basin.
- Keep upwind of smoke, vapors, or spill location.
- Exit through the decontamination corridor if possible.
- If evacuation is not via the decontamination corridor, site personnel should remove contaminated clothing once they are in a location of safety and leave it near the exclusion zone.

- All site personnel will move to the designated emergency meeting point. The ENTACT FPM will conduct a head count to ensure all personnel have been evacuated safely.
- In the event of an emergency site evacuation, all personnel should escape from emergency situation, decontaminate to the maximum extent practical, and meet at the pre-determined off-site location.

6.11 CHEMICAL EXPOSURE AND EMERGENCY DECONTAMINATION

Any person who becomes ill or injured as a result of chemical exposure must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed if possible and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed. First aid should be administered while awaiting an ambulance. General hygiene activities will be followed if associates are wearing Level D PPE. All injuries and illnesses should be reported to the ENTACT FPM and designated HSO.

If decontamination can be performed:

- Wash, rinse and/or cut off protective clothing and equipment.

If decontamination cannot be done:

- Wrap the victim in blankets or plastic to reduce contamination of other personnel.
- Alert emergency and offsite medical personnel to potential contamination.

6.12 PPE AND EMERGENCY EQUIPMENT

Specific levels of PPE are required for site personnel. See Section 7.0, Levels of Personal Protective Equipment, Section 5.4, and task specific JLAs. Depending on the potential emergency situations that could arise on the site, higher levels of PPE may be required. Onsite heavy equipment may be utilized in emergency situations and are inspected and maintained on a regular basis. Spill containment and fire extinguishers are also available.

6.13 OFF-SITE EMERGENCIES

Although the potential for off-site emergencies impacting site activities is considered low, ENTACT has considered the following as potential off-site emergency situations:

- Natural events such as earthquakes, flooding, or severe weather (tornado, winter storms, etc.)
- Train derailment involving hazardous materials
- Traffic accident involving hazardous materials

Site management will comply with local municipal or State Emergency Management procedures in the event of disasters including train derailments, fire, flood, earthquake, telecommunications failure, wildfire, winter or other natural or technological incidents.

Cory Lyman, Director of Emergency Management

John Flynt, Community Preparedness Coordinator

Phone Number
801.799.3604

Email Address
John.Flynt@slcgov.com

Physical Address
Public Safety Building, 6th Floor
315 East 200 South
Salt Lake City, Utah

In the event of a community emergency 2-1-1 acts as a public information point for information in coordination with Emergency Management professionals. 2-1-1 responds immediately during times of crisis, to field calls regarding the crisis and to direct callers to services most appropriate for their needs. The offsite emergency meeting point is identified upon site mobilization.

6.13.1 Off-Site Emergency Procedures

Have Emergency "Evacuation"/"Shelter in Place" Plans
Identify escape routes from your work site with safe places and gathering points. Ask the question – "What would we do if . . ." a particular set of emergency circumstances was to arise? Think about the possibilities of different events: flood, earthquake, etc.

6.14 SITE SECURITY AND CONTROL

In an emergency, the FPM and HSO must know who is onsite, and must be able to control the entry of personnel into work areas. All visitors and contract personnel entering or exiting the site must sign-in and out at the main office trailer. The FPM maintains a daily roster of all working personnel on the site. See Section 9.0 for Site Control Measures and Site Security.

The main office trailer and contractor administration trailers are marked accordingly. Signs are posted communicating the requirement that all visitors and deliveries must check in at the main office trailer.

General deliveries such as Fed Ex, UPS, freight deliveries, etc., are required to sign-in at the main office trailer. Equipment delivery services are required to contact the HSO or FPM and meet at the Value Save Supermarket parking lot to sign-in and will be escorted by ENTACT to the equipment delivery point.

6.15 INCIDENT REPORTING AND INVESTIGATION

6.15.1 ENTACT

ENTACT personnel will follow company protocol when reporting and investigating incidents. Refer to the Attachment E – Incident Reporting.

6.15.2 Chevron

Additionally, ENTACT will comply with Chevron's Incident Reporting and Investigation OE Process. The CEMC notification hierarchy is located in Section 6.4.2 of this HASP. Incidents will be reported to the ENTACT FPM, HSO, and EMC Project Manager. As a contractor for Chevron EMC, ENTACT will:

- Follow ENTACT's own incident reporting, investigation, and root cause analysis procedures for each incident involving either ENTACT or Subcontractor employees, and/or equipment, or third-party property.
- Implement Stop Work Authority
- Immediately after emergency response following an incident, notify the CEMC PM about the incident, providing sufficient information so that the CEMC Project Manager can provide the appropriate notifications
- Make appropriate notification to government agencies
- Facilitate investigations on incidents that occur to ENTACT employees or under CEMC control and determine systemic root causes using a root cause analysis (RCA) process (Why Tree)
- Complete incident investigations for ENTACT and Subcontractor incidents within 3 business days and the full RCA report within two (2) weeks following the event.
- Participate in investigations for CEMC Employee incidents or incidents for other Contractors on the same job site, as requested.

6.15.3 OSHA

The Field Project Manager is responsible for notifying OSHA. Within eight (8) hours after the death of any employee from a work-related incident or the in-patient hospitalization of three or more employees as a result of a work-related incident, you must orally report the fatality/multiple hospitalization by telephone or in person to the Area Office of the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, that is nearest to the site of the incident. You may also use the OSHA toll-free central telephone number, 1-800-321-OSHA (1-800-321-6742). If the Area Office is closed you must report the fatality or multiple hospitalization incidents using the 800 number.

The following information must be given:

1. The establishment name;
2. The location of the incident;
3. The time of the incident;

4. The number of fatalities or hospitalized employees;
5. The names of any injured employees;
6. Your contact person and his or her phone number; and
7. A brief description of the incident.

You can locate the local Area or Regional Office on the intranet:

http://osha.gov/html/RAmap.html

6.16 INJURY CASE MANAGEMENT

ENTACT and Chevron's primary concern following an incident is for the health and well-being of any injured employees, contractors or third parties. The following expectations apply to all site personnel; they are intended to help injured people receive prompt, proper medical attention and for employees and contractors to return to work as soon as possible.

a) A person injured on a CEMC work site should receive prompt access to any needed medical care.

b) Any injured CEMC employee who seeks medical treatment for a work-related injury must be accompanied by his or her on-site supervisor or HES specialist to a qualified physician and/or clinic.

c) Any injured contractor employee who seeks medical treatment for a work-related injury must be accompanied by the contractor's on-site supervisor or preferably, HES specialist to a qualified physician and/or clinic.

d) If possible, the on-site supervisor / HES Specialist should speak directly with the treating physician in order to describe the job duties of the injured person and obtain from the treating physician clarification of the exact nature of any restrictions related to the injury that are recommended by the physician.

e) Reasonable accommodations may be made on CEMC projects to allow the injured person to return to work provided that such work is within the CEMC project work scope as authorized and as long as returning the injured employee to work complies with any work restrictions recommended by the treating physician and is not likely to aggravate the employee's injuries or delay his or her recovery.

f) For serious injuries to contractor employees, the Contractor must provide daily updates to the CEMC Project Manager and/or General Manager to describe the status of an injured contractor employee; this daily update will continue until the condition of the injured person stabilizes. Then, ongoing, ENTACT is responsible for promptly notifying CEMC Project Manager, Area Manager and/or General Manager of any change in status of the injured person (e.g., discharge from hospital, return to work, re-hospitalization).

g) For any injuries to ENTACT employees requiring medical treatment, ENTACT must document the conclusions of the treating physician including any recommended work restrictions in the RCA.

h) ENTACT employees are required to notify their supervisor when they suffer an injury or illness outside of work hours if that injury or illness could be aggravated while performing their normal job duties; ENTACT Supervisors should make reasonable accommodation to allow them to work provided that such work is within the CEMC project work scope as authorized and as long as returning the injured employee to work complies with any work restrictions recommended by the treating physician and is not likely to aggravate the employee's injuries or delay his or her recovery.

i) The office or site-specific emergency response plan and/or HASP should specify the medical facility that is to be used in the event of work related injuries or illnesses (see hospital and clinic information at the front of this HASP).

7.0 LEVELS OF PERSONAL PROTECTION FOR SITE ACTIVITIES

ENTACT's Personal Protective Equipment Program identifies the appropriate level of PPE to be used by associates for each site task. This program consists of the following elements:

- HASP Section 5.4 – Task Hazard Assessment
- HASP Section 7.0 – Levels of Personal Protection for Site Activities
- Job Hazard Assessment (part of JLA)
- Job Loss Analysis
- ENTACT's Personal Protective Equipment Policy

Currently TPH is the material of concern. Tasks will be conducted in Level D and D+ PPE. ENTACT will be consistent with OSHA-defined levels of protection, with the exception of Level D+. This level of protection will be used when dermal protection is desirable, but respiratory protection is not needed. Table 7.1 lists the components for Level D PPE. Tables 7.2 and 7.3 list the components of Level D+ and C PPE if conditions change and they should be required. Levels A, B, C, and D+ protection are not anticipated for any on-site operations. Additional information regarding PPE is provided in ENTACT's Personal Protective Equipment Policy and ENTACT's Respiratory Protection Program both maintained under separate cover.

Emergency PPE and equipment may be upgraded from what is designated in this section. Emergency PPE and equipment will be determined according to the contaminant, concentration levels, and site characteristics at the time.

When a hazard exists, the ideal work environment would be achieved by the use of engineering controls such that the control utilized would either completely remove all hazards from the work place or fully isolate associates from hazardous conditions. An example of an engineering control is dust suppression accomplished by sprinkling soil with water. Whenever engineering controls can be proven effective and feasible, they will be initiated.

Subcontractors will comply at a minimum with ENTACT's PPE requirements or will develop their own standards according to their specific job tasks. Subcontractor PPE standards must be reviewed by the ENTACT Health and Safety Officer prior to project mobilization.

ENTACT will provide advanced training, as necessary, to any person who will be expected to perform site work using Level A or B protection (if applicable) or other specialized operation to be utilized at the site. In the event that Level A or B protection is required, a Level A/B Team will be formed and trained to carry out this work. Level A or B work must be authorized by the HSS and all site personnel engaged in this work must be trained in Level A/B implementation.

Table 7.1 Level D PPE	
Protective Gear	**Type**
Respiratory protection	Not Required
Chemical protective clothing [1]	Not Required
Hand protection: inner gloves	Not Required
Hand protection: outer gloves	Cotton or leather work gloves
Foot protection: inner boots	Steel-toe, leather work boots
Foot protection: outer boots [2]	None; metatarsal guards or equivalent; snake chaps
Clothing Requirement	Long Sleeve Shirt/Long Pants
Head protection	Standard hard hat
Eye protection	Standard safety glasses with side shield or goggles
Splash protection [3]	Standard face shield
Other protective clothing	High visibility, reflective vest, such as an orange traffic type vest
Hearing protection	Ear plugs or muffs with NRR of at least 25

[1] Associates may wear Tyvek or similar coveralls as protection from ticks and insects.

[2, 3] Splash protection and metatarsal guards or equivalent will be worn during power/pressure washing. Snake chaps may be worn in tall grass or weeds.

Table 7.2 Level D+ PPE	
Protective Gear	**Type**
Respiratory protection	None
Chemical protective clothing	Disposable coated Tyvek, Saranex, or equivalent
Hand protection: inner gloves	Nitrile, surgical fit
Hand protection: outer gloves	Latex dipped or leather work gloves
Foot protection: inner boots	Steel-toe, leather work boots
Foot protection: outer boots [1]	Rubber boot covers; metatarsal guards or equivalent; snake chaps
Head protection	Standard hard hat
Eye protection	Standard safety glasses with side shield or goggles
Splash protection [2]	Standard face shield
Other protective clothing	High visibility, reflective vest, such as an orange traffic type vest
Hearing protection	Ear plugs or muffs with NRR of 25
[1, 2] Splash protection and metatarsal guards or equivalent will be worn during power/pressure washing. Snake chaps may be worn in tall grass or weeds.	

Table 7.3 Level C PPE	
Protective Gear	**Specific Type**
Respiratory protection	North Half- or Full-Face Air Purifying Respirator (APR) with combination cartridges or organic vapors and particulates (P-100).
Chemical protective clothing	Disposable coated Tyvek, Saranex, or equivalent (asbestos removal requires taping to gloves & boots)
Hand protection: Inner gloves	Nitrile, surgical fit
Hand protection: Outer gloves	Latex dipped or Leather
Foot protection: Inner boots	Steel-toe leather work boots
Foot protection: Outer boot [1]	Rubber boot covers; metatarsal guards or equivalent; snake chaps
Head protection	Standard hard hat
Eye protections	Standard safety glasses with side shields or goggles
Splash protection[2]	Standard face shield
Other protective clothing	High visibility, reflective safety vest, such as orange traffic type vests
Hearing Protection	Ear plugs or muffs with NRR of 25
[1, 2] Splash protection will be worn during power/pressure washing. Snake chaps may be worn in tall grass or weeds.	

PPE will be upgraded:

- If new hazards are found with unknown toxic or physical hazards.
- If hazards exhibit higher toxic or physical hazards that require upgrading of PPE. Air monitoring will be closely monitored.
- If associate requests an upgrade including the voluntary use of respirators when not required by the HASP.

If work site conditions dictate the need to upgrade PPE, the FPM or HSO will issue a stop work order and will contact the Project Health and Safety Coordinator to revise or amend this HASP.

Cartridge Change Schedule Documentation Form

Job: Location:

Respirator Model: Cartridge Model:

Chemical (s)

Name	Exposure Limit	Concentration	Odor Threshold	Boiling Point *

*** Chemicals with boiling points less than 65 °C (149 °F) may be readily desorbed from activated carbon during periods of non-use.**

Patterns of Use:

Number of shifts per week: Hours cartridge used during shift:

Estimated work rate: □ Light □ Moderate □ Heavy

Environmental Data:

Maximum Expected Temperature: °C

Maximum Expected Relative Humidity: %

Basis for Service Life Estimate:

- ❑ Rule(s) of Thumb – Specify:
- ❑ Laboratory data (Attach Data Used)
- ❑ Mathematical Model (Identify Model Used and Attach Result)
- ❑ Workplace Cartridge Testing (Attach Description of Method and Results)
- ❑ Cartridge Testing After Use (Attach Description of Method and Results)
- ❑ OSHA Method for Mixtures (Attach Calculation Worksheet)
- ❑ Mole Fraction Calculation for Mixtures (Attach Calculation Worksheet)

Cartridge Change Schedule:

- ❑ Every _____ Hours
- ❑ After Each Shift
- ❑ After One Week
- ❑ Other (specify):

Logic Used in Setting Change Schedule:

8.0 FREQUENCY AND TYPES OF AIR MONITORING

Personal and work area air monitoring will be required at this job site. ENTACT is not responsible for any community air monitoring program at this work site.

Dust suppression methods will be used to control nuisance dust with the goal of dust suppression being the avoidance of any visible dust. If work site conditions indicate that other chemical hazards are present, the FPM or HSO will issue a stop work order and will contact the Project Health and Safety Coordinator to revise or amend this HASP.

Air monitoring will be implemented to ensure the safety of personnel at the job site and surrounding areas. Initial monitoring will be performed to determine associate exposure levels to the hazards. TPH, and nuisance dust are the primary concern. Initial hydrocarbon background sampling (one day) will be performed during mobilization. If concentrations of hydrocarbons exceed the job task PPE protection level then upgrading of PPE as outlined in Section 7 will be implemented. If unknown hazards are discovered during the operation work in that area will be discontinued until the Field Project Manager and the Health and Safety Coordinator have:

- Identified the hazards
- Identified levels of concentration
- Determined proper PPE
- Determined required monitoring

8.1 REAL-TIME ACTION LEVELS FOR PPE

Table 8.1
Real-Time Action Levels for Personal Protection Equipment

Monitoring Equipment	Hazard	Action Level Above Background	Action
PID	Organic gas/vapor	< 25 ppm	Level D
		25 ppm – 50 ppm (alarm will sound on PID monitor)	Stop work, don Level C (pending further screening for benzene)
		> 50 ppm	Stop work, withdraw from operation until elevated readings subside.
LEL Monitor	Explosive atmosphere	< 10% LEL	Level D

Monitoring Equipment	Hazard	Action Level Above Background	Action
		> 10% LEL	Stop work. Immediate withdrawal. Potential explosive hazard. Contact the PHSC for further instructions.
PDR	Nuisance Dust	0.5 mg/m^3	Increase application of water. Stop work and contact PHSC if level defy control.
Detector Tube	Benzene Exposure	> 0.5 PPM	Stop work until elevated reading subside. Contact PHSC for possible upgrade to Level C.

8.2 AIR MONITORING EQUIPMENT

The following is a list of air monitoring equipment that will be used on this site.

- 1 Multi-RAE 4-gas + Photo Ionization Detector (PID) as needed
- 2 Personal Data RAM (PDR) for respirable particulates as needed
- 1 Ultra RAE PID and colorimetric tubes for benzene as needed

8.4 AREA AIR MONITORING

Initial VOC air monitoring will include continuous real time monitoring for a period of two days. Alarms will be set at 100 ppm (low) and 300 (high), the action level and permissible exposure limit total petroleum hydrocarbons, respectively. ENTACT personnel will be required to check the PID periodically and report readings > 5ppm sustained for 5 minutes to the HSC. When sustained levels above 5 ppm are encountered, air monitoring for benzene will be initiated with the Ultra Rae and benzene specific colorimetric indicator tubes.

In addition, PID monitoring will occur at least once in each work area each week. The majority of the VOC monitoring will occur in the hazardous waste areas.

Real-time aerosol monitoring will be conducted at the onset of tasks which have high potential for creating nuisance dust or other airborne particulates.

Dust suppression methods will be used to control nuisance dust with the goal of dust suppression being the avoidance of any visible dust. If work site conditions indicate that other chemical hazards are present, the FPM or HSO will issue a stop work order and will contact the Project Health and Safety Coordinator to revise or amend this HASP.

9.0 SITE CONTROL MEASURES

The following section describes how workers will be allowed onto the site and what the various work zones are.

9.1 SITE ACCESS

Access to the site will also be controlled by ENTACT personnel during normal working hours. All personnel and visitors requiring access to the site will be required to sign the Visitor Logbook prior to entry to the site.

General deliveries such as Fed Ex, UPS, freight deliveries, etc., are required to sign-in at the ENTACT administration location.

9.1.1 Cameras and Electronic Equipment

Cameras or other electronic equipment may not be used without prior approval from the Chevron Project Manager and property owner.

9.2 WORK ZONES

At this time, site control (such as required by 29 CFR 1910.120) is not required for the project. However, the nature of demolition work dictates that strict access control is necessary and we will establish work zones in general accordance with the following sections.

The purpose of site control is to minimize potential contamination of associates, protect the public from the site activities, and prevent vandalism. To prevent exposure to unprotected personnel and migration of contamination due to tracking by personnel or equipment, work areas along with PPE requirements will be clearly identified. The areas of designation will be:

- Support zone (clean)
- Decontamination zone (transitional)
- Exclusion Zone (contaminated)

The FPM and the team will properly identify, mark, and enforce all zones of operation.

9.2.1 Support Zone

The support zone will be designated by signs and caution tape. It shall be secured against active or passive contamination from the work site. The support zone will consist of those areas adjacent to the exclusion zone where the administrative offices, decontamination trailer, and equipment are staged. Eating and drinking will only be allowed in this area.

The uncontaminated support zone will be the area outside the exclusion and decontamination zones and within the geographic perimeters of the site. This area is used for staging of materials, parking of vehicles, sanitation facilities, and receipt of deliveries. Personnel entering this zone

may include delivery personnel, visitors, security guards, etc., who will not necessarily be permitted in the exclusion zone. All personnel arriving in the support zone will upon arrival, report to the command post and sign the site entry/exit log. There will be one controlled entry/exit point from the clean zone to the decontamination zone.

9.2.2 Decontamination Zone

The decontamination (decon) zone will provide a location for removal of contaminated personal protective equipment when personnel leave the exclusion zone during the day and the final decontamination at the end of the day. Coveralls will not be worn more than one work shift without being washed or discarded. ENTACT personnel will decontaminate by properly disposing of contaminated clothing and washing the face, forearms and hands as they exit the decon area and before leaving the site.

An on-site decontamination facility (portable decon sink) shall be provided by ENTACT. ENTACT shall be responsible for providing the appropriate decontamination tools, equipment, solutions, liquids, containers, and supplies along with a concrete pad or other suitable base on which to perform decontamination activities.

All personnel shall be decontaminated before leaving the site (leaving the exclusion zone and entering the contamination reduction zone). Decontamination shall be required prior to breaks, when picking up tools, equipment, or materials in the support zone, or any other activities where the potential exists for contaminant transfer.

Equipment shall be cleaned and decontaminated prior to use on-site and prior to leaving the site. Wheels on any equipment in contact with potentially contaminated soil shall be cleaned prior to leaving any work area. Care shall be taken to avoid the possibility of contaminating formerly uncontaminated material or areas through the use of contaminated equipment.

Decontamination facilities shall be designed to meet all requirements of the approved work plan and all local, state, and federal requirements.

Decontamination facilities shall be designed to:

- Isolate contamination;
- Prevent cross-contamination;
- Be substantially watertight;
- Prevent contamination from leaving the site;
- Be large enough to contain run-off and spray water; and
- Have provisions for the collection and removal of accumulated water.

All decontamination liquids shall be collected and characterized to determine an appropriate disposal method. The decontamination facilities shall have a sump, pump, and piping system or other acceptable means to evacuate decontamination water in a timely manner.

- Decontamination solids, PPE, and debris shall be handled with demolition materials.

- The decontamination facility shall be resistant to chemical attack by the materials that will be contained in the facility.
- The decontamination stations may be temporary and transportable; side panels shall be used as needed to control fugitive emissions from the decontamination stations.
- All equipment shall be free of visual contamination prior to leaving the site. All tires and tracks shall be free of soil, grease, oil, slag, or other contaminants.

Decontamination facilities shall be capable of providing decontamination of the undercarriage and exterior of a vehicle to remove particulate matter using high-pressure spraying from the sides and bottom.

9.2.3 Exclusion Zone

The exclusion zone will be the areas outside the support zone and decontamination zone. The exclusion zone and the decontamination zone will continually change as work progresses. Entry to and exit from this zone will be made through the decontamination zone. Appropriate warning signs to identify the exclusion zone will be posted (such as. DANGER - AUTHORIZED PERSONNEL ONLY). Upon exiting the exclusion zone personnel and equipment must be decontaminated.

The exclusion zone will be identified with a yellow caution banner guard and/or signs. While in the exclusion zone, personnel will wear Level C PPE and refrain from horseplay, use of tobacco products, eating, drinking, and generating open flames. Associates will utilize the EZ Sign-In and Out log when entering the EZ and must sign out when exiting the EZ.

9.3 SECURITY OF PERSONNEL AND ASSETS

Site security measures will be established during mobilization and site preparation activities to prevent unauthorized access to the site and prevent the removal of materials, equipment or other items from the site that are not authorized. Site security and access is currently being maintained 24 hours a day by a security subcontractor under the direction of CPL. Additional security measures may be provided depending on work activities.

Site security is vital for protecting not only equipment and other valuable assets, but protects on-site personnel as well.

The Field Project Manager and Health & Safety Officer share responsibility for site security. They are responsible for ensuring that tools, vehicles, equipment, computers and facilities are secured at the end of the workday. Thefts and vandalism are crimes of opportunity that can often be prevented by removing the keys from vehicles and equipment, locking gates and office doors, securing supplies and equipment and providing exterior lighting. Under certain circumstances and when authorized by the client, private security patrols may be provided. ENTACT's Site Security Checklist will be utilized to ensure security measures are in place.

10.0 DECONTAMINATION PROCEDURES

In general, items entering the exclusion zone on the site must either be decontaminated or properly discarded upon exit from the exclusion zone. All personnel, including Federal, State, and local officials, must enter and exit the exclusion zone through the decon area. All personnel must be documented on the exclusion zone entry/exit log. Prior to demobilization, contaminated equipment will be decontaminated and inspected by the ENTACT FPM or designate before it is moved into the support zone. Any material that is generated by decontaminated procedures will be stored in a designated area in the exclusion zone until disposal arrangements are made.

10.1 PERSONNEL DECONTAMINATION

Once remediation procedures have been implemented the ENTACT FPM shall be responsible for ensuring that the PPE items and associates have been sufficiently decontaminated through proper training and procedures. Each associate and the FPM are ultimately responsible.

Station 1 Equipment Drop

Deposit equipment used on-site on plastic drop cloths. These items must be decontaminated or discarded as waste prior to removal from the exclusion zone.

Station 2 Outer Boot and Outer Glove Wash and Rinse

Scrub outer boots, outer gloves, and/or splash suit with decontamination solution or detergent water. Rinse off using water.

Station 3 Outer Boot and Glove Removal

Remove outer boots and gloves. If disposable, deposit in a container with plastic liner. If non-disposable, place in a clean dry place.

Station 4 Respiratory Protection Removal (not anticipated)

Remove hard hat and respirator and deposit on a clean surface. APR cartridges will be discarded as appropriate. Wash and rinse respirator at least daily. Wipe off and store respirator in a clean dry location. Example: plastic sealable bag.

Station 5 Inner Glove Removal

Remove inner gloves. Deposit in container for disposal.

Station 6 Protective Clothing Removal

Protective Tyvek or polycoated coveralls will be deposited in a container with a plastic liner that

is properly marked.

Station 7 Field Wash

Thoroughly wash hands, forearms and face with biodegradable soap and water.

Eating, drinking or any practice that increases the probability of hand to mouth transfer and/or ingestion of materials is prohibited in any area where the possibility of contamination exists and is permitted only in the designated break area. Personnel will not wear or bring dirty/decontaminated clothing into the clean support area.

Eating, drinking or any practice that increases the probability of hand to mouth transfer and/or ingestion of materials is prohibited in any area where the possibility of contamination exists and is permitted only in the designated break area. Personnel will not wear or bring dirty/decontaminated clothing into the clean support area.

10.2 EQUIPMENT DECONTAMINATION

Equipment, vehicles, or tools that have entered the exclusive zone will be decontaminated prior to removal. Some equipment decontamination may require pressurized water. In this case face shields will be utilized. Equipment will be decontaminated to meet visual standards.

10.3 DISPOSITION OF DECONTAMINATION WASTES

All equipment used for decontamination shall be decontaminated or disposed of with the established waste streams. Established waste streams are those specified in the work plan. Discarded clothing (PPE) will be disposed of along with the waste streams.

10.4 DECONTAMINATION FACILITIES

Decontamination facilities for personnel PPE and equipment will be provided by ENTACT. ENTACT personnel will decontaminate prior to leaving the site and taking breaks (washing hands, forearms, and face with soap and water prior to leaving site). ENTACT personnel will leave the ENTACT operations site in clean street clothing. Contaminated equipment will be placed into assigned containers for disposal or further decontamination. Equipment will be visually inspected and decontaminated with a high-pressure water spray until no visible contamination remains on the equipment. The wash water will be utilized as a dust suppressant if local regulations allow. The following decontamination procedures will be implemented for these categories.

A decontamination area will be constructed for equipment, personnel, PPE, and the storage of PPE utilized by site personnel. All personnel and equipment will be decontaminated prior to leaving the exclusion zone.

The decontamination of heavy equipment will be carried out by dry methods. However, if visual inspection indicates that contamination remains, power/pressure washing will be required. When

pressure washers are used with heated water, the lowest temperature that allows for decontamination should be used.

All personnel must use the decontamination zone to enter and exit the exclusion zone.

10.5 SIMPLIFIED DECONTAMINATION

Simplified decontamination process has been established for workers entering the excavation exclusion zone.

Station 1 Equipment Drop

Deposit equipment used within excavation onto plastic drop cloths. These items must be decontaminated (dry decon or wet wipe) prior to removal from the exclusion zone.

Station 2 Outer Glove, Disposable Boot Covers or Steel-Toe Rubber Boots Decon

Remove boot covers and discard into waste container. If steel toe rubber boots are utilized, they must be brushed clean or water washed. If outer gloves are utilized (task specific requirement) remove and discard outer gloves.

Station 3 Inner Glove Removal

Remove inner gloves. Deposit in waste container for disposal.

Station 4 Field Wash

Thoroughly wash hands, forearms and face with biodegradable soap and water or wet wipes.