	CONTACTOR SUBMITTAL	Date 3/21/11

PROJECT NAME: **San Jacinto Waste Pits**

CONTRACTOR:	**USA Environment LP**	Subcontract No.		Sub.No.	**20**

To:	**John LaPlante**	**References:**	HASP Rev. 1
		Drawing/Spec:	
Subject:	**Revised Site HASP**	**Detail/Section:**	
		Discipline:	

Response Requested By:		**High Priority:**	☒	**Low Priority:**	☐
Potential Impact:	**Capping of Western Cell**	**Cost:**	☐	**Schedule:**	☒

Attached is the revised HASP with the corrected Hospital and Location.

Routing:	**Date Sent**	**Date Received**	**COMMENTS**
	3/21/11		

Reply:

☒ Conforms to design concept
☐ Conforms to design concept with revisions shown
☐ Revise and resubmit
☐ For information only

Comments:

Addressee: Sign and return original to:	**Approved By:**
	Name:
Cesar Garcia	**Title:**
	Date:

This submittal has been reviewed for general conformance to design concept only. This review does not relieve the contractor or supplier of full responsibility for adhering to the contract document and satisfactory completion of all work.

By: John P. [signature] Date: 04-14-11

Anchor QEA, LLC

90023802

SUBMITTAL 20

HEALTH AND SAFETY PLAN

Prepared For:

McGinnes Industrial Maintenance Corp.
International Paper Company
Anchor QEA, LLC

Site:

San Jacinto River Waste Pits

Superfund Site

Prepared By:

USA Environment, LP

10234 Lucore St. Houston, TX 77017

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INTRODUCTION

HEALTH AND SAFETY PLAN

USA Environment, L.P. (USA) has prepared this Health and Safety Plan (HASP) for the San Jacinto River Superfund Waste Pit Site, on planned remediation activities planned for the Time Critical Removal Action (TCRA). This HASP describes the health and safety guidelines developed to mitigate potential risks and ensure the health and safety of on-site personnel, visitors, and the public from physical harm and exposure to hazardous materials or wastes. The procedures and guidelines contained herein were based upon the best available information. Specific requirements will be revised when new information is received or conditions change. A written amendment will document all changes made to the plan. Any amendments to this plan will be included in Appendix A. Where appropriate, specific OSHA standards or other guidance will be cited and applied.

APPLICABILITY

The requirements of this plan are mandatory for all USA personnel associated with impacted sediment remediation activities at San Jacinto Waste Pits. Located at San Jacinto River, Hwy 10 Exit Lynchburg, Channelview, TX. All personnel will operate in accordance with Title 29 Code of Federal Regulations Section 1910.120, Standards for Hazardous Waste Operations and Emergency Response (HAZWOPER). These regulations include the following provisions for employees: training Section 1910.120(e); medical surveillance, Section 1910.120(f); and personal protective equipment (PPE), Section 1910.120(g).

All USA personnel and/or our subcontractors, present at the project site, shall adopt and abide by this HASP. Failure to comply with the safe working requirements included in this HASP will be sufficient grounds for immediate removal from the project.

ACCOUNTABILITY

The following person has been identified as the single point of accountability for the remediation project:

USA Environment, L.P. CEO Bret Pardue (713) 425-6900

All work practices and procedures implemented on site must be designated to minimize worker contact with hazardous materials and to reduce the possibility of physical injury. A copy of this plan will be kept onsite and available to workers, clients and agencies personnel at all times.

USA's health and safety policy and procedure on any one project cannot be administered, implemented, monitored and enforced by any one individual. The overall objective of a safe, accident free work environment can only be accomplished by a dedicated, concerted effort by

every individual involved with the project from management down to the last employee. Each employee must understand their value to the company; the costs of accidents, both monetary, physical, and emotional; the objective of the safety policy and procedures; the safety rules that apply to the safety policy and procedures; and what their individual role is in administering, implementing, monitoring, and compliance with the safety polices and procedures.

SITE SAFETY ACCEPTANCE/ACKNOWLEDGEMENT

The USA Site Safety Officer or designated representative shall be responsible for informing all individuals entering the Work Zone (WZ) of the contents of this HASP and ensuring that each person signs the HASP Acknowledgment Form in Appendix G. By signing the HASP Acknowledgment Form, an individual acknowledges he/she recognizes the potential hazards present on-site and the policies and procedures required minimizing exposure or adverse effects of these hazards.

SAFETY MEETINGS

Daily tailgate safety meetings will be held by USA Environment during the course of the week. The meetings will be held at the start of each day to ensure that all personnel understand site conditions and operating procedures, to ensure that personal protective equipment is being used correctly and to address worker health and safety concerns. The meetings shall reinforce EH&S requirements, review compliance and near miss incidents caused by non-compliance, establish procedures and Job Safety Analyses (JSA's) for present and anticipated activities.

PRE – MOBILIZATION, ACTIVITIES, AND MEETINGS

The purpose of this meeting was to introduce the various project team members, to review the contract requirements, to resolve any issues identified by pertinent agencies, and to finalize a detail schedule of operations. Additionally, the USA team met with Anchor QEA Representatives to discuss USA's risk assessment process and how it integrates with the Remediation Project. Final documents which include the Technical Execution Plan (TEP), Heath and Safety Plan (HASP), Site/Project Level Risk Assessment, and Job Level Risk Assessment will be presented to Anchor QEA.

It is anticipated that additional phone conferences will be held prior to mobilization to discuss any outstanding action items and resolve any other issues prior to the commencement of work.

PROJECT MEETINGS AND REPORT MATRIX

USA will hold weekly progress meetings throughout the construction of the project. Meetings will be held at the USA trailer located at the site. At the progress meetings the following items will be discussed:

- Minutes of previous meeting;
- Discuss health and safety for the project;
- Update and review of current work progress and project schedule;
- Field observations and potential issues and conflicts;
- Problems that may impede the project schedule;
- Corrective measure and procedures to regain the project schedule;
- Revision to the project schedule;
- Two week look ahead;
- Status of existing change orders;
- Outstanding action items; and
- Other business.

USA will hold daily tailgate safety meetings for USA workers, all subcontract workers and planned visitors or oversight participants. The meetings will address the following:

- Health and Safety concerns presented by daily tasks;
- Discuss safety audits and field observations;
- Address additional controls and corrective actions;
- Discuss the job level risk assessment as it pertains to the daily tasks;
- Completion of JSA's for each crew;

USA will hold a post construction meeting approximately one week after substantial completion of the project has been achieved. This meeting will discuss the following:

- Status of special conditions for owners acceptance of the work;
- Outstanding punch list items;
- Outstanding change orders or other issues;
- List of deviations from the Contract Documents and specifications;

- Discuss submission of final submittals;
- Final billing amounts and procedures, including retainage;
- Project execution lessons learned and suggested improvements for future construction projects;
- HSSE lessons learned and suggestions and recommendations for future projects.

USA will submit project documentation throughout the project in a thorough and timely manner. The submittals are a combination of project and MSA documents.

AUTHORIZATION TO WORK PERMITS

"Authorization To Work" permit (See APPENDIX J) will be used to develop the basis of the topics discussed. A JSA (included in permit) for the work to be conducted during that shift will be reviewed and signed by all personnel involved in the project. All personnel involved in the work will participate in the meeting.

MOBILIZATION

Mobilization of Personnel and Equipment

Upon notice to mobilize, USA will mobilize necessary personnel and equipment to the site. Prior to commencing the work, the Site Health and Safety Officer will conduct a site orientation and tailgate safety meeting for all crewmembers, subcontractors, and any other parties as directed by USA and client representative. This safety meeting will inform the crew of potential material handling and excavation hazards and project safety protocols necessary to complete the project in a safe and timely manner. Equipment and personnel will be scheduled on an as needed basis depending on the USA work plan and will include the following:

Equipment

Sources of equipment will be subcontractor owned or rented from local distributors. All equipment will be inspected upon arrival to the site to ensure it is in proper working order. Any equipment that is found to be deficient will be removed from the site and replaced with another piece of equipment. Daily inspections to ensure continual proper working order will be documented on a daily equipment check list. All inspection documentation will be collected by USA and presented in the final report.

PERSONNEL AND RESPONSIBILITIES

All USA supervisory and craft personnel are responsible for ensuring that the safety program is being correctly followed at all times. **Health and safety is the first and foremost priority of every project individual**. It is the responsibility of each and every individual to ensure that they, in addition to their fellow employees are performing their project duties to the expected health and safety levels.

KEY PROJECT PERSONNEL

Name	Title/Responsibility	Office Phone	Cell Phone
David Keith	Anchor QEA Project Manager	228-818-9626 ext 221	
Randy Brown	Anchor QEA Construction QA		281-979-7338
Cesar Garcia	USA Site Project Manager	(713) 425-6900	(832) 641-0265
Ron Griffith	USA Site Supervisor	(713) 425-6900	(713) 213-6366
Jesse Garcia	USA Site Safety	(713) 425-6900	(281) 513-5523

PROJECT MANAGER

USA's Project Manager will have overall responsibility for the execution of the project. In conjunction with the SSO and the Project Coordinator, the Project Manager will ensure that work is being implemented and executed in full compliance with the health and safety requirements of this HASP. The Project Manger will ensure that both the Project Coordinator and SSO have the requisite training, resources and support to be able to fully implement and facility this HASP.

PROJECT COORDINATOR

USA's Site Superintendent is the primary responsible party for field coordination efforts. The Project coordinator will work closely under the direction of the Project Manager to schedule personnel, equipment and materials to the site to ensure smooth transition between scheduled construction events. Additionally, and in conjunction with the SSO, the Project Coordinator will ensure that work is being implemented and executed in full compliance with the health and safety requirements of this HASP.

SITE SAFETY OFFICER

USA's SSO is the primary responsible party for the project health and safety. The SSO will have the responsibility for ensuring that all personnel are aware of:

Names of personnel responsible for site health and safety
Health, safety and other hazards present on site
Use of PPE and ensuring that the equipment is available
Work practices by which the employee can reduce risks from hazards
Safe use of engineering controls and equipment onsite
Medical surveillance requirements, including recognition of symptoms which might indicate over exposure to hazards
Site control measures, decontamination procedures, site standard operating procedures, and the contingency plan and responses to emergencies including the necessary PPE.

The SSO is also responsible for ensuring that all employees have received at least 40 hours of HAZWOPER health and safety instruction (off the site), and three days of actual field experience under the direct supervision of a trained experienced supervisor. Workers who may be exposed to unique or special hazards shall be provided additional training as required.

The SSO will also monitor the performance of personnel to ensure the mandatory health and safety procedures are being performed and correct any performances that do not comply with this HASP. Copies of health and training certificates must be available for review by the SSO. If unforeseen site conditions or an emergency occurs the SSO shall ensure that the medical surveillance program is implemented as required by 29 CFR 1910.120. Additional responsibilities may include:

1. Consulting with the Project Manager and/or Site Superintendent
2. Preparation of any submittal of any and all health and safety project reports including progress, accident, and incident reports.
3. Monitor personnel decontamination to ensure that established procedures are being followed by all personnel.

RESPONSIBILITIES OF FIELD PERSONNEL

All personnel assigned to the project will be thoroughly briefed on the anticipated hazards and trained on equipment to be worn, safety procedures are to be followed along with all emergency procedures and communications. Additionally every onsite person will have the following responsibility:

- Visual contact must be maintained between pairs on onsite and site safety personnel.
- All field personnel should use their senses to alert themselves and fellow employees to potentially dangerous situations that they should avoid.
- Personnel should perform a risk assessment when unfamiliar of the area or task before doing the actual procedure in the field.

- Field personnel will be familiar with the physical characteristics of the site, including: wind direction identified by site windsock in relation to contaminated zones; accessibility to associates, equipment and vehicles; communications; operation zones; site access, and; nearest water sources.
- Procedures for leaving the contaminated area (exclusion zone) must be planned and implemented before going onsite in accordance with the site HASP.
- All visitors to the job site must comply with the HASP procedures. Personal protection equipment may be modified for visitors depending on the situation. The Site Safety Officer must approve all modifications.

EMERGENCY PROCEDURES

TO REPORT AN EMERGENCY: CALL 911. Be able to give information concerning the type and location of the emergency.

Onsite Contact Numbers

CONTACT	Name and Organization	PHONE
Emergency Mgmt. Coordinator	Ron Griffith	(713) 213-6366

Offsite Contact Numbers

CONTACT	AGENCY OR ORGANIZATION	PHONE OR CELL
Fire - Ambulance	Channelview Fire Department	911 – (281)452-5782
Police	Harris County Sheriff Department	911 – (713)221-6000
East Houston Regional Medical Center	13111 East – Freeway Houston, TX 77015	(713)393-2000
Occupational Clinic	San Augustine Industrial Clinic 321 West San Augustine, Deer Park Texas	(281) 476-0780
Poison Control Center	National Hotline	800-522-4611

David Keith	Anchor QEA, LLC Project Manager	228-818-9626 ext 221	
Cesar Garcia	USA Site Project Manager	(713) 425-6900	(832) 641-0265
Ron Griffith	USA Site Supervisor	(713) 425-6900	(713) 213-6366
Jesse Garcia	USA Site Safety	(713) 425-6900	(281) 513-5523

A hospital route map is provided in Appendix B

SITE BACKGROUND AND SCOPE OF WORK

SCOPE OF WORK

A summary of the work to be performed by the Contractor to complete the TCRA is outlined in these Technical Specifications and includes, but is not limited to, the following:

Project Set Up

- Mobilizing of all personnel, equipment, supplies, offices, and other facilities necessary for the work.
- Develop and implement a Site health and safety program.
- Develop and implement a Site quality control program.
- Develop and implement a Site security program.
- Develop and implement an environmental protection program.
- Conduct in-progress surveys of the work during construction to track progress and adjust cap placement operations as necessary.
- Construct an access road and lay-down area.
- Demobilizing of all personnel, equipment, supplies, offices, and other facilities necessary from the work

Site Description

Eastern Cell Protection

Water Side Construction of Rock Cover – Prior to the placement of the rock cover, the foot print of the area to receive the rock via water side placement (nominally water depths greater than -2 NAVD 88) on a daily basis will be covered with Mirafi 1120N or equivalent. This filter fabric comes in rolls that are 15 feet wide and 300 feet long. Fabric panels will be constructed that are approximately 29 feet wide by 300 feet long by stitching together two (2) rolls using a prayer seam. This seam will be a factory produced seam. The fabric panel will then be placed on a 10 foot by 40 foot spud barge. The fabric panel will then be attached to a long boom track hoe on a 40 foot by 100 foot barge and pulled into place. The fabric panel will be weighted using concrete anchors approximately every 20 feet on both sides. This represents slightly more than one day of water side rock placement. A long boom track hoe operating from a shallow draft barge will be used to place the rock cover. The rock will be off loaded from a separate materials barge and placed to the thicknesses desired. The rock will be placed on the fabric panels such that the next successive fabric panel can be placed with a three (3) foot overlap. The barges will be moved

with a shallow draft tug to allow movement as close to shore as possible (nominally -2 feet NAVD 88). The materials barges will be loaded from the barge slip at the Big Star property located to the north and west of the site. The materials barge will be loaded on a daily basis with the appropriate rock cover materials for that days work and location (or the next days work and location based upon work progress).

Land Side Construction of Rock Cover – Prior to the placement of the rock cover, the foot print of the area to receive the rock via land side placement (nominally water depths less than -2 NAVD 88 and above the typical high water line) on a daily basis will be covered with Mirafi 1120N or equivalent. This filter fabric comes in rolls that are 15 feet wide and 300 feet long. Fabric panels will be constructed that are approximately 29 feet wide by 300 feet long by stitching together two (2) rolls using a prayer seam. This seam will be a factory produced seam. The fabric panel will be located on the shoreline (in the dry) on a spool suspended by an all-terrain fork lit or equivalent. The ends of the panel will then be deployed outward until the desired end location is reached. Partial panels may be deployed in areas where needed or may be reserved for use in the Western Cell area. The fabric panel will be weighted using concrete anchors (or other appropriate means) approximately every 20 feet on both sides. A second panel will then be deployed adjacent to the first with a three (3) foot overlap resulting in a fabric covered area approximately 55 feet wide. This panel placement progression will proceed until all panels have been placed. Where the fabric panels overlap with either other land side placement or water side placement the fabric panels shall be over lapped by approximately 3 feet.

After at least three (3) panels have been place USA will begin placing Armor Cover Materials over the fabric panel typically USA will place a rock finger approximately 18 feet wide and 4.5 feet thick out to termination. After the rock finger has been constructed USA will use a track hoe with a rock bucket to begin spreading the materials to the side resulting in a uniform Armor Cover of +/- 18 inches (this example is given for Armor Cap C, thicknesses of both the rock finger and the resulting Armor Cap will be adjusted depending upon the material type).

- Implement erosion control measures as shown on Drawings.
- Grade miscellaneous areas as necessary.
- Construct an Armored Cap to the extents shown on the Drawings.

Western Cell Protection

Water Side Construction of Rock Cover – Water side placement on the Western Cell area will follow the same procedures as defined for the Eastern Cell.

Land Side Construction of Rock Cover – Prior to the placement of the rock cover, the foot print of the area to receive the rock via land side placement (nominally the Western Cell land side placement will occur above the high tide line and be in the dry) on a daily basis will be covered with Mirafi 1120N or equivalent. This filter fabric comes in rolls that are 15 feet wide and 300 feet long. Fabric panels will be constructed that are approximately 29 feet wide by 300 feet long by stitching together two (2) rolls using a prayer seam. This seam will be a factory produced seam. The fabric panel will be located on the shoreline (in the dry) on a spool suspended by an all-terrain fork lit or equivalent. The ends of the panel will then be deployed outward until the desired end location is reached. Partial panels may be deployed in areas where needed. The fabric panel will be weighted using concrete anchors (or other appropriate means) approximately every 20 feet on both sides. A second panel will then be deployed adjacent to the first with a three (3) foot overlap resulting in a fabric covered area approximately 55 fee wide. This panel placement progression will proceed until all panels have been placed. Where the fabric panels overlap with either other land side placement or water side placement the fabric panels shall be over lapped by approximately 3 feet.

After the entire Western Cell has been covered with fabric, USA will begin placing the appropriate armor materials. Placement will be direct dumping from off road truck and spreading using a D-6 LGP dozer or equivalent.

Clear and grub to the extents shown on the Drawings, removing off-site

- Vegetative material above grade. Smaller roots will be left on-site. Implement erosion control measures as shown on Drawings.
- Grade miscellaneous areas as necessary.
- Construct an Armored Cap to the extents shown on the Drawings.

Northwestern Area Protection

Construction of Granular Cover - Water side placement on the Northwestern area will follow the same procedures as defined for the Eastern Cell. No filter fabric is planned to be placed below the Armor Cap A Materials.

- Construct an Armored Cap to the extents shown on the Drawings.

Field Activities

USA Environment, LP shall comply with all applicable STAR Management Program Protocols during the Course of this Project. Activities associated with this project are listed below:

USA Environment, LP will provide labor, tools, material handling and personnel handling equipment, personal protective equipment (PPE), environmental controls, such as local exhaust

ventilation (LEV), waste containers, labeling, shipping papers, waste processing, transportation of all identified items and final disposition of all materials associated the project. USA will ensure all personnel working on site in support of Project San Jacinto River Waste Pit perform their work in compliance with all Federal, State and Local regulations.

The following is intended as an indication of clean-up activities to occur final determination/identification of all activities will occur during the pre-proposal walk-through):

- Proposed materials and methods to control erosion and turbidity
- Description of procedures for prompt maintenance and repair of installed erosion and turbidity controls
- Sheen and floating debris control measures
- Description of control procedures to decontaminate trucks importing fill material prior to the trucks leaving the Site (e.g., inspecting and brushing off visible dirt, wheel washing)
- Description of methods to decontaminate any equipment leaving the Site.
- Description of measures to minimize wheel contact of trucks entering and leaving the Site with the exposed sub-grade
- Site planning showing the location of TESC measures
- Fueling plan
- Emergency procedures to respond to a fuel spill on land or over water
- Methods to control dust for access road and other areas of the Site
- Description of best management practices that will be used to prevent or minimize storm water from being exposed to pollutants from spills, cleaning and maintenance activities, and waste handling activities, including fuel, hydraulic fluid, and other oils from vehicles and machinery
- Projected date when TESC measures will be in place
- Projected date of removal of TESC structures (after soil is stabilized by vegetation or other means)

USA shall perform the following per contract specification, issued by Anchor QEA, LLC

- Conduct daily pre-job meeting to ensure workforce understands safety requirements, scope and proper method for tasks.

- Maintain daily logs and reports of project progress and record any observations made by that Anchor QEA, LLC should be made aware of.
- Hold weekly and as required coordination meetings. The purpose of such meetings will be to review and revise overall project schedule, resolve conflicts, address questions. These meetings shall be recorded, maintained, and the meeting minutes distributed to site contact.
- Handle and take care of all materials, tools apparatus and equipment used in performance of the work furnished by The Contractor, subcontractors and all employees and agents of the contractor.
- Schedule, coordinate and supervise the work of each subcontractor on the project until final completion of the project.
- Confirm Substantial and Final completion of the work and provide written notice to the site contact that the work is ready for final inspection in accordance with the schedule for the project.
- Manage non-project related wastes created during the project, such as food and drink consumption.
- Manage all personnel to ensure appropriate work schedule is maintained.
- Be responsible for providing all appropriate emergency response for on site incidents created by USA Environment, LP or those working on their behalf.

The site utilities, such as electricity, water, HVAC and lavatories, shall be functional and the selected candidate shall utilize as necessary. Any water utilized for this project shall be collected in drums, appropriately labeled, profiled and disposition as part of the overall scope of work in this RFP.

All fire suppression systems shall be functional. Any anticipated impediments or unintended interruptions with these systems shall be communicated to the site contact as soon as possible.

Any intended hot work shall utilize a Hot Work Permit program approved by the RFP Contacts.

Anchor QEA, LLC shall directly oversee all packaging and shipping of any material regulated by U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA).

A site contact will be identified prior to project start and will be on site throughout the course of the project to provide oversight and to address any unforeseen conditions and/or situations.

SECURITY:

Anchor QEA, LLC shall not be responsible for lost, stolen or damaged materials supplied by USA Environment, LP or any employed subcontractors. Any damage to Anchor QEA, LLC property or facility infrastructure must be reported immediately to Anchor QEA, LLC site representative.

PROJECT LOCATION

FIGURE 1 – PROJECT LOCATION

LA - 29°47'44.66"N, LO - 95° 4'3.79"W To the left of the site ; the main gate to the work site is approx. 3 blocks.

STOP WORK AUTHORITY

All site personnel have the authority, without fear of reprimand or retaliation to immediately stop any work activity that presents a danger to the site team or the pubic. They are authorized to get involved, question and rectify any situation or work activity that is identified as not being in compliance with this HASP.

All site personnel are empowered to identify and correct unsafe acts and conditions before they can cause an incident.

JOB SAFETY ANALYSIS

This section provides a summary of each activity planned for the project, and an assessment of potential hazards and their mitigation. The level of employee protection for the work to be completed during site activities was determined by researching site conditions, reviewing planned activities, and identifying site-specific physical and chemical hazards.

The following is a brief summary and hazard assessment for the planned field activities.

This section is to be addressed in the daily safety meeting as each activity is to be attempted. The site work plan should be referenced for further details of each activity. Each Job Safety Analysis (JSA) is designed to develop awareness to chemical and physical hazards specific to each activity. JSA's found in Appendix C should be posted in the break area and command post. When the JSA's are discussed additional hazards may need to be addressed.

The following initial JSA's are included in Appendix C:

- Set up
- Mobilization of Personnel and Equipment;
- General Construction
- Roadway Safety
- Construct Access Ramps;
- Field Decontamination
- Landfill Operations
- Dust Control
- Air Quality Monitoring
- Placement of Signage

- Final Cleanup
- Equipment Decontamination
- Demobilization

Additional Task Specific JSA's will be developed as necessary upon initial site risk assessment is completed and as work tasks progress and new hazards are identified.

CHEMICAL HAZARDS

The following chemical hazards have been identified as being present at San Jacinto River Waste Pit.

Chemical Hazards (Also see the NIOSH Guide to Chemical Hazards)

Table 3-1 Chemical Hazards

Chemical or Waste Name	Concentration in Units	**Exposure Limits REL/PEL 8/10 hr day/40 hr wk**	IDLH (Airborne)	MSDS if (available)	OSHA Carcinogen	Routes of Exposure *
Hydraulic Oil	99%	NIOSH = zero TWA 0. PEL: TWA 0]	NO	YES	NO	Abs, Ing,
Motor Oil	99%	NIOSH REL Ca TWA 0.001 mg/m^3 OSHA PEL: TWA 0.5 mg/m^3 [skin]	NO	YES	NO	Inh, Abs, Ing, Con
Gasoline /Diesel	99%	NIOSH 1ppm=4.5mg/m3	NO	YES	NO	Inh, Abs, Ing, Con
Dioxin	99%	See MSDS	See MSDS	262-12-4	Yes	Inh, Abs, Ing, Con

REL – Recommended Exposure Limit, PEL – Permissible Exposure Limit, IDLH – Imed. Dangerous to Life & Health * Routes of Exposure: Inh – Inhalation, Abs – Skin Absorption, Ing – Ingestion, Con - Contact (Skin / Eye)

The Thirteen OSHA –Regulated Carcinogens are found in the NIOSH Guide to Chemical Hazards.

Environmental Engineering (English ver.) **Dioxin**

Any of several carcinogenic or teratogenic heterocyclic hydrocarbons that occur as impurities in petroleum-derived herbicides and through over-use or runoff may threaten both surface and groundwater supplies. Dioxin has been linked to cancer, damage to the immune system, and other serious health conditions. It is also produced in paper mills when chlorine is mixed with

wood pulp to brighten paper. Dioxin ends up in the mills' wastewater, which is then discharged into rivers.

PHYSICAL HAZARDS

The risk of exposure to physical hazards will be from noise, contact with moving parts and struck by equipment. Table 3-2 provides a general physical hazard analysis.

TABLE 3-2 GENERAL PHYSICAL/ENVIRONMENTAL HAZARD ANALYSIS

HAZARD	PRE PLANNING TO CONTROL HAZARD	ACTIVE CONTROL MEASURES
Traffic	• Evaluate traffic conditions at the entrances and exits to site to determine if traffic control devices will be needed. • Plan around any obvious traffic patterns (*i.e.* rush hour traffic, school traffic, planned community events in the area) • Evaluate the need for a Journey Management Plan for travel to and from site.	• Notify attendant and/or site owner of work activities and location. • Utilize cones, signs, flags and/or other traffic control devices. • Always engage emergency brake when parking, Chock tires when parking on slope (greater than 1 foot rise on path 100 feet long) • Wear PPE including high visibility clothing such as a reflective vest. If working around moving or rotating equipment in which a loose-fitting vest could get caught, orange FRC or high visibility hard hats, or vest with zippers instead of Velcro ties may also be worn. • When working around heavy equipment pedestrian must always get the operators attention and permission before getting in the operating radius of the machine (40'). • Do not operate cell phones while driving. If you need to use the phone, pull off the main travel path, park the vehicle and turn off the ignition prior to making call.
Small Equipment Usage	• Site operations evaluated to determine need for specialized intrinsically safe, explosion-proof and UL approved equipment and instruments. • Implement requirement for G.F.I., double insulated tool usage, or assured grounding program in all outdoor operations, will be utilized. • Specify equipment needs to ensure that equipment used only for the purpose for which it is designed and to prevent abuse or misuse of the equipment. • Specify requirements for the inspections and maintenance of specialized equipment.	• First aid on site. • Transport for medical care if necessary.

HAZARD	PRE PLANNING TO CONTROL HAZARD	ACTIVE CONTROL MEASURES
	• Specify that all equipment utilized on the project meets all OSHA requirements.	
Heat Stress	• Anticipate possible elevated temperatures. • Awareness to stress placed on body by specific PPE. • Awareness to levels of heat stress symptoms.	• Proper work/rest schedule and monitoring. • Drink plenty of fluids. • Buddy system/awareness. • First aid on site. • Medical care if symptoms persist.
Illumination	• Evaluate all operations and work areas to determine lighting requirements. • Specify specialized lighting requirements including explosion proof, intrinsically safe, lighting needs. • Determine if nighttime outdoor operations are necessary. Evaluate tasks to be performed and number of light plants necessary to allow operations. ▪ Ascertain if outdoor lighting from nighttime operations will have an impact on surrounding communities.	• Inspect specialized equipment and discard or replace as needed. • Add additional lighting to areas with lighting deficiencies (Confined Space). • Inspect drop cords and portable lights on regular basis. Replace or repair as necessary.
Noise	• Expected loud operations evaluated to determine compliance with community standards. • Loud operations scheduled for approved time periods. • Hearing protection requirements defined for personnel expected to have excessive exposures.	• Personnel receive annual audiogram. • Personnel required wearing hearing protection; use baffles and mufflers. • Defective equipment repaired as needed. • Ongoing hearing conservation education promoted at scheduled safety meetings. • Medical evaluation following noise (impact) exposure if symptoms present themselves.
Weather Conditions	• Evaluate prevailing weather conditions for the site. • Contingency plans developed for likely severe weather conditions such as tornado, and extreme thunderstorm. • Provide for daily weather forecast service in extreme weather areas. • Plan to weatherize safety systems, such as showers and eye washes that would be impacted by extreme cold weather. • Order necessary specialized cold weather clothing. • Grounding and bonding requirements defined for thunderstorm areas. • Sheltered air conditioned break areas provided for extreme hot and cold weather zones.	• Employees trained in contingency plan for severe weather conditions. • Emergency water sources inspected regularly in cold areas. • Weather service contacted regularly during storm conditions. • Supervisory personnel cease operations during extreme storm conditions (i.e., first scenes of thunderstorms). Personnel evacuate to safe assembly area.

BIOLOGICAL HAZARDS

During performance of work activities, certain biological hazards may be encountered. Poisonous plants, insects, and vermin are not anticipated at the San Jacinto River Waste Pit Project. Site workers should be aware that, although unlikely, insects and vermin have the potential to transmit viruses or rabies. Therefore any insect or vermin bite must be reported to the Site Safety Officer and medical attention applied as appropriate.

POISONOUS PLANTS

Poisonous vegetation such as poison ivy, poison sumac and poison oak, physical contact with these types of poisonous vegetation should be avoided. Exposure to such plants can result in dermatitis and skin irritation

INSECTS

Insect stings are another biological hazard that may be encountered. Personnel with known allergic reactions to insect stings should have their physician-prescribed emergency sting-kits on site and also inform the Site Safety Officer (SSO) of their allergy to insect bites/stings.

Tick bites and the possible onset of Lime disease are another biological concern. Ticks should be removed from your body with a pair of tweezers. Grab the tick as close as possible to the skin and pull with steady pressure to remove the whole tick. Wash the bite with soap and water immediately. Monitor the bite area for one month, looking for the onset of a rash around the bite. If a rash appears, seek medical attention.

West Nile virus (WNV) is a mosquito-born virus that can cause encephalitis or meningitis via the bite of an infected mosquito. An insect repellent containing DEET should be used (30 % DEET is usually good for 4-5 hours of protection when working outdoors.) Avoid prolonged or excessive use of DEET, and use it sparingly to cover skin and clothing. Always follow manufacturer's instructions.

PERSONNEL TRAINING

Initial Training

All training complies with 29CFR 1910.120(e).

40-HOUR TRAINING & REFRESHER TRAINING

All field employees receive forty hours of classroom training on safe work practices and hazardous waste sites.

Supervisor/Managers

Manager and Supervisors receive eight hours of training on safe management of hazardous waste sites.

Site Specific Training

Fire Extinguisher Training

At least one member of each work crew shall have training in the use of portable fire extinguishers in accordance with 29 CFR 1910.157(g).

On The Job Hazardous Waste Training

All personnel newly assigned to hazardous waste work will receive 3 days of on the job training by an experienced supervisor in accordance with 29 CFR 1910.120.

HASP Acknowledgment

Each person entering the site shall sign a statement attesting to the fact that they have read and understand the Site Safety Plan. (SSP Acknowledgement Form)

Annual Refresher

All field employees receive eight hours of refresher training on the above topics within the anniversary date of their initial 40-hour class.

First Aid/CPR

At least one individual on site will maintain valid and current CPR and First Aid Certification. Treatment will be limited to Good Samaritan/minor first aid. All traumatic/major first aid and cardiac problems will be referred to medical facilities.

Subcontractor Requirements

All subcontractors entering the Contamination Reduction Zone and Exclusion Zone will have adequate training satisfying 29 CFR 1910.120(e).

Substance Abuse Program

USA Environment has a zero tolerance for substance abuse in the work place. We are an active member of National Substance Abuse Program (NASAP) and follow closely DOT (PHMSA) and OSHA guidelines for promoting a safe, drug and alcohol abuse free workplace. The following is an outlines of our screening program:

- Pre- Employment Testing
- Pre-Access – (following clients protocol, 30 to 90 days)
- Reasonable Suspicion Testing
- Random Testing
- Post- Accident Testing
- Return to Duty Testing
- Follow-Up Testing

PERSONAL PROTECTIVE EQUIPMENT

The following is a brief description of the personal protective equipment (PPE) which may be required during various phases of the project. The U.S. EPA terminology for protective equipment will be used; Levels A, B, C and D.

Respiratory protective equipment shall be NIOSH-approved and use shall conform to OSHA 29 CFR 1910.134 Requirements. Each employer shall maintain a written respiratory protection program detailing selection, use, cleaning, maintenance and storage of respiratory protective equipment. The written Respiratory Protection Program will be maintained at the local and regional offices.

LEVEL A

Level A protection shall be used when:

- An extremely hazardous substance requires the highest level of protection for skin, eyes and the respiratory system;
- Substances with a high degree of hazard to the skin are known or suspected;
- Chemical concentrations are known to be above IDLH levels; or,
- Biological hazards requiring Level A are known or suspected.

LEVEL B

Level B protection shall be used when:

- The substance(s) has been identified and requires a high level of respiratory protection but less skin protection;
- Concentrations of chemicals in the air are IDLH or above the maximum use limit of an APR with full-face mask;
- Oxygen deficient or potentially oxygen deficient atmospheres (<19.5%) are possible; and/or,
- Confined space entry may require Level B.
- Incomplete identification of gases and vapors, but not suspected to be harmful to skin or skin absorbable.

Level B protective equipment at a minimum shall consist of:

- Supplied Air Respirator (SAR), SCBA or Cascade system w/5-minute egress;
- Chemical Resistant Poly tyvek ® or Saranex;

- Protective Coveralls
- Inner Gloves Latex or Nitrile;
- Outer Chemical Gloves Viton or PVA (Nitrile when contact with contaminants is unlikely);
- Outer Work Gloves Cotton or leather;
- Safety Boots Steel-toe/Steel Shank;
- Boot Covers (booties) or Latex boot covers;
- Rubber Over boots
- Hard Hat
- Hearing protection as required for noisy operations.

LEVEL C

Level C protection shall be used when:

- The same level of skin protection as Level B, but a lower level of respiratory protection is required;
- The types of air contaminants have been identified, concentrations measured, and an air-purifying respirator is available that can remove contaminants; or,
- The substance has adequate warning properties and all criteria for the use of APR respirators have been met.

Level C protective equipment at a minimum shall consist of the same equipment as Level B except the SAR will be substituted with a full face Air Purifying Respirator (APR) with Organic Vapor/Acid Gas HEPA cartridges.

LEVEL D

Level D protection shall be used when:

- The atmosphere contains no known respiratory hazard; and,
- Work functions preclude splashes, immersion or the potential for unexpected inhalation of, or contact with, hazardous concentrations of harmful chemicals.
- Level D protection equipment at a minimum shall consist of:
- Personal Flotation Device (PFD): As necessary;
- Safety Boots: Leather Steel-toe Work Boots;

- Boot Covers (booties): Latex or Tyvek® as necessary;
- Reflective Orange or Yellow Safety Vests
- Work Gloves: Cotton, Leather;
- Hard Hat: Yes;
- Face Shield: As necessary;
- Safety Glasses: Yes

Modifications: Hearing protection as required by noisy operations. Poly tyvek® coveralls and Viton®, Nitrile or PVA gloves when working and the possibility of a splash from hazardous chemicals exists.

Specific operating procedures for PPE and Respiratory Protection are provided in Appendix D.

DECISIONS TO UPGRADE/DOWNGRADE PPE

All decisions to downgrade from Level B to C or C to D must be accompanied by air monitoring results. The USA Safety Managers must be advised of on-site decisions to downgrade. All decisions must be documented with an Amendment to the SSP.

The following conditions will necessitate reevaluation of PPE use.

1. Commencement of a new work activity not previously identified
2. Change of job tasks during a work phase
3. Change of season/weather
4. Contaminants other than those identified in Safety Plan
5. Change in ambient levels of contaminants
6. Change in work which affects degree of chemical contact

MEDICAL MONITORING REQUIREMENTS

Pre-Employment Physical

Pre-employment and periodic update medical examinations are required for persons working at hazardous waste sites. All physicals must be completed and documented prior to assignment to the site. All physical exams will be conducted following parameters established by the respective employee's Corporate Physicians. USA and all subcontractors must adhere to the Drug Free Workplace Act of 1988.

Annual Physical Exam

A medical examination must have been completed within a 12-month period prior to on-site activity and repeated annually.

Accidental/Suspected Exposure Physical

Following any accidental or suspected uncontrolled exposure to site contaminants, personnel should be scheduled for a special physical examination. The physical examination will be specific for the contaminants and the associated target organs or physiological system. Exposure to blood/body fluids requires adherence to 29 CFR1910.1030 (Blood-borne Pathogens). Questions regarding the type of physical can be directed to the employer's Director of Health and Safety or their Corporate Physician. See Section 10.2 for their respective phone numbers.

Contractor Physical Examination Requirements

All subcontractors entering the Contamination Reduction Zone or Exclusion Zone will have adequate medical surveillance satisfying 29 CFR 1910.120(f).

Site Documentation

All personnel on-site must have the following documentation available on site:

- Copy of 40-Hour HAZWOPER Training certificate
- Copy of 8-Hour Annual Refresher
- CPR/First Aid Certificate (if applicable)
- Respirator Fit Test Record
- Medical Fitness for Duty Release, and (as applicable), medical clearance to wear respiratory protection

AIR MONITORING AND ACTION LEVELS

According to 29 CFR 1910.120 (h) Air Monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection needed on-site.

Routine Air Monitoring Requirements

- When the possibility of an Immediately Dangerous to Life and Health (IDLH) condition or flammable atmosphere has developed;
- When work begins on a different portion of the site;
- Contaminants other than those previously identified are being handled;
- A different type of operation is initiated;
- Employees are handling leaking drums or containers or working in areas with obvious liquid contamination; and,
- During confined space work

Air monitoring when completed will consist at a minimum of the criteria listed below. All air monitoring data will be documented and submitted to the Site Supervisor. Air monitoring instruments will be calibrated and maintained in accordance with the manufacturer's specifications. Calibration and maintenance performed will be entered in the site log and/or instrument log book. Personal exposure monitoring will be conducted for specific contaminants based on the specific work tasks and the recommendations of the site safety officer.

Personnel Monitoring

Personal samples may be collected for planned project activities. Individual plans will be written and implemented as necessary.

- Sampling Methods - U.S. EPA and NIOSH approved sampling methods will be utilized at this site.
- Calibration procedures - Calibration of all sampling equipment used during this project will be in accordance with the manufacturer's instructions.
- Analytical laboratory - Air samples may be collected periodically during intrusive and waste excavation activities.

Noise Monitoring

Noise monitoring may be conducted to identify locations and tasks that require the use of hearing protection (i.e., 85 dBA slow). A hearing conservation program will be implemented as required.

Heat Stress Monitoring

Property site will begin when temperatures exceed 75 ^{0}F. Monitoring for personnel working in permeable clothing, such as cotton or synthetic work clothes, will be conducted in accordance with The American Conference of Governmental Industrial Hygienists' (ACGIH) Threshold Limit Values for heat stress. Employees that must be monitored in either program shall include at a minimum:

- Exposed personnel (e.g., those not working in air conditioned spaces) conducting ground labor tasks in any ensembles;
- Exposed personnel (e.g., those not working in air conditioned spaces) wearing whole body, chemical protective clothing PPE; and
- Any additional personnel considered to be at particular risk by the Site Supervisor.

Area Monitoring and Work Rest Regimens

1) Wet Bulb Globe Temperature (WBGT) Area Monitoring:

a) The use of WBGT (wet bulb globe temperature) area monitoring may be used in conjunction with an established work/rest regimen. WBGT monitoring and the work/rest regimen shall be in accordance with the latest edition of the American Conference of Governmental Industrial Hygienists' (ACGIH)"Threshold Limit Values for Chemical Substances and Physical Agents" also referred to as the "TLV booklet."

b) In general, this procedure should only be applied to personnel in breathable work clothing with PPE which allows for evaporative cooling (e.g., level D workers or modified level D workers where PPE does not prevent evaporative cooling of the skin). If this monitoring program is used for personnel in PPE, the ACGIH TLV booklet correction factors for clothing shall be used.

2) Work Rest Regimen:

a) The values specified on Table 1 refer to heat stress conditions under which it is believed that nearly all heat acclimatized, adequately hydrated, un-medicated, healthy workers wearing light-weight summer clothing may be repeatedly exposed without adverse health effects. The work areas are assumed to have at least some air movement.

Table 1 Work Rest Regimens

Ambient Temperature (degrees F)	*Work Period (minutes)*	*Rest Period (minutes)*
72-80	120	15
80-85	90	15
85-90	60	15
90-95	30	15
95-100	15	15

The Site Safety Officer will also monitor workers wearing impermeable or semi-impermeable clothing for physiological results by checking the following:

Heart Rate

Count the radial pulse during a 30-second period as early as possible in the rest period. If the heart rate exceeds 110 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same. If the heart rate still exceeds 110 beats per minute at the next rest period, shorten the following work cycle by one-third.

Oral or Ear Temperature Measurement

Use a clinical thermometer (3 minutes under the tongue) or similar device to measure the oral temperature at the end of the work period (before drinking). If oral temperature exceeds 99.6 F (37.6 C), shorten the next work cycle by one-third without changing the rest period. Do not permit a worker to wear a semi permeable or impermeable garment when his/her oral temperature exceeds 100.6 F (38.1 C).

Ear temperature may also be used. Ear temperature should be taken when full face respirators and/or hoods are being worn (i.e., the head may become overheated before the rest of the body shows signs of stress). Workers should be removed if ear temperature increases by more than 1.5 °F. Workers should be rehabbed until the temperature returns to normal. It should be noted that some employees may have a “normal” temperature which is different than 98.5 °F (Individual employees should be monitored for one week prior to the beginning of heat stress conditions in

order to establish if they have a different normal baseline temperature). Workers should not be allowed to enter the zone if they are already having an elevated temperature.

Body Water Loss

Measure weight on a scale accurate to + 0.25 lb at the beginning and end of each work day to see if enough fluids are being taken to prevent dehydration. Weights should be taken while the employee wears similar clothing or, ideally, is nude. The body water loss should not exceed 1.5 percent total body weight loss in a work day.

Cold stress monitoring will be completed IAW ACGIH TLVs for cold stress.

Location of Monitoring Records

Copies of monitoring records will be retained in the onsite command (on-site office trailer) post during the project and the job file upon completion of the project.

SITE CONTROL AND STANDARD OPERATING PROCEDURES

Site control is necessary to prevent or reduce the transfer of hazardous materials (contaminants) from the project site by workers and equipment involved in site operations.

Site control involves two major components:

- Physical arrangements and control of the site work area.
- Methods for the removal of contaminants from personnel and equipment.

Site control can be accomplished in a number of ways, including physical barriers to exclude unnecessary personnel; checkpoints limiting access to the site or areas within the site, minimizing personnel and equipment on site consistent with effective, safe operations; establishment of containment zones; decontamination procedures; and conducting operations in a manner to reduce the possibility of contamination.

The use of three-zone system of area designation, access control points, and exacting decontamination procedures protects against the translocation of contaminating substances. This control system is based on a "worst-case" situation. Less stringent site-control and decontamination procedures may be used based upon more accurate information on the types of contaminants involved and the contaminating hazards they present.

Work Zones

One method of reducing the potential for transfer of contamination is to delineate zones or work areas within the vicinity of the incident based upon expected or known level of contamination. Within these zones, prescribed operations will occur, utilizing appropriate personal protective equipment. Movement between zones will be controlled at checkpoints. Three contiguous zones are recommended: Exclusion Zone (contaminated), Contamination-Reduction Zone (where decontamination takes place), and the Support Zone (non-contaminated areas).

Exclusion Zone:

The exclusion zone is an area where a potential exposure to hazard exists and where the prescribed levels of protection must be worn and training requirements must be satisfied by all entering personnel. An entry checkpoint is established at the periphery of the exclusion zone to control the flow of personnel and equipment to ascertain that the procedures established to enter and exit the zones are being followed. The boundary should be physically secured, fenced, posted, or well defined by geographical boundaries. Basic air monitoring and site sample analysis are the governing factors for determining the range of specific boundary perimeters.

Contamination-Reduction Zone:

The purpose of the Contamination-Reduction Zone (CRZ) is to provide an area to prevent or reduce the transfer of contaminants which may have been picked up by personnel or equipment returning from the exclusion zone. All decontamination activities occur in this zone. The boundary between the support zone and the CRZ is the "contamination control line" This boundary separates the possible contaminated area from the clean zone. Entry into the CRZ from the clean zone is through an access control point. Personnel entering at this station are wearing the prescribed personal protective equipment for working in the CRZ.

At the boundary between the CRZ and the exclusion zone is the "hot line" and access control station. Entrance into the exclusion zone requires the wearing of the prescribed personal protective equipment which may be different than the equipment requirements for working in the CRZ. At a point close to the "hot line", a personnel and/or equipment decontamination station is established for those exiting the exclusion zone. In some cases, another decontamination station is needed closer to the contamination control line for those working only in the CRZ.

Support Zone:

The support zone is the outermost area of the site and is considered a non-contaminated or "clean" zone. It is designated as a controlled-traffic area for authorized support personnel and the location for support equipment. Since normal work clothes are the appropriate apparel within this zone, potentially contaminated personnel clothing, equipment, etc., are not permitted.

To prevent migration of contamination from personnel and equipment, work areas will be clearly designated for employees and subcontractors ongoing awareness. Each work area will be clearly identified using signs or physical barriers.

- Exclusion Zone (EZ)
- Contamination Reduction Zone (CRZ), and
- Support Zone (SZ).

WORK IN, NEAR, OR OVER WATER: 29 CFR 1926.106

1926.106(a)

Employees working over or near water, where the danger of drowning exists, shall be provided with U.S. Coast Guard-approved life jacket or buoyant work vests.

1926.106(b)

Prior to and after each use, the buoyant work vests or life preservers shall be inspected for defects which would alter their strength or buoyancy. Defective units shall not be used.

1926.106(c)

Ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. Distance between ring buoys shall not exceed 200 feet.

1926.106(d)

At least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water.

USCG approved PFD (Types I, II, III, or V) shall be worn by all personnel when exposed, near, or work over water, regardless of other safety devices used. USCG-approved Type V automatic inflatable PFDs rated for commercial use may be worn by workers.

(1) When practical, river protection will consist of guardrails, nets or other physical barriers to prevent employees from falling into or swept away while work near or on water.

(2) When physical barriers are not practical, ladders and life rings (Throwable Flotation Device (Type IV PFD)) shall be installed in each enclosed water area to allow personnel to self-rescue. Ladders may be a rigid type or Jacob's ladder, and must be securely anchored to the vessel or structure. Life rings shall have a sufficient length of rope to allow them to float on the water surface and the rope shall be securely anchored to the vessel.

The number and placement of ladders and life rings shall be sufficient so that the maximum swimming distance to them is no more than 25 feet. Ladders and life rings may be retracted during reconfiguration or movement of plant.

DECONTAMINATION

After conducting remedial operations in areas potentially affected with harmful constituents, equipment, equipment and personnel decontamination is necessary to prevent potential spreading of the contaminants that may be present. This HASP provides decontamination procedures and protocols to be followed during and after the project.

Equipment Decontamination

All light and heavy construction equipment and hand tools will be decontaminated with the following procedure:

- Scrape mud and debris off of the equipment.
- Wash with clean water and suitable phosphate-free detergent solution (to the extent required). Pressurized water rinse may also be used in place of detergent.
- All De-con wastes must be containerized.

Personnel Decontamination

The Following Table represents the steps to ensure proper decontamination upon exiting an exclusion zone. Level C differs only in addition to exiting zone.

Table 8-1 Decontamination Procedures

	Level B, C De-con	Level D De-con
1	equipment drop	equipment drop
2	outer boot rinse	outer boot rinse
3	outer boot removal	outer boot removal
4	outer glove removal	outer glove removal
5	remove hard-hat	remove hard-hat
6	remove respirator	
7	wash respirator	
8	rinse respirator	
9	Coverall/Tyvek removal	Coverall/Tyvek removal
10	remove inner gloves	
11	wash hands and face	wash hands and face
12	hand dry and bag respirator	
13	Shower	shower (end of shift)
14	change to street clothing	change to street clothing

Footwear- (boots must be decontaminated each time before leaving the site. Boots must be cleaned by scraping off mud and rinsing with clean water until visible soil or mud is gone.

Sampling Equipment

Disposable sampling equipment will be cleaned and disposed of with municipal trash when possible. Reusable equipment will be decontaminated between uses to prevent cross-contamination. The procedure to decontaminate sampling equipment is as follows:

- Scrape or brush off heavy accumulations of soil or mud.
- Wash off remaining soil with a hand brush and phosphate-free detergent solution.
- Rinse with clean water.

WORK PERIOD

Hazardous waste site activities will only be conducted during daylight hours unless specifically approved by the clients or their authorized representative.

GENERAL SAFETY RULES

- All visitors must be sent to the Main Site Office trailer for Visitor Orientation and Site sign–in. Upon arrival to the Waste Pits Site, visitors must sign-in with site manager.
- Administrative hazard control will be practiced for all site areas by restricting entrance to Exclusion Zone to essential personnel and by using operational SOPs.
- Whenever possible, avoid contact with contaminated (or potentially contaminated) surfaces. Walk around (not through) puddles and discolored surfaces. Do not kneel on the ground or set equipment on the ground. Stay away from any waste drums unless necessary. Protect equipment from contamination by bagging.
- Eating, drinking, or smoking is permitted only in designated areas in the Support Zone.
- Hands and face must be thoroughly washed upon leaving the decontamination area.
- Beards or other facial hair that interfere with respirator fit will preclude admission to the EZ.
- All equipment must be decontaminated or discarded upon exit from the Exclusion Zone.
- All personnel exiting the Exclusion Zone must go through the decontamination procedures.
- Safety Equipment described in Section 4.0 will be required for all field personnel in the Exclusion Zone.

- Personnel will only travel in vehicles where individual seats (for each occupant are provided. Seat belts will be worn as required.
- Fire extinguishers will be available on site and in all areas with increased fire danger such as the refueling area.
- A minimum of two personnel will always be on site whenever heavy equipment is operated. Only necessary personnel need to be on or around heavy equipment.
- Employees will not interfere with or tamper in any way with air monitoring equipment.
- Equipment will be inspected daily before they are used. A checklist will be used to identify any problems or unusual observations. Checklists will be turned into the Site Supervisor daily so that appropriate actions may be taken to repair and maintain the equipment.
- Backhoes or other equipment with booms shall not be operated within 10 feet of any electrical conductor.
- Visitor log will be maintained at the command post or with the security guard. All personnel coming on site will sign in and out on a daily basis.
- Security will be maintained at the site by closing and locking all gates after normal work hours and SS will conduct a visual inspection of the security fence daily.
- If unauthorized members of the public are found on site, contact security, the site manager or the USA PM immediately. Do not leave the individual unattended.
- Visitors are not allowed in the work areas without authorization and not without appropriate levels of PPE as determined by site safety personnel. Access to the properties is restricted to the EPA and authorized representatives. All persons must sign in at the Command Post and receive authorization to enter the site.

BUDDY SYSTEM

The buddy system is mandatory at anytime that personnel are working in the Exclusion Zone, remote areas, on tanks, or when conditions present a risk to personnel. A buddy system requires at least two trained/experienced people who work as a team and maintain at a minimum audible and/or visual contact while operating in the Exclusion Zone.

COMMUNICATION

Site Supervisor will initiate a communication plan that will utilize two way radios for communicating with all personnel working on the site. A crew shall consist of two or more personnel. Every crew shall have at least one radio for communicating with the Site Supervisor at all times. All heavy equipment operators while operating a piece of heavy equipment shall have

a radio. During the shift all radios must be on and assigned to a designated radio frequency. Unnecessary communication shall not be tolerated on the radio. In case of emergency communication over the radio or three blasts from an air horn or vehicle horn shall signal all stop and report into the Site Safety Officer. Hand communication in addition to the radio can be used between heavy equipment operator and safety watch.

Communication Procedures

- Handheld radios will be available for all site personnel.
- The crews should remain in constant radio or visual contact while on site.
- The site evacuation signal will be 3 blasts on the air or vehicle horn.
- Any welding or other Hot Work will be planned and will follow the USA Hot Work Procedures
- When there is a risk of being affected by stored energy (pressure, heat, electricity) Lockout and Tagout Procedures will be followed
- Personnel will follow safe operating procedures when using hand tools.
- Personnel should not walk under suspended loads whether they are suspended in an equipment bucket or suspended by rigging.

MANDADORY SAFE WORK PRACTICES

These safe work practices must be followed by all site personnel:

- The cleaning of hands immediately or as soon as feasible, after removal of gloves by the use of antiseptic cleanser in conjunction with clean paper towels.
- The washing of hands and any other exposed skin with antiseptic cleanser and water immediately or as soon as feasible following contact with blood or other potentially infectious material. Employees shall also wash hands:
    - After removing personal protective equipment
    - After handling potentially infectious materials
    - After cleaning or decontaminating equipment
    - After using the bathroom
    - Before eating
    - Before and after handling or preparing food

- Designated location will be established for food ingestion. If deem necessary, employees will be provided a designated area to smoke which will offer the appropriate disposal canisters and fire extinguishers. These facilities will not be located within the immediate work zones.
- In the event a potential for chemical contamination exists onsite, employees will wash and conduct appropriate decontamination activities.
    - Wear appropriate PPE all the time.
- Defective PPE must be replaced immediately.
- Each employee required to take prescription drugs will notify the Site Supervisor prior to the start of work. Controlled or unauthorized drugs will not be permitted onsite at any time.

All procedures for sampling and/or analysis shall be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets. The slow and careful transfer of all liquids will accomplish this.

SPILL CONTAINMENT PROGRAM

The spill containment program for this project will involve the use of preventative measures in order to reduce the potential for environmental releases. These preventative measures will include the following:

- Daily equipment inspections;
- General housekeeping practices.

If project activities involve the use drums or other containers, the drums or containers will be the appropriate DOT regulations and will be inspected and their integrity assured prior to be moved. Drums or other containers will be properly labeled, stored in designated storage areas, and have their representative content MSDS on site. Operations will be organized so as to minimize drum or container movement. Drums or containers that cannot be moved without failure will be over-packed into an appropriate container. All drums stored onsite will be within a designated area and stored on secondary containment platform. Portable spill kits will be available on site.

FALL PROTECTION PROGRAM

OBJECTIVE

USA Environment is dedicated to the protection of its employees from all on-the-job injuries. The purpose of this section is: (a) To supplement our standard safety policy by providing safety standards specifically designed to cover fall protection on this job and; (b) to ensure that each employee is trained and made aware of the safety provisions which are to be implemented by this plan prior to the start of remediation activities

This Fall Protection Program addresses the use of conventional fall protection for any critical areas on the project.

Fall Protection Categories

All fall protection products fit into four functional categories.

1. Fall Arrest;
2. Positioning;
3. Suspension, and;
4. Retrieval.

FALL ARREST

A fall arrest system is required if any risk exists that a worker may fall from an elevated position, as a general rule, the fall arrest system should be used anytime a working height of six feet or more is reached. Working height is the distance from the walking/working surface to a grade or lower level. A fall arrest system will only come into distributes the forces throughout the body, and the shock absorbing lanyard decreases the total fall arresting forces. A full-body harness with a shock-absorbing lanyard or a retractable lifeline is the only product recommended.

POSITIONING

This system holds the worker in place while keeping his/her hands free to work. Whenever the worker leans back, the system is activated. However, the personal positioning system is not specifically designed for fall arrest purposes.

SUSPENSION

This equipment lowers and supports the worker while allowing a hands-free work environment, and is widely used in window washing and painting industries. This suspension system components are not designed to arrest a free fall, a backup fall arrest system should be used in conjunction with the suspension system.

RETRIEVAL

Preplanning for retrieval in the event of a fall should be taken into consideration when developing a proactive fall management program.

FALL PROTECTION SYSTEMS

Listed below are different types of fall safety equipment and their recommended usage.

Class 1

Body belts (single or double D-ring) are designed to restrain a person in a hazardous work position and to reduce the possibility of falls. They should not be used when fall potential exists; positioning only.

Class 2

Chest harnesses are used when there are only limited fall hazards (no vertical free fall hazard), or for retrieving persons such as removal of persons from a tank or a bin.

Class 3

Full body harnesses are designed to arrest the most severe free falls.

Class 4

Suspension belts are independent work supports used to suspend a worker, such as boatswain's chairs or raising or lowering harnesses.

Rope Lanyard Offers some elastic properties for all arrest; used for restraint purpose. Web Lanyard Ideal for restraint purposes where fall hazards are less than 2 feet.

CABLE POSITIONING

Lanyards: Designed for corrosive or excess heat environments and must be used in conjunction with shock absorbing devices.

Shock absorbers when used, the fall arresting force will be greatly reduced if a fall occurs.

Effective January 1, 1998, body belts are not acceptable as part of a personal fall arrest system. (Note: the use of a body belt in a positioning device system is acceptable and is regulated under paragraph (e) of 29 CFR 1926.502). An employee who uses a body belt as a personal fall arrest system is exposed to hazards such as falling out of the belt, serious internal injuries, and technical asphyxiation through prolonged suspension.

INSPECTION AND MAINTENANCE

To maintain their service life and high performance, all belts and harnesses should be inspected frequently. Visual inspection before each use should become routine, and also a routine inspection by a competent person. If any of the conditions listed below are found the equipment should be replaced before being used.

Harness Inspection

1. Belts and Rings: For harness inspections begin at one end, hold the body side of the belt toward you, grasping the belt with your hands six to eight inches apart. Bend the belt in an inverted "U." Watch for frayed edges, broken fibers, pulled stitches, cuts or chemical damage. Check D-rings and D-ring metal wear pads for distortion, cracks, breaks, and rough or sharp edges. The D-ring bar should be at a 90 degree angle with the long axis of the belt and should pivot freely.

   Attachments of buckles and D-rings should be given special attention. Note any unusual wear, frayed or cut fibers, or distortion of the buckles. Rivets should be tight and un-removable with fingers. Body side rivet base and outside rivets should be flat against the material. Bent rivets will fail under stress. Inspect frayed or broken strands. Broken webbing strands generally appear as tufts on the webbing surface. Any broken, cut or burnt stitches will be readily seen.

2. Tongue Buckle: Buckle tongues should be free of distortion in shape and motion. They should overlap the buckle frame and move freely back and forth in their socket. Rollers should turn freely on the frame. Check for distortion or sharp edges.

3. Friction Buckle: Inspect the buckle for distortion. The outer bar or center bars must be straight. Pay special attention to corners and attachment points of the center bar.

Heat

In excessive heat, nylon becomes brittle and has a shriveled brownish appearance. Fibers will break when flexed and should not be used above 180 degrees Fahrenheit.

Chemical

Change in color usually appears as a brownish smear or smudge. Transverse cracks appear when belt is bent over tight. This causes a loss of elasticity in the belt.

Ultraviolet Rays

Do not store webbing and rope lanyards in direct sunlight, because ultraviolet rays can reduce the strength of some material.

Molten Metal or Flame

Webbing and rope strands may be fused together by molten metal or flame. Watch for hard, shiny spots or a hard and brittle feel. Webbing will not support combustion, nylon will.

Paint and Solvents

Paint will penetrate and dry, restricting movements of fibers. Drying agents and solvents in some paints will appear as chemical damage.

Cleaning of Equipment

Basic care for fall protection safety equipment will prolong and endure the life of the equipment and contribute toward the performance of its vital safety function. Proper storage and maintenance after use is as important as cleaning the equipment of dirt, corrosives or contaminants. The storage area should be clean, dry and free of exposure to fumes or corrosive elements.

Nylon and Polyester

Wipe off all surface dirt with a sponge dampened in plain water. Squeeze the sponge dry. Dip the sponge in a mild solution of water and commercial soap or detergent. Work up a thick lather with a vigorous back and forth motion. Then wipe the belt dry with a clean cloth. Hang freely to dry but away from excessive heat.

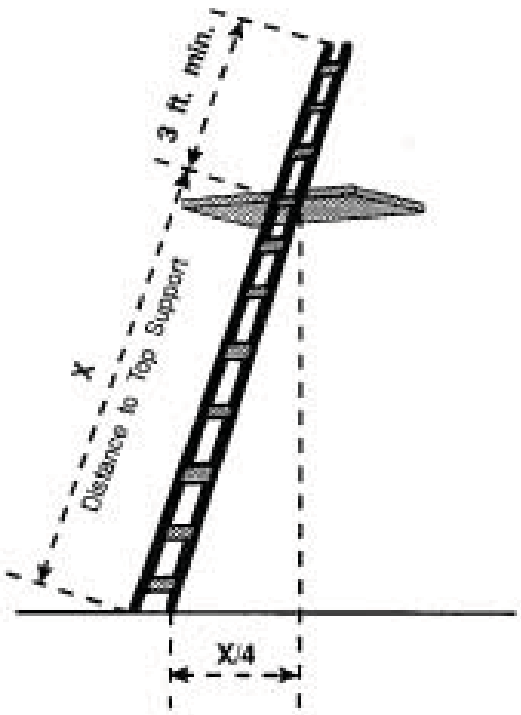
Drying

Harness, belts and other equipment should be dried thoroughly without exposure to heat, steam or long periods of sunlight. The information contained within this document was obtained partially from The St. Paul-Tie or Die Fall Protection Program manual.

LADDER SAFETY

Ladders

When portable ladders are used, the ladder side rails shall extend a minimum of 3 feet above the upper surface of the excavation as seen in the following Figure. Ladders shall have nonconductive side rails if work will be performed near exposed energized equipment or systems.



Two or more ladders, or a double-cleated ladder, will be provided where 25 or more employees will be conducting work in an excavation where ladders serve as the primary means of egress, or where ladders serve two-way traffic.

Ladders shall be used only on stable and level surfaces unless secured. Ladders placed in any location where they can be displaced by workplace activities or traffic shall be secured, or barricades shall be used to keep these activities away from the ladder.

Non-self-supporting ladders shall be positioned so that the foot of the ladder is one-quarter of the working length away from the support.

Employees shall not be allowed to carry any object or load while on the ladder that could cause them to lose their balance and fall.

Ladder Inspection

Ladders will be inspected prior to use for signs of damage or defects. Damaged ladders will be removed from service and marked with **"Do Not Use"** until repaired.

HAZARD COMMUNICATION PROGRAM

Each contractor will be responsible for maintaining a copy of their Hazard Communication Program and MSDS on site.

Material Safety Data Sheets

Material Safety Data Sheets will be maintained at the project trailer in the HASP Binder. MSDS will be available to all employees for review during the work shift.

Container Labeling

All containers received on site will be inspected by the contractor using the material to ensure the following:

1. All containers clearly labeled
2. Appropriate hazard warning
3. Name and address of the manufacturer

Hazardous Chemical List

All Hazardous chemicals brought in for this project will be inventoried and a copy of this inventory will be kept on site and updated monthly or whenever new chemicals are introduced. (To be completed on site).

Employee Training and Information

Prior to starting work, each employee will attend a health and safety orientation and will receive information and training on the following:

- an overview of the requirements contained in the Hazard Communication Standard
- hazardous chemicals present at the site
- the location and availability of the written Hazard Communication Program
- physical and health effects of the hazardous chemicals
- methods of preventing or eliminating exposure
- emergency procedures to follow if exposed
- how to read labels and review MSDS to obtain information
- location of MSDS file and location of hazardous chemical list

EMERGENCIES/ACCIDENTS/INJURIES

It is essential that site personnel be prepared in the event of an emergency. Emergencies can take many forms; illnesses or injuries, chemical exposure, fires, explosions, spills, leaks, releases of harmful contaminants, or sudden changes in the weather. The following sections outline the general procedures for emergencies. Emergency information should be posted as appropriate.

EMERGENCY CONTACTS FOR SAN JACINTO RIVER WASTE PITS TCRA PROJECT

Fire:	911
Police:	911
Sheriff:	911
Ambulance:	911
Hospital:	**East Houston Regional Medical Center**
Address:	13111 East Free-way, Houston, Texas 77015
Telephone:	(713) 393-2000

Directions to Hospital:

16901 Market St Channelview, TX 77530

Head west on Market St/Market Street Rd toward Bayou Dr

Take the 1st right onto Bayou Dr

Turn left at the 2nd cross street onto E Freeway Service Rd

Take the ramp on the left onto I-10 W Destination will be on the right

13111 East Fwy Houston, TX 77015

Occupational Health Services

Clinic: San Augustine Industrial Clinic

Address: 321 W. San Augustine, Deer Park Texas

Telephone: (281) 476-0780

Directions to Clinic:

Head northwest on I-10 W

Take exit 781A to merge onto East Sam

Houston Pkwy N/Sam Houston

Toll way S/Texas 8 Beltway S toward Sam Houston Pkwy

Continue to follow Sam Houston

Take the exit toward Red Bluff Rd/Pasadena Blvd

Merge onto East Sam Houston Pkwy S/Texas 8 Beltway S

Take the exit toward Red Bluff Rd/Pasadena Blvd

Turn left at Ramsey Dr

Continue onto W San Augustine St

*Directions from Site to Medical Facilities (See Map in Appendix B):

EMERGENCY EQUIPMENT AVAILABLE ON-SITE

(To Be Completed on Site)

Medical Equipment

First Aid Kits:

Inspection Date: _____ By: _____

Eye Wash Station: CRZ:

Fire-Fighting Equipment

Fire Extinguishers:

Inspection Date: _____ By: _____

Other:

_____ _____

_____ _____

Spill or Leak Equipment

Absorbent pads and dry absorbent:

Additional Emergency Equipment (*complete on site)*

_____ _____

_____ _____

ACCIDENT REPORTING/INVESTIGATION

All injuries or accidents must be reported to the USA Site Supervisor immediately. The site supervisor will contact the Hewlett Packard- Vehicle Service Center. The Site Supervisor will conduct an immediate investigation of the accident and document all results on the USA's Incident Investigation Form. The Site Supervisor will assign a supervisory individual to accompany all injured personnel to the clinic. Copies of all Supervisors' Accident Reports will be

sent to the USA Corporate Office and the Site Manager. Within 24 hours of the injury the appropriate injury reporting forms will be completed and submitted.

See Appendix E for investigation form.

Near Miss/ Unsafe Act

Unsafe Condition Reporting and Investigation

Major Incident Reporting and Investigation

EMERGENCY RESPONSE CONTINGENCY PLAN

To Be Completed upon Mobilization to site

USA Personnel Responsibilities During Emergencies

The USA Site Safety Officer must

- Immediately report emergency situations to the Anchor QEA, LLC, Inc Contact may take appropriate measures to protect site personnel and assist as necessary in responding to and mitigating the emergency situation.
- Take appropriate measures to protect personnel including: withdrawal from the Exclusion Zone, total evacuation and securing of the site or up-grading or down- grading the level of protective clothing and respiratory protection.
- Take appropriate measures to protect the public and the environment including isolating and securing the site, preventing run-off to surface waters and ending or controlling the emergency to the extent possible.
- Ensure that appropriate decontamination treatment or testing for exposed or injured personnel is obtained.
- Determine the cause of the incident and make recommendations to prevent the recurrence.
- Ensure that all required reports have been prepared.
- Contact USA's Safety Manager and Operations Manager

Medical Emergencies

Any person who becomes ill or injured in the Exclusion Zone must be decontaminated to the maximum extent possible when practical. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket.) First aid should be administered while awaiting an ambulance or paramedics. All injuries and illnesses must immediately be reported to the USA PM, The Anchor QEA, LLC, site representative on duty, & USA Safety Manger.

If the first aid provided to an injured person presents the possibility of exposure to blood or other body fluids or potentially infectious material, the care giver must wear surgical type impermeable gloves. The exposure must be reported to the Site Supervisor, The Turbo Care Contact Person,

and the USA Safety Manager within 24 hours of exposure, naming the injured person(s) and the person(s) administering first aid.

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.

Fire or Explosion

In the event of a fire or explosion, The Anchor QEA, site representative, contact person should be contacted immediately.

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

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

Spills, Leaks or Releases

In the event of a spill or a leak, site personnel will:

- Contact their supervisor
- Begin containment and recovery of the spilled materials if possible.

Evacuation Routes and Resources

Evacuation routes will be established for this site prior to start of work activities. All buildings and outside work areas have been provided with designated exit points. Evacuation should be conducted immediately, without regard for equipment under conditions of extreme emergency.

Evacuation notification will be determined by the Anchor QEA, site representative contact.

- Procedures and communicated in the pre job safety meeting.
- 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 or in a safe place.
- The Site Supervisor will conduct a head count to insure all personnel have been evacuated safely.

In the event that emergency site evacuation is necessary, all personnel are to follow the established Emergency procedures in the Emergency Action Plan.

Appendix A

SITE SAFETY PLAN AMENDMENTS

SITE SAFETY PLAN AMENDMENT: #_____

SITE NAME: San Jacinto River Waste Pits Project

DATE: _____

TYPE OF AMENDMENT:

REASON FOR AMENDMENT:

ALTERNATE SAFEGUARD PROCEDURES:

REQUIRED CHANGES IN PPE:

_____ _____

USA Project Manager: (Sign & Date)

_____ _____

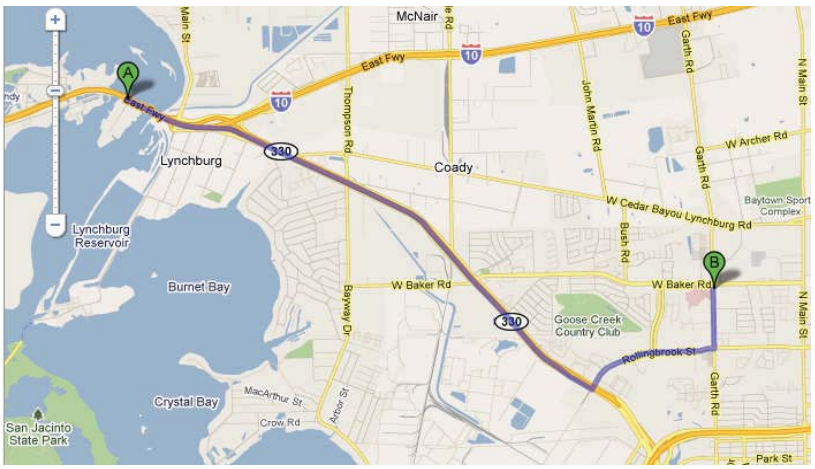
USA Site Health & Safety Manager: (Sign & Date)

Appendix B

Route to Medical Facilities

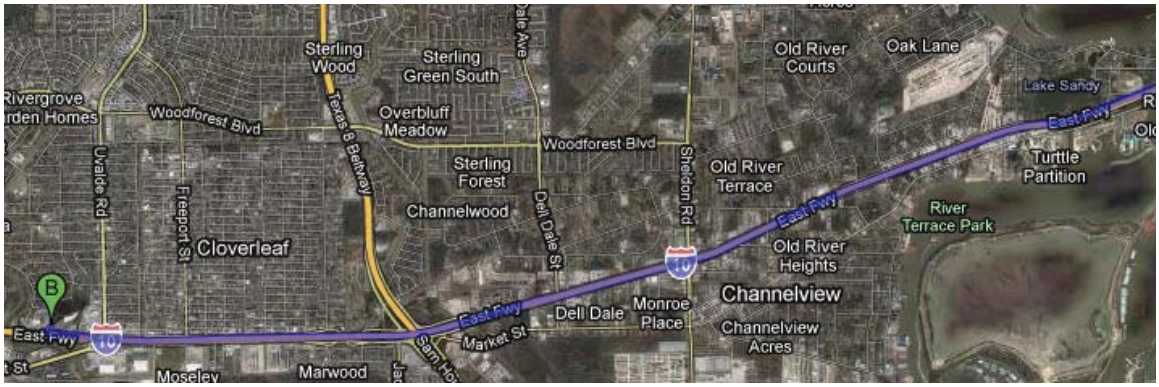
Route to Hospital

San Jacinto Methodist Hospital



1. Head southeast on I-10 E
2. Slight right at TX-330 Spur S (signs for Baytown)
3. Take the exit toward Rollingbrook Dr
4. Merge onto Decker Dr
5. Turn left at Rollingbrook St
6. Turn left at Garth Rd
7. Arrive at 4401 Garth Rd, Baytown TX

Route to Hospital from Work Site



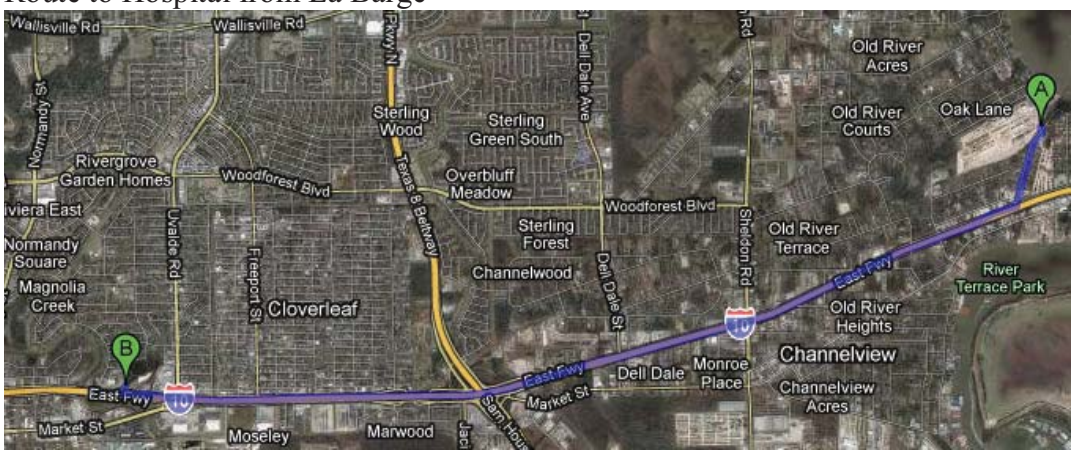
Hospital Route Map and Driving Directions

18001 E Freeway Service Rd Channelview, TX 77530

1. Head west on E Freeway Service Rd toward Monmouth St
2. Take the ramp on the left onto I-10 W
3. Take exit 779A toward Westmont St
4. Merge onto E Freeway Service Rd/N Shore Dr
5. Turn right at Rockglen St Destination will be on the left

East Houston Regional Medical Center 13111 East Freeway Houston, TX 77015

Route to Hospital from La Barge

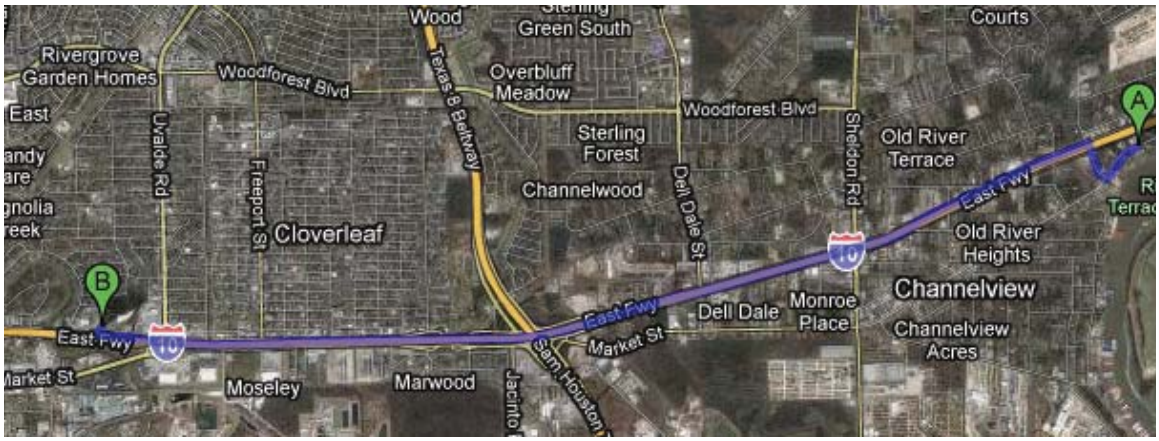


Hospital Route Map and Driving Directions

1. La Barge Pipe & Steel Channelview, Texas 77530
2. Head northeast on Celeste St toward Shields St
3. Turn right at Shields St
4. Turn right at River Rd
5. Turn right at E Freeway Service Rd
6. Take the ramp on the left onto I-10 W
7. Take exit 779A toward Westmont St
8. Merge onto E Freeway Service Rd/N Shore Dr
9. Turn right at Rockglen St Destination will be on the left

East Houston Regional Medical Center 13111 East Freeway Houston, TX 77015

Route to Hospital from the Administration Area

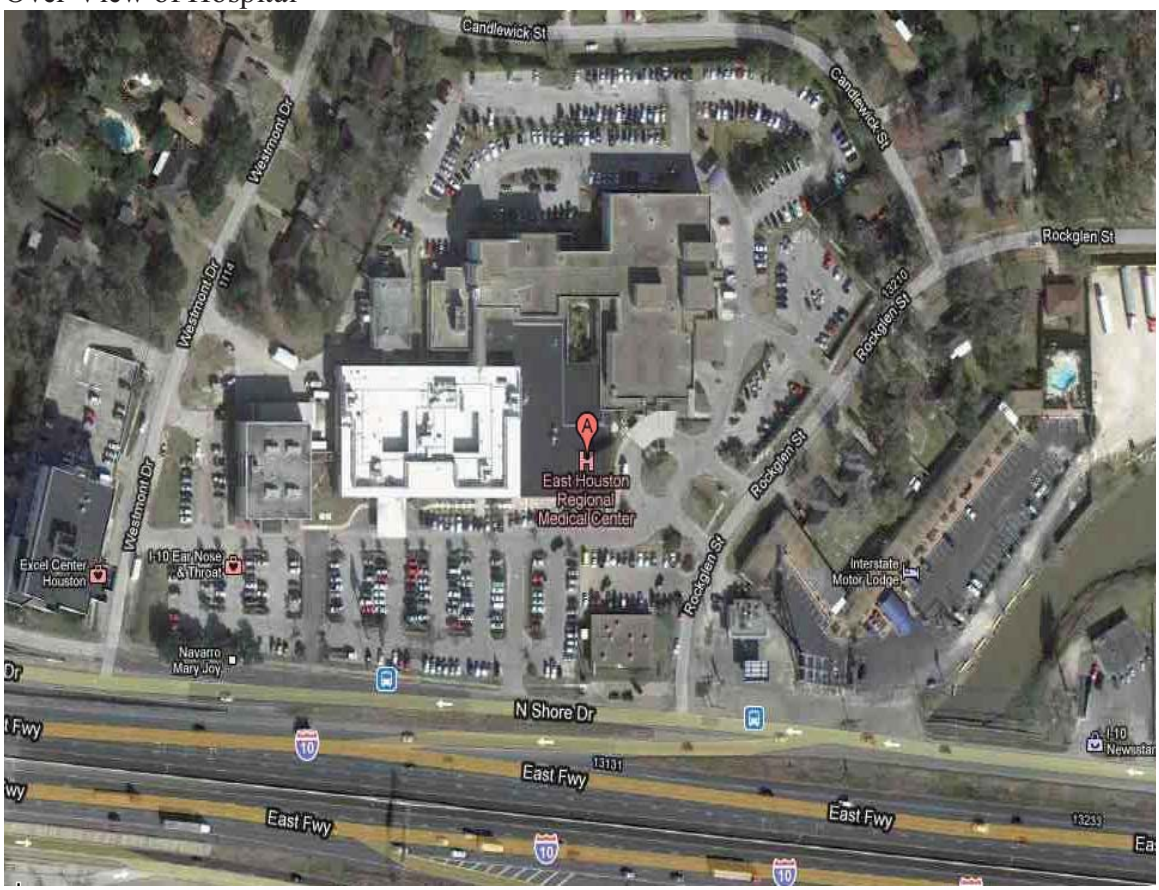


Hospital Route Map and Driving Direction

1. 16901 Market St Channelview, TX 77530
2. Head west on Market St/Market Street Rd toward Bayou Dr
3. Take the 1st right onto Bayou Dr
4. Turn left at the 2nd cross street onto E Freeway Service Rd
5. Take the ramp on the left onto I-10 W
6. Take exit 779A toward Westmont St
7. Merge onto E Freeway Service Rd/N Shore Dr
8. Turn right at Rockglen St Destination will be on the left

East Houston Regional Medical Center 13111 East Freeway Houston, TX 77015

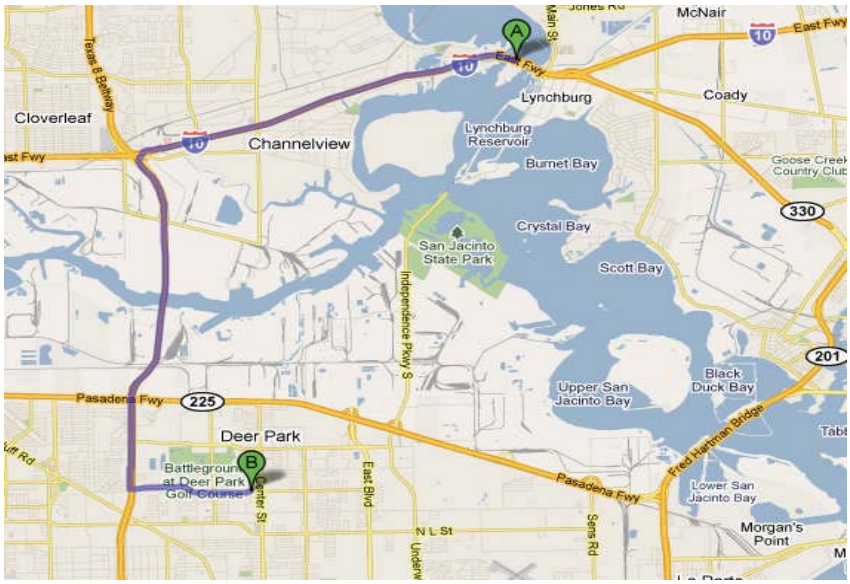
Over View of Hospital



East Houston Regional Medical Center
1311 East Freeway, Houston Texas 77015
713-393-2000

Route to Occupational Clinic

San Augustine Clinic



1. Head northwest on I-10 W
2. Take exit 781A to merge onto East Sam
3. Houston Pkwy N/Sam Houston
4. Tollway S/Texas 8 Beltway S toward Sam Houston Pkwy
5. Continue to follow Sam Houston
6. Take the exit toward Red Bluff Rd/Pasadena Blvd
7. Merge onto East Sam Houston Pkwy S/Texas 8 Beltway S
8. Take the exit toward Red Bluff Rd/Pasadena Blvd
9. Turn left at Ramsey Dr
10. Continue onto W San Augustine St
11. 321 W. San Augustine Deer Park TX

Appendix C

ACTIVITY HAZARD ANALYSES

See attached file

APPENDIX D

PERSONAL PROTECTIVE EQUIPMENT
&
RESPIRATORY PROTECTION

APPENDIX E

ACCIDENT REPORTING & INVESTIGATION

USA ENVIRONMENT L.P. INCIDENT REPORT

INCIDENT INVESTIGATION PROCESS – STEP 1 **INCIDENT NO:**

Incident – Complete Sections A and C	Injury – Complete Sections B and C

SECTION A							
NAME:							
DEPARTMENT:							
WHERE DID THE INCIDENT/CONDITION OCCUR?							
DATE AND TIME OF INC.:				DRUG SCREENING TEST CONDUCTED?		YES / NO	
DAY OF WEEK	MON	TUE	WED	THU	FRI	SAT	SUN
INCIDENT TYPE: (Mark with x)							
Environment (Spills/other)	Health (Occupational disease)	Non-Work Related incidents	Equipment damage	Corporate image	Project management	LEGAL COMPLIANCE	Other
Safety Related (Injury)	Safety Related (other)	Security (Crime/Sabotage)	Quality control	Vehicle accidents	Estimating error	Accounting error	

SECTION B		
NAME OF PERSON INJURED:	EMPLOYEE NO:	AGE:
DEPARTMENT:	REGULAR OCCUPATION:	
YEARS OF COMPANY SERVICE:	PERIOD IN PRESENT JOB:	
NAME OF SUPERVISOR:	HOURS ON DUTY PRIOR TO INCIDENT:	

INJURY						
PART OF BODY AFFECTED	HEAD	NECK	EYE	TRUNK	FINGER	HAND
	ARM	BACK	FOOT	LEG	INTERNAL	MULTIPLE
EFFECT ON PERSON	SPRAINS	STRAINS	CONTUSION	WOUNDS	FRACTURES	BURNS
	AMPUTATION	ELEC. SHOCK	ASPHYXIATION	UNCONSCIOUS	POISONING	MULTIPLE
NATURE OF INJURY(Describe the injury e.g. laceration left hand index finger.)						

SECTION C
PLEASE GIVE A DETAILED DESCRIPTION OF THE INCIDENT / INJURY or NEAR MISS

EMPLOYEE NAME(S) & SIGNATURE(S):- (OPTIONAL)	SUPERVISOR NAME(S) & SIGNATURE(S):-	EHS REPRESENTATIVE NAME(S) & SIGNATURE(S):-
DATE:	DATE:	DATE:

OFFICE USE ONLY						
INCIDENT CLASSIFICATION:	Recordable	Non Recordable	Near Miss	Financial loss	Production loss	Other

USA INCIDENT REPORT FORMAT CONFIDENTIAL
2009 ©

Detailed drawing of area / event / process - displaying the incident occurrence:

Additional information:
A. Did the Police, Fire or any other Agency/Utility respond to the event? If yes please attach a copy of official report or a copy of the request for a report - stating case number and the name as well as contact detail of the official involved – **YES / NO**
B. List all names and contact details of any witnesses to the event:

Financial: Initial Estimated Dollar loss - These will be verified / updated during investigation process
Time away from work place – hrs of personnel involved in incident =
Equipment damage =
Equipment replacement / rental =
Medical attention =
Investigator expenses – time plus other =
Clean up =
Equipment utilized to rectify =
Cost of corrective actions =
Other =
TOTAL INITIAL ESTIMATED COSTS INVOLVED =

USA INCIDENT REPORT FORMAT CONFIDENTIAL
2009 ©

APPENDIX F

FORMS & POSTINGS

You Have a Right to a Safe and Healthful Workplace.

IT'S THE LAW!

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthful conditions in your workplace. You or your representative may participate in the inspection.
- You can file a complaint with OSHA within 30 days of discrimination by your employer for making safety and health complaints or for exercising your rights under the *OSH Act.*
- You have a right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violation.
- Your employer must correct workplace hazards by the date indicated on the citation and must certify that these hazards have been reduced or eliminated.
- You have the right to copies of your medical records or records of your exposure to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.

he *Occupational Safety and Health Act of 1970 (OSH Act),* P.L. 91-596, assures safe and healthful working conditions for working men andwomen throughout the Nation. The Occupational Safety and Health Administration, in the U.S. Department of Labor, has the primaryresponsibility for administering the *OSH Act.*The rights listed here may vary depending on the particular circumstances. To file a complaint,report an emergency, or seek OSHA advice, assistance, or products, visit our website at www.osha.gov or call 1-800-321-OSHA or your nearest OSHA office:

Atlanta (404) 562-2300 Boston (617) 565-9860 Chicago (312) 353-2220 Dallas (214) 767-4731
Denver (303) 844-1600 Kansas City (816) 426-5861 New York (212) 337-2378 Philadelphia (215) 861-4900
San Francisco (415) 975-4310 Seattle (206) 553-5930 Teletypewriter (TTY) 1-877-889-5627
If you work in a state operating under an OSHA-approved plan, your employer must post the required state equivalent of this poster

1-800-321-OSHA

You Have a Right to a Safe and Healthful Workplace.

www.osha.gov U.S. Department of Labor

APPENDIX G

Site Safety Plan Acknowledgement

Site Safety Plan Acknowledgement

I have been informed, I understand, and I will abide by the procedures set forth in the Site Safety Plan and respective amendments.

Name (*Printed*)	Signature	Company Representing	Date

APPENDIX H

Meter Bump Test

AIR MONITORING SURVEY/CALIBRATION & DAILY BUMP LOG

CALIBRATION LOG

LOCATION: _____ DATE: _____

EQUIPMENT/AREA/EMPLOYEE: _____

IH MONITORING TECHNICIAN: _____

INSTRUMENT: _____CALIBRATION GAS: _____

INSTRUMENT: _____CALIBRATION GAS: _____

DAILY BUMP LOG

DATE	AREA/ EMPLOYEE	TIME	% LEL	% O_2	H_2S PPM	CO_2 PPM	COMMENTS/BUMP-CAL

COMMENTS: _____

_____

GRADE D AIR: CO < 10 PPM, O_2 19.5 - 23.5 %, CO_2 < 1000 PPM

CONFINED SPACE ENTRY: O_2 19.5 - 23.5 %, LEL < 10 %

APPENDIX I

CONTRACTOR'S AND LEASED EMPLOYEE'S SAFETY DECLARATION FORM

CONTRACTOR'S/LEASED EMPLOYEE'S SAFETY DECLARATION
(to be completed by each leased employee/contractor employee on site)

As the duly authorized and designated representative and agent of _____, I hereby certify and agree for myself that:

1 I have received an orientation briefing by USA including, but not limited to, site-specific safety rules, accident/injury reporting, emergency procedures and potential hazards in the work area during routine site operations;
2 I have received a written copy of the site-specific safety rules and will comply with those rules, as well as any applicable federal, state and local health and safety regulations;
3* I understand that unless I am a leased employee, I should provide my own required respirator and personal protective equipment when working on USA property;
4* If applicable, I have been examined within the past 24 months and have been medically qualified to perform my designated work assignments (including the wearing of respirators and personal protective equipment), in accordance with state and federal OSHA regulations;
5* If applicable, I have received training in appropriate health and safety topics (including, but not limited to, respiratory protection, hearing conservation, hazard communication and equipment operation), in accordance with state and federal OSHA regulations; including 40 hour OSHA training and 8 hour refreshers on a timely basis as required by 29 CFR 1910.120; and
6 If applicable, my employer performs regularly scheduled maintenance on owned or leased vehicles and equipment. Known defects will be repaired prior to operation and, as defects become apparent during equipment operation, the equipment will be taken out of service until repairs are made.

This declaration is hereby incorporated into the Contractual agreement between USA Environment, L.P. and _____ (Contractor/Leased Employee Firm).

_____ _____
Contractor/Leased Employee Date

_____ _____
USA Employee giving Orientation Date

* Documentation provided by employee:

40 Hour OSHA Training _____
8 Hour Refresher (current) _____
Fit-Testing Record _____
Medically Fit Documentation _____

_____ _____
USA Employee verifying documentation Date

* Applicable to all leased employees and contractors who will be involved in hazardous waste operations

APPENDIX J

AUTHORIZATION TO WORK PERMIT

WORK PERMIT

☐ General Work ☐ Confined Space (requires competent & hole watch person) ☐ Excavation (requires competent & hole watch person) ☐ Hot Work (requires fire watch) ☐ Electrical (requires lockout/ tagout)

Project: _____ Area: _____ Time Issued: _____

Issued By: _____ Date: _____ Permit Starts: _____

Attendant: _____ Fire Watch: _____ Permit Expires _____

Description of Work: _____

1. Special Equipment Requirements (Check all That Apply)

☐ Protective Clothing – Level A ☐ ½ Face Respirator ☐ Hearing Protection ☐ Personal Flotation Device
☐ Protective Clothing – Level B ☐ Full Face Respirator ☐ Fire Blanket ☐ Do Not Operate Tags
☐ Protective Clothing – Level C ☐ Air Line Respirator ☐ Safety Harness/Lifeline ☐ Tripod
☐ Protective Clothing – Level D ☐ Dust Mask ☐ Gloves ☐ Lighting
☐ Goggles ☐ 5-Min. Escape pack ☐ Air Blower In/Out ☐ Communication – Radio
☐ Face Shield ☐ Sandblast Hood ☐ Fall Protection ☐ Descent Device
☐ Safety Glasses ☐ SCBA ☐ Other (Describe) _____

2. Potential Hazards (check all that apply)

☐ Toxics ☐ Air Born Particulates ☒ Slip, Trip, Fall ☒ Pinch Points ☐ Over Head Hazards ☒ Below Ground
☐ Flammables ☐ Heat Stress ☐ Noise ☐ Restricted Lighting ☐ Acid / Caustic ☒ Mechanical
☐ Asbestos ☐ Radiation ☐ Excess Cold ☐ Electrical ☐ Haz Waste ☒ Ergonomic
☐ Reactive ☒ Vehicle Traffic ☐ Heavy Objects ☐ Working at or near water ☒ Sharp Objects

3. Type of Work to be Performed (Check all that apply)

☐ Operate Heavy Equipment ☐ Opening Process Equip ☐ Work at Elevation ☐ Demo Building ☐ Scaffolding
☐ Drilling/Chipping/Grinding ☐ Burning/ Welding ☐ Remove UST ☐ Liquid / Gas Transfer ☒ Hand Tools
☐ Mow / Weed Whack ☐ Blinding / Line Isolation ☐ Vacuum Truck ☐ Excavating ☐ Hot Tapping
☐ Pump / Blowers ☐ Other (Explain) _____

4. Equipment Condition (Check all that apply)

☐ Lock Out/Tag Out ☐ Blinded ☐ Out-Of- Service ☐ Nitrogen Purged ☐ Drained ☐ In Service
☐ Depressurized ☐ Clean / Gas Free ☐ Neutralized ☐ Open Line ☐ Pressurized
☐ Other (Explain) _____

5. Hot Work Protection

☐ Combustibles protected ☐ Fire extinguisher present ☐ No presence of product ☐ Fire watch present ☐ No dors/vapors present
☐ Fie blankets in place ☐ Air Monitoring required ☐ Ventilation adequate ☐ Equipment grounded/bonded
☐ Brass/ non-sparking tools ☐ Drainage openings covered ☐ Surrounding area inspected ☐ Other (Explain)__

6. Emergency Procedures

☐ Plant Emergency Team on Stand By ☒ Municipal Fire and Rescue Team Available
☐ Work Crew Set-up For Self Rescue – Non Entry
☐ Emergency Role Assigned and understood

JOB SAFETY ANALYSIS

Sequence of Basic Job Tasks	*Potential Hazards*	*Recommended Actions*

Air Monitoring (to be completed for Confined Space Entry & Hot Work) Meter ID:_____

	Safe Range	***Initial Check***	***Time:***	***Time:***	***Time:***	***Time:***	***Time:***	***Time:***	***Time:***	***Time:***	***Time:***	***Time:***	***Time:***
Oxygen	***19.5-23.5%***												
LEL	***0-10%***												
H_2s	***0 – 10 ppm***												
CO	***0 – 35 ppm***												
Other													

ADDITIONAL COMMENTS FOR TAILGATE SAFETY MEETING:

_____

_____

_____

The permit and Plan of Action, has been explained to me and I understand the requirements needed to complete the task safely and productively. I also understand that I can ask questions at any time during the job on things I do not understand.

USA PERSONNEL: PRINT NAME	SIGNATURE
1. _____	1._____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____
8. _____	8_____
9. _____	9. _____

Post Entry Briefing _____Cancelled By: _____ Time Cancelled: _____

APPENDIX K

Confined Space Entry Log

ENERGY CONTROL GROUP LOCKOUT FORM

ISSUED TO: _____ **DATE:** _____ **LOCATION:** _____

AUTHORIZED ENTRANT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT

PERIODIC AIR MONITORING For CSE

TYPE OF MONITOR	TIME	OXYGEN	LEL

ENTRY SUPERVISOR: _____

WATCHMAN:

APPENDIX L

Material Safety Data Sheets

(Additional MSDS's to be maintained onsite)

MATERIAL SAFETY DATA SHEET: SIMPLE GREEN®

I. PRODUCT & COMPANY INFORMATION

PRODUCT NAME: SIMPLE GREEN® CLEANER / DEGREASER
COMPANY NAME: SUNSHINE MAKERS, INC. Version No. 1006
15922 Pacific Coast Highway Issue Date: March, 1999
Huntington Harbour, CA 92649 USA
Telephone: 800-228-0709 _ 562-795-6000
Fax: 562-592-3034
Website: www.simplegreen.com
For 24-hour emergency, call Chem-Tel, Inc.: 800-255-3924
USE OF PRODUCT: An all purpose cleaner and degreaser used undiluted or diluted in water for direct, spray, and dip tank procedures.

II. INGREDIENT INFORMATION

The only ingredient of Simple Green® with established exposure limits is undiluted 2-butoxyethanol (<6%) (Butyl Cellosolve;
CAS No. 111-76-2): the OSHA PEL and ACGIH TLV is 25 ppm (skin). Note, however, that Butyl Cellosolve is only one of the
raw material ingredients that undergo processing and dilution during the manufacture of Simple Green®. Upon completion of
the manufacturing process, Simple Green® does not possess the occupational health risks associated with exposure to undiluted Butyl Cellosolve. Verification of this is contained in the independent test results detailed under "Toxicological Information" on Page 3 of this MSDS.
The Butyl Cellosolve in Simple Green® is part of a chemical category (glycol ethers) regulated by the Emergency Planning and
Community Right-to-Know Act (SARA, Title III, section 313); therefore, a reporting requirement exists. Based upon chemical
analysis, Simple Green® contains no known EPA priority pollutants, heavy metals, or chemicals listed under RCRA, CERCLA,
or CWA. Analysis by TCLP (Toxicity Characteristic Leaching Procedure) according to RCRA revealed no toxic organic or inorganic constituents.
All components of Simple Green® are listed on the TSCA Chemical Substance Inventory.

III. HAZARDS IDENTIFICATION

UN Number: Not required
Dangerous Goods Class: Nonhazardous
Hazard Rating (NFPA/HMIS) Rating Scale
Health = 1* Reactivity = 0 0 = minimal 1 = slight
Fire = 0 Special = 0 2 = moderate 3 = serious
4 = severe

*Mild eye irritant, non-mutagenic and non-carcinogenic. **None of the ingredients in Simple Green® are regulated or listed as potential cancer agents by Federal OSHA, NTP, or IARC.**

IV. FIRST AID MEASURES

SYMPTOMS OF OVEREXPOSURE AND FIRST AID TREATMENT

Eye contact: Reddening may develop. Immediately rinse the eye with large quantities of cool water; continue 10-15 minutes or until the material has been removed; be sure to remove contact lenses, if present, and to lift
upper and lower lids during rinsing. Get medical attention if irritation persists.
Skin contact: Minimal effects, if any; rinse skin with water, rinse shoes and launder clothing before reuse. Reversible reddening may occur in some dermal-sensitive users; thoroughly rinse area and get medical attention if
reaction persists.

Swallowing: Essentially non-toxic. Give several glasses of water to dilute; do not induce vomiting. If stomach upset occurs, consult physician.
Inhalation: Non-toxic. Exposures to concentrate-mist may cause mild irritation of nasal passages or throat; remove to fresh air. Get medical attention if irritation persists.

V. FIRE FIGHTING MEASURES

Simple Green® is stable, not flammable, and will not burn.
Flash Point/Auto-Ignition: Not flammable.
Flammability Limits: Not flammable.
Extinguishing Media: Not flammable/nonexplosive. No special procedures required.
Special Fire Fighting Procedures: None required.

VI. ACCIDENTAL RELEASE MEASURES

Recover usable material by convenient method; residual may be removed by wipe or wet mop. If necessary, unrecoverable
material may be washed to drain with large quantities of water.

VII. HANDLING, STORAGE & TRANSPORT INFORMATION

No special precautions are required. **This product is non-hazardous for storage and transport according to the U.S. Department of Transportation Regulations.** Simple Green® requires no special labeling or placarding to meet U.S. Department of Transportation requirements.
UN Number: Not required
Dangerous Goods Class: Nonhazardous

VIII. EXPOSURE CONTROLS

Exposure Limits: The Simple Green® formulation presents no health hazards to the user when used according to label directions for its intended purposes. Mild skin and eye irritation is possible (please see Eye contact and Skin contact in Section IV.).
Ventilation: No special ventilation is required during use.
Human Health Effects or Risks from Exposure: Adverse effects on human health are not expected from Simple Green®,
based upon twenty years of use without reported adverse health incidence in diverse population groups, including extensive use by inmates of U.S. Federal prisons in cleaning operations.
Simple Green® is a mild eye irritant; mucous membranes may become irritated by concentrate-mist.
Simple Green® is not likely to irritate the skin in the majority of users. Repeated daily application to the skin without rinsing, or continuous contact of Simple Green® on the skin may lead to temporary, but reversible, irritation.
Medical Conditions Aggravated by Exposure: No aggravation of existing medical conditions is expected; dermal-sensitive users may react to dermal contact by Simple Green®.

IX. PERSONAL PROTECTION

Precautionary Measures: No special requirements under normal use conditions.
Eye Protection: Caution, including reasonable eye protection, should always be used to avoid eye contact where splashing may occur.
Skin Protection: No special precautions required; rinse completely from skin after contact.
Respiratory Protection: No special precautions required.
Work and Hygienic Practices: No special requirements. Wash or rinse hands before touching eyes or contact lenses.

X. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/odor: Translucent green liquid with characteristic sassafras odor.
Specific Gravity: 1.0257 **Vapor Pressure:** 17 mm Hg @ 20 °C; 22 mm Hg @ 25 °C
pH of concentrate: 9.5 **Vapor Density:** 1.3 (air = 1)
Evaporation: >1 (butyl acetate = 1) **Density:** 8.5 lbs./gallon
Boiling Point: 110 °C (231 °F)
Freezing Point: -9 °C (16 °F) If product freezes, it will reconstitute without loss of efficacy when brought back to room temperature and agitated.

VOC Composite Partial Pressure: 0.006 mm Hg @ 20 °C
Volatile Organic Compounds (VOCs): 7.96 g/L per ASTM Method 3960-90. Per California AQMD's VOC test method, product must be diluted at least 2 parts of water to 1 part Simple Green® in order to meet SCAQMD Rule 1171 & Rule 1122
and BAAQMD Regulation 8-16 VOC requirements for solvent cleaning operations.
Water Solubility: Completely soluble in water. The higher salt concentrations in marine ecosystems will lead to complexes
with Simple Green® that may become visible at ratios above one part Simple Green® to 99 parts seawater.
Ash Content: At 600 °F: 1.86% by weight.
Nutrient Content: Nitrogen: <1.0% by weight (fusion and qualitative test for ammonia).
Phosphorus: 0.3% by formula.
Sulfur: 0.6% by weight (barium chloride precipitation method).
Detection: Simple Green® has a characteristic sassafras odor that is not indicative of any hazardous situation.

XI. STABILITY AND REACTIVITY INFORMATION

Nonreactive. Simple Green® is stable, even under fire conditions, and will not react with water or oxidizers. Hazardous polymerization will not occur.

XII. TOXICOLOGICAL INFORMATION

Nonhuman Toxicity

Acute Mortality Studies:
Oral LD_{50} (rat): >5.0 g/kg body weight
Dermal LD_{50} (rabbit): >2.0 g/kg body weight
Dermal Irritation: Only mild, but reversible, irritation was found in a standard 72-hr test on rabbits. A value of 0.2 (non-irritating) was found on a scale of 8.
Eye Irritation: With or without rinsing with water, the irritation scores in rabbits at 24 hours did not exceed 15 (mild irritant) on a scale of 110.
Subchronic dermal effects: No adverse effects, except reversible dermal irritation, were found in rabbits exposed to Simple Green® (up to 2.0 g/kg/day for 13 weeks) applied to the skin of 25 males and 25 females. Only female body weight gain was affected. Detailed microscopic examination of all major tissues showed no adverse changes.
Fertility Assessment by Continuous Breeding: The Simple Green® formulation had no adverse effect on fertility and reproduction in CD-1 mice with continuous administration for 18 weeks, and had no adverse effect on the reproductive performance of their offspring.

XIII. BIODEGRADABILITY AND ENVIRONMENTAL TOXICITY INFORMATION

Biodegradability:

Simple Green® is readily decomposed by naturally occurring microorganisms. The biological oxygen demand (BOD), as a percentage of the chemical oxygen demand (COD), after 4, 7, and 11 days was 56%, 60%, and 70%, respectively. Per OECD Closed Bottle Test, Simple Green® meets OECD and EPA recommendations for ready biodegradability.
In a standard biodegradation test with soils from three different countries, Butyl Cellosolve reached 50% degradation in 6 to
23 days, depending upon soil type, and exceeded the rate of degradation for glucose which was used as a control for comparison.

Environmental Toxicity Information:

Simple Green® is considered practically non-toxic per EPA's aquatic toxicity scale. Simple Green® is non-lethal to any of the marine and estuarine test animals listed in the following table at concentrations below 200 mg/L (0.02%). This table shows the Simple Green® concentrations that are likely to be lethal to 50% of the exposed organisms.

	LC_{50} in mg/L (ppm)	
	48-hour	**96-hour**
Marine Fish:		
Mud minnow (Fundulus heteroclitus)	1690	1574
Whitebait (Galaxias maculatus)	210	210
Marine/Estuarine Invertebrates:		
Brine Shrimp (Artemia salina)	610	399
Grass Shrimp (Palaemonetes pugio)	270	220
Green-lipped Mussel (Perna canaliculus)	220	220
Mud Snail (Potamopyrgus estuarinus)	410	350

XIV. DISPOSAL CONSIDERATIONS

Simple Green® is fully water soluble and biodegradable and will not harm sewage-treatment microorganisms if disposal by sewer or drain is necessary. Dispose of in accordance with all applicable local, state, and federal laws.

XV. OTHER INFORMATION

Containers: Simple Green® residues can be completely removed by rinsing with water; the container may be recycled or applied to other uses.

Electrical Wiring Compatibility: Polyimide insulated wiring is not affected by exposure to Simple Green®. After immersion in Simple Green® for 14 days at 74°F, the 61 cm piece of polyimide insulated wire passed a one minute dielectric proof test at 2500 volts (ASTM D-149).

Contact Point: Sunshine Makers, Inc., Research and Development Division: 562-795-6000.

*** NOTICE ***

All information appearing herein is based upon data obtained by the manufacturer and recognized technical sources. Judgments as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of this information, Sunshine Makers, Inc. or its distributors extends no warranties, makes no representations and assumes no responsibility as to the suitability of such information for application to purchaser's intended purposes or for consequences of its use.

Safety data for dibenzo-p-dioxin

General

Synonyms: dibenzodioxin, dibenzo(1,4)dioxin, dibenzo(b,e)(1,4)dioxin, oxanthrene, phenodioxin
Use:
Molecular formula: $C_{12}H_8O_2$
CAS No: 262-12-4
EINECS No:

Physical data

Appearance: white crystalline solid
Melting point: 122 - 123 C
Boiling point:
Vapour density:
Vapour pressure:
Density (g cm^{-3}):
Flash point:
Explosion limits:
Autoignition temperature:
Water solubility:

Stability

Stable. Combustible. Incompatible with strong oxidizing agents.

Toxicology

May be harmful or act as an irritant - toxicology not fully investigated.

Toxicity data

IPR-MUS LD50 > 50 mg kg^{-1}
UNK-RAT LD50 > 1000 mg kg^{-1}

Risk phrases

Field Assessment

Transport information

Non-hazardous for air, sea and road freight.

Personal protection

Safety glasses. Treat as potentially harmful.

Safety phrases

Field assessment

UNITED 923

UNITED LABORATORIES

MATERIAL SAFETY DATA SHEET

320 37th Avenue • St. Charles, Illinois 60174 • To Reorder, Call 800-323-2594

PRODUCT IDENTIFICATION	USE / DESCRIPTION	REVISION DATE	FOR MEDICAL AND
UNITED 923	Hydraulic Oil	April 29, 2002	TRANSPORTATION EMERGENCIES:
HYDRASLIK SAE 10W			INFOTRAC: 800-535-5053

HEALTH (0 = Maximum Safety)

1

Always follow Label Directions and Cautions.

4 Extreme. **3** High. **2** Moderate. **1** Slight. **0** Minimal.

1

See Health Hazard Data Section of this M.S.D.S. for more detailed information.

FLAMMABILITY (0 = Maximum Safety)

Susceptibility of Material to Burning.

4 Extremely flammable.

3 Ignites at normal temperature.

2 Ignites when moderately heated.

1 Must be preheated to burn.

0 Will not burn.

REACTIVITY (0 = Maximum Safety)

Susceptible to Release of Energy.

4 May detonate-vacate area if Materials are exposed to fire.

3 Strong shock of heat may detonate-use monitors from behind explosion resistant barriers.

2 Violent chemical change possible-use hose stream from distance

1 Unstable if heated-use precaution.

0 Normally stable.

PERSONAL PROTECTION

HAZARDOUS COMPONENTS

IDENTITY, EXPOSURE LIMITS AND S.A.R.A. TITLE III INFORMATION

HAZARDOUS COMPONENTS	CAS NUMBER	ACGIH TWA	ACGIH STEL	OSHA PEL	OTHER RECOMMENDED LIMITS	S.A.R.A. TITLE III QUANTITIES
Petroleum Hydrocarbon Blend	64742-58-1	5 mg/m^3*	Not established	5 mg/m^3*	NIOSH STEL 10 mg/m^3*	None
	64742-54-7	5 mg/m^3*	Not established	5 mg/m^3*	NIOSH STEL 10 mg/m^3*	None
	64742-57-0	5 mg/m^3*	Not established	5 mg/m^3*	NIOSH STEL 10 mg/m^3*	None

These values are for oil mist. There is little likelihood of mist-formation under normal use of this product.

PHYSICAL / CHEMICAL CHARACTERISTICS

BOILING POINT	SPECIFIC GRAVITY (H_20 = 1)
Above 350°F.	Less than 1.0
VAPOR PRESSURE (mm Hg.)	**MELTING POINT**
(At 77° F.) Not determined	Not determined
VAPOR DENSITY (Air = 1)	**EVAPORATION RATE**
Not determined	(Ether = 1) Slower
SOLUBILITY IN WATER	**VOLATILE ORGANIC COMPOUNDS (V.O.C.)**
Negligible	(Pounds Per Gallon Of Product) Negligible
APPEARANCE AND ODOR	**pH**
Red liquid with mild odor.	Not applicable

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used)	FLAMMABLE LIMITS	LEL	UEL
Over 200°F	Not determined	Not determined	Not determined

EXTINGUISHING MEDIA

Foam, dry chemical, carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES

Use water stream to cool fire-exposed containers. Burning product may float on water floods. Prevent runoff from entering sewers, streams or public water courses. Firefighters should wear full protective equipment and NIOSH-approved self-contained breathing apparatus in any indoor fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Avoid contact with strong oxidants, heat, sparks and flame.

REACTIVITY DATA

STABILITY: **STABLE X** **CONDITIONS TO AVOID**

UNSTABLE None known.

INCOMPATIBILITY (Materials To Avoid)

Avoid strong oxidizing agents.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS

When heated strongly, as in a fire, this product may produce oxides of carbon, sulfur, hydrogen chloride, phosphorus.

HAZARDOUS POLYMERIZATION:WILL NOT OCCUR X **CONDITIONS TO AVOID**

MAY OCCUR None known

HEALTH HAZARD DATA

HEALTH HAZARDS

EYES: May result in eye irritation. SKIN: May result in skin irritation. INHALATION: Inhalation of high vapor concentrations at elevated temperatures, may result in respiratory irritation. IF SWALLOWED: May result in gastrointestinal tract irritation.

CARCINOGENICITY: **NTP?** No **IARC MONOGRAPHS?** No **OSHA REGULATED?** No

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity? No

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Irritation SKIN: Irritation INHALATION: Irritation IF SWALLOWED: Gastrointestinal tract irritation

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY OVEREXPOSURE

None known

TARGET ORGANS:

Skin

EMERGENCY AND FIRST AID PROCEDURES

EYES: Flush with water for 15 minutes while holding eye lids open. If irritation persists, call a physician or poison control center.

SKIN: Wash with soap and water. If irritation persists, call a physician or poison control center. INHALATION: Remove to fresh air. If breathing difficulties arise, call a physician or poison control center.. IF SWALLOWED: DO NOT induce vomiting. Call a physician or poison control center.

PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Prevent entry into sewers or waterways by diking. Absorb small amounts using inert material. Place in a suitable container for disposal.

WASTE DISPOSAL METHOD

Consult local, state or federal authorities for proper disposal guidelines.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Keep containers closed when not in use. Avoid eye and skin contact. Store away from heat, sparks, flame and strong oxidants.

Keep out of reach of children.

CONTROL MEASURES

FOR USE WHERE SIGNIFICANT EYE, SKIN OR INHALATION EXPOSURE IS LIKELY

RESPIRATORY PROTECTION (Specify Type)

If TLV is exceeded, use NIOSH/MSHA approved respirator for oil mists.

VENTILATION:	MECHANICAL (General)	LOCAL EXHAUST
	Normally not required	Generally adequate

PROTECTIVE GLOVES	EYE PROTECTION
Nitrile, neoprene or oil resistant gloves are recommended.	Safety glasses are recommended

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Oil resistant apron is recommended to prevent contamination.

WORK HYGENIC PRACTICES

Remove contaminated clothing and launder before reusing. Wash hands and face with soap and water after using this product.

No. 2 Diesel MSDS SUMMARY SHEET

Manufacturer:

Name: PHILLIPS PETROLEUM COMPANY

Address 1: Address 2: Address 3: CSZ: BARTLESVILLE **State:** OK **Zipcode:** 74004

Emergency phone: (800) 424-9300

Business phone: 800-762-0942

Product:

Ferndale MSDS#: 1354 **Version # :** 6

Manufacturer MSDS#: 0041

Current? : 2002

Name:

NO. 2 DIESEL FUEL

Synonyms:

CARB **Diesel** TF3

CARB **Diesel** CARB **Diesel** 10%

Diesel Fuel Oil

EPA Low Sulfur **Diesel** Fuel

EPA Low Sulfur **Diesel** Fuel – Dyed

EPA Off Road High Sulfur **Diesel –** Dyed

Fuel Oil No. 2 – CAS # 68476-30-2

No. 2 **Diesel** Fuel Oil

No. 2 Fuel Oil – Non Hiway – Dyed

No. 2 High Sulfur **Diesel** – Dyed

No. 2 Low Sulfur **Diesel** - Dyed

No. 2 Low Sulfur **Diesel** - Undyed

Crude column 3rd IR

Crude column 3rd side cut

Atmospheric tower 3rd side cut

Ultra Low Sulfur **Diesel** No. 2

Finished **Diesel**

DHT Reactor Feed

Straight Run **Diesel**

Diesel

Middle Distillate

Product/Catalog Numbers:

MSDS Date: 01/01/2002 **(received:** 01/14/2002**)**

NFPA codes:

Health: 0 **Flammability:** 2 **Reactivity:** 0

No. 2 Diesel Fuel (MSDS #0041) Page 2 of 9

MATERIAL SAFETY DATA SHEET

No. 2 Diesel Fuel

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: No. 2 Diesel Fuel
Product Code: Multiple

SAP Code:

Synonyms: 1354

CARB Diesel TF3

CARB Diesel

CARB Diesel 10%

Diesel Fuel Oil

EPA Low Sulfur Diesel Fuel

EPA Low Sulfur Diesel Fuel – Dyed EPA
Off Road High Sulfur Diesel – Dyed

Fuel Oil No. 2 – CAS # 68476-30-2 No. 2
Diesel Fuel Oil

No. 2 Fuel Oil – Non Hiway – Dyed No. 2
High Sulfur Diesel – Dyed No. 2 Low
Sulfur Diesel - Dyed

No. 2 Low Sulfur Diesel – Undyed No. 2
Ultra Low Sulfur Diesel – Dyed

No. 2 Ultra Low Sulfur Diesel - Undyed

Intended Use: Fuel

Chemical Family:

Responsible Party: Phillip's Petroleum Company

Bartlesville, Oklahoma 74004

For Additional MSDSs: 800-762-0942

Technical Information:

The intended use of this product is indicated above. If any additional use is known, please contact us at the

Technical Information number listed.

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident California Poison Control System: 800-356-3120

Call CHEMTREC

North America: (800) 424-9300 Others:
(703) 527-3887 (collect)

Health Hazards/Precautionary Measures: Causes severe skin irritation. Aspiration hazard if swallowed. Can enter lungs and cause damage. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not

taste or swallow. Wash thoroughly after handling.

Physical Hazards/Precautionary Measures: Flammable liquid and vapor. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

Appearance: Straw-colored to dyed red

Physical Form: Liquid

Odor: Characteristic petroleum

No. 2 Diesel Fuel (MSDS #0041) Page 3 of 9

HFPA Hazard Class: HMIS Hazard Class Health:
0 (Least) Not Evaluated

Flammability: 2 (Moderate)

Reactivity: 0 (Least)

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS % VOLUME EXPOSURE GUIDELINE Limits
Agency Type
Diesel Fuel No. 2 100 100* mg/m3 ACGIH TWA-SKIN

CAS# 68476-34-6

Naphthalene <1 10ppm ACGIH TWA

CAS# 91-20-3 15ppm ACGIH STEL

10ppm OSHA TWA

250ppm NIOSH IDLH

All components are listed on the TSCA inventory

Tosco Low Sulfur No. 2 Diesel meets the specifications of 40 CFR 60.41 for low sulfur diesel fuel.
Note: State, local or other agencies or advisory groups may have established more stringent limits.

Consult an industrial hygienist or similar professional, or your local agencies, for further information.
*Proposed ACGIH (1999)

3. HAZARDS IDENTIFICATION

Potential Health Effects:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Severe skin irritant. Contact may cause redness, itching, burning, and severe skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis (inflammation). Not actually toxic by skin absorption, but prolonged or repeated skin contact may be harmful (see Section 11).

Inhalation (Breathing): No information available. Studies by other exposure routes suggest a low degree of toxicity by inhalation.

Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION HAZARD – This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract, nausea, diarrhea and transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

Cancer: Possible skin cancer hazard (see Sections 11 and 14).

Target Organs: There is limited evidence from animal studies that overexposure may cause injury to the kidney (see Section 11).

Developmental: Inadequate data available for this material.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and kidney disorders.

No. 2 Diesel Fuel (MSDS #0041) Page 4 of 9

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Immediately remove contaminated shoes, clothing, and constrictive jewelry and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek immediate medical

attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek immediate medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and

immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard; Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and

vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

5. FIRE FIGHTING MEASURES

Flammable Properties: Flash Point: >125°F/>52°

OSHA Flammability Class: Combustible liquid

LEL %: 0.3 / UEL %; 10.0

Autoignition Temperature: 500°F/260°C

Unusual Fire & Explosion Hazards: This material is flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

No. 2 Diesel Fuel (MSDS #0041) Page 5 of 9

6. ACCIDENTAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear

appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharged. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such ASTM

D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing or high pressure hydraulic oil equipment.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSIZ49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentration below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: A NIOSH certified air purifying respirator with an organic vapor cartridge maybe used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2). Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is a potential for an uncontrolled release,

exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrants a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation and skin damage (see glove manufacturer literature for information on permeability). Depending

on conditions of use, apron and/or arm covers may be necessary.

Eyes/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse. It is recommended that impervious clothing be worn when skin contact is possible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1atm).

Appearance: Straw-colored to dyed red

Physical State: Liquid

Odor: Characteristic petroleum pH:
unavailable

Vapor Pressure (mm Hg): 0.40 Vapor
Densisty (air=1):>3

Boiling Point/Range: 320-700°F /160-371°C

Freezing/Melting Point: No Data
Solubility in Water: Negligible Specific
Gravity: 0.81-0.88 @ 60°F Percent
Volatile: Negligible Evaporation Rate
(nBuAc=1): <1 Viscosity: 32.6-40.0 SUS @
100°F Bulk Density: 7.08 lbs/gal

Flash Point: >125°F / >52°C

Flammable/Expolsive Limits (%): LEL: 0.3 / UEL: 10.0

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc.

Hazardous Decomposition Products: The use of hydrocarbon fuels in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels. ACGIH has included a TLV of 0.05 mg/m3 TWA for diesel exhaust particulate on its 1999 Notice of Intended Changes. See Section 11 for additional information on hazards of engine exhaust.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Diesel Fuel No. 2 (CAS# 68476-34-6)

Carcinogenicity: Chronic dermal application of certain middle distillate streams contained in diesel fuel No. 2

resulted in an increased incidence of skin tumors in mice. This material has not been identified as carcinogen by NTP, IARC, or OSHA. Diesel exhaust is a probable cancer hazard based on tests with laboratory animals. **Target Organ(s):** Limited evidence of renal impairment has been noted from a few case reports involving excessive exposure to diesel fuel No. 2.

Naphthalene (CAS# 91-20-3)

Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has not been identified as a carcinogen by IARC or OSHA.

12. ECOLOGICAL INFORMATION Not evaluated at this time

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001) and benzene (D018). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent then the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container ?insate? could be considered a RCRA hazardous waste and must be disposed of with care and in compliance with federal, state and local regulations. Large empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller containers, consult with state and local regulations and disposal authorities.

14. TRANSPORT INFORMATION

DOT Shipping Description: Diesel Fuel, NA1983 **Non-Bulk Package Marking:** Diesel Fuel, 3, NA 1993, III

15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories):

Acute Health: Yes

Chronic Health: Yes

Fire Hazard: Yes

Pressure Hazard: No

Reactive Hazard: No

SARA 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:
Component CAS Number Weight %

-- None known --

California Proposition 65:

Warning: This material contains the following chemicals which are known to the state of California to cause

cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component Effect

Benzene Cancer, Developmental and Reproductive Toxicant

Toluene Developmental Toxicant

Diesel engine exhaust, while not a component of this material, is on the Proposition 65 list of chemicals known to the State of California to cause cancer.

Carcinogen Identification:

This material has not been identified as a carcinogen by NTP, IARC, or OSHA. See Section 11 for carcinogenicity information of individual components, if any. Diesel exhaust is a probable cancer hazard based on tests in laboratory animals. It has been identified as carcinogen by IARC.

UNLEADED GASOLINE (ALL GRADES)
MATERIAL SAFETY DATA SHEET

Petrocom Energy
Group, LLC 1330 Post Oak Blvd., Suite 2350
Houston, Texas 77056

Phone: 713-418-3000

Fax: 713-418-3001

Revision Date: 03/05/2008

Section 1: Product Identification

Name: Unleaded Gasoline

Synonyms: Regular/Midgrade/Premium Gasoline, Motor Fuel, Reformulated Gasoline, RFG, Conventional Gasoline.

CAS No.: 86290-81-5

MSDS No.: PEG-UNL
Use: Motor fuel

Section 2: Product Composition

Component	CAS Number	Amount (%)
Gasoline	86290-81-5	0 – 100
Benzene	71-43-2	0 – 5
Toluene	108-88-3	0 – 30
Xylene (all isomers)	1330-20-7	0 – 25
Hexane (other isomers)	Mixture	5 – 25
n-Hexane	110-54-3	0 – 3
Cyclohexane	110-82-7	0 – 3
Octanes (all isomers)	Mixture	0 – 20
Heptane (all isomers)	142-82-5	0 – 15
Ethanol	64-17-5	0 – 10
Pentanes (all isomers)	Mixture	0 – 20
Trimethylbenzenes (all isomers)	95-63-6	0 – 5
Ethylbenzene	100-41-4	0 – 5
Cumene	98-82-8	0 – 5
Methyl Tertiary Butyl Ether (MTBE)	1634-04-4	0 – 16
Tertiary Amyl Methyl Ether (TAME)	994-05-8	0 – 6

Section 3: Hazards Identification

Hazard Rankings

NFPA

Emergency Overview

DANGER!
Extremely Flammable liquid and vapor
Harmful if swallowed
Skin Irritant
May cause eye and respiratory irritation
Cancer Hazard – Contains material which can cause cancer

Physical form: Liquid

Appearance: Clear to amber

Odor: Strong, Gasoline

Potential Health Effects

Eyes: Contact with eyes may cause irritation, redness, tearing, stinging, watering and blurred vision.

Skin: Contact with skin may cause irritation, itching, redness and skin damage.

Prolonged or repeated contact may cause drying and cracking of the skin, and may also cause dermatitis and inflammation. (See also section 11).

Inhalation: Breathing high concentration can be harmful. Throat and lung irritation may occur. Central nervous system effects including nausea, euphoria, dizziness, headache, fatigue, drowsiness or unconsciousness may occur due to long term or high concentration exposure to vapors.

Ingestion: Toxic if swallowed. This product may cause nausea, vomiting, dizziness, drowsiness, diarrhea if swallowed. Central nervous system effects may be caused. Swallowing this product can result in severe lung damage and/or death.

Signs / Symptoms: When overexposed to this product effects such as nausea, vomiting, blurred vision, respiratory failure, central nervous system depression, unconsciousness, tremor, death may occur.

See toxicological Information (section 11)

Section 4: First Aid Measures

Eye contact: Flush eyes immediately with fresh, cool water for at least 15 minutes. If irritation or redness or any symptoms persist, seek medical attention.

Skin contact: Remove contaminated clothes and shoes. Flush affected area with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, wash affected area thoroughly with soap and water. If irritation or redness develops, seek medical attention.

Inhalation (Breathing): If inhaled, immediately move person to fresh air. If there is difficulty breathing, give oxygen. If not breathing, immediately give artificial respiration. Seek medical attention.

Ingestion (Swallowing): This product may be harmful or fatal if swallowed. This product may cause nausea, vomiting, diarrhea and restlessness. Do not induce vomiting. Do not give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is unconscious or drowsy, place on the left side with the head down. Seek immediate medical attention.

Notes to Physician: This material sensitizes the heart to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material.

Inhalation overexposure can produce toxic effects. Monitor respiratory distress. If difficulty in breathing evaluate upper respiratory tract inflammation, bronchitis and pneumonitis. Administer supplemental oxygen as required.

If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Cinsuder activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubtion or by placement of the body in a Trendelenburg and left lateral decubitus position.

Section 5: Fire Fighting Measures

NFPA Hazard Class: Health = 1 ; Flammability = 3 ; Instability = 0

(0 – Minimal ; 1 – Slight ; 2 – Moderate ; 3 – Serious ; 4 – Severe)

Auto – ignition temperature : >260 °C (500 °F)

Flash point : Closed cup: -43 °C (-45 °F)

Flammable limits : Lower: approximately 1.4%

Upper: approximately 7.6%

Products of combustion : Carbon monoxide, carbon dioxide, nitrogen and sulfur oxides,

smoke, fumes, unburned hydrocarbons and other products of incomplete combustion.

Special properties : Flammable liquid! This material can be ignited by heat, sparks,

flames or other sources of ignition. Vapors may travel long distances to a source where they can ignite and flash back, or explode. A mixture of vapor and air can create an explosion hazard in confined spaces. If container is not properly cooled, it can rupture n the heat of a fire.

Extinguishing media : Use of dry chemical, carbon dioxide, or foam is recommended to

extinguish fire. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may not extinguish the fire, unless it is used by experienced fire fighters and under favorable conditions.

Protective Equipment for : Fire fighters should wear appropriate protective equipment and **Fire Fighters** self contained breathing apparatus (SCBA) with a full face piece operated in positive pressure mode.

Section 6: Accidental Release Measures

Personal precautions: This material is extremely flammable. Eliminate all ignition sources. Keep all hot metal surfaces away from spill/release. All equipment used when handling this material must be grounded.

Spill precautions: Stay upwind and away from spill. Notify persons down wind of the spill, isolate spill area and keep unauthorized personnel out. If it can be done with minimal risk, try to stop spill. Always wear protective equipment, including respiratory protection. Contact emergency personnel.

Environmental precautions: Prevent spilled material from entering sewers, drains, soil, and natural waterways. Use foam or spills to minimize vapors (section 5). Spilled material may be absorbed into an appropriate absorbent material.

Methods for cleaning up: Notify fire authorities and appropriate federal, state and local agencies. Immediate cleanup is recommended.

Section 7: Handling and Storage

Handling: Flammable liquid and vapor. To be used only as a motor fuel. Avoid inhalation of vapors and contact with skin. Wash hands thoroughly after handling this material. Use in a well ventilated area away from all ignition sources. Use product with caution around heat, sparks, static electricity and open flames. Static electricity may ignite vapors and cause fire.

Empty containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks or other ignition sources. The may explode and cause injury and/or death. Empty drums should be completely drained, properly bunged, and returned promptly to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Storage: Store in approved containers only. Keep in tightly closed containers in cool, dry, well ventilated areas. Keep isolated away from heat, sources of ignition and hot metal surfaces.

Section 8: Exposure Controls / Personal Protection

Engineering controls: Provide ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below their occupational exposure limits. Eyewash stations and safety showers should be located near the work-station.

Personal Protection

Eye Protection: Keep away from eyes. Safety glasses complying with approved standards should be worn. Chemical type goggles should be worn.

Skin Protection: Keep away from skin. Skin protection should be worn. Chemical resistant, impervious gloves should be worn. Always follow good personal hygiene practices after handling the material.

Respiratory Protection: Approved respiratory equipment must be used if a risk assessment indicates it is necessary. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn.

General Protection: Use this material in well ventilated areas. Ventilation equipment should be explosion proof also.

Component	Applicable Workplace Exposure Limits
Gasoline	ACGIH – TWA: 300 ppm (8 hours) STEL: 500 ppm (15 minutes)
Benzene	ACGIH – TWA: 0.5 ppm (8 hours) STEL: 2.5 ppm (15 minutes) OSHA – TWA: 1 ppm (8 hours) STEL: 5 ppm (15 minutes)
Toluene	ACGIH – TWA: 20 ppm (8 hours) OSHA – TWA: 200 ppm (8 hours) CEIL: 300 ppm
Xylene (all isomers)	ACGIH – TWA: 100 ppm (8 hours) STEL: 150 ppm (15 minutes) OSHA – TWA: 100 ppm (8 hours)
Hexane (other isomers)	ACGIH – TWA: 500 ppm (8 hours) STEL: 1000 ppm (15 minutes)
n-Hexane	ACGIH – TWA: 50 ppm (8 hours) OSHA – TWA: 500 ppm (8 hours)
Cyclohexane	ACGIH – TWA: 100 ppm (8 hours) OSHA – TWA: 300 ppm (8 hours)
Octanes (all isomers)	ACGIH – TWA: 300 ppm (8 hours) OSHA – TWA: 500 ppm (8 hours)
Heptane (all isomers)	ACGIH – TWA: 400 ppm (8 hours) STEL: 5000 ppm (15 minutes) OSHA – TWA: 500 ppm (8 hours)
Ethanol	ACGIH – TWA: 1000 ppm (8 hours) OSHA – TWA: 1000 ppm (8 hours)
Pentanes (all isomers)	ACGIH – TWA: 600 ppm (8 hours) OSHA – TWA: 1000 ppm (8 hours)
Trimethylbenzenes (all isomers)	ACGIH – TWA: 25 ppm (8 hours)
Ethylbenzene	ACGIH – TWA: 100 ppm (8 hours) STEL: 125 ppm (15 minutes) OSHA – TWA: 100 ppm (8 hours)
Cumene	ACGIH – TWA: 50 ppm (8 hours) OSHA – TWA: 50 ppm (8 hours)
Methyl Tertiary Butyl Ether (MTBE)	ACGIH – TWA: 50 ppm (8 hours)
Tertiary Amyl Methyl Ether (TAME)	ACGIH – TWA: 20 ppm (8 hours)

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Section 9: Physical and Chemical Properties

Physical State:	Liquid.
Color:	Transparent, clear to amber liquid.
Odor:	Strong. Characteristic gasoline odor.
pH:	Not applicable
Boiling Point:	>26 °C (>78 °F)
Melting Point:	Not applicable.
Specific gravity:	0.66 to 0.75 (Water = 1)
Vapor density:	3 to 4 (Air = 1)
Vapor pressure:	220-450 mm Hg at 20°C (68°F) / 6-15 Reid-psia at 37.8°C (100°F)
Volatility:	720 – 770 g/l VOC (w/v)
Viscosity (at 40 °C):	< 1
Flash Point:	< -45 °F / < 43°C
Bulk Density:	6.0 – 6.4 lbs/gal
Solubility in water:	Negligible

Section 10: Stability and Reactivity

Stability:	Stable. Extremely flammable liquid and vapor. Vapor can cause fire.
Conditions to avoid:	Keep away from heat, flame and all other possible sources of ignition.
Materials to avoid:	Keep away from strong oxidizing agents such as acids, chlorine, hydrogen peroxide and oxygen.

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Hazardous decomposition products: Please refer to the combustion products identified in Section 5 of this MSDS.

Hazardous Polymerization: Not expected to occur.

Section 11: Toxicological Information

Toxicology Information

Oral toxicity: Almost non-toxic. LD 50: > 2000 mg/kg (species: rats)

Dermal toxicity: Almost non-toxic. LD 50: > 2000 mg/kg (species: rabbits)

Inhalation toxicity: Almost non-toxic. LD 50: > 5 mg/l (species: rats)

Eye irritation: Almost non-irritating. Draize score: > 6 and < 15 (species: rabbits)

Skin irritation: Irritant. Primary irritation index: > 3 and < 5 (species: rabbits)

Other data: Inhalation of high concentrations of vapors or mists may cause respiratory system irritation and damage. It may also result in the damage and depression of the central nervous system and may cause death. Prolonged contact with the material may cause severe skin irritation.

Subchronic toxicity: Dermal studies resulted in significant irritation but not systematic toxicity (species: rabbits). Inhalation exposures (90 day, approximately 1500 ppm vapor) produced light hydrocarbon nephropathy but no significant systemic toxicity (species: rats).

Neurotoxicity: Repeated and prolonged exposures to high concentrations of vapor has been reported to result in central nervous system damage and eventually, death. In a study in which ten human volunteers were exposed for 30 minutes to approximately 200, 500 or 1000 ppm concentrations of gasoline vapor, irritation of the eyes was the only significant effect observed, based on both subjective and objective assessments.

However, no persistent neurotoxic effects were observed in subchronic inhalation studies of gasoline.

Reproductive toxicity: An inhalation study with rats exposed to 0, 400 and 1600 ppm of wholly vaporized unleaded gasoline, 6 hours per day on day 6 through 16 of gestation, showed no teratogenic effects nor indication of toxicity to either the mother or the fetus. Another inhalation study in rats exposed to 3000,

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6000, or 9000 ppm of gasoline vapor, 6 hours per day on day 6 through 20 of gestation, also showed no teratogenic effects nor indications of toxicity to either the mother or the fetus.

Chronic toxicity: A lifetime mouse skin painting study of unleaded gasoline applied

at 50 microliters, three time weekly, resulted in some severe skin irritation and changes, but no statistically significant increase in skin cancer or cancer to any other organ. Lifetime inhalation of wholly vaporized unleaded gasoline over 2000 ppm has caused increased liver tumors in female mice and increased kidney tumors in male rats. The EPA has concluded that mechanism by which wholly vaporzied unleaded gasoline causes kidney damage is unque to the male rat. The effects in that species (kidney damage and cancer) should not be used in human risk assessment.

Other toxic effects Extremely hazardous in case of ingestion.

on humans Very hazardous in case of eye contact.

Hazardous in case of skin contact. Slightly hazardous in case of inhalation.

Carcinogenic effects: Contains material that may cause cancer depending on the level

and duration of exposure.

Target organs: Contains material that may cause damage to humans organs such

as (but not limited to) blood, kidneys, lungs, liver, eye, skin, nervous system and upper respiratory tract.

Section 12: Ecological Information

Ecotoxicity: This material may be toxic to aquatic organisms such as algae

and daphnia. It has also shown to be toxic to fish.

Environmental fate: The material is expected to be readily biodegradable. When

released into the environment, some of the constituents of gasoline will volatilize and be photo degraded in the atmosphere. Following spillage, the more volatile components of gasoline will be rapidly lost, with concurrent dissolution of these and other constituents into the water. Factors such as local environmental conditions, photo-oxidation, biodegradation and adsorption onto suspended sediments, can contribute to the weathering of spilled gasoline.

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Section 13: Disposal Considerations

Waste disposal: Avoid disposal of spilled material and runoff and contact with soil,

waterways, drains and sewers. Disposal of this product and any of its by products should always comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.

This material would likely be identified as a federally regulated RCRA hazardous waste. See sections 7 and 8 for further information on handling, storage and personal protection. See section 9 for the material's physical and chemical properties.

Section 14: Transportation Information

This material is U.S Department of Transportation (DOT) regulated material.

Shipping name: Gasoline, 3, UN 1203, PG II

Gasohol, 3, NA 1203, PG II (for gasoline blended with less than 20% ethanol).

Hazard class: 3 DOT Class: Flammable liquid

Packing Group: II

UN / NA Number: UN1203 / NA1203

Emergency Response Code: 128

Label:

Section 15: Regulatory Information

TSCA Inventory: This product and/or its components are listed on the Toxic

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Substances Control Act (TSCA)

SARA 302 / 304:

Emergency planning and notification

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and CFR 355. No components were identified.

SARA 311 / 312:

Hazard identification

SARA Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under: Fire, Acute (immediate) Health Hazard, Chronic (Delayed) Health Hazard.

CERCLA / SARA 313:

Toxic and chemical notification and release reporting

This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372

Component	CAS Number	Amount (%)
Benzene	71-43-2	0 – 5
Toluene	108-88-3	0 – 30
Xylene (o, m, p isomers)	1330-20-7	0 – 25
n-Hexane	110-54-3	0 – 3
Cyclohexane	110-82-7	0 – 3
1, 2, 4 Trimethylbenzenes	95-63-6	0 – 5
Ethylbenzene	100-41-4	0 – 5
Cumene	98-82-8	0 – 5
Methyl Tertiary Butyl Ether (MTBE)	1634-04-4	0 – 16

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California Proposition 65: This material may contain detectable quantities of the following chemicals known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Benzene (CAS NO. 71-43-3)

Toluene (CAS No. 108-88-3)

Ethylbenzene (CAS No. 100-41-4)

Naphthalene (CAS No. 91-20-3)

Canadian Regulations: WHMIS Hazard Class: B2 – Flammable Liquids

D2A – Very Toxic Material

Section 16: Other Information

Issue date: March 5, 2008

Previous issue date: No previous date

Version: 1

MSDS Code: PEG-UNL

Legend:

ACGIH = American Conference of Governmental Industrial Hygienists

CAS = Chemical Abstracts Service Registry

CEIL = Ceiling Limit

CERCLA = The Comprehensive Environmental Response, Compensation and Liability Act EPA = Environmental Protection Agency

NFPA = National Fire Protection Association

OSHA = Occupational Safety and Health Administration

SARA = Superfund Amendments and Reauthorization Act

STEL = Short Term Exposure Limit (15 minutes)

TWA = Time Weighted Average (8 hours)

WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer:

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The information presented in this Material Safety Data Sheet (MSDS) d on data believed to be accurate as of the issuance date of this MSDS. No warranty is expressed or implied for the accuracy or completeness of the above provided information. Petrocom Energy Group, LLC does not assume any liability for any damage or injury arising out of product use by others. The end user of the product has the responsibility for evaluating the accuracy of the data, and determining the safety, toxicity and suitability of the product under any conditions.

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APPENDIX M

Equipment Checklist Form

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APPENDIX N

TRAINING & MEDICAL Certificates

(To be added at project mobilization and maintained onsite as part of the project health and safety records)

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