SITE SPECIFIC HEALTH AND SAFETY PLAN

FOR

SCOTT AUTO SALES SITE
Northumberland, NY

PREPARED FOR:
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
2890 WOODBRIDGE AVENUE
EDISON, NJ 08837

CONTRACT NO. EP-S2-10-01
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PREPARED BY

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Exhibit A Material Safety Data Sheets

A comprehensive inventory of all chemicals and products requiring a Safety Data Sheet will be conducted on-site. A Safety Data Sheet will be filed for each item and placed into a folder. As additional products are brought on-site the corresponding SDS will be included in the folder. The location of the SDS folder will be made known to Site personnel during the initial orientation.

1 INTRODUCTION

This document describes the health and safety guidelines developed for the Scott Auto Sales Site, located at 4274 Route 50, Northumberland, Saratoga County, New York. This Health and Safety Plan (HASP), attached amendments and addendums, provides a general description of the levels of personal protection equipment and safe operating guidelines expected for the Scott Auto Sales Site. The plan is designed to provide necessary measures to protect on-site personnel, visitors, and the public from physical harm or exposure to hazardous materials and hazards from the work to be conducted. The procedures and guidelines contained herein were based upon the best available information at the time of the plan's preparation. Specific requirements will be revised when new information is received, or conditions change. A written amendment will document all changes made to the plan. Any amendments to this plan will be included as attachments. Where appropriate, specific OSHA, EPA standards and/ or other guidance will be cited and applied.

1.1 GENERAL SITE SAFETY RULES

The following requirements are standard safe work practices that apply to all site personnel and will be discussed in the safety briefing prior to initiating work on the site:

- All work will be performed in accordance with requirements and procedures described in the KEMRON Corporate Health and Safety Manual.
- Eating, drinking, chewing gum or tobacco, and smoking are prohibited in all work zones.
- The buddy system will be practiced at all times on the Scott Auto Sales Site. During site operations, each worker will consider themselves as a safety backup to their partner.
- Radio and cellphone communication will be used to contact the KEMRON Project Response Manager (RM) / Site Safety Officer (SSO) in the event of an emergency.
- No personnel will be admitted to the Contamination Reduction Zone (CRZ) or Exclusion Zone (EZ) without the proper safety equipment, training and medical surveillance certification.
- All personnel must comply with established site and safety procedures. Any staff member who does not comply with any safety policy, as established by the RM/SSO, will be immediately dismissed from the site.
- No loose clothing, rings, jewelry or other personal items shall be worn at the site. Hair shall be cut above shoulder level so not to become an entanglement hazard.
- Facial hair, beyond the corner of the mouth, is prohibited on personnel operating in the EZ who may potentially be required to wear a respirator if the personal protection level is upgraded.
- Proper personal hygiene and decontamination procedures must be followed before leaving the site.
- Use of cellular telephones, for other than work related or emergency issues, is prohibited in the work area.

1.2 DAILY SAFETY MEETINGS

Daily meetings will be held (at the start of each shift) to ensure that all personnel understand site conditions and operating procedures, to ensure that personal protective equipment is being used correctly, and to address any worker health and safety concerns. All new amendments to the

Health and Safety Plan will also be reviewed at these meetings. Any issues identified during the job walk will be discussed and resolved.

1.3 SITE SAFETY PLAN ACCEPTANCE ACKNOWLEDGMENT

The Response Manager/Site Safety Officer (SSO) shall be responsible for informing all individuals entering the exclusion zone or contamination reduction zone of the contents of this plan and ensuring that each person signs the Safety Plan Acknowledgment Form. By signing the Safety Plan Acknowledgment Form, individuals are recognizing the potential hazards present on-site and the policies and procedures that are required to minimize exposure or adverse effects of these hazards. Personnel are also thereby acknowledging, agreeing and consenting to all policies, procedures, regulations, rules and site specific requirements of the HASP.

1.4 TRAINING REQUIREMENTS

All personnel entering the exclusion zone or contamination reduction zone must have completed training requirements for hazardous site work in accordance with OSHA 29 CFR 1910.120 and Hazard Communication training per 29 CFR 1910.1200. All site employees will have completed required job/task specific training in accordance with OSHA and KEMRON training requirements. Job/task specific training requirements may include (but not be limited to): respiratory protection; elevated work and fall protection; heavy equipment operation; powered hand tools; trenching and excavation; confined space entry; calibration, use and maintenance of monitoring equipment; PPE. The RM will assure that all personnel are properly trained as required prior to any job/task assignment. Records of all required training will be maintained at the employee's home office location. Copies will be provided for site files, if required.

Subcontractors may be used for various segments of the work. Training and certification requirements will be relative to their specific task, and subject to KEMRON determination. Documentation of training requirements is the responsibility of each employer for their employees. Each individual must provide evidence of all required training before site entry.

Training Requirements	Type of Training[1]	Personnel to be Trained
Site Specific Health and Safety Plan	R	All
Pre-Job Start H&S/SSHASP Briefing	F or C	All
H&S Tailgate Meetings	F	All
General Employee Training (new hire, annual, routine) – KEMRON provided	C	All on site for >10 consecutive days
40 hr. Hazardous Waste Operations and Emergency Response (HAZWOPER) Class and 24 hr. Supervised Fieldwork	C	General site workers per 1926.65(e)(3)(i).
8-hour HAZWOPER annual refresher	C	All – If about 1 year from the previous 40-hour HAZWOPER or 8-hour refresher training
8-Hour HAZWOPER Supervisor	C	Response Manager, ES&H Representative
Fire Extinguisher	C	At least two field team member
First Aid/Cardiopulmonary Resuscitation (CPR)	C	At least two field team member
Bloodborne Pathogen (BBP) (KEMRON Program)	C	First Aid/CPR Trained Personnel
Personal Protective Equipment (PPE) (Employer's Program and SSHASP)	F	All
Employer Hazard Communication Program	R	All
[1] Types of Training: **R** = Read Training; **C** = Classroom Training; **F** = Field Training		

1.5 MEDICAL MONITORING REQUIREMENTS

All personnel entering the exclusion zone or contamination reduction zone must have completed appropriate required medical monitoring requirements under OSHA 29 CFR 1910.120 (f). Subcontractors may be used for various segments of the work. Documentation of medical monitoring is the responsibility of each employer. If there are additional medical monitoring requirements for this site, evidence of compliance must also be included.

1.6 FIT TESTING REQUIREMENTS

All personnel entering the exclusion or contamination reduction zone and using a full-face negative pressure respirator must have successfully passed a qualitative or quantitative respirator fit test for an air purifying respirator. When a fit factor of greater than 100 is required for an air-purifying respirator, quantitative fit testing shall be performed. Fit testing shall have been performed in accordance with OSHA 29 CFR 1910.134 within the last 12 months. Documentation of fit testing is the responsibility of each employer. All personnel shall be determined fit to wear a respirator by a licensed health care professional prior to respirator use and fit testing.

1.7 SITE ORIENTATION TRAINING

All personnel working on-site shall attend a site orientation that includes a review of the Health and Safety Plan including site-specific safety rules and requirements. All personnel will also be required to attend any facility specific safety orientations. Personnel accessing the site strictly for deliveries or administrative purposes shall not be required to attend the training.

Prior to starting work, each employee will attend a health and safety orientation and will receive information and training which shall include, at a minimum, the following:

- Name of Site Managers and key personnel.
- The location and availability of the written HASP.
- The location and availability of the Material Safety Data Sheets (MSDS) folder.
- Instruction on reading labels and review of Data Sheets.
- Hazardous chemicals that may be encountered on site and associated health effects.
- Decontamination procedures.
- Site layout and location of physical hazards that may be encountered.
- Necessary PPE, training on proper use, storage and task specific levels of protection required for scheduled activities.
- Locations of Emergency phone numbers and map to nearest emergency care facility/hospital/urgent care.
- Action levels and situations requiring upgrade or downgrade of level of protection.
- The importance of the Job Safety Analysis program and participation in the process.
- The site Emergency Action Plan and procedures to follow in the event of an incident.
- Familiarization of work site and location of controlled work zones: Exclusion Zone, Contamination Reduction Zone / Decontamination area, Support Zone and proper decontamination procedures.
- Location of first aid kits and fire extinguishers.
- Air monitoring protocol and location results will be posted.

1.8 DELIVERY PERSONNEL AND SUPPORT SUBCONTRACTORS

Personnel whose sole purpose is to deliver goods to the support zone shall not be required to meet the training and medical fitness requirements described in this section. Personnel performing site work strictly within the support zone and clean areas of the site or where safety and health hazards have been removed, shall also not be required to meet the training and medical qualifications but shall attend the Site Orientation Training described in Section 1.7. The site orientation training shall cover the Health and Safety Plan including site hazard communication information.

2 RESPONSIBLE SITE AUTHORITY

The Response Manager (RM), Site Safety Officer (SSO), Regional Health and Safety Manager (RHSM) and the Corporate Health and Safety Manager (CHSM) are responsible for formulating and enforcing health and safety requirements, and for implementing this HASP. The following summarizes the health and safety responsibilities of the site management.

2.1 KEMRON PROJECT TEAM:

Title	Name	Office	Phone Number
Response Manager	Kevin Shaver	Atlanta, GA	404-242-6013

U.S EPA Region II On-Scene Coordinator	Paul L. Kahn	Edison, NJ	908-420-4477
Regional Health & Safety Manager	Richard Hughes	Atlanta, GA	985-640-9254

2.2 PERSONNEL DESCRIPTIONS

2.2.1 Response Manager / Site Safety Officer

The Response Manager/SSO is responsible for the progress of the work at the project level. He supervises all project personnel to ensure that all on-site work is performed in compliance with the Work Plan specifications. The Response Manager directs the on-site personnel in correction of any non-conformance found in the work. In addition, any positions listed below that are not filled by a specific person become the responsibility of the Response Manager as well. Responsible for daily implementation of the site specific HASP, including such issues as changes in PPE and training requirements, policy enforcement, and health monitoring and report preparation, among others. He/she is also responsible for preparing decontamination procedures, and recommending equipment, and supplies, and any updates to this information as job site conditions change. The following are the primary responsibilities of this position:

- Prepares and organizes the background review of the work plan and the field team.
- Obtains permission(s) for site access and coordinates activities with appropriate officials.
- Ensures that work plan is completed and remains on schedule.
- Ensures compliance with the HASP.
- Briefs the field teams on their specific assignments.
- Ensures that safety and health requirements are met. Prepares the final reports and support files on the remedial activities.
- Documents field activities.
- Ensures protective clothing used is consistent with the requirements of the HASP.
- Periodically inspects protective clothing and equipment.
- Ensures that PPE is properly stored and maintained.
- Controls entry and exit at the Access Control Points.
- Coordinates safety and health program activities with on-site essential personnel.
- Confirms each team member's suitability for work based on a physician's recommendations.
- Monitors the work parties for signs of work related stressors, such as cold exposure, heat stress, and physical fatigue.
- Monitors and documents on-site hazards and conditions.
- Participates in the preparation of and implementation of the HASP.
- Conducts periodic inspections to determine if the HASP is being followed.
- Enforces the "buddy" work system.
- Set up decontamination lines and determines the decontamination solutions appropriate for the type of chemical contamination on site.
- Controls the decontamination of all equipment, personnel, and samples from the contaminated areas.

- Assists in the disposal of contaminated clothing and materials.
- Ensures that all required equipment is available.
- Advises medical personnel of potential exposures and consequences or effects.
- Is aware of emergency procedures, evacuation routes, and the telephone numbers of the plant emergency services, ambulance service, local hospital, poison control center, fire department, and police department.
- Coordinates emergency medical care.
- Notifies, when necessary, local public emergency officials.

2.2.2 Field Team Members

All team members are responsible for asking questions to ensure a complete understanding of the site-specific HASP. By signing the Safety Plan Acknowledgment Form, individuals are recognizing the potential hazards present on the Scott Auto Sales Site, and expressing understanding in both the hazards and the processes necessary to minimize exposures. Further, individuals are expressing understanding of all site specific policies, procedures, rules and regulations as set forth in this HASP and agreeing to comply with such.

Field Team Members shall:

- Report any unsafe or potentially hazardous conditions to the Response Manager.
- Comply with rules, regulations, and procedures as set forth in this HASP.
- Express safety ideas or concerns in the daily safety meetings.
- Perform all tasks safely.
- Perform/participate in the task hazard analysis process.
- Utilize “Stop Work Authority” if required.

2.2.3 Subcontractors

Each KEMRON subcontractor is responsible for assigning specific work tasks to their employees. Each subcontractor's management team will provide qualified employees and allocate sufficient time, materials, and equipment to safely complete their assigned tasks. In particular, each subcontractor is responsible for providing and equipping their personnel with any required personnel protective equipment (PPE).

KEMRON considers each subcontractor to be fully knowledgeable in all aspects of the work operations they are contracted to provide, and each subcontractor is responsible for compliance with all regulatory requirements that pertain to those services. Each subcontractor is expected to perform their operations in accordance with their own unique safety policies and procedures, in order to ensure that hazards associated with the performance of the work activities are properly controlled. Copies of any required safety documentation governing safety and health requirements for a subcontractor's work activities will be provided to KEMRON for review prior to the start of onsite activities, if requested or required.

Hazards not listed in this HASP (but known to any subcontractor) or known to be associated with a subcontractor's services must be identified and addressed to the KEMROM RM prior to beginning work operations. The RM or authorized representative has the authority to halt any

subcontractor operations, and to remove any subcontractor or subcontractor employee from the site for failure to comply with established health and safety procedures or for operating in an unsafe manner.

3 SITE CHARACTERISTICS

3.1 SITE BACKGROUND

The Scott Auto Sales Site is located at 4274 Route 50, Northumberland (also known as Gansevoort), in Saratoga County, New York. The Scott Auto Site is abandoned and occupies approximately 2 acres of land. Buildings on the Site consist of a multi-bay automotive garage with an attached office area and a small apartment. There are 3 out-buildings to the rear of the main garage. The Site has a one story, unoccupied house, and a 4-bay car garage adjacent to the house. The Site contains dozens of 55-gallon drums, mostly unmarked, and a number of small heating oil storage tanks. Field analytical data has indicated the presence of flammable liquids, acid with a pH 1, an oxidizer, and a caustic liquid with a pH of 13, and chlorinated solvents, possible F-001 degreasing solvent used to clean automotive parts. There are drums of auto body filler which typically contain solvents, Analytical results also indicate the presence of organic liquids with flash points at or below 140F, making them RCRA D001 ignitable waste.

3.2 SCOPE OF WORK

KEMRON will furnish all necessary personnel, equipment, and materials to perform the work set forth below. Additional technical direction will be provided by the EPA On-Scene Coordinator (OSC) through daily work orders. KEMRON will conduct all operations in accordance with all applicable local, state, and federal regulations.

1. Establish safe site access, signs, security, temporary facilities, power, lighting, and communications.
2. Improve site security, and secure doorway openings to limit and prevent unauthorized access to the site.
3. Construct staging area for temporary storage and containment inside of on-site garage bay. Staging area will be lined and bermed with poly sheeting to create a temporary containment.
4. Collecting and categorizing drums/containers for purposes of consolidating materials of similar composition and compatibility for on-site temporary storage. Once Segregated the drums will be moved to the temporary storage area inside the garage bays.
5. Transferring waste oils from above ground storage tanks
6. Other activities deemed necessary and appropriate by the OSC.
7. Demobilization. Limited post-task activities including the loading of materials, toilet facilities, emergency showers, office trailers, and project equipment.

4 PERSONNEL PROTECTIVE EQUIPMENT

The purpose of personal protective equipment (PPE) is to provide a barrier which will shield or isolate individuals from the chemical and/or physical hazards that may be encountered during work activities. Engineering and administrative controls will be employed to eliminate and/or minimize exposure potential to the extent practicable. Where these controls alone cannot reduce the personnel exposure potential to less than published exposure limits, PPE will be employed. The specific PPE requirements for each work task are specified in the individual THAs found in section 5.6 of this HASP. All site personnel will be trained in the use of all PPE utilized.

4.1. DESCRIPTION OF PROTECTION LEVELS

Engineering controls will be employed to eliminate and/or minimize exposure potential to the extent practicable. Where engineering controls alone cannot reduce exposure potential to less than published exposure limits, PPE will be employed. Air monitoring will be performed to determine the appropriate level of PPE for each task outlined in this SSHSP. Action levels and PPE upgrade information is outlined in Section 6.2.1.

Note: Use of Level A is not anticipated to be necessary for completion of tasks on the Scott Auto Sales Site.

4.1.1 Level B

EQUIPMENT REQUIRED:
- Positive pressure, full-face piece SCBA
- Chemical-resistant suit (one or two-piece chemical splash suit; disposable chemical-resistant one-piece suit)
- Inner and outer chemical-resistant gloves
- Coveralls/ Uniform
- Chemical-resistant steel toe boots
- Hard hat

OPTIONAL:
- Disposable boot covers
- Face shield
- Hearing protection when necessary

PROTECTION PROVIDED:
The provided protection is the same level of respiratory protection as Level A but less skin protection. It is minimum level recommended for initial site entry until the hazards have been further identified.

SHOULD BE USED WHEN:
The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection, but less skin protection. This involves atmospheres with Immediately Dangerous to

Life and Health (IDLH) concentrations of specific substances that do not represent a severe skin hazard;

- Atmosphere does not meet the criteria for use of air-purifying respirators,
- Presences of incompletely identified vapors or gases are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through the intact skin.

LIMITING CRITERIA:

- Use only when the vapor or gases present are not suspected of containing high concentrations of chemicals that are harmful to skin or capable of being absorbed through the intact skin.
- Increased heat stress and reduced visibility.

4.1.2 Level C

Level C will be the primary level of protection during remedial activities. Air monitoring results will dictate changes in protection levels.

EQUIPMENT REQUIRED:

- Full Face Air purifying, cartridge equipped respirator
- Tyvek Suit
- Tyvek Hood
- Inner (sample gloves) and outer (cloth, leather or chemical-resistant) gloves depending on the application.
- Disposable boot covers
- Hard hat
- Two-way radio communications
- Eye Protection
- Noise Protection

OPTIONAL:

- Face shield
- Modified Level C adds an outer chemical resistant suit.

PROTECTION PROVIDED:

The same level of skin protection as Level B, but a lower level of respiratory protection.

SHOULD BE USED WHEN:

- The atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect any exposed skin.
- The types of air contaminants have been identified, concentrations measured, and a cartridge is available that can remove the contaminant.
- All criteria for the use of air-purifying respirators are met.

LIMITING CRITERIA:
- Atmospheric concentration of chemicals must not exceed IDLH levels.
- The atmosphere must contain at least 20.0 percent oxygen.

4.1.3 Modified Level D

Note: Modified Level D is the minimum level of protection acceptable for use in Support Zone areas.

EQUIPMENT REQUIRED**:**
- Chemical resistant clothing when contact with contaminated media is possible (one or two-piece chemical splash suit; disposable chemical-resistant one-piece suit)
- Inner and outer chemical-resistant gloves
- Class II high visibility vest
- Chemical-resistant steel toe boots
- Hard hat
- Safety Glasses w/ Side Shields
- Two-way radio communications

OPTIONAL:
- Disposable boot covers
- Face shield
- Chemical Splash Goggles
- Hearing Protection when necessary

PROTECTION PROVIDED:
Protection from contact with potentially contaminated surfaces where respiratory hazards have been characterized to below established exposure limits or site action levels.

SHOULD BE USED WHEN:

- The atmosphere contains no known hazard.
- Work functions involve splashes or immersion.
- Modified Level D should be used when no atmospheric hazards exist but potential for dermal exposure is possible.

LIMITING CRITERIA:
- Modified Level D should only be worn where respiratory hazards have been characterized and determined to be below established exposure limits or site action levels.

- May not be used in areas where respiratory hazards exist or may be expected to develop.

4.1.4 Level D

Level D shall be used in any non-contaminated active work area of the site including construction of site support facilities during mobilization and during site restoration and demobilization.

EQUIPMENT REQUIRED**:**
- Proper fitting long pants in good repair
- Proper fitting work shirt, minimum 4" sleeves
- Steel toe work boots
- Safety glasses w/ Side Shields
- Class II high visibility vest
- Hard hat

OPTIONAL:
- Gloves (Cotton or Leather Palm Work)
- Chemical Splash Goggles
- Face shield
- Hearing Protection when necessary

PROTECTION PROVIDED:
Level D provides minimal skin protection.

SHOULD BE USED WHEN:
- The atmosphere contains no known hazard.
- Work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemical.

4.2 RESPIRATORY PROTECTION

This health and safety plan procedure serves as the procedure for the use of respirators on the Scott Auto Sales Site. The primary level of protection will be Level C protection utilizing full face respirators with organic vapor/acid gas/P-100 cartridges.

4.2.1 Continuing respirator effectiveness

The RM/SSO is responsible for conducting daily site inspections, including special inspections described in the inspections section of this procedure. Daily site inspections shall include surveillance of work place conditions. In particular the following conditions shall be assessed:

1. Potential changes in contaminant concentration;
2. Changes in employee exposure or stress;
3. Respirator effectiveness.

4.2.2 Training

Employees may be trained in a recent 40-hour or Emergency Response training course (within the last year), or a recent 8-hour refresher-training course, which covers the use of respiratory protection (within the last year) and have completed lead awareness training.

4.2.3 Fit Testing

Before site personnel use any respirator with a negative or positive pressure tight-fitting face piece, the individual must be fit tested with the same make, model, style, and size of respirator that will be used. Any modifications to the respirator face piece for fit testing shall be completely removed, and the face piece restored to NIOSH-approved configuration, before that face piece can be used in the workplace.

4.2.4 Fit testing period

Fit test results are good for a period of one year. If an employee using a tight-fitting face piece respirator will be assigned a different respirator face piece (size, style, model or make) the fit testing must be repeated. Fit test results are voided whenever the employee, a supervisor, a safety officer, or program administrator makes visual observations of, changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to:

- Facial scarring
- Dental changes
- Cosmetic surgery
- Facial Hair

4.2.5 Use of Respirators

Employees are not allowed to use respirators with tight-fitting face pieces under following circumstances:

- Facial hair that comes between the sealing surface of the respirator and the face.
- Any condition that interferes with the ability of the respirator to form a proper seal and / or the valve function to operate properly.
- If an employee wears corrective glasses, obtain the appropriate spectacle kit and have it fitted with prescription lenses

4.2.6 General Inspection and Repairs

Respirators shall be checked for proper function before and after each use and during cleaning prior to exiting the CRZ. Ensure that all cartridges and canisters used are clearly labeled and

color-coded with the NIOSH approval label. Respirators that fail an inspection or are otherwise found to be defective should be immediately removed from service. Repairs to respirators are to be made only by persons appropriately trained to perform such operations (this does not include routine adjustments.

4.2.7 Respirator cartridges changes

All cartridge changes must be done in the Contamination Reduction Zone (CRZ). Respirator Organic Vapor/Acid Gas/P-100 filters shall be changed at least every 8 hours (full shift) of use.

Employees shall also be advised that the cartridges must be changed immediately upon any of the following conditions.

- Breathing becomes difficult. This condition is usually caused in dusty conditions as well as areas of high humidity which will cause the cartridge to collect contaminants quicker.
- Manufacturer recommendations must also be consulted to assure proper use and change.

4.2.8 Cleaning and Disinfecting

Whenever respirators are doffed, employees shall wash their faces and respirator face pieces in order to prevent eye or skin irritation. Cleaning shall be accomplished by using soap and water or equivalent cleaning solutions.

4.2.9 Storage

All respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals.

FIELD ACTIVITIES COVERED UNDER THIS PLAN				
TASK DESCRIPTION	**TYPE**	**PRIMARY**	**CONTINGENCY**	**ADDITIONAL INFORMATION(*)**
1. Mobilization/ Setup (General)	Non-Intrusive	D	Modified D	• Level D PPE
2. Securing the Site	Non-Intrusive	D	Modified D	▪ Begin work in Level D PPE, Upgrade to Modified D if contact hazards are anticipated
3. Constructing Staging area for temporary storage and containment	Non-Intrusive	D	Modified D	▪ Begin work in Level D PPE, Upgrade to Modified D if contact hazards are anticipated
4. Conducting monitoring operations	Intrusive	C	B	▪ Begin work in Level C PPE using an organic vapor/acid gas cartridge and N particulate filter. Upgrade to Level B PPE based on air monitoring
5. Collecting and categorizing drums/containers into proper hazard classes for on-site temporary storage.	Intrusive	C	B	▪ Begin work in Level C PPE using an organic vapor/acid gas cartridge and N particulate filter. Upgrade to Level B PPE based on air monitoring.
6. Transferring waste oils from above ground storage tanks (ASTs)	Intrusive	C	B	▪ Begin work in Level C PPE using an organic vapor/acid gas cartridge and N particulate filter. Upgrade to Level B PPE based on air monitoring
7. Decontamination	Intrusive	Modified D	C	▪ Begin work in Modified D with splash protection, upgrade based on air monitoring
10. Project Closeout/ Site Restoration	Non-Intrusive	D	Modified D	▪ Level D PPE

- - Refer to Section 5.6 Task Hazard Identification and Safe Work Practices for detailed information.

5.0 SITE HAZARDS

5.1 CHEMICAL HAZARDS

Previous evaluations at the site have provided some information on the potential hazards that may be expected at the Scott Auto Sales Site. However, all of the specific chemicals of concern may not be known at this time. Exposure to unidentified chemicals by any route shall be maintained at the absolute practicable minimum level to prevent casual contact with chemicals. Control by proper use of personal protective equipment, engineering controls, and personal hygiene practices will prevent significant exposure. Monitoring will be conducted to assess the overall potential for exposure. If differing conditions are observed, additional assessment may be warranted.

A photo-ionization detector (PID) will be used to monitor ambient air and the workers breathing zone and at source points for VOCs such as benzene, naphthalene and other aromatic hydrocarbons. Petroleum hydrocarbons such as gasoline are also flammable and can be a physical hazard when present in high concentrations. Work areas will be screened with direct reading Multi-Gas meter for flammable vapors LEL, CO, O2 (oxygen enrichment or deficiency). An upgrade in protection level will be take place if established action levels are exceeded.`

5.2 CHEMICAL HAZARDS SUMMARY

5.2.1 Petroleum Hydrocarbons

The primary contaminants on the Scott Auto Sales Site are petroleum hydrocarbons, located throughout the property contained in drums, containers, and storage tanks. Gasoline, diesel, fuel, waste oils, solvents and heavier hydrocarbons such as grease. Volatile components of gasoline include benzene, toluene, ethylbenzene, and xylenes (BTEX). The primary exposure routes for petroleum hydrocarbons during scheduled activities are inhalation and dermal contact. Lighter petroleum hydrocarbons such as gasoline and benzene readily volatilize and are primarily an inhalation concern, whereas the primary route of exposure to heavier petroleum hydrocarbons such as aromatic hydrocarbons, oil, and grease is dermal contact.

The target organs primarily affected by prolonged exposure to petroleum hydrocarbons are the respiratory system, central nervous system, kidneys, liver, and skin. Prolonged dermal contact with petroleum hydrocarbons can cause irritation or dermatitis. The BTEX compounds are known or suspected human carcinogens. In mild form, intoxication resembles drunkenness. On a chronic basis, no true poisoning occurs; however, effects may include headache, lack of appetite, dizziness, sleeplessness, indigestion, and nausea. It is combustible when exposed to heat or flame and can react with oxidizing materials.

- The OSHA PEL is listed as 500 ppm (as petroleum distillates).

5.2.2 Naphthalene

Naphthalene is a colorless to brown solid with an odor of mothballs. Poisoning may occur by inhalation, ingestion, or skin absorption. Naphthalene can cause nausea, headache, fever, anemia, liver damage, vomiting, convulsions, and coma. It is an experimental teratogen and a questionable carcinogen. Naphthalene is flammable when exposed to heat or flame and reacts with oxidizing materials. It is explosive in the form of vapor or dust when exposed to heat or flame. When heated to decomposition, it emits acrid smoke and irritating fumes.

The odor threshold is 0.015 ppm. Caution should be used in relying on odor alone as a warning of potentially hazardous exposures.

- The OSHA PEL is listed as 10 ppm.

5.2.3 Ethylbenzene

Ethylbenzene is a clear, colorless liquid. It is mildly toxic by inhalation and skin contact. Inhalation can cause eye, sleep, and pulmonary changes. It is an eye and skin irritant at levels as low as 0.1% (1,000 ppm) of the vapor in air. At higher concentrations it is extremely irritating and can cause dizziness, irritation of the nose and throat, and a sense of constriction in the chest. Exposure to high concentrations of ethylbenzene vapor may result in irritation of the skin and mucous membranes, dizziness, irritation of the nose and throat, and a sense of constriction of the chest. The odor threshold is 2.3 ppm. Caution should be used in relying on odor alone as a warning of potentially hazardous exposures.

- The OSHA PEL is listed as 100 ppm.

5.2.4 Toluene

Toluene is a colorless liquid with a benzol-like odor. Toluene can affect humans when breathed in and by passing through the skin. Toluene should be handled as a teratogen – handle with extreme caution. It may damage the developing fetus. Contact can irritate the skin and eyes. Breathing toluene can irritate the nose and throat causing coughing and wheezing. Exposure to toluene can affect the nervous system, causing trouble concentrating, headaches, and slowed reflexes. Higher levels can cause humans to feel dizzy, lightheaded, and to lose consciousness. Death may occur. Prolonged contact can cause drying of the skin and a skin rash. Repeated toluene exposure may cause liver, kidney, and brain damage. Toluene is a flammable liquid and a fire hazard. The odor threshold is 0.16 ppm. Caution should be used in relying on odor alone as a warning of potentially hazardous exposures.

- The OSHA PEL is listed as 200 ppm.

5.2.5 Diesel Fuel

Diesel fuel is a gas oil fraction available in various grades as required by different engines. Composition of diesel varies in ratios of predominantly aliphatic, olefinic, cycloparaffinic, aromatic hydrocarbons, and additives. It is a severe skin irritant and ingestion of diesel can lead to systemic effects such as gastrointestinal irritation, vomiting, diarrhea, and, in severe cases, drowsiness and central nervous system depression, progressing to coma and death. Absorption of diesel fuel can cause hemorrhaging and pulmonary edema, progressing to pneumonitis and renal involvement. It is combustible when exposed to heat or flame, and can react with strong oxidizing materials.

- No OSHA PEL, the TLV is listed as 100 mg/m3 as total hydrocarbons (vapor and aerosol).

5.2.6 Benzene

Benzene is an aromatic hydrocarbon that is produced by the burning of natural products. It is a component of products derived from coal and petroleum and is found in gasoline and other fuels. Benzene is used in the manufacture of plastics, detergents, pesticides, and other chemicals. Research has shown benzene to be a carcinogen (cancer-causing). With exposures from less than five years to more than 30 years, individuals have developed, and died from, leukemia. Long-term exposure may affect bone marrow and blood production. Short-term exposure to high levels of benzene can cause drowsiness, dizziness, unconsciousness, and death.

- The OSHA PEL is listed as 1ppm.

5.2.7 M-Xylene

There are three forms of xylene in which the methyl groups vary on the benzene ring: meta-xylene, ortho-xylene, and para-xylene (m-, o-, and p-xylene). These different forms are referred to as isomers. Xylene is a colorless, sweet-smelling liquid that catches on fire easily. It occurs naturally in petroleum and coal tar. Chemical industries produce xylene from petroleum. It is one of the top 30 chemicals produced in the United States in terms of volume. Xylene is used as a solvent and in the printing, rubber, and leather industries. It is also used as a cleaning agent, a thinner for paint, and in paints and varnishes. It is found in small amounts in airplane fuel and gasoline.

- The OSHA PEL is listed as 100 ppm.

5.2.8 Hydrogen Sulfide

Hydrogen sulfide is an extremely hazardous, toxic compound. It is a colorless, flammable gas that can be identified in relatively low concentrations, by a characteristic rotten egg odor. The gas occurs naturally in coal pits, sulfur springs, gas wells, and as a product of decaying sulfur-containing organic matter, particularly under low oxygen conditions. It is therefore commonly encountered in places such as sewers, sewage treatment plants (H2S is often called sewer gas), manure stockpiles, mines, hot springs, and the holds of fishing ships. Industrial sources of hydrogen sulfide include petroleum and natural gas extraction and refining, pulp and paper manufacturing, rayon textile production, leather tanning, chemical manufacturing and waste disposal.

- The OSHA PEL is listed as 10 ppm.

5.2.9 Solvents

Solvents such as ether, alcohols, and toluene, for example, are highly volatile and flammable. Perchlorinated solvents, such as carbon tetrachloride (CCl4), are non-flammable. But most hydrogen-containing chlorinated solvents, such as chloroform, are flammable. When exposed to heat or flame, chlorinated solvents may produce carbon monoxide, chlorine, phosgene, or other highly toxic gases.
Always handle volatile and flammable solvents in an area with good ventilation. Insure that no open flames, smoking, or other ignition sources are allowed in the vicinity when handling uether or other highly flammable solvents, including non-intrinsically safe fixtures.

Solvent Exposure Hazards
Health hazards associated with solvents include exposure by the following routes:

- Inhalation of a solvent may cause bronchial irritation, dizziness, central nervous system depression, nausea, headache, coma, or death. Prolonged exposure to excessive concentrations of solvent vapors may cause liver or kidney damage. The consumption of alcoholic beverages can enhance these effects.
- Skin contact with solvents may lead to de-fatting, drying, and skin irritation.
- Ingestion of a solvent may cause several toxicological effects.

The odor threshold for the following chemicals exceeds acceptable exposure limits. Therefore, if you can smell it, you may be overexposed — *increase ventilation immediately!*

NOTE: *Do not depend on your sense of smell alone to know when hazardous vapors are present. The odor of some chemicals is so strong that they can be detected at levels far below hazardous concentrations (e.g., xylene).*

5.2.10 Nuisance Dust (Total and Respirable)

Nuisance dusts vary in toxicity depending upon composition. They can cause local irritation of the eyes, nose, throat, and lungs. Inhalation of some dusts may lead to bronchitis, emphysema, and bronchial asthma. Nuisance dusts do evoke some tissue response in the lung upon inhalation of sufficient amounts. However, this reaction is potentially reversible and may leave no scar tissue.

- The OSHA PEL is listed as 15 mg/m3 for total dust, and 5 mg/m3 for the respirable fraction.
- The TLV is listed as 10 mg/m3 for inhalable particles, and 3 mg/m3 for the respirable (inhalable) fraction.

5.3 PHYSICAL HAZARDS

5.3.1 Slip, Trip, Falls

Extra precaution should be taken while negotiating through the Site buildings and grounds of the Scott Auto Sales Site to access the areas of planned work activities. Awareness of sharp/jagged construction debris and items such as tires scattered on the ground as potential trip hazards. A thorough hazard assessment will be completed upon mobilization to identify any concerns and hazards onsite and will be continued thereafter proactively. If a hazard cannot be immediately addressed it should be flagged with a ribbon or yellow construction/caution tape to identify the hazard. Properly storing equipment/tools and removing debris and materials from established walking paths are precautions that will be standard operating procedures.

Precautions:

- Stumbling while carrying loads. NEVER carry items in a position that blocks your vision.
- Slips or trips in debris and trash.

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

5.3.2 Back Strain

Mechanical means of lifting is the preferred method and shall be used whenever possible. When mechanical means are not available, proper lifting techniques shall be used when handling heavy or bulky loads. Personnel shall lift with their legs; keeping their backs straight and loads close to their bodies. Personnel should avoid twisting at the waist during lifting, and should get help with bulky/heavy objects.

5.3.3 Overhead Hazards

- Investigation of a work area must be conducted before any work is to begin. All overhead hazards will be located and discussed with the work crew prior to beginning any task. Proper clearances must be maintained at all times. Equipment shall not deviate from established travel ways or work areas where clearances are unknown/ insufficient.

5.3.4 Buried Utilities

All buried utilities shall be identified before any intrusive work in the work area begins. At no time shall any attempt to locate a buried utility be made by using mechanically powered excavating equipment. Buried utilities shall be located by proper detection equipment or by hand excavation only. A one call to Dig Safely NY (811) will be made in advance of intrusive operations and work areas with the potential for excavation will be marked out for all utility providers to clearly see and locate.

5.3.5 Heavy Equipment

Daily inspections of heavy equipment will be conducted to insure all safety and operating mechanisms are in place and working properly (i.e., backup alarm, fire extinguisher, brakes, turn signals, flasher, other controls, etc.). This inspection will be documented and kept on file for review. Ground personnel shall communicate with the operator before he enters and after he leaves that operator's work area. The swing radius of any piece of equipment must be established and at no time are ground personnel to enter that area when the equipment is in operation. This is particularly important on the Scott Auto Sales Site where the operations of Skid Steer with drum handling grapple will have to maneuver through tight areas to access containers.
Only those personnel trained and qualified as equipment operators shall operate equipment. Equipment operators shall only operate equipment authorized by the Response Manager.

The following precautions should be observed whenever heavy equipment is in use:

- Personnel must be aware of the location and operation of heavy equipment and take precautions to avoid getting in the way of its operation. Workers must never assume that the equipment operator sees them; eye contact and hand signals should be used to inform the operator of intent.
- Personnel should not walk directly in back of, or to the side of, heavy equipment without the operator's knowledge.

5.3.6 Noise

Excessive noise is not anticipated on the Scott Auto Sales Site. A selection of hearing protection will be maintained on site for personnel to choose from and will be maintained in a clean and reliable condition. A good rule of thumb to keep in mind is if you have to raise your voice to talk to coworkers standing only three feet away, you are likely subjected to noise exposures exceeding 85 decibels and should use hearing protection.

5.3.7 Electrical

KEMRON Lock Out-Tag Out procedures shall be used before any servicing or maintenance is performed on any equipment or machine where the unexpected energizing, start-up or release of stored energy could occur and cause injury. The equipment/machine must be isolated from the energy source, rendered inoperative and these procedures clearly communicated to the crew.
Two 5kw portable generators will be used on the Scott Auto Sales Site to provide power needs for support area trailers and necessary equipment. Ground fault circuit interrupters will be used on all temporary electrical circuits in hooking up site trailers and equipment to 5 kw generators. GFCI Extension cords will be inspected daily and damaged cords will be taken out of service immediately. Electrical cords not specifically made for water submersion will be kept out of wet areas.

5.3.8 Bulk Fuel Storage Areas

Bulk Storage containers used for flammable liquids must be properly grounded and have bonding cables attached. "Flammable-No Smoking" signs will be placed around the area so that they are clearly visible. Areas that are designated as a bulk fuel storage area must have containment and be capable of retaining 110% of the largest tank inside that area. A dedicated

20-B rated fire extinguisher (20-lb. ABC or equivalent) must be located between 25 and 75 feet of the storage area as per 29 CFR 1926.152. Fire extinguishers shall be inspected at least monthly and mounted in place off of the ground.

5.3.9 Small Quantity Flammable/Combustible Materials

Small quantities of flammable/ combustible materials shall be stored in "safety" cans with appropriate flame arrestors, self-closing lids, and labeled according to their contents. Plastic cans are not acceptable.

5.3.10 Material Handling

Various materials and equipment will be handled manually during Scott Auto Sales Site operations. Care should be taken when lifting and handling heavy or bulky items to avoid back injuries. Items such as drums should be moved by mechanical means, when this is not feasible personnel shall request assistance from their buddy.
The following fundamentals address the proper lifting techniques that are essential in preventing back injuries:

- The size, shape, and weight of the object to be lifted must first be considered.
- Multiple employees or the use of mechanical lifting devices are required for heavy objects.
- The anticipated path to be taken by the lifter should be considered for the presence of slip, trip, and fall hazards.
- The feet will be placed far enough apart for good balance and stability (typically shoulder width).
- The worker will get as close to the load as possible. The legs will be bent at the knees.
- The back will be kept as straight as possible and abdominal muscles should be tightened.
- Twisting motions should be avoided when performing manual lifts.
- To lift the object, the legs are straightened from their bending position.
- A worker will never carry a load that cannot be seen over or around.

When placing an object down, the stance and position are identical to that for lifting. The legs are bent at the knees and the object lowered. When two or more workers are required to handle the same object, workers will coordinate the effort so that the load is lifted uniformly and that the weight is equally divided between the individuals carrying the load. When carrying the object, each worker, if possible, will face the direction in which the object is being carried. In handling bulky or heavy items, the following guidelines will be followed to avoid injury to the hands and fingers:

- A firm grip on the drums/containers/object is essential; leather gloves will be used if necessary.
- The hands and object will be free of oil, grease, and water which might prevent a firm grip. The fingers will be kept away from any points that could cause them to be pinched or crushed, especially when setting the object down.
- The drums will be inspected for metal slivers, jagged edges, burrs, and rough or slippery surfaces prior to being lifted, for those containers, drums, or items with sharp/jagged edges, personnel shall handle with cut resistant gloves.

5.3.11 Drum Handling

The Scott Auto Sales Site contains a multitude of 55-gallon drums, mostly unmarked, and a number of small heating oil storage tanks, including a 500 gallon tank labeled "waste oil" inside the garage. Field analytical data has indicated the presence of flammable liquids, acid with a pH on one, an oxidizer, and a caustic liquid with a pH of 13, and chlorinated solvents, possible F-001 degreasing solvent used to clean automotive parts. There are drums of auto body filler which typically contain solvents, Analytical results also indicate the presence of organic liquids with flash points at or below 140F, making them RCRA D001 ignitable waste.

Personnel shall use extra precaution when handling drums, using a the skid steer drum handler or a drum cart when possible. Prior to handling, drums should be visually inspected to gain as much information as possible about the contents and condition of the container. Conditions in the immediate vicinity of the drums may provide information about drum contents and their associated hazards. Monitoring shall be conducted around the drums to monitor breathing zone air quality and to check for combustible atmospheres. Personnel should assume that unlabeled drums contain hazardous materials until their contents are characterized. Also, keep in mind that drums are frequently mislabeled – particularly those that are reused. Thus, a drum's label may not accurately describe its contents.

Upon handling/storing any drums, the following actions will be taken:

- Prior to handling drums, all nonessential personnel should leave the area.
- Drum remnants or carcasses containing solid or liquid waste materials that have in some way become compromised, will not be handled/moved until it is determined that it is safe to do so. The drum will then be transferred to a new 55-gallon drum or over-pack, depending on their size, and will be transported to the Drum Storage Area for characterization and storage with similar waste.
- Do not handle any drum that is showing signs of bulging, severe damage, or for any reason appears to be unsafe, immediately contact the RM / SSO to make a determination on the drum safety.
- Loose waste materials (e.g., rags, waxy residues, used PPE, sorbents) associated with (within or adjacent to) buried drums will be placed into new 55-gallon drums and will be transported to the Drum Storage Area for characterization sampling and off-site disposal.
- Whole drums that contain waste materials (solid, liquid or a combination) will be placed into over-pack containers and will be transported to the Drum Staging Area for characterization and temporary storage with similar waste.
- The potential physical and chemical hazards associated with the drum removal, drum handling tasks are significant. Aside from the potential for inhaling vapors and being splashed from drums improperly secured or damaged, there are significant physical hazards associated with handling drums including:
    1. Being struck by drum parts (removable heads, rings and bungs) thrown by pressurized release of drum contents.
    2. Being struck by falling drums.
    3. Contact with sharp metal parts (chimes, rings, etc.).
    4. Strain and overexertion due to inappropriate lifting techniques.
    5. Being caught between drums when loading damaged drums into salvage or over-pack drums and when manually moving drums next to one another.

Partially concealed or semi-buried Drums
A number of the drums located throughout the property on the Scotts Auto Sales Site are in difficult to reach areas, partially hidden from view by vegetation, etc. These drums will be difficult to gain clues or information from regarding their contents. Use caution when attempting to handle, tools used to help remove material/soil/vegetation from around the drum should be non-sparking and used with care not to rupture the container.

5.4 ENVIRONMENTAL HAZARDS

Personnel have the potential to be exposed to heat stress as operations are beginning in the summer months and the necessity of additional personal protective equipment can increase body temperature substantially. Operating procedures were developed so that the hazards associated with these temperature extremes on the body can be recognized and avoided. Heat stress standard operating procedures should be reviewed and followed.

5.4.1 Heat Stress

The following general precautions are added as guidelines to reduce the potential of work related heat stress and should be followed:

- Training in the prevention and recognition of heat stress symptoms;
- Encourage proper physical fitness and diet in employees;
- Maintain fluid intake (prevent dehydration);
- Avoid alcohol or excessive caffeine consumption.
- Modify, as needed, work schedule and break times.
- Use of the buddy system;
- Availability of shaded and cooled rest areas and personal cooling devices.

5.4.2 Heat Exhaustion

Heat exhaustion is the body's response to an excessive loss of water and salt, usually through excessive sweating. At the first signs, personnel should immediately stop work, get out of the sun and find a cool, shady or air conditioned location to rest. Have the individual drink fluids and monitor very closely.

Symptoms:

- Headache, dizziness, or fainting
- Weakness
- Irritability or confusion
- Extreme thirst, nausea or vomiting

5.4.3 Heat Stroke

Heat stroke is the most serious heat-related disorder. It occurs when the body becomes unable to control its temperature: the body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. When heat stroke occurs, the body temperature can rise to 106 degrees Fahrenheit or higher within 10 to 15 minutes.

Symptoms:

- May be confused, unable to think clearly, pass out, collapse, or have seizures
- May stop sweating
- Hallucinations
- Chills
- Slurred speech

Precautions to take if personnel become ill from heat stress

- Immediately call Response Manager
- Have someone stay with the worker until help arrives
- Move the worker to a cooler/shaded area
- Remove outer clothing, Hard Hat, Vest
- Fan or mist the worker with water; apply ice, ice bags wrapped in towel if air conditioned room or vehicle is not nearby.
- Provide cool drinking water.
- If the worker is not alert, unresponsive, very confused, and/or stops sweating, immediately call 911 and apply ice as soon as possible.

5.4.4 Severe Weather

The weather will be closely monitored by the response manager and arrangements made to ensure that site personnel are prepared for inclement weather. Anticipated weather conditions will be discussed in the morning safety meetings and any pertinent information will be shared with crew members.

During severe weather, outdoors operations will be stopped under these conditions:

1) Lightning is within 15 miles of the site. Lightning has been known to strike within a radius of 8 miles from cloud to ground. Depending on the severity of the storm the speed at which it can move into the immediate area can be swift therefore notification of work stoppage to all crews must be immediate. Crews shall discontinue operations, meet at a predetermined staging area, and wait for further instructions.

2) Heavy Precipitation that affects visibility, mobility, or the overall conditions in which equipment and personnel can operate safely.

In evaluating the time when it is safe for crews to resume work, the following method will be used. The supervisor will wait 30 minutes after the first lightning strike to evaluate the weather conditions. The 30-minute wait clock will be reset after each additional lightning strike. After the heavy weather has left the area, the supervisor will determine that operations can continue in a safe manner. The “all clear” signal will be given and personnel will return to work.

5.4.5 Biological Hazards

5.4.5.1 Wasps / Hornets / Bees

Wasps/hornets/bees and other stinging insects present a serious hazard to personnel who are allergic. Employees whom are allergic should notify the RM and co-workers prior to starting operations and make known the degree of allergic reactions experienced in the past, and inform others of the location of medicine/shots that need to be taken in the event of being stung.

In the event of a bee/wasp sting, monitor the employee, if a stinger is present; remove it carefully by slowly scraping the stinger out of the skin with a credit card or similar device. Wash and disinfect the wound, cover it and apply ice. Continue to monitor the employee watching for allergic reaction; contact a doctor immediately if a reaction develops or 911 if the reaction is severe and is unresponsive to medication. Watch for and avoid nests and keep exposed skin to a minimum. Be sure to report any bite, sting, or any injury immediately to the RM.

5.4.5.2 Mosquito Bites

Due to the recent detections of the West Nile Virus, it is recommended that **preventative measures** be taken to reduce the probability of being bitten by mosquitoes whenever possible. Mosquitoes are believed to be the primary source for exposure to the West Nile Virus as well as several other types of encephalitis. The following guidelines should be followed to reduce the risk of these concerns for working in areas where mosquitoes are prevalent.

- Wear long-sleeved shirts and long pants whenever you are outdoors.
- Spray clothing with repellents containing permethrin or DEET since mosquitoes may bite through thin clothing.
- Apply insect repellent sparingly to exposed skin. An effective repellent will contain 35 percent DEET (N,N-diethyl-meta-toluamide). Repellents may irritate the eyes and mouth, so avoid applying repellent to the hands.
- Whenever an insecticide or insect repellent is used, be sure to read and follow the manufacturer's Directions For Use, as printed on the product.
- Note: Vitamin B and "ultrasonic" devices are NOT effective in preventing mosquito bites.

5.4.5.3 West Nile Virus

Most infections are mild, and symptoms include fever, headache and body aches, occasionally with skin rash and swollen lymph glands. More severe infection may be marked by headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis, and, rarely, death. The West Nile Virus incubation period is from 3 to 15 days.

5.4.5.4 Poison Ivy, Poison Oak and Poison Sumac

The potential for personnel to come into contact with poison ivy, poison oak, or poison sumac on the Scott Auto Sales Site is high, site personnel should take extra precautions and remain observant to avoid the vegetation when possible. A great deal of the drum and containers located throughout the Site are located in heavily vegetated areas.
Poison ivy, poison oak, and poison Sumac are more commonly found in moist areas or along the edges of wooded areas. Shrubs are usually 12 to 30 inches high, or can also be a tree-climbing

vine, with triple leaflets and short, smooth hair underneath. Plants are red and dark green in spring and summer with yellowing leaves anytime especially in dry areas. Leaves may achieve bright reds in fall but plants lose its (yellowed, then brown) leaves in winter, leaving toxic stems. All parts of the plant remain toxic throughout the seasons. These plants contain urushiol (you-ROO-shee-ol), a colorless or pale yellow oil that oozes from any cut or crushed part of the plant, including the roots, stems and leaves and causes allergic skin reactions when contacted. The oil is active year-round. Become familiar with the identity of these plants (see below). Wear protective clothing that covers exposed skin and clothes. Avoid contact with plants and the outside of protective clothing. If skin contacts a plant, wash the area with soap and water immediately.

Contamination with poison ivy, sumac or oak can happen through several pathways, including:

- Direct skin contact with any part of the plant (even roots once above ground foliage has been removed).
- Contact with clothing that has been contaminated with the oil.
- Contact from removing shoes that have been contaminated (shoes are coated with urishiol oil).
- Sitting in a vehicle that has become contaminated.
- Contact with any objects or tools that have become contaminated.
- Inhalation of particles generated by weed whacking, chipping, vegetation clearing.

If work must be performed on a site with poison ivy, sumac or oak, the following precautions are necessary:

- Decontaminate all tools used in the poison ivy, sumac or oak area: including those used to cut back poison oak, surveying instruments used in the area, air monitoring equipment or other test apparatus before they are placed back into the site vehicle.
- Wear PPE, including Tyvek coveralls, gloves and boot covers. PPE must be placed into plastic bags and sealed if they are not disposed immediately into a trash receptacle.
- Shower to remove any potential contamination as soon as possible following the work. Any body part with suspected or actual exposure should be washed with “Tecnu” or other product designed for removing urushiol. If you do not have Tecnu wash with cold water. Do not take a bath, as the oils can form and invisible film on top of the water and contaminate your entire body upon exiting the bath. Use IvyBlock or similar products to prevent poison oak, ivy and sumac contamination.

Poison Ivy

Poison Sumac

Poison Oak

If you do come into contact with one of these poisonous plants and a reaction develops, contact your supervisor.

5.4.5.5 Snakes

Snakes typically are found in underbrush and tall grassy areas. If a snake is encountered, stay calm and look around; there may be other snakes. Turn around and walk away on the same path used to approach the area. If a person is bitten by a snake, wash and immobilize the injured area, keeping it lower than the heart if possible. Seek medical attention immediately. **DO NOT** apply ice, cut the wound or apply a tourniquet. Try to identify the type of snake: note color, size, patterns and markings.

5.4.5.6 Spiders - Brown Recluse

It is regarded by many as the most dangerous spider in the United States. Because of interstate shipping/transportation, the Brown Recluse Spider can be found most anywhere in the United States. The average Brown Recluse Spiders are usually 1 inch or larger in size, including the legs and can grow as large as 3 inches, obviously the young Brown Recluse Spiders are much smaller. Brown recluse spider bites do not always hurt right away. In fact, bites may not be known or apparent until other symptoms appear.

Symptoms of a brown recluse spider bite may include the following:

- Reddened skin followed by a blister that forms at the bite site.
- Mild to intense pain and itching for 2 to 8 hours following the bite.
- An open sore with a breakdown of tissue (necrosis) that develops within a few hours to 3 to 4 days following the bite and the area may become painful, itchy, hot, swollen, red and tender. An irregular ulcerous sore, caused by necrosis, will often appear that is from 1/4 inch to 10 inches in diameter. Prompt attention is the best defense against preventing the necrosis. The wound is often described as being reddish and surrounded by a bluish area with a narrow whitish separation in between the red and the blue. This gives it the famous "bull's-eye" pattern. In just hours, a bite from the highly venomous Brown Recluse Spider can create blisters and cause tissue damage.

Brown Recluse

Some people have a severe, systemic (whole-body) reaction to brown recluse spider bites, including the rapid destruction of red blood cells and anemia. Signs and symptoms include the following:

- Fever and chills.

- Skin rash all over the body with many tiny, flat purple and red spots.
- Nausea or vomiting.
- Joint pain.

If bitten by a brown recluse spider, follow these steps:

- Remain calm. Too much excitement or movement will increase the flow of venom into the blood.
- Immediately contact the RM.
- Try to collect the spider, without being bitten, (even a mangled specimen has diagnostic value), if possible, for positive identification by a spider expert. A plastic bag, small jar, or pill vial is useful and no preservative is necessary, but rubbing alcohol helps to preserve the spider.
- Apply a cool, wet cloth to the bite or cover the bite with a cloth and apply an ice bag to the bite.
- Do not apply a tourniquet. It may cause more harm than benefit.
- Try to positively identify the spider to confirm its type.

A brown recluse bite can be serious and will likely require immediate medical care. Be prepared to describe the spider, where and when the bite took place, and what was being done at the time. Your health professional will ask about the main symptoms, when they began and how they have developed, progressed or changed since the bite. Immediately notify the Response Manager if bitten or stung regardless of the type of insect.

5.4.5.7 Widow Spiders

The Northern Black Widow spider may be encountered in Northern Regions of the United States. Other similar widow spiders are the Red Widow and the Brown Widow. Female widow spiders range from 8- 15 mm in body length; males are smaller, sometimes very small (2 mm). Most have globose, shiny abdomens that are predominantly black with red markings (although some may be pale and/or have lateral stripes), with moderately long, slender legs. These spiders are nocturnal and build a three- dimensional tangled web, often with a conical tent of dense silk in a corner where the spider hides during the day. In nature, most species are found under rocks and logs, but they readily adapt to human-altered environments, where they are most commonly found in outbuildings (sheds, barns, privies), water meter holes, nursery cans, and under any item or structure (e.g., barbecue grill, slide, sand box) that has been undisturbed for a lengthy period. Formerly, most bites by black widows (almost all by female spiders) occurred in outhouses, but presently, widow bites occur most frequently when the spider is trapped against human skin, either by reaching under objects where the spider is hiding or when putting on clothing, gloves or shoes containing the spider. Widow spiders are generally very timid and only bite in self-defense when they accidentally contact humans.



Brown Widow Red Widow Black Widow

Bite symptoms are systemic, spreading through the lymphatic system, and usually start about 1 to 3 hours after the bite. The most common symptoms are intense pain, rigid abdominal muscles, muscle cramping, malaise, local sweating, nausea, vomiting and hypertension. Other symptoms may include tremors, labored breathing, restlessness, increased blood pressure and fever. If left untreated, bite symptoms usually last 3 to 5 days.

If bitten, remain calm, and immediately contact the Response Manager. Apply an ice pack directly to the bite area to relieve swelling and pain. Try to collect the spider, without being bitten, (even a mangled specimen has diagnostic value), if possible, for positive identification by a spider expert. A plastic bag, small jar, or pill vial is useful and no preservative is necessary, but rubbing alcohol helps to preserve the spider.

5.4.5.8 Ticks

Every year employees are exposed to tick bites at work and at home putting them at risk of illness. Ticks typically are in wooded areas, bushes, tall grass and brush. Ticks are black, black and red, or brown and can be up to one-quarter inch in size. In some geographic areas exposure is not easily avoided. Wear tightly woven light-colored clothing with long sleeves and pant legs tucked into boots, spray only outside of clothing with permethrin or permanone and spray skin with only DEET, and check frequently for ticks. Use the buddy system and perform tick inspections prior to entering the field vehicle. Be sure to report any bite, sting, or anything suspicious to the RM/SSO

5.5 TASK HAZARD ANALYSIS PROCEDURE

Task hazard analysis (THA) is a technique used to identify hazards and hazard controls associated with a specific job function. THAs focus on the relationship between the workers, task, and resources required to complete the task, and the work environment. These variables must be evaluated to identify the potential hazards associated with each task. Once identified, steps can be taken to eliminate, reduce, or control the hazards to an acceptable level of risk. The Task hazard Analysis included in section 5.6 are provided as the basic structure of the hazard analysis based on the known hazards associated with the individuals tasks that were known at the time they were generated. These analyses should be used as an initial guide to help assess the risks and determine the controls of each major project task. On the day of the activity, the Response Manager/task supervisor/Foreman and the members of the crew shall complete the process by defining the individual steps required to perform the job, the hazards associated with each step, along with the current site specific conditions to accurately determine the appropriate controls and preventive measures for each hazard identified.

This analysis process conducted with the experienced workers and supervisors as a group helps identify previously undetected hazards and increasers the job knowledge of those participating. Safety and health awareness is raised, communication between workers and supervisors is improved, and acceptance of safe work procedures is promoted. Once the activity hazard analysis is completed, generally a rough draft, all personnel involved in the task shall sign the form. After hazards have been systematically identified and controls are developed, the

emphasis shifts to methods than can be used to help ensure that all controls stay in place and other hazards do not develop.

5.5.1 Unanticipated Work Activities / Conditions

Operations on the Scott Auto Sales Site may require additional tasks not identified or addressed in this HASP. Before performing any task not covered in this HASP, a THA must be prepared by the Job Forman/supervisor along with the crew personnel that will be involved in the task. The Regional Health and Safety Manger should be notified of any major changes in the scope of work or unanticipated developments that may require an amendment to the Health and Safety Plan.

5.6 PROJECT ACTIVITY HAZARD ANALYSIS

TASK DESCRIPTION: Task 1. Mobilization/ Setup

HAZARD ANALYSIS CONDUCTED BY: Richard Hughes **DATE:** August 21, 2013

PHYSICAL HAZARD IDENTIFICATION:

[X] PHYSICAL EXERTION	[X] HEAT STRESS	[o] COLD STRESS	[X] HEAVY EQUIPMENT
[o] FIRE HAZARDS	[X] LIFTING HAZARDS	[X] SLIP, TRIP, OR FALL	[X] HIGH NOISE (> 85 dBA)
[X] OVERHEAD UTILITIES	[o] EXCAVATION/TRENCHING	[o] CONFINED SPACE	[X] POISONOUS PLANTS
[o] POISONOUS/HAZARDOUS ANIMALS	[X] ELECTRICAL	[X] HAND/POWER TOOLS	[X] PUNCTURE/LACERATION
[o] OXYGEN DEFICIENT	[o] PRESSURIZED CONTAINERS	[o] EXPLOSIVE	[o] VISIBILITY
[X] VEHICLE TRAFFIC	[o] WELDING, CUTTING, BRAZING	[o] GLARE/LIGHT HAZARDS	[o] SPLASH
[o] GRINDING	[o] FLYING DEBRIS	[X] PINCH/GRAB/ROLL	[o] TEMPERATURE HAZARDS
[o] OTHER (SPECIFY) : _____			

CHEMICAL HAZARD IDENTIFICATION:

[o] CORROSIVE	[o] VOLATILE	[o] OXIDIZER	[o] TOXIC
[o] RADIOACTIVE	[o] BIOLOGICAL	[o] INERT	[o] REACTIVE
[o] FLAMMABLE	[o] COMBUSTIBLE	[o] NON-HAZARDOUS	[o] POISON A (GAS)
[o] OTHER (SPECIFY) : _____			

PERSONAL PROTECTIVE EQUIPMENT:

LEVEL OF PROTECTION	RESPIRATORY PROTECTION	PROTECTIVE CLOTHING	GLOVES	HEAD/FACE/EYE PROTECTION	FOOT PROTECTION
PRIMARY: Level D	None	Proper fitting long pants in good repair; minimum 4" sleeves, Class II high visibility vest	Leather or cotton work-glove.	Hard Hat, Safety Glasses, Hearing Protection,	Steel toe work boot
CONTINGENCY: Modified D	None	Tyvek® Coverall w/Hood	Leather or cotton work-gloves	Hard Hat, Safety Glasses, Hearing Protection,	Steel toe work boot

PPE:	Level D to Modified D	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**

PPE:	Level D to Modified D	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**
Physical Exertion/Lifting Hazards	Materials / Equipment	Moderate	Use proper lifting techniques and body mechanics. Avoid attempts to move immovable objects. Use mechanical equipment where possible. Get plenty of rest. Personnel shall use proper lifting techniques such as keeping back straight, using legs to lift, limiting twisting, using mechanical means where possible, and getting help when handling bulky items.
Electrocution	Overhead/Underground Utilities	Moderate	Identify all on-site utilities prior to any site activities. Ensure that all underground utility markings are clearly visible and maintained throughout the duration of work. Use GFCI protection, ensure grounding on two 5KW generators to supply power to Site trailers and equipment.
Struck By	Vehicle Traffic/ Unloading Equipment and materials.	Moderate	Locate a flat, level, open area clear of overhead utilities and obstructions to unload equipment and materials, always chock wheels. Personnel shall wear class II high visibility vests. Be alert to material and equipment loading/unloading hazards and moving equipment. Use a spotter to aid in unloading and to watch for overhead and backing hazards, and pedestrian/vehicular traffic.
Lacerations	Site Set-up, repairing fences, doors, windows, and hanging signage	Moderate	Always use the correct tool for the job. Inspect hand tools prior to use, wear leather gloves at all times. Practice the buddy system at all times.
Accidents / crash	Personnel Driving to and from project	Moderate	Personnel shall drive defensively at all times. Learn the safest route to and from job site, leave early to allow sufficient time to arrive safely. Contact Regional Health and Safety Manager to report KEMRON personnel driving dangerously.
Crushed/ Pinch Point	Heavy Equipment, Skid Steer	Moderate	All clearances for above and surrounding areas will be checked before operations begin. The use of a ground spotter will be implemented. The ground personnel shall be aware of the equipment's swing radius and pinch points and will stay clear of those areas. A communication system will be developed and instituted between ground personnel and the equipment operator. At no time will any load be swung above or suspended above any ground personnel. No personnel will be carried on equipment not equipped with passenger seats.
Heat	Environment	Moderate	Personnel shall be trained on the signs and symptoms of heat stress. An effective work/rest schedule will be implemented to regulate weather exposures. Fluids will be provided. Employees will be encouraged to refrain from alcohol use after work hours.

PPE:	Level D to Modified D	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**
Fire/Explosion Hazards	Heavy Equipment	Moderate	Prior to refueling any equipment, shut off the engine and allow to cool. Ensure the fueling area is well ventilated. Do not smoke while refueling. Keep open flames and sparks away from area. Do not use gasoline or diesel fuel for cleaning parts. Know where the fire extinguishers are located. Do not leave equipment unattended while fueling. Equipment will not be positioned in dry vegetation in such a manner that could create a fire.
Shock / Electrocution	Electrical Equipment, Extension cords	Moderate	Only licensed electricians will be used to hook up electrical circuits on Site trailers. All extension cords will be inspected before use for damage and removed from service if damage is found. Ground fault circuit interrupters shall be used on all 110-120-240 circuits. Ensure proper grounding of two 5KW generators for Site power.
Poisonous/ Hazardous Plants and Animals	Brush, vegetation, fence line, poison ivy, snakes, bees, wasps, ticks, spiders, rodents.	Low	A great deal of drums and containers on the Scotts Auto Sales Site are located in heavily vegetation. Avoid brushy areas if possible, recognize poison ivy, oak and sumac when necessary to access drums/containers. Protect skin and mucous membranes when working in proximity to poison ivy. Identify individuals allergic to bees or other environmental hazards.
Puncture / Laceration	Pinch Points, Hand Traps, Debris on-site	Moderate	Proper hand protection will be worn to minimize the possibility of injuries due to cuts and abrasions. Potential pinch points will be identified and marked to avoid injury. Think before placing hands into hazards areas, near moving parts. Use caution negotiating through debris and broken glass in the former plating building.
Hearing Loss	Loud noises	Low	Use of hearing protection will be worn when employees are exposed to high noise levels (greater than 85 dBA over an 8-hour workday). If you have to raise your voice to speak to your co-worker from a distance of approximately 3 feet away in order to be heard / understood, you should wear hearing protection.
Back Injury	Moving equipment, lifting materials	Moderate	Use proper lifting techniques and body mechanics. Avoid attempts to move immovable objects. Use mechanical equipment where possible. Get plenty of rest. Personnel shall use proper lifting techniques such as keeping back straight, using legs to lift, limiting twisting, using mechanical means where possible, and getting help when handling bulky items.

TASK DESCRIPTION: Task 2. Securing the Site

HAZARD ANALYSIS CONDUCTED BY: Richard Hughes **DATE:** August 21, 2013

PHYSICAL HAZARD IDENTIFICATION:

[X] PHYSICAL EXERTION	[X] HEAT STRESS	[o] COLD STRESS	[o] HEAVY EQUIPMENT
[X] FIRE HAZARDS	[X] LIFTING HAZARDS	[X] SLIP, TRIP, OR FALL	[o] HIGH NOISE (> 85 dBA)
[X] OVERHEAD UTILITIES	[o] EXCAVATION/TRENCHING	[o] CONFINED SPACE	[X] POISONOUS PLANTS
[o] POISONOUS/HAZARDOUS ANIMALS	[X] ELECTRICAL	[X] HAND/POWER TOOLS	[X] PUNCTURE/LACERATION
[o] OXYGEN DEFICIENT	[o] PRESSURIZED CONTAINERS	[o] EXPLOSIVE	[o] VISIBILITY
[X] VEHICLE TRAFFIC	[o] WELDING, CUTTING, BRAZING	[o] GLARE/LIGHT HAZARDS	[o] SPLASH
[o] GRINDING	[o] FLYING DEBRIS	[X] PINCH/GRAB/ROLL	[o] TEMPERATURE HAZARDS
[o] OTHER (SPECIFY) : _____			

CHEMICAL HAZARD IDENTIFICATION:

[o] CORROSIVE	[o] VOLATILE	[o] OXIDIZER	[o] TOXIC
[o] RADIOACTIVE	[o] BIOLOGICAL	[o] INERT	[o] REACTIVE
[o] FLAMMABLE	[o] COMBUSTIBLE	[o] NON-HAZARDOUS	[o] POISON A (GAS)
[o] OTHER (SPECIFY) : _____			

PERSONAL PROTECTIVE EQUIPMENT:

LEVEL OF PROTECTION	RESPIRATORY PROTECTION	PROTECTIVE CLOTHING	GLOVES	HEAD/FACE/EYE PROTECTION	FOOT PROTECTION
PRIMARY: D	None	Appropriate work attire	Leather or cotton work-glove.	Hard Hat and Safety Glasses	Steel toe work boot
CONTINGENCY: Modified D	None	Tyvek® Coverall w/Hood	Nitrile inner, Leather outer gloves	Hard Hat, Safety Glasses, Hearing Protection if necessary	Steel toe work boot

PPE:	Level D to Modified D	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**
Physical Exertion/Lifting Hazards	Materials / Equipment	Moderate	Use proper lifting techniques and body mechanics. Avoid attempts to move immovable objects. Use mechanical equipment where possible. Get plenty of rest. Personnel shall use proper lifting techniques such as keeping back straight, using legs to lift, limiting twisting, using mechanical means where possible, and getting help when handling bulky items.

PPE:	Level D to Modified D	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**
Electrocution	Overhead/Underground Utilities	Low	Identify all on-site utilities prior to any site activities. Ensure that all underground utility markings are clearly visible and maintained throughout the duration of work. Only licensed electricians will be used to hook up electrical circuits on Site trailers. All extension cords will be inspected before use for damage and removed from service if damage is found. Ground fault circuit interrupters shall be used on all 110-120-240 circuits. Ensure proper grounding of two 5KW generators for Site power.
Struck By	Vehicle/Equipment Traffic	Moderate	Be alert to material and equipment loading/unloading hazards and moving equipment. Use a spotter to aid in unloading and to watch for overhead and backing hazards, and pedestrian/vehicular traffic. Vehicles will obey all speed limits and will be operated in a non-reckless manner. No vehicle will be overloaded or loaded in such a way as to obscure the view of the driver.
Crushed/ Pinch Point	Heavy Equipment	Moderate	A communication system will be developed and instituted between ground personnel and the equipment operator. At no time will any load be swung above or suspended above any ground personnel
Heat Stress	Environment	Low	Personnel shall be trained on the signs and symptoms of heat stress. An effective work/rest schedule will be implemented to regulate weather exposures. Fluids will be provided. Employees will be encouraged to refrain from alcohol use after work hours.
Shock / Electrocution	Electrical Equipment, Extension cords	Low	Ground fault circuit interrupters shall be used on all 110-120-240 circuits. Inspect extension cord before each use, if damaged immediately remove from service.
Puncture / Laceration	Pinch Points, Hand Traps, debris on-site	Moderate	Proper hand protection will be worn to minimize the possibility of injuries due to cuts and abrasions. Potential pinch points will be identified and marked to avoid injury. Think before placing hands into hazards areas, near moving parts.
Hearing Loss	Loud noise	Low	Use of hearing protection will be worn when employees are exposed to high noise levels (greater than 85 dBA over an 8-hour workday). If you have to raise your voice to speak to your co-worker from a distance of approximately 3 feet away in order to be heard / understood, you should wear hearing protection.

PPE:	Level D to Modified D	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**
Back Injury	Moving equipment, lifting materials	Moderate	Use proper lifting techniques and body mechanics. Avoid attempts to move immovable objects. Use mechanical equipment where possible. Get plenty of rest. Personnel shall use proper lifting techniques such as keeping back straight, using legs to lift, limiting twisting, using mechanical means where possible, and getting help when handling bulky items.
Fire Hazard	Improper Refueling Procedures	Low	Prior to refueling any equipment shut off the engine and allow to cool. Ensure the fueling area is well ventilated. Do not smoke while refueling. Keep open flames and sparks away from area. Do not use gasoline or diesel fuel for cleaning parts. Know where the fire extinguishers are located. Do not leave equipment unattended while fueling.
Release of stored energy, electrocution	Lock-out Tag-out	Moderate	Prior to performing maintenance or repairs on any equipment, all residual or stored energy must be properly bled off. Once this is accomplished, LOTO controls will be implemented to prevent inadvertent startup of the equipment during maintenance activities

TASK DESCRIPTION: Task 3. Constructing staging area for temporary storage and containment

HAZARD ANALYSIS CONDUCTED BY: Richard Hughes **DATE:** August 21, 2013

PHYSICAL HAZARD IDENTIFICATION:

[X] PHYSICAL EXERTION	[X] HEAT STRESS	[o] COLD STRESS	[o] HEAVY EQUIPMENT
[o] FIRE HAZARDS	[X] LIFTING HAZARDS	[X] SLIP, TRIP, OR FALL	[o] HIGH NOISE (> 85 dBA)
[o] OVERHEAD UTILITIES	[o] EXCAVATION/TRENCHING	[o] CONFINED SPACE	[o] POISONOUS PLANTS
[o] POISONOUS/HAZARDOUS ANIMALS	[o] ELECTRICAL	[X] HAND/POWER TOOLS	[X] PUNCTURE/LACERATION
[o] OXYGEN DEFICIENT	[o] PRESSURIZED CONTAINERS	[o] EXPLOSIVE	[X] VISIBILITY
[X] VEHICLE TRAFFIC	[o] WELDING, CUTTING, BRAZING	[o] GLARE/LIGHT HAZARDS	[o] SPLASH
[o] GRINDING	[o] FLYING DEBRIS	[X] PINCH/GRAB/ROLL	[o] TEMPERATURE HAZARDS
[o] OTHER (SPECIFY) : _____			

CHEMICAL HAZARD IDENTIFICATION:

[o] CORROSIVE	[X] VOLATILE	[o] OXIDIZER	[o] TOXIC
[o] RADIOACTIVE	[o] BIOLOGICAL	[o] INERT	[o] REACTIVE
[o] FLAMMABLE	[o] COMBUSTIBLE	[o] NON-HAZARDOUS	[o] POISON A (GAS)
[o] OTHER (SPECIFY) : _____			

PERSONAL PROTECTIVE EQUIPMENT:

LEVEL OF PROTECTION	RESPIRATORY PROTECTION	PROTECTIVE CLOTHING	GLOVES	HEAD/FACE/EYE PROTECTION	FOOT PROTECTION
PRIMARY: Level D	None	Appropriate work attire, full length pants in good repair, minimum 4" sleeves. High visibility Class II vest	Leather Work Gloves	Hard Hat and Safety Glasses	Steel toe rubber boots
CONTINGENCY: Modified D	None	Tyvek® SL, (all seams must be taped/sealed)	Nitrile inner, Leather outer gloves	Hard Hat, Safety Glasses, Hearing Protection if noise hazard present.	Steel toe rubber boots/booties with taped seams.

PPE:	Level C to Level B	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**

PPE:	Level C to Level B	Date:	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**
Physical Exertion/Lifting Hazards	Materials / Equipment	Low	Use proper lifting techniques and body mechanics. Avoid attempts to move immovable objects. Use mechanical equipment where possible. Get plenty of rest. Personnel shall use proper lifting techniques such as keeping back straight, using legs to lift, limiting twisting, using mechanical means where possible, and getting help when handling bulky items.
Electrocution	Generator / Extension Cords	Low	Only licensed electricians will be used to hook up electrical circuits on Site trailers. All extension cords will be inspected before use for damage and removed from service if damage is found. Ground fault circuit interrupters shall be used on all 110-120-240 circuits. Ensure proper grounding of two 5KW generators for Site power.
Heat Stress	Lack of ventilation in Garage Bay /staging area	Moderate	Lack of ventilation in drum staging area, in addition to high levels of personal protective equipment could lead to additional heat stress. Personnel shall be trained on the signs and symptoms of heat stress. An effective work/rest schedule will be implemented to regulate weather exposures. Fluids will be provided. Employees will be encouraged to refrain from alcohol use after work hours.
Shock / Electrocution	Electrical Equipment, Extension cords	Moderate	Only licensed electricians will be used to hook up electrical circuits All extension cords will be inspected before use for damage and removed from service if damage is found. Ground fault circuit interrupters shall be used on all 110-120-240 circuits. Extension cords shall be thoroughly inspected prior to use, if damaged remove from service immediately.
Poisonous/ Hazardous Plants and Animals	Stinging insects, wasps/bees, spiders, snakes, rodents inside of Garage Bay.	Low	Identify team members allergic to wasps/ bees or other environmental hazards. Plan for contingencies. Pay close attention during to the inside of garage bay for evidence of nests. Poisonous spiders are often reclusive and found in dark secluded areas, areas such as the garage bay that has not been disturbed for some time may contain such.
Puncture / Laceration	Hand Tools, Pinch Points, Hand Traps	Moderate	Proper hand protection will be worn to minimize the possibility of injuries due to cuts and abrasions. Always use the right tool for the right job, inspect all tools and equipment prior to beginning task. Potential pinch points will be identified and marked to avoid injury. Think before placing hands into hazards areas, near moving parts.

PPE:	Level C to Level B	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**
Hearing Loss	Loud noise	Low	Use of hearing protection will be worn when employees are exposed to high noise levels (greater than 85 dBA over an 8-hour workday). If you have to raise your voice to speak to your co-worker from a distance of approximately 3 feet away in order to be heard / understood, you should wear hearing protection.
Slips, trips, Falls	Interior of garage bay, various debris, equipment, slick oily floors.	Moderate	The Scott Auto Sales site is congested with various debris, high vegetation/vines, tires, and slick oily surfaces that poses a significant trip hazard to personnel. Extra precaution should be taken while negotiating through the building to access the areas of planned work activities. Awareness of sharp/jagged construction debris and items such as broken glass are scattered on floors. A thorough hazard assessment will be conducted to identify any concerns and hazards onsite and will be continued thereafter proactively.
Hearing Loss	Loud noises	Low	Use of hearing protection will be worn when employees are exposed to high noise levels (greater than 85 dBA over an 8-hour workday). If you have to raise your voice to speak to your co-worker from a distance of approximately 3 feet away in order to be heard / understood, you should wear hearing protection.
Inhalation hazards	Dust	Low	Engineering controls will be in place to reduce emissions/fugitive dust by the application of water as necessary during site activities. Application rates will be closely regulated to control emissions, yet not result in the generation of runoff. Visual observations of fugitive dust plumes or concentrations observed in excess of established action levels will prompt a temporary stop of work until conditions abate and/or more aggressive dust control measures are implemented.

TASK DESCRIPTION: Task 4. Conducting Monitoring

HAZARD ANALYSIS CONDUCTED BY: Richard Hughes **DATE:** August 21, 2013

PHYSICAL HAZARD IDENTIFICATION:

[X] PHYSICAL EXERTION	[X] HEAT STRESS	[o] COLD STRESS	[o] HEAVY EQUIPMENT
[X] FIRE HAZARDS	[X] LIFTING HAZARDS	[X] SLIP, TRIP, OR FALL	[o] HIGH NOISE (> 85 dBA)
[o] OVERHEAD UTILITIES	[o] EXCAVATION/TRENCHING	[o] CONFINED SPACE	[o] POISONOUS PLANTS
[o] POISONOUS/HAZARDOUS ANIMALS	[o] ELECTRICAL	[o] HAND/POWER TOOLS	[X] PUNCTURE/LACERATION
[o] OXYGEN DEFICIENT	[o] PRESSURIZED CONTAINERS	[X] EXPLOSIVE	[X] VISIBILITY
[o] VEHICLE TRAFFIC	[o] WELDING, CUTTING, BRAZING	[o] GLARE/LIGHT HAZARDS	[o] SPLASH
[o] GRINDING	[o] FLYING DEBRIS	[X] PINCH/GRAB/ROLL	[o] TEMPERATURE HAZARDS
[o] OTHER (SPECIFY) : _____			

CHEMICAL HAZARD IDENTIFICATION:

[X] CORROSIVE	[X] VOLATILE	[X] OXIDIZER	[X] TOXIC
[o] RADIOACTIVE	[o] BIOLOGICAL	[o] INERT	[X] REACTIVE
[X] FLAMMABLE	[X] COMBUSTIBLE	[o] NON-HAZARDOUS	[o] POISON A (GAS)
[o] OTHER (SPECIFY) : _____			

PERSONAL PROTECTIVE EQUIPMENT:

LEVEL OF PROTECTION	RESPIRATORY PROTECTION	PROTECTIVE CLOTHING	GLOVES	HEAD/FACE/EYE PROTECTION	FOOT PROTECTION
PRIMARY: C	Full-face respirator with organic vapor/acid gas cartridge and N particulate filter	Tyvek® SL, (all seams must be taped/sealed)	Stansolve AK22 nitrile or equivalent gloves. May add leather outer glove if task requires.	Hard Hat, Safety Glasses, Hearing Protection if noise hazard present.	Steel toe rubber boots/booties with taped seams.
CONTINGENCY: B	SCBA	Tyvek® SL, (all seams must be taped/sealed)	Stansolve AK22 nitrile or equivalent gloves. May add leather outer glove if task requires.	Hard Hat, Safety Glasses, Hearing Protection if noise hazard present.	Steel toe rubber boots/booties with taped seams.

PPE:	Level C to Level B	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**

PPE:	Level C to Level B	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**
Atmospheric Hazards	High concentrations of VOC's, explosive atmosphere, Oxygen deficiency/enrichment	Moderate	A photo-ionization detector (PID) will be used to monitor ambient air in the workers breathing zone and at source points such as drums, and storage tanks prior to handling for VOCs such as benzene, naphthalene and other aromatic hydrocarbons. Petroleum hydrocarbons such as gasoline are also flammable and can be a physical hazard when present in high concentrations. Work areas and source points will be screened with direct reading Multi-Gas meter for flammable vapors LEL, CO, O2 (oxygen enrichment or deficiency). An upgrade in protection level will be take place if established action levels are exceeded.
Slip, Trip, Fall	Debris, changes in elevation, protruding items.	Moderate	The Scott Auto Sales site is congested with various debris, high vegetation/vines, tires, and slick oily surfaces that poses a significant trip hazard to personnel. Extra precaution should be taken while negotiating through the building to access the areas of planned work activities. Awareness of sharp/jagged construction debris and items such as broken glass are scattered on floors. A thorough hazard assessment will be conducted to identify any concerns and hazards onsite and will be continued thereafter proactively.
Struck By	Vehicle/Equipment Traffic	Moderate	Be alert to material and equipment loading/unloading hazards and moving equipment. Use a spotter to aid in unloading and to watch for overhead and backing hazards, and pedestrian/vehicular traffic. Vehicles will obey all speed limits and will be operated in a non-reckless manner. No vehicle will be overloaded or loaded in such a way as to obscure the view of the driver.
Heat Stress	Environment	Low	The lack of ventilation in the staging area, and other on-site buildings on the Scott Auto Sales Site along with high levels of personal protective equipment could lead to heat stress. Personnel shall be trained on the signs and symptoms of heat related illness. An effective work/rest schedule will be implemented to regulate exposures. Fluids will be provided. Employees will be encouraged to refrain from alcohol use after work hours.
Shock / Electrocution	Electrical Equipment, Extension cords	Low	Ground fault circuit interrupters shall be used on all 110-120-240 circuits. Inspect extension cord before each use, if damaged immediately remove from service.

PPE:	Level C to Level B	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**
Puncture / Laceration	Rusted drums, sharp edges on containers, debris.	Moderate	Proper hand protection will be worn to minimize the possibility of injuries due to cuts and abrasions. Potential pinch points will be identified and marked to avoid injury. Think before placing hands into hazards areas.
Release of stored energy, electrocution	Lock-out Tag-out	Moderate	Prior to performing maintenance or repairs on any equipment, all residual or stored energy must be properly bled off. Once this is accomplished, LOTO controls will be implemented to prevent inadvertent startup of the equipment during maintenance activities

TASK DESCRIPTION: Task 5. Collecting and categorizing drums/containers into proper hazard classes

HAZARD ANALYSIS CONDUCTED BY: Richard Hughes **DATE:** August 21, 2013

PHYSICAL HAZARD IDENTIFICATION:

[X] PHYSICAL EXERTION	[X] HEAT STRESS	[o] COLD STRESS	[o] HEAVY EQUIPMENT
[X] FIRE HAZARDS	[X] LIFTING HAZARDS	[X] SLIP, TRIP, OR FALL	[o] HIGH NOISE (> 85 dBA)
[o] OVERHEAD UTILITIES	[o] EXCAVATION/TRENCHING	[o] CONFINED SPACE	[o] POISONOUS PLANTS
[o] POISONOUS/HAZARDOUS ANIMALS	[o] ELECTRICAL	[X] HAND/POWER TOOLS	[X] PUNCTURE/LACERATION
[o] OXYGEN DEFICIENT	[o] PRESSURIZED CONTAINERS	[X] EXPLOSIVE	[X] VISIBILITY
[o] VEHICLE TRAFFIC	[o] WELDING, CUTTING, BRAZING	[o] GLARE/LIGHT HAZARDS	[X] SPLASH
[o] GRINDING	[o] FLYING DEBRIS	[X] PINCH/GRAB/ROLL	[o] TEMPERATURE HAZARDS

[o] OTHER (SPECIFY) : _____

CHEMICAL HAZARD IDENTIFICATION:

[X] CORROSIVE	[X] VOLATILE	[X] OXIDIZER	[X] TOXIC
[o] RADIOACTIVE	[o] BIOLOGICAL	[o] INERT	[X] REACTIVE
[X] FLAMMABLE	[X] COMBUSTIBLE	[o] NON-HAZARDOUS	[o] POISON A (GAS)

[o] OTHER (SPECIFY) : _____

PERSONAL PROTECTIVE EQUIPMENT:

LEVEL OF PROTECTION	RESPIRATORY PROTECTION	PROTECTIVE CLOTHING	GLOVES	HEAD/FACE/EYE PROTECTION	FOOT PROTECTION
PRIMARY: C	Full-face respirator with organic vapor/acid gas cartridge and N particulate filter	Tyvek® SL, (all seams must be taped/sealed)	Stansolve AK22 nitrile or equivalent gloves. May add leather outer glove if task requires.	Hard Hat, Safety Glasses, Hearing Protection if noise hazard present.	Steel toe rubber boots/booties with taped seams.
CONTINGENCY: B	SCBA	Tyvek® SL, (all seams must be taped/sealed)	Stansolve AK22 nitrile or equivalent gloves. May add leather outer glove if task requires.	Hard Hat, Safety Glasses, Hearing Protection if noise hazard present.	Steel toe rubber boots/booties with taped seams.

PPE:	Level C to Level B	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**

Atmospheric Hazards	High concentrations of VOC's, explosive atmosphere, Oxygen deficiency/enrichment	Moderate	A photo-ionization detector (PID) will be used to monitor ambient air in the workers breathing zone and at source points such as drums, and storage tanks prior to handling for VOCs. Petroleum hydrocarbons such as gasoline are also flammable and can be a physical hazard when present in high concentrations. Work areas and source points will be screened with direct reading Multi-Gas meter for flammable vapors LEL, CO, O2 (oxygen enrichment or deficiency). An upgrade in protection level will be take place if established action levels are exceeded.
Explosive / Spark	Smoking	Moderate	A designated smoking area will be created outside of the support area, a safe distance from any flammable, explosive atmospheres.
Splash	Drum Handling	Moderate	Prior to handling, drums should be visually inspected to gain as much information as possible about the contents and condition of the container. Conditions in the immediate vicinity of the drums may provide information about drum contents and their associated hazards. Monitoring shall be conducted around the drums to monitor breathing zone air quality and to check for combustible atmospheres. Personnel should assume that unlabeled drums contain hazardous materials until their contents are characterized. Also, keep in mind that drums are frequently mislabeled – particularly those that are reused. Thus, a drum's label may not accurately describe its contents. Do not handle any drum that is showing signs of bulging, leaking, severe damage, or for any reason appears to be unsafe, immediately contact the RM / SSO to make a determination on the drum safety.
Slip, Trip, Fall	Debris, tires, heavy vegetation/vines, changes in elevation, slick oily surfaces, protruding items.	Moderate	The Scott Auto Sales site is congested with various debris, high vegetation/vines, tires, and slick oily surfaces that may pose a significant trip hazard to personnel. Extra precaution should be taken while negotiating through the building to access the areas of planned work activities. Awareness of sharp/jagged construction debris and items such as broken glass are scattered on floors. A thorough hazard assessment will be conducted to identify any concerns and hazards onsite and will be continued thereafter proactively.
Fire / Explosive cond.	Collecting / Hazard Classification	Moderate	Segregate hazardous substances to ensure incompatible substances pose no threat from reaction, fire, or explosion. Fire extinguishers, spill kits, will be staged in the area prior to sampling. Clear routes will be kept open free of trip hazards and obstructions from the staging area to the decon area, and emergency eye wash / showers. Do not handle any drum that is showing signs of bulging, severe damage, or for any reason appears to be unsafe, immediately contact the RM / SSO to make a determination on the drum safety.

Physical Exertion/Lifting Hazards	Drum handling / Equipment	Moderate	Use skid steer drum handler or drum cart to move drums when possible. When mechanical means are unavailable or impractical personnel shall use proper lifting techniques such as keeping back straight, using legs to lift, limiting twisting, and requesting assistance from their buddy to assist in moving heavy containers, drums, or other heavy/bulky items.
Struck By	Vehicle/Equipment Traffic	Low	Be alert to material and equipment loading/unloading hazards and moving equipment. Use a spotter to aid in unloading and to watch for overhead and backing hazards, and pedestrian/vehicular traffic. Vehicles will obey all speed limits and will be operated in a non-reckless manner. No vehicle will be overloaded or loaded in such a way as to obscure the view of the driver.
Heat Stress	Inside Garage Bay Drum/Container Staging Area	Low	Lack of ventilation in drum staging area, in addition to high levels of personal protective equipment could lead to additional heat stress. Personnel shall be trained on the signs and symptoms of heat stress. An effective work/rest schedule will be implemented to regulate weather exposures. Team members shall ensure they remain hydrated throughout the work day. Employees will be encouraged to refrain from alcohol use after work hours.
Shock / Electrocution	Electrical Equipment, Extension cords	Low	Ground fault circuit interrupters shall be used on all 110-120-240 circuits. Inspect extension cord before each use, if damaged immediately remove from service.
Puncture / Laceration	Debris on-site, broken glass, sharp protruding items.	Moderate	Proper hand protection will be worn to minimize the possibility of injuries due to cuts and abrasions. Potential pinch points will be identified and marked to avoid injury. Think before placing hands into hazards areas.
Back Injury	Moving equipment, lifting materials	Low	Use proper lifting techniques and body mechanics. Avoid attempts to move immovable objects. Use mechanical equipment where possible. Get plenty of rest. Personnel shall use proper lifting techniques such as keeping back straight, using legs to lift, limiting twisting, using mechanical means where possible, and getting help when handling bulky items.
Release of stored energy, electrocution	Lock-out Tag-out	Moderate	Prior to performing maintenance or repairs on any equipment, all residual or stored energy must be properly bled off. Once this is accomplished, LOTO controls will be implemented to prevent inadvertent startup of the equipment during maintenance activities

TASK DESCRIPTION: Task 6. Transferring waste oils from above ground storage tanks (ASTs)

HAZARD ANALYSIS CONDUCTED BY: Richard Hughes **DATE:** August 21, 2013

PHYSICAL HAZARD IDENTIFICATION:

[X] PHYSICAL EXERTION	[X] HEAT STRESS	[o] COLD STRESS	[o] HEAVY EQUIPMENT
[X] FIRE HAZARDS	[X] LIFTING HAZARDS	[X] SLIP, TRIP, OR FALL	[o] HIGH NOISE (> 85 dBA)
[o] OVERHEAD UTILITIES	[o] EXCAVATION/TRENCHING	[o] CONFINED SPACE	[o] POISONOUS PLANTS
[o] POISONOUS/HAZARDOUS ANIMALS	[o] ELECTRICAL	[X] HAND/POWER TOOLS	[X] PUNCTURE/LACERATION
[o] OXYGEN DEFICIENT	[o] PRESSURIZED CONTAINERS	[X] EXPLOSIVE	[X] VISIBILITY
[o] VEHICLE TRAFFIC	[o] WELDING, CUTTING, BRAZING	[o] GLARE/LIGHT HAZARDS	[X] SPLASH
[o] GRINDING	[o] FLYING DEBRIS	[X] PINCH/GRAB/ROLL	[o] TEMPERATURE HAZARDS

[o] OTHER (SPECIFY) : _____

CHEMICAL HAZARD IDENTIFICATION:

[X] CORROSIVE	[X] VOLATILE	[X] OXIDIZER	[X] TOXIC
[o] RADIOACTIVE	[o] BIOLOGICAL	[o] INERT	[X] REACTIVE
[X] FLAMMABLE	[X] COMBUSTIBLE	[o] NON-HAZARDOUS	[o] POISON A (GAS)

[o] OTHER (SPECIFY) : _____

PERSONAL PROTECTIVE EQUIPMENT:

LEVEL OF PROTECTION	RESPIRATORY PROTECTION	PROTECTIVE CLOTHING	GLOVES	HEAD/FACE/EYE PROTECTION	FOOT PROTECTION
PRIMARY: C	Full-face respirator with organic vapor/acid gas cartridge and N particulate filter	Tyvek® SL, (all seams must be taped/sealed)	Stansolve AK22 nitrile or equivalent gloves. May add leather outer glove if task requires.	Hard Hat, Safety Glasses, Hearing Protection if noise hazard present.	Steel toe rubber boots/booties with taped seams.
CONTINGENCY: B	SCBA	Tyvek® SL, (all seams must be taped/sealed)	Stansolve AK22 nitrile or equivalent gloves. May add leather outer glove if task requires.	Hard Hat, Safety Glasses, Hearing Protection if noise hazard present.	Steel toe rubber boots/booties with taped seams.

PPE:	Level C to Level B	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**

Atmospheric Hazards	High concentrations of VOC's, explosive atmosphere, Oxygen deficiency/enrichment	Moderate	A photo-ionization detector (PID) will be used to monitor ambient air in the workers breathing zone and at source points such as drums, and storage tanks prior to handling for VOCs such as benzene, naphthalene and other aromatic hydrocarbons. Petroleum hydrocarbons such as gasoline are also flammable and can be a physical hazard when present in high concentrations. Work areas and source points will be screened with direct reading Multi-Gas meter for flammable vapors LEL, CO, O2 (oxygen enrichment or deficiency). An upgrade in protection level will be take place if established action levels are exceeded.
Slip, Trip, Fall	Debris, changes in elevation, protruding items.	Moderate	The Scott Auto Sales site is congested with various debris, high vegetation/vines, tires, and oily surfaces that may pose a significant trip hazard to personnel. Extra precaution should be taken while negotiating through the building to access the areas of planned work activities. Awareness of sharp/jagged construction debris and items such as broken glass are scattered on floors. A thorough hazard assessment will be conducted to identify any concerns and hazards onsite and will be continued thereafter proactively.
Physical Exertion/Lifting Hazards	Materials / Equipment	Low	Use proper lifting techniques and body mechanics. Avoid attempts to move immovable objects. Use mechanical equipment where possible. Get plenty of rest. Personnel shall use proper lifting techniques such as keeping back straight, using legs to lift, limiting twisting, using mechanical means where possible, and getting help when handling bulky items.
Heat Stress	Environment	Low	Lack of ventilation in drum staging area, in addition to high levels of personal protective equipment could lead to additional heat stress. Personnel shall be trained on the signs and symptoms of heat stress. An effective work/rest schedule will be implemented to regulate weather exposures. Team members shall remain hydrated throughout the work day.
Explosive Atmosphere	Hazardous/Flammable Liquids transfer	Moderate	A no smoking area will be designated outside of the support area, under no circumstances will personnel smoke in the exclusion zone. This shall be strictly enforced.
Fire / Explosion	Static Electricity	Moderate	Bonding and grounding procedures will be in place during all transfer operations to insure that any static charge that develops between two containers be equalized, if not eliminated, so that no potential for a static discharge between the containers exists. Fire extinguishers shall be properly staged near all transfer operations. The extinguishers should be staged no closer than 25 feet from the transfer, and no further than 75 feet away.

TASK DESCRIPTION: Task 7. Project Closeout/Site Restoration

HAZARD ANALYSIS CONDUCTED BY: Richard Hughes **DATE:** August 21, 2013

PHYSICAL HAZARD IDENTIFICATION:

[X] PHYSICAL EXERTION	[X] HEAT STRESS	[o] COLD STRESS	[X] HEAVY EQUIPMENT
[o] FIRE HAZARDS	[X] LIFTING HAZARDS	[X] SLIP, TRIP, OR FALL	[o] HIGH NOISE (> 85 dBA)
[X] OVERHEAD UTILITIES	[o] EXCAVATION/TRENCHING	[o] CONFINED SPACE	[o] POISONOUS PLANTS
[o] POISONOUS/HAZARDOUS ANIMALS	[X] ELECTRICAL	[X] HAND/POWER TOOLS	[X] PUNCTURE/LACERATION
[o] OXYGEN DEFICIENT	[o] PRESSURIZED CONTAINERS	[o] EXPLOSIVE	[o] VISIBILITY
[X] VEHICLE TRAFFIC	[o] WELDING, CUTTING, BRAZING	[o] GLARE/LIGHT HAZARDS	[o] SPLASH
[o] GRINDING	[o] FLYING DEBRIS	[X] PINCH/GRAB/ROLL	[o] TEMPERATURE HAZARDS
[o] OTHER (SPECIFY) : _____			

CHEMICAL HAZARD IDENTIFICATION:

[o] CORROSIVE	[o] VOLATILE	[o] OXIDIZER	[o] TOXIC
[o] RADIOACTIVE	[o] BIOLOGICAL	[o] INERT	[o] REACTIVE
[o] FLAMMABLE	[o] COMBUSTIBLE	[o] NON-HAZARDOUS	[o] POISON A (GAS)
[o] OTHER (SPECIFY) : _____			

PERSONAL PROTECTIVE EQUIPMENT:

LEVEL OF PROTECTION	RESPIRATORY PROTECTION	PROTECTIVE CLOTHING	GLOVES	HEAD/FACE/EYE PROTECTION	FOOT PROTECTION
PRIMARY: Level D	None	Proper fitting long pants in good repair; minimum 4" sleeves, Class II high visibility vest	Leather or cotton work-glove.	Hard Hat, and Safety Glasses	Steel toe work boot
CONTINGENCY: Modified D	None	Tyvek® Coverall w/Hood	Leather or cotton work-gloves	Hard Hat, Safety Glasses, Splash protection, and Hearing Protection when necessary	Steel toe work boot, w/ disposable covers.

PPE:	Level D to Modified D	**Date:**	August 21, 2013
Hazard Rating:	Medium	**Created by:**	Richard C. Hughes
HAZARD	**SOURCE**	**SEVERITY**	**CONTROL MEASURES**

Physical Exertion/Lifting Hazards	Materials / Equipment	Moderate	Use proper lifting techniques and body mechanics. Avoid attempts to move immovable objects. Use mechanical equipment where possible. Get plenty of rest. Personnel shall use proper lifting techniques such as keeping back straight, using legs to lift, limiting twisting, using mechanical means where possible, and getting help when handling bulky items.
Electrocution	Electrical connections, Extension cords	Moderate	Only qualified personnel are authorized to disconnect electrical circuits or repair any electrical equipment. KEMRON Personnel will under no circumstances attempt to work on electrical systems or disconnect on-site connections. Ground fault circuit interrupters (GFCI) will be used on all temporary electrical circuits (i.e., generators, site trailers, etc.). Electrical cords not specifically made for water submersion will be kept out of wet areas.
Struck By	Vehicle/Equipment Traffic	Moderate	Personnel shall wear class II high visibility vest at all times. Be alert to material and equipment loading/unloading hazards and moving equipment. Use a spotter to aid in loading equipment and materials. Watch for overhead and backing hazards, and pedestrian/vehicular traffic. Vehicles will obey all speed limits and will be operated in a non-reckless manner. No vehicle will be overloaded or loaded in such a way as to obscure the view of the driver.
Hand injury	Hand Tools	Low	Use all tools in the manner designed. Do not use tools with damaged cords. Wear gloves where required
Vehicular Accident	Driving	Low	Ensure that drivers are driving defensively at all times. KEMRON personnel will observe and obey all traffic safety laws at all times. Prior to demobilization, a final inspection should be conducted on all vehicles and equipment trailers.
Crushed/ Pinch Point	Heavy Equipment/ skid steer	Moderate	The use of a ground spotter will be implemented during demobilization activities. At no time will any load be swung above or suspended above any ground personnel. No personnel will be carried on equipment not equipped with passenger seats.
Heat Stress	Environment	Low	Personnel shall remain hydrated, and pay close attention to the signs of heat stress..
Fire Hazards	Equipment / Materials	Low	Fire extinguishers and all emergency equipment, first-aid kits, eye wash stations will remain staged during demobilization activities.
Poisonous/ Hazardous Plants and Animals	Brush, vegetation, fence line, poison ivy, snakes, bees, wasps, ticks, spiders, rodents.	Low	Avoid brushy areas, recognize poison ivy, oak and sumac. Protect skin and mucous membranes when working in proximity to poison ivy. Identify individuals allergic to bees or other environmental hazards.

Puncture / Laceration	Pinch Points, Hand Traps	Moderate	Proper hand protection will be worn to minimize the possibility of injuries due to cuts and abrasions. Potential pinch points will be identified and marked to avoid injury. Think before placing hands into hazards areas, near moving parts .
Hearing Loss	Loud noise	Low	Use of hearing protection will be worn when employees are exposed to high noise levels (greater than 85 dBA over an 8-hour workday). If you have to raise your voice to speak to your co-worker from a distance of approximately 3 feet away in order to be heard / understood, you should wear hearing protection.
Struck by vehicle / crush by equipment	Equipment / vehicles	Moderate	Personnel keep safe distance from loading operations, drivers check all mirrors and surroundings before backing, insure all back-up alarms are functional. Park vehicles, equipment and trailers on flat level surface, place wheel chocks.
Load Tip Over	Uneven terrain, soft spots	Moderate	Utilize spotter for correct positioning of trucks during demobilization. Inspect areas for level ground, free of obstructions and overhead hazards for loading of equipment, tools, and materials. Distribute loads evenly in trailers, securing all items.
Puncture/Injection	Pressure washer	Moderate	Personnel must use all necessary precautions while using pressure washers, regardless of the pressures. The use of high-pressure water can cause severe injuries and extreme caution and strict compliance with operating procedures must be followed. Pressure washers may be used on the Scott Auto Sales Site during vehicle/equipment decontamination. Personnel will utilize at minimum Modified Level D personal protective equipment when conducting pressure washer operations, along with a full face shield for splash protection and cut resistant metatarsal protection. The following should be observed during use of pressure washers: • Only trained personnel will be allowed to use the equipment. • No portion of the body shall ever be placed in front of the water jet. The jets of water can easily puncture and tear the skin or penetrate deeper causing infection or serious internal damage. • A job review will be made prior to high-pressure water being used. • Manufacturer's recommendations and requirements will be followed. • High-pressure cleaning may require partial body or total entry into tanks with a corresponding increase in PPE and other requirements • Only essential personnel will be allowed in the work area.

6 AIR MONITORING

The purpose of air monitoring is to identify and airborne contaminants in order to insure that proper levels of respiratory protection and personal protective equipment are being maintained and to determine the size and location of the exclusion, contamination reduction, and support zones. Direct-reading instruments shall be used to rapidly detect the presence of flammable or explosive atmospheres, oxygen deficiency, volatile organic compounds (VOCs), and carbon monoxide levels.

A photo-ionization detector (PID) will be used to monitor ambient air in the workers breathing zone and at source points such as drums, and storage tanks prior to handling for VOCs such as benzene, naphthalene and other aromatic hydrocarbons. Petroleum hydrocarbons such as gasoline are also flammable and can be a physical hazard when present in high concentrations. Work areas and source points will be screened with direct reading Multi-Gas meter for flammable vapors LEL, CO, O2 (oxygen enrichment or deficiency). An upgrade in protection level will be take place if established action levels are exceeded.

6.1 HEALTH AND SAFETY ACTION LEVELS

An action level is a level at which increased protection is required due to the concentration of contaminants in the work area or other environmental conditions, the concentration level (above background level) and the ability of the PPE to protect against that specific contaminant determine each action level. The action levels are based on concentrations in the breathing zone.

If ambient levels are measured which exceed the action levels in areas accessible to unprotected personnel, necessary control measures (barricades, warning signs, and mitigation actions, etc.) must be implemented prior to commencing activities at the specific work area.

6.1.1 Reasons to upgrade:

- Known or suspected presence of dermal hazards.
- Occurrence or likely occurrence of gas, vapor, or dust emission.
- Change in work task that will increase the exposure or potential exposure to hazardous materials.

6.1.2 Reasons to downgrade:

- New information indicating that the situation is less hazardous than was originally suspected.
- Change in site conditions that decrease the potential hazard.
- Change in work task that will reduce exposure to hazardous materials.

Table 6.1 Monitoring Equipment and Action Levels

	Function	Measurement	Action
PID - Measures Total Organic Vapors			
Conduct air monitoring for volatile organic compounds during remedial activities. Air monitoring will be conducted in the worker's breathing zone (WBZ) and at source points. If the action level is exceeded in the WBZ, an upgrade in protection is required.		0 - 2 ppm above background sustained for 5 minutes	Modified Level D required.
		2 - < 500 ppm above background sustained for 5 minutes	Level C required.
		> 500 ppm above background sustained for 5 minutes	Stop Work required. Leave Work Area, Contact RM/SSO for guidance and approval for possible use of Level B PPE.
(O_2/LEL) Measures oxygen level (O_2) and lower explosive limit (LEL)			
Conduct air monitoring for O_2/LEL when conditions exist where flammable vapors/gases and/or oxygen deficiency or enrichment can occur. A decreased O_2 reading of 0.1% (e.g., 20.9% to 20.8%) actually represents a change in the total air envelope of approximately 0.5% or 5,000 ppm. This represents little hazard if the displacing gas is inert; if the displacing gas is toxic/flammable/reactive, such a concentration represents a real hazard.	Oxygen Content	O_2 = 20.9 %	Acceptable
		O_2 > 19.5 - 20.8%	Verify reasons for O_2 depletion with appropriate air monitoring instrumentation before work continues. Utilize appropriate engineering controls/PPE once atmospheric contaminants have been verified.
		O_2 > 20.9 % - 22 %	Verify reasons for O_2 enrichment before entering area. Utilize appropriate engineering controls/PPE to control O_2 enriched atmosphere.
		O_2 > 22 %	**Leave area immediately;** this atmosphere is extremely flammable. Notify RM/SSO for guidance.
		O_2 <19.5%	**Leave area immediately;** this atmosphere is oxygen deficient. Verify reasons for O_2 depletion with appropriate air monitoring instrumentation before work continues. Utilize appropriate engineering controls/PPE once atmospheric contaminants have been verified.
	Lower Explosive Limit	LEL <10%	Acceptable conditions. Continue normal activity.
		LEL >10%	**Leave area immediately.** Contact RM/SSO for guidance on venting and other safety measures.
*Note: Instruments must be calibrated according to manufacturer's recommendations.			

Potential Chemical Exposure or Exposure Scenario	Criteria and Protocol for Health and Safety Specification
Petroleum Hydrocarbons Toluene, Benzene, Naphthalene, Xylene, Waste Oils, Gasoline, Diesel Fuel	1. Main concerns with petroleum hydrocarbons are preventing skin contact and inhalation of petroleum hydrocarbons. Utilize air monitoring equipment for screening of vapor concentrations. Aromatic hydrocarbons, when inhaled cause central nervous system depression with symptoms such as headache, dizziness, tiredness, and nausea. If exposure is suspected, leave area to fresh air and seek medical attention. 2. Excessive and repeated exposure to petroleum hydrocarbons can cause reddening, drying, and cracking of the skin. If direct contact occurs, rinse for 15 minutes with water and seek medical attention. 3. Chemical protection clothing and gloves must be specified by a health and safety professional.

6.2 MONITORING EQUIPMENT & DESCRIPTIONS

To monitor potential worker exposure concentrations to contaminants of concern during site activities on the Scott Auto Sales Site, air monitoring will be conducted using direct-reading instruments such as a PID and Multi-Gas monitor. Monitoring will be performed at 15-minute intervals, as needed for screening or whenever odors are sensed. The times and concentrations encountered during monitoring will be recorded on the appropriate air quality monitoring log. Monitoring equipment will be calibrated at the beginning of each work day. The PID will be calibrated according the manufacturers procedures. Calibration results will be recorded in a calibration log that will be kept on-site at all times. If monitoring equipment does not calibrate correctly, a replacement device will be obtained.

Table 6-2 – Monitoring Equipment

INSTRUMENT TYPE	EQUIPMENT MANUFACTURER	TARGET COMPOUNDS	MONITORING FREQUENCY
Photo Ionization Detector (PID)	RAE Systems Area RAE RAE Systems V-RAE	Petroleum hydrocarbons Organic Solvents	Daily during intrusive activities
Multi or 4 Gas Detectors	RAE Systems Area-RAE RAE Systems V-RAE	Lower Explosive Limit Oxygen (O_2) Carbon Monoxide (CO) Hydrogen Sulfide (H_2S)	
Particle Monitor	DataRam	Aerosols, mist, dust, and fumes	Daily upwind and downwind during all work shifts

6.3 MAINTENANCE AND CALIBRATION OF EQUIPMENT

All monitoring equipment will be maintained and calibrated in accordance with applicable manufacturer recommendations. All pertinent data will be logged in a health and safety logbook (or equivalent format) and maintained on site for the duration of site activities. Calibration of all monitoring equipment will be performed daily per the equipment manufacturer recommendations and recorded in a log book or daily sampling log.

7 SITE CONTROL

To prevent migration of contamination from personnel and equipment, work areas will be clearly specified as designated below prior to beginning operations. Each work area will be clearly identified using signs or physical barriers.

- Exclusion Zone
- Contamination Reduction Zone
- Support Zone

A log of all personnel visiting, entering or working on the site shall be maintained by the SSO. No visitor will be allowed in the EZ without showing proof of training and medical certification, per 29 CFR 1910.120(e), (f). Visitors will attend a site orientation given by the SSO and sign the Site Specific Safety and Health Plan.

7.1 SUPPORT ZONE

The support zone will be located in an area that has been determined contamination free or "clean" by supporting analytical data or other objective criteria. In this zone site break areas, toilet facilities, administrative, and other support functions will take place. Contaminated PPE and/ or equipment are prohibited in this area.

7.2 CONTAMINATION REDUCTION ZONE

The contamination reduction zone (CRZ) is the area between the exclusion zone and support zone designated for equipment and personnel decontamination. The CRZ may also be a staging area for site tools, emergency equipment, containment equipment, additional PPE, sampling equipment, and air bottle changes. All personnel and/ or equipment exiting the exclusion zone must enter the CRZ for decontamination before entering the support zone. PPE dress outs must be accomplished in the support zone before entry into the CRZ. Contaminated PPE will remain in the CRZ or the exclusion zone until properly disposed. The location of the CRZ will be determined mainly by the distance needed to prevent a potential release, explosion, or other hazard in the exclusion zone from affecting personnel in the CRZ and support zone.

7.3 EXCLUSION ZONE

The exclusion zone is the restricted area where it has been determined by supporting analytical that contamination exists and poses a health hazard. Air monitoring will be conducted on a routine basis to assure adequacy of the extent of the EZ. Only authorized personnel necessary for the performance of the work, and that meet all the requirements as stated in Section 1.0 "Introduction and Site Entry Requirements" of this SSHSP and other applicable requirements of 29 CFR 1910.120 and the LKR Corporate Health and Safety Manual are allowed entrance.

The exclusion zone (EZ) will be large enough to encompass the primary task area and to allow equipment and personnel to move about freely and conduct necessary tasks. The minimum number of personnel required to safely perform project tasks will be allowed into the EZ. The EZ will be delineated in a configuration large enough to prevent non-field team personnel in the support zone (SZ) from being exposed to potential safety and health hazards. The EZ shape and size will be based on the tasks being conducted, existing structures and facilities, and potential for impact to adjacent areas from project task and contaminants.

The exclusion zone will be well delineated by means of barricades, caution tape, fencing, or other highly visible and physical barriers. Air monitoring will be conducted on a routine basis to assure adequacy of the extent of the EZ. Signs should be placed at the perimeter of the exclusion

zone that are highly visible that states the hazard (i.e., WARNING CONTAMINATED AREA - KEEP OUT or HAZARDOUS WORK AREA - AUTHORIZED PERSONNEL ONLY).

7.4 BUDDY SYSTEM

The Buddy System shall be used for all entries into the exclusion zone. This is a system of organizing employees into work teams in such a manner that each team member can observe the activities of the other. Thus, in case of an emergency, the entire team can account for the location and activity of each team member.

7.5 VISITORS

All visitors will report to the KEMRON command post immediately upon arrival. All visitors entering the CRZ or exclusion zones must provide all required training and medical monitoring documentation before arrival on-site, if possible. The On Scene Coordinator and the Project Manager/Site Safety Officer must approve the site visit. The RM/SSO shall establish a safe route through the site and away from on-going operations. All visitors will be escorted while on site.

7.6 SITE SECURITY

Site security shall be tasked with:

1. Protecting unauthorized personnel from site physical hazards or chemical exposure
2. Preventing unauthorized personnel from entering exclusion zone
3. Prevent theft or vandalism of company equipment
4. Notify emergency agencies in case of a fire, explosion, or release after work hours.
5. Maintain site surveillance
6. Ensure all visitors are approved and have a valid purpose for entering the site.
7. Ensuring that all visitors are escorted

7.7 SITE MAPS

Site maps depicting the work areas, contaminated areas, EZ, CRZ, support zone and command post will be developed and posted on site and in work area vehicles prior to work. The map will include designated work areas, escape routes, emergency assembly areas, hazardous and utility layouts. Additionally, a map depicting the hospital driving route (included in this HASP) will also be posted at the site and reviewed with personnel during the site orientation.

7.8 SITE COMMUNICATION

Site communications on the Scott Auto Sales Site will be conducted via cell phones. Personnel working in flammable atmospheres will devise a system of communicating with hand signals or other intrinsically safe methods. To be effective, all communication commands must be prearranged and all signals recognized by all on-site personnel in advance.

As a contingency measure, air horns will be used to alert all on-site personnel to potential emergencies. The below communication commands / signals will be discussed during site

orientation and reinforced occasionally during safety meetings to ensure site personnel are familiar with the prearranged signals.

The prearranged air horn signals are as follows:

- 1 Blast - Attention, Contact command post.
- 2 Blasts - Emergency, Assemble at decontamination line.
- 3 Blasts - General Emergency, Evacuate site immediately and meet at the designated assembly area.

7.9 SITE INSPECTIONS

The Response Manager/Site Safety Officer will conduct formal site inspections on a weekly basis, informally on a daily basis. All formal inspections will be documented and kept on job file for review by KEMRON Corporate Health and Safety personnel.

7.10 TRAFFIC CONTROL

The Response Manager/SSO shall ensure that traffic patterns and roadways are designed and operated in a manner that minimizes the potential for vehicle related accidents. Key elements that will be considered and reviewed include:

- Minimize the potential for operating vehicles in reverse (i.e., backing up)
- Avoid traffic patterns with head-on traffic patterns. Where practical, establish traffic patterns that are circular.
- Minimize intersections when creating traffic plans.
- Avoid areas with overhead obstructions. Where overhead obstructions cannot be avoided, post warning signs and/ or construct warning devices. Warning devices are recommended where traffic includes the use of dump trucks.
- Maintain safe vehicle speeds. Slower traffic speeds should be required at intersections, in curves and in areas where pedestrian traffic is common.
- Instruct all drivers on proper site procedures and speed limits.
- Take all necessary precautions when negotiating railroad crossings.

To ensure adequate control of traffic, all vehicles entering the site shall be required to check in with KEMRON personnel. Only authorized vehicles will be allowed beyond the support zone area. Posted speed limits will be enforced by the KEMRON Project management team. All vehicles that enter a potentially contaminated area shall be decontaminated before leaving the site.

8 DECONTAMINATION

The decontamination process is designed to remove any contamination acquired in the EZ and to keep the spread of contaminated materials from entering the support (clean) area. Care must be exercised to ensure that contaminants are removed from personnel and equipment, before the personnel or equipment leaves the site. The decontamination line should extend from the EZ boundary line to the entrance of the SZ.

8.1 PERSONNEL DECONTAMINATION

The method of decontamination which will be utilized on the Scott Auto Sales Site will be the orderly and controlled removal of contaminated layers of personal protective clothing and disposing in proper containers. The RM/SSO will ensure that all site personnel are familiar with personnel decontamination procedures as listed below. All personnel wearing PPE in a work area (EZ) must undergo decontamination prior to entering the SZ. Personnel will perform the following decontamination procedures which consist of a series of procedures performed in a specific sequence:

- The first station of the decontamination line will consist of personnel dropping any tools or equipment for later decontamination on provided table or poly sheeting.
- Personnel will then have an amended water rinse applied on the outer suit, gloves and boot covers.
- Disposable boot covers and outer gloves will then be removed and placed in proper containment.
- The protective coveralls will then be removed using slow, sure movements, gently rolling the coveralls down as they are removed. Rolling the coveralls while removing them keeps the contaminant covered side in as it is tightly rolled all the way down to the ankles and removed. The rolled up garment can then be placed directly into the labeled PPE containment drum, followed by the removal of the inner gloves.
- Respirators will be removed last.
- Personnel will then thoroughly wash hands and face before leaving CRZ.
- Disposable protective clothing must be discarded and disposed of properly. All used protective clothing shall be deposited in labeled containers or impermeable bags for proper disposal.

The RM/SSO will be notified immediately of any emergency. An emergency eyewash station capable of providing the OSHA/ANSI required 0.4 gallon/minute flow for 15 minutes will be located at the CRZ and in areas where splash hazards may be present. All site employees will wash hands and face before leaving the decontamination area.

8.2 EQUIPMENT DECONTAMINATION

The decontamination process is designed to remove any contamination acquired in the EZ and to keep the spread of contaminated materials from entering the support area. Care must be exercised to ensure that contaminants are removed from all equipment before leaving the site. All vehicles, vessels, and equipment that have entered potentially contaminated areas will be visually inspected and, if necessary, decontaminated prior to leaving the area. If the level of

vehicle contamination is low, decontamination may be limited to rinsing tires and wheel wells with an appropriate detergent and water. If the vehicle is significantly contaminated, steam cleaning or pressure washing may be required. Large tools will be cleaned in the same manner.

The following supplies will be available to perform decontamination activities:

- Wash and rinse buckets
- Tap water and phosphate-free detergent (i.e., Alconox)
- Scrub brushes
- Distilled/deionized water
- Pressure washer/steam cleaner
- Paper towels and plastic garbage bags.

All wastewater generated during decontamination will be collected for disposal.

9 SANITARY FACILITIES AND LIGHTING REQUIREMENTS

Sanitary facilities, permanent or temporary will be provided on all KEMRON job sites. The requirements for sanitary facilities on site will meet all applicable standards found in CFR 29 1910.120 (n) (3) and the KEMRON operating procedure. Lighting on the Scott Auto Sales Site will be provided in areas insufficiently illuminated by intrinsically safe lights with appropriate safety cages covering bulbs. Power will be provided by two 5kw generators.

9.1 TOILET FACILITIES

For this project, KEMRON will provide one Port-O-Let at the office area and one in the work area.

9.2 LIGHTING

Lighting on the Scott Auto Sales Site will be provided in areas insufficiently illuminated by intrinsically safe lights with appropriate safety cages covering bulbs.

9.3 HYGIENE

A hand/face washing area with water and soap will be provided in the support zone.

9.4 LUNCH AREA

When food and beverages are consumed at the work site, an appropriate area will be provided in the clean area specifically for that purpose.

10 CONTINGENCY PLAN

The KEMRON contingency plan may be activated by the following conditions:

1. An injury occurs in any of the zones.
2. A chemical hazard action level is reached or an air monitor alarm sounds.
3. Someone observes the development of an IDLH situation.
4. An unknown odor is detected.
5. There is a security breach and/ or presence of unauthorized personnel.

6. There is a weather-related emergency.
7. There is a major chemical release, explosion, or fire.
8. There is a facility alarm condition.

In case of a project emergency, the following equipment will be used to alert on-site personnel.

1. Cellular phones or Portable radio communications
2. Portable air horns or truck horn.

The below communication commands / signals will be discussed during site orientation and reinforced occasionally during safety meetings to ensure site personnel are familiar with the prearranged signals.

The prearranged air horn (or truck horn) signals are as follows:

- 1 Blast - Attention, Contact command post.
- 2 Blasts - Emergency, Assemble at decontamination line.
- 3 Blasts - General Emergency, Evacuate site immediately and meet at the designated assembly area.

10.1 EMERGENCY PROCEDURES

10.1.1 CRZ or Exclusion Zone Injury:

Operations will cease and area will be cleared for emergency personnel. A rescue team designated by Response Manager/SSO will retrieve and will decontaminate injured personnel to the extent possible before movement to support zone. If the condition is serious, at least a partial decontamination will be completed, and first aid will be administered until professional medical assistance arrives. In a serious or life threatening injury or illness, emergency first response support will be provided by the local emergency crew. If movement will aggravate the injury, then the injured personnel will be left in place. If the injured personnel are at a greater risk inside the exclusion zone or emergency personnel are not able to enter the zone, then movement of the injured personnel becomes unavoidable. Care will be exercised to prevent spread of contamination. A copy of the MSDS (Material Safety Data Sheet) for the suspected contaminant(s) is to be provided to the responding medical team for transport back to the hospital.

10.1.2 Support Zone Injury:

The RM/SSO will assess the nature of the injury. If injury does not affect performance of personnel, operations may continue. If injury increases risk to others, operations will cease, until risk is removed or minimized.

10.1.3 PPE Failure:

The event of PPE failure or alteration, that person and his/her buddy will immediately leave the exclusion zone and assemble at the decontamination line. Re-Entry will not be permitted until the equipment has been repaired or replaced.

10.1.4 Other Equipment Failure:

In the event of equipment failure other than PPE, the RM/SSO shall determine if the problem affects the safety of personnel or prevents the safe completion of the tasks. If which case the operation shall cease until repairs/replacements are made and the risk to safety is removed.

10.1.5 Fire or Explosion:

Fire and Explosion Hazards Fires are of particular concern during the planned work activities on the Scott Auto Sales Site due to the flammable nature of petroleum hydrocarbon liquids and vapors. Explosive vapor conditions will be carefully monitored with direct-reading instruments, measuring the Lower explosive limit (LEL) and documenting the results. The LEL for gasoline hydrocarbons is approximately 1.4% in air. Using a 10-fold safety factor, a working criteria of 1400 ppm (10% LEL) as measured by a PID is established for explosion hazards. If measurements reveal this concentration, or above, work will be stopped immediately and the field crew will be instructed to stay upwind until these concentrations diminish.
An adequate multi-purpose (A, B, C) fire extinguisher (20lbs) will be located onsite at each major project task at all times. The local fire department will be notified by Regional Health & Safety Manager of the project location, anticipated activities, and other pertinent information to provide a more timely response in the event of an emergency. In the event of a fire not involving or in the immediate vicinity of hazardous materials, the RM/SSO will determine if the fire can be suppressed. If the fire is small and safety is not endangered, a team of properly equipped personnel will secure the situation. If the event is uncontrollable, all personnel will be evacuated and the proper authorities will be notified.

10.1.6 Spill, Leak or Release:

Operations will cease and the designated suppression personnel will assemble at the upwind vapor suppression area. All other non-essential personnel in the area will meet at the decontamination line or the designated assembly area depending on the alarm given. The RM/SSO will attempt to determine the nature and extent of the release by air monitoring and instrument readings taken by KEMRON personnel. The RM/SSO will direct the assembled team to contain the release or spill by the appropriate method. The RM/SSO will direct the suppression crew in making the necessary attempts to stop the release and initiate clean-up operations. Operations will remain suspended until the incident is stabilized and no longer poses a threat to personnel

10.2 EMERGENCY EQUIPMENT

The following equipment will be located on the job site:

- First Aid Kit (Office Trailer)
- Emergency Eyewash (capable of providing 15 minutes of flush time)
- ABC Dry Chemical Fire Extinguishers, located at:
  - Office Trailer
  - Decontamination Area
  - Fuel Storage Areas
  - Each Piece of Equipment on Site
- Chemical Sorbents Pads and Booms
- Portable Air Horns

- Portable Communication Radios

10.3 EMERGENCY TELEPHONE NUMBERS

CHEMTREC	800-424-9300
National Response Center	800-424-8802
Occupational Safety and Health Administration	800-321-6742
Poison Control Center	800-222-1222
US Environmental Protection Agency	
US EPA On Scene Coordinator Paul L. Kahn	908-420-4477
KEMRON Environmental Services, Inc.	800-548-6938
Response Manager Kevin Shaver	404-242-6013
Regional Health & Safety Manager Richard Hughes	985-640-9254
Emergency Fire	911
Emergency Police	911
Emergency Medical Services	911
Local Non-Emergency Numbers	
Saratoga, NY Sheriff's Office	518-885-6761
Gansevoort Volunteer Fire Department	518-792-4396
Saratoga, NY Public Works Department	518-885-2235
(*) Hospital: Saratoga Hospital	518-587-1141

This hospital shall only be used by site personnel for non-emergency cases. Emergency Services personnel will decide proper hospital for type of injury/illness at time of transport. The hospital shall be provided information regarding any specific hazards the injury/illness may be related to. Coordination for special emergency response requirements with them shall be completed upon arrival.

10.4 DIRECTIONS TO HOSPITAL

The nearest Hospital to the Scott Auto Sales Site is listed below along with a map and directions.

Saratoga Hospital
211 Church Street, Saratoga Springs, NY 12866
518-587-1141

11 SITE SAFETY PLAN REVIEW AND DOCUMENTATION

I have been briefed on and understand this site safety plan. I have been informed of the personnel to contact if I have any questions and know where to report any additional health and safety hazards. I agree to work to the safety plan guidelines and understand that failure to do so could result in removal from the site and/ or termination.

DATE	PRINTED NAME	SIGNATURE	ORGANIZATION

DATE	PRINTED NAME	SIGNATURE	ORGANIZATION

EXHIBIT A

MATERIAL SAFETY DATA SHEETS

MATERIAL SAFETY DATA SHEET

Benzene **MSDS No. 1785**

HOVENSA

EMERGENCY OVERVIEW DANGER!
FLAMMABLE - BLOOD TOXIN AND CARCINOGEN - ABSORBED THROUGH THE SKIN - CENTRAL NERVOUS SYSTEM - HARMFUL OR FATAL IF SWALLOWED - ASPIRATION HAZARD

High fire hazard. Keep away from heat, spark, open flame, and other ignition sources.

If ingested, do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs). Contact may cause eye, skin and mucous membrane irritation. Harmful if absorbed through the skin. Avoid prolonged breathing of vapors or mists. Inhalation may cause irritation, anesthetic effects (dizziness, nausea, headache, intoxication), and respiratory system effects.

Long-term exposure may cause blood disease, including anemia and leukemia.

NFPA 704 (Section 16)

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

HOVENSA L.L.C.
1 Estate Hope
Christiansted, VI 00820-5652

EMERGENCY TELEPHONE NUMBER (24 hrs): **CHEMTREC (800) 424-9300**

COMPANY CONTACT (business hours): **Safety Department (340) 692-3000**

SYNONYMS: Benzol; Coal Naphtha; coal tar naphtha; Cyclohexatriene; Phenyl hydride

See Section 16 for abbreviations and acronyms.

2. COMPOSITION and CHEMICAL INFORMATION ON INGREDIENTS

INGREDIENT NAME (CAS No.)	CONCENTRATION PERCENT BY WEIGHT
Benzene (71-43-2)	100

3. HAZARDS IDENTIFICATION

EYES

Moderate to severe irritant. Contact with liquid or vapor may cause irritation.

SKIN
Moderate to severe irritant. May cause skin irritation with prolonged or repeated contact. Practically non-toxic if absorbed following acute (single) exposure. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are exposed repeatedly.

INGESTION
The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Revision Date: 7/1/2006 Page 1 of 8

MATERIAL SAFETY DATA SHEET

Benzene **MSDS No. 1785**

HOVENSA

INHALATION
Excessive exposure may cause irritation to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

Effects to the blood (including decreased platelet and white blood cell counts), cardiovascular system, nervous system, retina, lungs, gastrointestinal system, spleen, and kidneys have been reported from large, acute (short) and repeated or prolonged exposures.

CHRONIC EFFECTS and CARCINOGENICITY
Benzene is a regulated human carcinogen. Benzene has the potential to cause bone marrow depression, aplastic anemia (low red blood cell count) and other blood diseases, including leukemia, after repeated and prolonged exposure. Benzene can cause liver and kidney toxicity.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash). Pre-existing chronic respiratory disease, liver or kidney dysfunction, or blood, cardiovascular and central nervous system disorders may be aggravated by exposure.

4. FIRST AID MEASURES

EYES
In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

SKIN
Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser. Obtain medical attention if irritation or redness develops.

INGESTION
DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

INHALATION

Remove person to fresh air. If person is not breathing, ensure an open airway and provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

NOTE TO PHYSICIAN
OSHA and US Coast Guard require that a person exposed to benzene in an emergency have a urine sample taken at the end of the shift and have a urine phenol test performed within 72 hours. For results equal to or greater than 75 ml/L of urine, employees must have a complete blood count every month for three months after the emergency exposure. See OSHA 29 CFR 1910.1028 or USCG 49 CFR 193.

Revision Date: 7/1/2006 Page 2 of 8

MATERIAL SAFETY DATA SHEET

Benzene **MSDS No. 1785**

HOVENSA

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT:	12 °F (-11°C)
AUTOIGNITION TEMPERATURE:	928 °F (498 °C)
OSHA/NFPA FLAMMABILITY CLASS:	1B (flammable liquid)
LOWER EXPLOSIVE LIMIT (%):	1.3%
UPPER EXPLOSIVE LIMIT (%):	7.9%

FIRE AND EXPLOSION HAZARDS
Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. Flowing product may be ignited by self-generated static electricity. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

EXTINGUISHING MEDIA
SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, or Halon.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

FIRE FIGHTING INSTRUCTIONS
Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

See Section 16 for the NFPA 704 Hazard Rating.

6. ACCIDENTAL RELEASE MEASURES

ACTIVATE FACILITY SPILL CONTINGENCY or EMERGENCY PLAN.

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Product may release substantial amounts of flammable vapors and gases (e.g., methane, ethane, and propane), at or below ambient temperature depending on source and process conditions and pressure.

Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection - do not discharge solid water stream patterns into the liquid resulting in splashing.

MATERIAL SAFETY DATA SHEET

Benzene **MSDS No. 1785**

HOVENSA

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

7. HANDLING and STORAGE

HANDLING and STORAGE PRECAUTIONS

Handle as a flammable liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents.

STORAGE PRECAUTIONS

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

WORK/HYGIENIC PRACTICES

Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a

cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

8. EXPOSURE CONTROLS and PERSONAL PROTECTION

EXPOSURE LIMITS

		Exposure Limits	
Components (CAS No.)	**Source**	**TWA/STEL**	**Note**
Benzene (71-43-2)	OSHA	PEL = 1ppm; STEL = 5 ppm	
	ACGIH	TLV = 0.5 ppm; STEL = 2.5 ppm	A1; skin; BEI

ENGINEERING CONTROLS

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

EYE/FACE PROTECTION

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

SKIN PROTECTION

Gloves constructed of nitrile or neoprene are recommended. Chemical protective clothing such as of E.I. DuPont Tyvek-Saranex 23 ®, Tychem®, Barricade® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

RESPIRATORY PROTECTION

A NIOSH -approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

9. PHYSICAL and CHEMICAL PROPERTIES

APPEARANCE

A clear, water-like liquid

ODOR
A sweet, aromatic odor.

ODOR THRESHOLD
4.7 ppm

BASIC PHYSICAL PROPERTIES

BOILING RANGE:	176 ^{o}F (80 ^{o}C)
VAPOR PRESSURE:	74.6 mm Hg @ 68 ^{o}F (20 ^{o}C)
VAPOR DENSITY (air = 1):	2.8
SPECIFIC GRAVITY (H_2O = 1):	0.87
EVAPORATION RATE:	High
PERCENT VOLATILES:	100 %
SOLUBILITY (H_2O):	Insoluble to slightly soluble

10. STABILITY and REACTIVITY

STABILITY: Stable. Hazardous polymerization will not occur.

CONDITIONS TO AVOID and INCOMPATIBLE MATERIALS
Material is stable under normal conditions. Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources

HAZARDOUS DECOMPOSITION PRODUCTS
Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.

11. TOXICOLOGICAL PROPERTIES

ACUTE TOXICITY

Acute Dermal LD50 (rabbits): > 9.4 ml/kg
Acute Oral LD50 (mouse): 4.7 g/kg
Acute inhalation LC50: 10,000 ppm (rat; 7 hours)
Eye irritation (rabbit): mild to moderate
Primary dermal irritation (rabbits): mild to moderate

CHRONIC EFFECTS AND CARCINOGENICITY
Carcinogenicity: OSHA: YES IARC: (1) NTP: YES ACGIH: (A1)

Numerous epidemiological (human) and animal studies have reported an increased incidence or a causal relationship between leukemia and benzene exposure.

Mutagenicity: positive

12. ECOLOGICAL INFORMATION

Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under

Federal and State regulations.

13. DISPOSAL CONSIDERATIONS

Consult federal, state and local waste regulations to determine appropriate disposal options.

14. TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Benzene DOT HAZARD CLASS and PACKING GROUP: 3, PG II DOT IDENTIFICATION NUMBER: UN 1114
DOT SHIPPING LABEL: FLAMMABLE LIQUID

PLACARD:

15. REGULATORY INFORMATION

U.S. FEDERAL, STATE, and LOCAL REGULATORY INFORMATION
Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other regulations at the state and/or local level. Consult those regulations applicable to your facility/operation.

CLEAN WATER ACT (OIL SPILLS)
Any spill or release of this product to "navigable waters" (essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)
Benzene is a CERCLA Section 103 "hazardous substance" subject to CERCLA and SARA Section 304 reporting requirements.

Reportable Quantity: 10 pounds

SARA SECTION 311/312 - HAZARD CLASSES

ACUTE HEALTH	CHRONIC HEALTH	FIRE	SUDDEN RELEASE OF PRESSURE	REACTIVE
X	X	X	--	--

SARA SECTION 313 - SUPPLIER NOTIFICATION
This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

	INGREDIENT NAME	CONCENTRATION PERCENT BY WEIGHT
Benzene	CAS NUMBER: 71-43-2	< 0.1 to 2

CANADIAN REGULATORY INFORMATION (WHMIS)
Class B Division 2 (Flammable Liquid)
Class D Division 2 Subdivision A (Very toxic by other means)
Class D Division 1 Subdivision A (Very toxic acute)
Class D Division 2 Subdivision B (Toxic by other means)

Revision Date: 7/1/2006

MATERIAL SAFETY DATA SHEET

Benzene

MSDS No. 1785

HOVENSA

CALIFORNIA PROPOSITON 65 LIST OF CHEMICALS

This product contains the following chemicals that are included on the Proposition 65 "List of Chemicals" required by the California Safe Drinking Water and Toxic Enforcement Act of 1986:

INGREDIENT NAME (CAS NUMBER)	**Date Listed**
Benzene	2/27/1987

NFPA® HAZARD RATING

HEALTH:	2
FIRE:	3
REACTIVITY:	0

Refer to NJPA 704 "Identification of the Fire Hazards of Materials" for further information

HMIS® HAZARD RATING

HEALTH:	3 *	Slight
FIRE:	3	Moderate
PHYSICAL:	0	Negligible
		* Chronic

SUPERSEDES MSDS DATED: 01/14/1999

ABBREVIATIONS:

AP = Approximately	< = Less than	> = Greater than
N/A = Not Applicable	N/D = Not Determined	ppm = parts per million

ACRONYMS:

ACGIH American Conference of Governmental Industrial Hygienists
AIHA American Industrial Hygiene Association
ANSI American National Standards Institute
(212) 642-4900
API American Petroleum Institute
(202) 682-8000
CERCLA Comprehensive Emergency Response, Compensation, and Liability Act
DOT U.S. Department of Transportation
[General info: (800) 467-4922]
EPA U.S. Environmental Protection Agency HMIS Hazardous Materials Information System IARC International Agency For Research On Cancer
MSHA Mine Safety and Health Administration
NFPA National Fire Protection Association
(617)770-3000
NIOSH National Institute of Occupational Safety and Health
NOIC Notice of Intended Change (proposed change to ACGIH TLV)

NTP National Toxicology Program
OPA Oil Pollution Act of 1990
OSHA U.S. Occupational Safety & Health

Administration
PEL Permissible Exposure Limit (OSHA) RCRA Resource Conservation and Recovery Act
REL Recommended Exposure Limit (NIOSH) SARA Superfund Amendments and Reauthorization Act of 1986 Title III SCBA Self-Contained Breathing Apparatus SPCC Spill Prevention, Control, and Countermeasures
STEL Short-Term Exposure Limit (generally 15 minutes)
TLV Threshold Limit Value (ACGIH) TSCA Toxic Substances Control Act TWA Time Weighted Average (8 hr.)
WEEL Workplace Environmental Exposure Level (AIHA)
WHMIS Canadian Workplace Hazardous Materials Information System

MATERIAL SAFETY DATA SHEET

Benzene **MSDS No. 1785**

HOVENSA

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

Revision Date: 7/1/2006 Page 8 of 8

Safety Data Sheet

Material Name: Diesel Fuel, All Types

SDS No. 9909
US GHS

Synonyms: Ultra Low Sulfur Diesel; Low Sulfur Diesel; No. 2 Diesel; Motor Vehicle Diesel Fuel; Non-Road Diesel Fuel; Locomotive/Marine Diesel Fuel

* * * Section 1 - Product and Company Identification * * *

Manufacturer Information

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS
Emergency # 800-424-9300 CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

GHS Classification:

* * * Section 2 - Hazards Identification * * *

Flammable Liquids - Category 3
Skin Corrosion/Irritation – Category 2
Germ Cell Mutagenicity – Category 2
Carcinogenicity - Category 2
Specific Target Organ Toxicity (Single Exposure) - Category 3 (respiratory irritation, narcosis)
Aspiration Hazard – Category 1
Hazardous to the Aquatic Environment, Acute Hazard – Category 3

GHS LABEL ELEMENTS

Symbol(s)

Signal Word

DANGER

Hazard Statements

Flammable liquid and vapor.
Causes skin irritation.
Suspected of causing genetic defects.
Suspected of causing cancer.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.
Harmful to aquatic life.

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking

Keep container tightly closed.
Ground/bond container and receiving equipment.

Safety Data Sheet

Material Name: Diesel Fuel, All Types **SDS No. 9909**

Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash hands and forearms thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/mist/vapours/spray.

Response

In case of fire: Use water spray, fog or foam to extinguish.
IF ON SKIN (or hair): Wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.
If swallowed: Immediately call a poison center or doctor. Do NOT induce vomiting.
IF exposed or concerned: Get medical advice/attention.

Storage

Store in a well-ventilated place. Keep cool.
Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
68476-34-6	Fuels, diesel, no. 2	100
91-20-3	Naphthalene	<0.1

A complex mixture of hydrocarbons with carbon numbers in the range C9 and higher.

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

First Aid: Skin

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or with waterless hand cleanser. Obtain medical attention if irritation or redness develops. Thermal burns require immediate medical attention depending on the severity and the area of the body burned.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

See Section 9 for Flammability Properties.
Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, and other gaseous agents.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Unsuitable Extinguishing Media

None

Fire Fighting Equipment/Instructions

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other firefighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full face piece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

* * * Section 6 - Accidental Release Measures * * *

Recovery and Neutralization

Carefully contain and stop the source of the spill, if safe to do so.

Materials and Methods for Clean-Up

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Caution, flammable vapors may accumulate in closed containers.

Emergency Measures

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Safety Data Sheet

Material Name: Diesel Fuel, All Types **SDS No. 9909**

Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental Precautions

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Prevention of Secondary Hazards

None

Handling Procedures

* * * Section 7 - Handling and Storage * * *

Handle as a combustible liquid. Keep away from heat, sparks, excessive temperatures and open flame! No smoking or open flame in storage, use or handling areas. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Storage Procedures

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks."

Incompatibilities

Keep away from strong oxidizers.

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

Component Exposure Limits

Fuels, diesel, no. 2 (68476-34-6)

ACGIH: 100 mg/m3 TWA (inhalable fraction and vapor, as total hydrocarbons, listed under Diesel fuel) Skin - potential significant contribution to overall exposure by the cutaneous route (listed under Diesel fuel)

Naphthalene (91-20-3)

ACGIH:	10 ppm TWA
	15 ppm STEL
	Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA:	10 ppm TWA; 50 mg/m3 TWA
NIOSH:	10 ppm TWA; 50 mg/m3 TWA
	15 ppm STEL; 75 mg/m3 STEL

Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

Personal Protective Equipment: Respiratory

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Personal Protective Equipment: Hands

Gloves constructed of nitrile, neoprene, or PVC are recommended.

Personal Protective Equipment: Eyes

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Personal Protective Equipment: Skin and Body

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance:	Clear, straw-yellow.	**Odor:**	Mild, petroleum distillate odor
Physical State:	Liquid	**pH:**	ND
Vapor Pressure:	0.009 psia @ 70 °F (21 °C)	**Vapor Density:**	>1.0
Boiling Point:	320 to 690 °F (160 to 366 °C)	**Melting Point:**	ND
Solubility (H2O):	Negligible	**Specific Gravity:**	0.83-0.876 @ 60°F (16°C)
Evaporation Rate:	Slow; varies with conditions	**VOC:**	ND
Percent Volatile:	100%	**Octanol/H2O Coeff.:**	ND
Flash Point:	>125 °F (>52 °C) minimum	**Flash Point Method:**	PMCC
Upper Flammability Limit (UFL):	7.5	**Lower Flammability Limit (LFL):**	0.6
Burning Rate:	ND	**Auto Ignition:**	494°F (257°C)

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

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible Products

Keep away from strong oxidizers.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

* * * Section 11 - Toxicological Information * * *

Acute Toxicity

A: General Product Information

Harmful if swallowed.

B: Component Analysis - LD50/LC50

Naphthalene (91-20-3)

Inhalation LC50 Rat >340 mg/m3 1 h; Oral LD50 Rat 490 mg/kg; Dermal LD50 Rat >2500 mg/kg; Dermal LD50 Rabbit >20 g/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Contact with eyes may cause mild irritation.

Potential Health Effects: Ingestion

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Potential Health Effects: Inhalation

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

This material has been positive in a mutagenicity study.

Carcinogenicity

A: General Product Information

Suspected of causing cancer.

Studies have shown that similar products produce skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

B: Component Carcinogenicity

Fuels, diesel, no. 2 (68476-34-6)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans (listed under Diesel fuel)

Naphthalene (91-20-3)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
NTP: Reasonably Anticipated To Be A Human Carcinogen (Possible Select Carcinogen)
IARC: Monograph 82 [2002] (Group 2B (possibly carcinogenic to humans))

Reproductive Toxicity

This product is not reported to have any reproductive toxicity effects.

Specified Target Organ General Toxicity: Single Exposure

This product is not reported to have any specific target organ general toxicity single exposure effects.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ general toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Fuels, diesel, no. 2 (68476-34-6)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	35 mg/L [flow-through]	

Naphthalene (91-20-3)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	5.74-6.44 mg/L [flow-through]	
96 Hr LC50 Oncorhynchus mykiss	1.6 mg/L [flow-through]	
96 Hr LC50 Oncorhynchus mykiss	0.91-2.82 mg/L [static]	
96 Hr LC50 Pimephales promelas	1.99 mg/L [static]	

	96 Hr LC50 Lepomis macrochirus 31.0265 mg/L [static]
72 Hr EC50 Skeletonema costatum	0.4 mg/L
48 Hr LC50 Daphnia magna	2.16 mg/L
	48 Hr EC50 Daphnia magna 1.96 mg/L [Flow through]
48 Hr EC50 Daphnia magna	1.09 - 3.4 mg/L

[Static]

Persistence/Degradability

No information available.

Bioaccumulation

No information available.

Mobility in Soil

No information available.

* * * Section 13 - Disposal Considerations * * *

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 14 - Transportation Information * * *

DOT Information

Shipping Name: Diesel Fuel
NA #: 1993 **Hazard Class:** 3 **Packing Group:** III

Placard:

* * * Section 15 - Regulatory Information * * *

Regulatory Information

Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Naphthalene (91-20-3)

CERCLA: 100 lb final RQ; 45.4 kg final RQ

SARA Section 311/312 – Hazard Classes

Acute Health	Chronic Health	Fire	Sudden Release of Pressure	Reactive
X	X	X	--	--

Material Name: Diesel Fuel, All Types **SDS No. 9909**

SARA SECTION 313 - SUPPLIER NOTIFICATION

This product may contain listed chemicals below the de minimis levels which therefore are not subject to the supplier notification requirements of Section 313 of the Emergency Planning and Community Right- To-Know Act (EPCRA) of 1986 and of 40 CFR 372. If you may be required to report releases of chemicals listed in 40 CFR 372.28, you may contact Hess Corporate Safety if you require additional information regarding this product.

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Fuels, diesel, no. 2	68476-34-6	No	No	No	Yes	No	No
Naphthalene	91-20-3	Yes	Yes	Yes	Yes	Yes	No

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

Additional Regulatory Information

Component Analysis - Inventory

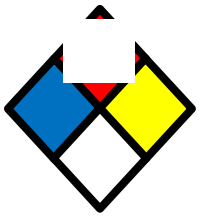
Component	CAS #	TSCA	CAN	EEC
Fuels, diesel, no. 2	68476-34-6	Yes	DSL	EINECS
Naphthalene	91-20-3	Yes	DSL	EINECS

* * * Section 16 - Other Information * * *

0

NFPA® Hazard Rating

Health	1
Fire	2
Reactivity	0



HMIS® Hazard Rating

Health

1* Slight

Fire 2 Moderate

Physical

0 Minimal
*Chronic

Safety Data Sheet

Material Name: Diesel Fuel, All Types
SDS No. 9909

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS
= Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL =
Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

Literature References

None

Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet

MATERIAL SAFETY DATA SHEET

Gasoline, All Grades

MSDS No. 9950

AMERADA HESS CORPORATION

EMERGENCY OVERVIEW DANGER!

EXTREMELY FLAMMABLE - EYE AND MUCOUS MEMBRANE IRRITANT - EFFECTS CENTRAL NERVOUS SYSTEM - HARMFUL OR FATAL IF SWALLOWED - ASPIRATION HAZARD

High fire hazard. Keep away from heat, spark, open flame, and other ignition sources.

NFPA 704 (Section 16)

If ingested, do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs). Contact may cause eye, skin and mucous membrane irritation. Harmful if absorbed through the skin. Avoid prolonged breathing of vapors or mists. Inhalation may cause irritation, anesthetic effects (dizziness, nausea, headache, intoxication), and respiratory system effects.

Long-term exposure may cause effects to specific organs, such as to the liver, kidneys, blood, nervous system, and skin. Contains benzene, which can cause blood disease, including anemia and leukemia.

1. CHEMICAL PRODUCT and COMPANY INFORMATION (rev. Jan-04)

Amerada Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

EMERGENCY TELEPHONE NUMBER (24 hrs): CHEMTREC (800)424-9300
COMPANY CONTACT (business hours): Corporate Safety (732)750-6000
MSDS Internet Website www.hess.com/about/environ.html

SYNONYMS: Hess Conventional (Oxygenated and Non-oxygenated) Gasoline; Reformulated Gasoline (RFG); Reformulated Gasoline Blendstock for Oxygenate Blending (RBOB); Unleaded Motor or Automotive Gasoline

See Section 16 for abbreviations and acronyms.

2. COMPOSITION and INFORMATION ON INGREDIENTS * (rev. Jan-04)

INGREDIENT NAME (CAS No.)	CONCENTRATION PERCENT BY WEIGHT
Gasoline (86290-81-5)	100
Benzene (71-43-2)	0.1 - 4.9 (0.1 - 1.3 reformulated gasoline)
n-Butane (106-97-8)	< 10
Ethyl Alcohol (Ethanol) (64-17-5)	0 - 10
Ethyl benzene (100-41-4)	< 3
n-Hexane (110-54-3)	0.5 to 4
Methyl-tertiary butyl ether (MTBE) (1634-04-4)	0 to 15.0

Tertiary-amyl methyl ether (TAME) (994-05-8)	0 to 17.2
Toluene (108-88-3)	1 - 25
1,2,4- Trimethylbenzene (95-63-6)	< 6
Xylene, mixed isomers (1330-20-7)	1 - 15

A complex blend of petroleum-derived normal and branched-chain alkane, cycloalkane, alkene, and aromatic hydrocarbons. May contain antioxidant and multifunctional additives. Non-oxygenated Conventional Gasoline and RBOB do not have oxygenates (Ethanol or MTBE and/or TAME). Oxygenated Conventional and Reformulated Gasoline will have oxygenates for octane enhancement or as legally required.

Revision Date: 01/08/04 Page 1 of 8

MATERIAL SAFETY DATA SHEET

Gasoline, All Grades MSDS No. 9950

AMERADA HESS CORPORATION

3. HAZARDS IDENTIFICATION (rev. Dec-97)

EYES
Moderate irritant. Contact with liquid or vapor may cause irritation.

SKIN
Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are exposed repeatedly.

INGESTION
The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

INHALATION
Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

CHRONIC EFFECTS and CARCINOGENICITY
Contains benzene, a regulated human carcinogen. Benzene has the potential to cause anemia and other blood diseases, including leukemia, after repeated and prolonged exposure. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with systemic toxicity. See also Section 11 - Toxicological Information.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash). Chronic respiratory disease, liver or kidney dysfunction, or pre-existing central nervous system disorders may be aggravated by exposure.

4. FIRST AID MEASURES (rev. Dec-97)

EYES

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

SKIN

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser. Obtain medical attention if irritation or redness develops.

INGESTION

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

INHALATION

Remove person to fresh air. If person is not breathing, ensure an open airway and provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

Revision Date: 01/08/04 Page 2 of 8

MATERIAL SAFETY DATA SHEET

Gasoline, All Grades MSDS No. 9950

AMERADA HESS CORPORATION

5. FIRE FIGHTING MEASURES (rev. Dec-97)

FLAMMABLE PROPERTIES:

FLASH POINT:	-45 ^{o}F (-43^{o}C)
AUTOIGNITION TEMPERATURE:	highly variable; > 530 ^{o}F (>280 ^{o}C)
OSHA/NFPA FLAMMABILITY CLASS:	1A (flammable liquid)
LOWER EXPLOSIVE LIMIT (%):	1.4%
UPPER EXPLOSIVE LIMIT (%):	7.6%

FIRE AND EXPLOSION HAZARDS

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. Flowing product may be ignited by self-generated static electricity. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

EXTINGUISHING MEDIA

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, or Halon.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

During certain times of the year and/or in certain geographical locations, gasoline may contain MTBE and/or TAME. Firefighting foam suitable for polar solvents is recommended for fuel with greater than 10% oxygenate concentration - refer to NFPA 11 “Low Expansion Foam - 1994 Edition.”

FIRE FIGHTING INSTRUCTIONS

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other firefighting equipment.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full face piece and full protective clothing.

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

See Section 16 for the NFPA 704 Hazard Rating.

6. ACCIDENTAL RELEASE MEASURES (rev. Dec-97)

ACTIVATE FACILITY SPILL CONTINGENCY or EMERGENCY PLAN.

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product

vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal - caution, flammable vapors may accumulate in closed containers. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

7. HANDLING and STORAGE (rev. Dec-97)

HANDLING PRECAUTIONS

******USE ONLY AS A MOTOR FUEL******
******DO NOT SIPHON BY MOUTH******

Handle as a flammable liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low

flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents.

STORAGE PRECAUTIONS

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

WORK/HYGIENIC PRACTICES

Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

8. EXPOSURE CONTROLS and PERSONAL PROTECTION (rev. Jan-04)

EXPOSURE LIMITS

Component (CAS No.)	Exposure Limits			
	Source	TWA (ppm)	STEL (ppm)	Note
Gasoline (86290-81-5)	ACGIH	300	500	A3
Benzene (71-43-2)	OSHA	1	5	Carcinogen
	ACGIH	0.5	2.5	A1, skin
	USCG	1	5	
n-Butane (106-97-8)	ACGIH	800	--	2003 NOIC: 1000 ppm (TWA) Aliphatic Hydrocarbon Gases Alkane (C1-C4)
Ethyl Alcohol (ethanol) (64-17-5)	OSHA	1000	--	
	ACGIH	1000	--	A4
Ethyl benzene (100-41-4)	OSHA	100	--	
	ACGIH	100	125	A3

Component (CAS No.)	Exposure Limits	
	Source	TWA (ppm)

STEL (ppm)

Note

n-Hexane (110-54-3) OSHA ACGIH

500
50

--
-- skin

Methyl-tertiary butyl ether [MTBE] (1634-04-4) ACGIH 50 A3

Tertiary-amyl methyl ether [TAME] (994-05-8) None established

Toluene (108-88-3) OSHA ACGIH

200
50 --

Ceiling: 300 ppm; Peak: 500 ppm (10 min.) A4 (skin)

1,2,4- Trimethylbenzene (95-63-6) ACGIH 25 --

Xylene, mixed isomers (1330-20-7) OSHA ACGIH

100
100

--
150 A4

ENGINEERING CONTROLS
Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

EYE/FACE PROTECTION
Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

SKIN PROTECTION
Gloves constructed of nitrile or neoprene are recommended. Chemical protective clothing such as that made of of E.I. DuPont Tychem ®, products or equivalent is recommended based on degree of exposure.

Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

RESPIRATORY PROTECTION
A NIOSH-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection and limitations.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

9. PHYSICAL and CHEMICAL PROPERTIES (rev. Jan-04)

APPEARANCE
A translucent, straw-colored or light yellow liquid

ODOR
A strong, characteristic aromatic hydrocarbon odor. Oxygenated gasoline with MTBE and/or TAME may have a sweet, ether-like odor and is detectable at a lower concentration than non-oxygenated gasoline.

ODOR THRESHOLD

	Odor Detection	Odor Recognition
Non-oxygenated gasoline:	0.5 - 0.6 ppm	0.8 - 1.1 ppm
Gasoline with 15% MTBE:	0.2 - 0.3 ppm	0.4 - 0.7 ppm
Gasoline with 15% TAME:	0.1 ppm	0.2 ppm

BASIC PHYSICAL PROPERTIES

BOILING RANGE:	85 to 437 ^{o}F (39 to 200 ^{o}C)
VAPOR PRESSURE:	6.4 - 15 RVP @ 100 ^{o}F (38 ^{o}C) (275-475 mm Hg @ 68 ^{o}F (20 ^{o}C)
VAPOR DENSITY (air = 1):	AP 3 to 4
SPECIFIC GRAVITY (H_2O = 1):	0.70 – 0.78
EVAPORATION RATE:	10-11 (n-butyl acetate = 1)
PERCENT VOLATILES:	100 %

SOLUBILITY (H_2O): Non-oxygenated gasoline - negligible (< 0.1% @ 77 ^{o}F). Gasoline with 15% MTBE - slight (0.1 - 3% @ 77 ^{o}F); ethanol is readily soluble in water

10. STABILITY and REACTIVITY (rev. Dec-94)

STABILITY: Stable. Hazardous polymerization will not occur.

CONDITIONS TO AVOID
Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources

INCOMPATIBLE MATERIALS
Keep away from strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.

11. TOXICOLOGICAL PROPERTIES (rev. Dec-97)

ACUTE TOXICITY
Acute Dermal LD50 (rabbits): > 5 ml/kg
Acute Oral LD50 (rat): 18.75 ml/kg
Primary dermal irritation (rabbits): slightly irritating
Draize eye irritation (rabbits): non-irritating
Guinea pig sensitization: negative

CHRONIC EFFECTS AND CARCINOGENICITY
Carcinogenicity: OSHA: NO IARC: YES - 2B NTP: NO ACGIH: YES (A3)

IARC has determined that gasoline and gasoline exhaust are possibly carcinogenic in humans. Inhalation exposure to completely vaporized unleaded gasoline caused kidney cancers in male rats and liver tumors in female mice. The U.S. EPA has determined that the male kidney tumors are species-specific and are irrelevant for human health risk assessment. The significance of the tumors seen in female mice is not known. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with effects to the central and peripheral nervous systems, liver, and kidneys. The significance of these animal models to predict similar human response to gasoline is uncertain.

This product contains benzene. Human health studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-forming system (particularly bone marrow), and serious blood disorders such as aplastic anemia and leukemia. Benzene is listed as a human carcinogen by the NTP, IARC, OSHA and ACGIH.

This product may contain methyl tertiary butyl ether (MTBE): animal and human health effects studies indicate that MTBE may cause eye, skin, and respiratory tract irritation, central nervous system depression and neurotoxicity. MTBE is classified as an animal carcinogen (A3) by the ACGIH.

12. ECOLOGICAL INFORMATION (rev. Jan-04)

Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations. If released, oxygenates such as ethers and alcohols will be expected to exhibit fairly high mobility in soil, and therefore may leach into groundwater. The API (www.api.org) provides a number of useful references addressing petroleum and oxygenate contamination of groundwater.

13. DISPOSAL CONSIDERATIONS (rev. Dec-97)

Consult federal, state and local waste regulations to determine appropriate disposal options.

Revision Date: 01/08/04 Page 6 of 8

MATERIAL SAFETY DATA SHEET

Gasoline, All Grades MSDS No. 9950

AMERADA HESS CORPORATION

14. TRANSPORTATION INFORMATION (rev. Jan-04)

DOT PROPER SHIPPING NAME: Gasoline DOT HAZARD CLASS and PACKING GROUP: 3, PG II DOT IDENTIFICATION NUMBER: UN 1203
DOT SHIPPING LABEL: FLAMMABLE LIQUID

PLACARD:

15. REGULATORY INFORMATION (rev. Jan-04)

U.S. FEDERAL, STATE, and LOCAL REGULATORY INFORMATION

This product and its constituents listed herein are on the EPA TSCA Inventory. Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other federal, state, or local regulations; consult those regulations applicable to your facility/operation.

CLEAN WATER ACT (OIL SPILLS)

Any spill or release of this product to "navigable waters" (essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) or, if not practical, the U.S. Coast Guard with follow-up to the National Response Center, as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)

The CERCLA definition of hazardous substances contains a “petroleum exclusion” clause which exempts crude oil, refined, and unrefined petroleum products and any indigenous components of such. However, other federal reporting requirements (e.g., SARA Section 304 as well as the Clean Water Act if the spill occurs on navigable waters) may still apply.

SARA SECTION 311/312 - HAZARD CLASSES

ACUTE HEALTH	CHRONIC HEALTH	FIRE	SUDDEN RELEASE OF PRESSURE	REACTIVE
X	X	X	--	--

SARA SECTION 313 - SUPPLIER NOTIFICATION

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

INGREDIENT NAME (CAS NUMBER)	CONCENTRATION WT. PERCENT
Benzene (71-43-2)	0.1 to 4.9 (0.1 to 1.3 for reformulated gasoline)
Ethyl benzene (100-41-4)	< 3
n-Hexane (110-54-3)	0.5 to 4
Methyl-tertiary butyl ether (MTBE) (1634-04-4)	0 to 15.0
Toluene (108-88-3)	1 to 15
1,2,4- Trimethylbenzene (95-63-6)	< 6
Xylene, mixed isomers (1330-20-7)	1 to 15

US EPA guidance documents (www.epa.gov/tri) for reporting Persistent Bioaccumulating Toxics (PBTs) indicate this product may contain the following deminimis levels of toxic chemicals subject to Section 313 reporting:

INGREDIENT NAME (CAS NUMBER)	CONCENTRATION - Parts per million (ppm) by weight
Polycyclic aromatic compounds (PACs)	17
Benzo (g,h,i) perylene (191-24-2)	2.55
Lead (7439-92-1)	0.079

MATERIAL SAFETY DATA SHEET

Gasoline, All Grades MSDS No. 9950

AMERADA HESS CORPORATION

CANADIAN REGULATORY INFORMATION (WHMIS)
Class B, Division 2 (Flammable Liquid)

Class D, Division 2A (Very toxic by other means) and Class D, Division 2B (Toxic by other means)

16. OTHER INFORMATION (rev. Jan-04)

NFPA® HAZARD RATING	HEALTH:	1	Slight
	FIRE:	3	Serious
	REACTIVITY:	0	Minimal
HMIS® HAZARD RATING	HEALTH:	1 *	Slight
	FIRE:	3	Serious
	REACTIVITY:	0	Minimal
	* CHRONIC		

SUPERSEDES MSDS DATED: 12/30/97

ABBREVIATIONS:
AP = Approximately < = Less than > = Greater than
N/A = Not Applicable N/D = Not Determined ppm = parts per million

ACRONYMS:

ACGIH American Conference of Governmental Industrial Hygienists
AIHA American Industrial Hygiene Association
ANSI American National Standards Institute
(212)642-4900
API American Petroleum Institute
(202)682-8000
CERCLA Comprehensive Emergency Response, Compensation, and Liability Act
DOT U.S. Department of Transportation
[General Info: (800)467-4922]
EPA U.S. Environmental Protection Agency HMIS Hazardous Materials Information System IARC International Agency For Research On Cancer
MSHA Mine Safety and Health Administration
NFPA National Fire Protection Association
(617)770-3000
NIOSH National Institute of Occupational Safety and Health
NOIC Notice of Intended Change (proposed change to ACGIH TLV)
NTP National Toxicology Program
OPA Oil Pollution Act of 1990
OSHA U.S. Occupational Safety & Health Administration
PEL Permissible Exposure Limit (OSHA)
RCRA Resource Conservation and Recovery Act REL Recommended Exposure Limit (NIOSH) SARA Superfund Amendments and

Reauthorization Act of 1986 Title III SCBA Self-Contained Breathing Apparatus SPCC Spill Prevention, Control, and Countermeasures
STEL Short-Term Exposure Limit (generally 15 minutes)
TLV Threshold Limit Value (ACGIH) TSCA Toxic Substances Control Act TWA Time Weighted Average (8 hr.)
WEEL Workplace Environmental Exposure Level (AIHA)
WHMIS Workplace Hazardous Materials Information System (Canada)

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

Revision Date: 01/08/04 Page 8 of 8

MATERIAL SAFETY DATA SHEET

CRUDE OIL

IMPORTANT: Read this MSDS before handling and disposing of this product and pass this information on to employees, customers, and users of this product.

1. PRODUCT and COMPANY IDENTIFICATION

Material Identity Crude Oil

Trade Name(s) Oriente, Cano Limon, Line 63, Shell-Ventura, SJV Light, Rainbow, West Texas Inter-Cushing, Peace River-Canadian, Federated Crude-Canadian, Pembina Crude-Canadian, Forcados, Cabinda, Basrah Light, Basrah, Arab Medium, Elang Crude, Girassol

Other Name(s) Earth Oil, Petroleum Oil, Rock Oil, Zafiro

Chemical Description This material is a C1 to C50 hydrocarbon liquid which contains approximately .9 to 2.8 wt% sulfur compounds

Manufacturer's Address

BP West Coast Products LLC
Carson Business Unit
1801 E. Sepulveda Boulevard
Carson, California 90749-6210

BP West Coast Products LLC
Cherry Point Business Unit
4519 Grandview Road
Blaine, Washington 98230

Telephone Numbers Emergency Health Information: 1 (800) 447-8735

2. COMPONENTS and EXPOSURE LIMITS

Exposure Limits

1 ` 2

ACGIH **OSHA** 3

Component

CAS No. **% Composition By Volume**

TLV **PEL**

Units **Type**

CRUDE OIL, PETROLEUM 8002-05-9	EQ	100		N/AP	N/AP

which contains: BUTANE

106-97-8	AP	0.8 to 1	800	800	pm	TWA	
HEXANE (N-HEXANE)							
110-54-3	AP	0.3 to 1	50 skin	50	ppm	TWA	
ISOPENTANE							
78-78-4	AP	0.3 to 1.5	N/AP 600	750 600	ppm ppm	STEL TWA	
PENTANE							
109-66-0	AP	1.5 to 2.5	N/AP 600	750 600	ppm ppm	STEL TWA	

Other applicable exposure guidelines:

COAL TAR PITCH VOLATILES, AS BENZENE SOLUBLES [4]				
65996-93-2	0.2	0.2	mg/m3	TWA
OIL MIST, MINERAL				
8012-95-1	10 5	N/AP 5	mg/m3 mg/m3	STEL TWA
STODDARD SOLVENT				
8052-41-3	100	100	ppm	TWA

Stoddard Solvent exposure limits are listed as an exposure guideline for hydrocarbon vapors that may be similar to those derived from crude oil.

Since specific exposure standards or control limits have not been established for this material, the exposure limits shown here are suggested as minimum control guidelines.

[1] Carcinogen displayed after Component Name. Listed by
[2] See Abbreviations on last page
[3]

(1)

NTP,

(2)

IARC,

(3)

OSHA,

(4)

Other

The OSHA exposure limits were changed in 1993 due to a federal court ruling. ARCO has chosen to list the 1989 OSHA exposure limits in this document as they are generally more stringent and therefore more protective than the current exposure limits. (Refer to 29 CFR 1910.1000).

3. HAZARD IDENTIFICATION

IMMEDIATE HAZARDS

DANGER

HIGHLY FLAMMABLE! OSHA/NFPA Class 1B flammable liquid. KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME! CONTAINS PETROLEUM DISTILLATES! Avoid breathing vapors or mists. Use only with adequate ventilation. If swallowed, do not induce vomiting since aspiration into the lungs may cause chemical pneumonia. Obtain prompt medical attention.

May cause irritation or more serious skin disorders! May be harmful if inhaled! May cause irritation of the nose, throat, and lungs, headache, dizziness, drowsiness, loss of coordination, fatigue, nausea and labored breathing. May cause irregular heartbeats. Avoid prolonged or repeated liquid, mist, and vapor contact with eyes, skin, and respiratory tract.

Wash hands thoroughly after handling.

Sulfur compounds in this material may decompose to release hydrogen sulfide gas which may accumulate to potentially lethal concentrations in enclosed air spaces. Vapor concentrations of hydrogen sulfide above 50 ppm, or prolonged exposure at lower concentrations, may saturate human odor perceptions so that the smell of gas may not be apparent. DO NOT DEPEND ON THE SENSE OF SMELL TO DETECT HYDROGEN SULFIDE!

Long-term tests show that similar crude oils have produced skin tumors on laboratory animals.

Crude oils contain some polycyclic aromatic hydrocarbons which have been shown to be carcinogenic after prolonged or repeated skin contact in laboratory animals.

Routes of Exposure **Signs and Symptoms**

Inhalation
(Primary)

Vapors or mists from this material, at concentrations greater than the recommended exposure limits in Section 2, can cause irritation of the nose, throat, and lungs, headache, dizziness, drowsiness, loss of coordination, fatigue, nausea and labored breathing. Airborne concentrations above the recommended exposure limits are not anticipated during normal workplace activities due to the slow evaporation of this material at ambient temperatures.

Exposure to moderate airborne concentrations of hydrogen sulfide (less than 50 ppm) can result in irritation of the eyes, nose and throat, headache, dizziness, shortness of breath, nausea and nervousness. Exposure to hydrogen sulfide vapor above 200 ppm may cause irritation of mucous membranes, inflammation of the lungs, accumulation of fluid in the lungs, irregular heartbeats, unconsciousness with convulsions or impaired breathing with suffocation. Exposure to higher concentrations of hydrogen sulfide vapor (above 500 ppm) may cause rapid death.

Eye Contact	May cause slight eye irritation.
Skin Contact	Moderate skin irritation may occur upon short-term exposure.
	Exposure to sunlight may increase the degree of skin irritation.
	Absorption through the skin may occur and produce toxic effects (see Summary of Chronic Hazards).
	Ingestion May cause irritation of the mouth, throat and gastrointestinal tract leading to nausea, vomiting, diarrhea, and restlessness. May cause headache, dizziness, drowsiness, loss of coordination, fatigue, nausea and labored breathing.

ASPIRATION HAZARD: Aspiration into the lungs may cause chemical pneumonia. This material can enter the lungs during swallowing or vomiting and may cause lung inflammation and damage which in severe cases may be fatal.

Summary of Chronic Hazards and Special Health Effects

Personnel with preexisting central nervous system (CNS) disease, skin disorders, or chronic respiratory diseases should be evaluated by an appropriate health professional before exposure to this material.

Prolonged/repeated skin exposure, inhalation or ingestion of this material may result in adverse dermal or systemic effects. Avoid prolonged or repeated exposure.

May be harmful if absorbed through the skin. Prolonged or repeated contact may create cancer risk, organ damage, and adversely affect reproduction, fetal development and fetal survival. Avoid all skin contact.

Neurotoxic effects have been associated with n-hexane, a component of this material. Avoid prolonged or repeated exposure.

See Section 11 for Additional Toxicological Information.

4. EMERGENCY and FIRST AID

Inhalation Immediately remove personnel to area of fresh air. For respiratory distress, give oxygen, rescue breathing, or administer CPR (cardiopulmonary resuscitation) if necessary. Obtain prompt medical attention.

Eye Contact Flush eyes with clean, low-pressure water for at least 15 minutes, occasionally lifting the eyelids. If pain or redness persists after flushing, obtain medical attention.

Skin Contact Immediately remove contaminated clothing. Wash affected skin thoroughly with soap and water. If irritation persists, obtain medical attention.

Ingestion Do not induce vomiting since aspiration into the lungs may cause lipoid pneumonia. Obtain prompt medical attention.

Emergency Medical Treatment See above procedures. Personnel with pre-existing central nervous system disease, skin disorders, chronic respiratory diseases, or impaired liver of kidney function should avoid exposure to this product.

Procedures

5. FIRE and EXPLOSION

Flash Point (Method)* Based on NFPA Petroleum, Crude AP 20°F to 90°F
Autoignition Temperature (Method)* N/DA
Flammable Limits (% Vol. in Air* **Lower** AP 1 +
Upper AP 8 +

* At Normal Atmospheric Temperature and Pressure
+ Based on NFPA 325

NFPA Hazard Rating:
Health: 2 = Moderate
Fire: 3 = High
Reactivity: 0 = Insignificant
Special:

Fire and Explosion Hazards

HIGHLY FLAMMABLE! This material releases flammable vapors at or below ambient temperatures. When mixed with air in certain proportions and exposed to an ignition source, these vapors can burn in the open or explode in confined spaces.

Flammable vapors may travel long distances along the ground before reaching a point of ignition and flashing back.

Open top tanks involved in a fire have a potential for "boil-over" if water or water-in-oil emulsion is at the bottom of the tank. Boil-over may result in a large expulsion of burning oil from the tank, greatly increasing the fire area.

Extinguishing Media

Special Firefighting Procedures

Foam, Dry chemical, Carbon dioxide (CO2)

Water and water fog can cool the fire but may not extinguish the fire.

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of combustion products and oxygen deficiencies. Cool tanks and containers exposed to fire with water. If firefighters cannot work upwind to

the fire, respiratory protective equipment must be worn unless and until atmospheric monitoring indicates that such protection is not required. Improper use of water and extinguishing
media containing water may cause frothing which can spread the fire over a larger area. Water fog or spray are of value for cooling tank shells and surfaces exposed to fire, but may not achieve extinguishment.

6. ACCIDENTAL RELEASE MEASURES

Precautions if Material is Spilled or Released

Contain spill, evacuate non-essential personnel, and safely stop flow. On hard surfaces, spilled material may create a slipping hazard. Equip cleanup crews with proper protective equipment (as specified in Section 8) and advise of hazards. Clean up by recovering as much spilled or contaminated materials as possible and placing into closed containers. Consult with an environmental professional for the federal, state and local cleanup and reporting requirements for spills and releases.

7. HANDLING and STORAGE

Handling, Storage and Decontamination Procedures

Store and transport in accordance with all applicable laws. KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME! KEEP CONTAINERS CLOSED, PLAINLY LABELED AND OUT OF CLOSED VEHICLES! Containers should be able to withstand pressures expected from warming or cooling in storage. Ground all drums and transfer vessels when handling.
Store in cool (80°F or below), well-ventilated location. All electrical equipment in storage and/or handling areas should be installed in accordance with applicable requirements of the National Electrical Code (NEC).

KEEP OUT OF REACH OF CHILDREN!

Empty containers retain some liquid and vapor residues, and hazard precautions must be observed when handling empty containers.

For determining National Electrical Code (NEC) Hazardous (Classified) location requirements for electrical installations, consider this material Class 1, Group D.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Where possible, use adequate ventilation to keep vapor and mist concentrations of this material below the Occupational Exposure Limits shown in Section 2. Electrical equipment should comply with National Electrical Code (NEC) standards (see Section 7).

Respiratory Where there is potential for exposure to hydrogen sulfide gas in excess of the permissible exposure limit, a NIOSH/MSHA-approved supplied-air respirator operated in positive pressure mode should be worn.

If hydrogen sulfide gas is not present in excess of permissible exposure limits, a NIOSH/MSHA-approved air-purifying respirator with an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations of hydrocarbon vapor may exceed the exposure limits in Section 2. Where work conditions may generate airborne mists of the material, also use a high-efficiency particulate pre-filter. Consult a

health and safety professional for guidance in respirator selection. Respirator use should comply with OSHA 29 CFR 910.134.

CAUTION: The protection provided by air-purifying respirators is limited. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are not known, or if concentrations exceed the protection limits of the air-purifying respirator.

Eyes Eye protection should be worn. If there is potential for splashing or spraying, chemical protective goggles and/or a face shield should be worn. If contact lenses are worn, consult an eye specialist or a safety professional for additional precautions. Suitable eye wash water should be available in case of eye contact with this material.

Skin Avoid all skin contact with this material. If conditions of use present any potential for skin contact, clean and impervious clothing such as gloves, apron, boots, and facial protection should be worn. Neoprene, Nitrile, Butyl Rubber or Viton glove material is recommended. When working around equipment or processes which may create the potential for skin contact, full body coverage should be worn, which consist of impervious boots and oil- resistant coated Tyvek suit or other impervious jacket and pants.

Non-impervious clothing which accidentally becomes contaminated with this material should be removed promptly and not reworn until the clothing is washed thoroughly and the contamination is effectively removed. Discard soaked leather goods.

Other Hygienic and Work Practices

Use good personal hygiene practices. If skin contact should occur, material should be removed from the skin with a waterless hand cleaner, and the affected area should then be washed with a mild soap and water. Wash hands and other exposed areas thoroughly before eating, drinking, smoking or using toilet facilities.

9. PHYSICAL and CHEMICAL PROPERTIES

Boiling Point:	AP -54°F to 1100°F
Viscosity Units, Temp. (Method):	N/DA
Dry Point:	N/AP
Freezing Point:	N/DA
Vapor Pressure, Temp. (Method):	AP 1 to 2 at 100°F (REID-PSIA)
Volatile Characteristics:	Appreciable
Specific Gravity (H_2O = 1 @ 39.2 F):	AP 0.88
Vapor Sp. Gr. (Air = 1.0 @ 60°F - 90°F):	N/DA
Solubility in Water:	Negligible
PH:	N/AP
	Appearance and Odor: Thick light yellow to dark black colored liquid. Petroleum hydrocarbon odor.
Other Physical and Chemical Properties:	Total sulfur = approx. 1.1% - 2.8% Hydrogen sulfide content is less than 5 ppm dissolved in liquid Vanadium = approx. 210 ppm

10. STABILITY and REACTIVITY

Stability	Stable
Hazardous Polymerization	Not expected to occur.
Other Chemical Reactivity	N/AP

Conditions to Avoid

Materials to Avoid

Hazardous or Decomposition Products

Heat, sparks, and open flame.

Strong acids, alkalis, and oxidizers such as liquid chlorine and oxygen.

Burning or excessive heating may produce carbon monoxide and other harmful gases or vapors including oxides of sulfur and nitrogen.

11. TOXICOLOGICAL INFORMATION

Toxicological Information

The information found in this section is written for medical, toxicology, occupational health and safety professionals. This section provides technical information on the toxicity testing of this or similar materials or its components. If clarification of the technical content is needed, consult a professional in the areas of expertise listed above.

Prolonged/ Repeated Exposures

IARC has determined there is "limited evidence for the carcinogenicity in experimental animals of crude oil" and "inadequate evidence for the carcinogenicity in humans of crude oil." IARC concludes that "crude oil is not classifiable as to its carcinogenicity to humans (Group 3)."

Crude oil administered orally to pregnant rats during gestation produced increased number of resorptions and decrease in fetal weight and length.

Exposure to N-hexane at concentrations considerably higher than the current permissible exposure limit has reportedly been associated with peripheral neuropathy.

12. ECOLOGICAL INFORMATION

Not Available

13. DISPOSAL CONSIDERATIONS

Waste Disposal

Methods

Maximize recovery for reuse or recycling. Consult environmental professional to determine if state or federal regulations would classify spilled or contaminated materials as a hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Comply with all federal, state and local laws pertaining to waste management.

14. TRANSPORT INFORMATION

UN Proper Shipping Name	Petroleum crude oil
UN Hazard Class	3
UN Number	UN1267
UN Packing Group	PGI

15. REGULATORY INFORMATION

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA), TITLE III

Section 311/312 Hazard Categories:
Immediate (acute) health hazard
Delayed (chronic) health hazard
Fire hazard

No chemicals in this product exceed the threshold reporting level established by SARA Title III, Section 313 and 40 CFR 372.

TOXIC SUBSTANCES CONTROL ACT (TSCA)
All components of this product are listed on the TSCA Inventory.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA)
This material is covered by CERCLA's PETROLEUM EXEMPTION.

(Refer to 40 CFR 307.14)
CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 - PROPOSITION 65

PROP 65 WARNING LABEL:
Chemicals known to the State to cause cancer, birth defects, or other reproductive harm are found in gasoline, crude oil, and many other petroleum products and their vapors, or result from their use. Read and follow label directions and use care when handling or using all petroleum products.

WARNING:
This product contains the following chemical(s) listed by the state of California as known to cause cancer or birth defects or other reproductive harm.

MINERAL OILS, UNTREATED **(C)**

Other Prop 65 chemicals will result under certain conditions from the use of this material. For example, burning fuels produces combustion products including carbon monoxide, a Prop 65 reproductive toxin.

(C) = Carcinogen

CRUDE OIL MSDS No.
RS296

16. OTHER INFORMATION

General Comments

The information and conclusions herein reflect normal operating conditions and may be from sources other than direct test data on the mixture itself.

Abbreviations:	EQ = Equal	AP = Approximately	N/P = No Applicable Information Found
	LT = Less Than	UK = Unknown	N/AP = Not Applicable
	GT = Greater Than	TR = Trace	N/DA = No Data Available

Disclaimer of Liability

The information in this MSDS was obtained from sources which we believe are reliable. **HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS CORRECTNESS.**

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. **FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.**

This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

Print Date: 01/01/2002
Page 7 of 7