



# Vacuum Truck Standard Operating Plan (SOP)

*The objective of this program is to establish the procedures associated with safe Vacuum Truck and Heavy Equipment use. This program applies to any H2 Enterprises owned or leased equipment and any subcontractor owned or leased equipment. The program is outlined as follows:*

## 1.0 Responsibilities

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### 1.1 Project Management

Project Management is responsible for the overall implementation of this Safety Program and specifically the following duties:

- Ensuring that the right equipment is selected for the job.
- Ensuring that the equipment is in a safe operating condition.
- Ensuring that the operators are adequately trained.
- Ensuring that communication between the operator and crewmembers is adequate to perform the anticipated functions safely.
- Coordinating and scheduling periodic maintenance of equipment with the Equipment Department.

### 1.2 Operators

Operators are responsible for safe operation of the equipment, to include but not limited to the following items:

- Each operator shall be held responsible for those operations under their direct control, Only Trained operators will be allowed to operate any and all equipment for H2 ENTERPRISES.
- Operators will adhere to the Equipment's specifications and manufactures load and rate limits at all times. The load charts MUST be posted inside of the cab and legible.
- Designated and assigned operators will maintain current State licenses, for vacuum trucks, and Semi-tractor trailer and any of the fleet that is able to carry more than 26000 pounds will have at a minimum of Class B CDL, for trailers Class A with Haz-mat endorsement (for tank trailers). (See Employee handbooklet for more information) Operators must have the physical ability to perform operating functions safely. When physically or mentally unfit the operator shall not engage in the operation of equipment.
- Operators shall not engage in any practice, which will divert their attention while actively engaged in operating equipment. (Use of Cell Phones or any other electronic devise that will distract the operator from his duties)

- Operators will be responsible for the lubrication of the mechanical devices on the equipment, the operator will grease and inspect the machine according to the manufacture's recommendations prior to each use. Including cleaning of Glass on cabs and cleaning of all Tracks on tracked equipment. **(See Operator Acknowledgment for additional expectations)**
- Conduct and document inspections prior to use daily, if equipment isn't working properly RED TAG equipment (Take out of service) Notify Supervisor/Mechanic.
- Routine (daily) preventative maintenance.
- Securing equipment at the end of their work shift.

### 1.3 Equipment Department

The Equipment Department coordinates and interfaces with field operations personnel to ensure that equipment is maintained in a safe condition. Furthermore, the Equipment Department will conduct periodic inspections and audits to assure compliance with this program.

### 1.4 H2 ENTERPRISES HSE Department

The H2 ENTERPRISES HSE Department coordinates and interfaces with field operations personnel to ensure that safe work practices, materials and necessary training have been conducted. Furthermore, the H2 ENTERPRISES HSE Department will conduct regular inspections and audits to assure compliance with this program.

## 2.0 General Guidelines

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- All equipment shall be maintained in safe working condition and shall be appropriate and adequate for the intended use.
- Only authorized personnel shall operate equipment.
- Equipment maintenance is to be performed only by approved personnel. Prior to performing any service or repair work, all equipment shall be:
  - a. Stopped and positively secured against movement or operation,
  - b. Locked and tagged out-of-service, unless it is designed to be serviced while running.
  - c. While equipment is being serviced or repaired, the operator shall dismount until the service or repair is completed. The operator will then make a complete walk-around safety check before remounting.
- Vacuum truck operators will document pre-shift safety inspections of their equipment, and any conditions that effect safe operation of the piece of equipment will be corrected prior to its continued use. H2 ENTERPRISES personnel must inspect equipment when it arrives on a project and before use. Subcontractors are expected to use their own forms, but they may use **Attachment A** if they feel it is adequate for the equipment.
- Equipment shall not be operated unless all required safety devices (seat belt, horn, backup alarm, brakes, warning lights, bonded and grounded hoses, multi-gas monitoring) are in place and functioning properly.
- All off-road earthmoving equipment such as loaders, dozers, scrapers, motor graders, rock trucks, tractors, rollers and compactors shall be equipped with seat belts and roll-over protective structures (ROPS).

### Potential Hazards for Vacuum Truck operators

- All equipment and motor vehicles with an obstructed view to the rear shall be equipped with an automatic back-up alarm that can be heard above and distinguished from associated background noise levels.
- Mobile equipment shall not be left unattended (i.e. operator is more than 25-feet from the unit) unless it is parked with ground engaging tools lowered, and brakes set.
- Equipment parked at night next to roadway traffic shall be at least 40' from the edge of the roadway. Equipment parked in these locations should be lighted, barricaded or otherwise clearly marked.
- Personnel shall not be transported or ride on equipment or vehicles that are not equipped with seats for passengers.
- All employees working around heavy or mobile equipment should wear class 2 reflective vests, at a minimum.
- Hearing Protection worn when operating Vacuum truck along with a minimum of Safety glasses with face shield while hooking and unhooking hoses, chemical gloves is required if hydrocarbons is detected in the load.
- When disconnecting hoses on vacuum trucks, be SURE that no pressure is on the line prior to cracking the ears of the hose. Best practice – Shut off valve at source first, create suction and crack ear so that any liquid will be caught in truck before closing off valve on trailer. USE of Drip bucket will be required to keep liquids from leaking into the ground. **USE OF INTERNALLY GROUNDED HOSES ONLY WILL BE USED BY H2 ENTERPRISES**. This will reduce the potential for static electricity, operator from being shocked during use and causing a spark due to static generated. NOTE: We must still use ground on truck prior to Vacuum and or discharge.
- Before connecting to and pulling liquid hydrocarbons, see manufactures recommendations for max temperatures that can be loaded through hoses. Our best practice is 100°F or below the products flashpoint range. SEE PRODUCT SDS for details.
- Hard hats are not required to be worn in an enclosed cab. Operators must wear their hard hat anytime they exit the cab.
- When fueling equipment or vehicles with gasoline or liquefied petroleum gas (LPG) the engine shall be shut down.
- All equipment and vehicles shall be equipped with appropriate fire extinguisher. The minimum fire extinguisher size shall be 5 lbs ABC type fire extinguisher. Most our Vacuum trucks carry a 20 pound ABC fire extinguisher.
- Haul roads shall be designed, constructed and maintained for safe operation consistent with the type of haulage equipment in use. Standard traffic control signs shall be used where necessary.
- Equipment that is moved or transported on or from the site must be loaded and secured to prevent movement. All transported equipment should be cleaned of mud, rocks, and debris accumulated from the site. Equipment must be secured, and haul equipment must not be loaded beyond its capacity.
- End dump equipment such as Vacuum trucks and earth hauling dump trucks must ensure that the end gate is secure and latched prior to entering any roadway. This should be completed right after dumping the material.
- Equipment, pickups and passenger vehicles not necessary for performing the work should be parked well away from the work area to reduce congestion and incidents of loss.
- Equipment wheels must be chocked when parking on an incline.
- Equipment operated at night must have a functioning beacon and lights on during operation.

- Careless, reckless or otherwise unsafe operation of equipment may result in disciplinary action up to an including discharge.

### **3.0 Inspections**

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The operator must do a documented inspection of the equipment before the start of operation on the shift and thereafter as required to ensure the safe operating condition of the equipment.

If the operator discovers a deficiency that would result in a condition that could endanger personnel or property, the operator will immediately tag the equipment “out-of-service” and report it to their supervisor. Any repair or adjustment necessary for the safe operation of the equipment must be made before the equipment is used.

Each piece of equipment must be equipped with the Operator’s Manual and a **Mobile Equipment Pre-Operation Book (Attachment A)**.

The operator must maintain the cab, floor and deck of mobile equipment free of material, tools or other objects, which could create a tripping hazard, interfere with the operation of controls, or are a hazard to the operator or other occupants in the event of an accident. Operator must also visually check main components on the equipment to ensure they are in good working order.

Copies of daily inspections must be turned in to the project office at the end of each week.

#### **3.1 Vacuum tank and accessories**

- Vacuum pumps for proper oil levels
- Vacuum pump operation / Gauges working properly to maintain proper vacuum
- Hose connections
- Water tanks and pressure fittings (If applicable)
- Carbon Filters canisters ( If applicable)
- Hinged doors and vacuum tank operations

### **4.0 Communication and Planning**

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Communications between operators, ground personnel, truck drivers and others is a significant element governing safe equipment operation H2 ENTERPRISES recommends utilizing two-way radio equipment.

It is critical that all ground personnel make and maintain eye contact with the equipment operator and ensure that the equipment operator acknowledges the intentions of ground personnel or other equipment operators when they come in close proximity with the equipment.

Where verbal or hand signals are used; only one person designated as the “SPOTTER” will be giving signals. If the equipment operator cannot hear or understand the signal or verbal direction, the operator is to stop the equipment immediately until the proper course of action can be determined.

Equipment operations and haul routes should be considered in the Job Safety Assessment (JSA). Things to consider in this plan include:

- Is an Internal Traffic Control Plan warranted?
- Type of product will be loaded (Vacuumed) Multi-Gas detector used?
- Overhead and underground utilities
- Exhaust from vacuum monitored and or filtered (Use of carbon canisters)?

- Monitor carbon canisters for temperature and vapors, use of multi-gas monitor and temperature gun will be used.
- Do any work operations interfere with each other
- Locations of haul routes
- Access in and out of the site
- Equipment parking and storage areas
- Continuous gas monitoring will be done anytime the Vac-truck is on operation? Monitoring the exhaust, if we get any readings of LEL we should shut down and contact Safety and Site operations to determine whether or not to proceed or use of filter system is warranted. **CAUTION:** In case any hot work being done in area, coordinate with site operations. Does it need to be shut down prior to vacuuming?
- Temperature of product you're loading and offloading? See above 2.0 for details.
- The grade and width of the haul roads
- Operator training

## 5.0 Overhead Power Lines

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Any vehicle or mechanical equipment capable of having parts of its structure elevated near overhead power lines shall be operated so that a minimum clearance distance of 20 feet is maintained. When it is difficult for the equipment operator to maintain the safe clearance distance, a person shall be designated to observe the clearance and warn the operator.

Safe clearance distance may be reduced under the following conditions:

- Overhead power lines that have been de-energized and grounded by the utility or owners of the lines do not require safe clearance distances unless dictated by the utility or owner. All power lines shall be considered to be energized until utility representatives or owners of the lines state that they are de-energized and grounded.
- If insulating barriers are installed to prevent contact with lines, and if the barriers are rated for the voltage of the line being guarded, the safe clearance distance may be reduced to a distance within the designed working dimensions of the insulating barrier. This still does NOT allow contact with lines to be made with any part of the machinery.
- If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 feet (1.2 meters [m]) for voltages less than 50kV, 10 feet (3 m) for voltages between 50 kV and 345 kV, and 16 feet (5 m) for voltages greater than 345 kV. When determining safe clearances during movement, the sag of the overhead lines and the effect of wind forces must be considered. (NOT RECOMMENDED IF THESE DISTANCES ARE REQUIRED CONTACT HSE REPRESENTATIVE PRIOR TO MOVEMENT)

- **USE OF GOALPOST** will be used at all power line crossings the height of the goal post will be set to 20ft or greater below the power lines this will give the operators and spotters another visual marker to ensure that we are in compliance with the minimum distance from the power lines. SEE Diagram below



Employees standing on the ground shall not contact any vehicle or mechanical equipment or any attachments unless one of the following conditions exists:

- The equipment is located such that no part of its structure can come closer to the line than the safe clearance distances permitted above.
- The employee is using protective equipment rated for the voltage of the power line.

If any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines is intentionally grounded, employees working on the ground near the point of grounding shall not stand at the grounding location or within 20 feet (6 m) of the equipment where there is a possibility of overhead line contact. Additional precautions, such as the use of barricades or insulation, shall be taken to protect employees from the hazardous ground potentials that can develop from the grounding point.

If any vehicle or mechanical equipment becomes electrically energized, personnel shall not touch any part of the equipment or attempt to touch any person who may be in contact with the electrical current. The utility company or appropriate party shall be contacted to have the line de-energized prior to approaching the equipment.

## **6.0 Regulatory Review**

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### **6.1 OSHA**













29 Code of Federal Regulations Part, 1926.600 – Subpart O – Motor Vehicles, Mechanized Equipment, and Marine Operations

**Attachment A – Mobile Equipment Pre-Operation Inspection Book**

**MOBILE EQUIPMENT OPERATORS PRE-OPERATION INSPECTION**

VEHICLE # \_\_\_\_\_ AMT. OF FUEL \_\_\_\_\_ SHIFT \_\_\_\_\_ DATE \_\_\_\_\_  
 OPERATOR NAME \_\_\_\_\_ HOURS WORKED \_\_\_\_\_  
 NO. OF LOADS COAL \_\_\_\_\_ GOB \_\_\_\_\_ ROCK \_\_\_\_\_ SAND \_\_\_\_\_ OTHER \_\_\_\_\_  
 HOURMETER START OF SHIFT \_\_\_\_\_ END OF SHIFT \_\_\_\_\_

REPORT ALL FOLLOWING CONDITIONS - MARK "X" IN APPROPRIATE BOX

SAFETY					MECHANICAL				
	OK	DEFECT	REMARKS	CORRECTED		OK	DEFECT	REMARKS	CORRECTED
 BACKUP ALARM					 OIL LEVEL 				
 HORN					WATER LEVEL				
 GLASS & WIPERS					RADIATOR				
 SEAT BELT					DIFFERENTIAL				
 LIGHTS-FRONT/REAR					TRANSMISSION				
MIRRORS					SCSR				
DOORS/LATCHES					OPERATOR COMMENTS:				
HOUSEKEEPING									
 BRAKES									
 PARKING BRAKES									
 STEERING									
 TIRES/WHEELS									
STEPS/HANDRAILS									
 FIRE EXTINGUISHER									
GUARDS									

THIS FORM MUST BE COMPLETED EACH SHIFT BY THE OPERATOR OF THE VEHICLE AND SUBMITTED TO YOUR SUPERVISOR BY THE END OF YOUR SHIFT IN COMPLIANCE WITH CFR 30 PART 77.1606-A. THE ABOVE INFORMATION IS CORRECT.

OPERATOR SIGNATURE \_\_\_\_\_ SUPERVISOR SIGNATURE \_\_\_\_\_

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## EQUIPMENT OPERATOR ACKNOWLEDGEMENT

To be eligible to receive Operator truck pay, operator must have these items and agree to complete the following listed tasks.

*PRINT BELOW*

I \_\_\_\_\_ agree to maintain the equipment in good working condition, these duties include the following:

- Daily Fluid Checks
- Daily filling of all low fluids
- Daily equipment inspections
- Daily Greasing as recommended by the manufacture
- Daily Cleaning of all windows
- Daily Removal of trash left inside of cab
- Daily Cleaning of all trucks on trucked equipment at end of shift
- Daily Check of all air/dust filters including but not limited to:
  - Cab dust filter
  - Engine Air filter
  - AC dust Filter

**I will provide the items listed below:**

\_\_\_\_\_ Grease Gun  
\_\_\_\_\_ Spade Shovel  
\_\_\_\_\_ Window Cleaner  
\_\_\_\_\_ Box of Rags or Towels  
\_\_\_\_\_ Drop tank (Diesel Fuel Tank) in excess of 100 Gallon Capacity

\_\_\_\_\_ Full Size 4X4 drive vehicle to travel the ROW  
\_\_\_\_\_ 1,000,000.00 General Liability Insurance with H2 ENTERPRISES listed as additional insured.  
\_\_\_\_\_ Hand tools required for filter & fluid checks

Employee Signature:

Date:

\_\_\_\_\_

\_\_\_\_\_

Supervisor/ HR Signature:

Date:

\_\_\_\_\_

\_\_\_\_\_