

Standard Operating Procedures for Vacuuming Activities

Introduction

The Underground Storage Tank (UST) Branch has created the Standard Operating Procedures for Vacuuming Activities for the removal of free phase product due to petroleum releases. In order to use Trust Fund monies more wisely, the UST Branch is reducing the reimbursable amount of time on-site for Environmental Response Action Contractor (ERAC) oversight during vacuuming events. The Trust Fund will only reimburse for an ERAC representative to be on-site for the initial vacuuming event. All remaining vacuuming events will be performed by the vacuum truck service technician at the direction of the ERAC. The ERAC maintains responsibility for coordinating the vacuuming events and preparing the final vacuuming report.

Preparing the Vacuuming Scope of Work/Cost Estimate Proposal

The vacuuming scope of work/cost estimate proposal must include the following:

1. A letter format proposal with:
 - identification of the proposed wells to be vacuumed and the identification of the wells that will be checked for free product. However, please state that during vacuuming activities, if additional wells are determined to contain free product, these wells shall be included or substituted into the vacuuming program and the MDEQ project manager shall be notified.
 - identification of the proposed time of vacuuming per well. When the vacuum truck will allow it, the UST Branch prefers the wells to be manifolded so multiple wells can be evacuated at the same time. Please indicate in the proposal if any wells will be manifolded. If manifolding will occur, please indicate which wells will be manifolded together.
 - identification of the information that will be submitted in the final vacuuming report. State that the final vacuuming report shall include, at a minimum, the items discussed in Section 4 of this Standard Operating Procedure.
2. A completed MDEQ Cost/Price Summary Form
3. A "Request for Vacuuming Proposal" form that has been completed by the vacuum truck service

Activities for Vacuuming

Section 1. Pre-Evacuation Procedures

The vacuum truck service technician shall:

- A. Measure and record product thickness in all the wells specified by the ERAC.
- B. Determine the wells to vacuum based on free product thickness (the wells with the most free product should be evacuated first). If additional wells contain product (other than the proposed wells to be vacuumed), the procedures shall be altered to include the evacuation of all wells containing at least 2 inches of free product. Either an ERAC representative or the OPC project manager shall be contacted when this situation occurs.
- C. Ensure that the truck has a RPM gauge on the pump.
- D. Confirm that the vacuum truck is empty and clean. Confirm presence of a check valve between truck and well. The check valve may be located on the evacuation apparatus or on the inlet side of the vacuum truck pump.

- E. Confirm that the vacuum truck has been grounded in accordance with Section 5.4.2 of API Publication No. 2219 – Safe Operation of Vacuum Trucks in Petroleum Service.

Note: The MDEQ strongly suggests the use of a Department of Transportation (DOT) certified vacuum truck to reduce potential liability during vacuuming event

Section 2. While Vacuuming

The vacuum truck service technician shall:

- A. Install the well evacuation apparatus. The drop tube should be set 1 foot below the groundwater/free product interface. However, vacuuming from a hydropunch well does not require a drop tube.
- B. Connect vacuum truck hose to apparatus prior to application of vacuum.
- C. Commence evacuation activities. In order to confirm that the vacuum pump is operating at or near manufacturer's recommended RPM, read the vacuum gauge on the truck vacuum pump and compare to the RPM noted on the pump curve for the truck. The operator should adjust the RPM if necessary. Maintain the recommended RPM for the duration of the vacuuming. If tank bed wells and non-tank bed wells are manifolded together, take necessary steps to reduce vacuum on the tank bed (i.e. install valve to control vacuum). **If only tank bed wells are vacuumed, use the minimum vacuum necessary to recover free product.**

Section 3. After Vacuuming

The vacuum truck service technician shall:

- A. Move truck to level ground, gauge fluid levels in truck, and convert the fluid level measurement to volume.
- B. Record free product thickness for all the wells specified by the ERAC.
- C. Sign and complete field copy of the waste manifests.
- D. For precautions for travel and off-loading for the vacuum truck, refer to the API Publication No. 2219.

Section 4. Reporting

A. Field Report

Individual field reports shall not be submitted to our office after each vacuuming event. However, the vacuum truck service company shall submit the field reports to the ERAC after each event. If free product does not exist at the location for two consecutive vacuuming events, the UST project manager shall be notified by the ERAC representative prior to any additional vacuuming events in order to discuss if the continuation of the vacuuming is necessary.

B. Final Report

A final report must be completed and submitted to our office by the due date established in the approval letter. The final report shall be signed and stamped by a Mississippi Registered Professional Engineer (P.E.) and/or Geologist (P.G.) as stated in the Mississippi Groundwater Protection Trust Fund Regulations. The final report shall include:

1. Summary of each event
2. Copy of the pump curve for each truck used during the vacuuming program
3. Copies of the completed waste manifests signed by the disposal facility operator
4. Copy of the Summary of Vacuuming Event(s) form
5. Copies of the Product Thickness forms for each event
6. Discussion of the free product thickness trends during the entire program
7. Site Map with the free product contour using the data from the last vacuuming event

8. Recommendations for further action. Please give a detailed explanation as to what the next step should be and why. Please be sure the recommendation is given after consideration of the best available technology and cost effectiveness of the next action.

Reimbursement for Vacuuming Events

Each vacuuming service reimbursement request submitted to our office shall include:

1. A completed Certification Affidavit
2. Completed Summary of Vacuuming Event(s) form
3. Completed waste manifest forms signed by the disposal facility operator
4. ERAC's invoices
5. Vacuum truck service's invoices to the ERAC or tank owner.

Vacuuming service reimbursement requests that do not include all of the above referenced information can not be processed for payment.

SUMMARY OF VACUUMING EVENT(S)

Owner Information _____ Name _____ Address _____ _____ Telephone	Location Information _____ Facility I.D. # _____ Name _____ Address _____
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Date	Proposed Total # of Hours to Vacuum	Total # of Hours Vacuumed	List of Monitoring Wells Vacuumed	Total # of Gallons Recovered

Location of Wastewater Disposal Facility: _____, _____
City State

VACUUM TRUCK SERVICE REPRESENTATIVE	
I certify that the above information is true and accurate to the best of my knowledge.	
REPRESENTATIVE NAME & TITLE	SIGNATURE & DATE

****A completed form and a completed waste manifest must accompany all vacuuming invoices.**

Request for Vacuuming Proposal

_____, is requesting a cost estimate for performing the following vacuuming activities at:
ERAC

Site Name

Site Address

Facility I.D. #

The names of the wells to be vacuumed (see Attached Map): _____

The wells to be manifolded and vacuumed: _____

The time for vacuuming for each well: _____

The wells to be checked for free product: _____

Activities for Vacuuming

An ERAC representative will be present during the initial vacuuming event to help familiarize the vacuum truck service technician with the site. However, all remaining vacuuming events approved by the MDEQ for this facility will be performed by the vacuum truck service technician.

Pre-Evacuation Procedures

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2. Determine the wells to vacuum based on free product thickness (the wells with the most free product should be evacuated first). If additional wells contain product (other than the proposed wells to be vacuumed), the procedures shall be altered to include the evacuation of all wells containing at least 2 inches of free product. Either an ERAC representative or the OPC project manager shall be contacted when this situation occurs.
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4. Confirm that the vacuum truck is empty and clean. Confirm presence of a check valve between truck and well. The check valve may be located on the evacuation apparatus or on the inlet side of the vacuum truck pump.
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After Vacuuming

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1. Move truck to level ground, gauge fluid levels in truck, and convert the fluid level measurement to volume.
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To be completed by the vacuum truck service

Disposal Rate: _____

Vacuumping Rate: _____

Loaded Mile Rate: _____

Estimated loaded miles: _____

Technician hourly rate: _____

Location of Wastewater Disposal Facility: _____

The vacuum truck service technician will be responsible for the vacuuming activities. By signing this proposal, the vacuum truck service is agreeing to abide by the requirements outlined on this form.

Vacuum Truck Service Company

Vacuum Truck Service Representative

Date