



SWM-SWP-G-130- Transportation Petroleum Spills -113017
Environmental Cleanup Guidance for Petroleum Transportation Spills

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SIGNATURES:


Division Director


Drafter / Preparer


Reviewer

PURPOSE

This guidance has been prepared by the Tennessee Department of Environment and Conservation (TDEC), Division of Solid Waste Management (DSWM), for the environmental cleanup of petroleum spills, including gasoline, diesel fuel, motor oil and transmission fluid, as the result of traffic accidents. THIS GUIDANCE IS NOT EMERGENCY RESPONSE GUIDANCE.

GENERAL INFORMATION

Petroleum spilled at a traffic accident is a hazardous material. The regulatory requirements for emergency responses to the release of hazardous materials, including who is in control and directs activities at these spill sites, is found in the Federal Regulations at 29 CFR 1910.120 as adopted pursuant to T.C.A. §50-3-201 by the Tennessee Department of Labor and Workforce Development. 29 CFR 1910.120 is interpreted and enforced by the Tennessee Division of Occupational Health and Safety (referred to as TOSHA- phone number 1-800-249-8510). DSWM personnel are not emergency responders. The situation can vary greatly from spill to spill, and the Local Incident Commander normally makes the final determination on what activities can be performed at the incident scene.

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Other safety factors, including but not limited to highway stability, traffic flow, and public utilities, also are taken into consideration. The Tennessee Department of Transportation (TDOT) (or equivalent county/city highway authority if not on an interstate or state route), other impacted property owners, public utilities, or other public agencies may prohibit or limit excavation activities.

GUIDANCE

The DSWM has established two categories for the environmental cleanup of petroleum spills as the result of traffic accidents. The first environmental cleanup guidance is for traffic accident spills contaminating environmental media with less than twenty five (25) gallons of petroleum. The second environmental cleanup guidance is for traffic accident spills contaminating environmental media with more than twenty five (25) gallons of petroleum. Contaminating environmental media is defined in this guidance as petroleum that spills directly onto and/or migrates from paved surfaces into gravel, soils, and/or water. Spills in Tennessee are to be reported to the Tennessee Emergency Management Agency (TEMA - 1-800-262-3300) which then notifies other state agencies such as the DSWM. *(Note: Spills that cause sheen on the surface waters require notification of TEMA and subsequently the Division of Water Resources.)*

Traffic Accident Spills Contaminating Environmental Media - Less Than Twenty Five (25) Gallons of Petroleum

29 CFR 1910.120 establishes the person who is in control at hazardous material spills and directs any actions that emergency responders take to stop the migration and for the cleanup of spilled petroleum. The owner and/or operator of the vehicle from which petroleum was spilled shall be responsible for the cleanup of the petroleum spilled from their vehicle. Notification of TEMA or the DSWM is not necessary for traffic accident spills that contaminate environmental media with less than twenty five (25) gallons of petroleum provided that the following can be safely conducted in accordance with 29 CFR 1910.120 *(Additional information is provided under GENERAL INFORMATION on page 1 and 2):*

1. Absorb all liquid petroleum with an absorbent material as soon as safely possible (i.e. petroleum absorbents, diatomaceous earth, clay, etc.) *(Note: Absorbent material must be placed in compatible containers and closed or managed with contaminated gravel and/or soil excavated at the site.); and,*
2. Within twenty four (24) hours, if there is any visible petroleum contaminated gravel and/or soil and excavation can be performed safely and is authorized by TDOT (or equivalent county/city highway authority if not on an interstate or state route), any other impacted property owners, and public utilities (if present), then excavate visibly petroleum contaminated gravel and/or soil. The excavation of contaminated gravel and/or soil may be limited or not authorized due to structural issues, underground utilities, or other concerns. Excavation is normally the preferred response. If excavation is not appropriate, contact the DSWM Statewide Petroleum Incident Logging System (SPILS) unit at SPILS@tn.gov or 1-833-247-7745. *(Notes: Excavated petroleum contaminated gravel and/or soil must be placed in compatible containers and covered or placed directly into an appropriate transport vehicle. The contaminated gravel and/or soil may also be placed on plastic and covered with plastic, but this usually does not occur because the amount of contaminated gravel and/or soil, if any, is small and disposal or treatment is required in a short time frame.)*

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Within two (2) weeks, the petroleum contaminated absorbent materials, gravel, and/or soil are to be disposed of in a Class I Landfill permitted in Tennessee or a similar facility in another state, with the permission of the landfill. If the contaminated absorbent materials, gravel and/or soil are disposed of in a Tennessee Class I Landfill (with the landfill's permission) and the total amount is equal to or less than five (5) cubic yards per accident, then special waste approval is not necessary. If the total amount is greater than five (5) cubic yards, then refer to the Material/Waste Management section on page 5 and 6. Another acceptable option is for the petroleum contaminated absorbent materials, gravel, and/or soil to be treated at a permitted facility that is authorized to treat such petroleum contaminated materials.

Traffic Accident Spills Contaminating Environmental Media - More Than Twenty Five (25) Gallons of Petroleum

29 CFR 1910.120 establishes the person who is in control at hazardous material spills and directs any actions that emergency responders take to stop the migration and for the cleanup of spilled petroleum. The owner and/or operator of the vehicle from which petroleum was spilled shall be responsible for the cleanup of the petroleum spilled from their vehicle. TEMA must be notified and will subsequently notify DSWM. A report detailing the response measures taken must be submitted to DSWM's SPILS unit. DSWM staff are not emergency response personnel, and TEMA will make the DSWM aware of the spill via the SPILS unit. The following should be conducted if authorized under 29 CFR 1910.120 (*Additional information is provided under GENERAL INFORMATION on page 1 and 2.*):

1. Absorb liquid petroleum with an absorbent material (i.e. petroleum absorbents, diatomaceous earth, clay, etc.) and/or collect liquid petroleum (*Notes: Absorbent material must be placed in compatible containers and closed or managed with contaminated gravel and/or soil excavated at the site. Collected liquid petroleum must be stored safely and securely in leak proof closed compatible containers.*);
2. As soon as safely possible and if authorized by TDOT (or equivalent county/city highway authority if not on an interstate or state route), any other impacted property owners, and public utilities (if present), excavate the visibly petroleum contaminated gravel and/or soil. The excavation of contaminated gravel and/or soil may be limited or not authorized due to structural issues, underground utilities, or other concerns. Excavation is normally the preferred response. If excavation is not appropriate, contact the DSWM SPILS unit at 1-833-247-7745. The DSWM SPILS unit will refer the spill site to the TDEC Division of Remediation, and it will no longer be managed under this guidance. The TDEC Division of Remediation may require additional cleanup, installation of a monitoring well(s) and/or risk assessment. (*Notes: It is advisable to screen the excavation site for hot spots with a monitor such as a photoionization detector to assist in determining if the petroleum contaminated gravel and/or soil has been removed prior to collecting samples. Excavated petroleum contaminated gravel and/or soil must be placed in compatible containers and covered or placed directly into an appropriate transport vehicle. The contaminated gravel and/or soil may also be placed on plastic and covered with plastic.*);
3. Confirmation samples are required to verify that any contamination that may remain is below the applicable no further action levels. Confirmatory sampling will be deemed to meet the requirements of DSWM regulations if sampling consists of taking three grab samples,

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two from the side walls and one from the bottom of the excavation, for each 200 square feet of excavation area. For releases to ditches, grab samples should be taken at the first visual impact, at the midpoint of the visual impact, and downgradient at the farthest visual impact and analyzed separately. Work plans for other confirmatory sampling programs may be submitted to the DSWM for review and approval. Samples must be collected in a manner to prevent cross contamination and stored at 4°C while being transported to the laboratory. Chain of custody forms shall be completed for all samples. Samples for gasoline and diesel spills shall be analyzed for benzene, toluene, ethylbenzene, total xylenes, methyl-tert-butyl-ether, and naphthalene. Samples for diesel spills must also be analyzed for extractable petroleum hydrocarbons. Samples for used motor oil and/or transmission fluid shall be analyzed for naphthalene and extractable petroleum hydrocarbons (EPH). Acceptable no further action levels (NFALs) for gravel and/or soil are:

CHEMICALS OF CONCERN	RESIDENTIAL SOIL NFALs* (mg/kg)	COMMERCIAL/ INDUSTRIAL SOIL NFALs* (mg/kg)	ANALYTICAL METHODS
Benzene	0.0729	3.8	8260B (EPA Publication SW-846)
Toluene	6.78	62.2	8260B (EPA Publication SW-846)
Ethylbenzene	143	1310	8260B (EPA Publication SW-846)
Total Xylenes	9.6	88	8260B (EPA Publication SW-846)
Methyl-tert-butyl-ether (MtBE)	39.6	364	8260B (EPA Publication SW-846)
Naphthalene	135	403	8260B (EPA Publication SW-846)
Extractable Petroleum Hydrocarbons	500	500	Tennessee Extractable Petroleum Hydrocarbons

** Commercial/Industrial soil NFALs apply to: 1. TDOT right of way property on the interstates; 2. TDOT or local government right of ways where the adjoining properties at the spill location are zoned for commercial or industrial purposes and there is no reason to conclude that the property is/or would ever be used for residences; and, 3. Other properties that are zoned for commercial or industrial purposes where there is no reason to conclude that the property is/or would ever be used for residences. Otherwise, the residential soil NFALs apply. The DSWM reserves the right to require residential soil NFALs based upon site specific conditions.*

If the confirmation samples document any contamination remaining in the gravel and/or soil above the applicable NFALs and additional excavation is authorized by TDOT (or equivalent county/city highway authority if not on an interstate or state route), any other impacted property owners, and public utilities (if present), then additional gravel and/or soil must be excavated until confirmation sampling verifies that all remaining gravel and/or soil is below the applicable NFALs. If the applicable NFALs cannot be reached, then contact the SPILS Unit (1-833-247-7745 or SPILS@tn.gov) within one working day of the date after that determination was made. Spill sites with contamination above the NFALs will be referred to the TDEC Division of Remediation and no longer managed under this guidance. The TDEC Division of Remediation may require additional cleanup, installation of monitoring well(s) and/or risk assessment.

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Material/Waste Management

Within fifty (50) days of all traffic accident spills contaminating environmental media with more than twenty five (25) gallons of petroleum, all free liquids must be sent for recycling or treatment at authorized facilities and all contaminated absorbent materials, gravel and/or soil must be disposed of or treated at authorized facilities. Collected liquid petroleum sent to be recovered and recycled at authorized facilities would not be a hazardous waste per Rule 0400-12-01-.02(1)(b)3. If the collected liquid petroleum is not going to be recovered, then a hazardous waste determination is required and, if hazardous, it must be managed as a hazardous waste with proper notification forms submitted to DSWM in accordance with Rule 0400-12-01.

All contaminated absorbent materials, gravel and/or soil must be disposed of in a Class I Landfill (with the landfill's permission) permitted in Tennessee or a similar facility in another state. The petroleum contaminated absorbent materials, gravel, and/or soil may also be treated at a permitted facility that is authorized to treat such petroleum contaminated materials. If the contaminated absorbent materials, gravel and/or soil are disposed of in a Tennessee Class I Landfill (with the landfill's permission) and the total amount is equal to or less than five (5) cubic yards per accident, then special waste approval is not necessary. Special waste approval is required for disposal of contaminated absorbent materials, gravel and/or soil greater than five (5) cubic yards per accident in a Class I Landfill permitted in Tennessee. However, Tennessee Class I Landfills may have blanket special waste approval for soil/debris contaminated **only with transmission fluid, motor oil, and/or diesel** from traffic accident spills as authorized in DSWM guidance for *Disposal of Petroleum Contaminated Soil and Debris in Class I Landfills 026*.

Detailed information on applying for a Special Waste Permit is provided on TDEC's website (TN.gov/environment), and the application may be submitted at tdec.tn.gov/specialwaste online. Absorbent materials, gravel, and/or soil contaminated **only with transmission fluid, used motor oil, and/or diesel** do not require sampling for special waste approval provided that other materials with hazardous constituents are not present. De minimus amounts of motor coolant, battery acid and windshield washer fluid spilled from a vehicle is allowable for landfill disposal, but not if carried as cargo. The generator must state on the special waste application that the absorbent materials, gravel, and/or soil are only contaminated with transmission fluid, used oil, and/or diesel and are not contaminated with other materials with hazardous constituents.

Absorbent materials, gravel, and/or soil contaminated with **gasoline** must be representatively sampled and the sample(s) analyzed for benzene (Method 8260B, EPA Publication SW-846). One grab sample should be taken for every twenty (20) cubic yards of material. Up to five (5) of these grab samples may be composited together for analysis to characterize up to one hundred (100) cubic yards of contaminated material. All samples should be taken from areas of greatest visual contamination. If the total amount of benzene in any sample is equal to or exceeds 10 mg/kg, then that sample(s) must be subjected to the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311, EPA Publication SW-846) and the extract analyzed to determine the concentration of benzene. If the concentration of benzene in the TCLP extract is equal to or exceeds 0.5 mg/l, then the waste is a hazardous waste and cannot be disposed of as a special waste but must be managed as a hazardous waste with proper notification forms submitted to DSWM in accordance with Rule 0400-12-01.

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Report

Within seventy five (75) days of all traffic accident spills contaminating environmental media with more than twenty five (25) gallons of petroleum, the owner and/or operator of the vehicle from which the petroleum was spilled shall submit a report to the DSWM SPILS Unit, Nashville Environmental Field Office, 711 R. S. Gass Blvd., Nashville, TN 37243-1550 (SPILS@tn.gov). The report must, at a minimum, contain the following:

1. Name, Address, and Phone Number of the owner of the vehicle from which the petroleum was spilled;
2. Name, Address, and Phone Number of any emergency response contractor(s);
3. Name, Address, and Phone Number of the insurance company(s);
4. Agency Name, Officer's Name and Contact Information for the primary law enforcement officer who investigated the accident;
5. The date and location of the spill by interstate/highway/street number/name and mile maker/address (e.g. 5. The petroleum spill resulting from a February 24, 2010 traffic accident occurred on ABC Drive, XYZ City, TN at 123 ABC Drive.);
6. The zoning of the properties adjacent to the right of way at the spill location and any other impacted property(s), name of the zoning authority, the name and phone number of the person contacted with the zoning authority, and if zoned as commercial/industrial, then include a statement regarding the potential for the property(s) to be used for residences. (e.g. 6. The only property impacted was the right of way on ABC Drive, XYZ City, TN immediately adjacent to 123 ABC Drive that is zoned for industrial use. This information was obtained from Jane Doe with XYZ City Zoning Authority (Phone #: 615-555-5555). Jane Doe of the XYZ City Zoning Authority confirmed that there were no plans to change the zoning.) *(Note: If the only property impacted by the spill is the right of way on a US Interstate then that is all that needs to be stated in the report.);*
7. List the type and estimated quantity of all liquid material spilled (e.g. 7. It is estimated that 100 gallons of diesel was spilled from a saddle tank of a truck.);
8. List the type and estimated quantity of all materials recovered in the liquid phase and document the final disposition of all liquids (e.g. 8. 50 gallons of diesel was collected in a vacuum truck and sent to XYZ Company for reclamation. Documentation is in Appendix A of this report.);
9. The names and phone numbers of the official with the TDOT, county/city authority, any other property owner(s) and/or public utilities that granted or denied authorization to excavate contaminated gravel and/or soil (e.g. 9. Permission was granted to excavate contaminated soil by Joe Doe of XYZ City Public Works Department (Phone #: 615-555-4444).);

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10. State which NFALs apply and whether or not the confirmation sampling documents that any remaining contamination is below the NFALs (e.g. 10. Since the zoning is commercial the commercial/industrial soil NFALs apply. The confirmation sampling documents that the remaining contamination is below the commercial/industrial soil NFALs);
11. State in square feet the surface areal extent of the gravel and/or soil that was contaminated by the spill and provide a sketch of the spill area showing the edge of the paved/concrete surface of the interstate/highway/street, the property line(s), the dimensions of the excavation areas, and the location of all sampling points (*Notes: Sampling points must be provided with individual identifiers that correspond to the analytical results on the laboratory report sheets. If additional excavation was necessary after the initial excavation/confirmation sampling event, then additional sketches shall be provided for each excavation/confirmation sampling event. If the surface area impacted by the spill is greater than 800 square feet, then the sketch shall be to scale.*) (e.g. 11. 420 square feet of surface area of the gravel and soil was contaminated by the diesel spill and the site sketch is in Appendix B of this report.);
12. Include a copy of the laboratory report sheets with the analytical results for all samples collected and all chain of custody forms (e.g. 12. Copies of the laboratory report sheets and the chain of custody forms are in Appendix C of this report.);
13. List the estimated amount of petroleum contaminated absorbent material, gravel and soil excavated and their disposition (e.g. 13. 15 cubic yards of petroleum contaminated absorbent material, gravel and soil was disposed of in ABC Class I Landfill under DSWM Special Waste Approval dated 02/18/10. Copies of the Special Waste Approval letter and the landfill receipts are in Appendix D of this report.);
14. If all contaminated gravel and soil could not be excavated, provide the date the DSWM SPILS Unit was contacted;
15. If waters of the State (surface and/or ground water) were impacted, describe the impact and describe the cleanup actions;
16. Name, contact information, and agency/company of the person signing the report; and,
17. The report shall be certified with the signature of the owner of vehicle from which the petroleum was spilled or their authorized representative with this statement: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information."

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If there are any questions, please contact TDEC's SPILS unit:

DSWM SPILS Unit
Nashville Environmental Field Office
711 R. S. Gass Blvd.
Nashville, TN 37216
1-833-247-7745
SPILS@tn.gov

REVISION HISTORY TABLE

Revision Number	Date	Brief Summary of Change
0	04/23/2010	Initial
1	11/30/2017	Updated for organizational changes and BOE Policy