



Disposal of Special Wastes Associated with the Development of Oil, Gas, and Geothermal Resources

This document provides recommendations for the management of special wastes associated with the exploration, development, or production of oil, gas, or geothermal resources that are regulated by the Railroad Commission of Texas (RRCT) and that are being disposed of in landfills permitted by the Municipal Solid Waste (MSW) Permits Section of the

Texas Commission on Environmental Quality (TCEQ) in accordance with Title 16, Texas Administrative Code, Section 3.30, and 30 TAC 330.3(148)(P). Some of the special wastes listed below require written authorization for disposal. Column 5 details the requirements for special waste disposal.

Description of Waste Items	RCRA Exempt per 40 CFR Part 261.4(b)(5) (see Note 1)	RRCT Authority Required for Disposal in TCEQ Landfill?	Treatment or Testing Recommended (see Note 2)	TCEQ Approval Required Prior to Disposal / Other Options
Asbestos-containing material	No Subject to specific regulations	Yes	Comply with Federal & State regulations for removal & disposal	No per §330.171(c)
Bags (empty), paper	No	No	None	No
Brush & vegetation from clearing land, uncontaminated	No	No	None	No / Disposal in Type IV landfill, compost facility
Buckets, detergent (empty)	No	No	None	No / Recycle
Buckets, grease (empty)	No	No	None	No / Recycle
Concrete, contaminated from compressor stations, oil, or gas facilities	No	Yes	Test for COCs on a case-by-case basis	Yes
Concrete, uncontaminated	No	No	None	No / Disposal in Type IV landfill
Containers (empty)	No	No	None	No / Recycle
Drill cuttings	Yes	Yes	Test for COCs on a case-by-case basis	Yes
Barrels, drums, 5-gallon buckets (empty)	No	No	None	No / Recycle
Fiberglass tanks & pipe (empty)	No	No	Clean, cut or shred	No
Filters—amine, dehydration, glycol	Yes	Yes	Drain, air dry for 48 hrs., test for TPH & benzene	Yes
Filters—cooling tower	Yes (No, if generated in transportation)	Yes	Drain, air dry for 48 hrs., test for chromium	Yes
Filters—saltwater	Yes	Yes	Drain, air dry for 48 hrs., test for pH, TPH, & chlorides	Yes
Filters— waste oil (1) entire unit is inside	No	Yes	Separate parts, recycle oil & metal parts	Yes

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metal container				
(2) replaceable fiber or paper filter inside unit	No	Yes	Drain for at least 24 hrs., recycle, waste-to-energy, test for lead & benzene	Yes
Iron sponge	Yes	Yes	Allow to oxidize completely to prevent combustion	Yes
Office trash, routine	No	No	None	No / Recycle
Metal plates, pipes, cable	No	No	None	No / Recycle
Molecular sieves	Yes	Yes	Cool in non-hydrocarbon, inert atmosphere; hydrate in ambient air for 24 hrs., test for TPH & benzene	Yes
Muds—drilling	Yes	Yes	Test for barium, TPH, & BTEX; treatment to reduce hydrocarbons may be required	Yes
Muds—sacks of unused drilling mud	No	Yes	Return to vendor, use at other sites	Yes
Muds—unused additives	No	Yes	MSDS, test for barium	Yes
“Pigging waste” from gathering lines in primary field operations	Yes	Yes	MSDS for corrosion inhibitors, test for TPH, benzene, RCRA metals, & NORM	Yes
“Pigging waste” from transmission lines	No	Yes	MSDS for corrosion inhibitors, TPH, benzene, & arsenic	Yes
Pipe scale & other deposits removed from piping & equipment	Yes (No, if generated in transportation)	Yes	Test for TPH, RCRA metals, & NORM	Yes
Pipe dope, unused	No	Yes	MSDS (may contain lead), re-use if possible	Yes
Plastic pit liners	Yes	Yes	Decontaminate	No
Pumps, valves, etc.	No	No	Test for NORM	No / Recycle
Rags & gloves, soiled	No	No	None	No
Sand—produced during exploration	Yes	Yes	Test for TPH, benzene, & NORM	Yes
Soil—containing crude oil hydrocarbon	Yes (No, if generated in transportation)	Yes	Test for TPH & benzene	Yes
Soil—containing lube oil hydrocarbons	No	Yes	Test for cadmium, chromium, lead, TPH, benzene, PCBs	Yes
Sulfur—ferrous elemental sulfur & soil contaminated with sulfur	No	Yes	Recover sulfur	Yes
Sorbent pads—crude oil & other exempt wastes	Yes	Yes	Test for TPH & benzene	Yes
Sorbent pads—lube oil & other nonexempt wastes	No	Yes	Test for TPH & benzene	Yes
Tank seals—rubber	No	Yes	Allow to drain	Yes / Recycle

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Tower packing	No	Yes	Test for chromium	Yes / Recycle
Water-treatment backwash solids	Yes	Yes	Test for RCRA metals & NORM	Yes
Wooden pallets, uncontaminated	No	No	None	No / Disposal in Type IV landfill

- The scope of the RCRA exemption for oil and gas wastes is limited to drilling fluid and cuttings, produced water, and other waste unique or intrinsic to exploration and production in "primary field operations." Guidance for determining whether an oil and gas waste is exempt or nonexempt, including the definition of "primary field operations," is available in the Railroad Commission's manual, *Interim Guidance for Statewide Rule 98* (available online at <www.rrc.state.tx.us/divisions/og/swr98/index.html>). Oil and gas waste is always nonexempt when generated in transportation operations (i.e., downstream of primary field operations).
- A less expensive alternative to the toxicity characteristic leaching procedure (TCLP) analysis is a total constituent analysis. If a total (i.e., total lead, total benzene, etc.) exceeds the example limits listed below or exceeds 20 times the TCLP limit for a Class 2-like waste, then the TCLP must be performed and the TCLP results must not exceed the stated limits for disposal in a standard MSW Type I landfill unit. For TCLP results that exceed the example limits listed below but do not exceed a hazardous limit, the waste may be authorized for disposal into an MSW Type I landfill with a Class 1 industrial waste unit. More TCLP limits can be found on Table 1, Appendix 1 of 30 TAC 335 Subchapter R:

Constituent	Total Limit (mg/kg)	MSW Type I TCLP Limit (mg/L)	Hazardous Waste TCLP Limit (mg/L)
Benzene	10	0.5	0.5
Arsenic	36	1.8	5.0
Barium	2,000	100	100
Cadmium	10	0.5	1.0
Chromium	100	5.0	5.0
Lead	30	1.5	5.0
Mercury	4	0.2	0.2
Selenium	20	1.0	1.0
Silver	100	5.0	5.0

There are additional constituent analyses that can limit the options for disposal into an MSW Type I landfill unit:

- TPH < 1,500 mg/kg may be disposed of in a standard MSW Type I landfill unit.
- TPH ≥ 1,500 mg/kg may be disposed of in an MSW Type I landfill with a Class 1 industrial unit as specified in 30 TAC 330.171(b)(4).
- PCBs ≥ 50 mg/kg may not be disposed of in an MSW Type I landfill unit, unless authorized by the USEPA as specified in 40 Code of Federal Regulations Part 761.
- NORM concentrations must be below 30 picocuries per gram for disposal in an MSW Type I landfill unit as specified in 25 TAC 289.259(d)(1)(A).

Explanation of Acronyms:

BTEX benzene, toluene, ethylbenzene, and xylene

COC constituents of concern

MSDS material safety data sheet

MSW municipal solid waste

NORM naturally occurring radioactive materials

PCBs polychlorinated biphenyls

RCRA Resource Conservation and Recovery Act

RRCT Railroad Commission of Texas

TCEQ Texas Commission on Environmental Quality

TCLP Toxicity Characteristic Leaching Procedure

TPH total petroleum hydrocarbons

Regulatory References:

16 TAC 3.30

30 TAC 330.3(148) and 330.171

30 TAC 335.505(1) and 335.521(a)(1)

40 CFR 261.4(b)(5)