

## **APPENDIX B**

# ***CLARIFICATION OF THE REGULATORY DETERMINATION FOR WASTES FROM THE EXPLORATION, DEVELOPMENT AND PRODUCTION OF CRUDE OIL, NATURAL GAS AND GEOTHERMAL ENERGY***

**58 Federal Register 15284-15287 (March 22, 1993)**

### **Important Note**

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The notice in this appendix has been reformatted to aid readability.

You should refer to the original Federal Register notice to assure accuracy.

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**40 CFR Part 261**

**[FRL-4606-6]**

**Clarification of the Regulatory Determination for Wastes From the Exploration, Development and Production of Crude Oil, Natural Gas and Geothermal Energy**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Clarification.

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**SUMMARY:** This document provides additional clarification of the Resource Conservation and Recovery Act (RCRA) Regulatory Determination for Oil and Gas and Geothermal Exploration, Development and Production Wastes dated June 29, 1988 (53 FR 25446; July 6, 1988). This document clarifies the regulatory status of wastes generated by the crude oil reclamation industry, service companies, gas plants and feeder pipelines, and crude oil pipelines. Since this document only further clarifies the status of these wastes under the RCRA Subtitle C hazardous waste exemption discussed in EPA's 1988 Regulatory Determination, and does not alter the scope of the current exemption in any way, comments are not being solicited by the Agency on this notice.

**FOR FURTHER INFORMATION CONTACT:** For general information on the scope of the RCRA Subtitle C exemption for wastes from the exploration, development and production of crude oil, natural gas and geothermal energy, contact the RCRA/Superfund hotline at (800) 424-9346 (toll free) or (703) 412-9810. For technical information, contact Mike Fitzpatrick, U.S. Environmental Protection Agency OS-323W, 401 M Street, SW., Washington, DC 20460; phone (703) 308-8411.

**SUPPLEMENTARY INFORMATION:**

**Table of Contents**

- I. Introduction
- II. Clarification of the Scope of the Oil and Gas Exemption
  - A. Crude Oil Reclamation Industry
  - B. Service Companies
  - C. Crude Oil Pipelines
  - D. Gas Plants and Feeder Pipelines
- III. Administrative Procedures Act Requirements
- IV. EPA RCRA Docket

**I. Introduction**

In the Solid Waste Disposal Act Amendments of 1980 (Pub. L. 94-580), Congress amended the Resource Conservation and Recovery Act (RCRA) to add sections 3001 (b)(2)(A), and 8002(m). Section 3001(b)(2)(A) exempted drilling fluids, produced waters, and other wastes associated with exploration, development, and production of crude oil, natural gas and geothermal energy

from regulation as hazardous wastes. Section 8002(m) required the Administrator to complete a Report to Congress on these wastes and provide an opportunity for public comment. The Administrator was also required by section 3001 (b)(2)(A) to make a determination no later than six months after completing the Report to Congress as to whether hazardous waste regulations under RCRA Subtitle C were warranted for these wastes.

EPA's Report to Congress was transmitted to Congress on December 28, 1987. In the process of preparing the Report to Congress, the Agency found it necessary to define the scope of the exemption for the purpose of determining which wastes were considered "wastes from the exploration, development or production of crude oil, natural gas or geothermal energy." Based upon statutory language and legislative history, the Report to Congress identified several criteria used in making such a determination. In particular, for a waste to be exempt from regulation as hazardous waste under RCRA Subtitle C, it must be associated with operations to locate or remove oil or gas from the ground or to remove impurities from such substances and it must be intrinsic to and uniquely associated with oil and gas exploration, development or production operations (commonly referred to simply as exploration and production or E&P); the waste must not be generated by transportation or manufacturing operations.

Transportation of oil and gas can be for short or long distances. For crude oil, "transportation" is defined in the Report to Congress and the subsequent Regulatory Determination as beginning after transfer of legal custody of the oil from the producer to a carrier (i.e., pipeline or trucking concern) for transport to a refinery or, in the absence of custody transfer, after the initial separation of the oil and water at the primary field site. For natural gas, "transportation" is defined as beginning after dehydration and purification at a gas plant, but prior to transport to market. To accurately determine the scope of the exemption, the reader is referred to the December 28, 1987, Report to Congress, Management of Wastes from the Exploration, Development, and Production of Crude Oil, Natural Gas, and Geothermal Energy (NTIS # PB88-146212) for the specific application of the criteria.

The Agency's Regulatory Determination was published in the Federal Register on July 6, 1988 (53 FR 25446). The Regulatory Determination included a list of example wastes that generally are exempt and a list of example wastes that generally are not exempt. Neither of these lists was intended to be a complete itemization of all possible exempt or non-exempt wastes. Also, because definitions of the terms used in these lists vary, the criteria identified in the Report to Congress remain the authoritative source for determining the scope of the exemption. The reader is referred to the July 6, 1988, notice for detailed background on all aspects of the Regulatory Determination.

Since 1987, the terms uniquely associated and intrinsic have been used as interchangeable synonyms in various documents in reference to oil and gas wastes qualifying for the exemption from Subtitle C regulation. (For simplicity's sake, when referring to exempt wastes, this notice combines the use of these two terms into the single term uniquely associated.) A simple rule of thumb for determining the scope of the exemption is whether the waste in question has come from down-hole (i.e., brought to the surface during oil and gas E&P operations) or has otherwise been generated by contact with the oil and gas production stream during the removal of produced water or other contaminants from the product (e.g., waste demulsifiers, spent iron sponge). If the answer to either question is yes, the waste is most likely considered exempt.

Since the Agency's Regulatory Determination, numerous requests have been received for determination, on a site-specific basis, of the regulatory status of wastes not itemized in the Regulatory Determination's list of examples. Many of these requests have dealt with broad categories of similar wastes (e.g., crude oil reclaimer wastes, service company wastes, pipeline wastes). Today's notice responds to the many requests for clarification of the scope of the exemption.

## II. Clarification of the Scope of the Oil and Gas Exemption

### A. Crude Oil Reclamation Industry

The crude oil reclamation industry recovers marketable crude oil and other hydrocarbons from produced water, crude oil tank bottoms and other oily wastes that are generated by the production of crude oil and natural gas. In general, the marketable crude oil is recovered from the waste materials by simple thermal and/or physical processes (e.g., heat and gravity separation). Occasionally, demulsifiers may be added to produced waters from which crude oil cannot be separated with heat and settling time alone. The typical residual materials left after removal of the crude oil by the reclaimers are also produced water and tank bottom solids. These residuals will often exhibit the same characteristics as the parent waste, although the concentrations of some constituents may vary from those in the parent.

In September 1990, the crude oil reclamation industry requested that the Agency provide an interpretation of the language in the 1988 Regulatory Determination pertaining to RCRA Subtitle C coverage of wastes from crude oil and tank bottom reclaimers. (The list of "non-exempt" wastes in the Regulatory Determination included "liquid and solid wastes generated by crude oil and tank bottom reclaimers.") In particular, they requested that EPA clarify whether any wastes generated by crude oil reclaimers are included within the oil and gas exemption, particularly those originating from the crude oil itself, such as produced water and the other extraneous materials in crude oil, otherwise known as basic sediment and water (BS&W).

In April 1991, the Agency responded to the request with a letter that included broad guidance on the status of wastes from the crude oil reclamation industry. (A copy of the letter is included in the docket to this notice.) EPA explained that the inclusion of "liquid and solid wastes" from crude oil reclamation on the list of non-exempt wastes contained in the Regulatory Determination was intended to refer only to those non-E&P wastes generated by reclaimers (e.g., waste solvents from cleaning reclaimers' equipment) and was not intended to refer to wastes remaining from the treatment of exempt wastes originally generated by the exploration, development or production of crude oil or natural gas.

EPA's basis for this position is several-fold. First, the Agency has consistently taken the position that wastes derived from the treatment of an exempt waste, including any recovery of product from an exempt waste, generally remain exempt from the requirements of RCRA Subtitle C. Treatment of, or product recovery from, E&P exempt wastes prior to disposal does not negate the exemption. [The same principle applies to exempt mining and mineral processing wastes. See, 54 FR at 36621 (Sept. 1, 1989).] For example, waste residuals (e.g., BS&W) from the on-site or off-site process of recovering crude oil from tank bottoms obtained from crude oil storage facilities at primary field operations (i.e., operations at or near the wellhead) are exempt from RCRA Subtitle C because the crude oil storage tank bottoms at primary field operations are exempt. In effect, reclaimers are conducting a specialized form of waste treatment in which valuable product is recovered and removed from waste uniquely associated with E&P operations. In addition, in many cases, product recovery or treatment reduces the volume and overall toxicity of the waste and thereby contributes to the Agency's policy and goals for waste minimization and treatment of waste prior to disposal.

EPA further notes that the off-site transport of exempt waste from a primary field site for treatment, reclamation, or disposal does not negate the exemption. The change of custody criterion (which is discussed in the Report to Congress) for the purpose of defining transportation refers to the transport of product (crude oil, natural gas) and does not apply to exempt wastes moving off-site for treatment or disposal since these wastes were generated by the exploration, development or production operations and not by the transportation process.

Thus, the off-site transport and/or sale of exempt oil-field wastes to crude oil reclaimers for treatment does not terminate the exempt status either of the wastes or the residuals from a reclamation process applied to these wastes.

However, there are solid and liquid wastes from reclamation operations that are not exempt from RCRA Subtitle C. These are wastes which the Agency intended to refer to in its example within the 1988 Regulatory Determination. Generally, these reclaimer wastes are derived from non-exempt oilfield wastes or otherwise contain materials that are not uniquely associated with exploration, development or production operations. An example would be waste solvents generated from the solvent cleaning of tank trucks that are used to transport oilfield tank bottoms. Such wastes would not be exempt from Subtitle C because the use of cleaning solvents is not uniquely associated with the production of crude oil.

Generally, crude oil reclaimer wastes that are derived from exempt oilfield wastes (e.g., produced water, BS&W) are not subject to the Subtitle C waste management requirements of RCRA. Such wastes, however, remain subject to any applicable state solid waste management requirements. Moreover, this exemption from RCRA Subtitle C requirements may not apply if the crude oil reclaimer wastes are combined with other wastes that are subject to RCRA Subtitle C requirements.

#### *B. Service Companies*

Oil and gas service companies are those companies hired by the principal operating company to, among other things, supply materials for use at a drilling or production site or provide a service to be performed. Some of the activities of service companies take place on-site while others may take place off-site. Examples of the types of activities that may take place off-site are product formulation, transport of materials, laboratory analysis, and waste handling and disposal.

The 1988 Regulatory Determination stated that "oil and gas service company wastes, such as empty drums, drum rinsate, vacuum truck rinsate, sandblast media, painting wastes, spent solvents, spilled chemicals, and waste acids" are not covered by the oil and gas E&P exemption. The Agency intended this statement to identify those wastes, including unused and discarded product materials, generated by service companies that are not uniquely associated with primary field operations. (Primary field operations occur at or near the wellhead or gas plant and include only those operations necessary to locate and recover oil and gas from the ground and to remove impurities.) Similar to the reference to crude oil reclamation wastes, the Agency did not intend to imply that under no circumstances will a service company ever generate a RCRA Subtitle C-exempt waste. For example, if a service company generates spent acid returns from a well work-over, the waste is exempt since the waste acid in this case came from down-hole and was part of primary field operations.

EPA is aware that some confusion exists in various segments of the industry with regard to the scope of the exemption from RCRA Subtitle C for solid wastes not uniquely associated with oil and gas exploration and production. One common belief is that any wastes generated by, in support of, or intended for use by the oil and gas E&P industry (including most service company wastes) are exempt. This is not the case; in fact, only wastes generated by activities uniquely associated with the exploration, development or production of crude oil or natural gas at primary field operations (i.e., wastes from down-hole or wastes that have otherwise been generated by contact with the production stream during the removal of produced water or other contaminants from the product) are exempt from regulation under RCRA Subtitle C regardless of whether they are generated on-site by a service company or by the principal operator. In other words, wastes generated by a service company (e.g., unused frac or stimulation fluids

and waste products) that do not meet the basic criteria listed in the Report to Congress (i.e., are not uniquely associated with oil and gas E&P operations) are not exempt from Subtitle C under the oil and gas exemption, just as wastes generated by a principal operator that do not meet these criteria are not exempt from coverage by RCRA Subtitle C.

The 1988 Regulatory Determination also stated that "vacuum truck and drum rinsate from trucks and drums transporting or containing non-exempt waste" is not included within the exemption (emphasis added). The unstated corollary to this is that vacuum truck and drum rinsate from trucks and drums transporting or containing exempt wastes is exempt, provided that the trucks or drums only contain E&P-related exempt wastes and that the water or fluid used in the rinsing is not subject to RCRA Subtitle C (i.e., is itself non-hazardous). This is consistent with the general policy principle that certain wastes derived exclusively from RCRA Subtitle C-exempt wastes remain exempt from RCRA Subtitle C.

### *C. Crude Oil Pipelines*

Crude oil is produced from the ground through a system of one or more wells in an oilfield. The oil and any related produced water typically is directed to a series of tanks known as a tank battery where the water and oil separate naturally due to gravity; sometimes, separation is enhanced by the use of heat. Most water is separated from the oil at the tank battery. The volume of oil produced is then metered prior to a change in custody or ownership of the oil and/or its transportation off-site.

In the case of crude oil, all production-related activities occur as part of primary field operations at or near the wellhead. Wastes generated as part of the process of transporting products away from primary field operations are not exempt. Generally, for crude oil production, a custody transfer of the oil (i.e., the product) or, in the absence of custody transfer, the end point of initial product separation of the oil and water, will define the end point of primary field operations and the beginning of transportation. Only wastes generated before the end point of primary field operations are exempt. In this context, the term end point of initial product separation means the point at which crude oil leaves the last vessel, including the stock tank, in the tank battery associated with the well or wells. The purpose of the tank battery is to separate the crude oil from the produced water and/or gas. The movement of crude oil by pipeline or other means after the point of custody transfer or initial product separation is not part of primary field operations.

Therefore, any waste generated by the transportation or handling of the crude oil (product) after custody transfer or, in the absence of custody transfer, after the end point of initial product separation of the oil and water, is not within the scope of the exemption. Examples of non-exempt wastes resulting from transportation include transportation pipeline pigging wastes, contaminated water and snow resulting from spills from transportation pipelines or other forms of transport of the product, and soils contaminated from such spills. It should be noted that the hydrocarbon-bearing soils identified in the 1987 Report to Congress and listed in the 1988 Regulatory Determination as being exempt are limited to those hydrocarbon-bearing soils that occur at oil or gas E&P sites or result from spills of exempt waste. As discussed above, the exempt status of wastes generated by primary field operations and transported off-site for treatment or disposal is not affected by custody transfer.

### *D. Gas Plants and Feeder Pipelines*

Natural gas is produced from the ground through a system of one or more wells in a gas field. Some water may be separated from the gas at the wellhead, but due to economy of scale, the gas from several wells is generally commingled and sent to a central gas plant where additional

water and other impurities are removed. The ownership, or custody, of the natural gas commonly changes hands between the wellhead and the gas plant, yet the removal of impurities from the gas at a gas plant is still a necessary part of the production process for natural gas.

For natural gas, primary field operations (as defined in the 1987 Report to Congress) include those production-related activities at or near the wellhead and at the gas plant (regardless of whether or not the gas plant is at or near the wellhead) but prior to transport of the natural gas from the gas plant to market. Because the movement of the natural gas between the wellhead and the gas plant is considered a necessary part of the production operation, uniquely associated wastes derived from the production stream along the gas plant feeder pipelines (e.g., produced water, gas condensate) are considered exempt wastes, even if a change of custody of the natural gas has occurred between the wellhead and the gas plant. Some wastes generated at this production stage may not be uniquely associated with the natural gas production stream and are, therefore, not exempt (e.g., pump lube oil, waste mercury from meters and gauges). Similarly, soils contaminated by spills of wastes that are not uniquely associated with production operations, such as soils contaminated by mercury from gauges, are not exempt wastes.

Wastes generated at compressor stations and facilities located along the transportation and distribution network downstream from the gas plant or at the market end of the transportation system are not covered by the E&P exemption. These wastes are not uniquely associated with oil or gas exploration and production and are not exempt.

In addition, wastes generated by non-production related activities (i.e., manufacturing) that may occur at a gas plant are not exempt. These non-exempt manufacturing activities include operations that go beyond the removal of impurities from the raw gas and the physical separation of the gas into its component fractions. Manufacturing activities would be those that are similar to petrochemical plant operations, such as the cracking and reforming of the molecular structures of the various gas fractions and the addition of odorants or other substances. The end point of the scope of the exemption for natural gas is in the gas plant once manufacturing begins or, if no manufacturing occurs, at the point at which the natural gas leaves the gas plant for transportation to market.

It should be noted that the production of elemental sulfur from hydrogen sulfide gas at a gas plant is considered treatment of an exempt waste (i.e., the hydrogen sulfide gas is a uniquely associated waste). This waste treatment process reduces the volume and/or toxicity of the exempt waste and produces a saleable product. As such, this process is similar to crude oil reclamation and any residual waste derived from the hydrogen sulfide remains exempt.

Finally, wastes uniquely associated with operations to recover natural gas from underground gas storage fields are covered by the exemption just as if the gas were being produced for the first time. This is because operations to store and retrieve natural gas from natural underground formations, as well as the types of wastes generated, are virtually identical to those involved with the production of natural gas for the first time, although the volume of wastes generated by natural gas storage and retrieval is typically smaller than the volume generated by the initial production. In effect, in the context of the E&P exemption, the storage of natural gas in natural underground formations returns the gas to the beginning point of the production process.

### **III. Administrative Procedure Act Requirements**

Today's notice is issued without request for public comment since it does not revise, amend, repeal, change, or otherwise alter any EPA regulation, nor constitute a change to EPA's



1988 Regulatory Determination regarding oil and gas exploration and production wastes. This notice merely provides further clarification of EPA's statements regarding the scope of the exemption for oil and gas wastes. Thus, EPA does not believe that today's notice constitutes an action for which notice and comment is required under the Administrative Procedure Act (APA).

To the extent today's notice is covered by APA requirements, EPA believes that it is merely interpreting the scope of the existing RCRA statutory exclusion for oil and gas wastes, for which notice and comment is not ordinarily required. Alternatively, EPA believes it has good cause under Section 553(b) of the APA to publish this notice without opportunity for comment. EPA has already received substantial comment regarding the scope of the oil and gas exemption in response to its 1987 Report to Congress, and further comment on the issue is unnecessary, particularly since EPA is not altering its position from that which the Agency announced in the 1988 Regulatory Determination.

#### **IV. EPA RCRA Docket**

The EPA RCRA docket is located at: United States Environmental Protection Agency, RCRA Information Center, room M2427, 401 M Street, SW., Washington, DC 20460.

The RCRA Information Center is open from 9:00 to 4:00 Monday through Friday, except for federal holidays. The public must make an appointment to review docket materials. Call the docket at (202) 260-9327 for appointments. Copies cost \$.15 per page.

The following documents related to the July 6, 1988 regulatory determination are available for inspection in docket number F-88-OGRA-FFFFF.

- Report to Congress on Management of Wastes from the Exploration, Development, and Production of Crude Oil, Natural Gas, and Geothermal Energy;
- All supporting documentation for the regulatory determination, including public comments on the Report to Congress and EPA response to comments, and
- Transcripts from the public hearings on the Report to Congress.

All supporting documentation for this Federal Register Notice are available for inspection in docket number F-93-OGRC-FFFFF.

Dated: March 11, 1993.

Richard J. Guimond,  
Assistant Surgeon General, USPHS. Acting Assistant Administrator.

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**NOTES**