

required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a "major rule" as defined by 5 U.S.C. 804(2). This rule will be effective August 6, 2001.

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by September 4, 2001. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

#### List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Intergovernmental relations, Nitrogen dioxide, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides.

Dated: June 21, 2001.

**Carol Rushin,**

*Acting Regional Administrator, Region 8.*

Chapter I, title 40 of the Code of Federal Regulations is amended as follows:

#### PART 52—[AMENDED]

1. The authority citation for part 52 continues to read as follows:

**Authority:** 42 U.S.C. 7401–7671q.

#### Subpart G—Colorado

2. Section 52.320 is amended by adding paragraph (c)(93) to read as follows:

##### § 52.320 Identification of plan.

\* \* \* \* \*

(c) \* \* \*

(93) On June 7, 2001, the Governor of Colorado submitted a revision to the long-term strategy portion of Colorado's State Implementation Plan (SIP) for Class I Visibility Protection. The revision was made to incorporate into the SIP emissions reduction requirements for the Craig Station (a coal-fired steam generating plant located near the town of Craig, Colorado). This SIP revision is expected to remedy Craig Station's contribution to visibility

impairment in the Mt. Zirkel Wilderness Area.

(i) Incorporation by reference.

(A) Revision of Colorado's State Implementation Plan for Class I Visibility Protection: Craig Station Units 1 and 2 Requirements, Section III, effective on April 19, 2001.

[FR Doc. 01–16689 Filed 7–3–01; 8:45 am]

**BILLING CODE 6560–50–P**

## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 261

[SWH–FRL–6999–7]

#### Hazardous Waste Management System; Identification and Listing of Hazardous Waste: Spent Catalysts from Dual-Purpose Petroleum Hydroprocessing Reactors

**AGENCY:** Environmental Protection Agency.

**ACTION:** Notice of opportunity for public comment on memoranda clarifying the scope of petroleum hazardous waste listings.

**SUMMARY:** The Environmental Protection Agency (EPA) today is providing the public an opportunity to comment on Agency memoranda that explain how current RCRA regulations apply to spent catalyst wastes removed from dual purpose hydroprocessing reactors and generated at petroleum refining facilities. The regulations addressed in these memoranda were promulgated under the Resource Conservation and Recovery Act (RCRA) on August 6, 1998 (63 FR 42110) and among other things, listed spent hydrotreating catalysts (K171) and spent hydrorefining catalysts (K172) as hazardous wastes. Subsequent to that final rule and in response to inquiries from handlers of certain spent petroleum hydroprocessing catalysts, EPA issued two memoranda explaining that spent catalysts from dual purpose petroleum hydroprocessing reactors fall within the scope of the final listing determinations for K171 and K172. Today the Agency is notifying the public of the opportunity to comment on these previously issued memoranda.

**DATES:** EPA will accept public comments until September 4, 2001. Comments postmarked after this date will be marked "late" and may not be considered.

**ADDRESSES:** If you wish to comment on the memoranda discussed below, you must send an original and two copies of your comments referencing docket number F–2001–PR2P–FFFFF to: RCRA

Docket Information Center, Office of Solid Waste (5305G), U.S.

Environmental Protection Agency Ariel Rios, 1200 Pennsylvania Avenue, NW., Washington, DC 20460. Hand deliveries of comments should be made to the Arlington, VA address listed in the **SUPPLEMENTARY INFORMATION**. You also may submit comments electronically by sending electronic mail through the Internet to:

[rcradocket@epamail.epa.gov](mailto:rcradocket@epamail.epa.gov). See the beginning of **SUPPLEMENTARY INFORMATION** for instructions on electronic submissions.

You should not submit electronically any confidential business information (CBI). You must submit an original and two copies of CBI under separate cover to: RCRA CBI Document Control Officer, Office of Solid Waste (5305W), U.S. EPA Ariel Rios, 1200 Pennsylvania Avenue NW., Washington, DC 20460.

**FOR FURTHER INFORMATION:** For general information, contact the RCRA Hotline at (800) 424–9346 or TDD (800) 553–7672 (hearing impaired). In the Washington, DC, metropolitan area, call (703) 412–3323. For information on specific aspects of the information contained in the memoranda discussed below, contact Patricia Overmeyer of the Office of Solid Waste (5304W), U.S. Environmental Protection Agency Ariel Rios, 1200 Pennsylvania Avenue, NW., Washington, DC 20460. (E-mail address and telephone number: [Overmeyer.patricia@epa.gov](mailto:Overmeyer.patricia@epa.gov), (703) 605–0708.)

**SUPPLEMENTARY INFORMATION:** You should identify comments in electronic format with the docket number F–2001–PR2P–FFFFF. You must submit all electronic comments as an ASCII (text) format or a word processing format that can be converted to ASCII (text). It is essential to specify on the disk label the word processing software and version/edition as well as the commenter's name. This will allow EPA to convert the comments into one of the word processing formats used by the Agency. Please use mailing envelopes designed to physically protect the submitted diskettes. EPA emphasizes that submission of comments on diskettes is not mandatory, nor will it result in any advantage or disadvantage to any commenter. Some of the supporting documents in the docket also are available in electronic format on the Internet at URL: <http://www.epa.gov/epaoswer/hazwaste/id/petroleum/catalyst.htm>

EPA will keep the official record for this action in paper form. Accordingly, we will transfer all comments received electronically into paper form and place

them in the official record, which also will include all comments submitted directly in writing. The official administrative file is the paper file maintained at the RCRA Docket, the address of which is in **ADDRESSES** at the beginning of this document.

EPA's responses to public comments, whether the comments are received in written or electronic format, will be published in the **Federal Register** or in a response to comments document placed in the public docket. We will not reply immediately to commenters electronically other than to seek clarification of electronic comments that may be garbled in transmission or during conversion to paper form, as discussed above.

You may view public comments and the supporting materials for the issues and memoranda discussed below in the RCRA Information Center (RIC), located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, VA. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding federal holidays. To review file materials, we recommend that you make an appointment by calling (703) 603-9230. You may copy a maximum of 100 pages from any file maintained at the RCRA Docket at no charge. Additional copies cost \$0.15/per page.

### Customer Service

#### *How Can I Influence EPA's Thinking on the Memoranda?*

We invite you to provide your comments on the memoranda that are described below and included in the appendices. Your views on the issues discussed in these documents, your ideas on new approaches we have not considered, any new and/or relevant data you may have, your views on how these memoranda may affect you, and other relevant information are requested. Your comments must be submitted by the deadline shown in the section titled **DATES** above. Your comments will be most effective if you follow the suggestions below:

- Explain your views as clearly as possible and provide a summary of the reasoning you used to arrive at your conclusions. Provide examples to illustrate your views wherever possible.
- If you estimate potential costs, explain how you arrived at your estimate.
- Tell us which aspects of the memoranda you support, as well as which parts with which you disagree.
- Offer specific alternatives.
- Clearly label any CBI submitted as part of your comments (send all CBI information according to the special

procedures listed above under **ADDRESSES**.) Please also provide non-CBI summaries of any CBI information, if possible.

- Include your name, date, and the EPA docket number (F-2001-PR2P-FFFFF) with your comments.

### I. Background

#### *A. What Is the Reason for Today's Publication?*

On August 6, 1998, EPA listed as hazardous wastes spent hydrotreating catalysts (K171) and spent hydrorefining catalysts (K172) generated in petroleum refining operations (63 FR 42110). These regulations were promulgated under RCRA, 42 U.S.C. 6901, *et seq.* EPA took no action with regard to a third type of spent hydroprocessing catalyst generated by petroleum refineries, hydrocracking catalysts.

Subsequent to the promulgation of the hazardous waste listing determination, a number of industry and environmental groups filed lawsuits challenging the validity of the listings. These cases were consolidated in the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) in *American Petroleum Institute v. EPA*, Docket No. 94-1683.

Among the petitioners was Gulf Chemical and Metallurgical Corporation. Gulf asserted that the final rulemaking did not provide adequate definitions of the spent catalysts covered within the scope of the hazardous waste listing descriptions for K171 and K172. In particular, Gulf stated that the scope of the final listing descriptions did not adequately address the regulatory status of spent catalysts from petroleum hydroprocessing reactors that perform both hydrotreating and hydrocracking functions (*i.e.*, spent catalysts from dual purpose reactors). Gulf pointed out that such dual purpose reactors perform functions meeting both the definitions of "hydrotreating" and "hydrocracking" provided in DOE's Petroleum Supply Annual (PSA) and presented in the preamble to the August 6, 1998 final petroleum refining listing determination.

After reviewing the issues raised by Gulf in its petition, we concluded that the Agency had no dispute with the petitioner with regard to the regulatory status of spent catalysts removed from dual purpose reactors. In fact, we saw no grounds for Gulf's challenge to the August 1998 rulemaking given that our interpretation of the final listing descriptions for K171 and K172 is that spent catalysts from petroleum hydroprocessing units that perform

hydrorefining and hydrotreatment functions are captured by the listing.

Gulf's challenge did, however, serve to highlight the potential for confusion regarding the regulatory status of spent catalysts removed from dual purpose reactors. Although a straight reading of the regulatory language promulgated in the final rule should result in a conclusion that spent catalysts from units or reactors that perform hydrotreatment or hydrorefining functions are listed hazardous wastes, EPA's Office of Solid Waste decided to distribute to the Agency's Senior RCRA Policy Advisors a memorandum explaining the regulatory status of spent catalysts from dual purpose petroleum hydroprocessing operations. The memorandum was issued on November 29, 1999, and was distributed to industry trade associations and posted on EPA's "RCRA On-line" website (<http://www.epa.gov/rcraonline>). The text of the memorandum is included as an appendix to this publication and a copy of the original memorandum is contained in the docket. After the memorandum was issued, Gulf dismissed its lawsuit on the hazardous waste listings (K171 and K172).

The views expressed in the November 29, 1999 memorandum are based upon the fact that spent catalysts removed from dual purpose reactors facilitate hydrotreatment or hydrorefining of petroleum feedstock. Dual purpose reactors are hydroprocessing reactors that perform hydrotreatment or hydrorefining functions while simultaneously hydrocracking petroleum feedstock. We further explained in the memorandum that the fact that such reactors hydrocrack petroleum feedstocks does not exclude the spent catalysts from the hazardous waste listing. It was never the Agency's intent to exclude a spent catalyst from the listings for K171 and K172 on the basis that a spent catalyst may be removed from a unit or reactor that hydrocracks, if that unit or reactor also hydrotreats or hydrorefines the petroleum stream.

In February 2000, API filed a lawsuit in the D.C. Circuit challenging the validity of the November 29, 1999 memorandum. *API v. EPA*, Docket No. 00-1069. API, however, agreed to hold this lawsuit in abeyance until the court decided the challenge to the original hazardous waste listing determinations.

While awaiting the opinion of the court in the first API lawsuit, and while the second suit was being held in abeyance, EPA received further inquiries on the regulatory coverage of spent catalysts from dual purpose hydroprocessing reactors. In response to

these additional inquiries, EPA distributed a second memorandum on June 1, 2000 further clarifying the scope of the K171 and K172 hazardous waste listings with regard to spent catalysts removed from dual purpose reactors. EPA also responded to two letters from individual petroleum refineries that requested information on the regulatory status of spent catalysts from two specific types of hydroprocessing reactors.

On June 27, 2000, the D.C. Circuit issued an opinion in the first lawsuit that upheld EPA's hazardous waste listing determinations. *API v. EPA*, 216 F.3d 50. API, thereupon, reactivated its lawsuit on the November 29, 1999 memorandum.

In June 2001, API and EPA entered into an agreement settling the second lawsuit. Under the terms of the settlement agreement EPA has agreed to publish this announcement offering the opportunity for public comment. EPA will evaluate and respond to the public comments and publish a response in the **Federal Register** announcing EPA's decision whether to maintain, and possibly clarify, the positions expressed in the memoranda or to change them.

#### *B. What Are Dual Purpose Reactors?*

Petroleum refineries use hydroprocessing units to prepare residual stream feedstocks for cracking and coking units and to polish final products (e.g., diesel fuels). Hydroprocessing reduces the boiling range of petroleum feedstock and removes substantial amounts of impurities from the feed.<sup>1</sup> During hydroprocessing, molecules are split or saturated in the presence of hydrogen. Hydroprocessing is a broad term encompassing the more specific processes of hydrotreating, hydrorefining, and hydrocracking. Hydroprocessing reactors that hydrotreat petroleum feedstock stabilize the feed and remove impurities catalytically and react the feed with hydrogen. Hydrotreating includes the removal of sulfur, nitrogen, metals and other impurities from petroleum feedstocks. Spent catalysts removed from hydrotreating reactors are listed hazardous wastes (K171). Hydrorefining also removes impurities, but uses more severe operating conditions than hydrotreating, and treats heavier molecular weight petroleum fractions (e.g., residual fuel oil and heavy gas oil). Spent catalysts removed from

hydrorefining reactors also are listed hazardous wastes (K172).

Hydrocracking is a process in which the primary purpose is to reduce the boiling range of petroleum feedstocks. EPA has not made a hazardous waste listing determination with regard to the status of spent catalysts removed from petroleum hydrocracking reactors.

Dual purpose hydroprocessing reactors process petroleum feedstocks by both hydrotreating (or hydrorefining) the feedstock (i.e., removing sulfur, nitrogen, metals, and/or other impurities) and hydrocracking the feedstock (i.e., reducing boiling points). Given that the catalysts in dual purpose reactors are used to promote a hydrotreating or hydrorefining function, as well as a hydrocracking function, such catalysts when spent, are listed hazardous wastes under the plain language of the regulation.

The Agency knows of three specific types of dual purpose hydroprocessing reactors currently in use at petroleum refineries. All are expanded- or ebullating-bed processes. These are the H-Oil, the LC-Fining, and the T-Star reactors. These reactors are designed to process heavy feeds and use catalysts to perform hydrotreating (i.e., metals removal, desulfurization) and hydrocracking functions. Ebullated bed hydroprocessing is a process that takes place in a reactor bed that is not fixed. In such a process, hydrocarbon feed streams enter the bottom of the reactor and flow upwards passing through the catalyst which is kept in suspension by the pressure of the fluid feed.

LC-Fining and H-Oil both use similar technologies but offer different mechanical designs. The purpose of an ebullating bed reactor is to convert the most problematic feeds, such as atmospheric residuum, vacuum residues, and heavy oils having a high content of asphaltenes, metals, sulfur, and sediments, to lighter, more valuable products while simultaneously removing contaminants. The function of the catalyst is to remove contaminants such as sulfur and nitrogen heteroatoms, which accelerate the deactivation of the catalyst, while cracking (converting) the feed to lighter products.

The H-Oil reactor is used to process residue and heavy oils to produce upgraded petroleum products such as LPG, gasoline, middle distillates, gas oil, and desulfurized fuel oil. Stable operation is achieved through a high operating pressure which ensures a sufficient reactor outlet hydrogen partial pressure. The H-Oil process can achieve conversion rates of 45 to 90 percent,

desulfurization of 55 to 92 percent, and demetallization of 65 to 90 percent.<sup>2</sup>

The LC-Fining process serves the purposes of desulfurization, demetallization, Conradson Carbon Residue (CCR) reduction,<sup>3</sup> and hydrocracking of atmospheric and vacuum residuum. The LC-Fining process can be used to yield a full range of high quality distillates including residuals that may be used as fuel oil, synthetic crude or feedstock for a residuum FCC, coker, visbreaker or solvent deasphalter. The LC-Fining process can achieve conversion rates of 40 to 97 percent, desulfurization of 60 to 90 percent, and a demetallization rate of 50 to 98 percent.

The T-Star Process also is an ebullated bed hydrotreating/hydrocracking process designed to process very difficult feedstocks (e.g., atmospheric residuum, vacuum residues, and heavy oils with high levels of sulfur and/or metals). T-Star units can maintain conversion rates in the range of 20 to 60 percent and hydrodesulfurization rates in the range of 93 to 99 percent.<sup>4</sup> Additional information on each of the dual-purpose technologies is provided in "Background Document Clarifying the Scope of Petroleum Hazardous Waste Listings: Supplemental Information Regarding Petroleum Hydroprocessing Units" which can be found in the docket.

## **II. Summary of the Agency's Views on Dual Purpose Catalysts**

EPA believes that spent catalysts removed from dual purpose reactors (i.e., those hydroprocessing reactors that perform both hydrotreating, or hydrorefining, and hydrocracking functions) are listed hazardous wastes. In the November 29, 1999 memorandum, the Agency clarified that these spent catalysts meet the listing descriptions for K171 and/or K172. Such materials include spent catalysts removed from expanded- or ebullated-bed reactors (e.g., H-Oil, T-Star, and LC-fining processes).

As explained in the preamble to the August 6, 1998 final rule, definitions for petroleum hydrotreating, hydrorefining, and hydrocracking operations are not

<sup>2</sup> See "Background Document Clarifying the Scope of Petroleum Hazardous Waste Listings: Supplemental Information Regarding Petroleum Hydroprocessing Units."

<sup>3</sup> Carbon residue is roughly related to the asphalt content of crude and to the quantity of lubricating oil fraction that can be recovered from it. It often is expressed in terms of weight percent carbon residue by the Conradson ASTM test procedure.

<sup>4</sup> Hydrocarbon Processing. "Refining Processes 2000." Process descriptions of hydroprocessing units. November 2000.

<sup>1</sup> Gary, James H. and Handwerk, Glenn E., "Petroleum Refining Technology and Economics," Third Edition, Marcel Dekker, Inc., New York, 1994, p. 174.

universally established. After considering all relevant materials in the rulemaking record, EPA decided that the simplest way to differentiate between hydrocracking and hydrotreating or hydrorefining is to rely on definitions provided in the Department of Energy's (DOE) Petroleum Supply Annual (PSA). The PSA contains operational definitions of hydrotreating and hydrocracking for purposes of submitting form EIA-820 to DOE. In the August 1998 final rule, EPA rejected reliance on other methods of differentiation, such as specific percentages of the feed that are converted, or reduced in molecular size, for each of the operations. EPA rejected the option of relying on specific conversion rates to differentiate between hydrocracking reactors and other hydroprocessing reactors. Our reasons for rejecting the use of conversion rates included the fact that the ability to vary the operating conditions for some reactors, or changes to the manner in which feedstock conversion is calculated or accounted for, may allow refineries to re-classify particular reactors without significantly altering the amount of hydrotreatment or hydrorefining conducted in the reactor.

In addition, the Agency, in the November 1999 memorandum, clarified that the listing should not be interpreted as providing that spent catalysts from any hydrocracking process—regardless of whether or not hydrotreatment also occurs—are, by definition, outside the scope of the K171 and K172 listings (*i.e.*, if a spent catalyst otherwise meets the K171 or K172 listings because it comes from a unit that performs a hydrotreating function, the fact that the spent catalyst is removed from a unit that also hydrocracks does not exclude the spent catalyst from the hazardous waste listing). In the August 1998 final rule, we did not define hydrocracking and then provide that hydrotreating and hydrorefining are “not hydrocracking.” The final listing determinations were meant to include spent catalysts removed from reactors that perform hydrotreating and hydrorefining functions, even if the reactors also perform a hydrocracking function. This is consistent with EPA's decision in the final rulemaking to rely on the PSA definitions in determining the function or functions performed by a reactor. The PSA definitions of hydroprocessing take into account the function or operation performed by a reactor when distinguishing between hydroprocessing operations. We, therefore, clarified in the November 1999 memorandum that it was based upon these functions,

hydrotreatment and hydrorefining, that we determine the regulatory status of the spent catalysts from dual purpose reactors. It was never our intent to allow the scope of the hazardous waste listing determination to be defined or superseded by the fact that any particular catalyst performs a hydrocracking function, when that same catalyst also facilitates a hydrotreatment or hydrorefining function in the same unit or reactor.

Further, in the November 29, 1999 memorandum, EPA explained that spent catalysts generated by refineries that self-classify spent catalyst from dual purpose hydroprocessors as hydrocracking catalyst, by identifying a unit as a hydrocracking unit when reporting to DOE, will nonetheless be K171 or K172 listed wastes if the unit performs a hydrotreatment or hydrorefining function. The final rule should not be interpreted as allowing petroleum refineries to classify dual purpose reactors as hydrocracking reactors and in doing so claim that the spent catalysts removed from these reactors are spent hydrocracking catalysts (which are not listed hazardous wastes). Rather, EPA relied on the PSA definitions because they are operational definitions. Thus, the rule does not permit refineries to avoid identifying spent catalysts from dual purpose reactors as listed hazardous wastes simply because they classified (or reclassified) the unit from which the catalyst is removed as a hydrocracking unit (this is based on the fact that the catalyst promotes hydrocracking as well as hydrotreating or hydrorefining). Catalysts removed from reactors that perform a hydrotreating or hydrorefining function, regardless of whether hydrocracking is performed in the same unit, are listed hazardous wastes, when spent.

After EPA distributed the November 29, 1999 memorandum, it was brought to the Agency's attention that the memorandum could be interpreted as indicating that spent catalysts from petroleum hydroprocessing reactors that hydrocrack are captured by the hazardous waste listings, even though such reactors may conduct minimal and incidental hydrotreatment or hydrorefining of previously treated feedstock. For example, some reactors that hydrocrack petroleum feedstock treated previously to remove sulfur, metals and other impurities, may also in practice perform incidental and minimal hydrotreating or hydrorefining due to the operating parameters employed and the nature of the pre-treated feed entering the reactor.

The Agency did not intend, when issuing the November 29, 1999 memorandum, to include within the scope of the hazardous waste listings spent catalyst from hydroprocessing reactors, if such reactors perform only a minimal and incidental amount of hydrotreatment or hydrorefining. Therefore, we issued a memorandum dated June 1, 2000, clarifying that spent catalysts removed from hydroprocessing reactors that hydrocrack petroleum feedstocks and perform no more than “minimal and incidental” hydrotreatment or hydrorefining are not within the scope of the hazardous waste listing descriptions for K171 or K172. This is consistent with the regulatory language, and with the intention stated in the preamble and the November 1999 memorandum, to adopt an operational approach to defining hydroprocessing catalysts. A spent catalyst removed from a unit that performs hydrotreating or hydrorefining operations is a “spent hydrotreating catalyst” or a “spent hydrorefining catalyst” within the meaning of the regulation, even if the unit also performs a hydrocracking function. However, EPA does not consider a spent catalyst removed from a reactor that performs hydrocracking operations to be a “spent hydrotreating catalyst” or “spent hydrorefining catalyst” simply because some hydrotreating or hydrorefining unavoidably occurs in the unit. A copy of the Agency's June 1, 2000 memorandum also is included in the docket. The text of the memorandum also is included as an appendix to this announcement.

EPA also received requests from members of the petroleum refining industry for clarification of the regulatory status of two specific types of spent catalysts. In response to these requests, we issued two letters to the requesting parties on June 1, 2000. We briefly summarize these letters below to provide an illustration of the application of the principles set out in the November 1999 and June 2000 memoranda.

In a letter to Motiva Enterprises LLC, we concluded that the spent catalyst from the Motiva refinery's H-Oil unit is a listed hazardous waste. Based upon our determination that the H-Oil unit is a dual purpose hydroprocessing reactor designed to both hydrotreat and hydrocrack petroleum feedstock in the same reactor using a single, ebullating bed catalyst with no guard bed<sup>5</sup> reactor, we found that the spent catalyst from

<sup>5</sup> A guard bed is used to mitigate pressure drop problems in the reactor due to contaminants in the feedstock.

the H-Oil unit meets the listing description for spent hydrotreating catalyst (K171). The H-Oil unit is precisely the type of dual purpose reactor addressed in our memorandum of November 29, 1999, in that the H-Oil unit uses a single catalyst to achieve both a high level of hydrocracking (*i.e.*, the boiling point of a high percentage of the feed is reduced) and a significant amount of hydrotreatment (*i.e.*, a high percentage of heteroatoms are removed).

In a second letter, to Chevron Research and Technology Company, we evaluated the regulatory status of spent catalysts from Chevron's two-stage ISOCRACKING hydroprocessing unit. In this letter, we stated that spent catalyst removed from the first stage of the ISOCRACKING unit, which performs a predominant treatment function, is a listed hazardous waste (K171). The inclusion of spent catalysts from the first stage reactor of this unit closely follows our determination that spent catalysts from guard bed reactors are within the scope of the listing descriptions for K171 and K172. This determination was clarified in the preamble to the August 6, 1998 final rule. Also, the final listing descriptions for K171 and K172 clearly designate spent catalysts from guard bed reactors as included within the scope of the listings (see 40 CFR 261.32). In addition, we also concluded that spent catalysts removed from the second stage reactor of Chevron's ISOCRACKING unit are not spent hydrotreating or hydrorefining catalysts and are not captured by the listing descriptions for K171 and K172. The second stage reactor within the ISOCRACKING unit receives pretreated feed and performs a predominant hydrocracking function; any hydrotreatment that occurs in the second stage of the reactor is minimal and incidental.

### III. Scope of the Public's Opportunity To Comment

EPA is providing this opportunity for the public to comment on the memoranda described above to settle the lawsuit filed by API in February 2000. EPA believes that the explanation of the hazardous waste listings' applicability to spent catalysts removed from dual purpose reactors, as expressed in the memoranda, is correct both as a procedural and substantive matter. However, the Agency acknowledges that the memoranda are controversial within the regulated community and believes that providing this opportunity for public comment is in the interest of good government because it will provide interested parties with a chance to influence the

Agency's thinking on this issue and avoid potentially unnecessary litigation.

EPA is soliciting comment on the regulatory interpretation presented in the November 29, 1999 and the June 1, 2000 memoranda which establish the Agency's position that spent catalysts removed from petroleum hydroprocessing reactors that perform both a hydrotreatment (or hydrorefining) function and a hydrocracking function are captured by the hazardous waste listings K171 and K172. In addition to receiving general comments on the content of the memoranda, the Agency solicits comments as to whether there are specific situations where it is not clear whether, or relatively how much, hydrotreatment or hydrorefining is either occurring or intended. If such cases exist, EPA is interested in hearing whether there is some way to provide greater clarity in general guidance for distinguishing those situations. For example, EPA is interested in comment on whether there is a better test for generally describing dual purpose units that are not H-Oil, LC-Fining, or T-Star reactors (the reactors that, as noted above, EPA knows about) but perform more than "minimal and incidental" hydrotreating or hydrorefining, or whether decisions regarding the regulatory status of these other reactors must be made on a case-by-case basis in all instances. EPA particularly requests that any improvements suggested by commenters be consistent with our focus on determining when a catalyst is used in a reactor that performs a hydrotreatment or hydrorefining function, regardless of whether it also is performing a hydrocracking function. Based on comments received, EPA may further clarify, or change, the approach taken in the November 1999 and June 2000 memoranda for identifying dual purpose reactors.

EPA will evaluate comments relevant to the issues discussed in the two memoranda and will publish a response to comments in the **Federal Register** announcing its intention either to reaffirm (and possibly clarify) the memoranda, or to take a different approach, based on the comments received. EPA will continue to apply the approach set forth in the memoranda during the pendency of this proceeding.

EPA is not reopening comment on any substantive or procedural issues affecting the August 6, 1998 hazardous waste listing rule. Comments are requested solely on the issues addressed within the context of the two memoranda. EPA is not soliciting comment on the hazardous waste listings themselves and does not intend

to respond to such comments, if received.

Likewise, we are not soliciting comments on the applicability of the existing petroleum refining listings to the provisions of CERCLA. Wastes listed as hazardous wastes under RCRA are by definition hazardous substances under CERCLA, and are included in the list of hazardous substances in 40 CFR 302.4, along with their corresponding reportable quantities ("RQs"). Hazardous substance RQs are those quantities of the designated chemical or waste that trigger certain reporting requirements if released to the environment.

Dated: June 11, 2001.

**Michael Shapiro,**

*Acting Assistant Administrator, Office of Solid Waste and Emergency Response.*

### Appendix A: November 29, 1999 Memorandum on Dual Purpose Catalysts

#### Memorandum

*Subject:* Spent Catalysts From Petroleum Refining "Dual Process" Units.  
*From:* Elizabeth Cotsworth, Director, Office of Solid Waste (5301W).  
*To:* RCRA Senior Policy Advisors, Regions I-X.

On August 6, 1998, EPA listed as hazardous waste spent hydrotreating catalysts (K171) and spent hydrorefining catalysts (K172) generated in petroleum refining operations (63 FR 42110). The Agency took no action regarding a listing determination for a third type of spent petroleum hydroprocessing catalyst, spent hydrocracking catalysts.

Since promulgation of the final rule, questions have been raised with regard to the regulatory status of spent catalysts removed from "dual purpose" reactors. Such reactors process refinery streams by both treating the feed to remove contaminants, such as sulfur, nitrogen and metal compounds (*i.e.*, hydrotreating), in addition to converting petroleum molecules to lighter fractions (*i.e.*, hydrocracking). In addition, it has come to the Agency's attention that some affected parties may believe that the definitions provided for catalytic hydrotreating and catalytic hydrocracking processes in the final Petroleum Rule, as well as the listing descriptions for spent hydrotreating catalysts (K171) and spent hydrorefining catalysts (K172), allow petroleum refineries to self-classify spent catalysts from dual purpose hydroprocessors as hydrocracking catalysts (which are not listed hazardous wastes), even in cases where such spent catalysts are functioning, at least in part, as hydrotreating (or hydrorefining) catalysts.

As explained in the preamble to the final rule, definitions for petroleum hydrotreating, hydrorefining, and hydrocracking operations are not universally established. After considering all relevant materials in the rulemaking record, EPA decided that the simplest way to differentiate between

hydrocracking and the other two petroleum hydroprocessing operations is to rely on definitions provided in the Department of Energy's (DOE) Petroleum Supply Annual (PSA). The PSA contains operational definitions of hydrotreating and hydrocracking for purposes of submitting form EIA-820 to DOE. EPA rejected reliance on other methods of differentiation, such as specific percentages of the feed that are reduced in molecular size for each of the operations.

The Agency's interpretation of the final listing determinations for spent hydroprocessing catalysts is that spent catalysts from petroleum hydroprocessors performing hydrotreating or hydrorefining operations are captured by the listings, regardless of whether hydrocracking also occurs in a dual purpose unit. This is because the final rule, as well as the PSA, defines a spent catalyst as hydrotreating or hydrocracking on the basis of the type of hydroprocessing operation in which the catalyst was used. This is consistent with the intent of the listing to identify wastes containing the hazardous constituents that are removed by catalytic hydrotreating or hydrorefining, regardless of whether hydrocracking also is occurring.

In addition, there may be a misunderstanding involving whether refineries may self-classify spent catalyst from dual purpose hydroprocessors as hydrocracking catalyst, by merely identifying a unit as a hydrocracking unit when reporting to DOE. The final rule should not be interpreted as allowing petroleum refineries to classify "dual purpose" units as hydrocracking units and in doing so claim that the spent catalysts removed from these units are spent hydrocracking catalysts (which are not listed hazardous wastes). In the preamble to the final rule, EPA explained that relying on the PSA is the "simplest" way to differentiate among the processes and that, if a refinery has been classifying its hydroprocessor as a hydrocracker, the unit would generally not be covered by K171 or K172. Rather, as noted above, EPA relied on the PSA definitions because they are operational definitions. Thus, the rule does not permit refineries to avoid identifying spent catalysts from dual purpose units as listed hazardous wastes simply because they classified (or reclassified) the unit from which the catalyst is removed as a hydrocracking unit, based solely on the fact that some hydrocracking takes place in the presence of the catalyst. Catalysts that perform a hydrotreating function, regardless of whether hydrocracking is performed in the same unit, are listed hazardous wastes, when spent. Consequently, as explained above, the Agency's position with regard to spent catalysts removed from dual purpose reactors is that these spent catalysts are listed hazardous wastes.

As you know, in addition to correctly classifying spent catalysts as solid and/or hazardous wastes, generators also are required to determine if spent catalysts that are hazardous wastes (either because they meet the definitions of listed wastes K171 or K172 or because the spent catalyst exhibits a characteristic of hazardous waste) have to

be treated to meet the land disposal restrictions standards before being land disposed. Please note that treatment of spent catalysts that are listed hazardous wastes K171 and K172 may require a combination of thermal treatment (to oxidize sulfides and vanadium), vanadium recovery, and stabilization (without improper dilution) to achieve the applicable land disposal restrictions.

Should you have any questions with regard to this issue, please feel free to contact Patricia Overmeyer of my staff at (703) 605-0708.

cc:

Mr. Ralph Colleli, American Petroleum Institute,  
Mr. John W. Hilbert III, The Ferroalloys Association  
Association of State and Territorial Solid Waste Management Officials

#### Appendix B: June 1, 2000 Memorandum on Spent Dual Purpose Catalysts

##### Memorandum

*Subject:* Spent Catalysts From Petroleum Refining "Dual Process" Reactors  
*From:* Elizabeth Cotsworth, Director, Office of Solid Waste (5301W).  
*To:* RCRA Senior Policy Advisors, Regions I-X.

On November 29, 1999, I sent you a memorandum entitled "Spent Catalysts from Petroleum Refining 'Dual Process' Units." In that memorandum, I described the Agency's position on the regulatory status of certain spent hydroprocessing catalysts. I stated that, in response to questions raised regarding the regulatory status of spent catalysts removed from "dual purpose" reactors<sup>1</sup> in petroleum refineries, EPA considers spent catalysts from such units to be listed hazardous wastes (*i.e.*, K171, K172).

After this memorandum was distributed to stakeholders, the Agency received questions from interested parties regarding its potential scope. A primary concern raised was that the wording of the memorandum may be interpreted by Regional and State officials in a way that would define virtually all spent hydroprocessing catalysts generated by the petroleum refining industry as listed hazardous waste under RCRA Subtitle C. There was concern that because *some* hydrotreating may occur in all hydroprocessing reactors, regulators would conclude that *any* hydrotreating occurring in a reactor would cause the spent catalyst removed from the reactor to be considered a listed hazardous waste. This was not our intention.

I would like to clarify that we do not consider spent catalysts from a petroleum hydroprocessing reactor to be a listed hazardous waste (meeting the definitions of

<sup>1</sup> Note that the words "unit" and "reactor" are used interchangeably by EPA. A petroleum refinery may consider a unit to be made up of a number of reactors. Our concern is with the proper classification of a spent catalyst from or generated from a single specific vessel based on the function performed by the catalyst, regardless of the configuration or terminology used by individual refineries.

either K171 or K172) solely because some incidental and minimal amount of hydrotreatment of feeds occurs in such unit. These catalysts are, however, subject to evaluation against the existing hazardous characteristics. We recognize that some minimal amount of hydrotreating may occur in any hydroprocessing reactor, even reactors that hydrocrack feedstreams containing very low levels of sulfur, nitrogen, and metals. As a general rule, we consider the definitions provided in the Department of Energy's Petroleum Supply Annual (PSA) to be the best way to identify processes that hydrotreat and processes that hydrocrack. The definitions used in the PSA define hydroprocessing in terms of the function performed. A more complete description of these definitions is provided in the preamble to the petroleum refining listing determination (63 FR 42110, August 6, 1998, see Pp. 42155-42156).

Again, the November 29, 1999 memorandum was directed more at alerting Regional and State officials to the issue of the status of spent catalysts removed from reactors that both hydrotreat and hydrocrack petroleum feedstreams in a single reactor. We are alerting all interested parties that we continue to stand by the determination in the November 29 memorandum that such "dual purpose" reactors generate spent catalysts that are listed hazardous wastes subject to regulation under RCRA Subtitle C. At the same time, we also are clarifying that spent catalysts from hydrocracking reactors that do only minimal and incidental hydrotreating are not listed hazardous wastes. However, as noted previously, spent catalysts from hydrocracking reactors are subject to evaluation against the hazardous waste characteristics.

If you should have any questions regarding this clarification, please feel free to contact either Rick Brandes at (703) 308-8871 or Patricia Overmeyer at (703) 605-0708.

cc:

Mr. Ralph Colleli, American Petroleum Institute  
Mr. John W. Hilbert III, The Ferroalloys Association  
Mr. Thomas Kennedy, Association of State and Territorial Solid Waste Management Officials

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## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 300

[FRL-7003-6]

#### National Oil and Hazardous Substances Pollution Contingency Plan; National Priorities List

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

**ACTION:** Partial direct final deletion of the Jacobs Smelter Superfund Site from the National Priorities List (NPL).