9433.1990(07)

DELISTING PETITION OF NITROGEN TETROXIDE RINSATE

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

DEC 21 1990

Mr. James D. Phillips
Director of Engineering Development
National Aeronautics and Space Administration
John F. Kennedy Space Center
Kennedy Space Center, FL 32899

Dear Mr. Phillips:

We have completed our review of your delisting petition (#0823) which requests the exclusion of nitrogen tetroxide (N2O4) rinsate generated from draining and rinsing operations associated with (N2O4) propellant use at the Kennedy Space Center facility located on Merritt Island, Florida. This waste is currently classified as EPA Hazardous Waste No. P078. Based on our evaluation of the petition, we will recommend to the Assistant Administrator for Solid Waste and Emergency Response that the petition be denied.

Our decision to recommend denial of the petition is based on the results of the corrosivity analyses for two of the four samples collected on July 26, 1989. The pH of these two samples was reported to be 2.0, which indicates that the petitioned waste exhibits the characteristic of corrosivity. Under the Resource Conservation and Recovery Act (RCRA), liquid wastes which exhibit a pH of less than or equal to 2.0 or greater than or equal to 12.5 are considered to exhibit the characteristic of corrosivity. See 40 CFR 261.22. As stated in 40 CFR §260.22(e)(3), the petitioner must demonstrate that the waste does not exhibit any of the characteristics defined in §§261.21 through 261.24, which include the characteristic of corrosivity.

Therefore, we conclude that the analytical data submitted as part of your petition show that the waste exhibits the characteristic of corrosivity. We believe that the waste should be considered hazardous and subject to regulation under 40 CFR Parts 260 through 268 and the permitting standards of 40 CFR Part

270. Accordingly, we will recommend to the Assistant Administrator that a notice proposing to deny your petition be published in the Federal Register.

It is our practice to give petitioners the option of withdrawing their petition to avoid a negative publication in the Federal Register. If you prefer this option, you must send us a letter withdrawing the petition and acknowledging that the wastes are considered hazardous and will be managed as such. If you send such a letter, it should be forwarded to this office within two weeks of the date of receipt of today's correspondence. If you choose not to withdraw the petition, we will recommend that a proposed denial decision be published in the Federal Register. Please forward any correspondence to the following address:

Mr. James Kent
U.S. Environmental Protection Agency
401 M St., S.W.
Washington, DC 20460
Mail Code OS-333

Please realize that you also have the option of resubmitting a new petition, at a later date, if you can treat the waste such that it no longer exhibits the characteristic of corrosivity. Enclosure 1 to this letter outlines the deficiencies in the information provided in your present petition that would need to be addressed should you re-petition the Agency. We suggest that you contact us if you do plan to submit a new petition so that we can inform you of any revisions to the petition review process that may be relevant to your petition effort.

If you have any questions regarding our findings, please contact Narendra Chaudahari of my staff at (202) 382-4783.

Sincerely,

Original Document signed

David Bussard, Director
Characterization and Assessment
Division

Enclosure

cc: Doug McCurry, Region IV
James Scarbrough, Region IV
Bob Scarberry, EPA HQ
Robert Kayser, EPA HQ
Narendra Chaudahari, EPA HO
Jim Kent, EPA HQ
Howard Finkel, ICF Incorporated

ENCLOSURE 1

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

DELISTING PETITION # 0823:

LIST OF DEFICIENCIES IN THE PETITION

The following is a list of information that was either not included or not sufficiently presented in the delisting petition submitted in July, 1990.

(1) General description and schematic of all cleaning, treating, decontamination, maintenance, handling and all other processes associated with the application of nitrogen tetroxide (N2O4) (i.e., all procedures and activities prior to, during, and following application of (N2O4) propellant):

- Documentation of the use and location of use of sampling equipment (e.g., containers, hoses), mobile equipment (e.g., tankers, drums, cylinders), transfer equipment, drums and other containers, storage and transfer systems, propellant components and hoses, and any other equipment used; and

- Documentation of any hazardous constituents associated with surfaces treated with (N2O4) or with equipment used in cleaning, treating, decontaminating, and handling treated surfaces that could potentially enter the rinsate waste stream.

(2) Specific description of the cleaning/passivation processes:

- Explanation of the types of products/surfaces that undergo each of the cleaning/passivation processes;

- Description and quantity of all substances and materials used (provide Material Safety Data Sheets for constituents considered hazardous by the Occupational Health and Safety Administration), including trichloroethylene

(listed in Appendix VIII of 40 CFR §261 as hazardous) and substances described/identified in the petition as "caustic", "detergent", and "deoxidate"; and

- Justification that undergoing the cleaning/passivation processes precludes the introduction of residual solvents or other cleaning agents in the waste stream.

(3) Specific description of all types of surfaces on which (N_2O_4) is applied.

(4) Specific description of surface and equipment preparation/decontamination processes following (N_2O_4) application, including draining, rinsing with water, decontamination, validation, certification, maintenance, and cleaning.

- Description of the location(s) at which the petitioned waste rinsate is generated; and

- Explanation of method(s) of draining waste rinsates from equipment and surfaces and subsequent handling of the petitioned waste prior to drum storage.

(5) Specific description of spillage collection system:

- Explain type of system(s) (e.g., floor drainage);

- Discussion of potential for substances other than the petitioned waste to enter the system, including a list of these substances and quantities entering the waste stream annually; and

- Explanation of the way in which the spillage collection system operates in conjunction with cleaning/passivation, N_2O_4 application, and post-application cleaning, decontamination, handling, etc.

(6) Description of waste stream generation and management:

- Length of time that the petitioned waste has been generated;

- Explanation of the difference between drum accumulation and "bulk" accumulation;

- Explanation of the method and length and location of bulk accumulation;

- Documentation of storage equipment used for drum and bulk accumulation and method(s) of transferring accumulated wastes to drum storage;

- Description of treatment method used on petitioned waste generated in the past;

- Explanation of means of on-site storage of the entire volume of the petitioned waste that was generated in the past (if the waste rinsate has been stored in surface impoundments or any other type of land-based unit, you are required to submit ground-water monitoring data); and

- Specify which of the waste management options will be used if the petitioned waste is delisted.

(7) Description of waste sampling procedures followed:

- Description of strategy for sample collection (i.e., frequency, duration, method of sampling, number of drums sampled, location of waste sampled);

- Justification of sampling frequency given facility use of (N_2O_4) during launch schedules;

- Justification of claim that rinsate generated from water and residual (N_2O_4) is uniform given that different types of equipment are used to apply (N_2O_4) propellant at different locations in the facility (i.e., prove that the type of equipment used in (N_2O_4) application and the location of use do not cause the petitioned waste to vary significantly);

- Discussion of the potential for waste rinsates to settle in temporary storage and final drum storage; and

- Documentation of chain-of-custody procedures.

(8) Description of waste testing procedures followed:

- In the absence of adequate procedures to test for the presence of (N2) in the petitioned waste, the petitioner must provide a convincing demonstration to account for the complete conversion of N02 to other compounds upon contact with water;

- Justification that the petitioned waste does not exhibit the characteristic of reactivity (pure (N2O4) is known to react with various organic substances, solvent residues, chlorocarbons, alcohols, and other chemicals, resulting in spontaneous ignition). You should provide evidence that the petitioned (N2O4) rinsate is not capable of reacting violently with any chemicals. This argument can be based on the documented absence of (N2O4) and N02 as required above.

- Justification that the petitioned waste does not exhibit the characteristic of ignitability (the petitioner is required to show that the flash point is not less than 60 degrees Celsius; in this petition, it is stated that the testing laboratory extinguished the flame at approximately 60 degrees Celsius; the petitioner must specify exactly when the flame was extinguished in order to determine whether the testing method was in accordance with test required as specified in 40 CFR §261.21); and

- Provide testing date(s) for all samples collected on October 10, 1989.

(9) Description of quality assurance and control procedures followed:

- Collection and testing of field, trip, equipment, and laboratory blanks to ensure that contaminants

were not introduced during sample collection and transportation (the petition states that seals were not used on the samples because of adhesive problems).

(10) Assuming you somehow treat the waste to ensure that the waste does not exhibit the characteristic of corrosivity (i.e., pH of 2.0 or less), you must analyze at least 4 more representative samples for the total concentrations of all the TC metals, nickel, cyanide, sulfide, and any constituents in 40 CFR §261 Appendix VIII or 40 CFR §264 Appendix IX likely to be present (see #2 above), and for the characteristics of ignitability and corrosivity. You must explicitly justify that the samples are fully representative of any variation in constituent concentrations over time.

(11)Description of the procedures used to collect and analyze the newly collected samples. The petitioner is reminded that the samples must be analyzed as soon as possible following collection. Please provide resumes for any new personnel involved in the collection or analysis of the waste.