



May 22, 2023

Mohamed Mazid, Ph.D., P.E.
Chief Technical Services
PADEP Southeast Regional Office
2 East Main St
Norristown, PA 19401

**Re: Energy Transfer Marketing & Terminals L.P. – Marcus Hook Terminal
EPA ID: PAR000538058
Response to Clean Air Council Comments Dated February 8, 2023**

Dear Dr. Mazid:

As requested by the Pennsylvania Department of Environmental Protection (PADEP) in their Technical Review Letter dated April 28, 2023, Energy Transfer Marketing & Terminals L.P. (ETMT) is submitting this response to the written comments submitted by the Clean Air Council (CAC) to the PADEP on February 8, 2023. As requested by the PADEP, ETMT is only providing responses to Comments Number 1, 4, 5, and 6. Comments Number 2 and 3 are not relevant to Permit No. PAR000538058; rather, they are associated with the Middle Creek Conveyance Post-Closure Plan under RCRA Permit No. PAD980550594.

CAC Comment No. 1: For ignitable waste, the Department should reconsider the practice of storage in drums in a hazardous waste storage area that is not sheltered, considering direct sunlight and the temperatures during hot summer months in the Philadelphia region.

ETMT Response: The CAC cited multiple sources for how storing drums in direct sunlight could potentially cause the surface temperature of a drum to exceed 140 °F; however, the CAC did not discuss how storing a drum in direct sunlight affects the temperature of the hazardous waste inside the drum. CAC implies that the container surface temperature and temperature of its contents are one and the same, but that is false and misleading.

Equation 1-31 from [AP 42, Fifth Edition, Volume I Chapter 7: Liquid Storage Tanks](#) is commonly used to calculate the liquid bulk temperature (T_B) of uninsulated fixed roof tanks. The same equation could also be used to calculate the liquid bulk temperature of a 55-gallon drum because a 55-gallon metal drum and an uninsulated fixed roof tank have many similarities. For example, both are: cylindrical; made of steel; uninsulated; and heat gain to the liquid contents of both is almost entirely through the tank shell.

$$T_B = T_{AA} + 0.003 \alpha_s I \quad (1-31)$$

where:

- T_B = liquid bulk temperature, °R
- T_{AA} = average daily ambient temperature, °R, as calculated in Note 4
- α_s = tank shell surface solar absorptance, dimensionless; see Table 7.1-6
- I = average daily total insolation factor, Btu/(ft² day); see Table 7.1-7.

When ETMT uses 86° F (545.7° R) as the ambient temperature in the above equation, which is the temperature used in the paper by Huang, et al in the CAC comments, 0.97 as the tank shell solar absorptance factors for a black surface, and 1,917 btu/ft²/day as the average daily total insolation factor for Philadelphia in June, the liquid bulk temperature equals 92° F (551.3° R). The detailed calculations are presented below. Please note that temperatures are converted from degrees Rankine to degrees Fahrenheit by adding or subtracting 459.7.

$$92^{\circ} \text{ F} = 545.7^{\circ} \text{ R} + (0.003 * 0.97 * 1,917)$$

Using the liquid bulk temperature calculated with Equation 1-31 above, ETMT can also calculate the average vapor temperature (T_v) of uninsulated tank using Equation 1-32 from [AP-42, Fifth Edition, Volume I chapter 7: Liquid Storage Tanks](#) below.

$$T_v = \frac{[2.2 (H_s/D) + 1.1] T_{AA} + 0.8 T_B + 0.021 \alpha_R I + 0.013 (H_s/D) \alpha_S I}{2.2 (H_s/D) + 1.9} \quad (1-32)$$

where:

- H_s = tank shell height, ft
- D = tank diameter, ft,
- T_{AA} = average daily ambient temperature, °R
- T_B = liquid bulk temperature, °R
- α_R = tank roof surface solar absorptance, dimensionless
- α_S = tank shell surface solar absorptance, dimensionless
- I = average daily total insolation factor, Btu/(ft² day).

When ETMT uses 86° F (545.7° R) as the ambient temperature in the above equation, 2.88 feet as the height of a 55 gallon drum, 1.92 feet as the diameter of a 55 gallon drum, 92° F (551.3) as the liquid bulk temperature as calculated by Equation 1-31 above, 0.71 as the tank roof solar absorptance factors for a medium gray surface, 0.97 as the tank shell solar absorptance factors for a black surface, and 1,917 btu/ft²/day as the average daily total insolation factor for Philadelphia in June, the vapor temperature equals 99° F. The detailed calculations are presented below. Please note that temperatures are converted from degrees Rankine to degrees Fahrenheit by adding or subtracting 459.7.

$$99^{\circ} \text{ F} = \frac{[2.2 * (2.88/1.92) + 1.1] * 545.7 + 0.8 * 551.3 + 0.021 * 0.71 * 1917 + 0.013 * (2.88/1.92) * 0.97 * 1917}{2.2 * (2.88/1.92) + 1.9}$$

The liquid bulk temperature of 92° F and the vapor temperature of 99° F calculated by ETMT are both far less than the direct surface temperature of 149 °F calculated by Huang, et al and far less than the flash point of 140 °F that triggers the regulation of ignitable hazardous waste. Since the practice of storing drum in direct sunlight has minimal influence on the liquid and vapor temperatures of the contents of the drum, ETMT believes that the practice of storing drums in direct sunlight is safe. Furthermore, and as the CAC points out in its comments, the practice of storing drums outside is recognized and is not expressly prohibited by the regulations. ETMT agrees and has safely done this for many years. The CAC also points that the requirements for the management of containers can be found 40 CFR § 264.173 which states, “A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.” ETMT describes

how it meets this requirement in multiple sections of the application, specifically in Sections 4.2, 4.4, and 4.5 of Appendix 9, which includes managing wastes to minimize a fire or explosion.

CAC Comment No. 4: The Department should discourage the perpetual and indefinite storage of hazardous waste from the retired petroleum refinery.

ETMT Response: ETMT is not storing hazardous waste at the Marcus Hook Terminal indefinitely. Hazardous wastes generated in product storage tanks, manufacturing process units, etc. are not subject to the Resource Conservation and Recovery Act (RCRA) regulations until the wastes exits the unit. This has been long-standing EPA policy and was most recently reaffirmed in 2021. See Attachment 1.

The sludges from various sumps and the API separator associated with the facility's wastewater system are cleaned and removed as needed. The API separator pockets and sumps were never cleaned out after the refinery was shut down because they remained in continuous operation. ETMT recently started cleaning the pockets in the API Separator and plans to clean additional pockets in the future. Since the sludges in the pockets may have been present when the refinery was in operation, the wastes should be considered K051, F037, and/or F038 hazardous wastes, in addition to being considered hazardous wastes for the D001 and/or D018 waste codes. The sludges are not considered hazardous waste until they are removed from the units. Once they are removed, they are moved to Container Storage Pad and transported off-site within 1 year in accordance with the permit requirements.

CAC Comment No. 5: The Department should require the applicant to provide calculations supporting the closure costs, which are missing from Attachment 11 of the permit renewal application.

ETMT Response: The calculations have been provided in the revised application.

CAC Comment No. 6: The Department should require the applicant to develop a spill prevention, control and countermeasure plan that includes details about individual instances when Tank 101 has discharged to the Delaware during precipitation events.

ETMT Response: Tank 101 discharges stormwater to Middle Creek on an emergency basis through Outfall 401. ETMT is permitted to do this through National Pollutant Discharge Elimination Permit No.: PA0011096; therefore, CAC's comment No. 6 is not relevant to Permit No. PAR000538058.

Should you have any questions regarding this submission, please do not hesitate to contact me at (610) 859-1279.

Sincerely,

Kevin W. Smith

Kevin W. Smith
Sr. Specialist – Environmental Compliance

ATTACHMENT 1

RCRA Interpretation Letter



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF
LAND AND EMERGENCY
MANAGEMENT

Date: 11.19.2021

COVERSHEET: EXPLANATION OF CITATION AND/OR TERMINOLOGY CHANGES IN THIS POLICY DOCUMENT

This policy document remains wholly in effect, but some or all of the regulatory citations within it have changed. These changes do not alter the existing regulatory interpretations.

As part of the [2016 Hazardous Waste Generator Improvements Rule](#), many of the regulations that apply to hazardous waste generators were moved to, or reorganized within, title 40 of the Code of Federal Regulations (CFR) part 262. To view a crosswalk between the old and new citations, please visit the [Hazardous Waste Generator Regulations Crosswalk webpage](#).

The Hazardous Waste Generator Improvements Rule also made changes to terms that may be included in this document. The most common term change was replacing “conditionally exempt small quantity generators” (CESQGs) with “very small quantity generators” (VSQGs). In addition, EPA defined the term “central accumulation area” (CAA) to mean a generator’s 90- or 180-day accumulation area for hazardous waste.

A handwritten signature in black ink that reads "Jessica Young". The signature is written in a cursive, flowing style.

Jessica Young
Chief of the Recycling and Generator Branch
Office of Resource Conservation and Recovery

9441.1995(09)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

March 8, 1995

Mr. Jack H. Goldman
Morgan, Lewis, and Bockius
1800 M Street, N.W.
Washington, D.C. 20036-5869

Dear Mr. Goldman:

Thank you for your letter of December 6, 1994, concerning the applicability of Resource Conservation and Recovery Act (RCRA) regulations to hazardous wastes generated in product storage tanks and manufacturing process units. As you mentioned in your letter, 40 CFR 261.4(c) indicates that hazardous waste generated in these units is not subject to RCRA regulation until it exits the unit, or unless the waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing or product storage. As is explained in the discussion you cited in an August, 1987, RCRA/Superfund Hotline Monthly Report, this provision means that the applicable 90/180/270-day generator accumulation period prescribed by 40 CFR 262.34 does not begin until 90 days after a product storage tank or manufacturing process unit ceases to be operated for manufacturing or product storage.

This letter addresses only the federal hazardous waste regulations. Most state agencies are authorized to implement the base RCRA program, which includes the generator regulations and the 40 CFR 261.4(c) exemption. State regulations, which are in effect in authorized states in lieu of the federal program, may be different (although no less stringent) than the federal regulations. Thus, you should contact the appropriate state environmental agency to determine how the regulations of that particular state apply to your client's activities.

I hope this information is useful to you.

Sincerely,

Michael J. Petruska, Chief
Regulatory Development Branch

RO 11899

Attachment

MORGAN, LEWIS & BOCKIUS
Counselors at Law
1800 M Street, N.W.
Washington, D.C. 20038

December 6, 1994

Mr. Michael J. Petruska
Chief, Regulatory Development Branch
Office of Solid Waste
U.S. Environmental Protection Agency
Mail Code 5304 401 M Street, S.W.
Washington, D.C. 20460

Pursuant to our telephone conversation of November 17, 1994, the purpose of this letter is to confirm that the Agency's policy with regard to 40 CFR §261.4(c), as stated in an November 4, 1987 memo from Thea McManus (copy attached),(see footnote 1) is still in effect. I represent a company that has a facility with several product storage and manufacturing process tanks that contain both product and hazardous waste. The company has begun to terminate its operations at this facility. My client is trying to ascertain the applicable deadlines for removing the hazardous waste from the tanks and shipping the waste off-site for treatment or disposal.

Hazardous waste in product or raw material storage tanks, in "manufacturing process units, " and in "non-waste-treatment-manufacturing nits" (collectively "MPUs") is currently exempt from applicable hazardous waste regulations at 40 CFR Parts 262-265, 268, 70, 271, and 124 until the waste is removed from the MPU or remains in the unit for more than ninety days after the cessation of operations. (see footnote 2) In the case of a facility ceasing the operations of an MPU, Agency policy, as stated in the November 1987 memorandum, is that after the passage of ninety days, the waste is subject to the hazardous waste management regulations and may then be stored on-site without a permit or interim status of an additional ninety days, pursuant to the accumulation rule at 40 CFR §262.34(a). (see footnote 3) In other words, two consecutive ninety-day periods potentially apply to management of the waste: ninety days (or until removal of the

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waste or the date of extinction, whichever comes earliest) until the waste is subject to regulation, and ninety days for the waste to be stored on-site without obtaining a storage permit or interim status.

As a follow up to the above interpretation, it is my understanding that hazardous waste that is stored in an MPU for ninety days pursuant to 40 CFR §261.4(c) can continue to remain in that unit for up to an additional ninety days under the ninety-day accumulation rule at 40 CFR §262.34(a), provided that the MPU meets the definition of tank at 40 CFR §260.10, and all applicable provisions of 40 CFR §262.34(a) are met, including that the tank complies with all applicable requirements for tanks at 40 CFR Part 265 Subpart J.

I would greatly appreciate it if you would confirm that these interpretations regarding the MPU rule of 40 CFR §261.4(c) remain the Agency policy. Because my client has initiated procedures to shut down its facility, I would appreciate an answer as soon as possible. Thank you very much for your assistance. Please call me if you have any questions.

Sincerely yours,

Jack H. Goldman

Enclosure

Footnotes

1 U.S. Environmental Protection Agency, memorandum from Thea McManus, "Final Monthly Report -- RCRA/Superfund Industry Assistance Report for August 1987," at 6-8 (November 4, 1987) (hereinafter "Hotline Memorandum")

2 40 CFR 261.4(c) (1993).

3 Hotline Memorandum, supra note 1; personal communication, Michael Petruska, Office of Solid Waste (November 1994) (enclosed)