UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE ADMINISTRATOR

IN THE MATTER OF	§	PETITION FOR OBJECTION
	§	
Clean Air Act Title V Permit No. O1668	§	
	§	
Issued to Shell Chemical LP	§	Permit No. O1668
	§	
Issued by the Texas Commission on Environmental Quality	§	
	§	
	§	

PETITION TO OBJECT TO TITLE V PERMIT NO. O1668 ISSUED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Pursuant to section 42 U.S.C. § 7661d(b)(2), Air Alliance Houston hereby petitions the Administrator of the U.S. Environmental Protection Agency ("Administrator" or "EPA") to object to Federal Operating Permit No. O1668 issued by the Texas Commission on Environmental Quality ("TCEQ" or "Commission") authorizing operation of Shell Chemical LP's ("Shell") Deer Park Chemical Plant, located in Harris County, Texas.

Air Alliance Houston is a Texas 501(c)(3) non-profit advocacy organization working to reduce public health impacts from air pollution and to advance Environmental Justice through applied research, education, and advocacy. Air Alliance Houston takes a strong stance against disproportionate exposure to air pollution by emphasizing an agenda centered on equity and Environmental Justice.

I. PROCEDURAL BACKGROUND

This petition addresses the TCEQ's response to EPA's November 2, 2022 objection to the renewal of Permit No. O1668 ("Objection Order").[1] EPA's Objection Order indicated that

[1] EPA's Objection Order is available electronically at: https://www.epa.gov/system/files/documents/2022-11/11-2-22%20Shell%20Objection%20Letter%20O1668.pdf

Shell's Title V permit was deficient because it failed to include monitoring requirements that assured compliance with represented levels of flare destruction and removal efficiency ("DRE") and emission limits using the represented DRE for assisted flares authorized by NSR Permit Nos. 3219 and 3179, which are incorporated by reference as applicable requirements into Shell's Title V permit. Objection Order at 4. On February 23, 2024, the TCEQ's Executive Director issued her response to the Objection Order identifying alterations made to NSR Permit Nos. 3219 and 3179 in response to the Objection Order. Executive Director's Response to EPA Objection ("Response to Objection") at 3.[2]

Changes to Shell's NSR permits to address EPA's Objection Order are properly raised by Air Alliance Houston for the first time in this petition, because they arose after the public comment period on Shell's Title V permit had closed. 42 U.S.C. § 7661d(b)(2). Moreover, changes to Shell's NSR permits to address the Objection Order are not barred by EPA's Hunter Policy, because they concern monitoring—which is a core Title V concern—and because the changes to Shell's NSR permits were made without notice or opportunity for public comment. EPA's 45-day review period to consider the TCEQ's changes to Shell's Title V permit ended on April 12, 2024 and this petition is timely filed on June 11, 2024.[3]

Because the TCEQ failed to correct the deficiencies identified by EPA's Objection Order within 90 days, as required by the Clean Air Act, it is now EPA's duty to revise and issue or deny Shell's Title V permit. 42 U.S.C. § 7661d(c); 40 C.F.R. § 70.8(c)(4). EPA may not simply reassert its objection and remand the deficient permit back to the TCEQ for further work and

[2] The Response to Objection is available electronically at: https://www.epa.gov/system/files/documents/2024-02/o1668-shell-chemical-lp-ltr.022624.docx

[3] EPA's Timeline for Review of Texas Title V Permits is available electronically at: https://www.epa.gov/caa-permitting/operating-permit-timeline-texas

additional delay. The Clean Air Act requires EPA to expeditiously correct the problem it identified, given Texas's failure to do so.

II. ISSUE: FLARE MONITORING FAILS TO ASSURE COMPLIANCE WITH TIER I BACT REQUIREMENTS AND REPRESENTED DESTRUCTION AND REMOVAL EFFICIENCY.

EPA's Objection Order indicated that Shell's Title V permit was deficient because it failed to include monitoring requirements that assured compliance with represented levels of flare DRE and emission limits using the represented DRE for assisted flares authorized by NSR Permit Nos. 3219 and 3179, which are incorporated by reference as applicable requirements into Shell's Title V permit. Objection Order at 4. This failure rendered Shell's Title V permit deficient, because it did not include monitoring, testing, and recordkeeping requirements that assured compliance with all applicable requirements. 42 U.S.C. § 7661c(a), (c).

Specifically, the TCEQ's Tier I BACT guidance requires flares to achieve 99% DRE for VOC compounds with up to three carbon atoms and 98% for all other VOC compounds.[4] The application for Permit No. 3129 dated November 20, 2017 specifically identifies this DRE requirement as applicable for ground flare and the limits calculated for other permits and flares included in Shell's Title V permit apply a 98%/99% DRE. A subsequent application identifies this DRE representation as applicable to all Shell's olefins plant flares. Permit Renewal & Amendment Source Analysis & Technical Review, Permit No. 3219, Project No. 278537 at 8-9;[5] *see also* Permit Amendment Source Analysis & Technical Review, Permit No. 3179, Project No. 160508 at 4 (identifying 98%/99% DRE as applicable for flares authorized by Permit No. 3179).

[4] The TCEQ's Current BACT for all Chemical Unit Types guidance is available electronically at: https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/bact/bact-chemical.xlsx

[5] Available electronically at: https://records.tceq.texas.gov/cs/idcplg?IdcService=TCEQ_EXTERNAL_SEARCH_GET_FILE&dID=5625598&Rendition=Web

Thus, the 98%/99% DRE is an enforceable application representation and an applicable requirement for purposes of Title V. 30 Tex. Admin. Code § 116.116(a). Permit Nos. 3219 and 3179 also contain the following pound/hour and ton/year emission limitations calculated using the represented 98%/99% DRE:

Permit No. 3219

Unit	**VOC (lb/hr)**	**VOC (TPY)**
OP-2 and OP-3 Elevated Flares, OP-3 Ground Flare Routine Operations	464.30	Annual Flare Cap
OP-2 and OP-3 Elevated Flares, OP-3 Ground Flare MSS Operations	3,740.10	Annual Flare Cap
Annual Flare Cap		369.20

Permit No. 3179

Unit	**VOC (lb/hr)**	**VOC (TPY)**
A1333 (HIPA Flare Normal Operations)	205.10	25
A1333 (HIPA Flare MSS Operations)	365.60	4.82

In response to the Objection Order, the TCEQ altered Permit Nos. 3219 and 3179 to include Special Conditions requiring Shell to comply with flare requirements in EPA's updated Part 63, Subpart F and Subpart YY regulations. Response to Objection at 3; Permit Alteration Source Analysis & Technical Review, Permit No. 3219, Project No. 365078;[6] Permit Alteration Source Analysis & Technical Review, Permit No. 3179, Project No. 365077.[7] The Executive

[6] Available electronically at: https://records.tceq.texas.gov/cs/idcplg?IdcService=TCEQ_EXTERNAL_SEARCH_GET_FILE&dID=7702138&Rendition=Web

[7] Available electronically at: https://records.tceq.texas.gov/cs/idcplg?IdcService=TCEQ_EXTERNAL_SEARCH_GET_FILE&dID=7704795&Rendition=Web

Director's response on this issue, which is copied in its entirety below, did not explain how these changes assure compliance with the applicable DRE and emission limits:

> **TCEQ Response to Objection 2:** NSR permit 3219 (project 365078) issued 02/07/2024 and NSR permit 3179 (project 365077) issued 02/07/2024, contain revised special conditions 9 and 14 respectively to include sufficient monitoring requirements for flare units to demonstrate compliance with the applicable requirements, including compliance with specified destruction efficiency. NSR permits 3219 and 3179 are incorporated by reference in the proposed permit (New Source Review Authorization References table at page 475).

Objection Response at 3.

> Special Condition No. 9.E, which was added to Permit No. 3219, states:
>
> The permit holder shall comply with the work practice standards, emission limitations, and monitoring/sampling, recordkeeping, and reporting requirements applicable to each flare that is an affected source under 40 CFR Part 63, including, without limitation, Subpart YY.
>
> Special Condition No. 14.F, which was added to Permit No. 3179, states:
>
> The permit holder shall comply with the work practice standards, emission limitations, and monitoring/sampling, recordkeeping, and reporting requirements applicable to each flare that is an affected source under 40 CFR Part 63, including, without limitation, Subpart F.
>
> These revisions *may* be sufficient to assure that Shell's flares achieve a 98% DRE, but

they are not sufficient to ensure that they continuously comply with the represented 99% DRE for compounds with three or fewer carbon atoms. And because much of the gas flared at Shell's Deer Park Chemical Plant consists of compounds with three or fewer carbon atoms, continuous performance at 98% DRE may result in nearly twice as much pollution as Shell presumes. We do not know exactly which compounds and in what amounts are sent to Shell's flares because the company improperly marks its speciated flare emissions submitted to the TCEQ confidential, but we do know that off-specification flaring at olefins plants often includes the following

compounds with three or fewer carbon atoms: ethylene, propylene, methane, ethane, and propane.

A memorandum describing RTI International's analysis of comments EPA received as part of its proposed revisions to the NESHAP for petroleum refineries to ensure that refinery flares achieve a minimum destruction efficiency of 98 percent includes test data indicating that flares at sources that vent large amounts of olefins, like propylene, have difficulty continuously achieving the 98 percent destruction efficiency required by Part 63, Subparts CC, YY, and F. This test data demonstrates that operational and monitoring requirements in Subparts CC, YY, and F that are incorporated into Shell's revised NSR permits fails to assure ongoing compliance with the enforceable 99% DRE requirement for certain compounds, which was used to calculate limits in Shell's permits. RTI International Memorandum, From Jeff Coburn to Adrew Bouchard and Brenda Shine, EPA/OAQPS, Re: Flare Control Option Impacts for Final Refinery Sector Rule (July 31, 2015).[8] Specifically, the memo explains that the presence of hydrogen and olefins (hydrocarbons with double bonds, like propylene) in flare gas can significantly reduce a flare's destruction efficiency. *Id.* at 7-9. While the memorandum concludes that specific requirements addressing the hydrogen-olefin interaction should not be finalized in EPA's 2015 refinery rulemaking, *Id*. at 5, the memorandum and the study it relies on do suggest that it is unreasonable to presume that compliance with the 270 BTU/scf NHV_{cz} requirement in Permit Nos. 3219 and 3179 assures compliance with the 99 percent destruction efficiency for compounds with three or fewer carbon atoms and requires the Executive Director to provide the basis for her determination that the revisions to Permit Nos. 3219 and 3179 are sufficient to assure at least 98% DRE for all compounds vented to Shell's flares.

[8] Available electronically at: https://downloads.regulations.gov/EPA-HQ-OAR-2010-0682-0748/content.pdf

Thus, the Executive Director's revisions to Permit Nos. 3219 and 3179 fail to address EPA's Objection Order, fail to provide a basis for the Executive Director's determination that the revisions assure compliance with applicable DRE representations and emission limits, and fail to assure compliance with all applicable requirements. Accordingly, Shell's Title V permit is deficient. 42 U.S.C. § 7661c(a), (c). Moreover, neither Shell's Title V permit nor Permit Nos. 3219 and 3179 explain how Shell must calculate VOC emissions from its flares to determine compliance with applicable representations and emission limits. This failure constitutes an additional deficiency. The Title V permit must include or incorporate a method for accurately determining compliance with applicable requirements using monitoring, testing, and/or recordkeeping methods in the permit. *Id*.

Sincerely,

/s/ Gabriel Clark-Leach

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