

**BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

Petition No. VI-2024-17

In the Matter of

Valero Refining-Texas, L.P., Valero Houston Refinery

Permit No. O1381

Issued by the Texas Commission on Environmental Quality

**ORDER GRANTING IN PART AND DENYING IN PART A PETITION FOR OBJECTION TO A TITLE V
OPERATING PERMIT**

I. INTRODUCTION

The U.S. Environmental Protection Agency (EPA) received a petition dated August 20, 2024 (the Petition) from Texas Environmental Justice Advocacy Services, Caring for Pasadena Communities, Lone Star Chapter of the Sierra Club, and Environmental Integrity Project (the Petitioners), pursuant to section 505(b)(2) of the Clean Air Act (CAA or Act), 42 United States Code (U.S.C.) § 7661d(b)(2). The Petition requests that the EPA Administrator object to operating permit No. O1381 (the Permit) issued by the Texas Commission on Environmental Quality (TCEQ) to the Valero Houston Refinery (Valero or the facility) in Harris County, Texas. The Permit was issued pursuant to title V of the CAA, 42 U.S.C. §§ 7661–7661f, and Title 30, Chapter 122 of the Texas Administrative Code (TAC). *See also* 40 Code of Federal Regulations (C.F.R.) part 70 (title V implementing regulations). This type of operating permit is also known as a title V permit or part 70 permit.

Based on a review of the Petition and other relevant materials, including the Permit, the permit record, and relevant statutory and regulatory authorities, and as explained in Section IV of this Order, the EPA grants in part and denies in part the Petition and objects to the issuance of the Permit. Specifically, the EPA denies Claim 1, Claim 12, and a portion of Claim 2, and grants the rest of the claims.

II. STATUTORY AND REGULATORY FRAMEWORK

A. Title V Permits

Section 502(d)(1) of the CAA, 42 U.S.C. § 7661a(d)(1), requires each state to develop and submit to the EPA an operating permit program to meet the requirements of title V of the CAA and the EPA's implementing regulations at 40 C.F.R. part 70. The state of Texas submitted a title V program governing the issuance of operating permits on September 17, 1993. The EPA granted full approval of Texas's title

V operating permit program in 2001. 66 Fed. Reg. 63318 (Dec. 6, 2001). This program, which became effective on November 30, 2001, is codified in 30 TAC Chapter 122.

All major stationary sources of air pollution and certain other sources are required to apply for and operate in accordance with title V operating permits that include emission limitations and other conditions as necessary to assure compliance with applicable requirements of the CAA, including the requirements of the applicable implementation plan. 42 U.S.C. §§ 7661a(a), 7661b, 7661c(a). The title V operating permit program generally does not impose new substantive air quality control requirements, but does require permits to contain adequate monitoring, recordkeeping, reporting, and other requirements to assure compliance with applicable requirements. 40 C.F.R. § 70.1(b); 42 U.S.C. § 7661c(c). One purpose of the title V program is to “enable the source, States, EPA, and the public to understand better the requirements to which the source is subject, and whether the source is meeting those requirements.” 57 Fed. Reg. 32250, 32251 (July 21, 1992). Thus, the title V operating permit program is a vehicle for compiling the air quality control requirements as they apply to the source’s emission units and for providing adequate monitoring, recordkeeping, and reporting to assure compliance with such requirements.

B. Review of Issues in a Petition

State and local permitting authorities issue title V permits pursuant to their EPA-approved title V programs. Under CAA § 505(a) and the relevant implementing regulations found at 40 C.F.R. § 70.8(a), states are required to submit each proposed title V operating permit to the EPA for review. 42 U.S.C. § 7661d(a). Upon receipt of a proposed permit, the EPA has 45 days to object to final issuance of the proposed permit if the EPA determines that the proposed permit is not in compliance with applicable requirements under the Act. 42 U.S.C. § 7661d(b)(1); *see also* 40 C.F.R. § 70.8(c). If the EPA does not object to a permit on its own initiative, any person may, within 60 days of the expiration of the EPA’s 45-day review period, petition the Administrator to object to the permit. 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d).

Each petition must identify the proposed permit on which the petition is based and identify the petition claims. 40 C.F.R. § 70.12(a). Any issue raised in the petition as grounds for an objection must be based on a claim that the permit, permit record, or permit process is not in compliance with applicable requirements or requirements under part 70. 40 C.F.R. § 70.12(a)(2). Any arguments or claims the petitioner wishes the EPA to consider in support of each issue raised must generally be contained within the body of the petition.¹ *Id.*

The petition shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided by the permitting authority (unless the petitioner demonstrates in the petition to the Administrator that it was impracticable to raise such objections within such period or unless the grounds for such objection arose after such period). 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d); *see also* 40 C.F.R. § 70.12(a)(2)(v).

¹ If reference is made to an attached document, the body of the petition must provide a specific citation to the referenced information, along with a description of how that information supports the claim. In determining whether to object, the Administrator will not consider arguments, assertions, claims, or other information incorporated into the petition by reference. *Id.*

In response to such a petition, the Act requires the Administrator to issue an objection if a petitioner demonstrates that a permit is not in compliance with the requirements of the Act. 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(c)(1).² Under section 505(b)(2) of the Act, the burden is on the petitioner to make the required demonstration to the EPA.³ The petitioner’s demonstration burden is a critical component of CAA § 505(b)(2). As courts have recognized, CAA § 505(b)(2) contains both a “discretionary component,” under which the Administrator determines whether a petition demonstrates that a permit is not in compliance with the requirements of the Act, and a nondiscretionary duty on the Administrator’s part to object where such a demonstration is made. *Sierra Club v. Johnson*, 541 F.3d at 1265–66 (“[I]t is undeniable [that CAA § 505(b)(2)] also contains a discretionary component: it requires the Administrator to make a judgment of whether a petition demonstrates a permit does not comply with clean air requirements.”); *NYPIRG*, 321 F.3d at 333. Courts have also made clear that the Administrator is only obligated to grant a petition to object under CAA § 505(b)(2) if the Administrator determines that the petitioner has demonstrated that the permit is not in compliance with requirements of the Act. *Citizens Against Ruining the Environment*, 535 F.3d at 677 (stating that § 505(b)(2) “clearly obligates the Administrator to (1) determine whether the petition demonstrates noncompliance and (2) object *if* such a demonstration is made” (emphasis added)).⁴ When courts have reviewed the EPA’s interpretation of the ambiguous term “demonstrates” and its determination as to whether the demonstration has been made, they have applied a deferential standard of review. *See, e.g., MacClarence*, 596 F.3d at 1130–31.⁵ Certain aspects of the petitioner’s demonstration burden are discussed in the following paragraph. A more detailed discussion can be found in the preamble to the EPA’s proposed petitions rule. *See* 81 Fed. Reg. 57822, 57829–31 (Aug. 24, 2016); *see also In the Matter of Consolidated Environmental Management, Inc., Nucor Steel Louisiana*, Order on Petition Nos. VI-2011-06 and VI-2012-07 at 4–7 (June 19, 2013) (*Nucor II Order*).

The EPA considers a number of criteria in determining whether a petitioner has demonstrated noncompliance with the Act. *See generally Nucor II Order* at 7. For example, one such criterion is whether a petitioner has provided the relevant analyses and citations to support its claims. For each claim, the petitioner must identify (1) the specific grounds for an objection, citing to a specific permit term or condition where applicable; (2) the applicable requirement as defined in 40 C.F.R. § 70.2, or requirement under part 70, that is not met; and (3) an explanation of how the term or condition in the permit, or relevant portion of the permit record or permit process, is not adequate to comply with the corresponding applicable requirement or requirement under part 70. 40 C.F.R. § 70.12(a)(2)(i)–(iii). If a petitioner does not identify these elements, the EPA is left to work out the basis for the petitioner’s objection, contrary to Congress’s express allocation of the burden of demonstration to the petitioner in CAA § 505(b)(2). *See MacClarence*, 596 F.3d at 1131 (“[T]he Administrator’s requirement that [a title V petitioner] support his allegations with legal reasoning, evidence, and references is reasonable and

² *See also New York Public Interest Research Group, Inc. v. Whitman*, 321 F.3d 316, 333 n.11 (2d Cir. 2003) (*NYPIRG*).

³ *WildEarth Guardians v. EPA*, 728 F.3d 1075, 1081–82 (10th Cir. 2013); *MacClarence v. EPA*, 596 F.3d 1123, 1130–33 (9th Cir. 2010); *Sierra Club v. EPA*, 557 F.3d 401, 405–07 (6th Cir. 2009); *Sierra Club v. Johnson*, 541 F.3d 1257, 1266–67 (11th Cir. 2008); *Citizens Against Ruining the Environment v. EPA*, 535 F.3d 670, 677–78 (7th Cir. 2008); *cf. NYPIRG*, 321 F.3d at 333 n.11.

⁴ *See also Sierra Club v. Johnson*, 541 F.3d at 1265 (“Congress’s use of the word ‘shall’ . . . plainly mandates an objection *whenever* a petitioner demonstrates noncompliance.” (emphasis added)).

⁵ *See also Sierra Club v. Johnson*, 541 F.3d at 1265–66; *Citizens Against Ruining the Environment*, 535 F.3d at 678.

persuasive.”)⁶ Relatedly, the EPA has pointed out in numerous previous orders that general assertions or allegations did not meet the demonstration standard. *See, e.g., In the Matter of Luminant Generation Co., Sandow 5 Generating Plant*, Order on Petition Number VI-2011-05 at 9 (Jan. 15, 2013).⁷ Also, the failure to address a key element of a particular issue presents further grounds for the EPA to determine that a petitioner has not demonstrated a flaw in the permit. *See, e.g., In the Matter of EME Homer City Generation LP and First Energy Generation Corp.*, Order on Petition Nos. III-2012-06, III-2012-07, and III-2013-02 at 48 (July 30, 2014).⁸

Another factor the EPA examines is whether the petitioner has addressed the state or local permitting authority’s decision and reasoning contained in the permit record. 81 Fed. Reg. at 57832; *see Voigt v. EPA*, 46 F.4th 895, 901–02 (8th Cir. 2022); *MacClarence*, 596 F.3d at 1132–33.⁹ This includes a requirement that petitioners address the permitting authority’s final decision and final reasoning (including the state’s response to comments) where these documents were available during the timeframe for filing the petition. 40 C.F.R. § 70.12(a)(2)(vi). Specifically, the petition must identify where the permitting authority responded to the public comment and explain how the permitting authority’s response is inadequate to address (or does not address) the issue raised in the public comment. *Id.*

The information that the EPA considers in determining whether to grant or deny a petition submitted under 40 C.F.R. § 70.8(d) generally includes, but is not limited to, the administrative record for the proposed permit and the petition, including attachments to the petition. 40 C.F.R. § 70.13. The administrative record for a particular proposed permit includes the draft and proposed permits; any permit applications that relate to the draft or proposed permits; the statement required by § 70.7(a)(5) (sometimes referred to as the “statement of basis”); any comments the permitting authority received during the public participation process on the draft permit; the permitting authority’s written responses to comments, including responses to all significant comments raised during the public participation process on the draft permit; and all materials available to the permitting authority that are relevant to the permitting decision and that the permitting authority made available to the public according to § 70.7(h)(2). *Id.* If a final permit and a statement of basis for the final permit are available

⁶ *See also In the Matter of Murphy Oil USA, Inc.*, Order on Petition No. VI-2011-02 at 12 (Sept. 21, 2011) (denying a title V petition claim where petitioners did not cite any specific applicable requirement that lacked required monitoring); *In the Matter of Portland Generating Station*, Order on Petition at 7 (June 20, 2007) (*Portland Generating Station Order*).

⁷ *See also Portland Generating Station Order* at 7 (“[C]onclusory statements alone are insufficient to establish the applicability of [an applicable requirement].”); *In the Matter of BP Exploration (Alaska) Inc., Gathering Center #1*, Order on Petition Number VII-2004-02 at 8 (Apr. 20, 2007); *In the Matter of Georgia Power Company*, Order on Petitions at 9–13 (Jan. 8, 2007) (*Georgia Power Plants Order*); *In the Matter of Chevron Products Co., Richmond, Calif. Facility*, Order on Petition No. IX-2004–10 at 12, 24 (Mar. 15, 2005).

⁸ *See also In the Matter of Hu Honua Bioenergy*, Order on Petition No. IX-2011-1 at 19–20 (Feb. 7, 2014); *Georgia Power Plants Order* at 10.

⁹ *See also, e.g., Finger Lakes Zero Waste Coalition v. EPA*, 734 Fed. App’x *11, *15 (2d Cir. 2018) (summary order); *In the Matter of Noranda Alumina, LLC*, Order on Petition No. VI-2011-04 at 20–21 (Dec. 14, 2012) (denying a title V petition issue where petitioners did not respond to the state’s explanation in response to comments or explain why the state erred or why the permit was deficient); *In the Matter of Kentucky Syngas, LLC*, Order on Petition No. IV-2010-9 at 41 (June 22, 2012) (denying a title V petition issue where petitioners did not acknowledge or reply to the state’s response to comments or provide a particularized rationale for why the state erred or the permit was deficient); *Georgia Power Plants Order* at 9–13 (denying a title V petition issue where petitioners did not address a potential defense that the state had pointed out in the response to comments).

during the agency's review of a petition on a proposed permit, those documents may also be considered when determining whether to grant or deny the petition. *Id.*

If the EPA grants a title V petition and objects to the issuance of a permit, a permitting authority may address the EPA's objection by, among other things, providing the EPA with a revised permit. 42 U.S.C. § 7661d(b)(3), (c); 40 C.F.R. § 70.8(d); *see id.* § 70.7(g)(4); 70.8(c)(4); *see generally* 81 Fed. Reg. at 57842 (describing post-petition procedures); *Nucor II Order* at 14–15 (same). In some cases, the permitting authority's response to an EPA objection may not involve a revision to the permit terms and conditions themselves, but may instead involve revisions to the permit record. For example, when the EPA has issued a title V objection on the ground that the permit record does not adequately support the permitting decision, it may be acceptable for the permitting authority to respond only by providing an additional rationale to support its permitting decision.

When the permitting authority revises a permit or permit record in order to resolve an EPA objection, it must go through the appropriate procedures for that revision. If a final permit has been issued prior to the EPA's objection, the permitting authority should determine whether its response to the EPA's objection requires a minor modification or a significant modification to the title V permit, as described in 40 C.F.R. § 70.7(e)(2) and (4) or the corresponding regulations in the state's EPA-approved title V program. If the permitting authority determines that the revision is a significant modification, then the permitting authority must provide for notice and opportunity for public comment for the significant modification consistent with 40 C.F.R. § 70.7(h) or the state's corresponding regulations.

In any case, whether the permitting authority submits revised permit terms, a revised permit record, or other revisions to the permit, and regardless of the procedures used to make such revision, the permitting authority's response is generally treated as a new proposed permit for purposes of CAA § 505(b) and 40 C.F.R. § 70.8(c) and (d). *See Nucor II Order* at 14. As such, it would be subject to the EPA's 45-day review per CAA § 505(b)(1) and 40 C.F.R. § 70.8(c), and an opportunity for the public to petition under CAA § 505(b)(2) and 40 C.F.R. § 70.8(d) if the EPA does not object during its 45-day review period.

When a permitting authority responds to an EPA objection, it may choose to do so by modifying the permit terms or conditions or the permit record with respect to the specific deficiencies that the EPA identified; permitting authorities need not address elements of the permit or the permit record that are unrelated to the EPA's objection. As described in various title V petition orders, the scope of the EPA's review (and accordingly, the appropriate scope of a petition) on such a response would be limited to the specific permit terms or conditions or elements of the permit record modified in that permit action. *See In the Matter of Hu Honua Bioenergy, LLC*, Order on Petition No. VI-2014-10 at 38–40 (Sept. 14, 2016); *In the Matter of WPSC, Weston*, Order on Petition No. V-2006-4 at 5–6, 10 (Dec. 19, 2007).

III. BACKGROUND

A. The Valero Houston Refinery

The Valero Houston Refinery is owned and operated by Valero Refining-Texas, L.P. and located in Harris County, Texas. The refinery processes crude oil into petroleum products such as blended

gasoline, diesel, kerosene, etc. The refinery receives the crude oil processed at the facility via off-site marine facilities, pipeline, and/or transport vessels.

The facility is a major source of volatile organic compounds (VOC), sulfur dioxide (SO₂), particulate matter (PM), nitrogen oxides (NO_x), hazardous air pollutants, and carbon monoxide and is subject to title V of the CAA. Emission units within the facility are also subject to the PSD program, other preconstruction permitting requirements, and various New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP).

B. Permitting History

Valero Refining-Texas, L.P. first obtained a title V permit for the Valero Houston Refinery in 2005, which was subsequently renewed. On May 21, 2021, TCEQ issued a renewal permit to the facility. That permit was the subject of a petition to the EPA filed on June 29, 2021. In response to that petition, the EPA issued an order on June 30, 2022. *In the Matter of Valero Refining-Texas, L.P., Valero Houston Refinery*, Order on Petition No. VI-2021-8 (June 30, 2022) (*Valero Houston I Order*).

In response to the EPA's order dated June 30, 2022, Valero Refining-Texas, L.P. applied for a title V permit minor revision on September 27, 2022. TCEQ published notice of a draft permit on August 22, 2023, subject to a public comment period that ran until September 21, 2023. On May 7, 2024, TCEQ submitted the Proposed Permit, along with its responses to public comments (RTC) to the EPA for its 45-day review. The EPA's 45-day review period ended on June 21, 2024, during which time the EPA did not object to the Proposed Permit. TCEQ issued the final title V renewal permit for the Valero Houston Refinery on July 3, 2024.

The EPA notes that, in addition to raising new issues, this Petition raises many objections that are similar to those that were raised in the June 29, 2021 Petition. As explained in detail in this Order, TCEQ made a number of revisions to the Permit and to the permitting record to address the EPA's objections in the *Valero Houston I Order*. In this Order, the EPA explains the extent to which TCEQ responded to the previous order. The EPA also explains where further revision to the Permit or explanation in the permit record is necessary and, where appropriate, provides more specific guidance to TCEQ than was provided in the previous Order.

C. Timeliness of Petition

Pursuant to the CAA, if the EPA does not object to a proposed permit during its 45-day review period, any person may petition the Administrator within 60 days after the expiration of the 45-day review period to object. 42 U.S.C § 7661d(b)(2). The EPA's 45-day review period expired on June 21, 2024. The EPA's website indicated that any petition seeking the EPA's objection to the Permit was due on or before August 19, 2024. The Petition was submitted August 19, 2024. Therefore, the EPA finds that the Petitioners timely filed the Petition.

D. Environmental Justice

The EPA used EJScreen¹⁰ to review key demographic and environmental indicators within a five-kilometer radius of the Valero Houston Refinery. This review showed a total population of approximately 92,544 residents within a five-kilometer radius of the facility, of which approximately 94 percent are people of color and 50 percent are low income. In addition, the EPA reviewed the EJScreen Environmental Justice Indexes, which combine certain demographic indicators with 13 environmental indicators. The following table identifies the Environmental Justice Indexes for the five-kilometer radius surrounding the facility and their associated percentiles when compared to the rest of the State of Texas.

EJ Index	Percentile in State
Particulate Matter 2.5	92
Ozone	78
Nitrogen Dioxide	91
Diesel Particulate Matter	94
Toxic Releases to Air	96
Traffic Proximity	92
Lead Paint	90
Superfund Proximity	95
RMP Facility Proximity	95
Hazardous Waste Proximity	96
Underground Storage Tanks	86
Wastewater Discharge	96
Drinking Water Non-Compliance	0

The Petition includes a section titled “Grounds for Objection” which includes six numbered subsections (I–VI). Petition at 5. Subsection I includes extensive discussion of environmental justice (EJ). *See id.* at 7–12. The Petitioners do not present any specific “grounds for objection” within this discussion related to the EPA’s authority to object to a permit under title V. Rather, Subsection I appears to serve as backdrop and support for the Petitioners’ more specific, permit-focused claims that follow. The Petitioners claim that the EPA has recognized the EJ concerns in this area and “concluded that environmental justice concerns require giving ‘focused attention to the adequacy of monitoring (as well as other concerns raised by Petitioners).’” *Id.* at 11–12 (quoting *Valero Houston I Order* at 9–11; citing EPA Region 6, *Texas Environmental Justice Collaborative Action Plan* at 4 (Aug. 3, 2016); EPA Region 6, *Climate Adaptation Implementation Plan* at 34 (Oct. 2022); *In the Matter of United States Steel Corp., Granite City Works*, Order on Petition No. V-2011-2 at 4–6 (Dec. 3, 2012) (*U.S. Steel Granite City Works II Order*); EPA, *Tools to Advance Environmental Justice: Cumulative Impacts Addendum* at 8, 11 (Jan. 2023)).

¹⁰ EJScreen is an environmental justice mapping and screening tool that provides the EPA with a nationally consistent dataset and approach for combining environmental and demographic indicators. *See* <https://www.epa.gov/ejscreen/what-ejscreen>. The information herein is based on a November 12, 2024 report using EJScreen version 2.3.

The EPA is committed to advancing environmental justice and incorporating equity considerations into the agency's work.¹¹ The EPA appreciates and takes seriously the Petitioners' concerns regarding the potential impacts of emissions from the Valero Houston Refinery on communities living near the facility, as well as the Petitioners' desire that the facility's title V permit contains sufficient provisions to comply with the CAA. The EPA has thoroughly reviewed and evaluated the Petition, giving focused attention to the adequacy of permit conditions. As explained in the following sections, the EPA is granting the Petition where the Petitioners has demonstrated that the Permit fails to assure compliance with applicable requirements or the requirements of part 70.

IV. EPA DETERMINATIONS ON PETITION CLAIMS

The section of the Petition titled "Grounds for Objection" includes six subheadings (I through VI). As mentioned in the prior section, Subsection I of the Petition appears to serve as backdrop and support for the Petitioners' more specific, permit-focused claims that follow. Subsection V includes eight discrete claims alleging different problems related to the sufficiency of monitoring and other provisions designed to assure compliance with different requirements in the Permit. The remaining subsections contain one claim each. This Order addresses the Petitioners' claims as follows:

- Petition Subsection II: Claim 1
- Petition Subsection III: Claim 2
- Petition Subsection IV: Claim 3
- Petition Subsection V.A: Claim 4
- Petition Subsection V.B: Claim 5
- Petition Subsection V.C: Claim 6
- Petition Subsection V.D: Claim 7
- Petition Subsection V.E: Claim 8
- Petition Subsection V.F: Claim 9
- Petition Subsection V.G: Claim 10
- Petition Subsection V.H: Claim 11
- Petition Subsection VI: Claim 12

A. Claim 1: The Petitioners Claim That "TCEQ Failed to Provide Notice to the Public Through a Mailing List for Revisions to the Title V Permit."

Petition Claim: The Petitioners claim that TCEQ violated the requirement of 40 C.F.R. § 70.7(h)(1) to provide notice of the draft permit via a mailing list and thereby also failed to resolve the EPA's objection in the *Valero Houston I Order*. See Petition at 12–14.

The Petitioners quote the *Valero Houston I Order*, relating the EPA's direction to TCEQ concerning public participation requirements of part 70:

¹¹ See, e.g., *U.S. Steel Granite City Works II Order* at 5; Executive Order 12898 (Feb. 11, 1994). More recently, Executive Orders 13990, 14008, and 14096, signed by President Biden on January 20, 2021, January 27, 2021, and April 21, 2023, respectively (among other Executive Orders), affirm the federal government's commitment to environmental justice.

[P]rovide documentation showing how [TCEQ] complied with the requirements of 40 C.F.R. § 70.7(h)(1). If TCEQ is unable to show that it complied with title V requirements to develop a mailing list and provide notification, it should develop a mailing list, ensuring that the Petitioners are included, and re-notice the Permit following all applicable public notice procedures.

Petition at 12 (citing *Valero Houston I Order* at 12).

The Petitioners claim that TCEQ failed to provide the Petitioners notice through a mailing list of the draft revisions to the Permit in response to the EPA's objection in the *Valero Houston I Order*, despite their submission of previous comments and petition on the renewal permit that was the subject of that order and despite their having signed up for a mailing list. *Id.* at 12, 14.

In rebuttal to TCEQ's RTC, which argued that the current permitting action is a "minor revision" and therefore not subject to the public participation requirements of 40 C.F.R. § 70.7(h) or 30 TAC Chapter 122, the Petitioners argue that because the revisions relate to the renewal permit and are a direct response to the EPA's objection to that renewal permit, they are subject to the public participation requirements of 40 C.F.R. § 70.7(h). Petition at 12–13 (citing RTC at 13). The Petitioners again cite the EPA's direction to TCEQ in the *Valero Houston I Order* and claim that the EPA "specifically contemplated" that TCEQ would provide notice on these revisions through a mailing list to the Petitioners. *Id.* at 13.

Additionally, the Petitioners claim that TCEQ's response fails to demonstrate that TCEQ has used a mailing list to provide notice, as required by 40 C.F.R. § 70.7(h)(1), "constituting a failure to abide by the EPA order. For this reason, [the] EPA must object." *Id.* at 13, 14 (citing 40 C.F.R. § 70.7(h)(4); 30 TAC § 122.320(b)(9)).

The Petitioners conclude: "EPA must not require TCEQ to re-notice the permit. EPA must instead object to set a precedent for other title V permitting circumstances, and EPA should provide instruction to TCEQ about complying with the requirements of 40 C.F.R. § 70.7(h)(1) for future permit proceedings." *Id.* at 14.

EPA Response: For the following reasons, the EPA denies the Petitioners' request for an objection on this claim.

In the *Valero Houston I Order*, the EPA directed TCEQ to provide documentation showing how it complied with the requirements of 40 C.F.R. § 70.7(h)(1) *when issuing the renewal permit*; only if TCEQ was unable to show that it complied with title V requirements to develop a mailing list and provide notification would it then need to re-notice the renewal permit. In response to comments, TCEQ stated:

For the previous draft of title v permit FOP O1381/Project 24377, IP list notification on the public notice related documentation (PNAP, WCC content ID 5149562) mailed on Feb 12, 2019, and revision (Errata letter, WCC content ID 5149585) mailed on Feb 13, 2019, was mailed out as required under Part 70 or under 30 TAC Chapter 122. Documentation

of the IP list mailout is accessible at CFR Online (please see WCC content ID 6123085 page 788 through 791 of 1024).

RTC at PDF p. 13.

This explanation arguably addresses the EPA's direction that TCEQ provide documentation showing how it complied with the requirements of 40 C.F.R. § 70.7(h)(1). In any case, the Petitioners have not demonstrated that TCEQ's actions (or inactions) with respect to the renewal permit would present any basis for the EPA to object to the present title V permit revision that is the subject of the Petition.

The Petitioners are incorrect to argue that the procedural requirements that apply to the issuance of renewal permits also necessarily apply to the present permit revision. While the revisions to the permit are a direct response to the EPA's objection on the renewal permit, they are two separate permit actions. In fact, the EPA's *Valero Houston I Order* specifically indicated that TCEQ's response to the EPA's objection should follow the relevant permit revision procedures, which do not necessarily require public notice in all situations.¹²

While the Petitioners are correct that in the *Valero Houston I Order*, the EPA contemplated that TCEQ would provide notice to Petitioners for permit revisions in response to EPA's order,¹³ that direction did not compel TCEQ to revise the permit in such a way that would qualify it for a modification that would require public notice and comment. TCEQ is correct in its assertion that a "minor revision" is not subject to the public participation requirements of 40 C.F.R. § 70.7(h) or 30 TAC Chapter 122. Critically, the Petitioners have not attempted to allege or demonstrate that this permit action did not, in fact, qualify as a minor revision, and have failed to demonstrate that TCEQ's action required a public notice that complied with mailing list requirements in 40 C.F.R. § 70.7(h)(1). Thus, the Petitioners have failed to demonstrate that TCEQ did not satisfy any part 70 requirements governing the issuance of this permit revision. Additionally, TCEQ in its RTC states that "although not required under Part 70 or under 30 TAC Chapter 122, the ED notes that the public announcement information was mailed out to the interested parties list in view of the public comments received on FOP O1381/Project 24377 (see below). The IP list may be found at WCC content ID number – 5552173." RTC at PDF p. 13.

Interestingly, while the Petitioners present this claim as grounds for objection, the Petitioners explicitly request that the EPA *not* require TCEQ to re-notice the permit (which would be a potential remedy *if* the EPA were to object on this claim, which the EPA is not doing). The Petitioners' assertion that the EPA must instead object to "set a precedent for other permitting circumstances" and "should provide instruction to TCEQ about complying with the requirements of 40 C.F.R. § 70.7(h)(1) for future permit proceedings" is misplaced. Those proposed remedies lie outside of the scope of this specific title V

¹² *Valero Houston I Order* at 5 ("When the permitting authority revises a permit or permit record in order to resolve an EPA objection, it must go through the appropriate procedures for that revision. The permitting authority should determine whether its response is a minor modification or a significant modification to the title V permit, as described in 40 C.F.R. § 70.7(e)(2) and (4) or the corresponding regulations in the state's EPA-approved title V program. If the permitting authority determines that the modification is a significant modification, then the permitting authority must provide for notice and opportunity for public comment for the significant modification consistent with 40 C.F.R. § 70.7(h) or the state's corresponding regulations.").

¹³ "If, as the EPA anticipates, TCEQ re-notices the Permit in reaction to this objection, this *may* be done in conjunction with any re-notice of the Permit as necessary to respond to other grants discussed in the following sections." *Valero Houston I Order* at 12 (emphasis added).

permitting action and are programmatic in nature, thus are not a basis for objection to this title V permit.

B. Claim 2: The Petitioners Claim That “The Proposed Title V Permit Fails to Include Sufficient Monitoring, Testing, and Recordkeeping Requirements to Assure Compliance with Applicable Limits Established by Permits by Rule.”

Petition Claim: The Petitioners claim that despite direction from the EPA in the *Valero Houston I Order* to “revise the [renewal permit] to specify monitoring, recordkeeping, and reporting sufficient to assure compliance with all applicable requirements associated with” Permits by Rule (PBR), the Permit still does not include sufficient monitoring, testing, and recordkeeping requirements to assure compliance with applicable limits established by PBRs as they assert is required by 42 U.S.C. § 7661c(a) and 7661c(c) and 40 C.F.R. § 70.6(c)(1). Petition at 14 (quoting *Valero Houston I Order* at 22); *see id.* at 14–21.

The Petitioners dismiss TCEQ’s explanations in its RTC referencing a “revised Table D,” dated December 20, 2023, noting that the Permit incorporates an earlier version of Table D, dated August 3, 2023, and claiming that the December 20, 2023 version of Table D is not publicly available. *Id.* at 14–16 (citing RTC at 5, 18; Permit at 14, Special Term and Condition 22). Moreover, the Petitioners allege that TCEQ generally incorporates materials by reference incorrectly because TCEQ does not “clearly identify those materials and tell the public how they can easily access the materials.” *Id.* at 16 (citing RTC at 16–17).

Throughout the remainder of Claim 2, the Petitioners explain how, in their opinion, the version of Table D dated August 3, 2023, does not assure compliance with PBR limits with respect to different categories of units and emissions at the facility. *See id.* at 16–21.

Fugitive Emissions Monitoring

The Petitioners present two reasons that the monitoring conditions in Table D fail to assure compliance with limits on fugitive emissions:

- (1) neither Table D nor the Proposed Permit identifies how Valero will calculate fugitive VOC emissions and
- (2) the LDAR requirements from permit 2501A (which Table D relies upon) mainly only require quarterly monitoring using a gas analyzer, which is both too infrequent and likely to miss leaks from valves, pumps, seals, and other equipment.

Id. at 17. The Petitioners also refer to further arguments they make under Claim 4 concerning the monitoring requirements from NSR Permit 2501A. *Id.*; *see* Section IV.D of this Order.

Addressing TCEQ’s RTC, the Petitioners claim that TCEQ’s response is inadequate because it refers to monitoring associated with other requirements, not the PBR limits at issue, and TCEQ fails to connect those other requirements to compliance assurance for the PBR limits. Petition at 17 (citing RTC at 16).

Storage Tank Emissions Monitoring

The Petitioners present four arguments to explain why, in their opinion, the monitoring conditions in Table D fail to assure compliance with limits on storage tank emissions.

First, the Petitioners claim that the Permit does not specify which emission factors and calculation methods must be used to determine compliance: “It remains unclear whether AP-42 emission factors, emissions factors from TCEQ guidance, or some combination of the two apply.” *Id.* at 18. According to the Petitioners, TCEQ’s RTC did not resolve this confusion, merely referring to “unidentified NSR files” and not “the emissions factors or calculation methods from those files that apply to the PBR limits for the storage tanks.” *Id.*

Second, the Petitioners argue that, regardless of which emission factors are used, Valero would have to “make certain assumptions to calculate emissions from the tanks” without any requirement to verify or substantiate such assumptions. *Id.* Tank geometry, tank and roof condition, the condition of various tank components, and the variation in certain properties of tank contents in response to ambient conditions are all examples of factors the Petitioners say Valero should verify to assure compliance with the limits on storage tank emissions. *Id.* (citing Petition Exhibit D October 2019 Declaration from Dr. Ranajit Sahu (Oct. 2019 Sahu Declaration)). The Petitioners claim that TCEQ’s response in its RTC was inadequate because it referenced a guidance document that is not incorporated “with any specificity” in the Permit and NSR permit conditions that “have nothing to do with validating or substantiating assumptions.” *Id.* at 18–19 (citing RTC at 16–17).

Third, the Petitioners claim that the Permit lacks any requirement to inspect floating roof tank components, which, they argue, it must in order to assure that each tank is properly maintained. *Id.* at 19. Because TCEQ’s RTC references periodic monitoring requirements from NSR Permit 2501A, the Petitioners refer to arguments they make under Claim 4 regarding the inadequacy of those requirements. *Id.* (citing RTC at 16); *see* Section IV.D of this Order.

Fourth and finally, the Petitioners claim that the calculation methods cannot assure ongoing compliance with the Permit’s limits unless Valero is required to periodically verify their accuracy. *Id.* at 19. The Petitioners claim that AP-42 emission factors “can grossly underestimate VOC emissions from these tanks based, in part, on the AP-42 methods’ inability to fully capture the underlying processes that lead to emissions from tanks.” Petition at 20 (citing Petition Ex. D).

Docks Emissions Monitoring

The Petitioners claim that the Permit fails to identify how Valero will calculate emissions from 90DOCK1 and 90DOCK2 to assure compliance with applicable tpy limits contained in Table D. *Id.* at 20–21. TCEQ’s RTC added no clarity, according to the Petitioners, but merely pointed to other federal requirements applicable to the docks. *Id.* at 21 (citing RTC at 17).

EPA Response: For the following reasons, the EPA grants in part and denies in part this Petition claim and objects to the issuance of the Permit.

In responding to the *Valero Houston I Order*, the facility submitted a PBR Supplemental Table D dated August 3, 2023 with its title V application that lists monitoring requirements of PBRs¹⁴ and, as directed by the EPA in the *Valero Houston I Order*, includes the date of the application and the project number in the title V permit itself.¹⁵ The Petitioners are correct that in its RTC, TCEQ indicates that revised Special Condition 23¹⁶ references the newer, December 20, 2023 version of the supplemental table; however, the most recent version of the title V permit and Special Condition 22 still does not reference the December 20, 2023 version of PBR Supplemental Table D but rather incorporates the August 3, 2023 version. Thus, for the remainder of this claim, the EPA will evaluate the Petitioners' claims in relation to the August 3, 2023 version of Supplemental Table D, as that is the table that is currently incorporated into the title V permit.

In regard to the Petitioners' overarching claim that TCEQ has failed to appropriately incorporate by reference monitoring and emission calculation and methods by simply referring to "appropriate" PBR files in the RTC, the EPA will address these purported deficiencies for each of the three referenced units in the Petition.

Fugitive Emissions Monitoring

The Petitioners have demonstrated that neither PBR Supplemental Table D nor the Proposed Permit identifies how Valero will calculate fugitive VOC emissions. The Petitioners are correct that the August 2023 version of PBR Supplemental Table D states that the monitoring for fugitives includes:

Emissions from fugitive component leaks are minimized through the 28VHP Leak Detection and Repair program as detailed in the relevant conditions of NSR Permit No. 2501A. The LDAR requirements in the permit specific the parameter monitored, the frequency of monitoring and averaging times. "Except as may be provided for in the special conditions of this permit, accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer "[sic]For more detail see applicable Special Conditions in NSR Permit No. 2501A.

While this does not identify how Valero will calculate fugitive VOC emissions, the EPA notes the December 20, 2023 version of PBR Supplemental Table D references emission factors and calculations contained in PBR registration applications, as well as citations to the page numbers and Content ID numbers for those applications documents. But because the August 20, 2023 version of PBR Supplemental Table D is incorporated into the title V permit, the Petitioners are correct that the title V permit as-is does not identify these emission factor and calculation materials. For these reasons, the EPA grants this portion of the claim.

To the extent the Petitioners have claimed that the LDAR requirements from Permit 2501A mainly only require quarterly monitoring using a gas analyzer, which they claim is both too infrequent and likely to

¹⁴ See TCEQ Response to EPA Objection at PDF p. 6 (Aug. 18, 2023).

¹⁵ "In responding to this Order, TCEQ should amend the title V permit to include information in Special Condition No. 23 that identifies the location of the PBR Supplemental Tables being incorporated into the Permit. This information should include the date of the application and the associated project number." *Valero Houston I Order* at 18.

¹⁶ TCEQ appears to erroneously cite Special Condition 23 in its RTC; however, Special Condition 22 in the title V permit is the condition that explicitly references Supplemental Table D dated August 3, 2023.

miss leaks from valves, pumps, seals, and other equipment, the Petitioners have not provided sufficient justification beyond this statement to demonstrate a flaw in the Permit or permit record. First, the Petitioners do not mention or refute TCEQ's RTC, which states "The monitoring requirements according to the 28VHP LDAR programs have been demonstrated to meet BACT based on the monitoring frequency and leak definitions that are specified for this LDAR program. Hourly leak inspections are not required for this LDAR program, which has been approved as BACT for numerous sites within Texas." RTC at PDF p. 16. Second, the Petitioners have not provided any justification or analysis for their claim that quarterly monitoring is too infrequent, simply making this sole assertion. For these reasons, the EPA denies this portion of the claim.

Storage Tank Emissions Monitoring

Similar to the Petitioners' claim regarding fugitive emission monitoring, the Petitioners have demonstrated that neither PBR Supplemental Table D nor the Permit identifies how Valero will calculate emissions from storage tanks. The Petitioners are correct that the August 2023 version of PBR Supplemental Table D states that the monitoring for storage tanks includes:

The average temperature, material vapor pressure and throughput are recorded on a monthly basis. Calculate the rolling 12-month emissions and ensure resulting 12-month emissions are less than the applicable limit. Emissions are calculated using (a) AP-42 Compilation of Air Pollutant Emission Factors, Chapter 7 - Liquid Storage Tanks" and (b) the guidance contained on the webpage entitled, "NSR Guidance for Storage Tanks," located at https://www.tceq.texas.gov/permitting/air/guidance/newsourcereview/tanks/nsr_fac_tanks.html.

While this does not sufficiently identify how Valero will calculate storage tank emissions, the EPA notes that the December 20, 2023 version of PBR Supplemental Table D references emission factors and calculations contained in PBR registration applications as well as citations to the page numbers and Content ID numbers for those applications documents for *some* of the storage tanks. But because the August 20, 2023 version of PBR Supplemental Table D is incorporated into the title V permit, the Petitioners are correct that the title V permit as-is does not identify these emission factor and calculation materials. Additionally, the Petitioners are correct that it is unclear whether the AP-42 emission factors, the TCEQ guidance, or a combination of the two provide the emission factors for calculating emissions from storage tanks. Further, in TCEQ's RTC (at PDF p. 17), it notes that it "requires NSR permit holder to use AP-42 factors per TCEQ guidance document APDG 6419 – Short-term Emissions from Floating Roof Storage Tanks to determine permitted hourly emission rates" but citation of this documentation is not included in the permit or PBR Supplemental Table D. For these reasons, the EPA grants this portion of the claim.

The EPA disagrees with the Petitioners' general assertions that Valero should be required to verify assumptions for emission calculations or should be required to periodically verify the accuracy of its calculation methodologies. While in some instances it may be necessary for a facility to verify assumptions for emission calculations or periodically verify the accuracy of its calculation methodologies (for example by verifying an emission factor via a stack test), here the Petitioners do not present any compelling supporting information or facts that demonstrate that in this specific

instance Valero should be required to verify assumptions for emission calculations or should be required to periodically verify the accuracy of its calculation methodologies. Additionally, the Petitioners' assertion that PBR Supplemental Table D does not require Valero to inspect floating roof tank components does not contain any additional justification or analysis that the PBRs for those units require visual inspection and that the visual inspection requirements in Special Condition 30(C)¹⁷ of NSR Permit 2501A are inadequate to assure compliance with applicable requirements related to storage tanks. For these reasons the EPA denies this portion of the claim.

Docks Emissions Monitoring

Similarly to the Petitioners' claim regarding fugitive emission monitoring and storage tank emission monitoring, the Petitioners have demonstrated that neither PBR Supplemental Table D nor the Permit identifies how Valero will calculate emissions from docks. The Petitioners are correct that the August 2023 version of PBR Supplemental Table D states that the monitoring for docks includes:

The dock is limited to be used for loading and unloading of No. 6 fuel oil, asphalt, B/B/ (butene, butylene), butane, catalyst feed, diesel, cycle oils, isobutane, kerosene, natural gas, propane, and spent acid. Estimate and record throughput each month. Calculate the rolling-12 month emissions. Emissions will not exceed 4.81 tpy.

and

The dock is limited to be used for loading and unloading of Kerosene/Jen Fuel, Light Cycle Oil, Cat Feed/Gas Oils, and No. 6 Oil/Resid. Estimate and record throughput each month. Calculate the rolling-12 month emissions. Emissions will not exceed 3.89 tpy.

While this does not identify how Valero will calculate dock emissions, the EPA notes that the December 20, 2023 version of PBR Supplemental Table D references emission factors and calculations contained in PBR registration applications as well as citations to the page numbers and Content ID numbers for those applications documents. But because the August 20, 2023 version of PBR Supplemental Table D is incorporated into the title V permit, the Petitioners are correct that the title V permit as-is does not identify these emission factor and calculation materials. For these reasons, the EPA grants this portion of the claim.

Direction to TCEQ: TCEQ must revise Special Condition 22 (or whichever Special Condition in the revised permit references Supplemental Table D) to incorporate the appropriate PBR Supplemental Table D into the title V permit. Because the EPA expects that TCEQ may make further edits to Supplemental Table D in response to this order, the EPA also expects that TCEQ will properly incorporate that revised Supplemental Table D. TCEQ must also ensure that all PBR monitoring requirements include appropriate references and citations to emission factors and calculations used to assure compliance with emission limits, particularly those for storage tanks, as it appears that the

¹⁷ Special Condition 30(C): "For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and seal gap measurements as specified in Title 40 Code of Federal Regulations § 60.113b (40 C.F.R. § 60.113b) Testing and Procedures (as amended at 54 FR 32973, Aug. 11, 1989) to verify fitting and seal integrity. Records shall be maintained of the dates seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted."

December 20, 2023 version continues to lack appropriate references and citations. Additionally, TCEQ should clarify whether the AP-42 emission factors, the TCEQ guidance, or a combination of the two provide the emission factors for calculating emissions from storage tanks. Also, if TCEQ guidance document APDG 6419 – Short-term Emissions from Floating Roof Storage Tanks is used to determine permitted hourly emission rates, that document should be properly cited in the Permit.

C. Claim 3: The Petitioners Claim That “The New Proposed Permit Does Not Include the Required General Duty to Operate and Maintain the Valero Houston Refinery Consistent with Safety and Air Pollution Practices.”

Petition Claim: The Petitioners claim that the Permit erroneously omits 40 C.F.R. § 63.642(n) as an applicable requirement for several units subject to 40 C.F.R. part 63, subpart CC. Petition at 21–22.

The Petitioners quote the *Valero Houston I Order*, relating the EPA’s direction to TCEQ concerning the inclusion of relevant applicable requirements: “In its order, EPA stated that ‘TCEQ must evaluate those NSPS and NESHAP provisions that are not included in the Permit, including 40 C.F.R. §§ 63.642(n)’ and determine if it is applicable to the Valero Facility. ‘If [it is] applicable, TCEQ should revise the Permit to include these citations.’” *Id.* at 21 (citing *Valero Houston I Order* at 30).

The Petitioners describe 40 C.F.R. § 63.642(n) as “the general duty requirement from subpart CC to operate and maintain the facility consistent with safety and air pollution control practices” and claim that the Permit indicates this requirement is applicable to just three units—90DOCK1, MAINTVENT, and PROCVENT. *Id.* The Petitioners state that this requirement applies to all units subject to subpart CC, not just the three indicated by the Permit, and list some examples of units that the Permit indicates are subject to subpart CC but not 40 C.F.R. § 63.642(n), *e.g.*, 90FB735, 91FB922, 91FB924, 91FB931, 30FL1 and 30FL6. *Id.* at 21–22.

The Petitioners address TCEQ’s response in its RTC, claiming it is inadequate because it only mentions two units—MAINTVENT and PROCVENT. *Id.* at 21 (citing RTC at 23).

Additionally, the Petitioners state: “EPA should also object to the proposed permit because it does not include 40 C.F.R. § 63.642(n) as a special condition to ensure clarity about its enforceability.” *Id.* at 22.

EPA Response: For the following reasons, the EPA grants this Petition claim and objects to the issuance of the Permit.

Under title V of the CAA, the EPA’s part 70 regulations, and TCEQ’s EPA-approved title V program rules, every title V permit must include all applicable requirements that apply to a source, as well as any permit terms necessary to assure compliance with these requirements. *E.g.*, 42 U.S.C. § 7661c(a). The CAA requirement to include all applicable requirements (including NSPS and NESHAP regulations) in a title V permit can be satisfied using Incorporation-by-Reference (IBR) in certain circumstances. *See, e.g.*, White Paper Number 2 at 40 (explaining how IBR can satisfy the requirements of CAA § 504).

Here, the Petitioners have demonstrated that the TCEQ’s response to comment is inadequate, as it has not provided a reasoned explanation for the exclusion of 40 C.F.R. § 63.642(n) as an applicable requirement for a number of units that have been listed as subject to NESHAP subpart CC. In

responding to the *Valero Houston I Order* and as indicated in the RTC, TCEQ purportedly evaluated the applicability of 40 C.F.R. § 63.642(n) and added an applicable citation in the Applicable Requirements Summary Table for MAINTVENT and PROCVENT and also evaluated the applicability of 40 C.F.R. part 63, subpart CC and determined that there are no additional applicable requirements that need to be included in the Permit. RTC at PDF p. 23. The Petitioners are correct that there are a number of other units subject to subpart CC that do not include 40 C.F.R. § 63.642(n) as an applicable requirement and that TCEQ simply stating that it has determined that there are no additional applicable requirements needed to be included in the Permit is inadequate.

Direction to TCEQ: TCEQ should revise the Permit to include 40 C.F.R. § 63.642(n) as an applicable citation in the Applicable Requirements Summary Table for units that are indicated as subject to 40 C.F.R. part 63, subpart CC.

D. Claim 4: The Petitioners Claim That “The Proposed Permit’s Monitoring Requirements Still Cannot Ensure Compliance with the Hourly and Annual PM Limits for the Refinery’s FCCU.”

Petition Claim: The Petitioners claim that, in violation of 40 C.F.R. § 70.6(c)(1), as well as the requirements from 42 U.S.C. § 7661c(a) and 7661c(c), the Permit still fails to assure compliance with the PM_{2.5} and PM₁₀ annual and hourly limits of applicable to the FCCU. *Id.* at 23 (citing Permit 2501 Maximum Allowable Emission Rates Table (MAERT) at “FCCU Unit Stack”; Permit at 206). Specifically, the Petitioners argue that TCEQ’s revisions in response to the EPA’s objection failed to resolve the issue of stack testing frequency. *Id.*

The Petitioners relate the EPA’s objection in the *Valero Houston I Order* concerning the monitoring requirements for the FCCU and claim that the EPA directed TCEQ to: (1) identify the monitoring for the FCCU’s hourly and annual PM_{2.5} and PM₁₀ limits from NSR Permit 2501A’s MAERT; (2) evaluate the frequency of stack testing; and (3) revise Valero’s permit(s) to clarify that testing for condensable PM be included in stack testing requirements. *Id.* at 22 (citing *Valero Houston I Order* at 35–36).

To begin, the Petitioners claim that Special Condition 15, which outlines compliance demonstration for the FCCU, mistakenly references stack tests required by Special Condition 57 and should, instead, reference Special Condition 56, because Special Condition 57 addresses testing for a different emissions unit. *Id.* at 23 n. 47.

The Petitioners next explain why, in their opinion, the stack testing frequency required by Special Conditions 15 and 56 cannot assure compliance with the PM limits. *See id.* at 23–25. Addressing Special Condition 56, the Petitioners argue that it does not actually require testing on a set schedule, but only “as required by the TCEQ Executive Director[.]” *Id.* at 23. According to the Petitioners, Special Condition 56.C could be interpreted to require the use of an emission factor dating from 2008 to demonstrate compliance with the PM limits. *Id.* at 24. Even if an emission factor from a more recent stack test is actually required, the Petitioners claim that Special Condition 15 still would only require stack testing every five years, “or annually if emissions are high enough[.]” which they contend is not frequent enough to assure compliance with annual and hourly limits. *Id.*

[T]he FCCU's 1b PM/1,000 lb coke-burn emission rate depends on many factors that do not remain constant. Based on testing conducted at other facilities, FCCU PM rates are variable and can change from stack test run to run, hour to hour, month to month, and year to year based on the operating and maintenance conditions of the FCCU's controls, the additives that Valero may use to achieve NO_x and SO₂ reductions (including agents such as ammonia for additional NO_x control), the manner in which the regenerator is operating, the temperature of regeneration, and other factors.

Id. at 25 (citing Petition Ex. F, June 2021 declaration from Dr. Ranajit Sahu (2021 Sahu Declaration)).

Additionally, the Petitioners claim that TCEQ has still not explained why the stack test frequency is adequate, despite the EPA's direction to TCEQ in the *Valero Houston I Order* and despite the Petitioners' comments raising this issue on the draft permit. *Id.* (citing *Valero Houston I Order* at 36). The Petitioners claim that the RTC lists other monitoring requirements without explaining how these assure compliance with the PM limits and nowhere explains TCEQ's rationale concerning stack testing frequency. *Id.* at 26–28 (citing RTC at 56). Listing several other responses from TCEQ and explaining why each one is not relevant to the issue of stack testing frequency, the Petitioners state: "TCEQ also lists several boilerplate responses that again have nothing to do with the frequency problem—non-substantive responses that it repeats in purporting to respond to the problems that Petitioners highlighted with the monitoring for units other than the FCCU." *Id.* at 28–29 (citing RTC at 56–57).

The Petitioners argue that "strong PM monitoring requirements for the FCCU are especially important to confirm that the PM emissions increases resulting from the 'FCCU/Alkylation Turnaround' project . . . do not trigger major PSD." *Id.* at 25. Moreover, the Petitioners claim that the Permit fails to assure compliance with requirements from "30 TAC § 116.127 that Valero calculate and maintain a record of the annual emissions, in tons per year, on a calendar year basis for either five or ten years—and report if annual emissions from the project exceed the baseline emissions by a significant amount" due to the same reasons the Permit fails to assure compliance with the PM limits. *Id.* (citing 40 C.F.R. § 70.2 (definition of "applicable requirement"); 30 TAC § 122.10(2)).

In conclusion, to rectify the abovementioned flaws they see in the Permit, and due to EJ concerns (referencing the EJ section of the Petition which is summarized in section III.D of this Order), the Petitioners state that the Permit should be revised to:

Require PM CEMS (which are widely available from several vendors) and continuous flow and temperature measurements for compliance with the filterable portions of Valero's PM limits.

Because PM CEMS only measures filterable PM: (a) require annual stack testing for condensable PM; (b) establish a filterable/condensable ratio from the most recent stack test (or as an average of the result from the most recent test and all prior tests, as these tests begin to accumulate over time); (c) establish hourly filterable and condensable operating limits that reflect the relative proportions from the most recent stack test (or using the average of tests discussed in (b) above); and (d) require Valero to meet those filterable and condensable operating limits as shown by hourly PM_{2.5} and PM₁₀ CEMS

results. As we explained in our previous petition (at 44-45), a significant portion of PM from the FCCU is condensable PM.

Remove the language from SC 56-F that allows the FCCU to operate at a burn rate not exceeding 10% of the burn rate from the previous stack test if the short-term emission rate did not exceed 80% of the MAERT limit.

Id. at 26.

EPA Response: For the following reasons, the EPA grants this Petition claim and objects to the issuance of the Permit.

In response to the *Valero Houston I Order*, TCEQ amended NSR Permit 2501A to require the use of emission factors from the most recent stack test to demonstrate compliance with emission limits as well as to reference NSR Permit 2501A Special Condition 57 and MACT UUU 40 C.F.R. § 63.1571(a)(5). The MACT standard provides the requirement for performance testing to be conducted every 5 years as well as the requirement that the first performance test be conducted no later than August 1, 2017, or within 150 days of startup of a new unit. Despite these changes, the Petitioners have demonstrated that TCEQ has not adequately responded to public comments. Specifically, TCEQ has not provided a reasoned explanation or evaluation for whether the monitoring based on an emission factor from a 2008 stack test is still sufficient to assure compliance. While TCEQ states in its RTC that it “is not aware of any facts that would require any other additional monitoring to further validate FCCU emission factors beyond that which has consistently been required under federal law and Texas permits,” RTC at PDF p. 56, this general statement does not provide any specific reasoning for why the *current* monitoring and emission factors are sufficient based on a stack test from 2008 or how it has determined that the emission characteristics of the FCCU have not changed since 2008 and are not expected to change over the term of the Permit. See *Valero Houston I Order* at 36.

Additionally, the Petitioners are correct that while Special Condition 15 of NSR Permit 2501A references Special Condition 57 as being used for MAERT compliance demonstration, Special Condition 56 is also relevant to emission limits for the FCCU. More importantly, while the Petitioners are correct that Special Condition 56 of NSR Permit 2501A does not require any additional testing beyond exceptions for when the FCCU is operating at greater than 110% of the burn rate from the previous stack test and emissions from that test exceeded 80% of the short-term limit, MACT UUU 40 C.F.R. § 63.1571(a)(5) requires stack testing at a minimum frequency of every 5 years, beginning August 1, 2017. Thus, it is likely that TCEQ should have required additional stack testing after the purported 2008 stack test that is referenced in the RTC and included in NSR Permit 2501A. If that is the case, the Permit should reference that more recent stack test, as it is not only required by MACT UUU 40 C.F.R. § 63.1571(a)(5), but also may provide a more appropriate emission factor for calculating hourly and annual PM emissions.

Direction to TCEQ: First, TCEQ should amend NSR Permit 2501A to ensure that Special Condition 15 references the correct special condition for MAERT compliance demonstration for the FCCU, as the most recent NSR Permit 2501A Special Condition 15 references Special Condition 57, but it appears it should reference Special Condition 56. Second, TCEQ should amend the record to provide a reasoned explanation for why it believes that the monitoring based on an emission factor from a 2008 stack test

is sufficient to assure compliance, particularly how it determined that the emission characteristics of the FCCU have not changed since 2008 and are not expected to change over the term of the Permit. If, however, the facility has conducted a stack test more recently, as required by MACT UUU 40 C.F.R. § 63.1571(a)(5) (as it should have), TCEQ should include that more recent date in the Permit and explain how that stack test is sufficient to assure compliance with the hourly and annual PM limits for the FCCU.

E. Claim 5: The Petitioners Claim That “The Proposed Permit’s Monitoring Requirements Cannot Ensure Compliance with the Hourly and Annual Limits for the Refinery’s Flares.”

Petition Claim: The Petitioners claim that in the *Valero Houston I Order*, the EPA directed TCEQ to:

(1) revise the permit(s) to identify any emission factors and destruction/conversion efficiencies used to calculate emissions; (2) provide justifications for the destruction and conversion efficiencies in the permit record; (3) revise the permit(s) to clarify how compliance is determined for each pollutant, including which continuous monitors are used; and (4) for the VOC limits, specify in the permit(s) which VOCs and gases are monitored by the composition analyzers and flow monitors, respectively

Id. at 29–30 (citing *Valero Houston I Order* at 40–42).

The Petitioners note that TCEQ revised Special Condition 38.D, Special Condition 38.F, and added Attachment G to Permit 2501A, but claim that the Permit still does not assure compliance with hourly and annual limits on VOCs, SO₂, NO_x, and CO from the facility’s two flares—30FL1 and 30FL6—in violation of 42 U.S.C. § 7661c(a) and 7661c(c) and 40 C.F.R. § 70.6(c)(1). *Id.* at 30.

The Petitioners argue that strong monitoring and emission calculation requirements for the flares are important due to the Houston region’s nonattainment designation for the ozone NAAQS, regular compliance problems with the flares, and EJ concerns—particularly with regard to benzene emissions. *Id.* at 43. Additionally, the Petitioners note that the hourly limits for each pollutant could potentially result in exceedances of the respective annual limits in any given rolling 12-month period. *Id.* at 33, 37, 39, 41, and 43.

Proceeding pollutant-by-pollutant, the Petitioners address problems they see with the requirements for the flares. *Id.* at 31–41.

VOC Emissions Monitoring

The Petitioners present three reasons why, in their opinion, the monitoring related to VOC emission limits on the flares is still insufficient. *Id.* at 31–35.

First, despite the EPA’s previous objection on the issue, the Petitioners claim that the Permit still does not contain adequate conditions and work practice standards to ensure that the flares are destroying 98 and 99 percent of VOCs. *Id.* at 31 (citing *Valero Houston I Order* at 41).

Although the flares are subject to NESHAP subpart CC operating requirements, the Petitioners argue that these flares were designed to achieve at best 98 percent destruction efficiency and cannot assure compliance with requirements to achieve 99 percent destruction efficiency. *Id.* (citing 80 Fed. Reg. 75178, 75211 (Dec. 1, 2015); 2021 Sahu Declaration). In support, the Petitioners cite an EPA letter to TCEQ that the Petitioners contend emphasizes “the same thing[.]” *Id.* (citing July 15, 2024 Ltr. from D. Garcia to C. Chism at PDF p. 2, 3–4 (July 15, 2024)). The Petitioners claim that the Permit is devoid of any “enhanced operating requirements” that could possibly assure compliance with 99 percent destruction of VOCs. *Id.* at 32.

Moreover, the Petitioners allege that the flares have struggled to comply with already applicable requirements in 40 C.F.R. § 63.670(e) on combustion-zone net heating values, noting several “violations” documented in compliance reports. *Id.* at 33. The Petitioners argue that Valero cannot apply even a 98 percent destruction efficiency during such periods of noncompliance. *Id.* According to the Petitioners, steam-assist systems, such as those in use at the facility’s flares, reduce the net heating value in the combustion zone and flame stability, leading to lower destruction efficiencies. *Id.* at 33 (citing Petition Ex. G March 2019 Sahu Declaration (March 2019 Sahu Declaration)).

Addressing the RTC, the Petitioners claim that TCEQ’s reliance on these federal regulations to assume a 99 percent destruction efficiency is, therefore, not substantiated. *Id.* at 45 (citing RTC at 60).

Second, the Petitioners claim that it is still unclear whether composition analyzers must measure all VOCs in the waste gas or only a subset, the latter of which could result in underestimation of emissions. *Id.* at 33–34 (citing *Valero Houston I Order* at 41). The Petitioners argue that the Permit cannot rely on subpart CC requirements to provide this information without clearly stating and explaining the basis for such a connection, which the Petitioners claim TCEQ has failed to do. *Id.* at 34 (citing *Valero Houston I Order* at 42).

Third and finally, the Petitioners claim that the Permit still fails to specify which gases are monitored by the flow monitors, noting that emissions may be underestimated if all gases are not monitored. *Id.* (citing *Valero Houston I Order* at 41). While acknowledging TCEQ’s response in its RTC that states all gases entering the flares are measured by the flow monitors, the Petitioners argue that clarification in the permit record is not sufficient and the Permit itself must be revised to so indicate. *Id.* at 34–35 (citing RTC at 59; *Valero Houston I Order* at 35–36).

To rectify the flaws in the Permit related to VOC monitoring, the Petitioners state Valero must “directly monitor the flare VOC emissions using techniques such as extractive sampling (followed by analysis) or via Video Imaging Spectral Radiometry[.]” *Id.* at 40. Barring such revisions, the Petitioners argue that Valero must assume lower destruction efficiencies in its emission calculations, especially when other requirements are not met (*e.g.*, the combustion zone net heating value). *Id.* at 41–42.

SO₂ Emissions Monitoring

The Petitioners present four reasons why, in their opinion, the Permit does not assure compliance with limits on SO₂ emissions from the facility’s flares. *Id.* at 35–37.

First, the Petitioners claim that the Permit requires accounting for only H₂S, and not all sulfur compounds, when calculating SO₂ emissions, which underestimates emissions. *Id.* at 35. In light of the requirement in Special Condition 38.F to use reduced sulfur analyzers to measure sulfur compounds from the flares, the Petitioners argue basing the SO₂ emission rate on the H₂S concentration “makes no sense[.]” *Id.* The Petitioners note that TCEQ’s RTC states the retention of the H₂S-based calculation was an “inadvertent error” but claim that TCEQ has nevertheless failed to revise the Permit to fix the error. *Id.*

Second, the Petitioners claim that the Permit still fails to specify a conversion efficiency for the percentage of sulfur from waste gases that is oxidized to SO₂ in the flares, again despite the EPA’s objection concerning this issue in the *Valero Houston I Order*. *Id.* at 36. The Petitioners note that a document referenced in Special Condition 38.F, “NSR Emission Calculations—Sample Calculations for Flares,” states that the emission factor for SO₂ from flares is “100 percent S in fuel to SO₂” but insist that the Permit must state this. *Id.* (citing “NSR Emission Calculations—Sample Calculations for Flares” at 8).

Third, the Petitioners express concern that any conversion efficiency of sulfur compounds in flare waste gases to SO₂ other than 100 percent may underestimate emissions and should not be allowed “[u]nless Valero can prove that the actual conversion efficiency in the flares is different[.]” *Id.*

Fourth and finally, the Petitioners claim that the sulfur analyzers used at the facility do not measure high enough total sulfur concentration, possibly resulting in significant underestimation of SO₂ emissions. *Id.* at 36–37 (citing Flare Management Plan Tables 3.5.1-2; 2021 Sahu Declaration); *see id.* at 42.

CO and NO_x Emissions Monitoring

Regarding monitoring CO from the flares, the Petitioners observe that Attachment G of NSR Permit 2501A states: “CEMS. Pilot flame presence monitored continuously (Special Condition 38.B). Continuous flow monitor and composition analyzer record of the vent stream flow and composition to the flare every 15 minutes, with hourly averages recorded (Special Condition 38.D.). Vent gas heat content is measured daily.” *Id.* at 37. The Petitioners further indicate that this permit states: “Measured flow rates and heating value are used to calculate the heat input in MMBtu/hr. TCEQ flare emission factor (lb/MMBtu) from ‘Flares and Vapor Oxidizers (October 2000 RG-109) Table 4’ is multiplied by the heat input to determine the mass emission rate.” *Id.*

The Petitioners note that Attachment G contains identical requirements for monitoring CO and NO_x emissions and present the same six reasons why, for both pollutants, in their opinion, the Permit does not assure compliance with the relevant limits on the facility’s flares. *See id.* at 37–40.

First, the Petitioners claim that the Permit still fails to identify the emission factors that are used to calculate CO and NO_x emissions and determine compliance with the relevant limits, despite the EPA’s direction to TCEQ on this issue in the *Valero Houston I Order*. *Id.* at 37, 39 (citing *Valero Houston I Order* at 41). Attachment G to the Permit references a guidance document—Flares and Vapor Oxidizers (October 2000 RG-109)—that the Petitioners claim is not publicly available, leaving the public unable to assess the emission factors. *Id.* at 37, 39.

Second, according to the Petitioners, the Permit is in conflict with itself, because Special Condition 38.F references a different document (“NSR Emission Calculations—Sample Calculations for Flares”), creating confusion about which emission factor from which document is actually required. *Id.* at 37–38, 39. Moreover, the Petitioners claim that the NSR Emission Calculations document lists four different emission factors for each pollutant, and it is unclear which emission factor is actually required by the Permit. *Id.* at 38, 40.

Third, the Petitioners claim that the “EPA has concluded that emission factors generally should not be used to determine compliance with emission limits because they reflect an average of emissions from different facilities.” *Id.* at 38 (citing *In the Matter of Tesoro Refining and Marketing*, Order on Petition No. IX2004-6 at 32 (Mar. 15, 2005); see *id.* at 40). The Petitioners argue that actual CO and NO_x emissions from the flares could, therefore, exceed the emissions calculated with emission factors. *Id.* at 38, 40.

Fourth, compounding the uncertainty surrounding which emission factors the Permit requires, the Petitioners claim that TCEQ has failed to explain how the emission factors accurately estimate emissions, despite the EPA’s direction to TCEQ to revise the permit record with such a justification in the *Valero Houston I Order*. *Id.* at 38–39, 40 (citing *Valero Houston I Order* at 62).

Fifth, the Petitioners caution against using “old, non-updated” emission factors from AP-42, which they claim yield inaccurate results and cannot assure compliance with the limits applicable to the flares. *Id.* at 39, 40.

Sixth and finally, the Petitioners challenge the frequency of vent gas heat content measurements, arguing that daily measurements are too infrequent to assure compliance with hourly and annual limits because vent gas heat content can vary over shorter periods of time. *Id.* at 39, 40. The Petitioners claim that “gas heat content can easily be measured on a 15-minute basis using composition data that Valero is already required to measure on a 15-minute basis for calculating the flares’ VOC emissions.” *Id.* at 39.

To rectify the flaws in the Permit concerning CO and NO_x emissions monitoring, the Petitioners state that Valero must “use an emission factor value that is the highest measured value from the limited testing done to support the current EPA AP-42 emission factor[.]” *Id.* at 42–43.

Following the pollutant-by-pollutant analysis of monitoring requirements, the Petitioners address TCEQ’s RTC, which they claim does not resolve any of the problems they identified in public comments. *Id.* at 44–45. The Petitioners claim that TCEQ lists numerous irrelevant conditions from the Permit from various NSPS and NESHAP requirements that, according to the Petitioners, have nothing to do with assuring compliance with the limits applicable to the facility’s flares. *Id.* at 44. Additionally, the Petitioners argue that “NESHAP and NSPS requirements alone cannot ensure compliance with the very specific hourly and annual limits” due to the issues with monitoring presented in the Petition. *Id.* at 41.

Importantly, nothing in the permit or permit record ties the NSPS or NESHAP requirements to specific VOC, CO, SO₂, or NO_x hourly or annual emission rates or the MAERT flare limits or explains how the NSPS or NESHAP monitoring can be used to

determine specific, actual emissions of the various pollutants listed in the MAERT for the flares. Further, these NESHAP and NSPS provisions do not include any limits for the pollutants listed in the MAERT.

Id.

The Petitioners also note that TCEQ states: “[F]lare units are equipped with a CEMS to continuously monitor CO, SO₂, NO_x and O₂.” *Id.* at 45 (quoting RTC at 58). The Petitioners presume TCEQ must be referring to “units upstream of the flares, since the flares themselves are not equipped with CEMS.” *Id.*

Additionally, and finally, the Petitioners criticize the Permit’s flare gas recovery system because, as they claim, it is not required to be in use during maintenance and shutdown periods, and it is ineffective when in use because it “may not have sufficient capacity to handle all instances of leaking pressure relief devices” *Id.* at 43–44.

EPA Response: For the following reasons, the EPA grants this Petition claim and objects to the issuance of the Permit.

In general, in response to the *Valero Houston I Order*, TCEQ made a number of revisions to NSR Permit 2015A including changes to Special Condition 38(F) and Attachment G to address objections related to assuring compliance with emission limits for refinery flares.

VOC Emissions Monitoring

The Petitioners have demonstrated that the permit record, in particular the RTC, does not explain how the Permit’s monitoring regime assures that Valero is achieving the 99% destruction and removal efficiency (“DRE”) identified in Attachment G of incorporated NSR Permit 2501A; nor does it explain how the Permit assures compliance with the hourly and annual VOC emission limits for its flares that may depend, in part, on any applicable DRE assumption. Thus, it does not appear that the Permit assures compliance with all applicable requirements. The EPA has previously communicated technical concerns related to TCEQ’s flare DRE assumptions and the lack of adequate monitoring and operating requirements necessary to assure continuous compliance with emission limitations, such as those that rely on 99 percent DRE.¹⁸ In its RTC, TCEQ explains that “TCEQ flare guidance and assumed DRE values are based in part on historical EPA research and publications.” TCEQ purportedly also relies on EPA AP-42 Chapter 13.5 (Industrial Flares, revised September 1991), which states:

Properly operated flares achieve at least 98 percent combustion efficiency in the flare plume, meaning that hydrocarbon and CO emissions amount to less than 2 percent of hydrocarbons in the gas stream.

Recent EPA tests using propylene as flare gas indicated that efficiencies of 98 percent can be achieved when burning an offgas with at least 11,200 kJ/m³ (300 Btu/ft³).

¹⁸ See Letter from David Garcia, Director, Air and Radiation Division, Region 6, U.S. EPA to Corey Chism, Director, Office of Air, TCEQ, *Texas Commission on Environmental Quality Flare Operating and Monitoring Requirements as Specified in Clean Air Act New Source Review and Title V Operating Permits* (July 15, 2024), available at <https://www.epa.gov/system/files/documents/2024-07/2024.07.15.epa-comments-on-tceq-flare-assumptions.pdf>.

AP-42 Section 13.5.2. The RTC also states:

“TCEQ has not seen enough conclusive data to establish a different and specific DRE value, or to substantially revise BACT requirements for flares that are not subject to sector-specific regulations such as 40 CFR Part 63 Subpart CC. Further, the proposed flare destruction efficiencies of 98 percent (4 or more carbons) and/or 99 percent (3 or less carbons) are consistent with at least eight RACT/BACT/LAER Clearinghouse (RBLC) data entries for VOC control since 2017, including sites in Texas and Ohio.

RTC at PDF p. 59–60. While this information is relevant, it is not responsive to the Petitioners’ concerns specifically related to how flares at Valero can achieve 99 percent destruction efficiency. Broadly referencing historical research and publications and the AP-42 chapter does not provide any technical basis for the appropriateness of 99 percent destruction efficiency assumptions.

Further, TCEQ’s RTC does not attempt to respond to the other comments made by the Petitioners regarding TCEQ specifying which gases are monitored by composition analyzers and which gases are monitored by flow monitors. In the *Valero Houston I Order*, the EPA directed TCEQ to specify in the Permit which VOCs and gases are being monitored to demonstrate compliance with the VOC emission limit. *Valero Houston I Order* at 42. TCEQ does not appear to have specified which gases are monitored by composition analyzers or flow monitors in the Permit, and the RTC does not provide an explanation of their absence despite the issue being raised by the Petitioners in public comments.

Direction to TCEQ: As the EPA stated in the *Valero Houston I Order*, TCEQ must specify in the Permit which VOCs and gases are being monitored to demonstrate compliance with the VOC emission limit. In this instance, TCEQ should respond to the Petitioners’ comments regarding whether the flare composition analyzers are measuring all VOCs in the waste gas (or only a subset of the VOCs) and whether the flow monitors are measuring all of the gases entering the flares, including sweep and purge gases.¹⁹ Additionally, TCEQ must also revise the permit record to fully explain how the Permit’s monitoring, recordkeeping, and/or operational requirements are sufficient to assure compliance with the lb/hr and TPY VOC emission limitations for flares. This explanation should also identify the specific monitoring, recordkeeping, and/or operational limitations in the Permit that TCEQ has determined will ensure Valero will achieve the specific DRE utilized in any VOC-limit compliance demonstrations.

¹⁹ The EPA notes that other applicable requirements that require flare monitoring may provide the information that the Petitioners highlight. Specifically, 40 C.F.R. part 63, subpart CC, for which both flares are subject, requires Valero to conduct flare vent gas composition monitoring. *See* 40 C.F.R. § 63.670(j). The definition of flare Vent Gas under this provision includes all waste gas, portion of sweep gas not recovered, flare purge gas, and flare supplemental gas (but does not include pilot gas, total steam or assist air). 40 C.F.R. § 63.641. Subpart CC also requires Valero to install a flow monitoring system and allows that different flow monitoring methods may be used "provided that the flow rates of all gas streams that contribute to the flare vent gas are determined." 40 C.F.R. § 63.670(i). If TCEQ is relying upon other requirements such as those found in the NSPS or NESHAP in order to assure compliance with the emission limits found in the MAERT, then the Permit must clearly state this connection and the permit record should provide a basis for this connection. *See Valero Houston I Order* at 42.

SO₂ Emissions Monitoring

As an initial matter, as the Petitioners have correctly pointed out, while TCEQ's RTC indicates that due to an error in Attachment G, for SO₂, total sulfur concentration (and not H₂S) and vent flow rate to the flare are measured to calculate mass emission rates, the current version of the Permit still indicates that H₂S concentration and vent flow rate are measured to calculate mass emission rates.

The Petitioners have demonstrated that TCEQ's RTC is inadequate as it does not respond to a number of specific claims raised by the Petitioners. First, the RTC is not responsive to the Petitioners' comments regarding the identification and justification of conversion efficiencies, specifically the percentage of sulfur from waste gas that is converted to SO₂ in the flares. While the RTC generally references the guidance document New Source Review (NSR) Emission Calculations - Sample Calculations for Flares, this broad reference does not specifically speak to the specific SO₂ conversion efficiencies. While that guidance document states that the conversion efficiency for SO₂ is 100 percent sulfur in fuel converted to SO₂,²⁰ this emission factor is not referenced with specificity in the Permit. Additionally, the RTC is not responsive to the Petitioners' comments related to the use of total sulfur analyzers to assure compliance with hourly and annual SO₂ limits because the upper bound of the total sulfur concentration that Valero's total sulfur analyzers can measure is too low. Public Comments at PDF p. 30. While the EPA is not commenting on the technical merits of the Petitioners' comments and claim regarding the upper bound of total sulfur analyzers for Valero, TCEQ has failed to respond to comments on this particular issue.

Direction to TCEQ: TCEQ should revise Attachment G to correct the error it points to in the RTC, specifically to include that total sulfur concentration (and not H₂S) is used in the calculation for mass emission rates. In addition, TCEQ should explicitly identify the conversion efficiencies that are necessary to calculate and assure compliance with the SO₂ emissions limits for flares. If TCEQ intends for Valero to use the conversion efficiency for SO₂ that is found in the guidance document "New Source Review (NSR) Emission Calculations - Sample Calculations for Flares," that should be specifically identified in the Permit, or incorporated by reference at a level of specificity that it is clear where in that document the information can be found. Lastly, TCEQ must amend the permit record to respond to the Petitioners' comments regarding the use of total sulfur analyzers to assure compliance with hourly and annual SO₂ limits and provide a justification for the sufficiency of the upper bound of the total sulfur analyzers.

CO and NO_x Emissions Monitoring

Generally, the EPA has cautioned against the use of AP-42 emission factors for compliance demonstrations, but these cautionary statements do not equate to an EPA finding that AP-42 emission factors may never be sufficient to assure compliance with any permit limits, or to a finding that such use is presumptively inadequate to assure such compliance. The determination of whether it is necessary to develop a source-specific emission factor to calculate emissions of a particular pollutant from a particular unit is a highly fact-specific evaluation. *See In the Matter of Suncor Energy (U.S.A.), Inc., Commerce City Refinery, Plant 2 (East)*, Order on Petition Nos. VIII-2022-13 & VIII-2022-14 at 24–25 (July 31, 2023) (*Suncor Plant 2 Order*).

²⁰ New Source Review (NSR) Emission Calculations - Sample Calculations for Flares at 8.

The Petitioners have demonstrated that the Permit and permit record are unclear as to the emission factors being used to calculate CO and NO_x emissions. First, the Petitioners are correct that Attachment G of the incorporated NSR permit references “Flares and Vapor Oxidizers (October 2000 RG-109) Table 4,” which does not appear to be available on TCEQ’s website, and NSR Permit 2501A Special Condition 38.F references “New Source Review (NSR) Emission Calculations – Sample Calculations for Flares,” which does contain emission factors for CO and NO_x but contains multiple options. Thus, it is unclear to the EPA which emission factors apply, and neither the Permit nor permit record identify the additional information, such as emission factors in the Permit and/or enforceable application representations that would be required to determine compliance with those emission limits. *See In the Matter of Motiva Enterprises LLC, Port Arthur Refinery*, Order on Petition No. VI-2016-23 at 11 (May 31, 2018).

Additionally, the Petitioners have demonstrated that TCEQ’s RTC is not responsive to the Petitioners’ concerns related to how the relevant CO and NO_x emission factors can accurately estimate emissions from flares, the measurement of vent gas heat, and how daily measurements assure compliance with hourly limits. In fact, it does not appear to the EPA that the RTC includes any language specifically responding to these concerns. When public comments raise meritorious challenges to the sufficiency of a monitoring provision, the EPA expects TCEQ to engage with these comments and explain the basis for its decisions (or specifically identify where any prior justification may be found). *See In the Matter of BP Amoco Chemical Company, Texas City Chemical Plant*, Order on Petition No. VI-2017-6 at 18 (July 20, 2021).

Direction to TCEQ: First, TCEQ must amend the Permit to ensure that the correct guidance document is cited both in the Permit and any attachments (in this case NSR Permit 2501A and Attachment G) to ensure there is a consistent document being referenced for the source of emission factors for CO and NO_x. Second, in addition to the correct citation, if TCEQ intends on citing Flares and Vapor Oxidizers (October 2000 RG-109) Table 4, this document must be made available to the public. If TCEQ intends on citing “New Source Review (NSR) Emission Calculations – Sample Calculations for Flares,” it must specify in the Permit which emission factor(s) apply to the facility. Lastly, TCEQ must amend the permit record to provide a justification for how the relevant CO and NO_x emission factors can accurately estimate emissions from flares as well as provide a response to the Petitioners’ comments regarding the measurement of vent gas heat and how daily measurements assure compliance with hourly limits.

F. Claim 6: The Petitioners Claim That “The Proposed Permit’s Monitoring Requirements Cannot Ensure Compliance with the Hourly and Annual VOC Limits for the DAF Unit.”

Petition Claim: The Petitioners claim that the Permit fails to assure compliance with hourly and annual VOC limits applicable to the facility’s dissolved air flotation (“DAF”) unit in violation of 42 U.S.C. § 7661c(a) and 7661c(c) and 40 C.F.R. § 70.6(c)(1). Petition at 47; *see id.* at 46–51.

The Petitioners first relate the EPA’s Direction to TCEQ in the *Valero Houston I Order* concerning the monitoring for the DAF unit:

TCEQ must revise the Permit to include monitoring sufficient to demonstrate compliance with the hourly and annual VOC emission limits including what test methods and calculation procedures are required. TCEQ should consider whether additional direct or

parametric monitoring, such as hourly monitoring of throughput, would be necessary to assure ongoing compliance with the hourly VOC emission limits . . . Further, TCEQ must amend the permit record to include the rationale to demonstrate that the monitoring, recordkeeping, and reporting is sufficient to assure compliance with the hourly and annual VOC emission limits.

Id. at 46 (quoting *Valero Houston Order* at 45).

The Petitioners also note that the Permit requires monthly wastewater grab samples—to determine VOC concentration—and wastewater flow rate as inputs to the Toxchem model to determine compliance with the VOC limit applicable to the DAF unit. *Id.* at 46–47. The Petitioners then list six reasons why, in their opinion, the monitoring provisions are inadequate to assure compliance. *See id.* at 47–49.

First, the Petitioners challenge the frequency and accuracy of the wastewater VOC concentration sampling, arguing that monthly sampling is not frequent enough to assure compliance with shorter-term limits. *Id.* at 47 (citing March 2019 Sahu Declaration). In support, the Petitioners state that influent concentrations can vary and affect VOC emissions from uncovered DAF units. *Id.* Instead, the Petitioners insist that daily sampling must be required, or weekly if VOC concentrations are shown to be stable. *Id.* The Petitioners also claim that other relevant variables such as flow rate, temperature, and wind speed can also change quickly and affect VOC emissions, but are not mentioned in the Permit. *Id.* (citing RTI International, *Emissions Estimation Protocol for Petroleum Refineries* (Apr. 2015) available at: <https://www3.epa.gov/ttn/chief/efpac/protocol/Protocol%20Report%202015.pdf>). Moreover, the Petitioners state that the EPA “recognized that ‘[a]ccuracy of TOXCHEM is largely dependent on the accuracy of site-specific inputs[.]’” *Id.* at 48 (quoting *In the Matter of ExxonMobil Fuels & Lubricant Company, Baton Rouge Refinery, Reforming Complex and Utilities Unit, Order on Petitions Nos. VI-2020-4, VI-2020-6, VI-2021-1, VI-2021-2* at 34 (Mar. 18, 2022) (*Exxon Baton Rouge Order*)).

The Petitioners also claim that despite the EPA directing TCEQ to “consider whether additional direct or parametric monitoring, such as hourly monitoring of throughput, would be necessary to assure ongoing compliance with the hourly VOC emission limits,” TCEQ has failed to address this point. *Id.* (quoting *Valero Houston I Order* at 45).

Second, the Petitioners claim that the permit record is still lacking a justification of the sampling frequency, despite the EPA’s direction to TCEQ to add such justification in the *Valero Houston I Order*. *Id.* (citing *Valero Houston I Order* at 45; *Exxon Baton Rouge Order* at 36).

Third, arguing that flow rate can change quickly, the Petitioners state that the Permit must require hourly flow measurements to assure compliance with an hourly VOC limit. *Id.* at 49. The method of determining “average monthly wastewater flow rate” indicated in the Permit is unclear, according to the Petitioners, despite the EPA noting in the *Valero Houston I Order* that the Permit lacked requirements related to a continuous influent flow monitor. *Id.*

Fourth, the Petitioners state that the Permit must require hourly measuring of temperature, total pressure, diffused air flow rate, and wind speed to assure compliance with the VOC limits. *Id.* (citing RTI International, *Emissions Estimation Protocol for Petroleum Refineries* at Table 7-5 (Apr. 2015)).

Fifth, the Petitioners allege that the Permit inappropriately leaves “it up to Valero to determine what is a ‘representative portion of the wastewater stream’ for sampling VOC concentration[.]” *Id.* Instead, the Petitioners claim, the Permit must “require monitoring of VOC concentration at specific, appropriate points upstream—and also downstream—of the DAF unit.” *Id.* (citing *Exxon Baton Rouge Order* at 35).

Sixth and finally, the Petitioners claim that the Permit must identify any emission factors or destruction efficiencies used in VOC calculations for the DAF unit. *Id.*

Reiterating EJ concerns (referencing the EJ section of the Petition which is summarized in section III.D of this Order) the Petitioners argue that strong monitoring requirements are necessary because “the DAF unit is one of the largest sources of hazardous air pollutants at the refinery,” and reducing VOCs will also reduce HAPs. *Id.* at 49–50.

Addressing TCEQ’s responses in its RTC, the Petitioners claim that TCEQ “did not even attempt to address” the six problems with the monitoring for the DAF unit identified in the Petition, despite having raised these issues in public comments. *Id.* at 50. The Petitioners claim that TCEQ’s assertion that the requirements “satisfied BACT and ensure compliance with the hourly and annual emission rates” ignores TCEQ’s obligation to supplement insufficient monitoring under title V. *Id.* at 51 (citing RTC at 61; 42 U.S.C. § 7661c(a), 7661c(c); 40 C.F.R. § 70.6(c)(1)). The Petitioners also dismiss another response that refers to PBR requirements, which the Petitioners argue are not relevant to this issue. *Id.*

EPA Response: For the following reasons, the EPA grants this Petition claim and objects to the issuance of the Permit.

In response to the *Valero Houston I Order*, TCEQ amended the Permit (both Special Condition 37 of NSR Permit 2501A and Attachment G) to include monitoring flow rates. However, TCEQ has failed to respond to comments raised by the Petitioners regarding the sufficiency and justification of monthly sampling, measurement of hourly flow rate and other variables, the representative nature of sampling points, and the presence or absence of emission factors and/or destruction efficiencies.

In responding to the Petitioners’ comments, TCEQ states that it “has previously determined that the short-term emissions using the monthly VOC concentration, flowrate, and Toxchem model as specified in the table [Attachment G] above satisfied BACT and ensure compliance with the hourly and annual emission rates.” RTC at PDF p. 60. This, in combination with TCEQ’s other general responses, does not speak to any of the Petitioners’ specific concerns regarding a number of variables and measurement methodologies. First, the Petitioners have demonstrated that the RTC is unresponsive to the Petitioners’ concerns regarding the frequency of sampling, particularly how monthly sampling of VOC concentration and flow rate measurement is sufficient to assure compliance with short-term and annual VOC emission rates.

As the EPA has previously discussed, at best, these calculations show how to calculate an emissions rate based on throughput (or other process variables) over a given period of time. *See In the Matter of*

Georgia-Pacific Consumer Operations LLC, Crossett Paper Operations, Order on Petition Nos. VI-2018-3 & VI-2019-12 at 19 (Feb. 22, 2023). But if throughput (or other process variables) are not themselves measured on an hourly basis—but instead, on a daily or monthly basis—it is difficult to understand how such information could provide an assurance that the source is complying with its emission limits on an hour-to-hour basis. Overall, although it is not always necessary for there to be an exact match in the time scales associated with emission limits and the associated monitoring, it is not clear to EPA whether the Permit assures compliance with all applicable requirements, and TCEQ has failed to provide a reasoned explanation in response to the Petitioners’ comments regarding this issue. Accordingly, EPA grants this part of the claim. 40 C.F.R. § 70.8(c)(3)(ii).

Next, the Petitioners have correctly pointed out that TCEQ’s RTC ignores the Petitioners’ comments that state the Permit fails to require Valero to measure other “critical inputs” such as temperature, total pressure, diffused air flow rate, and wind speed. The RTC does not speak to any of these “critical inputs” at all, and it is unclear to the EPA the role these “critical inputs” play in appropriately monitoring VOC emissions. Further, while Special Condition 37 of NSR Permit 2501A does state that samples shall be taken in a “representative portion of the wastewater stream upstream and downstream” of the DAF unit, this is still too general given the potential differences in sampling points based on variables such as flow rate and residence time. Measuring VOC concentrations and flow rates at appropriate locations within the wastewater treatment train is important if these inputs to TOXCHEM and resulting VOC emissions are to be accurately quantified.

Lastly, the Petitioners are correct that TCEQ’s RTC is not responsive to their comments regarding the inclusion of any emission factors or assumed destruction efficiencies in its VOC calculations. Because TCEQ has failed to provide any response to this comment, it is unclear to EPA if there are any emission factors or destruction efficiencies used in VOC calculations.

Direction to TCEQ: First, TCEQ must provide a reasoned explanation of how monthly sampling of VOC concentration and monthly measurement of flow rate is sufficient to assure compliance with hourly and annual VOC emission rates. This explanation must account for any variables that could potentially vary on a shorter time scale than monthly. TCEQ must also provide a response to the Petitioners’ comments regarding the exclusion of monitoring certain “critical inputs” such as temperature, total pressure, diffused air flow rate, and wind speed. Further, TCEQ must identify the location(s) at which VOC concentrations and wastewater flow are to be measured with sufficient specificity (at a minimum more specific than “upstream” and “downstream”) and must either require measurements at multiple sites upstream and downstream of the DAF unit or explain how measurements at multiple sites are not necessary to assure compliance. In any case, TCEQ must explain the basis for the chosen locations in the permit record. TCEQ must provide a response to the Petitioners’ comments by stating in the permit record whether there are any emission factors or assumed destruction efficiencies. Any emission factors or assumed destruction efficiencies must be included in the Permit.

G. Claim 7: The Petitioners Claim That “The Proposed Permit’s Monitoring Requirements Cannot Ensure Compliance with the PM and Opacity Limits for Boilers 1-4.”

Petition Claim: The Petitioners claim that the Permit does not assure compliance with hourly and annual PM_{2.5} and PM₁₀ limits and continuous opacity limits applicable to boilers 1-4 (81BF01, 50BF02,

50BF03, and 50BF04) in violation of 42 U.S.C. § 7661c(a) and 7661c(c) and 40 C.F.R. § 70.6(c)(1). Petition at 52; *see id.* at 51–55.

The Petitioners relate the EPA’s objection from the *Valero Houston I Order* concerning the monitoring requirements for the boilers, noting that the EPA found that the permit record lacked justifications “for why a single visual observation conducted annually” assures compliance with a continuous opacity limit and why a single stack test without parametric monitoring assures compliance with hourly and annual PM limits. *Id.* at 51–52 (citing *Valero Houston I Order* at 48, 49).

The Petitioners note that, in response to the EPA’s objection, TCEQ added to the Permit Special Condition 10.D, which references Attachment A, which requires Valero to measure flow rates and heating values to obtain a heat input that determines emission rates via an emission factor. *Id.* at 52.²¹ The Petitioners claim that TCEQ added no new opacity monitoring and that the Permit still only requires an annual Method 9 observation to monitor opacity. *Id.* (citing Special Condition 11).

The Petitioners then present three reasons why, in their opinion, the Permit still fails to assure compliance with the PM and opacity limits applicable to the boilers. *See id.* at 53–54.

First, addressing the opacity requirements, the Petitioners claim that TCEQ made no attempt to fix or justify the monitoring in the Permit, despite the EPA’s objection to those same requirements. *Id.* at 53 (citing *Valero Houston I Order* at 48–49). The Petitioners state that EPA’s “has previously concluded that biannual and quarterly Method 9 visual observations are inadequate to assure compliance with opacity limits that apply continuously” and note that Valero is required to conduct such observations even less frequently. *Id.*

Moreover, the Petitioners argue that visual observations are impossible at night and under certain weather conditions and therefore cannot assure compliance with continuous opacity limits. *Id.*

Next, turning to the monitoring for the PM limits, the Petitioners claim that an emission factor determined by an initial stack test cannot assure compliance with annual and hourly limits because boiler performance degrades over time. *Id.* (citing March 2019 Sahu Declaration). Additionally, the Petitioners claim that TCEQ has not explained how these requirements can assure compliance. *Id.* at 54. The Petitioners allege that TCEQ avoided explaining whether the boilers are subject to any operational firing rate limitations and that the Permit must clearly state if they are. *Id.* at 54 (citing TCEQ Response to Objection at 8).

Finally, challenging the frequency of the fuel gas heat content measurements, the Petitioners argue that the variability of the hydrogen content of fuel gas necessitates measurements “at the same frequency that Valero measures heat content for its process controls (in no case less frequently than once per day).” *Id.*

As a parenthetical aside, the Petitioners contend that strong monitoring requirements for the boilers are especially important to confirm that the PM emissions increases resulting from the alkylation unit expansion project do not trigger major PSD. *Id.* at 55. Moreover, the Petitioners claim that the Permit

²¹ The Petitioners note that the Permit actually contains a Special Condition 10.E, not 10.D, but the Petitioners state it should be numbered 10.D. *Id.* n. 89.

fails to assure compliance with requirements from “30 TAC § 116.127 that Valero calculate and maintain a record of the annual emissions, in tons per year, on a calendar year basis for either five or ten years—and report if annual emissions from the project exceed the baseline emissions by a significant amount” due to the same reasons the Permit fails to assure compliance with the PM limits. *Id.* (citing 40 C.F.R. § 70.2 (definition of “applicable requirement”); 30 TAC § 122.10(2)).

To remedy the abovementioned flaws they see in the Permit relating to the monitoring requirements for the boilers, the Petitioners state that the Permit should be revised to:

Require PM CEMS and continuous flow and temperature measurements for compliance with the filterable portions of Valero’s PM limits.

Because PM CEMS only measures filterable PM: (a) require annual stack testing for condensable PM; (b) establish a filterable/condensable ratio from the most recent stack test (or as an average of the results from the most recent test and all prior tests, as these tests begin to accumulate over time); (c) establish hourly filterable and condensable operating limits that reflect the relative proportions from the most recent stack test (or the average across tests discussed in (b) above); and (d) require Valero to meet those filterable and condensable operating limits as shown by hourly PM CEMS results.

Id. at 56.

Addressing TCEQ’s responses in its RTC, the Petitioners allege that “TCEQ did not even attempt to substantively address any of the problems” they identified and raised in public comments concerning the monitoring for the PM and opacity limits. *Id.* Noting that the RTC refers to NSPS subpart Db requirements, the Petitioners argue that “nothing in the Permit or permit record ties the NSPS requirements to specific, actual PM emission rates or opacity levels or to the Permit’s very specific PM and opacity limits” despite the EPA’s direction to TCEQ to provide such a connection. *Id.* (citing RTC at 61; *Valero Houston I Order* at 49).

The Petitioners dismiss other TCEQ responses as “boilerplate responses [that] in no way resolve the inadequacy of the monitoring here.” *Id.*

EPA Response: For the following reasons, the EPA grants this Petition claim and objects to the issuance of the Permit.

First, with respect to opacity monitoring, in response to the *Valero Houston I Order*, TCEQ did amend NSR Permit 124424 to include Special Condition 10.D,²² which references Attachment A and includes monitoring requirements and emission calculation information for boilers. However, the Petitioners are correct that TCEQ appears to have not amended or revised any portion of Special Condition 11, which is the only condition that mentions opacity monitoring. Special Condition 11 reads: “Opacity of emissions from the boilers shall not exceed 5 percent averaged over a six-minute period. Opacity shall be determined by the U.S. Environmental Protection Agency (EPA) Test Method 9 during the initial compliance testing and at least once per year thereafter.” NSR Permit 124424 at 3. Attachment A

²² The EPA notes there appears to be an error with the labeling in NSR Permit 124424, as Special Condition 10.D seems to be mislabeled as Special Condition 10.E.

includes PM, PM_{2.5}, and PM₁₀ monitoring requirements, but it is unclear from the record if these requirements are connected to the opacity requirements in the NSR Permit. Further, TCEQ's RTC does not provide any additional explanation for how a single visual observation conducted annually would be sufficient to determine compliance with an opacity limit that applies at all times.

With respect to the claim that the stack test-derived emission factor itself, which is apparently determined by an initial stack test, cannot assure compliance with annual and hourly limits, the Petitioners have demonstrated that TCEQ's RTC is generally unresponsive. TCEQ has not provided a reasoned explanation or evaluation for whether the monitoring based on an emission factor from a single stack test is still sufficient to assure compliance. While TCEQ states in its RTC that it "is not aware of any facts that would require any other additional monitoring to further validate flare [sic] emission factors beyond that which has consistently been required under federal law and Texas permits," RTC at PDF p. 62, this general statement does not provide any specific reasoning for why the emission factors are sufficient based on an initial stack test.

With respect to boiler firing rate operational limitations, the Petitioners are correct in their assertion that based on the RTC, it is unclear whether a maximum boiler firing rates have been established, as the incorporated NSR Permit No. 124424 states that "if the boilers are unable to reach the maximum firing rate during testing, then future firing may be limited to the highest firing rate achieved during testing."²³ In the title V permit minor revision application for project 34289 Valero states: "Since initial stack testing for these units has already occurred and the test dates are documented in NSR Permit 2501A SC 55.C, the test boiler firing rates were included in the stack testing reports which are available to the public. Therefore, maximum firing rate limitations are not necessary to be included in the Permit."²⁴ However, this portion of the permit record is still too general in providing an explanation for the exclusion of the maximum boiler firing rates and remains separate from the fact that the RTC is still unresponsive to the comments the Petitioners raised on this topic.

The Petitioners have demonstrated that TCEQ's RTC is not responsive to their comments that measuring fuel gas heat content daily is too infrequent to assure compliance with the boilers' hourly PM limits. In fact, the RTC does not speak to this point at all, and it is unclear to the EPA based on the Permit and permit record if there is enough variability in the fuel gas heat content to determine if daily fuel gas heat content measurements are too infrequent. For these reasons, the EPA grants this claim.

Direction to TCEQ: In response to the Petitioners' public comments, TCEQ must provide a reasoned explanation as to how a single visual observation conducted annually would be sufficient to determine compliance with an opacity limit at all times as well as a reasoned explanation or evaluation for whether the monitoring based on an emission factor from a single stack test is sufficient to assure compliance. Additionally, TCEQ must respond to the Petitioners' comments that measuring fuel gas heat content daily is too infrequent to assure compliance with the boilers' hourly PM limits. Lastly, because initial stack testing for these units has already occurred, TCEQ should be able to identify whether limitations on the maximum firing rate were established. If applicable, these limitations must be included in the Permit. If TCEQ intends for permit application representations (or stack test reports)

²³ See Permit No. 124424 (Project 350864), Conditions, WCC Content ID 6442500 (Feb. 6, 2023) available at https://records.tceq.texas.gov/cs/idcplg?idcservice=tceq_external_search_get_file&did=7130947&rendition=web.

²⁴ See Permit No. O1381 (Project 34289), Agency Review, WCC Content ID 7264432 at 480 (July 3, 2024) available at https://records.tceq.texas.gov/cs/idcplg?idcservice=tceq_external_search_get_file&did=8167516&rendition=web.

to establish maximum firing rates for boilers 1-4, TCEQ should explicitly acknowledge this in its response and clearly incorporate any such representations into the Permit.

H. Claim 8: The Petitioners Claim That “The Proposed Permit’s Monitoring Requirements Cannot Ensure Compliance with Hourly [and] Annual VOC Limits for Fugitive Emissions.”

Petition Claim: The Petitioners claim that the Permit fails to assure compliance with the hourly and annual limits on VOC emissions applicable to the fugitive components listed in Permit 2501A and the Alkylation Unit No. 2 fugitive components in violation of 42 U.S.C. § 7661c(a) and 7661c(c) and 40 C.F.R. § 70.6(c)(1). Petition at 58; *see id.* at 56–61.

The Petitioners first repeat sections of the EPA’s previous objection on this issue from the *Valero Houston I Order*, note TCEQ’s response to that objection, and outline the revised requirements in Attachment G related to fugitive emissions. *Id.* at 56–57 (citing *Valero Houston I Order* at 50 and RTO at 8–9).

The Petitioners then present four reasons why, in their opinion, the Permit still fails to assure compliance with the VOC limits on fugitive emissions. *See id.* at 58–59.

First, despite the EPA’s previous direction to TCEQ to clearly identify the Commission’s “Air Permit Technical Guidance for Chemical Sources - Fugitive Guidance” in the Permit, and despite TCEQ’s insistence in the RTC that it did so, the Petitioners claim the Permit still fails to specify how fugitive emissions are calculated and does not actually mention the guidance document TCEQ says it does. *Id.* at 58 (citing *Valero Houston I Order* at 51). Instead, according to the Petitioners, Attachment G references “Content ID 5768852 Pg.49,” which “does not list the relevant ‘correlation equations,’ ‘EPA industry-appropriate emission factors,’ or ‘permit representations;’ [but] only lists the hourly and annual VOC emission limits for certain fugitive emission point numbers.” *Id.* at 58. The Petitioners also allege that “permit 124424’s Attachment A . . . does not even address fugitive emissions.” *Id.*

Second, even if the Commission’s fugitive guidance document were referenced in the Permit, the Petitioners argue it does not cover all of the sources of fugitive emissions at the facility, “even though the hourly and annual VOC limits at issue here (at least those from Permit 2501A) are for all fugitive VOC emissions—not just emissions from the equipment and periods of operation covered by the guidance.” *Id.* Moreover, the Petitioners add, the document contains several different emission factors, and the Permit fails to specify which Valero must use. *Id.*

Third, the Petitioners claim that the methodology of multiplying component counts by emission factors to determine emission rates cannot assure compliance with the VOC limits because this methodology “would presumably always keep Valero in compliance with these limits, rather than attempting to calculate the actual fugitive emissions.” *Id.*

Fourth and finally, the Petitioners argue that the quarterly leak detection and repair requirements in Permit 2501A’s Special Condition 41 and Permit 124424’s Special Condition 15 are insufficiently frequent and “likely to miss leaks from valves, pumps, seals and other equipment.” *Id.* (citing March 2019 Sahu Declaration; EPA, *Leak Detection and Repair, a Best Practices Guide* (Oct. 2007).

Addressing TCEQ's RTC, the Petitioners state that "TCEQ did not even attempt to address our first three arguments[.]" *Id.* at 60. The Petitioners also dismiss TCEQ's assertion that "monitoring requirements according to the 28VHP LDAR programs have been demonstrated to meet BACT," arguing that this response does not engage the substance of the Petitioners' arguments. *Id.* (citing RTC at 63). The Petitioners criticize TCEQ for listing other general NSPS and NESHAP requirements that they claim the EPA already determined "cannot ensure compliance with the fugitive VOC limits here." *Id.* (citing RTC at 63; *Valero Houston I Order* at 50). In addition, the Petitioners claim that TCEQ references monitoring requirements related to PBR limits, which are not relevant to this issue. *Id.* (citing RTC at 63). And finally, the Petitioners describe the rest of TCEQ's response as "non-substantive, boilerplate responses" that "in no way resolve the inadequacy of the monitoring here." *Id.* at 61 (citing RTC at 63–64).

To remedy the flaws they see in the Permit, the Petitioners claim that the Permit should be revised to require monitoring via optical gas imaging and calculations based on "which components are leaking, the duration of leaks, and quantity of VOC emissions from leaks." *Id.* at 59 (citing March 2019 Sahu Declaration). Also, the Petitioners insist that "Valero must also be required to take into account fugitive emissions from all parts of the refinery and all time periods of fugitive emissions." *Id.*

The Petitioners conclude by emphasizing that EJ considerations and the area's nonattainment status for the ozone NAAQS add to the importance of strong monitoring and emission calculation requirements for fugitive VOC emissions. *Id.* at 60.

EPA Response: For the following reasons, the EPA grants this Petition claim and objects to the issuance of the Permit.

In response to the *Valero Houston I Order*, TCEQ amended NSR Permit 2501A and Attachment G to include monitoring VOCs for fugitive emissions; however, the Petitioners are correct in their assertion that the document "Air Permit Technical Guidance for Chemical Sources - Fugitive Guidance" is not referenced in Attachment G, and the document referenced in Attachment G (Content ID 5768852 Pg. 49) simply contains permitted emission limits for presumably consolidated PBRs and does not appear to contain any emission calculation methodologies. If TCEQ is relying upon "Air Permit Technical Guidance for Chemical Sources - Fugitive Guidance" or any other document for the source to use to demonstrate compliance with the VOC limits, then that needs to be clearly cited in the Permit.

The Petitioners are also correct that the guidance document Air Permit Technical Guidance for Chemical Sources - Fugitive Guidance appears to contain a number of emission factors for fugitive emissions, and thus it is unclear which emission factors must be used in calculating fugitive emissions. TCEQ's RTC also does not provide any explanation or clarification, despite the Petitioners raising this clearly in their comments. Additionally, because the RTC does not speak specifically to the point made by the Petitioners regarding whether the guidance covers all of the sources of fugitive emissions at the facility, it is unclear to the EPA whether all sources of fugitive emissions are captured in the guidance.

Lastly, the Petitioners assert that quarterly leak detection and repair requirements in Permit 2501A's Special Condition 41 and Permit 124424's Special Condition 15 are insufficiently frequent and while the guidance document Air Permit Technical Guidance for Chemical Sources - Fugitive Guidance lists quarterly monitoring for LDAR 28VHP, TCEQ's RTC does not adequately address the Petitioners'

concerns. TCEQ's RTC states that "the monitoring requirements according to the 28VHP LDAR programs have been demonstrated to meet BACT based on the monitoring frequency and leak definitions that are specified for this LDAR program. Hourly leak inspections are not required for this LDAR program, which has been approved as BACT for numerous sites within Texas." RTC at PDF p. 64. This response does not explain *how* quarterly monitoring assures compliance with hourly VOC limits for fugitive emissions. For these reasons, the EPA grants this claim.

Direction to TCEQ: First, if TCEQ is relying upon the guidance document "Air Permit Technical Guidance for Chemical Sources - Fugitive Guidance" for the source to use to demonstrate compliance with the VOC limits, then that needs to be clearly cited in the Permit. If TCEQ properly incorporates that document, it must clarify which emission factors Valero is using in calculating fugitive VOC emissions as well as provide an explanation in the permit record for how that guidance captures all sources of fugitive emissions at the facility. Alternately, if TCEQ intends for Valero to rely on component counts, correlation equations, and EPA industry-appropriate emission factors that are identified in a permit application to assure compliance with fugitive VOC emissions limitations, TCEQ should identify such parameters, or adequately incorporate by reference the relevant application representations. Finally, TCEQ must provide an explanation for *how* quarterly monitoring assures compliance with hourly VOC limits for fugitive emissions beyond the fact that TCEQ's guidance provides for quarterly monitoring.

I. Claim 9: The Petitioners Claim That "The Proposed Permit's Monitoring Requirements Cannot Ensure Compliance with the Hourly and Annual PM and VOC Limits for the Atmospheric Tower Heater."

Petition Claim: The Petitioners claim that the Permit fails to assure compliance with the hourly and annual limits on VOC, PM_{2.5}, and PM₁₀ emissions applicable to the facility's Atmospheric Tower Heater (23CB201) in violation of 42 U.S.C. § 7661c(a) and 7661c(c) and 40 C.F.R. § 70.6(c)(1). Petition at 61–62; *see id.* at 61–66.

The Petitioners repeat a section of the EPA's previous objection on this issue, which noted that the renewal permit did "not specify any monitoring or calculation methodology" related to the limits on the Tower Heater and emphasized that the justification for any associated monitoring must be added to the permit record. *Id.* at 61 (quoting *Valero Houston I Order* at 53).

The Petitioners also note the requirements in the revised Permit 2501A's Attachment G, which require calculating the emission rate using an AP-42 emission factor applied to heat input that is based on daily fuel gas heat content measurement and continuous fuel flow to heater measurement. *Id.*

The Petitioners then present four reasons why, in their opinion, the monitoring requirements are still insufficient to assure compliance with the Tower Heater's VOC, PM_{2.5}, and PM₁₀ limits. *See id.* at 62–63.

First, the Petitioners claim that compliance assurance relying on emission factors is inadequate for a number of reasons. *See id.* at 62–63 (citing *In the Matter of Tesoro Refining and Marketing, Order* on Petition No. IX-2004-6 (Mar. 15, 2005) (*Tesoro Order*) at 32). The Petitioners argue that emission factors are likely not representative of actual emissions at the facility because they are compiled from the average emission rates from multiple different facilities. *Id.* at 62. Moreover, the specific source of emission factors referenced in the Permit—AP-42 Chapter 1.4—lists emission factors related to only

natural gas combustion and not refinery fuel gas, which, the Petitioners contend, the heater is allowed to burn. *Id.* (citing Permit 2501A Special Condition 7.A). The Petitioners also criticize the ratings of the emission factors and cite the *Tesoro Order* as an example where the EPA has previously objected to a permit in part due to a similar low rating of an emission factor used for compliance assurance. *Id.* at 63 (citing AP-42 Introduction at 9, 10; *Tesoro Order* at 32–33). Moreover, the Petitioners emphasize that the emission factors in Chapter 1.4 have not been updated since March 1998. *Id.*

Second, the Petitioners claim that the Permit lacks requirements for periodic stack testing to confirm the appropriateness of the emission factors, which the Petitioners claim are necessary due to changing operating conditions. *Id.*

Third, because the “hydrogen content of fuel gas varies over a short time[,]” the Petitioners claim that measuring the fuel gas heat content on a daily basis is too infrequent to assure compliance with the heater’s hourly and annual VOC and PM limits. *Id.* Instead, the Petitioners state that the fuel gas heat content “should be measured at the same frequency that Valero measures heat content for its process controls (in no case less frequently than daily).” *Id.*

Fourth and finally, the Petitioners allege that TCEQ has failed to justify the monitoring for the heater in the permit record, despite the EPA’s direction to do so in the *Valero Houston I Order*. *Id.* In particular, the Petitioners argue that the permit record lacks any explanation of how the AP-42 emission factors accurately reflect actual emissions from the heater and any explanation of why periodic stack tests are not necessary. *Id.* (citing RTC at 65–67).

Addressing TCEQ’s RTC, the Petitioners claim that TCEQ’s responses do “not even attempt to resolve or substantively address” the problems with the monitoring conditions that the Petitioners identified in their public comments on the Draft Permit and wholly fail to explain why the monitoring is sufficient. *Id.* at 65 (citing RTC at 65). The Petitioners argue that TCEQ’s recitation of various other requirements applicable to the heater, including NSPS and NESHAP requirements, is irrelevant in this case, and that the EPA already stated so. *Id.* (citing *Valero Houston I Order* at 53).

The Petitioners then address TCEQ’s reference to Condition 8, which requires opacity monitoring. *See id.* at 66. The Petitioners argue that Condition 8 cannot assure compliance with the VOC and PM limits because it does not actually require opacity observations on any set schedule, citing several EPA title V petition orders in support. *Id.* at 66 (citing *In the Matter of EME Homer City Generation L.P., Homer City Coal-Fired Electric Generating Facility*, Order on Petition Nos. III-2012-06, III-2012-07, and III-2013-02 at 44 (June 30, 2014); *In the Matter of PacifiCorp’s Jim Bridger and Naughton Electric Utility Steam Generating Plants*, Order on Petition No. VIII-00-1 at 19 (Nov. 16, 2000); *In the Matter of Tennessee Valley Authority, Bull Run*, Order on Petition IV-2015-14 at 11 (Nov. 10, 2016)). Dismissing the remainder of TCEQ’s responses on this issue, the Petitioners describe them as “non-substantive, boilerplate responses” that “in no way resolve the inadequacy of the Atmospheric Tower Heater PM and VOC monitoring and emissions calculations requirements.” *Id.*

To remedy the abovementioned flaws the Petitioners see in the monitoring requirements for the facility’s Atmospheric Tower Heater, the Petitioners state that the Permit must be revised to require a continuous opacity monitoring system coupled with semi-annual or quarterly stack testing for both filterable and condensable PM, or PM CEMS, in lieu of continuous opacity monitoring. *Id.* at 64 (citing

March 2019 Sahu Declaration). For VOC emissions monitoring, the Petitioners state that the Permit must require semi-annual or quarterly stack tests that “cover a range of heater loads, including low and intermediate loads.” *Id.*

The Petitioners emphasize the importance of strong monitoring conditions in this case due to EJ concerns and because they would ensure that the heater would better limit its emissions of two hazardous air pollutants—acenaphthylene and hexane. *Id.* at 63–64.

EPA Response: For the following reasons, the EPA grants this Petition claim and objects to the issuance of the Permit.

In response to the *Valero Houston I Order*, TCEQ amended NSR Permit 2501A and Attachment G to include monitoring for hourly and annual VOC and PM emissions. The Petitioners, however, have demonstrated that the record is inadequate on several points raised in public comment.

In general, while the EPA has cautioned against the use of AP-42 emission factors for compliance demonstrations, these cautionary statements do not equate to an EPA finding that AP-42 emission factors may never be sufficient to assure compliance with any permit limits, or to a finding that such use is presumptively inadequate to assure such compliance. In this instance, the ratings and date the last update was made to the emission factor are relevant information, but not the sole determining factors for the appropriateness of AP-42. The determination of whether it is necessary to develop a source-specific emission factor to calculate emissions of a particular pollutant from a particular unit is a highly fact-specific evaluation. *See Suncor Plant 2 Order* at 24–25. However, in this case, the Petitioners have pointed out that Chapter 1.4 of AP-42 only lists emission factors for natural gas combustion and not both natural gas and refinery fuel gas, which the heater is allowed to burn. TCEQ’s RTC does not provide any clarity on this point, as the response provided does not speak to or even mention the appropriateness of AP-42 in light of the exclusion of refinery fuel gas from Chapter 1.4, nor does it explain how the AP-42 emission factors accurately reflect actual emissions from the heater.

Regarding the adequacy of the permit record, TCEQ’s RTC is not responsive to Petitioners’ comments regarding the Permit lacking requirements for periodic stack testing to confirm the appropriateness of the emission factors. In the title V permit minor revision application for project 34289, Valero states: “TCEQ customarily estimates emission rates from such sources based on AP-42 emission factors, and generally does not require stack sampling to demonstrate the suitability of the emission factors.” However, this part of the permit record is still too general in providing an explanation for the lack of stack testing, in addition to the fact that the RTC is still unresponsive to the comments the Petitioners raised on this topic.²⁵ The Petitioners have also demonstrated that TCEQ’s RTC is not responsive to their comments that measuring fuel gas heat content daily is too infrequent to assure compliance with the atmospheric tower heater hourly VOC and PM limits. In fact, the RTC does not speak to this point at all. Thus, it is unclear to the EPA based on the Permit and permit record whether variability in the fuel gas heat content necessitates heat content measurements more frequently than on a daily basis.

Direction to TCEQ: TCEQ must revise the permit record to respond to the Petitioners’ comments regarding the appropriateness of AP-42 in light of its exclusion of refinery fuel gas from Chapter 1.4 as

²⁵ See Permit No. O1381 (Project 34289), Agency Review, WCC Content ID 7264432 at 481 (July 3, 2024) available at https://records.tceq.texas.gov/cs/idcplg?idcservice=tceq_external_search_get_file&did=8167516&rendition=web.

well as to explain how the AP-42 emission factors accurately reflect PM and VOC emissions from the atmospheric tower heater. TCEQ must also revise the permit record to respond to the Petitioners' comments regarding the Permit lacking requirements for periodic stack testing to confirm the appropriateness of the emission factors. Lastly, TCEQ must revise the permit record to respond to the Petitioners' comments that measuring fuel gas heat content daily is too infrequent to assure compliance with the tower heater hourly PM and VOC limits.

J. Claim 10: The Petitioners Claim That “The Proposed Permit’s Monitoring Requirements Cannot Ensure Compliance with the Hourly and Annual Limits for the Refinery’s Tanks.”

Petition Claim: The Petitioners claim that the Permit fails to assure compliance with hourly and annual limits—for both routine emissions and emissions during planned maintenance, startup, and shutdown periods—for VOCs and other pollutants from the tanks covered by Permit 2501A (Storage Tanks 22FB747, 42FB2802, 45FB6001-02, 45FB7403, 46FB6301, 90FB807, 91FB922, and 90FB735) in violation of 42 U.S.C. § 7661c(a) and 7661c(c) and 40 C.F.R. § 70.6(c)(1). Petition at 68; *see id.* at 66–75. The Petitioners also claim that “permit 2501A’s [maintenance, startup, and shutdown] provisions are unlawful and must be removed.” *Id.* at 68 n. 111.

First, the Petitioners repeat parts of the EPA’s previous objection in the *Valero Houston I Order* on this issue, in which the EPA found that the guidance document “Technical Guidance Package for Chemical Sources -Storage Tanks” and calculation methods from the permit application were not properly incorporated by reference in the renewal permit. *Id.* at 66–67 (citing *Valero Houston I Order* at 58).

Next the Petitioners note revisions to Permit 2501A’s Attachment G, which require monthly recording of the average temperature, average material vapor pressure, and throughput, as well as emissions calculations using AP-42 Compilation of Air Pollutant Emission Factors, Chapter 7-Liquid Storage Tanks and guidance contained on a webpage entitled “NSR Guidance for Storage Tanks.” *Id.* at 67. The Petitioners also quote Permit 2501A’s Special Condition 48.F(4) requirement for emissions calculations using “methods described in Section 7.1.3.2 of AP-42 ‘Compilation of Air Pollution Emission Factors, Chapter 7 -Storage of Organic Liquids’ dated November 2006 and the permit application.” *Id.* at 67–68.

The Petitioners then present five reasons why, in their opinion, the Permit still fails to assure compliance with the limits applicable to the facility’s storage tanks. *See id.* at 68–72.

First, despite the EPA’s direction to TCEQ to do so, the Petitioners claim that TCEQ has failed to clearly identify the emission factors required in the Permit. *Id.* at 68. The Petitioners argue that it is “unclear whether AP-42 emissions factors, emissions factors from TCEQ guidance, or some combination of the two apply.” *Id.* Moreover, the Petitioners claim that the webpage entitled “NSR Guidance for Storage Tanks” links to numerous documents, making the precise emission factor or calculation to be used according to the Permit unclear. *Id.* at 69. The Petitioners state that “TCEQ must revise the permit(s) to clearly identify the specific guidance from the webpage ‘NSR Guidance for Storage Tanks’ . . .” and “identify what calculations or sections of the guidance are applicable to the Facility.” *Id.* (citing *Valero Houston I Order* at 57–58).

The Petitioners allege that “TCEQ has totally ignored EPA’s objection regarding the reference to the application.” *Id.* The Petitioners repeat the EPA’s suggestion to directly include the calculation methods in the Permit, which, they argue, “would provide far more clarity to the public and regulators than incorporating the calculation methods by reference.” *Id.*

Second, the Petitioners claim that AP-42 emission factors dating from 2006 are not capable of assuring compliance with hourly limits applicable to the tanks “because that version of AP-42 does not address short-term emissions from tanks—only annual emissions are addressed.” *Id.* The Petitioners note that the EPA revised AP-42 in 2020 to account for short-term emissions from tanks. *Id.* Due to variability of emissions from the tanks that could quickly cause an exceedance of the applicable limits, the Petitioners argue that the older version of AP-42 cannot account for short-term emissions. *Id.* at 69–70 (citing Petition Ex. D 2019 Sahu Declaration).

Third, the Petitioners claim that all of the possible calculation methods require Valero to make certain assumptions, *e.g.*, “ tank geometry; tank conditions; condition of the roof including the floating roof pan; the presence and conduction of roof penetrations such as guide poles; the condition of the specific tank components such as rim seals and guide pole seals; properties of the tank product and their variation with ambient conditions; specifically temperature; product throughput; wind speed, among others,” none of which are required to be substantiated. *Id.* at 70 (citing Petition Ex. D 2019 Sahu Declaration). Because changes in such parameters can lead to “much higher emissions from the tanks,” the Petitioners state that the Permit must require these assumptions to be confirmed at least quarterly. *Id.* at 70, 73.

Fourth, the Petitioners challenge the frequency and specificity of requirements to inspect the floating roof tank components, arguing that vague, annual inspections cannot assure compliance with the Permit’s limits. *Id.* at 70 (citing Permit 2501A Special Condition 30.C; Alex Cuclis, *Why Emission Factors Don’t Work at Refineries and What to Do About It*, Presentation/Paper for the EPA at the Emissions Inventory Conference in Tampa, Florida at 18–19 (Aug. 2012); March 2019 Sahu Declaration). Compounding this problem, claim the Petitioners, is the long time period that 40 C.F.R. § 60.113b allows for problems with seals and other maintenance issues to be addressed. *Id.* at 71. Instead, the Petitioners state that optical imaging, no less than quarterly, is necessary and that any gaps revealed should be repaired within three days. *Id.*

Fifth, delivering several general critiques of AP-42 emission factors—calling them “inherently flawed,” “inaccurate,” and based on decades-old, limited testing of a small number of tanks—the Petitioners fault the Permit for not requiring periodic verification of the accuracy of the calculation methods for tanks. *Id.* at 71 (citing March 2019 Sahu Declaration). The Petitioners argue that “AP-42 methods can grossly underestimate actual VOC emissions from tanks based in part on AP-42 methods’ inability to fully capture the underlying processes that lead to emissions from tanks.” *Id.* (citing EPA, *Critical Review of DIAL Emissions Test Data for BP Petroleum Refinery in Texas City, Texas*, EPA 453/R-10-002, ES-2, Table 1 (Nov. 2010); Loren Raun and Dan W. Hoyt, City of Houston, Bureau of Pollution Control and Prevention, *Measurement and Analysis of Benzene and VOC Emissions in the Houston Ship Channel Area and Selected Surrounding Major Stationary Sources Using DIAL Technology to Support Ambient HAP Concentrations Reductions in the Community*, 1, 92–94, Table 4.4(a) (July 2011); Memorandum from Brenda Shine, EPA, *on Potential Low Bias of Reported VOC Emissions from the Petroleum Refining Industry*, EPA Docket No. EPA-HQ-OAR-2003-0146 at 5–6 (July 27, 2007). FluxSense, *Pilot 60 Study to*

Quantify Industrial Emissions of VOCs, NO₂, and SO₂ by SOF and Mobile DOAS in the Carson Area (Mar. 27, 2014).

Instead of emission factors, the Petitioners claim the Permit must be revised to require:

[D]irect verification of routine emissions from tanks containing high vapor pressure products (i.e., with vapor pressures at or above 5 mm Hg-or 0.1 psia) be conducted using methods such as DIAL at least annually so that the AP-42-based/emission factor methods can be verified/calibrated. In addition, so that these emission calculation methods can be calibrated for planned short-term periods with high levels of emissions (such as from cleaning, degassing and landings) from all tanks (not just tanks with higher vapor pressures), require use of DIAL or other direct measurement methods for every other (i.e., the first, third, fifth, and so on) planned period of short-term emissions. If such testing demonstrates that AP-42/emission factor methods are unreliable, Valero must be required to continue to use DIAL or a comparable direct monitoring method (to be conducted at least quarterly for routine emissions and in each instance for MSS emissions) to assure compliance with applicable emission limits— or to appropriately adjust the AP-42 based calculation methods.

Id. at 73.

Addressing TCEQ's RTC, the Petitioners claim it "does not even attempt to resolve the problems that Petitioners identified in their comments" and fails to explain why TCEQ considers the monitoring adequate, despite the EPA's explicit direction to do so. *Id.* at 74 (citing RTC at 67; *Valero Houston I Order* at 58). The Petitioners characterize TCEQ's responses as "various statements and assertions that have nothing to do with the fundamental problem regarding tank VOC and benzene monitoring and emissions calculations." *Id.* The Petitioners claim that TCEQ merely lists several provisions that are irrelevant to the issue here, going through each provision and explaining how it is unrelated to the monitoring for the tanks. *Id.* at 74–75 (citing RTC at 67–74). The Petitioners dismiss the remainder of TCEQ's responses on this issue, describing them as "non-substantive, boilerplate responses" that "in no way resolve the inadequacy of the Refinery Storage Tank monitoring and emissions calculations methods." *Id.* at 75.

The Petitioners emphasize that strong monitoring is especially important in this case due to Harris County's nonattainment status for ozone and the fact that tank emissions at the refinery can rapidly spike to levels that would negatively affect air quality. *Id.* at 72 (citing Dan Eden, TCEQ, *Interoffice Memorandum: Air Emissions During Tank Floating Roof Landings* (Dec. 5, 2006))

EPA Response: For the following reasons, the EPA grants this Petition claim and objects to the issuance of the Permit.

As an initial matter, and as previously stated, while the EPA has cautioned against the use of AP-42 emission factors for compliance demonstrations, these cautionary statements do not equate to an EPA finding that AP-42 emission factors may never be sufficient to assure compliance with any permit limits, or to a finding that such use is presumptively inadequate to assure such compliance. In this instance, the ratings and date the last update was made to the emission factor is relevant information,

but not the sole determining factors for the appropriateness of AP-42. The determination of whether it is necessary to develop a source-specific emission factor to calculate emissions of a particular pollutant from a particular unit is a highly fact-specific evaluation. See *Suncor Plant 2 Order* at 24– 25.

While in response to the *Valero Houston I Order*, TCEQ amended NSR Permit 2501A and Attachment G to include monitoring for hourly and annual emission for storage tanks, the Petitioners are correct that it is unclear whether the AP-42 emission factors, the TCEQ guidance "NSR Guidance for Storage Tanks," or a combination of the two provide the emission factors for calculating emissions from storage tanks. Additionally, the link to the "NSR Guidance for Storage Tanks" document leads to a website that does contain multiple documents; thus, it is unclear which of the TCEQ guidance document is being used for calculating emissions. While the Petitioners argue that the 2020 update to the AP-42 emission factors should be used, as it accounts for short-term emissions, neither the Permit nor the RTC make it clear which version of the AP-42 Chapter on storage tank is used for calculations.²⁶

The EPA disagrees with the Petitioners' general assertions that Valero should be required to verify assumptions for emission calculations or should be required to periodically verify the accuracy of its calculation methodologies. While in some instances it may be necessary for a facility to verify assumptions for emission calculations or periodically verify the accuracy of its calculation methodologies (for example by verifying an emission factor via a stack test), here the Petitioners do not present any compelling supporting information or facts that demonstrate that in this specific instance Valero should be required to verify assumptions for emission calculations or should be required to periodically verify the accuracy of its calculation methodologies.

Lastly, TCEQ's RTC is not responsive to the Petitioners' comments regarding the frequency and specificity of requirements to inspect the floating roof tank components. While the Permit indicates annual visual inspections of floating roof tank components, the Petitioners argue in their public comments that this frequency is inadequate, and TCEQ's RTC does not speak to inspections in any way. For these reasons, the EPA grants this claim.

Direction to TCEQ: TCEQ should clarify whether the AP-42 emission factors, the TCEQ guidance "NSR Guidance for Storage Tanks," or a combination of the two provide the emission factors for calculating emissions from storage tanks. Also, TCEQ must clarify which document on the website that is linked in Attachment G is the correct document to reference for short-term emission calculations. TCEQ must also respond to the Petitioners' comments regarding the frequency and specificity of requirements to inspect the floating roof tank components and provide a reasoned explanation for how annual visual inspections are sufficient for floating roof tank components.

K. Claim 11: The Petitioners Claim That "The Proposed Permit's Monitoring Requirements Cannot Ensure Compliance with the Hourly and Annual PM₁₀ Limits for Refinery's Cooling Towers."

Petition Claim: The Petitioners claim that the Permit does not assure compliance with the hourly and annual PM₁₀ limits applicable to the facility's cooling towers (27CWT2, 23CWT7, 22CWT3, 44CWT9,

²⁶ The EPA notes that the AP-42 Chapter on Storage Tanks has been recently updated again in October 2024.

42CWT10, 40CWT11, and 32CWT12) in violation of 42 U.S.C. § 7661c(a) and 7661c(c) and 40 C.F.R. § 70.6(c)(1). Petition at 76–77; *see id.* at 75–80.

The Petitioners relate the EPA’s previous objection in the *Valero Houston I Order* and repeat statements in association with the limits for the cooling towers, emphasizing the EPA’s finding that TCEQ had not established a clear relationship between parametric monitoring of total dissolved solids (TDS), conductivity, and hourly PM₁₀ limits, in order to assure compliance with those limits. *Id.* at 75–76 (citing *Valero Houston I Order* at 60–61).

The Petitioners also note TCEQ’s revisions to Permit 2501A to add Special Condition 29.E regarding monitoring and calculating PM₁₀ from six of the refinery’s cooling towers. *Id.* at 76.

The Petitioners then present seven reasons why, in their opinion, the monitoring for the cooling towers is still insufficient to assure compliance with the hourly and annual limits on PM₁₀ emissions. *See id.* at 77–79.

To start, the Petitioners challenge the frequency of monthly TDS monitoring, arguing that TDS concentrations in cooling water can vary significantly depending on “cooling water quality . . . , what processes at the refinery the cooling water is being used for, and the TDS content in the water before additives are added and before it is used to cool processes at the refinery. *Id.* at 77 (citing Oct. 2019 Sahu Declaration.; AP 42, Fifth Edition, Compilation of Air Pollutant Emissions Factors, Volume 1: Stationary Point and Area Sources, Table 13.4-2). Instead, the Petitioners state, the Permit must require at least hourly TDS monitoring. *Id.*

Second, the Petitioners claim that the option to monitor TDS via daily conductivity monitoring is undermined by insufficiently frequent sampling to validate the correlation between conductivity and TDS concentration, arguing that TDS variability is too great to rely on quarterly validation. *Id.* at 77–78. Rather, the Petitioners claim that any conductivity monitoring should be conducted hourly, 90 days of concurrent daily TDS and conductivity measurements must be required to establish the correlation, and monthly sampling must be required to validate the correlation. *Id.* at 79.

Third, the Petitioners claim that “TCEQ has failed to establish that the manufacturer design assurance for drift eliminator control efficiency listed in permit 2501A’s [Special Condition] 28.C and permit 124424’s [Special Condition] 18.D are still accurate.” *Id.* at 78. The Petitioners argue that the drift eliminators are likely old and, if not properly maintained, various issues can result in much higher drift rates over time. *Id.* While acknowledging the requirements for the drift eliminators to be “maintained and inspected annually,” the Petitioners dismiss these provisions as too vague and too infrequent to assure compliance. *Id.* (citing Permit 2501A Special Conditions 28.c and 18.D). Instead, the Petitioners state that the Permit must require semi-annual inspections and detailed maintenance instructions. *Id.*

Fourth, contrasting Permit 2501A and Permit 124424, the Petitioners claim that Permit 2501A is unclear regarding the frequency of flow measurements for the purpose of calculating PM emissions. *Id.* (citing *Valero Houston Order* at 61). The Petitioners note that Permit 124424 specifies that “cooling water circulation rate shall be measured at least hourly” and state that Permit 2501A must do so likewise. *Id.*

Fifth, the Petitioners claim that “Valero must not be allowed to use design maximum circulation rates in its PM emissions calculations in lieu of measured flow rates,” arguing that hourly flow rates could exceed design maximum rates. *Id.*

Sixth and similarly, the Petitioners challenge the option to use annual average flow rates in the calculation of annual PM emissions, arguing that these annual averages fail to accurately characterize large fluctuations in flow. *Id.* at 78–79. Instead, the Petitioners claim that in calculating rolling 12-month PM₁₀ emissions, Valero must be required to sum all the relevant hourly emissions. *Id.*

Seventh and finally, despite the EPA’s direction to TCEQ to justify the monitoring for the cooling towers in the permit record, the Petitioners claim that TCEQ has still failed to do so. *Id.* at 79.

The Petitioners claim that TCEQ’s RTC “does not even attempt to resolve the problems” the abovementioned issues that the Petitioners identified in their comments on the Draft Permit. *Id.* at 80 (citing RTC at 70). The Petitioners allege that TCEQ fails to explain why it disagrees with the Petitioners, but instead presents “various statements and assertions that have nothing to do with the fundamental problem regarding PM₁₀ measurement and calculation methods.” *Id.* (citing RTC at 65). The Petitioners contend that the RTC is inadequate and does not attempt to resolve the problems that Petitioners identified in their comments. 80 (citing RTC at 70). Furthermore, the Petitioners note that nowhere does TCEQ explain why it disagrees, instead including various statements and assertions that have nothing to do with the fundamental problem regarding PM₁₀ measurement and calculation methods (citing RTC at 65). The Petitioners dismiss the remainder of TCEQ’s responses on this issue, describing them as “non-substantive, boilerplate responses” that “in no way resolve the inadequacy of the Cooling Towers PM₁₀ monitoring and emissions calculations requirements.” *Id.*

EPA Response: For the following reasons, the EPA grants this Petition claim and objects to the issuance of the Permit.

While in response to the *Valero Houston I Order*, TCEQ amended NSR Permit 2501A and Attachment G to include monitoring for PM for the cooling towers, the Petitioners are correct in their assertion that NSR Permit 2501A, NSR Permit 124424, and their associated attachments are unclear regarding the frequency of flow measurements for the purpose of calculating PM emissions. NSR Permit 2501 Special Condition 29(E) indicates that PM shall be calculated using the daily maximum and average actual cooling water circulation rate for the short term and annual average rates. However, Attachment G to that NSR Permit indicates that either monitored or maximum designed hourly flow rates for short-term emissions or monitored annual average or maximum design flow rates for annual emissions can be used to calculate PM emission. NSR Permit 124424 Special Condition 18(H) states that PM emissions shall be calculated using the daily maximum and annual average actual cooling water circulation rate for the short term and annual average rates. However, Attachment A to that NSR Permit indicates that PM emission can either be calculated using the monitored or designed maximum hourly circulation rates for short term emissions or monitored annual average or design maximum hourly circulation rates for long term emissions. In both instances, the Special Condition of the NSR Permit and the associated monitoring found in the respective attachments are misaligned; thus, it is difficult to know at what frequency flow measurements are required.

Regarding the remainder of the Petitioners' claims related to monitoring for PM emissions for the cooling towers, TCEQ's RTC fails to respond to the specific technical concerns raised in public comments. In this instance, TCEQ's RTC fails to address the Petitioners' concerns regarding: (1) the frequency of monitoring, specifically how monthly monitoring ensures compliance with annual and hourly PM₁₀ limits; (2) the frequency of conductivity monitoring; (3) verification that drift eliminator control efficiencies are still accurate and inspection frequency for drift analyzers; and (4) the use of design maximum circulation rates and annual average flow rates in calculation of emissions. Because of the lack of explanation in the permit record, particularly the RTC, the EPA cannot make a determination on the technical merits of the Petitioners' concerns, and TCEQ must provide said explanation in the record. For these reasons, the EPA grants this claim.

Direction to TCEQ: TCEQ must amend the underlying NSR Permits to make it clear at what frequency flow and/or circulation measurements are required to calculate PM emissions and ensure that the Special Conditions and Attachment tables are consistent with one another. Additionally, TCEQ must amend the permit record to respond to the Petitioners' specific public comments related to the frequency of monitoring, verification of drift eliminator control efficiencies, the use of design maximum circulation rates, and the use of annual average flow rates.

L. Claim 12: The Petitioners Claim That "In Violation of 40 C.F.R. § 70.7(a)(5), TCEQ Failed to Provide a Reasoned Explanation for Why the Proposed Permit Ensures Compliance with the Limits at Issue Here for the FCCU, Flares, DAF Unit, Boilers, Fugitive Emissions, Atmospheric Tower Heater, Tanks, and Cooling Towers."

Petition Claim: The Petitioners claim that TCEQ failed to satisfy the requirement of 40 C.F.R. § 70.7(a)(5) to "provide a statement that sets forth the legal and factual basis for the draft permit conditions" with respect to the Permit's monitoring and emission calculation methods they challenge in Claim 4. Petition at 80–81.

The Petitioners characterize the EPA's objection in the *Valero Houston I Order* as based on TCEQ's failure "to adequately explain how the monitoring and emission calculation methods for the units discussed above (the FCCU, flares, DAF Unit, boilers, fugitive emissions, atmospheric tower heater, tanks, and cooling towers) can ensure compliance with the relevant limits." *Id.* at 80 (citing *Valero Houston I Order* at 62). Referring to arguments they make in Claim 4 concerning inadequate monitoring and emission calculation methods, the Petitioners argue that TCEQ has still not justified the Permit's monitoring conditions and explained how they assure compliance with the limits applicable to the relevant units. *Id.* at 81.

The Petitioners claim that the Statement of Basis and other documents TCEQ cites in its RTC as justification for the monitoring conditions in question contain no such justification and merely "list (some of) the relevant monitoring and calculation methods . . ." and "changes that TCEQ made to permits 2501A and 124424 to supposedly address [the] EPA's objections." *Id.* at 81 (citing TCEQ Response Objection at 11; RTC at 72).

EPA Response: For the following reasons, the EPA denies the Petitioners' request for an objection on this claim.

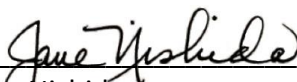
As described in the EPA’s response to Claims 4 through 11, the EPA agrees with the Petitioners that there are certain instances where TCEQ’s permit record does not provide a sufficient justification for the Permit’s testing and monitoring requirements (or the lack of such requirements). To the extent the Petitioners demonstrated inadequacies in TCEQ’s permit record within Claims 4 through 11, the EPA is objecting to the Permit on that basis in response to those claims. Thus, the EPA’s responses to Claims 4 through 11 fully address the Petitioners’ allegations—and, as appropriate, contain the EPA’s conclusions—regarding the sufficiency of TCEQ’s permit record.

In Claim 12, the Petitioners do not identify any additional instances where TCEQ failed to provide a sufficient justification for any specific permit terms.²⁷ In other words, the Petitioners do not identify any additional deficiency in TCEQ’s permit record that would provide a basis for EPA to object to the Permit, beyond the issues already addressed in Claims 4 through 11.²⁸ *See, e.g., Suncor Plant 2 Order* at 78. Claim 12 does not identify any additional basis for the EPA’s objection. Accordingly, the EPA denies Claim 12.

V. CONCLUSION

For the reasons set forth in this Order and pursuant to CAA § 505(b)(2) and 40 C.F.R. § 70.8(d), I hereby grant in part and deny in part the Petition and object to the issuance of the Permit as described in this Order.

Dated: January 7, 2025



Jane Nishida
Acting Administrator

²⁷ Instead, Claim 9 includes a general allusion to the emission units discussed in Claims 4 through 11.

²⁸ Although Claim 9 does not include any additional factual allegations, it does include, for essentially the first time, an additional legal citation to 40 C.F.R. § 70.7(a)(5). However, again, the EPA’s responses to Claims 4 through 11 effectively address any permit record-related issues arising under 40 C.F.R. § 70.7(a)(5). As the EPA has explained on numerous occasions, the EPA generally evaluates permit record-focused claims under 40 C.F.R. § 70.7(a)(5) by evaluating whether issues related to an inadequate permit record result in, or may have resulted in, a deficiency in the content of the permit. *See, e.g., Suncor Plant 2 Order* at 28. The EPA also considers whether the permit record as a whole—not only the statement of basis, but also the response to comments and potentially other parts of the permit record—supports the terms and conditions of the permit. *See, e.g., id.* at 30. The EPA’s responses to Claims 4 through 11 account for these analytical considerations under 40 C.F.R. § 70.7(a)(5).