

**SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT
SOUTHERN REGION HEARING BOARD
34946 Flyover Court
Bakersfield, CA 93308
(661) 392-5500**

STAFF REPORT

REQUEST FOR HEARING DOCKET NO: S-26-11A

PETITIONERS: 184 COMMUNITY ACTION GROUP, COMITÉ PROGRESO DE LAMONT

SUBJECT: The District's Issuance of Authority to Construct S-37-178-0 to Kern Energy in Bakersfield, California, District Project S-1251187, Hydrogen Recovery and Power Production Project

TERMS USED IN THIS REPORT

Term	Meaning
APCO	Air Pollution Control Officer
ATC	Authority to Construct: the District permit that authorizes construction of new or modified equipment. ATC S-37-178-0 is the permit on appeal.
ALR	Average leak rate
BACT	Best Available Control Technology: the most stringent emission limitation or control technique required for a new or modified emissions unit, as defined in Rule 2201 §3.10.
CAPCOA Guidelines (the Guidelines)	California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, CAPCOA and the California Air Resources Board (CARB), February 1999.
Certificate of Conformity	A procedure under Rule 2201 and Rule 2520 that allows an ATC to be incorporated into a federal operating permit after a 45-day EPA review.
Correlation Equation	A formula from the CAPCOA Guidelines that converts a screening value into an emission rate in kilograms per hour.
Daily Emission Limit	An enforceable permit condition limiting a unit's emissions per day. For this Project it is 1.3 pounds of VOC per day (Condition 5).
Default Zero Factor	The small emission rate the Guidelines assign to a component whose reading is indistinguishable from background.
ERC	Emission reduction credit: Certified, surplus reductions in emissions that a permit applicant surrenders to offset a new emissions increase.

Term	Meaning
Engineering Evaluation	The District's application review for the Project, dated April 30, 2026, including its appendices and the responses to public comments (Appendix M).
Federal Major Modification	A change at a major source that results in a significant emissions increase. In the San Joaquin Valley the significance threshold for VOC is zero (Rule 2201, Table 3-1), so this Project, with a 1.3 lb/day increase, is a Federal Major Modification.
I&M	Inspection and maintenance
Inspection and Maintenance Program	The leak detection and repair program required by Rule 4455: periodic analyzer inspections, daily audio-visual checks of pumps and compressors, and repair deadlines.
Leak Threshold	The reading above which a component is considered leaking and must be repaired: 100 ppm for the Project's valves, connectors, and flanges, and 500 ppm for pump and compressor seals (Conditions 6 and 7). A reading at the threshold is the boundary between a component that is not leaking and a minor leak.
Major Leak	Under Rule 4455, a reading above 10,000 ppm. It must be minimized within one hour and repaired within 3 days, or within 1 day if above 50,000 ppm.
Minor Leak	Under Rule 4455, a leak above the applicable leak threshold and up to 10,000 ppm (Table 2). It must be repaired within 7 days.
Parts Per Million (ppm or ppmv)	The concentration reading a portable analyzer shows when held at a piping component to detect a leak.
Pegged Component and Pegged Factor	A component whose reading is at or above the top of the range used with the correlation equation. The Guidelines assign it a fixed emission rate, the pegged factor.
Potential to emit (PE)	The maximum amount of a pollutant an emissions unit can emit under its physical and operational design, including enforceable permit limits (Rule 2201 §3.32).
Screening Value	The analyzer reading, in ppm, for one component at one inspection. For a new unit, screening values are assumed until the components are installed and inspected.
SOCMI	Synthetic Organic Chemical Manufacturing Industry
SSP 2015 (the Policy)	District Policy SSP-2015, Procedures for Quantifying Fugitive VOC Emissions at Petroleum and SOCMI Facilities (September 15, 2005).
Volatile organic compounds (VOC)	Volatile organic compounds: The air pollutant emitted by the Project. VOC contributes to the formation of ozone.

I. INTRODUCTION

This appeal challenges the District's approval of a project that will recover hydrogen already produced at Kern Energy's refinery and use it to generate electricity in fuel cells with no direct emissions of criteria air pollutants. The Project produces no new hydrogen and does not increase emissions from existing refinery operations. Its only potential air emissions are volatile organic compounds (VOC) from leaks at new piping components. The District conservatively estimated those emissions at 1.3 pounds per day and imposed enforceable limits and inspection requirements.

The District did not give this Project a regulatory shortcut. Because the San Joaquin Valley is in extreme nonattainment for ozone, even this limited VOC increase triggers review as a Federal Major Modification. The District applied Best Available Control Technology (BACT), required federal emissions offsets, independently reviewed the engineering information, and provided extensive public participation: a hearing in Lamont with Spanish interpretation, Spanish-language materials, a 91-day public comment period, and written responses to every comment. Neither EPA nor CARB objected.

Petitioners seek to overturn that decision principally by substituting a generalized emissions formula for the more refined method the District selected using refinery inspection data and enforceable leak controls. Their preferred calculation produces a strikingly unrealistic result. The District's analysis instead assumes substantially more detectable leaks than the refinery's actual inspections show, treats those assumed emissions as occurring continuously throughout the year, and counts even components that handle hydrogen as potential VOC sources. These are conservative assumptions, not concessions to the applicant.

The other challenges fare no better. The District applied its established BACT procedures and evaluated the relevant equipment categories; the alternative standard Petitioners invoke was neither identified during public comment nor shown to be cost effective for this Project. Petitioners also seek to invalidate an emissions credit banked in 1992 despite the permanent shutdown and removal of the original equipment. Finally, the Project adds new components but does not physically change or alter the permitted operation of the refinery's existing reformers or storage tanks.

The District takes seriously its obligation to protect public health and air quality in a region facing some of the nation's most significant air pollution challenges. That obligation demands rigorous and scientifically defensible permitting decisions, not the mechanical application of assumptions that exaggerate emissions or disregard reliable evidence. The District fulfilled that responsibility here. Its permitting determination reflects a careful, independent application of the governing rules, supported by substantial technical analysis and enforceable requirements designed to ensure continuing compliance.

Ultimately, Petitioners have identified no violation of an applicable permitting requirement that would justify overturning the District's decision. Their disagreement with the District's technical judgments does not establish that the ATC was improperly issued. For the reasons detailed in this Staff Report, the District respectfully requests that the Hearing Board determine that ATC S-37-178-0 was properly issued and deny the Petition in its entirety.

II. STANDARD OF REVIEW

Health and Safety Code §42302.1 provides:

Within 30 days of any decision or action pertaining to the issuance of a permit by a district, or within 30 days after mailing of the notice of issuance of the permit to any person who has requested notice, or within 30 days of the publication and mailing of notice provided for in Section 1 of Chapter 1131 of the Statutes of 1993, any aggrieved person who, in person or through a representative, appeared, submitted written testimony, or otherwise participated in the action before the district may request the hearing board of the district to hold a public hearing **to determine whether the permit was properly issued**. Except as provided in Section 1 of Chapter 1131 of the Statutes of 1993, within 30 days of the request, the hearing board shall hold a public hearing and **shall render a decision on whether the permit was properly issued**.

Emphasis added. The Hearing Board must decide whether the District properly issued ATC S-37-178-0. Health and Safety Code § 42301(b) and Rule 2201 § 5.6.1 prohibit issuance unless the Project is expected to comply with applicable District and state requirements. The issue is compliance with those standards—not whether another methodology might produce a different estimate.

The Hearing Board independently reviews regulatory interpretations while giving appropriate deference to the APCO's determinations. Petitioners bear the burden of showing improper issuance. (*Valero Refining Co.—California v. Bay Area Air Quality Management Dist. Hearing Bd.* (2020) 49 Cal.App.5th 618, 630, 638–639.) Under Health and Safety Code § 42309, a permit may be revoked for a violation of applicable law or District rules.

The District does not dispute standing or timeliness. The record establishes compliance with the applicable permitting requirements, and the Petition should be denied.

III. SUMMARY OF FACTS

A. DESCRIPTION OF PROJECT

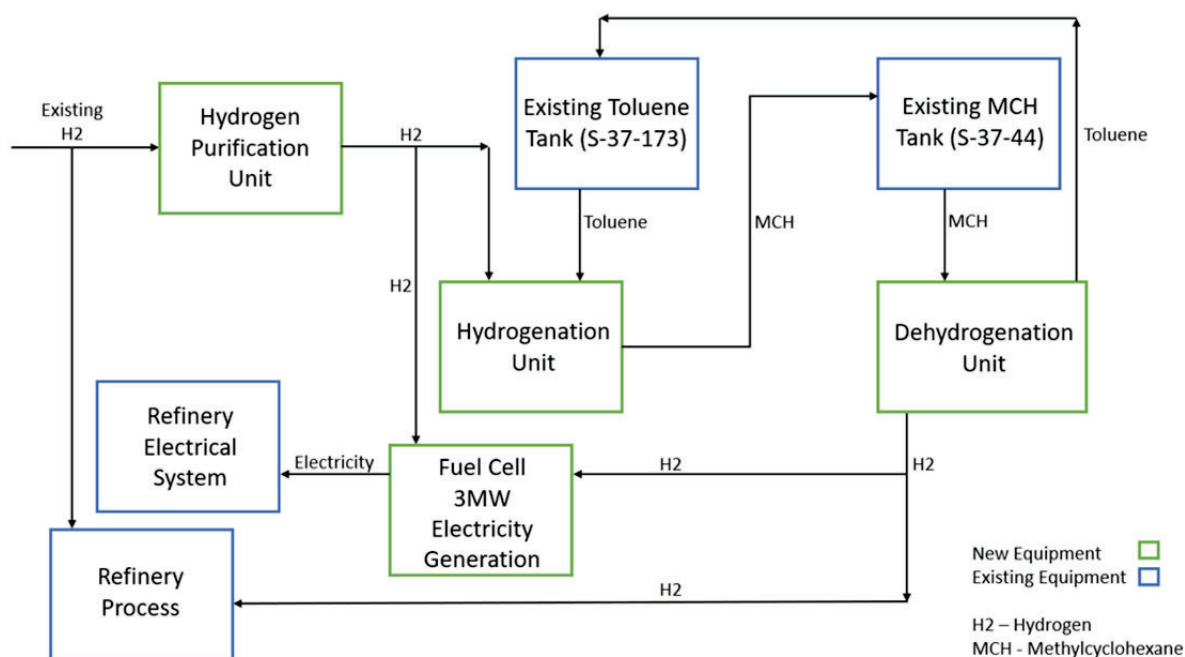
Kern Energy submitted an ATC application, designated as Project S-1251187, for ATC S-37-178-0 to install a hydrogen recovery process unit (the Project). The Project captures hydrogen that is already co-produced in the refinery's existing Naphtha Reformer Unit and Platformer Unit and uses it to generate electricity for refinery power needs in seven permit-exempt fuel cells, or stores it for later use. Based on the manufacturer information in the application review, the fuel cells have zero NOx, SOx, CO, and VOC emissions. The Project involves no new hydrogen production. (*Pet. Exh. C, PEXH000169-000170.*)

The Project involves installing the following systems:

- A hydrogen purification system;
- Hydrogenation and dehydrogenation systems; and
- Seven fuel cell electrical generators (PureCell Model 400) that use the purified hydrogen.

The Project operates in two modes. In the Hydrogen Direct to Fuel Cell mode, hydrogen from the reformers is purified and sent directly to the fuel cells. In the Hydrogen Store and Release mode, purified hydrogen is chemically bound to toluene in a reactor (hydrogenation) to form methylcyclohexane (MCH), which is a stable liquid at ambient temperature. The toluene and MCH are stored in existing permitted organic liquid storage tanks. When hydrogen is needed, the MCH is converted back into hydrogen and toluene in a reactor (dehydrogenation); the hydrogen is used in the fuel cells or to supplement refinery operations, and the toluene is reused in the process. Heat for the hydrogenation and dehydrogenation processes is supplied by existing refinery steam and heat exchangers. (*Pet. Exh. C, PEXH000170.*)

The Project is subject to District permitting requirements because VOCs may be emitted from leaks at the piping components (valves, connectors, flanges, pump seals, and other components) associated with the new equipment. These fugitive component leaks are the Project's only emission source. (*Pet. Exh. C, PEXH000171.*)



B. PROCEDURAL BACKGROUND

Kern Energy submitted the application on March 12, 2025, and the District received it on March 14, 2025. The application was deemed complete on May 29, 2025. (*Pet. Exh. C, PEXH000169.*)

Because the Project is a Federal Major Modification and a Title V significant modification, public notice with a 30-day comment period was required. (*Dist. Exh. 3, §§5.4.1, 5.5.1, 5.9.1.1; Pet. Exh. C, PEXH000183-000185.*) At Kern Energy's request, the Project was processed with a Certificate of Conformity under Rule 2520, which provides EPA a 45-day review period; the EPA and public review periods ran concurrently. (*Pet. Exh. C, PEXH000169.*) The notice of preliminary decision was published on October 28, 2025, with comments due December 1, 2025, and the preliminary decision was provided to EPA and the California Air Resources Board (CARB). (*Dist. Exh. 3, §§5.5.3, 5.9.1.5; Pet. Exh. G, PEXH000288-000289.*) As Rule 2201

requires, the notice stated that members of the public could request a public hearing. (*Pet. Exh. G, PEXH000289.*)

On November 14, 2025, Leadership Counsel for Justice and Accountability requested a public hearing. (*Pet. Exh. H, PEXH000291.*) On December 11, 2025, more than 30 days before the hearing as §5.9.1.2.6 requires, the District issued a notice of public hearing and a revised notice of preliminary decision stating the Project's emission increase as 483 lb-VOC/year, with comments due January 27, 2026. (*Pet. Exh. J, PEXH000312.*) The District held the public hearing in person in Lamont on January 12, 2026, provided simultaneous Spanish interpretation and Spanish-language materials, and notified the Arvin/Lamont Community Steering Committee of the hearing. The District accepted all comments received from October 28, 2025 through January 27, 2026, a public review period of 91 days. (*Pet. Exhs. G, H, J, K; Pet. Exh. C, PEXH000245-00246, 000253, Responses #3 and #23.*)

Neither EPA nor CARB submitted comments. EPA's 45-day review period expired without objection. For an ATC processed with a Certificate of Conformity, the APCO may issue the final permit if EPA does not object within its 45-day review period, and the Certificate of Conformity may be issued only if EPA has not objected. (*Dist. Exh. 3, §§5.9.1.6, 5.9.1.9, 6.1.5; Dist. Exh. 5, §3.7.*) The District responded in writing to each public comment (*Pet. Exh. C, PEXH000244-000258*) and issued ATC S-37-178-0 on April 30, 2026 (*Pet. Exh. C., PEXH000164.*)

IV. THE DISTRICT'S ISSUANCE OF THE ATC WAS IN COMPLIANCE WITH RULE 2201

The Petitioners' claims consist of various theories that the District violated Rule 2201 – *New and Modified Stationary Source Review*. Specifically, Petitioners allege the District violated Rule 2201 in four respects:

- (1) That the District incorrectly calculated the post-project Potential to Emit (PE) for VOCs;
- (2) That the ERCs used to satisfy federal offset requirements for the Project were improperly banked because they were not permanent¹;
- (3) That the District's ATC Engineering Evaluation failed to take into account all equipment units whose permit conditions would be modified by the Project; and
- (4) That the District failed to comply with BACT.

The evidence and applicable rules resolve each issue in the District's favor.

¹ Page 7 of the Petition alleges that the ERCs were improperly banked because they were not "surplus." However, the Petition later argues that the banked ERCs are invalid because they did not comply with the "permanence" requirement. Given the absence in the Petition of any argument addressing the "surplus" factor, the District concludes the "surplus" statement was in error, and that Petitioners' argument is intended to rely exclusively on the "permanence" factor.

A. THE DISTRICT CORRECTLY CALCULATED THE PROJECT'S POTENTIAL EMISSIONS

1. The District Reasonably Chose Method 3 And Properly Applied It To Reach A Conservative Potential To Emit

Petitioners contend that the District understated the Project's VOC potential to emit (PE) by using the Correlation Equation Method (Method 3) rather than the Average Emission Factor Method (Method 1), which the Petitioners contend the CAPCOA Guidelines required because site-specific screening values for the new components do not exist. (*Petition pp. 8–9; Pet. Exh. N, PEXH 000370-00373, ¶¶ 13–14, 20.*) That overlooks the refinery's existing inspection data and the express allowance within the Guidelines to use representative data for new equipment.

The District properly selected Method 3 under Rule 2201, District Policy SSP-2015, and the CAPCOA Guidelines.

Why the 1.3 lb/day estimate is conservative:

- The District applied the definition of potential to emit in Rule 2201 §3.32 and 40 CFR 51.165(a)(1)(iii), under which enforceable permit limitations are treated as part of an emissions unit's design.
- SSP-2015 authorizes the Correlation Equation Method for a new emissions unit that is subject to BACT and to inspection and repair conditions, and the CAPCOA Guidelines direct California refineries with existing I&M programs to use a screening-value method rather than Method 1.
- The CAPCOA Guidelines allow a new facility to use existing I&M data from similar processes that the district accepts as representative. The District accepted Kern Energy's refinery inspection data as representative of the new components.
- The District assumed 10% of components would have detectable readings, compared with less than 1% in the inspection records; assigned screening values at the applicable leak thresholds; assumed emissions at those levels for 24 hours a day, 365 days a year; and counted all 880 components as VOC sources even though some carry hydrogen.
- The PE reflects enforceable operational limitations: the leak definitions (*Pet. Exh. C, PEXH000167, Conditions 6 and 7*), the Rule 4455 inspection and repair program (*Id. Condition 10*), and component and emission recordkeeping. (*Id., Condition 9.*) The resulting 1.3 lb/day is an enforceable daily emission limit. (*Id., Condition 5.*)

Together, these assumptions yield a defensible estimate of the Project's maximum permitted emissions. They do not assume perfect operation. They combine representative refinery data with enforceable limits and deliberately conservative assumptions about leaks, duration, and VOC-bearing components.

PE Definition and Background:

Rule 2201 defines Potential to Emit as:

the maximum capacity of an emissions unit to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including pollution control equipment and restrictions in hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is incorporated into the applicable permit as an enforceable permit condition.

(*Dist. Exh. 3, §3.32.*) The federal nonattainment new source review definition, 40 CFR 51.165(a)(1)(iii), and the Title V definition in Rule 2520 §3.27, which requires a federally enforceable permit condition, are to the same effect. Rule 2201 also requires a daily emissions limitation to be "[e]nforceable, in a practical manner, on a daily basis." (*Dist. Exh. 3, §3.17.2.*) The Project's 1.3 lb/day limit (Condition 5) is federally enforceable through the Title V permit.

EPA guidance has long recognized that a limitation restricts potential to emit only if it is enforceable as a practical matter, meaning it is supported by monitoring, recordkeeping, and reporting sufficient to verify compliance. (*Dist. Exh. 1, pp. 1–2, 6–7.*)² The 1989 Guidance recognizes operational limitations, including requirements that a source install and maintain controls that perform to a specified standard, as limitations that restrict potential to emit. (*Dist. Exh. 1, p. 5.*) For this Project, and in addition to several other conservative assumptions, those limitations are the leak definitions of 100 ppm for valves, connectors, and flanges and 500 ppm for pump and compressor seals (Conditions 6 and 7), the Rule 4455 inspection and repair program, including quarterly instrument inspections, daily audio-visual inspections, and prescribed repair deadlines (Condition 10), and the requirement to maintain the component count and resulting emissions (Condition 9). (*Pet. Exh. C, PEXH000167.*) The daily emission limit of 1.3 lb/day (Condition 5) is established on the basis of those operational limitations. (*Ibid.*)

The PE is therefore a maximum-capacity estimate for the emissions unit as physically and operationally designed, taking into account enforceable limitations such as throughput limits, material restrictions, emission controls, work practice requirements, and emission limits. The PE is conservative, but it is not based on operating scenarios that would require a violation of an applicable rule, emission limitation, or permit condition. Emissions from malfunctions, upsets, or other noncompliant operation are addressed through the applicable enforcement, reporting, and excess-emission requirements.

District PE Calculation Methodology Justification:

The District uses established emissions-estimation methods and the best representative data available.

In a refinery, piping and associated components carry liquid and gas streams that contain VOCs. VOCs can be released through leaks at component interfaces and piping connections. Components are inspected with a portable instrument under EPA Method 21, which reports the

²Memorandum from Terrell E. Hunt, Associate Enforcement Counsel, Office of Enforcement and Compliance Monitoring, and John S. Seitz, Director, Stationary Source Compliance Division, Office of Air Quality Planning and Standards, U.S. EPA, "Guidance on Limiting Potential to Emit in New Source Permitting" (June 13, 1989) (1989 Guidance).

concentration at the leak interface in parts per million by volume (ppmv). Instruments commonly read up to 50,000 ppmv or higher. For refineries, Rule 4455 (Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants) requires the operator to inspect all accessible components with a Method 21 instrument at least once every calendar quarter (*Dist. Exh. 6, Rule 4455 §5.2.3*); to audio-visually inspect all accessible operating pumps, compressors, and pressure relief devices at least once every 24 hours, with Method 21 monitoring within 24 hours of any leak that cannot be immediately repaired (*Dist. Exh. 6, Rule 4455 §§5.2.1, 5.2.2*); and to repair leaks within the time periods specified in Table 5.

For this Project, the best available data are the emission factors and correlation equations in the "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," CAPCOA/CARB, February 1999 (Guidelines). (*Pet. Exh. M, PEXH000321-000365*.) The Guidelines implement EPA's 1995 Protocol for Equipment Leak Emission Estimates³ with technical corrections and adjustments that improve the accuracy of its factors. (*Pet. Exh. M, PEXH000329, §III*.) The Guidelines contain recommendations that all California districts apply consistently and others that each district may apply at its discretion.

The correlation equations and factors are derived from studies at refineries, marketing terminals, and oil and gas production facilities in which instrument screening values were paired with measured (bagged) mass emission rates from the same components. Because an instrument measures concentration rather than mass, the correlation equations convert a screening value into a mass emission rate.

District Policy SSP-2015, "Procedures for Quantifying Fugitive VOC Emissions at Petroleum and SOCMF Facilities" (September 15, 2005) ("the Policy"), establishes the EPA and CAPCOA factors as the District's generally accepted emission factors for fugitive components. Section IV of the Policy provides that "[e]mission factors in the CAPCOA document or emission factors in the EPA document shall be used for new or modified emissions units," and that "[t]he average emission factors, screening range emission factors, equations for average leak rate emission factors for various leak definitions, EPA correlation equation emission factors, and unit-specific correlation equation emission factors may be used." It further provides: "Any of the above generally accepted emission factors may be used for an emissions unit subject to a BACT requirement provided permit conditions are included that require periodic inspection, maintenance, and repair of leaking fugitive components." (*Dist. Exh. 9, p. 3*.)

The Project is subject to BACT, and ATC S-37-178-0 requires inspection, maintenance, and repair of leaking components under Rule 4455 (Condition 10). (*Pet. Exh. C, PEXH000167*.) The Petitioners rely on the Policy as the District's controlling methodology, suggesting that the District applied the wrong emission factors to the Project in violation of the Policy. (*Petition p. 8; Pet. Exh. N, PEXH 000369-000370, ¶ 11*.) The Petitioners are wrong, as the Policy expressly authorizes the District's chosen method.

³U.S. EPA, Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017 (Nov. 1995), available at https://www.epa.gov/sites/default/files/2020-09/documents/protocol_for_equipment_leak_emission_estimates.pdf.

The Policy lists five tiers of emission factors "in increasing refinement and accuracy" (*Dist. Exh. 9, SSP-2015, p. 2*):

1. Average emission factors (CAPCOA Method 1);
2. Screening range emission factors (CAPCOA Method 2);
3. Equations for average leak rate (ALR) emission factors;
4. EPA correlation equation emission factors (CAPCOA Method 3); and
5. Unit-specific correlation equation emission factors (CAPCOA Method 4).

The average leak rate (ALR) equations are not addressed in the Guidelines; the Policy notes that "because the CAPCOA document does not present emission factors that supersede the ALR emission factors, the ALR emission factors may be employed." (*Dist. Exh. 9, p. 2*.)

The Policy also reproduces CAPCOA's June 11, 1997 letter to the Western States Petroleum Association, which the Guidelines later formalized: "Average emission factors can be used when there is no reliable site-specific data to use with the correlation equations. For the average emission factors, no control efficiency due to I&M will be used. Screening value range emission factors from the EPA document can be used. CAPCOA revised EPA correlation equation emission factors in CAPCOA document Table IV-3a can be used." (*Dist. Exh. 9, p. 3*.)

The methods differ in how directly they use measured screening information. Petitioners do not contend that Methods 2, 4, or the equations for average leak rate emission factors should have been used. Therefore, the District will only address the differences between Methods 1 and 3.

Average Emission Factor Method (CAPCOA Method 1) (The Method Petitioners contend was required)

Average emission factors are multiplied by component counts. The refinery average factors are based on 1980 and 1982 refinery studies, represent average facility emissions, and assume no control credit for an I&M program. (*Pet. Exh. M, PEXH000331, PEXH000333, pp. 4, 7*.) Under the Guidelines, "[t]he Average Emission Factor Method may be used by refineries and marketing terminals to estimate overall emissions only when reliable site-specific screening data are not available." (*Pet. Exh. M, PEXH000333, p. 7*.) The Guidelines further state: "In general, California refineries with existing I&M programs that routinely collect individual screening values are required to use either the Screening Value Range Method [Method 2] or the Correlation Equation Method (general or unit specific) [Methods 3 and 4] instead of the Average Emission Factor Method [Method 1]." (*Pet. Exh. M, PEXH000331, p. 4*.) Kern Energy is an existing refinery with an I&M program under Rule 4455 that routinely collects individual Method 21 screening values. Accordingly, per the Guidelines, Method 1 is not appropriate for the Project.

The Petitioners read the Guidelines to require Method 1 for any new equipment, and read the Guidelines' statement that "[a] new facility may also use existing I&M data from similar processes to estimate emissions provided that the data are accepted by the local districts as being representative of the new source" as a Method 1 provision. (*Pet. Exh. N, PEXH 000370, ¶13*.) The text does not support that interpretation. The Guidelines provide two paths for new equipment. Under the first, a new project may begin with an average-factor estimate and adjust

it once site-specific data exist: "In the case of new projects, once an I&M program is in place and reliable site-specific screening data are available, the source may use either the Screening Value Range Method (Method 2), the Correlation Equation Method (Method 3), or the Unit Specific Correlation Equation Method (Method 4) to estimate emissions and make the appropriate adjustment to the original estimates." (*Pet. Exh. M, PEXH000331, p. 7.*) The next sentence provides the second path, which is the approach the District applied here: "A new facility may also use existing I&M data from similar processes to estimate emissions provided that the data are accepted by the local districts as representative of the new source." (*Pet. Exh. M, PEXH000331, p. 7.*) Method 1 uses no I&M data; it multiplies component counts by fixed average factors. Existing I&M data can be used only in a method that takes screening data as an input, so the second path necessarily involves a screening-value method. If a new facility may use representative I&M data from similar processes, new components installed at an existing refinery may use that refinery's own I&M data.

Because Kern Energy *does* have an established I&M program that generates site-specific screening data, which the District accepted as representative of the new components, *Method 1 is not the appropriate method for this Project.*

Correlation Equation Method (CAPCOA Method 3)

Method 3, which is more refined than Method 1, is clearly the most appropriate method for this Project. Each component's screening value is entered into the correlation equation for its component type, or the component is counted as a default zero or a pegged component. (*Pet. Exh. M, PEXH000342, p. 16.*) Kern Energy has an existing I&M program and the District reasonably accepted that data as representative. The correlation equation is valid for all leak concentrations above zero up to 100,000 ppmv. Repairs are required for any leak above the applicable aforementioned limits (e.g. 100 ppm, 500 ppm, 10,000 ppm); therefore, the correlation equation is appropriate for all values above zero for this project.

Why Method 3 Was Most Appropriate:

The Method 3 calculation uses three inputs:

- **Component counts** come from the Project's engineering design. (*Pet. Exh. C, PEXH000202.*)
- **The range distribution** (90% default zero, 9.5% correlation range, 0.5% pegged range) was proposed by Kern Energy and accepted by the District as representative of the new components, based on existing I&M data from the same refinery, as the Guidelines allow for a new facility using data from similar processes. (*Pet. Exh. C, PEXH000172, 000202.*) The supporting data are discussed below.
- **The screening values** were assumed based on regulatory requirements, not measured. Because the components had not yet been installed, component-specific screening values did not yet exist. For this preconstruction estimate, the District assigned each correlation-range component a screening value equal to the applicable leak threshold (100 ppmv for valves, connectors, and flanges; 500 ppmv for pump seals and other components), which is the highest screening value a component may register before it is

considered leaking under the applicable requirements. (*Pet. Exh. C, PEXH000245.*)

Pegged-range components were assigned 9,999 ppmv, as discussed under Range 3.

The existing data are representative because the new components are the same component types, installed at the same refinery, handle refinery hydrogen and hydrocarbon streams, and are subject to the same Rule 4455 inspection frequency, leak thresholds, repair deadlines, and operator management plan as the existing components from which the data were collected. Once installed, the new components are monitored under the facility's I&M program, and Condition 9 requires the permittee to maintain an accurate component count and the resulting emissions calculated under Table IV-3a. (*Pet. Exh. C, PEXH000167.*)

The correlation equation converts a screening value into an emission rate; it does not determine how many components are at that screening value or for how long. Those are separate assumptions of the PE. Because the PE multiplies each component's emission rate by 24 hours per day and 365 days per year, it assumes that the components assigned to each range remain at the assigned screening value continuously throughout the year. For example, assigning 0.5% of the Project's 880 components to the pegged range assumes that approximately four components are at the pegged-range screening value at all times. The Rule 4455 requirements to minimize a leak within one hour and repair it within the prescribed period bear directly on how long a component can remain at a high screening value.

How the correlation calculation works:

For each component type, there are three emission factor ranges, corresponding to the instrument screening value:

- Range 1: Default Zero Factor
- Range 2: Correlation Equation
- Range 3: Pegged Range

Range 1 (Default Zero Factor):

The default zero factor applies when the screening value, corrected for background, equals 0.0 ppmv, meaning the reading is indistinguishable from background. The default zero factors, which are based on 1993 refinery and marketing terminal data, assign a small emission rate to components that screen at background. (*Pet. Exh. M, PEXH000346, Table IV-3a, note b, p. 20.*) The facility's inspection data show that the great majority of components screen in this range.

Range 2 (Correlation Equation) and Range 3 (Pegged Range):

The District has refined its application of Method 3 over nearly a decade to reflect available data, enforceable leak requirements, and actual equipment characteristics while preserving conservative assumptions.

As mentioned above, the correlation equation applies when the screening value is above background (zero ppmv) up to 100,000 ppmv. Under Table IV-3a, note c, the correlation equations "apply for actual screening values, corrected for background, between background

and 9,999 ppmv and can be used for screening values up to 99,999 ppmv at the discretion of the local district." (*Pet. Exh. M, PEXH000346, Table IV-3a, note b, p. 20.*) Therefore the correlation equation was applied to both correlation and pegged ranges.

For correlation-range components, the District entered the applicable leak threshold as the screening value, as described above. That value is the boundary between a component that is not leaking and a minor leak, and it is the highest emission rate a component in this range can have without being a leak that must be repaired. For the correlation range (Range 2), these values are 100 ppmv or 500 ppmv, depending on component type.

For pegged-range components, the District entered the highest concentration before it is considered to be a major leak as the screening value, as described above. For the pegged range (Range 3), this value is 9,999 ppmv, since a major leak is greater than 10,000 ppmv.

Further detail for enforceable limitations that apply to the equipment:

- Under Rule 4455, a reading above 10,000 ppmv is a major gas leak (Table 2). Every leak must be minimized within one hour of detection (*Dist. Exh. 6, §5.3.4*). A major gas leak up to 50,000 ppmv must then be repaired within 3 calendar days, extendable by 2 days for no more than 0.05% of the components inspected each quarter, and a leak above 50,000 ppmv within 1 day, with no allowable extension period (*Dist. Exh. 6, §5.3.5, Table 5*). A leaking essential or critical component that cannot be shut down must be minimized and repaired at the next turnaround, and no later than one year (*Dist. Exh. 6, §5.3.6*). Major gas leaks found in a District inspection, or not repaired within the required period, count toward the maximum allowable number of leaking components (*Dist. Exh. 6, §§5.1.3, 5.1.4.4, Table 3*). A leak above 50,000 ppmv is a violation when found in a District inspection or an annual operator inspection, or when not repaired within the required period (*Dist. Exh. 6, §§5.1.3, 5.1.4.3*).
- Condition 5 limits fugitive VOC emissions from the unit to 1.3 lb/day. Condition 9 requires the permittee to maintain an accurate component count and the resulting emissions calculated under Table IV-3a of the Guidelines, and Condition 10 subjects the unit to the Rule 4455 inspection and repair requirements. (*Pet. Exh. C, PEXH000167.*)

The Engineering Evaluation states this basis in shorthand: that Rule 4455 "does not allow leaks over 10,000 ppmv." (*Pet. Exh. C, PEXH000171-000172.*) More precisely, major leaks must be minimized promptly and repaired within prescribed periods, subject to limited exceptions; the unit also must comply with its daily emissions limit. The estimate therefore does not assume indefinite operation at major-leak levels. (*Dist. Exh. 3, Rule 2201 §3.32; 40 CFR 1.165(a)(1)(iii).*)

(*See Dist. Exh. 14 for the emission factor determination calculations.*)

Additional Inputs

Number of Components

The number of components of each type is based on the Project's engineering design: 251 valves, 6 pump seals, 36 other components, 120 connectors, and 467 flanges, for a total of 880.

(*Pet. Exh. C, PEXH000202.*) Consistent with Table IV-3a, note f (*Pet. Exh. M, PEXH000346*), which assigns compressors to the "other" component type, the 36 other components include the Project's compressor seals.

Percentage of Components in Each Range

The range distribution was proposed by Kern Energy and accepted by the District based on site-specific inspection data from the refinery:

- **Kern Energy I&M records.** The facility's 2022, 2023 & 2024 I&M Program records were reviewed. The facility inspected over 80,000 components during each year. Records show that over 99% of components inspected were in the default zero range, 0.5% of components were in the correlation range and 0.2% were in the pegged range. (*Dist. Exh. 15.*)
- **District inspections.** The District inspects the facility annually, screening approximately 10% of components each year. Over the last two years, the District screened 14,464 components, of which more than 99.7% were in the default zero range, less than 0.3% were in the correlation range, and less than 0.1% were in the pegged range. (*Dist. Exh. 10.*)

Both data sets show far fewer components with detectable readings than the 90/9.5/0.5 distribution assumes. The distribution assigns 10% of components to the correlation and pegged ranges, compared with less than 1% observed, and is therefore conservative.

The correlation-range components are assigned the applicable leak threshold, the boundary between a component that is not leaking and a minor leak. (*Pet. Exh. C, PEXH000167, Conditions 6 and 7.*) Rule 4455 classifies leaks as minor or major (Table 2) and limits the number of leaking components per inspection period on a facility-wide basis, as a percentage of all components of each type inspected at the facility (Table 3). Leaks found in operator inspections and repaired within the required period are not counted toward that limit. (*Dist. Exh. 6, §5.1.3.2.1.*) Because the facility has more than 80,000 components, the leak frequency assumed for this Project's 880 components is consistent with the facility-wide limits.

Range Distribution: Project Assumption Compared with Inspection Data

Correlation Equation Range	Project Assumption	Kern Energy inspection and maintenance	District Inspections
Range 1: Default Zero	90%	>99%	>99.7%
Range 2: Correlation Equation (at the leak threshold)	9.5%	0.5%	0.3%
Range 3: Pegged Correlation Equation	0.5%	0.2%	<0.1%

(*See Dist. Exh. 12 for PE calculation example.*)

Petitioners' Method 1 estimate: Petitioners' Method 1 calculation produces 399.9 lb/day, or 145,955 lb/year. (*Pet. Exh. N, PEXH000372, ¶ 20.*) This wildly inaccurate estimate applies broad population-average factors from 1980 and 1982 refinery studies without credit for the facility's existing I&M program That would attribute more than half the refinery's reported post-project stationary-source VOC potential (269,297 lb/year) to approximately 1.1% of its more than 80,000 components. (*Pet. Exh. C, PEXH000174*). On its face, this result is not realistic.

Even applying Method 1 using the District's component counts, service categories, and an assumed 100% VOC content yields 101.5 lb/day—not 399.9 lb/day. The substantial discrepancy undermines Petitioners' calculation; it does not displace the District's use of Method 3.

Additional conservatism: The District treated all 880 new components as VOC-containing. (*Pet. Exh. C, PEXH000171.*) This assumption was made despite that portions of the system are in hydrogen service. Furthermore, the District did not apply SSP-2015's provision that VOC emissions are not assessed for components handling fluid streams with a VOC content of 10% or less by weight (*Dist. Exh. 9, p. 4*), and did not evaluate whether any gas-service components qualify for the Rule 4455 exemption for components exclusively handling gas/vapor streams with a VOC content below 1% by weight. (*Dist. Exh. 6, §4.2.5.*) Every new component was counted in the PE for VOC, despite the fact that *not* every component emits VOC, further validating the conservative nature of the resulting PE of 483 lbs/year.

2. The District Properly Applied The Correlation Equation Method

Petitioners argue that as part of its Method 3 calculations, the District misapplied the Correlation Equation Method by assuming screening values tied to regulatory leak limits rather than measured values, and by using the correlation equation at 9,999 ppmv instead of the Guidelines' pegged factors. The Petitioners also note that other Kern Energy projects used pegged-range percentages of 0.15 to 1.0 percent. (*Petition pp. 10–11; Pet. Exh. N, PEXH000371-000372, ¶¶ 15, 18–19.*) The Petitioners state that using the leak thresholds assumes Kern Energy has never had a leak above the regulatory limit. (*Pet. Exh. N, PEXH000372, ¶19.*)

Screening Values. Once again, Petitioners are wrong. Because the components are not yet installed, measured values do not exist. The District used the highest values before a component triggers the applicable leak-repair requirement, and assumed those values persisted for 8,760 hours per year. This does not assume leaks never occur: higher readings trigger Rule 4455 repair duties. (*Pet. Exh. C, PEXH000167; Dist. Exh. 6.*)

The Petitioners also note that the Method 21 analyzers some organizations use read to 50,000 ppmv. (*Pet. Exh. N, PEXH000372, ¶18.*) This is immaterial to the project since field equipment do not affect the District's calculation.

Pegged Range Percentages and Other projects. The District's distribution conservatively assigns 9.5% of components to readings at the leak threshold and 0.5% to major-leak concentrations at all times, compared with less than 1% of components with detectable readings, and less than 0.2% at major-leak levels, in the facility's inspection data. Pegged-range percentages differ among Kern Energy projects because each project's distribution is based on the inspection data that are representative of that project when it is evaluated. Kern Energy may

use records from an existing permit unit that closely resembles the new installation, such as a unit processing similar streams with similar components at similar conditions. For this Project, no single existing unit closely resembled the new installation, so facility-wide data were used. The District accepts a proposed distribution when it is supported by representative data and results in emissions equal to or more conservative than the data show. Inspection data also change over time as new inspections are conducted.

Enforceability Matters. Condition 5 limits VOC emissions to 1.3 lb/day; Condition 9 requires component and emissions records; and Condition 10 imposes Rule 4455 the inspection and repair duties. (*Pet. Exh. C, PEXH000167.*) An exceedance of the daily limit is a violation subject to enforcement.

3. The District Did Not Improperly Group Components

Petitioners contend that the District failed to properly follow Method 3 by grouping components rather than calculating emissions individually. (*Pet. Exh. N, PEXH000371, ¶17.*)

It is Petitioners who misapply the Guidelines. Method 3 calls for a screening value for each component. Before construction, the District assigned identical assumed values to components of the same type. Calculating one rate and multiplying by the component count is mathematically identical to repeating the same calculation component by component. (*Pet. Exh. M, PEXH000342–000343.*)

Once the components are installed, they are screened under Rule 4455, and Condition 9 requires emissions to be calculated under Table IV-3a, whose correlation method enters each component's screening value individually. The Unit-Specific Correlation Equation Method differs only in that it uses site-specific equations developed from bagging data.

4. The District Relied Upon Its Own, Independent Judgment To Use Method 3, Not Kern Energy's Request

Petitioner argues that the District used the Correlation Equation Method at Kern Energy's request, despite the absence of site-specific screening values for the new components. (*Petition pp. 9–10.*)

The District—not the applicant—selected the appropriate method. Staff reviewed the proposed inputs and independently determined that Method 3 was authorized and supported by representative data. Agreement with an applicant's proposed method does not make that decision improper.

B. EMISSION REDUCTION CREDIT CERTIFICATE C-1579-1

Petitioners challenge ERC Certificate C-1579-1 on the theory that the reductions banked in 1992 were not permanent. (*Petition p. 11.*) The claim is both untimely as a challenge to that final

banking action and unsupported on the merits. (*Petition p. 11, citing Rule 2201 §§3.2.1, 4.8.1.1.*)⁴

As an initial matter, Petitioners' claim for challenging this ERC Certificate is untimely. As Petitioners note, ERC Certificate C-1579-1 was banked on November 5, 1992, and would have been subject to a public notice and comment period beforehand. (*Petition, p. 11, fn. 32; Dist. Exh. 2, § VIII.E.*) At the outset, Petitioners were required to bring any action challenging the validity of the ERC Certificate within 90 days following the date the District's banking action became final. (*Code of Civil Procedure § 1094.6.*) Their administrative remedy to challenge it before the hearing board would have been required as soon as 30 days following the District's issuance. (*H&S §§ 40713, 42302.1.*) Any challenge to the validity of ERC Certificate C-1579-1 has therefore long-since been time-barred.

On the merits, however, the ERC Certificate is not deficient for lack of permanence. Rule 2201 §3.2 requires an Actual Emissions Reduction used as an offset to be "real, enforceable, quantifiable, surplus, and permanent." ERC Certificate C-1579-1 was split from Certificate C-3-1, which was issued on November 5, 1992 under Project C-92003 to Fruehauf Trailer Corporation for the shutdown of a truck trailer coating operation. That banking action was processed under the rules and review procedures that applied at the time and was issued as a final action. (*Dist. Exh. 2.*) The reductions were generated by the shutdown of the coating operation, the surrender of its Permit to Operate, and the removal of the equipment from the facility. (*Pet. Exh. C, PEXH000247.*) Those facts have not changed. Permanence depends on the enforceable status of the source that generated the reductions. With its permit surrendered and its equipment removed, that source cannot emit again without a new permit, which would be subject to new source review. The possibility that similar work could occur at another business does not make the reductions temporary. Any new coating operation in the District would require its own permit and would be subject to Rule 2201. To the extent the Petitioners challenge the 1992 banking determination itself, that final action is not the permitting action before the Hearing Board.

Petitioners assert that the District must prove the reductions did not shift elsewhere, but Petitioners bear the burden in this permit appeal and identify no evidence of such a shift. In any event, the 1992 banking decision is not the permitting action now under review, and any challenge to the validity of the ERC at issue is untimely by over 3 decades.

C. THE DISTRICT WAS NOT REQUIRED TO EVALUATE OTHER, EXISTING PERMIT UNITS AT THE FACILITY BECAUSE NO OTHER EXISTING UNITS WERE MODIFIED FOR THE PROJECT

Petitioners argue that the District should have treated the Naphtha Reformer (S-37-119), Platformer and scrubber (S-37-4), and existing toluene and methylcyclohexane tanks (S-37-173 and S-37-44) as modified units. (*Petition pp. 3, 11–12; Pet. Exh. N, PEXH000375-000378, ¶¶*

⁴ Though the Petition cites the parts of Rule 2201 that define the surplus criteria for ERC approval, the Petition articulates no argument challenging the surplus requirement for the District to respond to. Any claim that the ERC fails to meet the surplus criteria is therefore waived.

27–31, 35.) However, none of these units underwent the physical or operational change that would require that treatment.

In determining which emissions units are new or modified for purposes of a Federal Major Modification, APR 1150 applies the definitions in 40 CFR 51.165. An existing emissions unit is included in the applicability calculation only if it undergoes a physical change or an actual change in the method of operation. (*Dist. Exh. 7, §V, p. 5.*) The Naphtha Reformer, the Platformer, and the tanks did not undergo either a physical change or an actual change in the method of operation in connection with the Project:

- The new piping and components that tie the Project into existing equipment are new fugitive components. Under SSP-2015, fugitive emission sources are associated with the emissions unit they serve (*Dist. Exh. 9, p. 5*); these components serve, and are counted in, S-37-178-0. (*Pet. Exh. C, PEXH000202.*) The Petitioners are correct that a new tee or elbow adds components (*Pet. Exh. N, PEXH000375, ¶ 28*); those components are included in the Project's 880 new individual components.
- Hydrogen is co-produced in the reformers as part of their existing operation, whether or not the Project is built. No changes to the components associated with the reformers are expected, and the Project does not change the reformers' permitted operation; the hydrogen is routed by new piping to the new unit rather than to its existing refinery processes. (*Pet. Exh. C, PEXH000171 and PEXH000250-000251, 000255, Responses #12 through #14 and #31.*)
- The tanks continue their permitted organic liquid storage service under their existing permit conditions and vapor control requirements. (*Pet. Exh. C, PEXH000246, 000250, Responses #4 and #12.*)

Storage tanks. The Project uses existing permitted organic liquid storage tanks, S-37-44 and S-37-173, to store toluene and methyl cyclohexane (MCH). Those tanks continue to serve a storage function and remain subject to their existing permit requirements and vapor control requirements. (*Pet. Exh. C, PEXH000246, 000250, Responses #4 and #12.*) Before this Project, the tanks were authorized to store toluene and MCH, and they will continue to be authorized to store either organic liquid after the Project is implemented. Because the tanks were already authorized to store both materials, the risk assessment previously conducted for the tanks remains unchanged. The Project does not introduce a new material or storage scenario that would alter the assumptions or results of that assessment. Because the tanks were permitted to store organic liquids before the Project and will continue to store organic liquids, the tanks are not altered within the meaning of District Rule 2010. (*Dist. Exh. 4, §3.0.*)

No emissions increase at existing units. Even if these units were included, the emissions increase for an existing unit is projected actual emissions minus baseline actual emissions, less any unused baseline capacity. (*Dist. Exh. 7, §V.*) Because the reformers' and tanks' permitted operations do not change, projected actual emissions equal baseline actual emissions, and the Project causes no emissions increase at those units. Under APR 1150 §VI, a unit in a Federal Major Modification project that has no emissions increase is not subject to BACT.

Rule 2201 definitions. The Rule 2201 definitions cited in the Petition apply to a change in method of operation of an existing emissions unit, or a structural change or addition to an existing emissions unit, "which would necessitate a change in permit conditions." (*Dist. Exh. 3, §§3.29.1.1, 3.29.1.2.*) The Project requires no change to the permit conditions of S-37-119, S-37-4, S-37-44, or S-37-173. Rule 2201 §3.29.1.6, which the Petitioners cite, lists "[a] Federal Major Modification" as a modification. The Project was reviewed as a Federal Major Modification; whether an existing unit is part of it is determined under 40 CFR 51.165, as APR 1150 provides and as addressed above. Rule 2010 §3.0, which requires an Authority to Construct before building, altering, or replacing equipment that may emit air contaminants, leads to the same result, because the reformers and tanks are not altered.

No emissions were overlooked. All 880 new fugitive components were included in the new permit unit, subject to BACT, the 1.3 lb/day limit, and federal offsets. The resulting PE calculation is appropriate.

D. THE DISTRICT PERFORMED A PROJECT-SPECIFIC BACT ANALYSIS FOR THIS PROJECT IN COMPLIANCE WITH RULE 2201 AND DISTRICT POLICY

Petitioners claim the BACT review omitted equipment, relied on an incorrect emissions estimate, and failed to consider a 100 ppmv pump-and-compressor seal option listed by the Bay Area Air District. (*Petition pp. 13-14; Pet. Exh. N, PEXH000373-000375, ¶¶ 24–26.*) The District applied BACT to every new component and followed its established project-specific procedures.

1. The District followed its BACT procedures and the applicable Clearinghouse guidance

District Rule 2201 requires BACT for, among other things, a new emissions unit with a PE greater than 2.0 lb/day, and for any new or modified emissions unit in a project that results in a Federal Major Modification. (*Dist. Exh. 3, §§4.1.1, 4.1.3.*) The Project's new equipment under permit unit S-37-178-0, has a PE of 1.3 lb/day, below 2.0 lb/day. BACT was triggered because the Project is a Federal Major Modification for VOC: the facility is a major source of VOC in an extreme ozone nonattainment area, so the VOC threshold is zero and any increase qualifies. (*Dist. Exh. 3, §3.21.6, Table 3-1; Dist. Exh. 7, §V; Pet. Exh. C, PEXH000177-000179.*)

Rule 2201 §3.10 defines BACT as:

the most stringent emission limitation or control technique of the following: 3.10.1 Achieved in practice for such class or category of source; 3.10.2 Contained in any State Implementation Plan approved by the Environmental Protection Agency for such class or category of source. A specific limitation or control technique shall not apply if the owner of the proposed emissions unit demonstrates to the satisfaction of the APCO that such a limitation or control technique is not presently achievable; or 3.10.3 Contained in an applicable federal New Source Performance Standard; or 3.10.4 Any other emission limitation or control technique, including process and equipment changes of basic or control equipment, found by the APCO to be cost effective and technologically feasible for such class or category of sources or for a specific source."

BACT determinations are made in consultation with the “BACT Clearinghouse,” a streamlining and informational tool that documents and organizes BACT determinations for common classes and categories of sources. CAPCOA established the statewide BACT Clearinghouse in 1983, administered by CARB, to centralize determinations made in California and promote consistency among air districts. Because BACT is determined case by case by many permitting agencies, a clearinghouse prevents each agency from having to independently rediscover what technology has already been required and demonstrated elsewhere.

The Clearinghouse also establishes the achieved-in-practice benchmark, while at the same time reduces repetition of the same engineering analysis. Once the District has thoroughly evaluated a particular emissions unit, there is little value in having the next permit engineer reconstruct the same analysis from the beginning unless something material has changed. The Clearinghouse creates an institutional starting point and minimizes duplicate project-specific determinations.

Despite its benefits, the Clearinghouse, as a tool, does not represent a “technology ceiling.” The District recognizes that it still must consider whether newer or more stringent technologies have become achieved in practice, technologically feasible and cost effective, or otherwise required. Accordingly, District policy APR 1305 requires the District to revise the Clearinghouse when cleaner technology becomes available (*Dist. Exh. 8, §VI.A*), rather than requiring each permit engineer to redo a nationwide BACT search on every project.

Petitioners’ Exhibit N cites a 2026 District response stating that BACT Guidelines are not a regulatory prerequisite to permit issuance and that BACT is determined case by case. (*Pet. Exh. N, PEXH000373-000375, ¶¶ 24–26*.) That statement is consistent with the approach taken here. A Guideline is not required before a permit can issue: where the Clearinghouse does not cover a class and category of source, the District considers all control technologies available as of the date the application is deemed complete. (*Dist. Exh. 8, §IV*.) However, where the Clearinghouse *does* cover the class and category, as Guideline 7.2.3 does for this Project, the analysis follows the Clearinghouse as set forth in APR 1305.

Here, the District properly followed its BACT policy for this Project. Under APR 1305, for a class and category of source covered in the BACT Clearinghouse, the control technologies considered in the top-down analysis are those listed in the Clearinghouse on the date the application is deemed complete. However, the Policy also requires that other control technology must be considered before final action if they are brought to the District’s attention in written public comments after the preliminary decision is issued. (*Dist. Exh. 8, §§IV, IX.A*.)

For this Project, BACT Guidelines 7.2.2 (Petroleum Refining, Valves and Connectors) and 7.2.3 (Petroleum Refining, Pump and Compressor Seals), updated July 22, 2020, list achieved-in-practice leak definitions of 100 ppmv and 500 ppmv, respectively, with an I&M program under Rule 4455. Neither Guideline lists a technologically feasible option or alternate basic equipment. The top-down analysis selected the achieved-in-practice option for each category, and because the applicant proposed the most effective option identified, no cost-effectiveness analysis was required. (*Pet. Exh. C, PEXH000203-000208; Dist. Exh. 8, §IX.D.1*.)

Importantly, no public comment during the 91-day comment period identified the Bay Area Air District option. APR 1305 therefore did not require the District to add that option to the Project's BACT analysis after the preliminary decision. (*Pet. Exh. C, PEXH000203-205.*)

The Bay Area listing does not establish that a 100 ppmv seal standard is BACT for this Project. Rule 2201 §3.10.4 requires both technological feasibility and cost effectiveness, as determined for the relevant source. Another district's listing is relevant information, not a substitute for that determination.

Cost-Effectiveness

With respect to cost effectiveness, in 2006, the Bay Area Air District's BACT Guidelines identified a 100 ppmv leak definition for pump and compressor seals at petroleum refineries as technologically feasible. The District examined the cost-effectiveness question of this leak definition when it amended Rule 4455 in 2023 for several different leak concentration levels, including 100 ppm. (*Dist. Exh. 13, BACT CE Analysis.*) In that rulemaking, the District compared Rule 4455 with the leak standards of other agencies, including Bay Area Air District Regulation 8, Rule 18, which applies a 500 ppmv leak standard to pumps and compressors, and evaluated lowering the minor leak threshold for pumps, compressors, and other components in gas service to 500 ppmv and to 100 ppmv⁵. (*Dist. Exh. 11.*) For Rule 4455 components, lowering the threshold from 500 ppmv to 100 ppmv would have reduced emissions by approximately 0.05 ton of VOC per year at an added cost of about \$28,464 per year, or about \$630,797 per ton of VOC reduced. (*Dist. Exh. 11, Appendix C, p. C-15, Table C-14.*) The lowest cost-effective leak concentration level was therefore determined to be 500 ppm, not 100 ppm. This cost analysis was done for all components in the District, including those on pumps and compressors in this refinery.

The result for this Project is the same. Using the same assumptions as the PE, which place far more components at the leak threshold than the facility's inspection data show, lowering the leak definition for the Project's pump seals and other components from 500 ppmv to 100 ppmv would reduce emissions by no more than about 37 lb-VOC/year (about 0.02 ton/year). At the District's VOC cost-effectiveness threshold of \$27,100 per ton in effect when the ATC was issued, the option would be cost effective only if its total annualized cost were less than about \$330 per year. (*Dist. Exh. 13, BACT CE Analysis.*)

The rulemaking figures cover all 1,708 Rule 4455 pumps, compressors, and other components in the Valley. The Project's estimate is higher per component because the PE assumes that 9.5% of components remain at the leak threshold at all times, which overstates the reduction the 100 ppmv option would achieve. Applying the rulemaking's per-component reduction to the Project's 12 components would reduce emissions by about 2.5 lb-VOC/year, and the option would be cost effective only if it cost less than approximately \$35 per year.

⁵ San Joaquin Valley Air Pollution Control District, Final Draft Staff Report, Proposed Amendments to Rules 4401, 4409, 4455, 4623, and 4624 (June 15, 2023), pp. 28–29 and Table 3, available at <https://ww2.valleyair.org/media/2mq1qbgn/12.pdf>.

Using the District's unit costs from the 2023 Rule 4455 rulemaking, a single replacement of a leaking pump seal or other component requires about 40 hours of labor at \$133 per hour plus parts, or about \$5,500. (*Dist. Exh. 11, Appendix C, p. C-8, Table C-4.*) The cost of one additional replacement in a year would therefore exceed the break-even cost by more than 1.5 times, and the 100 ppmv option would be cost effective only if it resulted in fewer than one additional replacement about every eleven years.

Class and Category of Source

APR 1305 requires that technological feasibility be judged for "the specific class and category of source." (*Dist. Exh. 8, §III.H*). Pump and compressor seals are dynamic seals: they must contain a pressurized fluid while allowing a shaft or rod to move, which makes them fundamentally different from static connections. The engineering objective is to balance leakage, lubrication, friction, heat generation, wear, reliability, and process safety. Achieving and continuously maintaining the same screening concentration at a rotating shaft seal as at a static valve or connection is inherently more difficult. A 500 ppmv pump and compressor seal threshold reflects those mechanical characteristics while maintaining a stringent leak trigger that captures the great majority of controllable emissions.

Petroleum refineries do not constitute a homogeneous source category merely because they share an industry classification. Refinery scale, process complexity, equipment rating and capacity, process-fluid characteristics, operating pressures and temperatures, seal configuration, available utilities and control infrastructure, equipment redundancy, and process integration can materially affect the practical applicability and demonstrated performance of pump and compressor seal technologies.

This distinction is particularly relevant when comparing the large, integrated, high-conversion refineries in the Bay Area, which have capacities much greater than that of a small refinery such as Kern Energy. The large Bay Area refineries also operate major conversion processes, including vacuum distillation, catalytic cracking, hydrocracking, and coking, that are not part of Kern Energy's smaller process configuration. These differences can result in substantially different pump and compressor populations, process services, seal designs, supporting utility systems, redundancy, and maintenance requirements.

Accordingly, a 100 ppmv pump and compressor seal limitation identified as technologically feasible for large Bay Area refinery configurations constitutes relevant technology-transfer information, but it does not by itself establish that the same limitation is technologically feasible for pump and compressor seals at a smaller San Joaquin Valley refinery.

In addition for this source category, a lower leak requirement does not necessarily produce additional emission reductions. Repair attempts at very low concentrations can damage a component or otherwise increase its leak rate, resulting in greater emissions, longer repair periods, and replacement of parts. EPA reached a similar conclusion when it developed the new source performance standards for equipment leaks at synthetic organic chemical manufacturing industry facilities and petroleum refineries constructed, reconstructed, or modified after November 7, 2006. Rather than amending Subparts VV and GGG, EPA promulgated new

Subparts VVa and GGGa, which set a 2,000 ppmv leak definition for pumps in light liquid service (40 CFR 60.482-2a(b)(1)) and a 500 ppmv leak definition for valves (40 CFR 60.482-7a). EPA considered, but did not adopt, lower leak definitions. In discussing lower leak definitions for valves, EPA noted that refinery consent decrees require first attempts to repair valves at instrument readings above 100 or 200 ppm, and that this effort "has been only marginally successful because evidence to date shows such attempts are almost as likely to make emissions worse as to fix the valve."⁶

Federal New Source Performance Standards

Rule 2201's BACT definition also includes any limitation "[c]ontained in an applicable federal New Source Performance Standard." (*Dist. Exh. 3, §3.10.3.*) No new source performance standards applies to S-37-178-0; the Project is not an affected facility under Subpart GGGa because it is not a process unit. (*Pet. Exh. C, PEXH000188.*) For completeness, the BACT requirements applied here are more stringent than the GGGa standards that apply to refinery process units. The Project's valves, connectors, and flanges are subject to a 100 ppmv leak definition, compared with 500 ppmv for valves under GGGa and no periodic instrument monitoring requirement for connectors in gas/vapor or light liquid service (40 CFR 60.593a(g)). The Project's pump and compressor seals are subject to a 500 ppmv leak definition, compared with 2,000 ppmv for pumps under GGGa, which also exempts compressors in hydrogen service (40 CFR 60.593a(b).)

2. The District Required BACT On All New Emissions Components; No Existing Emissions Units Were Modified.

Rule 2201 applies BACT on an emissions-unit basis. (*Dist. Exh. 3, §4.1.*) This Project has one new permit unit, S-37-178-0. The District applied Guidelines 7.2.2 and 7.2.3 to its new fugitive components. Existing units that undergo no physical or operational change do not require a separate BACT analysis. (*Dist. Exh. 7, §VI; Pet. Exh. C, PEXH000203-208.*)

Also contrary to Petitioners' arguments, the PE also did not affect the BACT analysis. BACT was triggered by the Federal Major Modification determination, and the VOC significance threshold is zero (*Dist. Exh. 3, §3.21.6, Table 3-1*), so any VOC increase triggers that determination. The cost-effectiveness determination discussed above is based on the Rule 4455 source-category analysis, not on this Project's PE. And the incremental reduction from lowering the pump and compressor seal threshold from 500 to 100 ppmv depends on the distribution of screening values at those components, which Method 1 does not use; the Petitioners' Method 1 total therefore does not translate into a larger incremental reduction for a cost-effectiveness analysis.

⁶EPA, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry; Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries, proposed rule, 71 Fed. Reg. 65302, 65305 (Nov. 7, 2006), available at <https://www.federalregister.gov/documents/2006/11/07/E6-18646>; final rule, 72 Fed. Reg. 64860 (Nov. 16, 2007).

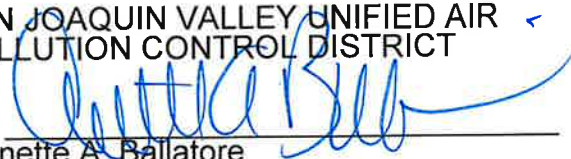
V. CONCLUSION

Petitioners have not shown that the District violated any applicable permitting requirement. The District used representative inspection data and conservative assumptions, required enforceable emissions controls, applied BACT, secured offsets, and evaluated every new emissions component. The administrative record supports proper issuance of the ATC.

The District respectfully requests that the Hearing Board find under Health and Safety Code section 42302.1 that ATC S-37-178-0 was properly issued and deny the Petition, including the request for revocation.

Dated: October 9, 2026

SAN JOAQUIN VALLEY UNIFIED AIR
POLLUTION CONTROL DISTRICT

By: 

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