Bay Area Air Quality Management District
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San Francisco, CA 94109
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Permit Evaluation and Statement of Basis for Reopening – Revision 4

MAJOR FACILITY REVIEW PERMIT

Valero Refining Co. - California
Facility #B2626

Facility Address:
3400 East Second Street
Benicia, CA 94510-1097

Mailing Address:
3400 East Second Street
Benicia, CA 94510-1097

Application 12403, et al

Application Engineer: Thu Bui
Site Engineer: Thu Bui

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Title V Statement of Basis

A. Background

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Title 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a major facility as defined by BAAQMD Regulation 2-6-212. It is a major facility because it has the "potential to emit," as defined by BAAQMD Regulation 2-6-218, of more than 100 tons per year of a regulated air pollutant, than 10 tons per year of a hazardous air pollutant or more than 25 tons per year of a combination of hazardous air pollutants.

Major Facility Operating permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. The permits must contain all applicable requirements (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is B2626.

This facility received its last Title V permit on December 1, 2003. The permit has been reopened several times, as outlined below.

Revision 1: On December 16, 2004, the District issued Revision 1 of the permit, which amended flare and BAAQMD Regulation 9, Rule 10 requirements, added new permitted sources, and corrected typographical and other inadvertent errors ("Revision 1 Permit"). EPA objected to the Revision 1 permit on one issue: the permit's failure to include monitoring or a design review for certain thermal oxidizers.

Revision 2: In the same October 8, 2004 letter in which it objected to the Revision 1 permit and required that it be reopened, EPA sent comments identifying a number of issues to be resolved for the District's refinery Title V permits. (Note that EPA commented on five refineries in this letter. Not all comments concern this facility.) On April 15, 2005, the District proposed Revision 2 of the permit. The primary purpose of the Revision 2 proposal was to address various issues identified in EPA's October 8, 2004 letter regarding the Revision 1 proposal. The public comment period for the Revision 2 proposal ended May 24, 2005.

Revision 3: On December 7, 2004, EPA received a petition from Our Children's Earth Foundation (OCE) requesting that the administrator object to the issuance of the Title V permit (the Revision 1 Permit). On March 15, 2005, shortly before the Revision 2 reopening was

proposed, EPA issued an Order directing the District to reopen the permit to address possible deficiencies that EPA had identified based on the OCE petition. On August 15, 2005, the District proposed Revision 3 of the permit, primarily to address the issues listed in the EPA March 15, 2005 Order.

The TV permit with combined Revision 2 and Revision 3 was issued on March 2, 2007. The Revision 3 Permit is the current permit for the facility, and the phrases "Revision 3 Permit" and "current permit" are used interchangeably in this document.

Revision 4: The District is now finalizing Revision 4 to update Regulations and to incorporate changes that made through New Source Review applications. The changes involved in Revision 4 are reflected in the accompanying draft permits, and they are explained in this statement of basis for Revision 4. For ease of reference for reviewers at this draft permit stage, all changes to the current permit being made through Revision 4 are shown in "strikeout/underline" format.

This statement of basis does not address factual and legal bases for permit requirements and conditions that are not the subject of the Revision 4 reopening. These matters were addressed in the previous comprehensive statements of basis that accompanied the initial permit, the Revision 1 Permit, and the combined Revision 2 and 3 Permit. Those statements of basis are available upon request.

Revision 4 permit incorporated the change of facility contact name from Clark Hopper to Todd Lopez. Revision 4 permit deletes sources that were permitted but were not constructed, corrects source names and model numbers, and renumbers abatement devices. The new Airborne Toxic Control Measure (ATCM) was added for emergency standby engines, and the SIP and Regulation 8, Rule 5 was updated in this revision.

In addition, Revision 4 permit incorporates the following recent Title V minor revision or administrative amendment applications into the permit:

Application Number(s) (Title V/New Source Review (NSR))	**Description**
17034/2390	Added Condition 17835, Parts 4, 5, and 6 for POC abatement facility for the S-1027 Light Ends Rail Rack
17035/2035	S-1058, a grandfathered source, was created for the Virgin Light Ends Process Unit, which was mistakenly identified as S-1014 for Cat Light Ends Process Unit in permit Condition # 10574 and 18043
12403/12341	EVR Upgrade S-165
12422/None	Low Vapor Pressure Exempt Services for Tanks
12476/None	Correct 8-5-306 for A-57 replace annual source test with continuous temperature monitor, A-36 and A-37 with continuous VOC analyzer and flowmeters
12577/None	S-208 and S-1013 Pressure Drums

Application Number(s) (Title V/New Source Review (NSR))	Description
12868/None	Deletion of non applicable requirements (40 CFR 60.482-10) for closed vent standard and control devices, because the fugitive component emission leaks are routed to the fuel gas system or to atmosphere, not to closed vent system and control devices
13200/13201	H2S Limit Consistency
13202/13203	Condition 19466, Part 5, ESP Operation for S-3 and S-4 Crude Preheat Furnace, F101 and Reduced Crude Furnace, F102
14442/14443	SRU Spare Tail Gas Unit Operation (added A-62 abatement)
14603/14604	SRU Consent Decree, H2S Limit for S-1 and S-2 Sulfur Recovery Units A and B. Adding applicability of Subpart A and J per consent decree
14607/14606	S-239 Crude/Product Dock Sump – is not a tank, Regulation 8-2- Miscellaneous Operations applies, not Regulation 8-5-Organic Storage Tank.
14765/14754	Seal Replacement for S-81 TK-1753 Slop/Gasoline Tank, External Floating Roof
17033/15052	S-27 Powerformer Regeneration Facility
15386/15317	Abatement Consent Decree S-157 Sulfur Storage Pit
15962/15961	Condition 21233 (NOx Box) for S-7 Process Furnace F-103, Jet Fuel Hydrofining
16093/16056	S-8 Silos replacement of abatement
16327/16302	S-27 and S-158 PERC tank throughput increase
16702/16658	S-237 Condition 16027 increase source test due date
16838/16837	S-108 and S-124 are not pressure tanks
16843/16656	S-157 Sulfur Storage Pit Maintenance Allowance
16880/16879	S-234 and S-235 replaced with exempt storage totes (S-149 and S-150) and contain low VP materials
16897/16839	S-64 and S-66 Exemption

All of the above applications are minor modifications and administrative changes that correct and reflect Valero operations such as changing tank service, removal of inapplicable requirements, adding requirements per consent decree, and adding new sources. None of the above applications resulted in emissions increases with the exception of Applications NSR 16302/TV 16327 where perchloroethylene was increased from S-27, storage tank. Furthermore, the revisions do not involve a relaxation of any applicable monitoring, reporting, or recordkeeping condition.

- NSR Application 2390/TV 17034 is to add Condition 17835, Parts 4, 5, and 6 for POC abatement facility at the S-1027 Light Ends Rail Rack that were mistakenly left out in

previous TV permit Rev. 2 & 3. No emission increase or addition of any new requirements from this administrative amendment.

- NSR Application 2035/TV 17035 is to add S-1058, a grandfathered source, that was created for the Virgin Light Ends Process Unit, which was mistakenly identified as S-1014 for Cat Light Ends Process Unit in permit Condition # 10574 and 18043. This mistake was made in the evaluation of the NSR Application 2035 for the MTBE Phase-out. NSR Application 2035 was not included in the Appendix C below because it was already included in previous TV Permit Rev. 2 & 3. No emission increase or addition of any new requirements from this administrative amendment.

- NSR Application 12341/TV 12403 is upgrading the Gasoline Dispensing, S-165, to CARB certified EVR Phase I per CARB Executive Order VR-102. No emission increase results from this minor modification. Condition # 20666 was added for this application.

- TV Application 12422 allows storage tanks to operate under the available exemptions in the applicable regulations and reduce the applicable requirements if the tank is storing liquid that has a vapor pressure that meets the threshold for the applicable exemption. Condition 20762, Part 2 was added to clarify the switching service requirement for all liquid organic storage tanks subject to Regulation 8-5. The Regulation 8-5 and SIP 8-5 exemptions for low vapor pressure service (BAAQMD 8-5-117 and SIP 8-5-117) were added to the site wide general Table IV-Refinery and to each source-specific table for tanks to allow any tank to operate in exempt low vapor pressure service. The NSPS Subpart Kb exemption for low vapor pressure service (40 CFR 60.110b(b)) was added to Tables IV-J9, J13, J18, J38, and J40 for tanks specifically subject to NSPS Subpart Kb. Condition 20762 was added to Tables IV-J15, J19, J20, J27, J29, J30, and J31.1 for tanks that are only subject to the BAAQMD 8-5-117/SIP 8-5-117 low vapor pressure exemption. No emission increase results from this administrative amendment.

- TV Application 12476 to correct A-36, A-37 and A-57 annual source test requirement on Table VII. A-36 and A-37 are carbon canisters that are currently equipped with continuous hydrocarbon analyzers and flow meters. A-57 is the thermal oxidizer that is currently equipped with a continuous temperature monitor. This effectively results in more stringent monitoring requirements. No emission increase results from this administrative amendment.

- TV Application 12577 to correct tanks S-208 and S-1013 from a fixed roof to pressure tanks with nitrogen-blanketed pressure tank, and PV valves that vents to vapor recovery system. Delete monitoring requirements for 8-5-306, 8-5-303.1, and 8-5-303.2. Add Regulation 8-5-307 for pressure tanks. No emission increase results from this administrative amendment.

- TV Application 12868 to delete non-applicable requirements (40 CFR 60.482-10) for closed vent standard and control devices, because the fugitive component emission leaks are routed to the fuel gas system or to atmosphere, not to closed vent system and control devices. No emission increase results from this administrative amendment.

- NSR Application 13201/TV 13200 is to change the H2S concentrations of Conditions 10574, 14318, 16027 and 19177 from 160 ppm to 162 ppm as requested by Valero. The application allowed the conditions be changed to NSPS Subpart J requirement and omit all concentration limit values because the limit could be changed in the future. No emission increase results from this minor modification.

- NSR Application 13203/TV 13202 allows three out of five Electrostatic Precipitators (ESPs) to abate S-3 and S-4 CO Boilers at all times. Condition 19466, Parts 5b and 5c were added. Condition 19466, Part 5a was also modified to allow four out of five ESPs to operate during ESP emergency repairs. No emission increase results from this minor modification.

- NSR application 14443/TV 14442 allows a new parallel abatement A-62 to abate S-1 and S-2 Clause Sulfur Recovery Unit (SRU) A&B when necessary for maintenance or improve the abatement reliability of the existing A-24. Conditions 125 and 126 were modified to reflect this change. No emission increase results from this minor modification.

- NSR Application 14606/TV14603 is required to incorporate NSPS Subpart A & J applicability, which are in effect on December 31, 2005, to S-1 and S-2 Clause SRU A&B per Consent Decree. Conditions 125, Part 9 and 126, Part 9 were added to incorporate the NSPS requirements. No emission increase results from this minor modification.

- NSR Application 14606/TV 14607 is to correct the applicability of S-239, which is a process equipment that is subject to Regulation 8-2 instead of Regulation 8-5 for storage tank. Condition 18422 was modified to reflect this change. No emission increase results from this minor modification.

- NSR Application 14754/TV 14765 – is for S-81 primary and secondary seal replacement which is exempt by Regulation 2-1-123.4. No emission increase results from this minor modification.

- NSR Application 15052/TV 17033 is for S-27 Powerformer Regeneration Facilities to improve maintenance and reliability of the regeneration system by adding the caustic scrubbing system and the sulfide injection system. Condition 23326 was added. No emission increase results from this minor modification.

- NSR Application 15317/TV 15386 is for S-157 sulfur pit to comply with Consent Decree requirement to reroute vent from sulfur pit back to process unit. Condition 23446 was added. No emission increase results from this minor modification.

- NSR Application 15961/TV 15962 is to revise the NOx box for S-7. Condition 21233 was modified. No emission increase results from this minor modification.

- NSR Application 16056/TV 16093 is to replace a cyclone with a baghouse filter at S-8 coke storage silos. Conditions 19466 and 20820 were revised. No emission increase results from this minor modification.

- NSR Application 16302/TV 16327 is for S-27 perchloroethylene (PERC) tank throughput increase from 10,000 to 30,000 gallons per year. More PERC was needed to clean the catalyst in the Powerformer Regeration Facilities, where all PERC is consumed in the reaction chamber. Condition 9684 is revised. Small amount of Non-Precursor Organic Compound (NPOC) emission increase results from this minor modification.

- NSR Application 16656/TV 16843 allows S-157, the Sulfur Pit, 240 hours of vapor recovery/sparger maintenance without sending the vapor to the SRU to avoid unscheduled equipment breakdown. Condition 23466 was revised. No emission increase results from this minor modification.

- NSR Application 16658/TV 16702 allows the annual CO source test to be submitted within 45 days instead of 30 days per Condition 16027. No emission increase results from this administrative amendment.

- NSR Application 16837/TV 16838 is to correct S-108 and S-124 from pressure tanks to fixed roof tanks. Therefore, the title was corrected for S-108 and S-124. Condition 76003 was deleted for material that S-108 is not storing in the future. No emission increase results from this minor modification.

- NSR Application 16879/TV 16880 is to remove S-234 and S-235 fixed roof tanks from service, and to exempt S-249 and S-250 from permit per Regulation 2-1-123.2 for storing and loading of organic liquid with initial boiling point greater than 302^{o}F. No emission increase results from this minor modification.

- NSR Application 16839/TV 16897 is to exempt S-64 and S-66 from permit per Regulation 2-1-123.2 for storing and loading of organic liquid with initial boiling point greater than 302^{o}F. No emission increase results from this minor modification.

B. Facility Description

The facility description can be found in the statement of basis that was prepared for the current permit (Revision 1 Permit) that was issued December 16, 2004. It is available upon request.

C. Permit Content

The legal and factual basis for the changes being made in this Revision 4 follows. Changes to each permit section are described in the order presented in the permit.

I. Standard Conditions

This section of the permit contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil-fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, the section will contain a standard condition pertaining to these programs. Many of these conditions derive from

40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District's General Provisions and Permitting rules.

Changes to permit:
The dates of adoption or approval of the rules in Standard Condition I.A have been updated.

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S24). Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302. Significant sources are those sources that have a potential to emit of more than 2 tons of a "regulated air pollutant," as defined in BAAQMD Rule 2-6-222, per year or 400 pounds of a "hazardous air pollutant," as defined in BAAQMD Rule 2-6-210, per year.

All abatement (control) devices that control permitted or significant sources are listed. Each abatement device whose primary function is to reduce emissions is identified by an A and a number (e.g., A-24). If a source is also an abatement device, such as when an engine controls VOC emissions, it will be listed in the abatement device table but will have an "S" number. An abatement device may also be a source (such as a thermal oxidizer that burns fuel) of secondary emissions. If the primary function of a device is to control emissions, it is considered an abatement (or "A") device. If the primary function of a device is a non-control function, the device is considered to be a source (or "S").

The equipment section is considered to be part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types, contents or sizes of tanks, etc. This information is part of the factual basis of the permit.

Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District's regulations. The capacities in the permitted sources table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1. They may, however, be specifically described in a Title V permit if they are considered significant sources pursuant to the definition in BAAQMD Rule 2-6-239.

Following are explanations of the differences in the equipment list between the Revision 2 & 3 permit being made through this Revision 4:

Devices Removed from Service or Archived since Application was submitted:

- S-234 and S-235 replaced with S-249 and S-250 exempt storage totes and contain low VP additive materials
- S-1032, S-1033, A-62 and A-63 Cogen Phase II not constructed

Devices Permitted Since Application was submitted:

- A-66, added new cyclone separator for S-8 coke silos

Devices with Changed Permit Status:

- S-64 and S-66 became exempt
- S-108 and S-124, changed tanks from pressure to vertical fixed roof
- S-171 and S-180 were added to the table for exempt sources because they are no longer used for permitted services
- S-239, changed from tank to miscellaneous emissions source

Corrections to Devices Shown in Application

- Table IIA Permitted Sources:
  - S-8, changed title to Fluid coking – storage, Coker product, (Coke Storage Tanks TK-1902 A/B) – A/N NSR 16056/TV 16093
  - S-64, moved to Table IIB – A/N NSR 16839/TV 16897 (S-64 and S-66 exemption)
  - S-66, moved to Table IIB – A/N NSR 16839/TV 16897 (S-64 and S-66 exemption)
  - S-108, changed tank from pressure to vertical fixed roof; changed material stored from MMT to additives – A/N NSR 16837/TV 16838
  - S-124, changed tank from pressure to vertical fixed roof – A/N NSR 16837/TV 16838
  - S-158, changed throughput to 30 kgal/12 months - A/N NSR 16302/TV 16327
  - S-202, added "Derived from" in the Throughput column
  - S-234, deleted – A/N NSR 16879/TV 16880 (S-234 and S-235 replaced with exempt S-249 and S-250 storage totes and contain low VP additive materials)
  - S-235, deleted – A/N NSR 16879/TV 16880 (S-234 and S-235 replaced with exempt S-249 and S-250 storage totes and contain low VP additive materials)
  - S-239, revised throughput limit per A/N 14606
  - S-242, corrected model number to NT855-F3, corrected HP to 340, source previously misidentified
  - S-1027, corrected typographical error for consistency with Condition 17835
  - S-1032, deleted, Cogen Phase II not constructed
  - S-1033, deleted, Cogen Phase II not constructed
  - S-1058, a grandfathered source, was created for the Virgin Light Ends Process Unit, which was mistakenly identified as S-1014 for Cat Light Ends Process Unit in permit Condition # 10574 and 18043 – A/N NSR 2035/TV 17035
- Table IIB Exempt Sources:
  - S-64, added – A/N 16839/TV 16897 (S-64 and S-66 exemption)
  - S-66, added – A/N 16839/TV 16897 (S-64 and S-66 exemption)
  - S-171 and S-180 were added to the table for exempt sources because they no longer use for permitted services
  - S-249 and S-250 Demulsifier Totes, added – A/N NSR 16879/TV 16880

- Table IIC Abatement Devices:
  - A-13, added S-1058 to the list of controlled sources – A/N NSR 2035/TV 17035
  - A-24, changed description to Unit A and added S-157 as an abated device
  - A-24, added NSPS Subpart J for S-1 and S-2 as required by consent decree
  - A-25 was deleted and removed from service 15 years ago because S-23 was installed with low NOx burners
  - A-26, added S-1058 to the list of controlled sources – A/N NSR 16879/TV 16880
  - A-29, updated BAAQMD and SIP Regulation 8, Rule 44
  - A-36, corrected the language to reflect the right abatement, A/N TV 12476
  - A-37, corrected the language to reflect the right abatement, A/N TV 12476
  - A-38 and A-39, corrected the names, source numbers and conditions
  - A-51, updated BAAQMD and SIP Regulation 9, Rule 9
  - A-56, added S-157 as an abated device
  - A-56, added NSPS Subpart J for S-1 and S-2 as required by consent decree
  - A-57, Added the row to reflect the mass emission limit, A/N TV 12476
  - A-62, Selective Catalytic Reduction (SCR) System, deleted, Cogen Phase II sources S-1032 and S-1033 not constructed
  - A-63, CO Oxidizing Catalyst System, deleted, Cogen Phase II sources S-1032 and S-1033 not constructed
  - A-64, changed to A-62 consistent with Conditions 125 and 125 per A/N NSR 14443/TV 14442
  - A-62 (renumbered from A-64), changed description from Spare to Unit B and added S-157 as an abated device
  - A-62 (renumbered from A-64), added NSPS Subpart J for S-1 and S-2 as required by consent decree
  - A-66, added new cyclone separator for coke silos, – A/N NSR 16056/TV 16093
  - S-18 and S-19, added S-160 and S-1058 to the list of controlled sources

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in this section.

Changes to permit:

Language has been added to Section III to clarify that this section contains requirements that may apply to temporary sources. This provision allows contractors that have "portable" equipment permits that require them to comply with all applicable requirements to work at the facility on a temporary basis, even if the permit does not specifically list the temporary source. Examples are temporary sand-blasting or soil-vapor extraction equipment.

The dates of adoption or approval of the rules and their "federal enforceability" status in Table III have also been updated:

- BAAQMD Regulation 1, General Provisions and Definitions
- BAAQMD Regulation 2, Rule 1, General Requirements
- BAAQMD Regulation 2, Rule 2, Permits, New source Review
- BAAQMD Regulation 2, Rule 4, Permits, Emissions Banking
- SIP Regulation 2, Rule 6, Permits, Major Facility Review
- BAAQMD Regulation 2, Rule 9, Permits, Interchangeable Emission Reduction Credits
- BAAQMD Regulation 3, Fees
- BAAQMD Regulation 8, Rule 2, Miscellaneous Operations
- SIP Regulation 8-28; Adopted 05/24/2004 version
- BAAQMD Regulation 8, Rule 40 Aeration of Contaminated Soil and Removal of Underground Storage Tanks
- 40 CFR Part 61, Subpart M, National Emission Standards for Hazardous Air Pollutants – National Emission Standard for Asbestos
- 40 CFR Part 82, Subpart F, CFC Recycling and Emissions Reductions

Table III has been updated by adding the following rules and standards to conform to current practice:

- BAAQMD Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
- SIP Regulation 8, Rule 2, Miscellaneous Operations
- BAAQMD Regulation 8-28; Added 8-28-302
- SIP Regulation 8, Rule 40 Aeration of Contaminated Soil and Removal of Underground Storage Tanks
- California Health and Safety Code Section 41750 et seq., Portable Equipment
- California Health and Safety Code Section 44300 et seq., Air Toxics "Hot Spots" Information and Assessment Act of 1987
- California Health and Safety Code Section 93115 et seq., Airborne Toxic Control Measure for Stationary Compression Ignition Engines

IV. Source-Specific Applicable Requirements

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are "federally enforceable" and a "Y" (yes) indication will appear in the "Federally Enforceable" column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the "Federally Enforceable" column will have a "Y" for "yes". If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)

- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District's or EPA's websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

This permit did not require any complex applicability determinations.

District permit applications not included in this proposed permit.

This facility sends a large number of permit applications to the District every year. Review of the following permit applications was not completed in time to include the results in this Title V permits. The Title V permit will be revised periodically to incorporate these applications as permit revisions following the procedures in Regulation 2, Rule 6, Major Facility Review.

Application # (Title V/New Source Review)	**Project Description**
13244/13009	VIP ULSD F-5401 & F-5402
15607/15606	Crude Unit Baseline POC Main Stack
16480/5846	Valero Improvement Project
16657/none	Subsumed Permit Shields-NOx CEM span and opacity location
16708/16707	S-173, S-43, S-44 and S-46 relax source test from semi-annual to annual
16710/16706	S-237 remove the monthly visible monitor
16939/16938	Wastewater Treatment Plant, consolidate conditions
17032/16866	ULSD Mass Emissions
TBD/16937	Valero Improvement Project Amendment
TBD/3782	Increase fugitive count to Alky Unit Throughput
16840/none	Tank Farm Throughputs to remain the same as before splitting with NuStar Logistics
TDB/15934	Thermal oxidizer for Diversion Tanks (S-193, S-196, S-205, S-206)

Changes to permit:

- Throughout Section IV – Deleted past due Future Effective Date
- Table IV-Refinery:
  - Regulation 8-5, Storage of Organic Liquids adopted rule change and adopted SIP. Added 8-5-117 and SIP 8-5-117 per TV A/N 12422.
  - Regulation 8-8, Wastewater adopted rule change and adopted SIP
  - Regulation 8-10, Vessel Depressurization, change "Y" to "N" on federal enforceable requirement for Sections 501 and 502 since they have not been SIP approved
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); BAAQMD Regulation 2, Rule 1 (7/19/2006); SIP Regulation 9, Rule 1 (6/08/1999) BAAQMD Regulation 11, Rule 12 (7/18/1990); NSPS Title 40 Part 60 Subpart A (6/01/2006); NESHAPS Title 40 Part 61 Subpart A (4/09/2004); NESHAPS Title 40 Part 63 Subpart A (4/20/2006); and NESHAPS Title 40 Part 63 Subpart B (7/11/2005) have been updated
  - NESHAPS 40 CFR 63 Subpart B, delete 63.52(e)(1) past due requirements for permit applications for specific regulations. These obligations have been met or were determined not applicable to the facility.
  - NSPS 40 CFR 60 Subpart Kb, added 40 CFR 60.113b(b)(1), 60.113b(b)(1)(i), 60.113b(b)(1)(ii), 60.113b(b)(1)(iii) to allow a new tank to be brought into NSPS Kb service or for an existing tank to be returned to NSPS Kb service
  - Correct 63.641 descriptions
  - NESHAPS 40 CFR 63 Subpart G, add 40 CFR 63.120(b), 63.120(b)(1), 63.120(b)(1)(i), 63.120(b)(1)(ii), 63.120(b)(1)(iii), 63.120(b)(1)(iv) to allow for a new tank to be brought into MACT service or for an existing tank to be returned to MACT service
  - Re-arrange Conditions and NESHAPS regulations in alpha-numerical order
  - Added Condition 20762, Part 2 per TV A/N 12422
- Table IV-A1
  - The effective dates of SIP Regulation 9, Rule 1 (6/08/1999); NESHAPS 40 Part 63 Subpart UUU (4/20/2006) have been updated
  - Update 40 CFR 63 Subpart UUU - National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units
  - Delete 40 CFR 63 Subpart A – MACT general provisions because it is already included in the Table IV-Refinery for site-wide applicability
  - Add applicability for 40 CFR 60 Subpart J and new permit condition 125 Part 9 as required by consent decree per A/N 14604
  - Condition 125, Part 4 corrected A-64 to A-62 per A/N NSR 14443/TV 14442
  - Add new permit conditions 125 Parts 5, 6, 7, and 8 per A/N 14443 for dual operation of tail gas hydrogenation units
  - Condition 19466, updated part 3 – A/N NSR 16056/TV 16093
- Table IV-A2
  - The effective dates of SIP Regulation 9, Rule 1 (6/08/1999); NESHAPS 40 Part 63 Subpart UUU (4/20/2006) have been updated
  - Update 40 CFR 63 Subpart UUU - National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units

  - Delete 40 CFR 63 Subpart A – MACT general provisions because it is already included in the Table IV-Refinery for site-wide applicability
  - Add applicability for 40 CFR 60 Subpart J and new permit condition 126 Part 9 as required by consent decree per A/N 14604
  - Condition 126, Part 4 corrected A-64 to A-62 per A/N NSR 14443/TV 14442
  - Add new permit conditions 126 Parts 5, 6, 7, and 8 per A/N 14443 for dual operation of tail gas hydrogenation units
  - Condition 19466, updated part 3 – A/N NSR 16056/TV 16093
- Table IV-A3
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); BAAQMD Regulation 2, Rule 9 (6/15/2005); SIP Regulation 9, Rule 10 (3/29/2001) have been updated
  - Condition 19466, part 5, changed to part 5a and modified description to refer to part 5b. Added parts 5b and 5c.
  - Condition 22156, part 1, updated for consistency with language in Section VI
- Table IV-A4
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); NESHAPS 40 Part 63 Subpart UUU (4/20/2006) have been updated
  - Updated 40 CFR 63 Subpart UUU - National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units
  - Delete 40 CFR 63 Subpart A – MACT general provisions because it is already included in the Table IV-Refinery for site-wide applicability
  - Consistent with the addition of 40 CFR 63 Subpart UUU, the catalyst regenerator at the FCCU must be installed, operated and maintained per Performance Specification 1 of Appendix B
- Table IV-A5
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999) have been updated
- Table IV-A6.1
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); SIP Regulation 9, Rule 10 (3/29/2001); BAAQMD Regulation 2, Rule 9 (6/15/2005) have been updated
  - Condition #19466 Part 10, S-220 was installed with CEM for CO and O2 as required by Condition #21233 Part 9; therefore, it does not require semi annual source test requirement. Condition was revised to reflect this correction
- Table IV-A6.2
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); SIP Regulation 9, Rule 10 (3/29/2001); BAAQMD Regulation 2, Rule 9 (6/15/2005) have been updated
  - Condition #19466 Part 10, S-220 was installed with CEM for CO and O2 as required by Condition #21233 Part 9; therefore, it does not require semi annual source test requirement. Condition was revised to reflect this correction
- Table IV-A6.3
  - The effective date of SIP Regulation 9, Rule 10 (3/29/2001) has been updated
- Table IV-A8.1

  - The effective date of NSPS Title 40 Part 60 Subpart J (9/21/2006) has been updated
  - Add BAAQMD and SIP Regulation 1-523 for parametric monitors since Regulation 12-12 requires continuous monitoring of the pressure and water of water seals for each flare
  - Add BAAQMD adopted Regulation 12-12 for Flare Flares at Petroleum Refineries
- Table IV-A8.2
  - The effective date of NSPS Title 40 Part 60 Subpart J (9/21/2006) has been updated.
  - The title of NSPS Title 40 Part 60 Subpart J was corrected
  - Add exemption for Organic Liquid Storage and Distribution per Regulation 12-12-110
- Table IV-A9
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); NSPS Title 40 Part 60 Subpart J (9/21/2006); NSPS 40 Part 60 Appendix B (9/21/2006) have been updated
  - Update BAAQMD and SIP Regulation 1-523 for parametric monitors since Regulation 12-12 requires continuous monitoring of the pressure and water of water seals for each flare
  - Add BAAQMD adopted Regulation 12-12 for Flares at Petroleum Refineries
- Table IV-A10
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); SIP Regulation 9, Rule 10 (3/29/2001); NSPS Title 40 Part 60 Subpart J (9/21/2006); NSPS 40 Part 60 Appendix B (9/21/2006); BAAQMD Regulation 2, Rule 9 (6/15/2005) have been updated
  - Condition 10574, Part 13, the H2S concentration was changed to the limitation of NSPS 40 CFR 60 Subpart J
  - Condition 10574, Part 18 corrected typographical errors for consistency with Section VI
  - Condition 10574, Part 19, added back to table for S21 and S22
  - Condition #19466 Part 10, S-220 was installed with CEM for CO and O2 as required by Condition #21233 Part 9; therefore, it does not require semi annual source test requirement. Condition was revised to reflect this correction
- Table IV-A11
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); SIP Regulation 9, Rule 10 (3/29/2001); NSPS Title 40 Part 60 Subpart J (9/21/2006); NSPS 40 Part 60 Appendix B (9/21/2006); BAAQMD Regulation 2, Rule 9 (6/15/2005) have been updated
  - Condition 14318, Part 5, the H2S concentration was changed to the limitation of NSPS 40 CFR 60 Subpart J
  - Condition #19466 Part 10, S-220 was installed with CEM for CO and O2 as required by Condition #21233 Part 9; therefore, it does not require semi annual source test requirement. Condition was revised to reflect this correction
- Table IV-A12
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); SIP Regulation 9, Rule 10 (3/29/2001); BAAQMD Regulation 2, Rule 9 (6/15/2005) have been updated
  - Condition #19466 Part 10, S-220 was installed with CEM for CO and O2 as required by Condition #21233 Part 9; therefore, it does not require semi annual source test requirement. Condition was revised to reflect this correction
- Table IV-A13.1

  - The effective date of BAAQMD Regulation 1 (7/19/2006) has been updated
- Table IV-A13.2
  - The effective date of BAAQMD Regulation 9, Rule 9 (12/06/2006) has been updated
  - Update BAAQMD and SIP BAAQMD Regulation, Rule 9
- Table IV-A14.1
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); BAAQMD Regulation 2, Rule 4 (12/21/2004) have been updated
- Table IV-A14.2
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); BAAQMD Regulation 2, Rule 4 (12/21/2004); BAAQMD Regulation 9, Rule 9 (12/06/2006) have been updated
  - Update BAAQMD and SIP BAAQMD Regulation, Rule 9
- Table IV-A15
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); SIP Regulation 9, Rule 10 (3/29/2001); NSPS Title 40 Part 60 Subpart J (9/21/2006); NSPS 40 Part 60 Appendix B (9/21/2006); BAAQMD Regulation 2, Rule 9 (6/15/2005) have been updated
  - Condition #19466 Part 10, S-220 was installed with CEM for CO and O2 as required by Condition #21233 Part 9; therefore, it does not require semi annual source test requirement. Condition was revised to reflect this correction
- Table IV-A16
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); SIP Regulation 9, Rule 10 (3/29/2001); NSPS Title 40 Part 60 Subpart J (9/21/2006); NSPS 40 Part 60 Appendix B (9/21/2006); BAAQMD Regulation 2, Rule 9 (6/15/2005) have been updated
  - Condition #19466 Part 10, S-220 was installed with CEM for CO and O2 as required by Condition #21233 Part 9; therefore, it does not require semi annual source test requirement. Condition was revised to reflect this correction
- Table IV-A17
  - The effective date of BAAQMD SIP Regulation 9, Rule 10 (3/29/2001) has been updated
- Table IV-A18
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); SIP Regulation 9, Rule 10 (3/29/2001); NSPS Title 40 Part 60 Subpart J (9/21/2006); NSPS 40 Part 60 Appendix B (9/21/2006); BAAQMD Regulation 2, Rule 9 (6/15/2005) have been updated
  - Condition #19466 Part 10, S-220 was installed with CEM for CO and O2 as required by Condition #21233 Part 9; therefore, it does not require semi annual source test requirement. Condition was revised to reflect this correction
- Table IV-A19
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); SIP Regulation 9, Rule 10 (3/29/2001); NSPS Title 40 Part 60 Subpart Db (11/16/2006); NSPS Title 40 Part 60 Subpart J (9/21/2006); NSPS 40 Part 60 Appendix B (9/21/2006); BAAQMD Regulation 2, Rule 9 (6/15/2005) have been updated
  - Condition # 10574 Part 10 deleted, redundant with Regulation 8-28-302.
  - Condition #10574 Part 12, S-1014 was changed to S-1058 “Virgin Light Ends Process Unit” to label correctly – A/N NSR 2035/TV 17035

  - Condition 10574, Part 13, the H2S concentration was changed to the limitation of NSPS 40 CFR 60 Subpart J
  - Condition 10574, Part 18 corrected typographical errors for consistency with Section VI
  - Condition 10574, Part 19, changed basis to Regulation 9-10-502.2
  - Condition #19466 Part 10, S-220 was installed with CEM for CO and O2 as required by Condition #21233 Part 9; therefore, it does not require semi annual source test requirement. Condition was revised to reflect this correction
- Table IV-A20
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); NSPS Title 40 Part 60 Subpart Db (11/16/2006); NSPS Title 40 Part 60 Subpart J (9/21/2006); NSPS 40 Part 60 Appendix B (9/21/2006) have been updated
  - Condition 16027, Part 3, the H2S concentration was changed to the limitation of NSPS 40 CFR 60 Subpart J
  - Condition 19466, updated part 3 – A/N NSR 16056/TV 16093
  - Condition 16027, Part 15, added "initial" for source test demonstration
  - Condition 16027, Part 22, increased source test due date from 30 to 45 days per A/N NSR 16658/TV 16702
- Table IV-A21
  - Updated BAAQMD Regulation 9, Rule 8 (7/25/2007)
  - Add CARB ATCM requirements for stationary diesel engines
  - Add Condition 22851 due to new ATCM requirements for emergency firewater pumps.
- Table IV-A22.1
  - Deleted S-1032, Cogen Phase II not constructed
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); BAAQMD Regulation 9, Rule 9 (12/06/2006); NSPS 40 Part 60 Appendix B (9/21/2006); NSPS Title 40 Part 60 Subpart J (9/21/2006); NSPS Title 40 Part 60 Subpart GG (2/24/2006) have been updated
  - Update 40 CFR 60 Subpart GG
  - Condition 19177, Part 19g, the H2S concentration was changed to the limitation of NSPS 40 CFR 60 Subpart J
  - Update BAAQMD and SIP BAAQMD Regulation 9, Rule 9
  - Revised Condition 19177 to delete S-1032 and S-1033, Cogen Phase II not constructed
- Table IV-A22.2
  - Deleted S-1033, Cogen Phase II not constructed
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); NSPS Title 40 Part 60 Subpart Db (11/16/2006); NSPS Title 40 Part 60 Subpart J (9/21/2006); NSPS 40 Part 60 Appendix B (9/21/2006); have been updated
  - Condition 19177, Part 19g, the H2S concentration was changed to the limitation of NSPS 40 CFR 60 Subpart J
  - Delete 40 CFR 60.44b(e) because S-1031 was constructed after 7/9/1997
  - Revised Condition 19177 to delete S-1032 and S-1033, Cogen Phase II not constructed
- Table IV-A23
  - Updated BAAQMD Regulation 9, Rule 8 (7/25/2007)
  - Add CARB ATCM requirements for stationary diesel engines
  - Add Condition 22820 due to new ATCM requirements for emergency standby engines.

- Table IV-B1
  - Condition 19466, added part 2e, updated parts 3, 7 and 9 – A/N NSR 16056/TV 16093
- Table IV-B2
  - Condition 19466, updated part 3– A/N NSR 16056/TV 16093
- Table IV-B3
  - Condition #639, Part 2 for S-174 and S-175, the Regulation 6-301 averaging period was added to Ringelmann 1 for clarification
- Table IV-B4
  - Condition 19466, updated parts 3 and 7 – A/N NSR 16056/TV 16093
- Table IV-B5
  - The effective date of BAAQMD Regulation 8, Rule 2 (7/20/2005) has been updated
- Table IV-B7
  - Condition 19466, updated part 3 – A/N NSR 16056/TV 16093
- Table IV-B8
  - The effective date of BAAQMD Regulation 8, Rule 2 (7/20/2005) has been updated
  - Added Condition 17835, Parts 4, 5, and 6 per revised PTO issued 3/16/2006 under A/N 2390 for POC abatement facility for the S-1027 Light Ends Rail Rack
- Table IV-B9.1
  - The effective date of BAAQMD Regulation 8, Rule 2 (7/20/2005) has been updated
- Table IV-B9.2
  - The effective date of BAAQMD Regulation 8, Rule 2 (7/20/2005) has been updated
- Table IV-C1
  - The effective date of BAAQMD Regulation 8, Rule 2 (7/20/2005) has been updated
  - Added new BAAQMD Permit Condition 22326 per A/N NSR 15052/TV 17033
- Table IV-C2
  - Added new Condition 23446 for S-157 Sulfur Storage Pit abatement requirements per consent decree per A/N NSR 15317/TV 15386
  - Revised Condition 23446 for S-157 Sulfur Storage Pit for maintenance allowance per A/N 16656/TV 16843
- Table IV-C3
  - The effective date of BAAQMD Regulation 8, Rule 2 (7/20/2005) has been updated
- Table IV-C4.1
  - The effective date of BAAQMD Regulation 8, Rule 2 (7/20/2005) has been updated
- Table IV-C4.2
  - The effective date of BAAQMD Regulation 8, Rule 2 (7/20/2005) has been updated
- Table IV-C5
  - The effective date of BAAQMD Regulation 8, Rule 2 (7/20/2005) has been updated
- Table IV-D1
  - The effective date of NESHAPS Title 40 Part 63 Subpart UUU (4/20/2006) has been updated
  - Update 40 CFR 63 Subpart UUU - National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units
  - Delete 40 CFR 63 Subpart A – MACT general provisions because it is already included in the Table IV-Refinery for site-wide applicability

- Table IV-D3
  - Condition #10574 Part 12, S-1014 was changed to S-1058 "Virgin Light Ends Process Unit" to label correctly – A/N NSR 2035/TV 17035
- Table IV-D6
  - S-1014 title was corrected to Cat Light Ends (Naphtha Splitter, T-805) – A/N NSR 2035/TV 17035
  - Delete Condition #10574 Part 12 which does not apply to S-1014 "Cat Light Ends (Naphtha Splitter) – A/N NSR 2035/TV 17035
- Table IV-D9
  - Create a new table IV-D9 for S-1058 Virgin Light Ends – A/N NSR 2035/TV 17035
- Table IV-E1
  - Regulation 8-5 adopted rule change and SIP. Added Condition 20762 per TV A/N 12422.
- Table IV-E2
  - Delete Regulation 8-7-605, which does not apply to Phase I vapor recovery system. Regulation 8-7-605 applied to Vacuum-Assist Phase II vapor recovery system only
  - Delete Regulation 8-7-302.11 does not apply to Phase I vapor recovery system. Regulation 8-7-302.11 applied to Vacuum-Assist Phase II vapor recovery system only
  - Add Regulation 8-7-301.13, 302.14, 407 and 408 applicable requirements
  - Correct descriptions of 8-7-602 and 8-7-603
  - Add Conditions 20666 and 22323
- Table IV-F1
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); SIP Regulation 1 (6/28/1999); NESHAPS Title 40 Part 63 Subpart Y (4/20/2006) have been updated
  - Deleted BAAQMD 1-602 requirement for area and continuous emissions monitors. Source is only subject to parametric monitoring requirements.
  - Updated BAAQMD and SIP Regulation 8, Rule 44
  - Deleted all references to Condition 98 because lightering operations are no longer conducted by Valero and if resumed, any lightering operations would be regulated by BAAQMD Regulation 8, Rule 44
- Table IV-H1.1
  - The effective date of NESHAPS Title 40 Part 61 Subpart FF (12/04/2003) has been updated
  - Condition # 10574 Part 10 deleted, redundant with Regulation 8-28-302.
  - Condition #10574 Part 12, S-1014 was changed to S-1058 "Virgin Light Ends Splitter" to label correctly– A/N NSR 2035/TV 17035
- Table IV-H1.2
  - The effective date of NESHAPS Title 40 Part 61 Subpart FF (12/04/2003) has been updated
- Table IV-H2.1
  - Corrected tag for S-238 to TK-2083
  - Regulation 8-8 adopt rule change and SIP
  - The effective date of NESHAPS Title 40 Part 61 Subpart FF (12/04/2003) has been updated
- Table IV-H2.2
  - Regulation 8-8 adopt rule change and SIP

  - The effective date of NESHAPS Title 40 Part 61 Subpart FF (12/04/2003) has been updated
- Table IV-H4.1
  - Regulation 8-8 corrected title and federal enforceability
  - The effective date of NESHAPS Title 40 Part 61 Subpart FF (12/04/2003) has been updated
- Table IV-H4.2
  - The effective date of NESHAPS Title 40 Part 61 Subpart FF (12/04/2003) has been updated
- Table IV-H5.1
  - Regulation 8-8 corrected title
  - The effective date of NESHAPS Title 40 Part 61 Subpart FF (12/04/2003) has been updated
- Table IV-H5.2
  - Regulation 8-8 corrected title
  - The effective date of NESHAPS Title 40 Part 61 Subpart FF (12/04/2003) has been update
- Table IV-H6
  - Regulation 8-5 adopt rule change and SIP; Remove all citations except 8-5-117 exemptions. Added Condition 20762 per TV A/N 12422.
  - Regulation 8-8 adopt rule change and SIP
- Table IV-H7
  - Regulation 8-5 adopt rule change and SIP; Remove all citations except 8-5-117 exemptions. Added Condition 20762 per TV A/N 12422.
  - Regulation 8-8 adopt rule change and SIP
- Table IV-X
  - Add footnote (5) concerning SIP applicability of Regulation 8-18, 8-28 and 11-7
  - Add Cogen Compressors to fugitive applicability requirements.
  - Add exempt LPG sphere tanks (TK-1721 – TK-1725) to fugitive applicability requirements
  - Correct title of S-211 to Alkylate Debutanizer (at former MTBE unit)". The word former was added to be consistent with Table IIB
  - Correct title to "PFMR Feed". The facility is no longer manufactures or uses MTBE
  - Add Fugitive requirements for S-1058 Virgin Light Ends – A/N NSR 2035/TV 17035
  - Delete non-applicable Condition 10574, Part 1, 4, 5, 8, 10, 11, 12 from S-1014 Cat Light Ends – A/N NSR 2035/TV 17035
  - Delete Condition 10574 Part 10 from S-1003, 1007, 1011, 1020 thru 1024, 1026, Heartcut stream
  - Add Condition 17835, Part 5 to S-1027
  - Correct fugitive applicability requirements for S-1031 and S-1032, Cogen Phase I not subject to 40 CFR 60 Subpart GGG because not petroleum refinery process unit per definitions.
  - Delete S-1032 and S-1033, Cogen Phase II not constructed
- Table IV-I

  - Delete 40 CFR 60.482-10 standard for closed vent system and control devices because the fugitive component emission leaks are routed to the fuel gas system or to atmosphere, not to closed vent system and control devices. Application 12868.
  - Add adopted SIP Regulation 8-18
  - Add Regulation 8-28
  - Add adopted SIP Regulation 8-28
- Table IV-J3
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422.
  - The effective date of NESHAPS Title 40 Part 63 Subpart G (12/21/2006) has been updated
- Table IV-J4
  - Deleted S-66 – A/N 16839/TV 16897 (S-64 and S-66 exemption)
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422.
  - The effective date of NESHAPS Title 40 Part 63 Subpart G (12/21/2006) has been updated
- Table IV-J5
  - Deleted S-64 – A/N 16839/TV 16897 (S-64 and S-66 exemption)
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422.
  - The effective date of NESHAPS Title 40 Part 63 Subpart G (12/21/2006) has been updated
- Table IV-J6
  - Regulation 8-5 adopted rule change and SIP
  - The effective date of NESHAPS Title 40 Part 63 Subpart G (12/21/2006) has been updated
- Table IV-J7
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422.
  - The effective date of NESHAPS Title 40 Part 63 Subpart G (12/21/2006) has been updated
- Table IV-J8
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - The effective date of NESHAPS Title 40 Part 63 Subpart G (12/21/2006) has been updated
- Table IV-J9
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - NSPS Subpart Kb added 40 CFR 60.110b(b) per TV A/N 12422
- Table IV-J10
  - Renumbered table from J10 to J35. Added Benzene Wastewater to title. Changed tank from MACT Group 1 tank subject to 40 CFR 63 Subpart G to Benzene Waste NESHAP tank subject to 40 CFR 60 Subpart Kb as specified in MACT Periodic Report tank list.

  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table IV-J11
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Delete SIP 8-5-305.1, SIP 305.1.1 and add BAAQMD 8-5-305.2 because S-89 had new seals installed after 2/1/1993
- Table IV-J12
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table IV-J13
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - NSPS Subpart Kb added 40 CFR 60.110b(b) per TV A/N 12422
- Table IV-J14
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table IV-J15
  - Regulation 8-5 adopted rule change and SIP; Removed all citations except 8-5-117. exemptions. Added Condition 20762 per TV A/N 12422.
- Table IV-J16
  - Changed title to Fixed Roof Tank with Vapor Recovery to Fuel Gas; MACT Exempt (Mixed C5s)– A/N NSR 16837/TV 16838
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table IV-J17
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table IV-J18
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - NSPS Subpart Kb added 40 CFR 60.110b(b) per TV A/N 12422
  - Added 40 CFR 60.116b(e)(1) to the applicable requirement
  - Deleted 40 CFR 63 Subpart CC not applicable to S-227 (pentane is not HAP)
  - Deleted Condition #10574, Part 10, redundant with Regulation 8-28-302
- Table IV-J19
  - Regulation 8-5 adopted rule change and SIP; Removed all citations except 8-5-117 exemptions. Added Condition 20762 per TV A/N 12422.
  - Correct 63.641 description
  - Added Condition 20762, Part 2 per TV A/N 12422
- Table IV-J20
  - Regulation 8-5 adopted rule change and SIP; Removed all citations except 8-5-117 exemptions. Added Condition 20762 per TV A/N 12422.
- Table IV-J21
  - Delete “with Permit Conditions” from title – A/N NSR 16837/TV 16838

  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Correct 63.641 description
  - Delete BAAQMD Condition #76003 because the MMT Octane was banned in 1997. S-108 is out of service. New permit is required if it is returned to service
- Table IV-J22
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Correct 63.641 description
- Table IV-J23
  - Removed S234 and S235 – A/N NSR 16879/TV 16880 (S-234 and S-235 replaced with storage totes and contain low VP additive materials)
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table IV-J24
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Removed PV from title
- Table IV-J26
  - Incorporated Application 14606 and 14607. Changed title to Miscellaneous Equipment, Dock Sump. Deleted BAAQMD 8-5. Added BAAQMD 8-2. Changed Condition 18422
- Table IV-J27
  - Exempt from Regulation 8-5 for low vapor pressure (perchloroethylene); adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 and Condition 20762 per TV A/N 12422. Added Regulation 8-2 as applicable requirements per NSR A/N 16302/TV 16327
  - Incorporate A/N NSR 16302/TV 16327 – Increase throughput to 30 kgal/12 months
- Table IV-J28
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Correct description from Storage Drum to Pressure Tank, Nitrogen Blanket
  - Incorporate application 12577 to delete citations for PV vents on drums that does not have PV vents. Add Regulation 8-5-307 for pressure tank.
- Table IV-J29
  - Regulation 8-5 adopted rule change and SIP; Removed all citations except 8-5-117 exemptions. Added Condition 20762 per TV A/N 12422.
- Table IV-J30
  - Regulation 8-5 adopted rule change and SIP; Removed all citations except 8-5-117 exemptions. Added Condition 20762 per TV A/N 12422.
  - Modify 40 CFR 60.110b(b) description
  - Correct 63.641 description
- Table IV-J31.1
  - Regulation 8-5 adopted rule change and SIP; Removed all citations except 8-5-117 exemptions. Added Condition 20762 per TV A/N 12422.
- Table IV-J32

  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - The effective date of NSPS Title 40 Part 60 Subpart Kb (10/15/2003) has been updated
  - Incorporated A/N NSR 14754/TV 14765 – S81 new seals
- Table IV-J33
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - The effective date of NSPS Title 40 Part 60 Subpart Kb (10/15/2003) has been updated
  - Delete 63.640(o)(1) overlap with 40 CFR 60 Subpart QQQ because S104 built in 1969 before May 4 1987 effective date of QQQ.
  - Incorporated A/N NSR 14754/TV 14765 – S81 new seals
- Table IV-J34
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - The effective date of NSPS Title 40 Part 60 Subpart Kb (10/15/2003) has been updated
- Table IV-J36
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Deleted Regulation 1 and SIP Regulation 1. These are requirements for parametric monitoring that apply to the control device(s) and not the source.
- Table IV-J37
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Deleted Regulation 1 and SIP Regulation 1. These are requirements for parametric monitoring that apply to the control device(s) and not the source.
- Table IV-J38
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - NSPS Subpart Kb added 40 CFR 60.110b(b) per TV A/N 12422
  - Deleted Regulation 1 and SIP Regulation 1. These are requirements for parametric monitoring that apply to the control device(s) and not the source.
- Table IV-J39
  - Regulation 8-5 adopted rule change and SIP. Delete citations for PV vents on tanks that do not haves PV vents. Added BAAQMD and SIP 8-5-117 per TV A/N 12422.
  - Deleted Regulation 1 and SIP Regulation 1. These are requirements for parametric monitoring that apply to the control device(s) and not the source.
- Table IV-J40
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - NSPS Subpart Kb added 40 CFR 60.110b(b) per TV A/N 12422
  - Deleted Regulation 1 and SIP Regulation 1. These are requirements for parametric monitoring that apply to the control device(s) and not the source.
- Table IV-J41
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422

  - Incorporate application 12577 to delete citations for PV vents on drums that does not have PV vents. Add Regulation 8-5-307 for pressure tank
  - The effective date of NESHAPS Title 40 Part 61 Subpart FF (12/04/2003) has been updated
- Table IV-J42
  - Added "MACT" to title
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table IV-J43
  - Added "MACT" to title
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table IV-K1
  - Regulation 8-5 adopted rule change and SIP
  - The effective dates of BAAQMD Regulation 1 (7/19/2006); 40 CFR 60 Subpart A (6/01/2006); 40 CFR 60 Subpart J (9/21/2006) have been updated
  - Regulation 12-11, add 12-11-112 exemption for wastewater treatment systems
  - Regulation 12-12, add 12-12-112 exemption for wastewater treatment systems

V. Schedule of Compliance

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10 which provides that a major facility review permit shall contain the following information and provisions:

"409.10 A schedule of compliance containing the following elements:

10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;

10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and

10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted."

Since the District has not determined that the facility is out of compliance with an applicable requirement, the schedule of compliance for this permit contains only sections 2-6-409.10.1 and 2-6-409.10.2.

The BAAQMD Compliance and Enforcement Division has conducted a review of compliance over the past year and has no records of compliance problems at this facility during the past year. The compliance report is contained in Appendix A of this permit evaluation and statement of basis.

VI. Permit Conditions

During the Title V permit development, the District has reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for clarity and enforceability. Each permit condition is identified with a unique numerical identifier, up to five digits.

When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting has been added to the permit.

All changes to existing permit conditions are clearly shown in "strike-out/underline" format in the proposed permit. When the permit is issued, all 'strike-out" language will be deleted and all "underline" language will be retained, subject to consideration of comments received.

The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 et seq., an order of abatement pursuant to H&SC § 42450 et seq., or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

Conditions that are obsolete or that have no regulatory basis have been deleted from the permit.

Conditions have also been deleted due to the following:

- Redundancy in record-keeping requirements.
- Redundancy in other conditions, regulations and rules.
- The condition has been superseded by other regulations and rules.
- The equipment has been taken out of service or is exempt.
- The event has already occurred (i.e. initial or start-up source tests).

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- BACT: This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- Cumulative Increase: This term is used for a condition imposed by the APCO which limits a source's operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.
- Offsets: This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- PSD: This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.
- TRMP: This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy.

Changes to permit:

- Table VI-Index, Condition #98, deleted all references to Condition 98 because lightering operations are no longer conducted by Valero and if resumed, any lightering operations would be regulated by BAAQMD Regulation 8, Rule 44
- Table VI-Index, Condition #8564, correct "Foor" to "Roof"
- Table VI-Index, Condition #10574, add missing sources to the cross-reference index (typographical error). Corrected S-1014 to S-1058 for VLE – A/N NSR 2035/TV 17035
- Table VI-Index, Condition #18748, deleted, superceded by 22851
- Table VI-Index, Condition #18744, deleted, superceded by 22820
- Table VI-Index, Condition #18043, correct "VLE" to "CLE" – A/N NSR 16879/TV 16880
- Table VI-Index, Condition #19177, deleted S-1032 and S-1033, Cogen Phase II not constructed
- Table VI-Index, Condition #22820 for S243
- Table VI-Index, added Condition #22851 for S240, S241, S242
- Table VI-Index, added Condition #22323 for S165
- Table VI-Index, added Condition ##20666 for S165
- Table VI-Index, delete Condition #76003 for S108
- Condition #98, deleted all references to Condition 98 because lightering operations are no longer conducted by Valero and if resumed, any lightering operations would be regulated by BAAQMD Regulation 8, Rule 44
- Condition # 125 and #126, added Part 9 as required by consent decree per A/N 14604
- Condition # 125 and #126, added Parts 5, 6, 7, and 8 per A/N 14443 for dual operation of tail gas hydrogenation units and corrected Part 4 to renumber A-64 to A-62
- Condition #639, Part 2 for S-174 and S-175, the Regulation 6-301 averaging period was added to Ringelmann 1 for clarification
- Condition #8564, Part 3. Deleted because Benzene Waste NESHAP 40 CFR 61 Subpart FF does not apply to crude oil tank (tank no longer owned by Valero – see Facility B5574 Title V Permit).
- Condition # 9584. Incorporated A/N NSR 16302/TV 16327. Increased S-158 throughput to 30 kgal/12 months.
- Condition #10574, add missing sources (typographical error). Corrected S-1014 to S-1058 for VLE in Fugitives Section – A/N NSR 2035/TV 17035
- Condition #10574, Part 10, deleted condition because it is redundant with 8-28-302
- Condition #10574, Part 13, change the H2S concentration to the limitation of NSPS 40 CFR 60 Subpart J
- Condition #10574, Part 19, changed basis to Regulation 9-10-502.2 in place of monitoring and records
- Condition #14318, part 5, change the H2S concentration to the limitation of NSPS 40 CFR 60 Subpart J
- Condition #16027, Part 3, change the H2S concentration to the limitation of NSPS 40 CFR 60 Subpart J
- Condition #16027, Part 15, added "initial" for source test demonstration
- Condition #16027, Part 19, corrected typographical error
- Condition 1#6027, Part 22, increased source test due date from 30 to 45 days per A/N NSR 16658/TV 16702

- Condition #17835, Added Condition #17835, Parts 4, 5, and 6 per revised PTO issued 3/16/2006 under A/N 2390 for POC abatement facility for the S-1027 Light Ends Rail Rack
- Condition #18043, Corrected "Virgin" to "Cat" for S1014
- Condition #18422, Revise throughput limit per A/N 14606 and revised Part 2 and the basis of Part 3
- Condition #18744, Superceded by Condition #22820
- Condition #18748, Superceded by Condition #22851
- Condition 19177, revised to delete S-1032 and S-1033, Cogen Phase II
- Condition #19177, Part 19g, change the H2S concentration to the limitation of NSPS 40 CFR 60 Subpart J
- Condition #19466, added part 2e and updated parts 3, 7, and 9 – A/N NSR 16056/TV 16093 (for S-8 Coke Storage)
- Condition #19466, Part 5, changed language to allow the use of 3 of the 5 precipitators for no more than 30 days per year. Changed Part 5 to Part 5a. Added Parts 5b and 5c
- Condition #19466, Part 10, S-220 was installed with CEM for CO and O2 as required by Condition #21233 Part 9; therefore, it does not require semi annual source test requirement. Condition was revised to reflect this correction
- Condition #20666, added new condition for S165
- Condition #20762, Part 2, added per TV A/N 12422. Renumbered existing part 2 to part 3.
- Condition #21233, Part 5A, added new NOx Box operating point for S-7 per A/N 15962 added new NOx Box operating points for S-20 per A/N 12701, corrected operating point for min O2 at high firing for S-20 from 2, 37 to 1.6, 37 as originally intended per A/N 11307
- Condition #21233, Part 5C, corrected the language from Part 7 to Part 6
- Condition #22820, added new condition for S243
- Condition #22851, added new condition for S240, S241, S242
- Condition #22323, added new condition for S165
- Condition #23326 added new condition for S-27 per A/N 15052
- Condition #76003, deleted condition for S108. Additive no longer available and S108 out of service.
- Condition #23446, added new condition for S-157 Sulfur Storage Pit abatement requirements per A/N NSR 15317/TV 15386
- Revised Condition #23446 for S-157 Sulfur Storage Pit for maintenance allowance per A/N 16656/TV 16843

VII. Applicable Limits and Compliance Monitoring Requirements

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

Monitoring decisions are typically the result of a balancing of several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) degree of variability in the operation and in the control device, if there is one, 3) the potential severity of

impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) whether there is some other factor, such as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

These factors are the same as those historically applied by the District in developing monitoring for applicable requirements**.** It follows that, although Title V calls for a re-examination of all monitoring**,** there is a presumption that these factors have been appropriately balanced and incorporated in the District's prior rule development and/or permit issuance. It is possible that, where a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation**.** Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise the nature or frequency of monitoring only when it can support a conclusion that existing monitoring is inadequate**.**

Changes to permit:

A note has been added at the beginning of the section to clarify that this section is a summary of the limits and monitoring, and that in the case of a conflict between Sections I-VI and Section VII, the preceding sections take precedence.

- Throughout Section VII – Deleted past due Future Effective Date
- Table VII-Refinery
  - Regulation 8-5 adopted rule change and SIP. Added permit condition 20762 per TV A/N 12422.
- Table VII-A1
  - Added 40 CFR 63 Subpart UUU TRS monitoring
  - Add monitoring for 40 CFR 60 Subpart J and new permit condition 125 Part 9 as required by consent decree per A/N 14604
  - Add monitoring for new permit conditions 125 Parts 5, 6, 7, and 8 per A/N 14443 for dual operation of tail gas hydrogenation units
- Table VII-A2
  - Added 40 CFR 63 Subpart UUU TRS monitoring
  - Add monitoring for 40 CFR 60 Subpart J and new permit condition 126 Part 9 as required by consent decree per A/N 14604
  - Add monitoring for new permit conditions 126 Parts 5, 6, 7, and 8 per A/N 14443 for dual operation of tail gas hydrogenation units
- Table VII-A3
  - Added Condition 19466, part 5c source test for 3 precipitator operation
  - Add Type of Limit "FP" for 6-310.3 limit
  - Deleted "ESP Operating Parameter/" because the requirement to establish and use ESP operating parameters to demonstrate compliance BAAQMD 6-310.3 has been replaced with a requirement for continuous opacity monitoring in Condition 22156, Part 1
- Table VII-A4
  - Added 40 CFR 63 Subpart opacity monitoring and initial source test for PM

- Table VII-A8.1
  - Added Regulation 12-12-501 for water seal pressure and level continuous monitoring requirements
- Table VII-A9
  - Added Regulation 12-12-501 for water seal pressure and level continuous monitoring requirements
- Table VII-A10
  - Added Condition 10574, part 19 back to Fuel Flow limit
  - Change Condition 10574, part 13 and 17 H2S limit to 162 ppm
- Table VII-A18
  - Delete Condition 19466 Part 14 from 9-10-303 NOx monitoring. Cleanup of previous deletion of S-173 from Condition 19466 Part 14.
  - Added Condition 21233, Part 7A for 9-10-303 NOx monitoring requirement
- Table VII-A11
  - Change Condition 14318, part 5 H2S limit to 162 ppm
- Table VII-A13.2
  - Updated BAAQMD and SIP Regulation 9, Rule 9
- Table VII-A14.2
  - Updated BAAQMD and SIP Regulation 9, Rule 9
- Table VII-A19
  - Change Condition 10574, part 13 H2S limit to 162 ppm
  - Add Condition 19466, Part 10 for CO CEM for BAAQMD 9-10-305 and Condition 10574, Part 24
- Table VII-A20
  - Change Condition 16027, part 3 H2S limit to 162 ppm
- Table VII-A21
  - Remove Condition 18748 limits and add Condition 22851 limits for firewater pump ATCM requirements.
  - Updated BAAQMD Regulation 9, Rule 8
- Table VII-A22.1
  - Deleted S-1032, Cogen Phase II not constructed
  - Changed Sulfur monitoring citation and frequency for 40 CFR 60 Subpart GG, 60.333(b) to reflect latest regulation
  - Change Condition 19177, part 19g H2S limit to 162 ppm
  - Revised Condition 19177 limits and monitoring requirements, Cogen Phase II not constructed
  - Updated BAAQMD and SIP Regulation 9, Rule 9
  - Replaced 9-9-501 monitoring requirement with BAAQMD Condition 19177, Part 38
- Table VII-A22.2
  - Deleted S-1033, Cogen Phase II not constructed
  - Change Condition 19177, part 19g H2S limit to 162 ppm
  - Revised Condition 19177 limits and monitoring requirements, Cogen Phase II not constructed
- Table VII-A23

  - Remove Condition 18744 limits and add Condition 22820 limits for emergency standby engine ATCM requirements.
  - Updated BAAQMD Regulation 9, Rule 8
- Table VII-C1
  - Added monitoring requirements for new Condition # 23326 for S-27
- Table VII-D6
  - Corrected Title from Virgin to Cat
- Table VII-E1
  - Added BAAQMD and SIP 8-5-117 and Condition 20762 per TV A/N 12422
- Table VII-E2
  - Added 98% recovery requirement from 8-7-301.10
  - Added test limits from Condition # 20666, part 2
  - Added throughput limit from Condition # 22323, part 1
- Table VII-F
  - Deleted all references to Condition 98 because lightering operations are no longer conducted by Valero and if resumed, any lightering operations would be regulated by BAAQMD Regulation 8, Rule 44
  - Updated BAAQMD and SIP Regulation 8, Rule 44
- Table VII-H2.1
  - Added BAAQMD and SIP 8-8 exemptions
- Table VII-H2.2
  - Added BAAQMD and SIP 8-8 exemptions
- Table VII-H4.2
  - Identified abatement devices
- Table VII-H5.2
  - Identified abatement devices
  - Added BAAQMD and SIP 8-8-307.2 for Carbon Canisters
  - Added SIP 8-8-307.2 for Thermal Oxidizer and corrected monitoring requirement citation to Parts 5 & 6
  - Change “CEM” with “VOC analyzer” for NMHC monitoring
  - Added monitoring requirement citation and type for BAAQMD 8-8-303 monitoring
  - Corrected “11319” to “13319” typographical error
- Table VII-H6
  - Modified monitoring requirement for 8-5-117 to add Condition 20762 per TV A/N 12422 and delete 8-5-501.1.
  - Added BAAQMD and SIP 8-8 exemptions
- Table VII-H7
  - Added BAAQMD and SIP 8-5-117 and Condition 20762 per TV A/N 12422
  - Added BAAQMD and SIP 8-8 exemptions
- Table VII-I
  - Delete monitoring requirements for 40 CFR 60.482.10 standard for closed vent system and control devices because the fugitive component emission leaks are routed to the fuel gas system or to atmosphere, not to closed vent system and control devices. Application 12868.

  - Added and modified BAAQMD and SIP 8-28 monitoring requirements to reflect current regulation.
  - Modified footnotes
- Table VII-J3
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J4
  - Deleted S-66 – A/N 16839/TV 16897 (S-64 and S-66 exemption)
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J5
  - Deleted S-64 – A/N 16839/TV 16897 (S-64 and S-66 exemption)
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J6
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J7
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J8
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J9
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J10
  - Renumbered table from J10 to J35. Added Benzene Wastewater to title. Changed tank from MACT Group 1 tank subject to 40 CFR 63 Subpart G to Benzene Waste NESHAP tank subject to 40 CFR 60 Subpart Kb as specified in MACT Periodic Report tank list.
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J11
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J12
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J13
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J14
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J15

  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 and Condition 20762 per TV A/N 12422
- Table VII-J16
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J17
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J18
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Add 40 CFR 60.116b(e)(1) to the applicable requirement
  - Deleted 40 CFR 63 Subpart CC, not applicable to pentane
- Table VII-J19
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 and Condition 20762 per TV A/N 12422
- Table VII-J20
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 and Condition 20762 per TV A/N 12422
- Table VII-J21
  - Delete "with Permit Conditions" from title – A/N NSR 16837/TV 16838
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Delete BAAQMD Condition #76003 because the MMT Octane was banned in 1997. S-108 is out of service. New permit is required if it is returned to service
- Table VII-J22
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J23
  - Removed S234 and S235 – A/N NSR 16879/TV 16880 (S-234 and S-235 replaced with storage totes and contain low VP additive materials)
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J24
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Removed PV from title and removed 8-5-303.1 and 303.2 monitoring requirements for PV vents.
- Table VII-J25
  - Deleted table for S170 (source removed and Table IV-J25 previously deleted).
- Table VII-J26
  - Incorporated Application 14606 and 14607. Changed title to Miscellaneous Equipment, Dock Sump. Deleted BAAQMD 8-5. Added BAAQMD 8-2. Changed Condition 18422.
- Table VII-J27

  - Exempt from Regulation 8-5 for low vapor pressure (perchloroethylene); adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 and Condition 20762 per TV A/N 12422. Added Regulation 8-2 as applicable requirements per NSR A/N 16302/TV 16327
  - Incorporate A/N NSR 16302/TV 16327 – Increase throughput to 30 kgal/12 months
- Table VII-J28
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Incorporated Application 12577 to correct the tank from a fixed roof to nitrogen-blanketed pressure tank with PV valves that do not vent to atmospheres. Correct description from Storage Drum to Pressure Tank, Nitrogen Blanket. Delete monitoring requirements for 8-5-306, 8-5-303.1, and 8-5-303.2. Add Regulation 8-5-307 for pressure tank
- Table VII-J29
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 and Condition 20762 per TV A/N 12422
- Table VII-J30
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 and Condition 20762 per TV A/N 12422
- Table VII-J31.1
  - Regulation 8-5 adopted rule change and SIP, Added BAAQMD and SIP 8-5-117 and Condition 20762 per TV A/N 12422
- Table VII-J31.2
  - Editorial changes only
- Table VII-J32
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Incorporated A/N NSR 14754/TV 14765 – S81 new seals
- Table VII-J33
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Incorporated A/N NSR 14754/TV 14765 – S81 new seals
- Table VII-J34
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J36
  - Incorporated application 12476. Corrected SIP 8-5-306 to delete annual source test.
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J37
  - Incorporated application 12476. Corrected SIP 8-5-306 to delete annual source test.
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J38
  - Incorporated application 12476. Corrected SIP 8-5-306 to delete annual source test.

  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Changed type of limit from VOC to NMHC (2 places)
- Table VII-J39
  - Incorporated application 12476. Corrected SIP 8-5-306 to delete annual source test.
  - Regulation 8-5 adopted rule change and SIP. Delete citations for PV vents on tanks that do not haves PV vents. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J40
  - Incorporated application 12476. Corrected SIP 8-5-306 to delete annual source test.
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Changed type of limit from VOC to NMHC (2 places)
- Table VII-J41
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
  - Incorporated application 12577 to delete citations for PV vents on drums that does not have PV vents. Add Regulation 8-5-307 for pressure tank.
- Table VII-J42
  - Added "MACT" to title
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-J43
  - Added "MACT" to title
  - Regulation 8-5 adopted rule change and SIP. Added BAAQMD and SIP 8-5-117 per TV A/N 12422
- Table VII-K1
  - Regulation 8-5 adopted rule change and SIP

VIII. Test Methods

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not applicable requirements.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

Changes to permit:

- Regulation 8-5 adopted rule change and SIP. Added test method citations in parentheses for clarity. Consolidated all similar test methods in single rows. Added new test methods and citations from Regulation 8-5 (10/18/2006).
- Regulation 8-44 adopted rule change and SIP.
- 40 CFR 60 Subpart GG 60.333(b) – Revise acceptable test method for ASTM D10728-80 or 90 in lieu of ASTM D3031-81, 4084-82, and 3246-81,92 and reference to the permit shield.

– Regulation 9-9 adopted rule change and SIP.

IX. Permit Shield:

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, or (2) A provision in a major facility review permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program. The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility has the first and second types of permit shield.

Changes to permit:

- Table IX-A-2 and IX-A-3 deleted. Sulfur plants (S-1 and S-2) are now subject to NSPS Subpart J per consent decree. Shield no longer applies.
- Table IX-B-4 – Corrected typographical error to replace Regulation 9-9-303 with 9-3-303
- Table IX-B-5 – Deleted permit shield. Revised NSPS Subpart GG for turbines introduces custom schedule alternatives that allow the use of TRS CEM for fuel sulfur content monitoring.
- Table IX-B-5 – Deleted S-1032, Cogen Phase II not constructed.
- Table IX-B-6 – Deleted S-1033, Cogen Phase II not constructed.

X. Revision History

The revision history was updated.

XI. Glossary

Changes to permit

There is a minor correction to the definition of Major Facility.

XII. Appendix A - State Implementation Plan

Changes to permit:

This section has been deleted. The address for EPA's website is now found in Sections III and IV.

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

E. Differences between the Application and the Proposed Permit:

- NSR Application 12341 mentioned the associated TV A/N 10351 in incorrect. It should be TV A/N 12403.

APPENDIX A

GLOSSARY

ACT
Federal Clean Air Act

APCO
Air Pollution Control Officer

ARB
Air Resources Board

BAAQMD
Bay Area Air Quality Management District

BACT
Best Available Control Technology

Basis
The underlying authority which allows the District to impose requirements.

CAA
The federal Clean Air Act

CAAQS
California Ambient Air Quality Standards

CAPCOA
California Air Pollution Control Officers Association

CEQA
California Environmental Quality Act

CFR
The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

CO
Carbon Monoxide

Cumulative Increase
The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Cumulative increase is used to determine whether threshold-based requirements are triggered.

District
The Bay Area Air Quality Management District

dscf
Dry Standard Cubic Feet

EPA
The federal Environmental Protection Agency.

Excluded
Not subject to any District regulations.

Federally Enforceable, FE
All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60 (NSPS), Part 61 (NESHAPs), Part 63 (MACT), and Part 72 (Permits Regulation, Acid Rain), including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

FP
Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

HAP
Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

Major Facility
A facility with potential emissions of: (1) at least 100 tons per year of regulated air pollutants, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

MFR
Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Federal Clean Air Act and implemented by District Regulation 2, Rule 6.9999

NESHAPS
National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63.

NMHC
Non-methane Hydrocarbons (Same as NMOC)

NMOC
Non-methane Organic Compounds (Same as NMHC)

NOx
Oxides of nitrogen.

NSPS
Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. Mandated by Title I, Section 111 of the Federal Clean Air Act, and implemented by 40 CFR Part 60 and District Regulation 10.

NSR
New Source Review. A federal program for pre-construction review and permitting of new

and modified sources of pollutants for which criteria have been established in accordance with Section 108 of the Federal Clean Air Act. Mandated by Title I of the Federal Clean Air Act and implemented by 40 CFR Parts 51 and 52 and District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

Offset Requirement
A New Source Review requirement to provide federally enforceable emission offsets for the emissions from a new or modified source. Applies to emissions of POC, NOx, PM10, and SO2.

Phase II Acid Rain Facility
A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

POC
Precursor Organic Compounds

PM
Particulate Matter

PM10
Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns

PSD
Prevention of Significant Deterioration. A federal program for permitting new and modified sources of those air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

SIP
State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

SO2
Sulfur dioxide

THC
Total Hydrocarbons (NMHC + Methane)

Title V
Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

TOC
Total Organic Compounds (NMOC + Methane, Same as THC)

TPH
Total Petroleum Hydrocarbons

TRMP
Toxic Risk Management Plan

TSP
Total Suspended Particulate

VOC
Volatile Organic Compounds

Units of Measure:

bhp	=	brake-horsepower
btu	=	British Thermal Unit
cfm	=	cubic feet per minute
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m^2	=	square meter
min	=	minute
mm	=	million
MMbtu	=	million btu
MMcf	=	million cubic feet
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
yr	=	year

APPENDIX B

Permit Evaluation Reports

For

Application 2390/TV 17034 Light Ends Rail Rack (S-1027) is attached because the last TV revision did not include the permit evaluation; however, all the changes were modified in the last revision.

Application 12341/TV 12403 EVR Phase I Replacement for S-165
Underground Gasoline Tank 6000 gallons

Application TV 12422 Tank Exemptions, 8-5-117 and Subpart Kb 60.110b(b)
Low Vapor Pressure Exempt Service for Tanks

Application TV 12476 Correct the monitoring frequency and type requirement from annual source test to continuous temperature monitor for A-57 (thermal oxidizer) and to continuous VOC concentration and flowrate for A-36 and A-37 (carbon canisters)

Application TV 12577 Correct S-208 and S-1013 to pressure tanks

Application 13201/TV 13200 H2S Limit Consistency

Application 13203/TV 13202 Condition 19466, Part 5, ESP Operation for S-3 and S-4
Crude Preheat Furnace, F101 and Reduced Crude Furnace, F102

Application 14443/TV 14442 SRU Parallel Tail Gas Unit

Application 14604/TV 14603 SRU Constant Decree, H2S Limit for S-1 and S-2
Sulfur Recovery Units A and B

Application 14606/TV 14607 Condition 18422 for S-239
Crude/Product Dock Sump TK-1918, 3,100 gallons

Application 14754/TV 14765 Seal Replacement for S-81
TK-1753 Slop/Gasoline Tank, External Floating Roof, 3654K gallons

Application 15052/TV 17033 S-27, Powerformer Regeneration Facilities

Application 15317/TV 15386 Abatement Consent Decree S-157
Sulfur Storage Pit

Application 15961/TV 15962 Condition 21233 (NOx Box) for S-7
Process Furnace F-103, Jet Fuel Hydrofining, 53 MMBtu/hr

Application 16056/TV 16093 S-8 Silos replacement of abatement

Application 16302/TV 16327 S-27 and S-158 PERC tank throughput increase

Application 16656/TV 16843 S-157 Sulfur Storage Pit Maintenance Allowance

Application 16658/TV 16702 S-237 Condition 16027 Increase source test due date

Application 16837/TV 16838 S-108 and S-124 are not pressure tanks

Application 16839/TV 16897 S-64 and S-66 Exemption

Application 16879/TV 16880 S-234 and S-235 replaced with exempt storage totes (S-149 and S-150) and contain low VP materials

EVALUATION REPORT

Applicant **Valero Refining Company** **Application Number 2390**
Plant Number 12626

1. Background:

Valero submitted Application Number 1916 to obtain a Permit to Operate the following equipment due to a loss of exemption:

S-1027 Light Ends Rail Racks; 10 loading spots for propanes, butanes and pentanes

The equipment was previously exempt under Regulation 2-1-123.3 for the storage or loading of liquid gases. On May 17, 2000, the District adopted Regulation 2-1-319.1, which imposed a cap on all exemptions limiting emissions of any single pollutant, after abatement to no more than 5 tons per year. Valero estimated the historic POC emissions from this source to be 12.5 tons per year. Hence, a loss of exemption permit was required and one was issued for Application Number 1916.

Valero load and unload up to 30 rail cars per day at the Light Ends Loading Rack (S-1027). The emissions emanate from filling these rail cars. At the end of the filling operation, the arms are liquid filled. The material between the arms isolation valve and the rail car is released to atmosphere as part of the disconnection process creating the emissions. Valero is proposing to install facilities to eliminate these emissions by routing them to an existing sphere or fuel gas recovery system. Valero has submitted this application to the District for the installation of loading arm drain piping. Subsequently, Valero intends to submit a banking application to the District in the future for these emissions reductions.

2. Emission Calculations:

The fugitive emissions from the component additions of the proposed new pipelines were calculated using emission factors from EPA's Protocol for Equipment Leak Emission Estimate and the estimated fugitive component counts. The new drain system is expected to include the following new fugitive emissions for POC:

Component Type	Service Type	# of Components	Emission Factor (kg/hr/source)	Subtotal (kg/hr)
Valves	Gas	50	1.30E-05	6.50E-03
Others	Gas	150	1.20E-04	1.80E-02

Total = 0.0245 kg/hr

POC = 0.0245 kg/hr(24 hr/day)(1000 g/kg)(lb/454g) = 1.3 lb/day
POC = 1.3 lb/day(365 day/yr)(ton/2000 lb) = 0.2 TPY

Because the proposed addition of fugitive components is not estimated to exceed 10 lbs/day, and the components are expected to meet applicable requirements of Regulation 8 rules, the proposed addition of fugitive components is exempt from the requirements of Regulation 2-1-301 and 2-1-302, per Regulation 2-1-128.21.

TOXICS

Because the fugitive emissions estimated from S-1027 are expected to be composed of propanes, butanes, and pentanes, no toxic emissions are estimated. Hence, no risk screening is required.

3. Statement of Compliance:

The miscellaneous operations involving the Light Ends Rail Racks (S-1027) and the proposed installation of the loading arm drain piping is exempt from Regulation 8-2, per Section 114 of that regulation. This existing source is not subject to the requirements of CEQA because the proposed addition of the loading arm drain piping is exempt from permit requirements, per Regulation 2-1-128.21 and 2-1-128.19.

Regulation 10 - New Source Performance Standard and Regulation 11 - Hazardous Pollutants requirements are not triggered. Because this application is ministerial (exempt source), the requirements of the California Environmental Quality Act (CEQA) are not triggered. Because this facility is not located within 1000 feet of any school, public noticing is not required. There no K-12 schools located within 1000 feet of the facility, and hence, no public noticing requirements are triggered.

4. Conditions

I recommend no additional conditions be added to S-1027. If and when Valero submits their banking application, additional conditions should be added to ensure the emission reductions that they request to bank.

5. Authority to Construct:

I recommend that an Authority to Construct be issued to Valero for the following:

S-1027 Installation of Loading Arm Drain Piping to Light Ends Rail Racks

6. Exemptions:

None.

Application Reviewed By: **M.K. Carol Lee**
Position: **Senior Air Quality Engineer**
Signature of Reviewer

_____
Date

Evaluation Report
A/N 12341
G# 6764 (Plant 12626, Source 165)
Valero Refinery, 3400 E. Second St., Benicia

Background

Valero has applied for an A/C to replace the Phase I vapor recovery on the existing underground gasoline tank at their Benicia refinery with EVR certified Phase I equipment. No other work is proposed under this application.

Valero currently operates a 6,000 gallon underground gasoline tank with one EW A4005 gasoline nozzle equipped with two-point Phase I and balance Phase II vapor recovery equipment. This equipment is permitted as Source 165 at Plant 12626 and is not currently subject to any throughput conditions.

Proposed Phase I equipment consists of OPW EVR Phase I per CARB Executive Order VR-102. All other equipment will remain unchanged.

Emissions

No change in permitted throughput has been requested. A baseline of 92,000 gal/yr is being established under this application as the highest reported throughput in the three previous years. This station will be conditioned at this level under Cond #22323.

As the EVR Phase I equipment is certified at 98% efficiency (vs. 95% for conventional Phase I) there should be no increase in emissions per unit throughput.

The net emission increase under this A/N will be zero.

Statement of Compliance

As there will be no net emissions increase from this project, this application is exempt from the BACT and offset requirements of Regulation 2, Rule 2.

The proposed OPW EVR Phase I equipment is certified under G-VR-102D, while the existing Phase II equipment is certified under G-70-17AD and 52AM. Use of CARB certified equipment satisfies all requirements of District Regulation 8, Rule 7.

Permit Conditions

Authority to Construct Conditions:

(Data Bank Cond ID# to be assigned)

1. The Phase I equipment shall be installed in accordance with California Air Resources Board (CARB) Executive OrderVR-102 (OPW EVR Phase I systems).
2. Only the replacement of the existing Phase I system with EVR-certified equipment is authorized under this Authority to Construct. No other work, including modifications to dispensers or vapor recovery piping, is allowed.

3. Only over fill prevention devices (e.g., flapper valves, ball floats) listed in the applicable CARB Executive Order as compatible with the Phase I system may be installed. Note: Executive Order VR-104-A prohibits the use of drop tube overfill prevention devices (flapper valves) in conjunction with the CNI EVR Phase I system.
4. No more than three pressure vacuum (PV) valves may be installed on any manifolded tank system. The District recommends that vents be manifolded to a single relief valve whenever possible.
5. The following performance tests shall be successfully conducted within (30) days of start-up:.

   I. Static Pressure Performance Test, in accordance with CARB procedure TP-201.3 or the applicable equivalent District test procedure (ST-30). If the tank size is 500 gallons or less, the test shall be performed on an empty tank.

   II. Phase I Adaptor Static Torque Test on all rotatable Phase I adaptors in accordance with CARB TP-201.3.

   III. One of the following tests. The measured leak rate for each component shall be within the limits set in the applicable CARB Executive Order:

   a) Stations equipped with drop tube overfill prevention devices ("flapper valves"): a Drop Tube Overfill Prevention Device and Spill Container Drain Valve Leak Test in accordance with CARB Test Procedure TP-201.1D and the applicable CARB Executive Order.

   b) All other stations: a Drop Tube/Drain Valve Assembly Leak Test in accordance with CARB Test Procedure TP-201.1C and the applicable CARB Executive Order.

6. The applicant shall notify Source Test by FAX at (415) 749-4922, 48 hours prior to any testing required for permitting. Test results for the performance tests required pursuant to conditions #5 shall be submitted within twenty (20) days of test date.
7. The current gasoline throughput at this facility shall not exceed 92,000 gallons of fuel per year.

Permit to Operate Conditions

COND# 20666 ----------

1. The OPW EVR Phase I Vapor Recovery System, including all associated plumbing and components, shall be operated and maintained in accordance with the most recent version of California Air Resources Board (CARB) Executive Order VR-102. Section 41954(f) of the California Health and Safety Code prohibits the sale, offering for sale, or installation of any vapor control system unless the system has been certified by the state board. (District Regulation 8-7-301.2)

2. The owner or operator shall conduct and pass a Rotatable Adaptor Torque Test (CARB Test Procedure TP201.1B) and either a Drop Tube/Drain Valve Assembly Leak Test (TP201.1C) or, if operating drop tube overfill prevention devices ("flapper valves"), a Drop Tube Overfill Prevention Device and Spill Container Drain Valve Leak Test (TP201.1D) at least once in each 36- month period. Measured leak rates of each component shall not exceed the levels specified in VR-102. Results shall be submitted to BAAQMD within 15 days of the test date in a District-approved format. (District Regulation 8-7-301.2)

COND# 22323 ----------

1. Pursuant to BAAQMD Toxic Section Policy, the owner/operator shall ensure that the annual gasoline throughput does not exceed 92,000 gallons in any consecutive 12 month period.

Title V Permit Revisions

This plant has a Title V permit. This project will require a minor revision of the Title V permit. The revisions to the Title V permit are being processed under A/N 10351.

Proposed revisions to the Title V permit are attached.

Recommendation

All fees have been paid. Recommend that an A/C be issued for the above project.

By _____ date_____

Scott Owen
Supervising AQ Engineer

Table IV - E2
Source-Specific Applicable Requirements
Gasoline Dispensing
S-165 (FD-165)

Applicable Requirement	Regulation Title or Description of		Federally Enforceable (Y/N)	Future Effective Date
BAAQMD · Regulation 8 · Rule 7	**Organic Compounds, Gasoline Dispensing Facilities (11/17/1999)**			
8-7-113	Tank Gauging and Inspection Exemption	Y		
8-7-301.1	Requirement for CARB Phase I System		Y	
8-7-301.2	Installation of Phase I Equipment per CARB Requirements		Y	
8-7-301.3	Submerged Fill Pipes		Y	
8-7-301.5	Maintenance of Phase I Equipment per Manufacturers		Y	
8-7-301.6	Leak-Free, Vapor-Tight		Y	
8-7-301.7	Poppetted Drybreaks		Y	
8-7-301.8	No-Coaxial Phase I Systems on New and Modified Tanks		Y	
8-7-301.9	CARB-Certified Anti-Rotational Coupler or Swivel Adapter		Y	
8-7-301.10	System Vapor Recovery Rate		Y	
8-7-301.11	CARB-Certified Spill Box		Y	
8-7-301.12	Drain Valve Permanently Plugged		Y	
8-7-301.13	Annual Vapor Tightness Test Requirement		Y	
8-7-302.1	Requirements for CARB Certified Phase II System		Y	
8-7-302.2	Maintenance of Phase II System per CARB Requirements		Y	
8-7-302.3	Maintenance of All Equipment as Specified by Manufacturer		Y	
8-7-302.4	Repair of Defective Parts Within 7 Days		Y	
8-7-302.5	Leak-Free, Vapor-Tight		Y	
8-7-302.6	Insertion Interlocks		Y	
8-7-302.7	Built-In Vapor Check Valve		Y	
8-7-302.8	Minimum Liquid Removal Rate		Y	
8-7-302.9	Coaxial Hose		Y	
8-7-302.10	Galvanized Piping or Flexible Tubing		Y	
8-7-302.11	ORVR Compatible		Y	
8-7-302.12	Liquid Retainment Limit		Y	1/1/09*
8-7-302.13	Spitting Limit		Y	1/1/09*
8-7-302.14	Annual Back Pressure Test For Balance Systems		Y	
8-7-303	Topping Off		Y	
8-7-304	Certification Requirements		Y	
8-7-306	Prohibition of Use		Y	
8-7-307	Posting of Operating Instructions		Y	
8-7-308	Operating Practices		Y	
8-7-309	Contingent Vapor Recovery Requirements		Y	
8-7-313	Requirements for New or Modified Phase II Installations		Y	
8-7-313.1	Total Organic Compound Emissions From Nozzle/Fillpipe Interface, Storage Tank Vent Pipes, and Pressure-Related Fugitives Shall Not Exceed 0.42 lb/1000 Gallons		Y	1/1/09*

* California Health & Safety Code § 41954 (g) prohibits local Districts from enforcing stricter local standards for gasoline vapor recovery equipment until two components or systems have been certified to meet the stricter standards, and allows existing facilities four years to retrofit to meet any such standards. Since the District adopted these standards, the California Air Resources Board has adopted similar standards in Certification Procedure CP-201 which will apply to new facilities effective 1/1/05, and all facilities effective 1/1/09.

Table IV - E2
Source-Specific Applicable Requirements
Gasoline Dispensing
S-165 (FD-165)

Applicable Requirement	Regulation Title or Description of	Federally Enforceable (Y/N)	Future Effective Date
8-7-313.2	Total Organic Compound Emissions From Spillage Shall Not Exceed 0.42 lb/1000 Gallons	Y	1/1/09*
8-7-313.3	Total Organic Compound Emissions From Liquid Retain and Spitting Shall Not Exceed 0.42 lb/1000 Gallons	Y	1/1/09*
8-7-315	Pressure Vacuum Valve Requirements, Underground Storage Tanks	Y	
8-7-401	Equipment Installation and Modification	Y	
8-7-406	Testing Requirements, New and Modified Installations	Y	
8-7-501	Burden of Proof	Y	
8-7-502	Right of Access	Y	
8-7-503.1	Gasoline Dispensed Records	Y	
8-7-503.2	Dispensing Facility Maintenance Records	Y	
8-7-503.3	Dispensing Records Retention	Y	
8-7-601	Determination of Equipment in Compliance with Dynamic Backpressure Requirements and Vapor Tight Y	Y	
8-7-602	Determination of Phase I Vapor Recovery Efficiency	Y	
8-7-603	Determination of Applicability	Y	
8-7-604	Determination of Equipment in Compliance with Liquid Removal Requirements	Y	
8-7-605	Determination of Equipment in Compliance with Air to Liquid Volume Ratio (A/L) Requirements	Y	
8-7-606	Determination of Applicability	Y	

Table VII – E2 Fuel Dispensing
Applicable Limits and Compliance Monitoring Requirements
S-165 – GASOLINE DISPENSING FACILITY G#6764

Type of Limit	Emission Limit Citation	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency	Monitoring Type
VOC	BAAQMD Regulation 8-7-313.1	Y	1/1/09	Fugitives $\leq$ 0.42 lb/1000 gallon	None	N	Use CARB Certified Vapor Recovery System
VOC	BAAQMD Regulation 8-7-313.2	Y	1/1/09	Spillage $\leq$ 0.42 lb/1000 gallon	None	N	Use CARB Certified Vapor Recovery System
VOC	BAAQMD Regulation 8-7-313.3	Y	1/1/09	Liquid Retain + Spitting $\leq$ 0.42 lb/1000 gallon	None	N	Use CARB Certified Vapor Recovery System

Table VII – E2 Fuel Dispensing
Applicable Limits and Compliance Monitoring Requirements
S-165 – GASOLINE DISPENSING FACILITY G#6764

Type of Limit	Emission Limit Citation	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency	Monitoring Type
VOC	None	Y		None	BAAQMD Regulation 8-7-503	P/M	Records
VOC	SIP Regulation 8-7-301.2	Y		95% recovery of gasoline vapors		N	
VOC	BAAQMD Regulation 8-7-301.10	Y		98% recovery of gasoline vapors		N	Use of CARB-certified Vapor Recovery System
VOC	BAAQMD Regulation 8-7-301.6 8-7-302.5	Y		Leak free and vapor tight fugitive components	BAAQMD Regulation 8-7-301.13	A	Vapor Tightness Test
VOC	BAAQMD Regulation 8-7-302.14	Y		None	BAAQMD Regulation 8-7-302.14	A	Backpressure Test
VOC	BAAQMD Condition #20666 Part 2	Y		Drop Tube/Drain Valve leak rate not to exceed 0.17 CFH @ 2" H_20; minimum 360° rotation with maximum 108 pound-inch torque	BAAQMD Regulation 8-7-503.2 and BAAQMD Condition #20666 Part 2	P/3A	Drop Tube/Drain Valve Leak Test (CARB TP 201.1C or 201.1D) and Torque Test (CARB TP 201.1B)
Gasoline Throughput	BAAQMD Condition # 22323	N		92,000 gallons gasoline per 12-month period	BAAQMD 8-7-503.1	P/A	Records

EVALUATION REPORT
VALERO BENICIA REFINERY
TANK EXEMPTIONS, 8-5-117 AND SUBPART Kb 60.110b(b)
APPLICATION 12422, PLANT 12626

BACKGROUND

The Valero Benicia Refinery (Valero) operates a variety of storage tanks that are subject to Regulation 8, Rule 5, and NSPS Subpart Kb. Both Rule 8-5 and Subpart Kb have provisions that reduce the applicable requirements if the tank is storing liquid that contains a low vapor pressure:

> **8-5-117 Exemption, Low Vapor Pressure:** The provisions of this Rule, except for Section 8-5-307, shall not apply to tanks storing organic liquids with a true vapor pressure of less than or equal to 25.8 mm Hg (0.5 psia) as determined by Sections 8-5-602 or 604.
> *(Adopted 1/20/93; Amended 11/27/02)*
>
> § 60.110b Applicability and designation of affected facility.
> (a) Except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m^3) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.
> (b) This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

In English, Subpart Kb does not apply for 1), small tanks (less than 19,813 gallons capacity), 2), medium tanks (between 19,813 gallons and 39,890 gallons capacity) if the stored liquid vapor pressure is less than 2.1756 psia, and 3), large tanks (over 39,890 gallons capacity) if the vapor pressure is less than 0.5076 psia.

The Valero Revision 1 Title V permit has the tanks qualifying for the 8-5-117 low vapor pressure limited exemption listed in the following tables:

Table IV-J15 for S-65 and 69
Table IV-J19 for S-93, 94, 95, 96, 99, 100, 106, 107, 109, 111, 116, 118, 119, 140 and 145
Table IV-J20 for S-98
Table IV-J29 for S-121, S-142, S-144 and S-185
Table IV-J30 for S-230
Table J31.1 for S-132 and 134

For Subpart Kb, the Revision 1 permit shows the 60.110b(b) in the following tables:

Table IV-J30 for S-230
Table IV-J41 for S-208, although this citation is deleted in the proposed Revision 3 permit.

For all the sources above, the tanks are expected to be in "exempt service" at all times. For all the tables above, there are no Regulation Standards (300 series regulations) in the applicable requirements. Only Recordkeeping requirements are shown.

Most of the Valero tanks are not exempt and the Title V tables show multiple requirements including those from Regulation 8, Rule 5, and in a few cases, Subpart Kb. A Tank Summary is included in the application file. Intermittently, Valero operates several of these tanks in a service that qualifies for the low vapor pressure limited exemption (aka "exempt service"). When this happens, Valero is not obligated to comply with the requirements of high vapor pressure ("non-exempt") service, such as the periodic seal inspections. The Valero Enviance tracking software reports this as a deviation, and Valero is sensitive to any item including on the deviation reports.

Valero has submitted this application for an administrative amendment to clarify the permit showing that when a vapor pressure criterion is met, 8-5-117 and/or 60.110b(b) allow different requirements to be applicable. Valero has identified the following sources for potential exempt service:

Source	TK-	Title V Table	Capacity kgal	Capacity Barrels	Service
55	2801	J14		22600	Sour Water
63	1711	J4	10920	260000	Gasoline
64	1712	J5	13524	322000	Gas Oil
66	1714	J4	8400	200000	Gas Oil
73	1733	J5	5880	140000	Gasoline
75	1736	J5	3360	80000	Gasoline
76	1737	J5	5880	140000	Gasoline
77	1738	J5	3360	80000	Gasoline
78	1739	J5	6804	162000	Gasoline
79	1751	J5	5040	120000	Gasoline
80	1752	J5	3780	90000	Gasoline
81	1753	J33	3654	87000	Gasoline
82	1754	J5	3150	75000	Gasoline
83	1755	J6	5040	120000	Gasoline
84	1756	J6	3780	90000	Gasoline
85	1757	J32	1260	30000	Gasoline
86	1758	J3	3150	75000	Gasoline
87	1759	J12	650	15476	Gasoline
88	1760	J12	307	7310	Gasoline
89	1761	J11	651	15500	Gasoline
90	1762	J12	307	7310	Gasoline
91	1763	J12	307	7310	Gasoline
92	1771	J6	4620	110000	JP4
97	1776	J7	4620	110000	JP4
101	1791	J34	189	4500	Slop
103	1793	J34	676	16095	Slop

Source	TK-	Title V Table	Capacity kgal	Capacity Barrels	Service
104	1795	J33	3654	87000	MMT
105	1796	J34	189	4500	HTA
108	1801	J21	16.8	400	MMT
110	1803	J22	16.8	400	HTA
112	1805	J10	336	8000	"TEL WASH"
113	1806	J23	2.52	60	Lubrisol
114	1807	J23	2.52	60	Gasoline Red Dye
115	1808	J23	2.52	60	Gasoline Orange Dye
117	1810	J23	6.3	150	Corr Inhibitor
120	1813	J23	2.52	60	Metal Deact
122	1814	J23	2.54	60	Additives
123	1794	J23	8.4	200	IPA
124	1735	J16	3360	80000	Pentanes
131	2069	J36		3000	WW Sludge
133	2712	J17		2105	Spent Acid
143	1034	J24	4.5	107	Corr Inhibitor
150	2051	J37		5280	Corr Inhibitor
158	2902	J27	2.3	55	Carbon Tetrachloride
163	1732	J8	3780	90000	Gasoline
171	None	J23	0.5	12	Methanol
193*	2027	J38	840	20000	WW Diversion
196*	2077	J38	840	20000	WW Diversion
199	D2055	J39	1.3	31	Crude Oil Collection
200	D2056	J39	2.3	55	Oil/Water Collection
205*	2026	J40	30	714	WW Surge
206*	2076	J40	30	714	WW Surge
207*	1740	J9	14700	350000	Gasoline
208	D920	J41	14	333	Coker Feed Drum
210*	1820	J13	630	15000	Methanol/Ethanol
227*	1741	J18	7350	175000	C5/Heartcut
234	None	J23	2	48	Demulsifier
235	None	J23	1	24	Demulsifier
239	1918	J26	3.1	74	Dock Sump
1013	D2720	J28	10	238	EADC

*Of these sources, Valero has identified S-193, S-196, S-205, S-206, S-207, S-210 and S-227 as potential Subpart Kb 60.110b(b) low vapor pressure service.

Consistent with Valero's opinion that this application corrects a deficiency in the title V permit, there is no NSR permit related to this Title V administrative amendment application.

It is understood that Valero needs some flexibility to manage the facility operation. The Legal Division opinion has been expressed that Valero has the option to state that certain requirements are not applicable, such as when a source is out of service. In such a case, Valero is required to keep records supporting why a particular regulation is not applicable. If the tracking software reports this as a deviation then this is a feature of the software, not necessarily a problem with the permit. Nevertheless, Valero believes the missing exemption citations are a deficiency because Valero "may not be afforded the protection of the exemption". District internal discussions have resulted in a general conclusion that something will be done to address the concerns Valero raises in this application.

In-house District discussion identified concerns over this service switching issue. The primary concern is ensuring emissions are minimized during any transition. For example, if a particular tank were switched from gasoline to Diesel service, it would be prudent to remove all the gasoline from the tank before starting the exempt Diesel service (to prevent the high vapor pressure gasoline emissions). While it is likely this will be done to maximize product, without detailed procedures, an owner/operator could designate a tank "exempt" anytime the supply valve lineup is changed regardless of tank contents. An abusive owner/operator could make programmed changes just prior to the required seal inspections and craft an inspection avoidance program. These are extreme situations that are likely to never be experienced (and have never been experienced at Valero). However, when considering that tanks are never 100% cleaned (unless there is a confined space entry required), there will be a mixture of exempt and non-exempt material in a tank during the transition period. Among the questions remaining to be answered: when does a tank become "exempt", what is required during the transition period, and what tests and records are required to demonstrate the end of the transition period.

There have been several alternatives associated with the issue of operating tanks in and out of exempt service:

1. Add a general condition in Section I of the permit that allows the owner/operator to determine which applicable requirements are applicable and which are exempt.
2. Add the specific tank exemptions 8-5-117 and 60.110b(b) to the site wide general table.
3. Add the specific tank exemptions 8-5-117 and 60.110b(b) to each tank table.
4. Generate a new permit condition that details the steps and tests required to change from nonexempt to exempt service.
5. Defining the different operating scenarios that change the service of the tanks per Regulation 2-6-409.11.
6. Address the requirements for switching in and out of exempt service in the next revision of Regulation 8, Rule 5.
7. Do nothing. The Title V permit is intended to list all applicable requirements, not applicable exemptions. The owner/operator has the responsibility to certify compliance. If a particular source is in abnormal service, the owner/operator needs to include the associated requirement changes in the compliance certification. This

option would place the exempt service in the same category as start-up, shutdown, and out-of-service scenarios.

The general consensus is that Item #6 above is the best solution. All of the other solutions leave out sufficient detail that interpretation will lead to future disputes. However, rulemaking is a comprehensive and lengthy process. After consulting with the Legal Division, District Staff selected a combination of Item # 2 and # 4 as the most suitable option to resolve the disposition of this application.

EMISSIONS SUMMARY

There are no changes in emissions due to this application. Allowing tanks to operate in exempt service is inherent in the existing permit and this clarification does not change emissions.

PLANT CUMULATIVE INCREASE

There are no net changes to the plant cumulative emissions.

TOXIC RISK SCREEN

This proposed administrative amendment would not emit toxic compounds in amounts different that previously emitted. Therefore, a toxic risk screen is not required.

BEST AVAILABLE CONTROL TECHNOLOGY

BACT is triggered for new or modified sources that emit criteria pollutants in excess of 10 lbs/day. However, Regulation 2-1-234 defines a modified source as one that results in an increase in daily or annual emissions of a regulated air pollutant. For this application, there is no change in emissions. Therefore, BACT does not apply.

PLANT LOCATION

According to the SCHOOL program, the closest school is Semple Elementary, which is just over one mile from the facility.

COMPLIANCE

This application will not change the compliance for the affected sources. Specifically, compliance with NSPS Subpart Kb and Regulation 8-5 will remain unchanged.

The closest school is over a mile from the facility, so the Public Notice requirements of Regulation 2-1-214 do not apply.

Toxics, CEQA, NESHAPS, BACT, and Offsets do not apply.

CONDITIONS

Permit Condition 20762 was previously added to the Title V permit to address concerns over tanks in exempt service. Part 2 of the condition shown below was inserted in response to this application. An underline/strikeout version is appended to this evaluation.

Condition 20762
For Refinery and Asphalt Plant:

This condition applies to tanks that are exempt from Regulation 8, Rule 5, Storage of Organic Liquids, due to the exemption in Regulation 8-5-117 for storage of organic liquids with a true vapor pressure of less than or equal to 25.8 mm Hg (0.5 psia).

1. Whenever the type of organic liquid in the tank is changed, the owner/operator shall verify that the true vapor pressure at the storage temperature is less than or equal to 25.8 mm Hg (0.5 psia). The owner/operator shall use Lab Method 28 from Volume III of the District's Manual of Procedures, Determination of the Vapor Pressure of Organic Liquids from Storage Tanks. For materials listed in Table 1 of Regulation 8 Rule 5, the owner/operator may use Table 1 to determine vapor pressure, rather than Lab Method 28. If the results are above 25.8 mm Hg (0.5 psia), the owner/operator shall report non-compliance in accordance with Standard Condition I.F and shall submit an application to the District for a new permit to operate for the tank as quickly as possible. (Basis: Regulation 8-5-117)

2. Whenever the type of organic liquid in the tank is changed to a liquid with the true vapor pressure at the storage temperature greater than 25.8 mm Hg (0.5 psia), the owner/operator shall comply with all the requirements of Regulation 8-5 prior to making the change. (Basis: Regulation 8, Rule 5)

3. The results of the testing shall be maintained in a District-approved log for at least five years from the date of the record, and shall be made available to District staff upon request. (Basis: 8-5-117)

RECOMMENDATION

It is recommended that this Administrative Amendment to the Valero B2626 Title V permit be granted.

_____ _____

Arthur P. Valla 7Feb06
Air Quality Engineer

EVALUATION REPORT
VALERO REFINING CO.
Application #12476 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for a correction to the Title V permit for the following equipment:

A-36 Carbon Canisters on WWTP Upstream Diversion Tanks, abate S-193, S-196, S-205 and S-206, Waste Water Treatment Plant

A-37 Carbon Canisters on WWTP On-Site Equipment, abate S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200, Waste Water Treatment Plant

A-57 Thermal Oxidizer for WWTP On-Site equipment, abate S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200, Waste Water Treatment Plant

Valero would like to correct the monitoring frequency and type requirements on Table VII of the TV permit for abatements A-36, A-37 and A-57, which are incorrectly listed as annual source test, instead of continuous hydrocarbon analyzers and flowmeters for A-36 and A-37, and continuous temperature monitor for A-57.

A-36 and A-37 are carbon canisters that are subject to District's Condition # 11879, Parts 11, 12, 14 and 16, which required installation of the continuous VOC concentration and flow indicator to calculate the NMHC emissions. The same requirements for A-36 and A-37 are repeated again in Conditions 11880, 11882, 11888 and 13319.

A-57 is the thermal oxidizer that is subject to District's Condition # 11879, Parts 1, 2, 3, 4, 5, and 6, which required installation of the continuous temperature monitor to demonstrate compliance with the 98.5% wt. control efficiency. The same requirements for A-57 are repeated again in Conditions 11882, 11888 and 13319.

In addition, the TV permit, Table IIC omitted A-57 in the limit related to the combined NMHC emission limit for A-36, A-37 and A-57 as specified in Conditions 11879, 11882, and 11888.

The above administrative amendment requests are acceptable and the inapplicable requirements (annual source test) in the TV permit sections VII for A-36, A-37 and A-57 should be removed. The continuous hydrocarbon analyzers and flowmeters should be added to the TV permit sections VII for A-36 and A-37, and the continuous temperature monitor should be added to TV permit section VII for A-57 to reflect Valero's actual operation.

II. EMISSION CALCULATIONS

This application will not result in an emission increase.

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

There are no net changes to the plant cumulative emissions.

IV. TOXIC SCREENING ANALYSIS

This application will not result in an increase in toxic air contaminant emissions from existing levels. Therefore, a Toxic RSA is not required.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application will not result in any emission increase from existing levels. Therefore, BACT is not triggered per Regulation 2-2-301.

VI. OFFSETS

This application does not result in emission increases. Therefore, offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIANCE

The waste water treatment sources that associated with A-36, A-37 and A-57 are subject to expected to be in compliance with Regulation 8, Rule 5 – Storage of Organic Liquid Tanks, Regulation 8, Rule 8 – Wastewater Collection and Separation Systems. All sources in the Waste Water Treatment Plant are in compliance with Reg. 8-5 requirement because these tanks are abated either by carbon canister or thermal oxidizer with control efficiency greater than 98.5% wt. All sources in the Waste Water Treatment Plant are in compliance with Reg. 8-8 requirement because these tanks are abated either by carbon canister or thermal oxidizer with control efficiency greater than 95% wt.

The waste water treatment sources that associated with A-36, A-37 and A-57 are subject to expected to be in compliance with NSPS Title 40 Part 60, Subpart Kb for Storage Tanks, NESHAP Title 40 Part 61, Subpart FF for Benzene Waste Operations and NESHAP Title 40 Part 63, Subpart CC for Petroleum Refineries.

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapters 3.3 and 4.

This project is over 1,000 ft from the nearest public school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

Toxics, CEQA, BACT, Offsets, PSD are not triggered.

VIII. CONDITIONS

There are no change to Conditions 11879, 11880, 11882, 11888 and 13319.

IX. RECOMMENDATION

It is recommend that this Administrative Amendment to the Valero Refining Company B2626 Title V permit be granted for the following equipment:

A-36 Carbon Canisters on WWTP Upstream Diversion Tanks, abate S-193, S-196, S-205 and S-206, Waste Water Treatment Plant

A-37 Carbon Canisters on WWTP On-Site Equipment, abate S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200, Waste Water Treatment Plant

A-57 Thermal Oxidizer for WWTP On-Site equipment, abate S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200, Waste Water Treatment Plant

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:F:\Valero\12476\12476e\1/10/08

EVALUATION REPORT
VALERO REFINING CO.
Application #12577 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for corrections to the Title V permit for the following equipment:

S-208 Coker Feed Drum D-920, Pressure Tank, 14,000 gallon capacity

S-1013 EADC Storage Tank D-2720, Pressure Tank, 10,000 gallon capacity

Valero would like to correct the applicable requirements on the TV permit for Sources S-208 and S-1013, which are incorrectly listed as regular tanks; therefore the tanks are subject to Regulation 8-5-306 for emission control system, Regulation 8-5-404 and Regulation 8-5-603 for determination of abatement efficiency instead of Regulation 8-5-307 for pressure tanks as shown in Table IV of the TV permit. In addition, the safety valves on S-208 and S-1013 are not pressure vacuum valves; therefore these tanks are not subject to Regulation 8-5-303, and 8-5-403 requirements for pressure vacuum valves as shown in Tables VII in the Title V permit.

S-208 and S-1013 are pressure tanks operating with a nitrogen blanketing system that operates at all time except during tank filling. During tank filling, displaced vapors are vented to the fuel gas vapor recovery header.

This application for administrative amendment requests are acceptable and the inapplicable requirements (Regulations 8-5-306, 303, 403, 404, and 603) in the TV permit sections IV and VII from S-208 and S-1013 should be removed. Regulation 8-5-307 should be added to the TV permit sections IV and VII to reflect Valero's actual operation.

II. EMISSION CALCULATIONS

This application will not result in an emission increase.

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

There are no net changes to the plant cumulative emissions.

IV. TOXIC SCREENING ANALYSIS

This application will not result in an increase in toxic air contaminant emissions from existing levels. Therefore, a Toxic RSA is not required.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application will not result in any emission increase from existing levels. Therefore, BACT is not triggered per Regulation 2-2-301.

VI. OFFSETS

This application does not result in emission increases. Therefore, offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIANCE

Sources S-208 and S-1013, pressure tanks, are subject to and expected to be in compliance with Regulation 8, Rule 5-307 – Storage of Organic Liquid Bulk. Sources S-208 and S-1031 are in compliance with Reg. 8-5-307 requirement because these tanks are pressure tanks that are equipped with a nitrogen blanketing system, and abated by vapor recovery to the fuel gas system during filling period.

Sources S-108 and S-124 are subject to expected to be in compliance with NSPS Title 40 Part 60, Subpart Kb for Storage Tanks, NESHAP Title 40 Part 61, Subpart FF for Benzene Waste Operations and NESHAP Title 40 Part 63, Subpart CC for Petroleum Refineries.

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 4.

This project is over 1,000 ft from the nearest public school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

Toxics, CEQA, BACT, Offsets, PSD are not triggered.

VIII. CONDITIONS

S-1013 currently does not have any operating condition. Permit Condition # 8771, Part 3, 4 and 5 applied to S-208 and there is no change to the Condition.

Condition #8771

3. **The coker feed drum (S-208) shall be abated by the flare gas recovery system including the flares (S-18 & S-19) at all times. [Basis: Cumulative Increase]**

4. **The maximum material throughput at S-208 shall not exceed 29 million gallons during any rolling 12 consecutive month period. [Basis: Cumulative Increase]**

5. To demonstrate compliance with Condition #4, the monthly material throughput at S-208 shall be maintained in a District approved log. These records shall be kept on site and made available for District inspection for a period of at least 60 months from the date on which a record is made. [Basis: Cumulative Increase]

IX. RECOMMENDATION

It is recommend that this Administrative Amendment to the Valero Refining Company B2626 Title V permit be granted for the following equipment:

S-208 Coker Feed Drum D-920, Pressure Tank, 14,000 gallon capacity
S-1013 EADC Storage Tank D-2720, Pressure Tank, 10,000 gallon capacity

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:F:\Valero\12577\12577e\1/10/08

EVALUATION REPORT
VALERO BENICIA REFINERY
NSPS SUBPART VV FUGITIVE LEAKS
APPLICATION 12868, PLANT 12626

BACKGROUND

The Valero Benicia Refinery (Valero) has applied to remove an applicable requirement from its Title V permit. Relevant to this application, Valero is subject to the following regulations:

- NSPS Subpart VV--Standards Of Performance For Equipment Leaks Of Voc In The Synthetic Organic Chemicals Manufacturing Industry
- NSPS Subpart GGG—Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries
- NESHAPS Subpart CC—National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries (aka MACT).

The fugitive requirements are detailed in the Valero Title V permit in:

- **Table IV –I, Source-specific Applicable Requirements Fugitive Components**, and in
- **Table VII – I Fugitives Applicable Limits And Compliance Monitoring Requirements, Fugitive Components**.

In Table IV is **40 CFR 60.482-10, Standards: Closed Vent Systems And Control Devices**, and in Table VII are the monitoring requirements of **40 CFR 60.482-10(f) & (g).** The complete text for this standard is duplicated on Page 3 and 4 of this evaluation.

This application is to delete the requirements of 40 CFR 60.482-10 from the Title V permit. Since this application impacts monitoring, it is a significant revision to the Title V permit. There is no NSR application associated with this Title V significant revision application.

APPLICBILITY DETERMINATION

Valero's application generally justifies the removing of 40 CFR 60.482-10 from the Title V permit because there are no fugitive emission leaks that are routed to a closed vent system and control device. All fugitive emission leaks are either directed to the fuel gas recovery system or vented to atmosphere.

Valero's rationale is as follows:

The Valero Benicia Refinery is subject to MACT 40 CFR 63 Subpart CC. 63.640(c)(4) states that equipment leaks are included in the emission points of the Subpart CC affected source. For equipment leaks, the Refinery MACT is 63.648, Equipment Leak Standards. 63.648(a) says the owner/operator of existing sources shall comply with NSPS Subpart VV. Therefore, the Refinery MACT Subpart CC for equipment leaks is NSPS Subpart VV. However, 63.640(d)(5)

states that emission points routed to fuel gas system are not included in the affected source of Subpart CC. The Subpart CC 63.641 definition for Fuel Gas System is interpreted by Valero to include the Flare Gas Recovery System and the Flare Gas Recovery Compressors A-13 and A-26 (that discharge into the sour gas header that is amine treated to produce the refinery fuel gas). 63.640(d)(5) further states no testing, monitoring, recordkeeping or reporting is required for fuel gas systems or emission points routed to the fuel gas systems. Therefore, for emission points covered by the Refinery MACT, but routed to the fuel gas system, NSPS Subpart VV does not apply.

For emission points that are not routed to the fuel gas system, NSPS Subpart VV applies. The Valero Title V permit lists the following Subpart VV requirements:

40 CFR 60.480	Applicability and Designation of Affected Facility
40 CFR 60.482-1	Standards: General
40 CFR 60.482-10	Standards: Closed vent systems and control devices
40 CFR 60.482-2	Standards: Pumps in light liquid service
40 CFR 60.482-3	Standards: Compressors
40 CFR 60.482-4	Standards: Pressure relief devices in gas/vapor service
40 CFR 60.482-5	Standards: Sampling connection systems
40 CFR 60.482-6	Standards: Open-ended valves or lines
40 CFR 60.482-7(a)	Standards [Valves]
40 CFR 60.482-7(b)	Standards
40 CFR 60.482-7(c)(1)	Standards
40 CFR 60.482-7(d)(1)	Standards
40 CFR 60.482-7(e)	Standards
40 CFR 60.482-7(f)	Standards
40 CFR 60.482-7(h)	Standards
40 CFR 60.482-8	Standards: Pumps & Values in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid Service, and Flanges & Other Connectors
40 CFR 60.482-9(a)	Standards [Delay of Repair]
40 CFR 60.482-9(b)	Standards
40 CFR 60.482-9(c)	Standards
40 CFR 60.482-9(d)	Standards
40 CFR 60.483-1	Alternative Standards for Valves-Allowable Percentage of Valves Leaking
40 CFR 60.483-2	Alternative Standards for valves - skip period leak detection and repair
40 CFR	Test Methods and Procedures

60.485	
40 CFR 60.486	Recordkeeping Requirements
40 CFR 60.487(a)	Reporting
40 CFR 60.487(b)	Reporting
40 CFR 60.487(c)	Reporting
40 CFR 60.487(d)	Reporting

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES
Subpart VV—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

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§ 60.482-10 Standards: Closed vent systems and control devices.

(a) Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.

(b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent.

(c) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.

(d) Flares used to comply with this subpart shall comply with the requirements of §60.18.

(e) Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(f) Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (f)(2) of this section.

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (f)(1)(ii) of this section:

(i) Conduct an initial inspection according to the procedures in §60.485(b); and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in §60.485(b); and

(ii) Conduct annual inspections according to the procedures in §60.485(b).

(g) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected.

(h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

(i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.

§ 60.482-10 Standards: Closed vent systems and control devices. (Continued)

(j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (j)(2) of this section:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (k)(3) of this section:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The process unit within which the closed vent system is located becomes an affected facility through §§60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

(3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.

(l) The owner or operator shall record the information specified in paragraphs (l)(1) through (l)(5) of this section.

(1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(3) For each inspection during which a leak is detected, a record of the information specified in §60.486(c).

(4) For each inspection conducted in accordance with §60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(5) For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(m) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

[48 FR 48335, Oct. 18, 1983, as amended at 51 FR 2702, Jan. 21, 1986; 60 FR 43258, Aug. 18, 1995; 61 FR 29878, June 12, 1996; 65 FR 78277, Dec. 14, 2000]

APPLICBILITY DETERMINATION (Continued)

Valero did not detail Subpart VV in the application rationale other than to list the applicable standards. But there are similar arguments for emission points routed to the fuel gas system. Subpart VV has (in 60.481) a similar definition for fuel gas system, but it does not have a citation similar to MACT Subpart CC 63.640(d)(5) that exempts emission points routed to fuel gas systems. Rather, the standards of Subpart VV detail proscriptive requirements for detecting and repairing leaks. Where practical and appropriate, the standards exempt emission points from these proscriptive requirements when routed to a fuel gas system. For example, 60.482-3(h) for Compressors:

> 60.482-3(h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of §60.482–10, except as provided in paragraph (i) of this section.

However, in addition to routing to the fuel gas system, the exemption also covers emission points that are routed to a process or to a closed vent system with a control device. The latter

option requires compliance with 60.482-10. Valero argues that 60.482-10 does not apply in any case because no emission points are routed to a closed vent system and control device. Either equipment leaks are routed to the fuel gas system, or they leak to atmosphere (in which the owner/operator must comply with the Subpart VV standards).

APPLICBILITY DETERMINATION DISCUSSION

The initial review of the Valero Applicability Determination raised some issues. The portion regarding MACT Subpart CC emission points is valid and no standard in NSPS subpart VV applies. However, for emission points subject to Subpart VV, it was not clear that applying the definition of the fuel gas system to include the flare gas recovery system was appropriate. This is because Subpart VV 60.481 defines a vapor recovery system not as a fuel gas system, but as a control device:

Control device means an enclosed combustion device, vapor recovery system, or flare.

And even though the vapor recovery system discharges into a sour gas line that could be considered part of the fuel gas system, there is no provision in Subpart VV that exempts a control device from the standards. Therefore, the flare gas recovery header is a closed vent system and the flare gas recovery compressor is a control device. In that case, 60.482-10 applies.

The second issue concerns the situation where the flare gas recovery compressors are shutdown or of insufficient capacity to recover all of the gas directed to the Flare Gas Recovery System. In this case, some or all of the fugitive gases are flared. Clearly, during this situation the fugitive leaks are collected and discharged to a closed vent system and control device. The time where this flaring situation occurs is infrequent, and according to Valero, only during startup, shutdown or upset conditions. However, Subpart VV does not have any provisions that limit the applicability of standards during startup, shutdown or upset conditions.

Upon further review, and consulting with the legal division, it became a key to the applicability determination that all fugitive emissions shown as subject to Subpart VV in **Table IV-X, Fugitive Sources: Applicable Requirements**, are not directly subject to Subpart VV. Each source is subject to either MACT Subpart CC or NSPS Subpart GGG**,** both of which require compliance with Subpart VVV. Since there is no independent basis for Subpart VV applicability, using Subpart VV definitions (or any other provisions of the subpart, other than the standards) is not correct.

In conclusion, **60.482-10 Standards: Closed vent systems and control devices** does not apply and should be removed from the Title V permit.

EMISSIONS SUMMARY

There are no changes in emissions expected due to this application.

PLANT CUMULATIVE INCREASE

There are no net changes to the plant cumulative emissions.

TOXIC RISK SCREEN

There are no changes in emissions expected due to this application. Therefore, a toxic risk screen is not required.

BEST AVAILABLE CONTROL TECHNOLOGY

BACT is triggered for new or modified sources that emit criteria pollutants in excess of 10 lbs/day. However, Regulation 2-1-234 defines a modified source as one that results in an increase in daily or annual emissions of a regulated air pollutant. For this application, there is no expected change in emissions. Therefore, BACT does not apply.

COMPLIANCE

This application will not change the compliance for the affected sources. The fugitive component requirements for the facility will remain unchanged and compliance with the other provisions of NSPS Subpart VV will not be changed.

The closest school is over a mile from the facility, so the Public Notice requirements of Regulation 2-1-214 do not apply.

Toxics, CEQA, BACT, and Offsets do not apply.

CONDITIONS

There are no changes to the facility permit conditions.

RECOMMENDATION

It is recommended that Application 12868 to remove NSPS 40 CFR 60.482-10 from the Title V permit be approved.

_____ _____

Arthur P. Valla 26Mar07
Air Quality Engineer II

EVALUATION REPORT
VALERO BENICIA REFINERY
H2S LIMIT, NSPS SUBPART J
APPLICATION 13201, PLANT 12626

BACKGROUND

The Valero Benicia Refinery (Valero) is subject to fuel gas H2S concentration limit based on 40 CFR 60.104(a)(1), NSPS Subpart J:

> § 60.104 Standards for sulfur oxides.
> Each owner or operator that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test, required by §60.8, is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after initial startup, whichever comes first.
> (a) No owner or operator subject to the provisions of this subpart shall:
> (1) Burn in any fuel gas combustion device any fuel gas that contains hydrogen sulfide (H_2S) in excess of 230 mg/dscm (0.10 gr/dscf). The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this paragraph.

This limit is in several permit conditions in terms of a concentration limit of 160 ppm H2S:

Cond ID	Part	Source(s)	Limit
10574	13	S-21 S-22 S-220	The Owner/Operator shall limit the refinery fuel gas combusted in any CFP equipment to no more than any of the following: (a) 100 ppmv H2S, averaged over a 24-hour calendar day and (b) 160 ppm H2S, averaged over any 3-hour period. [Basis: Cumulative Increase, BACT, NSPS]
14318	5	S-23	As per Regulation 10-14, the Owner/Operator shall continuously monitor the hydrogen sulfide and shall limit the hydrogen sulfide to no more than 160 ppm (dry). [Basis: Cumulative Increase, BAAQMD 10-14]
16027	3	S-237	Fuel Gas System: The Owner/Operator shall limit the refinery low-pressure fuel gas to no more than any of the following: (a) 100 ppmv H2S, averaged over a 24-hour calendar day and (b) 160 PPM H2S, averaged over any 3-hour period. [Basis: Cumulative Increase, BACT, NSPS]
19177	19g	S-1030 S-1031	The Owner/Operator shall limit the sulfur dioxide (SO2) mass emissions at P-60 or P-62 to no more than 10.75 pounds per hour (rolling 24 hour average). The Owner/Operator shall limit the sulfur concentrations in the refinery fuel gas to no more than 35 ppm TRS (rolling consecutive 365 day average). (Basis: BACT) The Owner/Operator shall limit the Sulfur concentrations in fuel gas fired in S-1030, S-1031, S-1032 and S-1033 to no more than 100 ppm Totaled Reduced Sulfur (rolling 24 hour average). (Basis: BACT) The Owner/Operator shall limit the hydrogen sulfide (H2S) concentrations in refinery fuel gas to no more than 160 ppm (rolling consecutive 3-hour average). (Basis: NSPS)

Valero has submitted this administrative change in conditions application to change the H2S limit to 162 ppm. This request is to be consistent with the EPA guidance document *Alternative Monitoring Plan for NSPS Subpart J Refinery Fuel Gas, 8/7/2002,* included in the application file. In addition, the change would also make the permit condition limits consistent with the

recent Valero Consent Decree (http://www.epa.gov/compliance/resources/decrees/civil/caa/valero-cd.pdf pg. 55, part 119 and pg. 119, part 243).

This application is for an administrative change in conditions for the following sources:

S-1030 Combustion Turbine Generator (Cogen) 500MM Btu/hr
S-1031 Heat Recovery Steam Generator, 310MM Btu/hr
S-21 Hydrogen Reformer Furnace, F-301
S-22 Hydrogen Reformer Furnace, F-351
S-23 Gas Oil Hydrocracker Furnace, F-401
S-220 Hot Oil Furnace, F-4460
S-237 Boiler - SG-1032

In addition to the H2S concentration value issue, Valero also points out that Condition 14318-5 for S-23 does not include the 3-hour averaging language, and this application requests the averaging language be added.

EMISSIONS SUMMARY

There are no changes in emissions due to this application. The change from 160 ppm to 162 ppm H2S is merely showing 3 significant figures on the limitation. It could be argued that this is an inappropriate adjustment since both the 0.10 gr/dscf and to 230 mg/dscm are only two significant figures. However, since EPA uses 162 ppm elsewhere it would be of little value to argue against this change in conditions.

The conversion calculation from 40 CFR 60.104(a)(1) 0.10 gr/dscf is as follows:

ppmv H2S = (0.10 grains H2S/dscf Fuel Gas)
X (1 Lb H2S /7000 grains H2S)
X (1 Lb-mole H2S / 34 Lb H2S)
X (385.3 dscf Fuel Gas / Lb-mole Fuel Gas)
X 1,000,000
= 161.89 ppmv

The conversion calculation from 40 CFR 60.104(a)(1) 230 mg/dscm is as follows:

ppmv H2S = (230 mg H2S/dscm Fuel Gas) X (1 g / 1000 mg)
X (1 Lb H2S /453.6 grams H2S)
X (1 Lb-mole H2S / 34 Lb H2S)
X (1 dscm / 35.314 dscf)
X (385.3 dscf Fuel Gas / Lb-mole Fuel Gas)
X 1,000,000
= 162.71 ppmv

Adding the 3-hour averaging language to the S-23 H2S limit is consistent with the other permit conditions and in compliance with 40 CFR 60.105(e)(3)(ii):

(e) For the purpose of reports under §60.7(c), periods of excess emissions that shall be determined and reported are defined as follows:

Note: All averages, except for opacity, shall be determined as the arithmetic average of the applicable 1-hour averages, e.g., the rolling 3-hour average shall be determined as the arithmetic average of three contiguous 1-hour averages.

(1) *Opacity.* All 1-hour periods that contain two or more 6-minute periods during which the average opacity as measured by the continuous monitoring system under §60.105(a)(1) exceeds 30 percent.

(2) *Carbon monoxide.* All 1-hour periods during which the average CO concentration as measured by the CO continuous monitoring system under §60.105(a)(2) exceeds 500 ppm.

(3) *Sulfur dioxide from fuel gas combustion.* (i) All rolling 3-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under §60.105(a)(3) exceeds 20 ppm (dry basis, zero percent excess air); or

(ii) All rolling 3-hour periods during which the average concentration of H_2S as measured by the H_2S continuous monitoring system under §60.105(a)(4) exceeds 230 mg/dscm (0.10 gr/dscf).

PLANT CUMULATIVE INCREASE

There are no net changes to the plant cumulative emissions.

TOXIC RISK SCREEN

This proposed throughput change would not emit toxic compounds in amounts different that previously emitted. Therefore, a toxic risk screen is not required.

BEST AVAILABLE CONTROL TECHNOLOGY

BACT is triggered for new or modified sources that emit criteria pollutants in excess of 10 lbs/day. However, Regulation 2-1-234 defines a modified source as one that results in an increase in daily or annual emissions of a regulated air pollutant. For this application, there is no change in emissions. Therefore, BACT does not apply.

PLANT LOCATION

According to the SCHOOL program, the closest school is Semple Elementary, which is just over one mile from the facility.

COMPLIANCE

This application will not change the compliance for the affected sources. Specifically, compliance with NSPS Subpart J 40 CFR 60.104(a)(1) and 40 CFR 60.105(e)(3)(ii) is not changed.

The closest school is over a mile from the facility, so the Public Notice requirements of Regulation 2-1-214 do not apply.

Toxics, CEQA, NESHAPS, BACT, and Offsets do not apply.

CONDITIONS

Upon consideration of this application for a change in conditions, it was recommended that, instead of changing the condition language from 160 ppm to 162 ppm as requested by Valero, that the conditions be changed to refer to NSPS Subpart J and omit all concentration limit values. The existing Conditions will be modified as follows:

Cond ID	Part	Source(s)	Limit
10574	13	S-21 S-22 S-220	The Owner/Operator shall limit the refinery fuel gas combusted in any CFP equipment to no more than any of the following: (a) 100 ppmv H2S, averaged over a 24-hour calendar day and (b) the H2S concentration limitation specified in NSPS 40 CFR 60 Subpart J~~160 ppm H2S, averaged over any 3-hour period~~. [Basis: Cumulative Increase, BACT, NSPS]
14318	5	S-23	As per Regulation 10-14, the Owner/Operator shall continuously monitor the hydrogen sulfide and shall limit the hydrogen sulfide to no more than the H2S concentration limitation specified in NSPS 40 CFR 60 Subpart J ~~160 ppm (dry)~~. [Basis: Cumulative Increase, BAAQMD 10-14]
16027	3	S-237	Fuel Gas System: The Owner/Operator shall limit the refinery low-pressure fuel gas to no more than any of the following: (a) 100 ppmv H2S, averaged over a 24-hour calendar day and (b) the H2S concentration limitation specified in NSPS 40 CFR 60 Subpart J~~160 PPM H2S, averaged over any 3-hour period~~. [Basis: Cumulative Increase, BACT, NSPS]
19177	19g	S-1030 S-1031	The Owner/Operator shall limit the sulfur dioxide (SO2) mass emissions at P-60 or P-62 to no more than 10.75 pounds per hour (rolling 24 hour average). The Owner/Operator shall limit the sulfur concentrations in the refinery fuel gas to no more than 35 ppm TRS (rolling consecutive 365 day average). (Basis: BACT) The Owner/Operator shall limit the Sulfur concentrations in fuel gas fired in S-1030, S-1031, S-1032 and S-1033 to no more than 100 ppm Totaled Reduced Sulfur (rolling 24 hour average). (Basis: BACT) The Owner/Operator shall limit the hydrogen sulfide (H2S) concentrations in refinery fuel gas to no more than the H2S concentration limitation specified in NSPS 40 CFR 60 Subpart ~~J160 ppm (rolling consecutive 3-hour average)~~. (Basis: NSPS)

RECOMMENDATION

It is recommended that an Administrative Change in Conditions to the Permit to Operate be granted to Valero for:

S-1030 Combustion Turbine Generator (Cogen) 500MM Btu/hr
S-1031 Heat Recovery Steam Generator, 310MM Btu/hr
S-21 Hydrogen Reformer Furnace, F-301
S-22 Hydrogen Reformer Furnace, F-351
S-23 Gas Oil Hydrocracker Furnace, F-401
S-220 Hot Oil Furnace, F-4460
S-237 Boiler - SG-1032

_____ _____

Arthur P. Valla 5Dec05
Air Quality Engineer

EVALUATION REPORT
VALERO BENICIA REFINERY
CONDITION 19466, PART 5, ESP OPERATION
APPLICATION 13203, PLANT 12626

BACKGROUND

The Valero Benicia Refinery (Valero) operates A-1 through A-5, Electrostatic Precipitators (ESPs) to minimize particulate emissions from the S-3 and S-4 CO furnaces that exhaust at the refinery Main Stack. The ESPs are subject to Permit Condition 19466 Part 5 that requires at least 4 out of the 5 units to be in operation at all times. Valero has applied to change the 4/5 requirements for:

S-3 Crude Preheat Furnace, F-101
S-4 Reduced Crude Furnace, F-102
A-1,2,3,4,5 Electrostatic Precipitators

Valero states that in some operating situations, it is not necessary to operate 4 ESPs to comply with Regulation 6-301 and 6-304. In addition, when a unit is down for scheduled maintenance, an upset causing an unscheduled shutdown of a second unit can occur.

EMISSIONS SUMMARY

There are no changes in emissions expected due to this application. The change from 4 ESPs to 3 ESPs will be infrequent and is expected to have little or no impact on emissions. An initial source test will be imposed to confirm that this is the case.

PLANT CUMULATIVE INCREASE

There are no net changes to the plant cumulative emissions.

TOXIC RISK SCREEN

This proposed change is not expected to emit toxic compounds in amounts different that previously emitted. Therefore, a toxic risk screen is not required.

BEST AVAILABLE CONTROL TECHNOLOGY

BACT is triggered for new or modified sources that emit criteria pollutants in excess of 10 lbs/day. However, Regulation 2-1-234 defines a modified source as one that results in an increase in daily or annual emissions of a regulated air pollutant. For this application, there is no expected change in emissions. Therefore, BACT does not apply.

PLANT LOCATION

According to the SCHOOL program, the closest school is Semple Elementary, which is just over one mile from the facility.

COMPLIANCE

This application will not change the compliance for the affected sources. Specifically, compliance with Regulations 6-301, 6-304 and 6-310 is not changed.

The closest school is over a mile from the facility, so the Public Notice requirements of Regulation 2-1-214 do not apply.

Toxics, CEQA, NESHAPS, BACT, and Offsets do not apply.

CONDITIONS

Permit Condition 19466 will be changed as follows:

Condition 19466 (a clean version from the Title V permit, Revision 3 Proposed):

1. Deleted. (Basis: Sampling is a safety problem and there is reasonable assurance that compliance with Regulation 9-1-313.2 is achieved. See detailed analysis in Statement of Basis)

2a. Deleted. (Basis: S-188 vents to the refinery fuel gas system).

2b. Deleted. (Basis: S-189 vents to the refinery fuel gas system).

2c. Deleted. (Basis: S-160 was modified in May, 2005 and now vents to Vapor Recovery System A-13/A26)

2d. The Owner/Operator shall operate S-160 Seal Oil Sparger only when abated by A-13/A-26 Vapor Recovery Compressor to be returned to the refinery fuel gas system. (Basis: Cumulative Increase)

3. The Owner/Operator shall monitor and record on a monthly basis the visible emissions from Sources S-1, S-2, S-8, S-11, S-176, S-233 and S-237 to demonstrate compliance with Regulation 6-301 (Ringlemann 1 or 20% opacity). For S-176 only, this monitoring is only required when dry salt is added to the tank. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-301]

4. The owner/operator shall notify the District in writing by fax or email no less than three calendar days in advance of any scheduled startup or shutdown of any process unit and as soon as feasible for any unscheduled startup or shutdown of a process unit, but no later than 48 hours or within the next normal business day after the unscheduled startup/shutdown. The notification shall be sent in writing by fax or email to the Director of Enforcement and Compliance. The requirement is not federally enforceable. [Regulation 2-1-403]

5a. The Owner/Operator shall abate the emissions from the S-3 and S-4, CO Boilers, by at least four of the five A-1 through A-5 Electrostatic Precipitators, except for no more than 30 days per calendar year to allow for emergency ESP repairs, and the Owner/Operator shall exhaust those emissions through the main stack (P-1). [Basis: Regulation 6-301 and Regulation 6-304].

5b. The Owner/Operator shall abate the emissions from the S-3 and S-4 CO Boilers by at least three of the five A-1 through A-5 Electrostatic Precipitators at all times. [Basis: Regulation 6-301 and Regulation 6-304].

5c. In order to demonstrate compliance with Regulations 6-301, 6-304 and 6-310, the Owner/Operator shall, prior to June 30, 2006, conduct a District approved source test during the operation of 3 ESP units. All source testing shall be completed in accordance with the District's Manual of Procedures. This source test shall be completed and the source test report demonstrating compliance submitted to the District's Compliance and Enforcement Division and the District's Engineering Division. This source test report shall be approved by the District's Source Test Section prior to 3 ESP unit operation after the initial source test. [Basis: Regulations 6-301, 6-304 and 6-310]

6. The Owner/Operator shall perform an annual source test on Sources S-5 and S-6 to demonstrate compliance with Regulation 6-310 (outlet grain loading no greater than 0.15 grain/dscf). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-310]

7. The Owner/Operator shall perform an annual source test on Sources S-8 and S-176 to demonstrate compliance with Regulation 6-310 (outlet grain loading no greater than 0.15 grain/dscf). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. For S-176 only, this source test is only required when dry salt is added to the tank. [Basis: Regulation 6-310]

8. The Owner/Operator shall perform annually a source test on S-1 and S-2 to determine compliance with Regulation 6-330 (Outlet grain loading not to exceed 0.08 grain/dscf of SO3 and H2SO4). The Owner/Operator shall submit the test results to the District's

Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-330]

9. The Owner/Operator shall perform an annual source test on Sources S-5, S-6 and S-8 to demonstrate compliance with Regulation 6-311 (PM mass emissions rate not to exceed $4.10P^{0.67}$ lb/hr). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-311]

10. The Owner/Operator shall conduct a District-approved source test on a semi-annual basis on Sources S-7, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-30, S-31, S-32, S-33, S-34, S-40, S-41 and S-220 and on an annual basis on sources S-35 and S-173 to demonstrate compliance with Regulation 9-10-305 (CO not to exceed 400 ppmv, dry, at 3% O2, operating day average). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 9-10-305]

11. The Owner/Operator shall conduct a semi-annual District-approved source test on Sources S-43, S-44 and S-46 to demonstrate compliance with Regulation 9-9-301.1 (NOx not to exceed 55 ppmv, dry, at 15% O2, fired on refinery fuel gas). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 9-9-301.1]

12. The Owner/Operator shall abate the VOC emissions from the S-159 Lube Oil Reservoir using the S-36 Boiler. [Basis: Cumulative Increase]

13. The Owner/Operator shall vent the VOC emissions from S-167 and S-168 Seal Oil Spargers in a closed system to the flare gas recovery header to be returned to the refinery fuel gas system. [Basis: Cumulative Increase]

14. The Owner/Operator shall use the continuous emission monitors required by Regulation 9, Rule 10, to monitor compliance for all NOx limits at the following sources:
    CO Furnaces: S-3, S-4
    Process Furnaces: S-21, S-22, S-23, S-25, S-30, S-31, S-32, S-33, S-220
    Steam Generators : S-40, S-41

15. The Owner/Operator shall use the continuous opacity monitors required by Regulation 1-520 to monitor compliance for the opacity limits at the Main Stack for the following sources:

S-5 Fluid Catalytic Cracking Unit, Catalyst Regenerator
S-6 Fluid Coker, Burner

16. To allow sufficient time to prepare test plans, train employees, and install any necessary equipment, the monitoring requirements Parts 1, 2c, 3, 6, 7, 8, 9, 10, 11, 14 and 15 are effective April 1, 2004.

RECOMMENDATION

It is recommended that a Change in Conditions to the Permit to Operate be granted to Valero for:

S-3 Crude Preheat Furnace, F-101
S-4 Reduced Crude Furnace, F-102
A-1,2,3,4,5 Electrostatic Precipitators

_____ _____

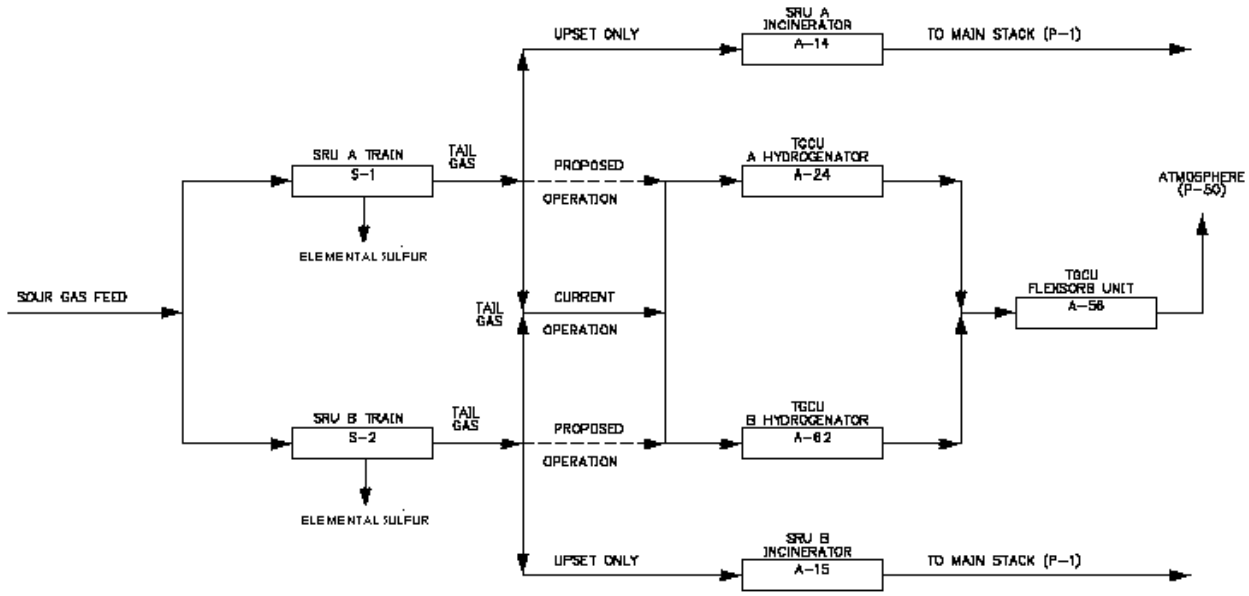
Arthur P. Valla 21Dec05
Air Quality Engineer

EVALUATION REPORT
VALERO BENICIA REFINERY
PARALLEL TAIL GAS TREATMENT UNIT OPERATION
APPLICATION 14443, PLANT 12626

BACKGROUND

The Valero Benicia Refinery (Valero) operates a tail gas treatment process that abates the discharge vapors from the Sulfur Recovery Units (SRU). This process consists of

S-1 Claus SRU A, 240 short tons/day (VIP rate), 160 short tons/day (Title V)
S-2 Claus SRU B, 240 short tons/day (VIP rate), 160 short tons/day (Title V)
A-24 Tail Gas Hydrogenation unit (Beavon Process) consisting of a Reducing Gas Generator, Hydrogenation Reactor, and Waste Heat Boiler
A-62 Tail Gas Hydrogenation unit (Beavon Process) consisting of a Reducing Gas Generator, Hydrogenation Reactor, and Waste Heat Boiler
A-56 Flexsorb Adsorption Unit, including an amine Adsorption Unit and Regenerator. The H_2S containing acid gas is recycled back to the Claus Units.
P-50 Cleaned Tail Gas discharge from Flexsorb unit.



In the above simplified drawing, A-24 Hydrogenation Unit is shown dedicated to S-1 SRU A Train, and A-62 Hydrogenation Unit is shown dedicated to S-2 SRU B Train. However, A-24

can also be aligned with S-2 and A-62 can be aligned with S-1, for additional operating flexibility.

In this process the sulfur in the sour gas is recovered as elemental sulfur in a Claus process. The waste gas from the sulfur recovery unit is rich in sulfur compounds (primarily SO2 and H2S) and requires abatement prior to discharge to the atmosphere. The A-24 and A-62 Tail Gas Units consist of a Reducing Gas Generator (aka Combustor), a reactor, and a heat recovery steam generator. The Reducing Gas Generator burns natural gas in an oxygen deficient environment to produce a "reducing" gas containing hydrogen for use in the Hydrogenation Reactor. In the reactor, essentially all of the sulfur compounds are converted ("reduced") to H2S. This allows removal of H2S in the downstream amine adsorption A-56 Flexsorb unit. The H2S rich discharge liquid from the Flexsorb tower is regenerated and the waste gas recycled to the Sulfur Recovery units for conversion to elemental sulfur.

Prior to 2003, Valero operated the Sulfur Removal units S-1 and S-2 with a single Tail Gas Treatment unit A-24 followed by A-56 amine Flexsorb unit. In 2003 Valero submitted application 8028 to add a spare tail gas treatment unit to allow scheduled maintenance and improve abatement reliability. Application 8028 requested an immediate permit to operate under Regulation 2-1-106 Accelerated Permitting Program. This permit to operate was not granted because even though the A-62 is a spare tail gas unit, there is a short period of time (when switching units) where both units are operating simultaneously causing an increase in emissions. Valero amended the application to remove the Reducing Gas Generator and the reactor and steam generator were granted a permit per Regulation 2-1-106. Valero submitted Application 8427 for the Reducing Gas Generator, which was granted a permit to operate in December 2003.

This process works well discharging vapors that comply with District regulations. However, Valero has recognized that maximum reliability can be achieved by operating each tail gas unit continuously and dedicated to a single Sulfur Recovery Unit. Allowing this flexibility will also provide confidence that tail gas treatment will continue to be reliable once the sulfur production rates increase as approved in the Valero Improvement Project (VIP) Application 5846.

This application is for a change in conditions to allow either single or parallel operation of:

A-24 Tail Gas Hydrogenation Unit
A-62 Tail Gas Hydrogenation Unit

This change to parallel operation was originally submitted in Application 13205. However, this application was cancelled in January 2006 due to failure to complete the application.

EMISSIONS SUMMARY

The A-24 and A-62 Tail Gas Hydrogenation units have been permitted as abatement units. However, these units are actually process units that modify the chemical composition of the S-1 and S-2 SRU tail gas in order for sulfur compounds to be removed by amine adsorption in the A-56 Flexsorb unit. The quantity of natural gas used in the Reducing Gas Generator is a function of: 1) the condition (activity) of the catalyst in the Hydrogenation Reactor which in turn

determines the amount of preheat required for the SRU tail gas; and 2) the SRU tail gas quality and quantity which in turn determines the amount of hydrogen required to convert the sulfur compounds to hydrogen sulfide. The design of the Reducing Gas Generator is rated at a heat release of 9.1 MMBtu/hr, and in this case the natural gas feed rate is 10,761 SCFH. The "design" case includes high SRU tail gas pre-heat and low hydrogen production in the Reducing Gas Generator. Under normal conditions, the Reducing Gas Generator has a heat release of 8.2 MMBtu/hr and requires 12,275 SCFH of natural gas. In the "normal" case, the SRU tail gas requires low pre-heat and high hydrogen production in the reducing gas – thus the higher natural gas rate of 12,275 SCFH for a lower overall heat release of 8.2 MMBtu/hr.

Because Tail Gas Treatment units A-24 and A-62 are process units, the design is based on engineering's estimates of process requirements, in particular heat required in the reactor and the tail gas quality. In order to provide flexibility for operating conditions not covered by the engineers, Valero has estimated a maximum operating case that covers operating fluctuations that have occurred in the past. In the "maximum hourly" case, the Reducing Gas Generator has a heat release of 9.1 MMBtu/hr and requires 13,500 SCFH of natural gas. The "maximum hourly" case includes both high SRU tail gas pre-heat and high hydrogen production in the Reducing Gas Generator. The "maximum hourly" case represents peak natural gas throughput operating conditions for the Reducing Gas Generator. This contingency is 10 percent above the "normal" case.

Since this tail gas treatment unit is not a typical heater firing natural gas and exhausting directly to atmosphere, the manufacturer does not publish emission factors for the Reducing Gas Generator as is common for other, more conventional natural gas fired devices. Furthermore, any emission factor used for natural gas combustion would be subject to discussion since the combustion is in an oxygen deficient environment, and the products of combustion are impacted in the reactor and the amine adsorption unit. Nevertheless, emissions will be calculated based on AP-42 Section 1.4 Natural Gas Combustion. It is expected that emissions will be considerable less than those predicted by AP-42. In order to prevent overestimating emissions, the following approach will be employed:

- Estimate the emissions using AP-42
- Calculate the VIP sulfur production increase
- Ratio the AP-42 emissions by the increase in sulfur production

The VIP sulfur production rate is 240 tons/day for each Claus unit, up from 160 tons/day allowed in the current permit. This is a 50% increase, so the effect of this approach is to estimate the emissions due to this application as one-half of the AP-42 emissions. An initial compliance source test will be used to verify emissions.

Calculation Basis:
"Design" Heat Release: 9.1 MMBtu/hr (10,761 SCFH Natural Gas)
"Normal" Natural Gas Flowrate: 12,275 SCFH (at 'normal' operation 8.2 MMBtu/hr heat release)
"Maximum Hourly" Natural Gas Flowrate: 13,500 SCFH (at 'maximum hourly' operation of 9.1 MMBtu/hr heat release, which is about 10 percent higher than 'normal' operation)

AP-42 Table 1.4-1 and 1.4-2 Emission factors:
NOx: 100 lb/MMSCF (uncontrolled small boiler)
CO: 84 lb/MMSCF (uncontrolled small boiler)
POC: 5.5 lb/MMSCF
PM10: 7.6 lb/MMSCF
SO2: 0.6 lb/MMSCF (2000 grains/SCF)

"Normal" Criteria Pollutants from each Tail Gas Unit Reducing Gas Generator					
Pollutant	AP-42 EF (lb/MMSCF)	Max. Natural Gas SCFH	Emissions lb/hr	Sulfur Ratio lb/hr(note 1)	"Normal" Emissions ton/yr
NOx	100	12,275	1.228	0.614	2.688
CO	84	12,275	1.031	0.516	2.258
POC	5.5	12,275	0.068	0.034	0.148
PM10	7.6	12,275	0.093	0.047	0.204
SO2	0.6	12,275	0.007	0.004	0.016

Note 1: The "Sulfur Ratio" emissions are 50% of the calculated emissions (see explanation above)

The maximum hourly and daily emissions are based on AP-42 emission factors with no sulfur production discount. These emissions will be the basis for the BACT evaluation and the acute toxics review.

"Maximum Hourly" Criteria Pollutants from each Tail Gas Unit Reducing Gas Generator				
Pollutant	AP-42 EF (lb/MMSCF)	Max. Natural Gas SCFH	Emissions lb/hr	Emissions lb/day
NOx	100	13,500	1.350	32.400
CO	84	13,500	1.134	27.216
POC	5.5	13,500	0.074	1.782
PM10	7.6	13,500	0.103	2.462
SO2	0.6	13,500	0.008	0.194

PLANT CUMULATIVE INCREASE

Pollutant	Current Ton/yr	A-62 Ton/yr	Total Emissions Ton/yr
NOx	0.006	2.688	2.694
CO	111.262	2.258	113.520
POC	0.0	0.148	0.148
PM10	0.0	0.204	0.204
SO2	0.0	0.016	0.016

TOXIC RISK SCREEN

Toxic Emissions are also based on emission factors from AP-42 Section 1.4 Natural Gas Combustion, Tables 1.4-3 and 1.4-4.

The acute toxic risk screen will be based on the "Maximum Hourly" throughput.

Pollutant	AP-42 EF (lb/MMSCF)	Max. Natural Gas SCFH	Emissions lb/hr X 1000	Acute Toxic Trigger lb/hr
Benzene	0.0021	13,500	0.028350	2.9
Formaldehyde	0.075	13,500	1.012500	0.21
Naphthalene	0.00061	13,500	0.008235	N/A
Toluene	0.0034	13,500	0.045900	82
Arsenic	0.0002	13,500	0.002700	0.00042
Beryllium	0.000012	13,500	0.000162	N/A
Cadmium	0.0011	13,500	0.014850	N/A
Chromium	0.0014	13,500	0.018900	N/A
Copper	0.00085	13,500	0.011475	0.22
Manganese	0.00038	13,500	0.005130	N/A
Mercury	0.00026	13,500	0.003510	0.004
Nickel	0.0021	13,500	0.028350	0.013
Selenium	0.000024	13,500	0.000324	N/A
Vanadium	0.0023	13,500	0.031050	0.066
Zinc	0.029	13,500	0.391500	N/A
Dichlorobenzene	0.0012	13,500	0.016200	N/A
Hexane	1.8	13,500	24.300000	N/A

There are no toxic air contaminants emitted in excess of the acute toxic trigger level.

The chronic toxic risk screen will be based on the "Normal" throughput.

Pollutant	AP-42 EF (lb/MMSCF)	Max. Natural Gas SCFH	Emissions lb/hr X 1000	Emissions lb/yr	Chronic Toxic Trigger lb/yr
Benzene	0.0021	12,275	0.0257775	0.2258	6.4
Formaldehyde	0.075	12,275	0.9206250	8.0647	30
Naphthalene	0.00061	12,275	0.0074878	0.0656	5.3
Toluene	0.0034	12,275	0.0417350	0.3656	12000
Arsenic	0.0002	12,275	0.0024550	**0.0215**	**0.012**
Beryllium	0.000012	12,275	0.0001473	0.0013	0.08
Cadmium	0.0011	12,275	0.0135025	**0.1183**	**0.045**

Pollutant	AP-42 EF (lb/MMSCF)	Max. Natural Gas SCFH	Emissions lb/hr X 1000	Emissions lb/yr	Chronic Toxic Trigger lb/yr
Chromium	0.0014	12,275	0.0171850	0.1505	N/A
Copper	0.00085	12,275	0.0104338	0.0914	93
Manganese	0.00038	12,275	0.0046645	0.0409	7.7
Mercury	0.00026	12,275	0.0031915	0.0280	0.56
Nickel	0.0021	12,275	0.0257775	0.2258	0.73
Selenium	0.000024	12,275	0.0002946	0.0026	770
Vanadium	0.0023	12,275	0.0282325	0.2473	N/A
Zinc	0.029	12,275	0.3559750	3.1183	1400
Dichlorobenzene	0.0012	12,275	0.0147300	0.1290	16
Hexane	1.8	12,275	22.0950000	193.5522	270000

The table above shows that the chronic toxic triggers for cadmium and arsenic are exceeded. However, the combustion products from the natural gas burning are sent to the reactor and the flexsorb unit. It is unknown what impact the reactor will have on these emissions, but the Flexsorb unit has three separate sections (a quench section, an amine adsorption section, and a demister section) that would act like a multi-staged water wash abatement device. Using the standard 90% abatement efficiency for a water wash, these emissions are below the trigger level as shown below:

Pollutant	AP-42 EF (lb/MMSCF)	Emissions from Combustor lb/yr	Assumed Flexsorb Abatement Efficiency	Emissions from Flexsorb Unit, lb/yr	Chronic Toxic Trigger lb/yr
Arsenic	0.0002	0.0215	90%	0.00215	0.012
Cadmium	0.0011	0.1183	90%	0.01183	0.045

Emissions of arsenic and cadmium do not exceed the chronic toxic trigger level.

Therefore, this application does not emit any toxic compounds that exceed the toxic triggers of Regulation 2, Rule 5 and a risk screen is not required.

BEST AVAILABLE CONTROL TECHNOLOGY

BACT is triggered for new or modified sources that emit criteria pollutants in excess of 10 lbs/day. Based on the "Maximum Hourly" case, the emissions of A-62 exceed 10 lb/day for NOx and CO. However, the NOx and CO emissions are secondary emissions for abatement unit A-62. Therefore, pursuant to Regulation 2-2-112, A-62 is exempt from BACT, but must use

Reasonably Available Control Technology (RACT). RACT for combustion in a Reducing Gas Generator has not been established. This is likely because of the small number of situations where natural gas is combusted in an oxygen deficient environment.

For NOx emissions, the manufacturer claims that any NOx formed in this reducing environment would be mostly converted to ammonia in the Hydrogenation Reactor and removed in the amine unit. However, assuming that all the NOx is simply carried through unchanged in the reactor and Flexsorb unit, Valero estimates the treated Tail Gas effluent NOx concentration less than 10 ppm. Therefore, actual NOx emissions should be lower than that. In support of this argument, an unannounced source test performed by CARB in 1997 resulted in a report showing NOx emissions undetectable.

For CO, the amount of emissions predicted from natural gas combustion is less than 0.01% of the CO generated by the Sulfur Recovery Unit itself. Furthermore, much of the CO is converted to CO2 in the tail gas unit reactor. Therefore, even if there was a CO limit to apply to the secondary emissions from natural gas combustion, it would be impractical to detect (via source test) these emissions – they would be lost in the CO generated in the Claus Units. Valero estimates the total CO concentration in the treated tail gas to be 450 ppm. Prorating this to estimate the contribution from the natural gas combustion would be 0.0001 X 450 = 0.045 ppm CO, an insignificant and undetectable concentration. The aforementioned CARB source test resulted in a total CO concentration averaging 181 ppm.

For comparison, RACT for Thermal Oxidizers is 50 ppmvd NOx and 350 ppmvd CO (both at 15% O2). Thermal oxidizers are dissimilar to the oxygen deficient Reducing Gas Generators in that the former is operated at high excess air in order to achieve high combustion temperatures and to generate turbulence. However, they are similar in that combustion tuning to optimize secondary emissions is limited since the primary purpose of the units is abatement of other components (VOC for thermal oxidizers and sulfur compounds for the Tail Gas Treatment units). Nevertheless, were RACT for thermal oxidizers to be used and applied to the combustion in the Reducing Gas Generators, A-62 would comply.

OFFSETS

Valero is required to provide emission offsets for NOx, SOx, PM10 and POC emissions from this parallel tail gas treatment unit operation per Regulation 2-2-302 and 2-2-303. Valero will provide offsets based on the "Normal" case. An initial source test will be imposed to verify compliance with the offset requirements and annual source tests will be imposed to confirm NOx emissions do not exceed 8.064 tons/yr from the A-56 Flexsorb discharge.

Valero has proposed that the offset requirements be satisfied in the following manner:

Parallel Tail Gas Treatment Project
Project Emissions and Emission Offset Requirements

BAAQMD Source	Heater Number	MMBTU/HR	Emissions, Tons/Year NOx	SOx	CO	PM10	POC
Total Project Emissions			2.688	0.016	2.258	0.204	0.148
Offset Ratio			1.15	1.00	N/A	1.00	1.15
Total Emissions Offsets Required			3.091	0.016	N/A	0.204	0.170
Offsets Provided via Certificates			Notes 1, 4	Notes 2, 4	Note 5	Notes 3, 4	Notes 1, 4

Note 1: Valero will first surrender Certificate # 882 with POC credits of 0.11 tons/year and then Certificate # 753 with POC credits of 8.658 tons/year to satisfy total NOx and POC offset requirements of 3.261 tons/year.
Note 2: Valero will surrender Certificate # 883 with SOx credits of 1.17 tons/year to satisfy SOx offset requirements of 0.016 tons/year.
Note 3: Valero will first surrender Certificate # 837 with PM10 credits of 2.25 tons/year to satisify PM10 offset requirements of 0.204 tons/year.
Note 4: BAAQMD shall reissue new Certificates for the remaining emission reduction credits.
Note 5: The shutdown of two package boilers (S-38 and S-39) required for completion of Cogen Phase I has net reduced Refinery CO emissions by about 70 tons/year.

TOTAL EMISSIONS FROM A-56 FLEXSORB STACK

As previously indicated, source testing will be imposed to demonstrate that the basis for granting this authority to construct is valid. Since both Tail Gas Treatment Units A-24 and A-62 feed A-56 Flexsorb unit and the treated tail gas ultimately discharges through a single stack P-50, the combined emissions need to be summarized and considered for potential source test limits.

Pollutant	A-24 lb/hr (note 2)	A-62 lb/hr (note 2)	Total lb/hr	A-24 Ton/yr (note 2)	A-62 Ton/yr (note 2)	Total Emissions Ton/yr
NOx (note 1)	1.228	0.614	1.842	5.376	2.688	8.064
CO (note 1)	1.031	0.516	1.547	4.516	2.258	6.774
POC (note 1)	0.068	0.034	0.102	0.296	0.148	0.444
PM10(note 1)	0.093	0.047	0.140	0.409	0.204	0.613
SO2 (note 1)	0.007	0.004	0.011	0.032	0.016	0.048

Note 1: Emissions for A-62 has been adjusted by 50% based on the VIP sulfur production increase..
Note 2: A-24 and A-62 emissions are used interchangeably to illustrate a 50% increase in total emissions.

CEQA

This application qualifies for the categorical exemption of Regulation 2-1-312 because the project does not have potential for causing a significant adverse environmental impact. This project results in a more efficient method for operating existing abatement equipment and qualifies pursuant to Regulation 2-1-312.2. The applicant has provided Form Appendix H in support of this exemption.

PLANT LOCATION

According to the SCHOOL program, the closest school is Semple Elementary, which is just over one mile from the facility.

COMPLIANCE

The operation of this spare equipment continuously will not change the compliance for the Sulfur Plants S-1 and S-2. Tail gas emissions from S-1 and S-2, abated by A-24 and/or A-62, then by A-56, will comply with Regulations 6-301, 6-310 and 6-330, and 9-1-307:

6-301 **Ringelmann No. 1 Limitation:** Except as provided in Sections 6-303, 6-304 and 6-306, a person shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree.

6-310 **Particulate Weight Limitation:** A person shall not emit from any source particulate matter in excess of 343 mg per dscm (0.15 gr. per dscf) of exhaust gas volume.

6-330 **Sulfur Recovery Units:** A person shall not emit from any operation manufacturing sulfur, using as a principal raw material any sulfur-containing material, any emission having a concentration of SO_3 or H_2S0_4, or both, expressed as 100% H_2S0_4, exceeding 183 mg dscm (0.08 gr. dscf) of exhaust gas volume.

9-1-307 **Emission Limitations for Sulfur Recovery Plants:** A person shall not emit, from any source in a sulfur recovery plant, effluent process gas containing sulfur dioxide in excess of 250 ppm by volume (dry) calculated at zero percent oxygen. Plants which emit less than 45 kg (100 lbs.) per day of sulfur dioxide shall not be subject to this limitation. (Amended February 16, 1983; May 20, 1992)

The tail gas emissions will also comply with NESHAPS Subpart UUU 63.1568(a)(1)(i). Valero has selected Option 1 to comply with NSPS Subpart J 60.104(a)(2)(ii) which limits TRS to 300 ppm and H2S to 10 ppm.

The closest school is over a mile from the facility, so the Public Notice requirements of Regulation 2-1-214 do not apply.

Toxics does not apply.

The project qualifies for the CEQA categorical exemption of Regulation 2-1-312.

CONDITIONS

Existing Conditions 125 and 126 will be modified as follows:

COND#125 ----------

Valero Refining Company – California
3400 E. Second Street
Benicia, Ca 94510
Application 14443
S-1 Sulfur Recovery Unit A
Previous Applications: 26227(1977), 26878(1979), 29808 (1984), 17850(1997), 8028 (Oct 2003) and 8427 (Dec 2003)

For Source S-1 Claus Sulfur Recovery Unit (F-1301A, Natural Gas)

1. The Owner/Operator shall provide reasonable access to 24 hour sulfur production data whenever the APCO or his/her designated representative performs compliance determination on the Sulfur Recovery Unit (SRU), Tail Gas Clean-up Unit and main stack.
(Basis: Banked POC credits)

2. Deleted.
(Basis: Owner/Operator installed the best available H2S monitor which was approved by the APCO.)

3. Except during upset conditions, the Owner/Operator shall not open the motor operated valve (MOV-001), which allows Tail Gas from S-1 to flow to the incinerator (F-1302A; A-14), when either of the sour gas feed valves (F002, F004) to source (S-1) are open. A closed block valve or blind in the pertinent lines shall be considered sufficient to fulfill this requirement.
(Basis: Regulation 9-1-312.2, odors)

4. Except during upset conditions, the Owner/Operator shall route the tail gases from the S-1 Sulfur Recovery Unit to the Beavon and Flexsorb SE Tail Gas Treatment Units (A-24 or A-62 and A-56). The Owner/Operator shall return the recovered hydrogen sulfide to the S-1 and/or S-2 SRU for recovery as elemental sulfur.
(Basis: Regulation 9-1-312.2, odors)

5. The total emissions from natural gas firing in both A-24 and A-62 Reducing Gas Generators shall not exceed the following limits:Pollutant lb/hr tons/yrNOx: 1.842 8.064
CO: 1.547 6.774
POC: 0.102 0.444
PM10: 0.140 0.613
SO2: 0.011 0.048
(Basis: Offsets, Cumulative Increase)

6. The Owner/Operator of A-24 shall fire the Reducing Gas Generator only with Natural Gas not to exceed a maximum heat release of 9.1 MMBtu/hr, a maximum natural gas fuel rate of 13,500 SCFH, and a maximum annual natural gas consumption of 108 MMSCF (12,275 SCFH annual average). (Basis: Cumulative Increase, Toxics)

7. Within 60 days of the start up of the parallel operation of A-24 and A-62 Tail Gas Treatment Units, the Owner/Operator shall conduct an initial District approved source test to demonstrate the emission changes caused by the operation of the two Beavon Process Reducing Gas Generators simultaneously. This source test shall measure the NOx, CO, POC, PM10 and SO2 emissions before and after the startup of the second Tail Gas Treatment unit. Reasonable steps shall be taken in the refinery to maximize natural gas firing to both units. The Owner/Operator shall submit the results of the source test to the Source Test Section within 60 days of the source test. (Basis: Compliance determination, Cumulative Increase, Offsets)

8. The owner/operator shall conduct a District approved source test annually to demonstrate compliance with the NOx limits of Part 5. The Owner/Operator shall submit the results of the source test to the Source Test Section within 60 days of the source test. (Basis: Cumulative Increase, Offsets)

COND# 126 ----------

Valero Refining Company – California
3400 E. Second Street
Benicia, Ca 94510
Application 14443

S-1 Sulfur Recovery Unit A
Previous Applications: 26227(1977), 26878(1979), 29808 (1984), 17850(1997), 8028 (Oct 2003) and 8427 (Dec 2003)

For Source S-2 Claus Sulfur Recovery Unit (F-1301B, Natural Gas)

1. The Owner/Operator shall provide reasonable access to 24 hour sulfur production data whenever the APCO or his/her designated representative performs compliance determinations on the Sulfur Recovery Unit (SRU), Tail Gas Clean-up Unit and main stack.
(Basis: BAAQMD 9-1-313.2)

2. Deleted.
(Basis: Owner/Operator installed the best available H2S monitor which was approved by the APCO.)

3. Except during upset conditions, the Owner/Operator shall not open the motor operated valve (MOV-003), that allows Tail Gas from S-2 to flow to the incinerator (F-1302B; A 15) when either of the sour gas feed valves (F052, F054) to source S-2 are open. A closed block valve or blind in the pertinent lines shall be considered sufficient to fulfill this requirement.
(Basis: Regulation 9-1-312.2)

4. Except during upset conditions, the Owner/Operator shall route the tail gases from the S-2 Sulfur Recovery Unit to the Beavon and Flexsorb SE Tail Gas Treatment Unit (A-24 or A-62 and A-56). The Owner/Operator shall return the recovered hydrogen sulfide the S-1 and/or S-2 SRU for recovery as elemental sulfur.
(Basis: Regulation 9-1-312.2)

5. The total emissions from natural gas firing in both A-24 and A-62 Reducing Gas Generators shall not exceed the following limits:

Pollutant	lb/hr	tons/yr
NOx:	1.842	8.064
CO:	1.547	6.774
POC:	0.102	0.444
PM10:	0.140	0.613
SO2:	0.011	0.048

(Basis: Offsets, Cumulative Increase)

6. The Owner/Operator of A-62 shall fire the Reducing Gas Generator only with Natural Gas not to exceed a maximum heat release of 9.1 MMBtu/hr, a maximum natural gas fuel rate of 13,500 SCFH, and a maximum annual natural gas consumption of 108 MMSCF (12,275 SCFH annual average). (Basis: Cumulative Increase, Toxics)

7. Within 60 days of the start up of the parallel operation of A-24 and A-62 Tail Gas Treatment Units, the Owner/Operator shall conduct an initial District approved source test to demonstrate the emission changes caused by the operation of the two Beavon Process Reducing Gas Generators simultaneously. This source test shall measure the NOx, CO, POC, PM10 and SO2 emissions before and after the startup of the second Tail Gas Treatment unit. Reasonable steps shall be taken in the refinery to maximize natural gas firing to both units. The Owner/Operator shall submit the results of the source test to the Source Test Section within 60 days of the source test. (Basis: Compliance determination, Cumulative Increase, Offsets)

8. The owner/operator shall conduct a District approved source test annually to demonstrate compliance with the NOx limits of Part 5. The Owner/Operator shall submit the results of the source test to the Source Test Section within 60 days of the source test. (Basis: Cumulative Increase, Offsets)

RECOMMENDATION

It is recommended that an Authority to Construct be granted to Valero for either single or parallel operation of:

A-24 Tail Gas Hydrogenation Unit
A-62 Tail Gas Hydrogenation Unit

_____ _____

Arthur P. Valla Date: 24Aug06
Air Quality Engineer

EVALUATION REPORT
VALERO BENICIA REFINERY
SRU CONSENT DECREE, H2S LIMIT, NSPS SUBPART J
APPLICATION 14604, PLANT 12626

BACKGROUND

In November 2005, Valero entered into a Clean Air Act Settlement with the U.S. Environmental Protection Agency and several state air quality agencies. This settlement is more commonly known as the "Consent Decree". Paragraphs 221 and 222 in Section XII, Part B, **SRP NSPS Subparts A and J Applicability** of the Consent Decree require Valero's S-1 and S-2 Claus Sulfur Recovery Units to be "affected facilities" under 40 CFR 60.100, effective December 31, 2005. Prior to Consent Decree, S-1 and S-2 were not subject to NSPS Subpart J pursuant to 40CFR60.100(b) because the Claus units were constructed in 1968, and have not been modified after the October 4, 1976 Subpart J effective date.

B. SRP NSPS SUBPARTS A and J APPLICABILITY

221. In accordance with the schedule provided in Paragraph 222 and 223, the SRPs at Valero's Refineries and Tesoro's Golden Eagle Refinery shall be "affected facilities" pursuant to 40 C.F.R. Part 60, Subpart J, and shall comply with the applicable provisions of 40 C.F.R. Part 60, Subparts A and J, as such requirements apply to SRPs.

222. The SRPs at Valero's Refineries and Tesoro's Golden Eagle Refinery are as follows:

SRP	Trains Comprising an SRP	NSPS Applicability Date
Ardmore SRP	SRU No. 1	Date of Lodging
Benicia SRP	SRU A SRU B	December 31, 2005

The key NSPS Subpart J emission limit for S-1 and S-2 is 60.104(a)(2)(ii):

(a) No owner or operator subject to the provisions of this subpart shall:

(2) Discharge or cause the discharge of any gases into the atmosphere from any Claus sulfur recovery plant containing in excess of:

(ii) For a reduction control system not followed by incineration, 300 ppm by volume of reduced sulfur compounds and 10 ppm by volume of hydrogen sulfide (H_2S), each calculated as ppm SO_2 by volume (dry basis) at zero percent excess air.

Valero is also subject to 40 CFR 63 Subpart UUU (Petroleum Refinery MACT II). 40 CFR 63.1568, associated with Subpart UUU Table 29, allows two options for HAP emission limitations from Sulfur Recovery Units. Valero has selected Option 1, complying with NSPS (63.1568(a)(1)(i)). Therefore, Valero is already subject to NSPS Subpart J 60.104(a)(2)(ii) through 40 CFR 63 Subpart UUU.

However, since H2S is not on the list of 189 HAPs in the 1990 Clean Air Act amendments, Valero was not subject to the H2S limitation of 60.104(a)(2)(ii).

Therefore, this application is for a change in conditions adding the NSPS Subpart J 10 ppm H2S limitation for:

S-1 Sulfur Recovery Unit A
S-2 Sulfur Recovery Unit B
A-24 Tail Gas Treatment Unit
A-62 Spare Tail Gas Treatment Unit
A-56 Flexsorb Unit

EMISSIONS SUMMARY

There are no changes in emissions due to this application. This application is to add an H2S emission limitation and will not result in a decrease or an increase in emissions.

PLANT CUMULATIVE INCREASE

There are no net changes to the plant cumulative emissions.

TOXIC RISK SCREEN

This proposed change in conditions would not emit toxic compounds in amounts different that previously emitted. Therefore, a toxic risk screen is not required.

BEST AVAILABLE CONTROL TECHNOLOGY

BACT is triggered for new or modified sources that emit criteria pollutants in excess of 10 lbs/day. However, Regulation 2-1-234 defines a modified source as one that results in an increase in daily or annual emissions of a regulated air pollutant. For this application, there is no change in emissions. Therefore, BACT does not apply.

PLANT LOCATION

According to the SCHOOL program, the closest school is Semple Elementary, which is just over one mile from the facility.

COMPLIANCE

This application will not change the compliance for S-1 and S-2. Compliance with Regulation 6, Regulation 9, Rule 1 and Rule 10, and 40 CFR 63 Subpart UUU (Petroleum Refinery MACT II) will not be changed. This application only adds compliance with the 10 ppm H2S limit of 60.104(a)(2)(ii). 40 CFR 60.105(a)(6) requires a CEM to monitor TRS emissions. This CEM was installed pursuant to the Petroleum Refinery MACT II which became effective in September 2005. However, there is no CEM requirement for the 10 ppm H2S limit. Therefore, the general requirement of NSPS Subpart A 60.8 which requires an initial source test applies and will be imposed conditionally.

The closest school is over a mile from the facility, so the Public Notice requirements of Regulation 2-1-214 do not apply.

Toxics, CEQA, BACT, and Offsets do not apply.

CONDITIONS

Existing Conditions will be modified as follows:

COND# 125 ----------

Valero Refining Company - California
3400 E. Second Street
Benicia, Ca 94510
Application 14443
S-1 Sulfur Recovery Unit A
Previous Applications: 26227(1977), 26878(1979), 29808 (1984), 17850(1997), 8028 (Oct 2003) and 8427 (Dec 2003)

For Source S-1 Claus Sulfur Recovery Unit (F-1301A, Natural Gas)

1. The Owner/Operator shall provide reasonable access to 24 hour sulfur production data whenever the APCO or his/her designated representative performs compliance determination on the Sulfur Recovery Unit (SRU), Tail Gas Clean-up Unit and main stack. (Basis: Banked POC credits)

2. Deleted. (Basis: Owner/Operator installed the best available H2S monitor which was approved by the APCO.)

3. Except during upset conditions, the Owner/Operator shall not open the motor operated valve (MOV-001), which allows Tail Gas from S-1 to flow to the incinerator (F-1302A; A-14), when either of the sour gas feed valves (F002, F004) to source (S-1) are open. A closed block valve or blind in the pertinent lines shall be considered sufficient to fulfill this requirement. (Basis: Regulation 9-1-312.2, odors)

4. Except during upset conditions, the Owner/Operator shall route the tail gases from the S-1 Sulfur Recovery Unit to the Beavon and Flexsorb SE Tail Gas Treatment Units (A-24 or A-62 and A-56). The Owner/Operator shall return the recovered hydrogen sulfide to the S-1 and/or S-2 SRU for recovery as elemental sulfur. (Basis: Regulation 9-1

-

312.2, odors)

5. The total emissions from natural gas firing in both A-24 and A-62 Reducing Gas Generators shall not exceed the following limits:

Pollutant	lb/hr	tons/yr
NOx:	1.842	8.064
CO:	1.547	6.774
POC:	0.102	0.444
PM10:	0.140	0.613
SO2:	0.011	0.048

(Basis: Offsets, Cumulative Increase)

6. The Owner/Operator of A-24 shall fire the Reducing Gas Generator only with Natural Gas not to exceed a maximum heat release of 9.1 MMBtu/hr, a maximum natural gas fuel rate of 13,500 SCFH, and a maximum annual natural gas consumption of 108 MMSCF (12,275 SCFH annual average). (Basis: Cumulative Increase, Toxics)

7. Within 60 days of the start up of the parallel operation of A-24 and A-62 Tail Gas Treatment Units, the Owner/Operator shall conduct an initial District approved source test to demonstrate the emission changes caused by the operation of the two Beavon Process Reducing Gas Generators simultaneously. This source test shall measure the NOx, CO, POC, PM10 and SO2 emissions before and after the startup of the second Tail Gas Treatment unit. Reasonable steps shall be taken in the refinery to maximize natural gas firing to both units. The Owner/Operator shall submit the results of the source test to the Source Test Section within 60 days of the source test. (Basis: Compliance determination, Cumulative Increase, Offsets)

8. The owner/operator shall conduct a District approved source test annually to demonstrate compliance with the NOx limits of Part 5. The Owner/Operator shall submit the results of the source test to the Source Test Section within 60 days of the source test. (Basis: Cumulative Increase, Offsets)

9. In order to determine compliance with the 10 ppm H2S limit of NSPS Subpart J 40 CFR 60.104(a)(2)(ii), the owner/operator shall conduct an initial District approved source test. The owner/operator shall obtain

approval for all source test procedures from the District's Source Test Section prior to conducting any tests. The owner/operator shall notify the District's Source Test Section in writing of the source test protocols and projected test dates at least 7 days prior to the testing date(s). Source test results shall be submitted to the District within 60 days of conducting the tests. (Basis: NSPS 60.104(a)(2)(ii) and 60.8, Consent Decree XII.B ¶221, ¶222 & ¶224.)

COND# 126 ----------

Valero Refining Company - California
3400 E. Second Street
Benicia, Ca 94510
Application 14443
S-1 Sulfur Recovery Unit A
Previous Applications: 26227(1977), 26878(1979), 29808 (1984), 17850(1997), 8028 (Oct 2003) and 8427 (Dec 2003)

For Source S-2 Claus Sulfur Recovery Unit (F-1301B, Natural Gas)

1. The Owner/Operator shall provide reasonable access to 24 hour sulfur production data whenever the APCO or his/her designated representative performs compliance determinations on the Sulfur Recovery Unit (SRU), Tail Gas Clean-up Unit and main stack. (Basis: BAAQMD 9-1-313.2)

2. Deleted. (Basis: Owner/Operator installed the best available H2S monitor which was approved by the APCO.)

3. Except during upset conditions, the Owner/Operator shall not open the motor operated valve (MOV-003), that allows Tail Gas from S-2 to flow to the incinerator (F-1302B; A15) when either of the sour gas feed valves (F052, F054) to source S-2 are open. A closed block valve or blind in the pertinent lines shall be considered sufficient to fulfill this requirement. (Basis: Regulation 9-1-312.2)

4. Except during upset conditions, the Owner/Operator shall route the tail gases from the S-2 Sulfur Recovery Unit to the Beavon and Flexsorb SE Tail Gas Treatment Unit (A

-

24 or A-62 and A-56). The Owner/Operator shall return the recovered hydrogen sulfide the S-1 and/or S-2 SRU for recovery as elemental sulfur. (Basis: Regulation 9-1-312.2)

5. The total emissions from natural gas firing in both A-24 and A-62 Reducing Gas Generators shall not exceed the following limits:

Pollutant	lb/hr	tons/yr
NOx:	1.842	8.064
CO:	1.547	6.774
POC:	0.102	0.444
PM10:	0.140	0.613
SO2:	0.011	0.048

(Basis: Offsets, Cumulative Increase)

6. The Owner/Operator of A-62 shall fire the Reducing Gas Generator only with Natural Gas not to exceed a maximum heat release of 9.1 MMBtu/hr, a maximum natural gas fuel rate of 13,500 SCFH, and a maximum annual natural gas consumption of 108 MMSCF (12,275 SCFH annual average). (Basis: Cumulative Increase, Toxics)

7. Within 60 days of the start up of the parallel operation of A-24 and A-62 Tail Gas Treatment Units, the Owner/Operator shall conduct an initial District approved source test to demonstrate the emission changes caused by the operation of the two Beavon Process Reducing Gas Generators simultaneously. This source test shall measure the NOx, CO, POC, PM10 and SO2 emissions before and after the startup of the second Tail Gas Treatment unit. Reasonable steps shall be taken in the refinery to maximize natural gas firing to both units. The Owner/Operator shall submit the results of the source test to the Source Test Section within 60 days of the source test. (Basis: Compliance determination, Cumulative Increase, Offsets)

8. The owner/operator shall conduct a District approved source test annually to demonstrate compliance with the NOx limits of Part 5. The Owner/Operator shall submit the results of the source test to the Source Test Section within 60 days of the source test. (Basis: Cumulative Increase, Offsets)

9. In order to determine compliance with the 10 ppm H2S limit of NSPS Subpart J 40 CFR 60.104(a)(2)(ii), the owner/operator shall conduct an initial District approved source test. The owner/operator shall obtain approval for all source test procedures from the District's Source Test Section prior to conducting any tests. The owner/operator shall notify the District's Source Test Section in writing of the source test protocols and projected test dates at least 7 days prior to the testing date(s). Source test results shall be submitted to the District within 60 days of conducting the tests. (Basis: NSPS 60.104(a)(2)(ii) and 60.8, Consent Decree XII.B ¶221, ¶222 & ¶224.)

RECOMMENDATION

It is recommended that a Change in Conditions to the Permit to Operate be granted to Valero for:

S-1 Sulfur Recovery Unit A
S-2 Sulfur Recovery Unit B
A-24 Tail Gas Treatment Unit
A-62 Spare Tail Gas Treatment Unit
A-56 Flexsorb Unit

_____ _____

Arthur P. Valla 18Oct06
Air Quality Engineer

EVALUATION REPORT
VALERO REFINING COMPANY
Application #14606 - Plant #12626

3400 East Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for a change of condition to the Permit to Operate for the following equipment:

S-239 Crude/Product Dock Sump TK-1918, 3,100 gallons.

Valero requested two changes to the existing permit Condition 18422. First, Valero requests to increase the permitted throughput of source S-239, Crude/Product Dock Sump, from 102,000 gallons per year to 360,000 gallons per year in Part 1. Second, Valero requests to delete the requirement of Regulation 8-5-301 that required the tank to be equipped with a submerged fill pipe in Part 2.

The Crude/Product Dock Sump, S-239, is a grandfathered source that has been in service since 1969. At that time, the Crude Dock and Product Dock were separate operations. In 1984, the Product Dock operation was relocated to and consolidated with the Crude Dock. However, the sump was never permitted separately. It was grouped as part of the Product Dock. The sump is used to accept the drained liquid from the crude and product loading arms and occasionally capture sampled purges, leaks or spills, surface run-off from various dock drains and maintenance/hydrotesting wastes.

The Crude/Product Dock Sump, S-239, is vertical-cylindrical vessels, 9 feet diameter and 5 feet height, with round bottom. The sump is covered and located beneath the dock in order to receive drained materials. It is heat-traced and insulated with pumping capacity of 100 gallons per minute.

In February 2001, Compliance Enforcement Division Staff requested Valero to submit an application for the sump so that it can be permitted separately from the Product Dock, S-129 and install a submerged fill pipe to it so that it meets the requirement of Regulation 8-5-301. A Violation Notice was issued on February 1, 2001 to Valero for operating the sump without a submerged fill pipe. Even though, Valero did not agree with the determination, subsequently, Valero installed a submerged fill pipe on February 13, 2001 to come into compliance and obtained the permit under Application # 2378, which was issued on Nov. 14, 2001 with Condition 18422.

Historically, the District did not require any other refinery to submit an application for a liquid sump. In this application, the District will grant Valero's request to use Regulation 8-2 for S-239 applicability for miscellaneous operation. S-239 is considered as part of the crude process where the liquid is not stored, but is collected and transported to the crude storage tanks. Its function is a junction box/lift station that contains a submerged pump to transfer materials out of the sump.

Since S-239 was a grandfathered source with no operation and physical modification, the District will consider S-239 as a loss of exemption source; therefore, it is not subject to New Source Review requirements (BACT, cumulative increase, offsets, toxic review, public notification requirements triggered by proximity to a K-12 school.). The District will impose a throughput limit of 360,000 gallons of materials per year at S-239. Although S-239 has a specific explicit lower throughput limit of 102,000 gallons per year, the District recognized that many throughput limits reported during initial permitting were mistaken or not carefully determined. As a result,

we have allowed facility operators to supply documentation demonstrating an appropriate higher capacity; either contemporary design information or historical data showing higher achieved throughputs.

Valero indicated that the implementation of the higher throughput will not increase throughput of process units downstream of S-239, and will not result in emission increases from existing equipment. The higher throughput limit will not cause any of the upstream or downstream sources to exceed the permitted limit. Therefore, no physical modification is required at any upstream and downstream units and no emission increase is associated with this change.

Valero submitted Application # 14607 to modify the TV permit along with this application.

II. EMISSION CALCULATIONS

The emissions for S-239 are quantified for information only. Source S-239 is treated as a loss of exemption source; therefore, it is not subject to New Source Review requirements (BACT, cumulative increase, offsets, toxic review, public notification requirements triggered by proximity to a K-12 school.)

The sump throughput is based on the maximum ship traffic of 24 vessels per month, and the emissions from S-239 are calculated by EPA Tank 4.0 program using gasoline with Reid Vapor Pressure of 11 psi and Sacramento meteorological data. (See attached calculations).

Tank Emissions (EPA Tank 4.0) based on 360,000 gallons/year:
Valero's established throughput = 24 vessels/mo. X 630 gallons/loading arm X 2 loading arms X 12 months/yr = 362,880 gallons/yr

	Annual (lb/yr)	Daily (lb/day)	
Working loss	1,304.56		
Deck fitting loss	1,631.42		
Maximum emissions	2,935.98	8.0	(365 day/yr)

STATEMENT OF COMPLIANCE

Source S-239 is subject to and expected to comply with the requirement of Regulation 8-2-
Regulation 8-2-301 - Miscellaneous Operations since the emissions from S-239 are less than 15 lbs/day.

Valero is not located within 1,000 feet of any school. The public notification requirements of Regulation 2-1-412 are not required.

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 11.9.

NSR, BACT, Offsets, and PSD are not applicable.

CONDITIONS

Condition # 18422 for Source S-239, Crude/Product Dock Sump TK-1918, Application #2378, Amended by Application #14606, Plant # 12626 – Valero Refinery.

1. The Owner/Operator shall limit the total liquid throughput at source S-239 to no more than 360,000 gallons during any consecutive twelve-month period. (Basis: Cumulative Increase)

2. The Owner/Operator of S-239 shall comply with all requirements of Regulation 8-2. (Basis: Regulation 8-2-301)

3. In order to demonstrate compliance with the part 1, the owner/operator of tank S-239 shall either maintain the total monthly throughput of each material stored, summarized on a consecutive 12-month basis in a District approved log, or shall be able to generate these records on short notice. These records shall be kept on site and made available for District inspection for a period of 60 months from the date that the record was made. (Basis: Recordkeeping)

RECOMMENDATION

Issue a conditional change of Permit Condition # 18422 for Valero for the following equipment:

S-239 Crude/Product Dock Sump TK-1918, 3,100 gallons.

_____
Thu H. Bui
Senior Air Quality Engineer
Engineering Division

Date: _____

THB:C:\Valero\14606\14606e

EVALUATION REPORT for Exempt Source(s)

Applicant Valero Refining Company – California.

Plant Number 12626 Application Number 14754

1. Background:

The Applicant has applied for a seal replacement alteration for:

S-81 TK-1753 Slop/Gasoline Tank, External Floating Roof, 3654K gallons

On June 6, 2006, the S-81 semi-annual tank inspection discovered that about 20 feet of the primary seal (liquid mounted tube seal) was missing. NOV A47817 was issued pursuant to Regulation 8-5-321.4. Temporary repairs were made June 7. In this application, Valero is proposing a new tank seal system for a permanent solution. The new primary seal will be a metallic shoe type seal. The secondary seal will also be replaced. This alteration is exempt by Regulation 2-1-123.4:

123.4 Tank seal replacement. For any tank subject to Regulation 8, Rule 5, any new seal must comply with the applicable provisions of Regulation 8, Rule 5, and the District must receive written notification of the tank source number and seal type at least three days prior to the installation.

Written notice was made June 9, 2006 by John Hansen of Pillsbury Winthrop Shaw Pittman.

2. Emission Calculations:

There is no chargeable cumulative increase for the exempt seal replacement on equipment described in Section 1. The MSDSs for Slop Oil and Gasoline indicated the presense of toxic materials. However, the District inventory does not include emissions of toxic materials from S-81 (not unusual for a grandfathered source) so it can be assumed toxics do not exceed trigger levels. In any case, the seal replacement will either have no impact or reduce toxic emissions. Therefore, this application for the seal replacement for this equipment does not cause the emission of one or more toxic air contaminants in quantities that exceed the limits listed in of Regulation 2-5.

3. Statement of Compliance:

The exempt alteration described in Section 1 is exempt from Sections 2-1-301 and 302, in accordance with the specific section of Regulation 2-1 cited in Section 1.

When the new seals are installed and the tank is returned to service, S-81 will comply with Regulation 8, Rule 5, NSPS Title 40, Part 60 Subpart Kb (Tanks) and Part 61 Subpart FF (Benzene Waste Operations).

4. Exemptions:

I recommend that Valero be issued exemption status for the alteration to the equipment described in Section 1:

Application Reviewed By: Arthur Valla.
Position: Air Quality Engineer II

Date

EVALUATION REPORT
VALERO REFINING COMPANY
Application #15052 - Plant #12626

3400 East Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for a modification to the Permit to Operate for the following equipment:

S-27 Powerformer Regeneration Facilities

Valero Benicia Refinery (Valero) operates S-1004 Powerformer that treats heavy naphtha fractions from the Virgin Light Ends (VLE) unit (in the S-1006 Pipestill) and the Hydrocracker (HCU) S-1003. The Powerformer consists primarily of four heaters (S-30 through S-33, 463 MMBTU/hr total) and five reactors where the heavy naphtha is catalytically reformed producing high-octane gasoline components.

Normally, four reactors are operated in series. The process is manifolded together in such a way that a fifth, spare "swing" reactor can be used in place of any of the other four reactors when performance deteriorates. The fifth "swing" reactor can also be operated in parallel with the last reactor. After this fifth reactor switch, the offline reactor is regenerated with S-27, Powerformer Regeneration Facilities.

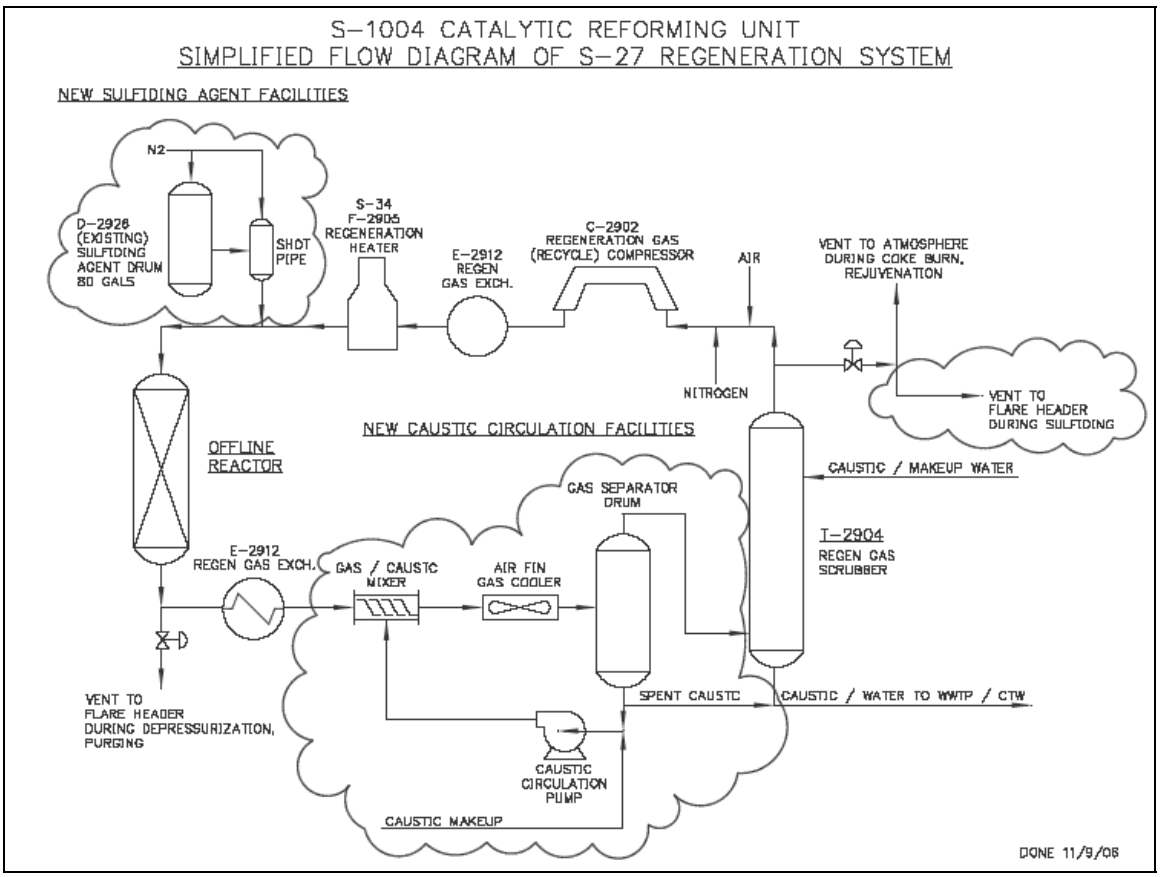
S-27 currently consists of a regeneration gas circulation system with F-2905 Regeneration Heater (S-34), T-2904 Regeneration Gas Scrubber, and C-2902 Regeneration Gas Recycle Compressor. After the offline reactor is depressured and inerted, reactor regeneration begins by heating nitrogen containing controlled amounts of air in S-34 and circulating the hot gas stream through the reactor. In the reactor, the carbon deposits are oxidized to CO2 in an exothermic reaction. In addition, chloride from the catalyst produces HCl during the regeneration. The hot regeneration effluent gas is circulated through T-2904 Regeneration Gas Scrubber, where a caustic/water mix is used to scrub the HCl and cool the gas. The scrubbed, cooled gas is blended with more air, compressed, and the heating step starts again. About 1% of the scrubbed, cooled gas is vented to atmosphere at emission point P-41. As all the carbon is removed from the reactor, oxygen breakthrough occurs and the reactor outlet temperature drops, indicating that catalyst regeneration is complete. At this point, additional steps are taken to activate the catalyst so that the reactor can be returned to the process.

Two problems are currently experienced with the existing configuration. Firstly, caustic scrubbing of the recycle gas in T-2904 plugs the tower internals. Secondly, when the reactor is returned to the process train, the regenerated catalyst is so active that overcracking occurs when feed is first introduced.

This application is for proposed changes to S-27 to improve maintenance and reliability of the regeneration system. These improvements include:

a. A new independent caustic scrubbing system to neutralize HCl.
b. A new sulfide injection system to temporarily deactivate the catalyst for start-up

A flow diagram showing these improvements follows:



During the primary burn (at low temperature), secondary burn (at higher temperature), and rejuvenation (with PERC), Valero must vent to atmosphere due to the presence of oxygen in the regeneration recycle gas. Otherwise, routing this vent stream (with oxygen) to the flare gas recovery header would create an explosive mixture.

After the remaining oxygen is purged from the regeneration system to atmosphere with nitrogen, the regeneration vent is lined up to the flare gas recovery header for the two remaining regeneration steps, such as catalyst reduction (with hydrogen), and catalyst sulfiding (with di-methyl di-sulfide (DMDS)). By routing the regeneration vent gas to the flare gas recovery header, the flare gas compressor can recover and return these vapors to the fuel gas system.

Valero requests to vent the sulfiding gas to the flare gas recovery header instead of the sour fuel gas system as initially proposed, because Valero discovered that the operating pressure at the tie-in point to the sour fuel gas was too high compared to the operating pressure of the Powerformer Regeneration Facilities.

Prior to issuance of this permit, Valero was provided an opportunity to review and accepted the proposed permit Condition # 23326 below. Valero has not submitted any application to modify the TV permit, but has been notified by the District to submit one in the future.

II. EMISSION CALCULATIONS

The operation of S-27 consists of the following steps:

1. The underperforming reactor isolated and swing reactor placed in service.
2. Reactor depressured to flare header.

3. Reactor is lined up to the regeneration circulation system.
4. System is filled with nitrogen to about 100 psi
5. C-2902 starts up and the regeneration circulation begins
6. Air is injected into the suction of C-2902 and the carbon burn off begins. Effluent gas from the reactor is cooled and the HCl is scrubbed in T-2904. (This application proposes HCl scrubbing in a new caustic mixing system upstream of T-2904.) Some of the cooled and scrubbed gas is vented to atmosphere on pressure control, but most of it returns to C-2902.
7. Air injection is increased step-wise based on reactor outlet temperature. When the regeneration is complete, temperature drops and oxygen breakthrough is detected at the outlet of the reactor.
8. PERC is injected into the hot circulation gas with oxygen present to rejuvenate the catalyst. The circulated gas contains about 5% oxygen so the vent to atmosphere is still utilized. Nitrogen is added to "O2 free" the regeneration circuit while venting to atmosphere. Then the vent to atmosphere is closed, the proposed new vent line to the sour fuel gas header is opened, and make-up hydrogen is added to the regeneration circuit to reduce (activate) the catalyst.
9. After the catalyst reduction step is complete, the proposed new sulfiding equipment is used to inject a small-predetermined amount of di-methyl di-sulfide (DMDS) into the circulation gas to temporarily and slightly deactivate the catalyst. This generates H2S so the gas is vented to the sour fuel gas system through the new vent line.
10. Once the catalyst sulfiding is complete, the reactor is isolated from the regeneration system and pressured up with hydrogen.
11. The regenerated reactor is returned to service.

There are three parts of the regeneration process that have potential to produce emissions. The first is the reactor depressurization which discharges to the flare header, but normally all the emissions are recovered by the flare gas recovery compressors (A-13 or A-26) and sent to fuel gas. The second is the catalyst reduction and sulfiding steps but during these steps all emissions are sent to the sour fuel gas system. The third is the discharge to atmosphere during the carbon burn, rejuvenation, and O2 freeing steps. This third part is the only part of the regeneration process that generates emissions from S-27.

There are no changes in emissions expected due to this application. Valero has certified that this alteration does not result in an increase in any pollutants. However, S-27 is a grandfathered source. Therefore, there are no emissions associated with S-27. In order to certify that the S-27 emissions have not changed, baseline emissions need to be established. There are no records that can substantiate baseline emissions because the P-41 discharge from S-27 has not been monitored. Therefore, Valero has qualitatively addressed the likelihood of emissions of each criteria pollutant. With the exception of CO, all criteria pollutant emissions are expected to be zero or negligible:

- POC. The source of POC emissions is residual hydrocarbon left in the reactor after depressuring. These would be small to begin with, and once the regeneration burn-off begins, most, if not all, of the hydrocarbons would be oxidized immediately resulting in no POC emissions. Current databank emission calculations use a generic emission factor for organics. This emission factor is 0.1 lb Organics per million SCF of gas discharged to the atmosphere. This emission factor will remain and will be the basis for calculating POC emissions.
- SO2. The source of SO2 emissions would be any residual sulfur left in the reactor after depressuring. However, the reactor feed streams have a typical sulfur content of about 1 ppm because the S-1004 Powerformer catalyst is sensitive to sulfur. Therefore, there is little or no sulfur available to generate SO2 emissions.

- PM10. PM10 emissions are unlikely because the T-2904 wet scrubber acts as a particulate abatement device.
- NOx. There are two mechanisms for NOx emissions – oxidation of the nitrogen in the reactor from the residual process hydrocarbons after depressurization, and thermal NOx from the air/nitrogen regeneration gas during burn-off. Firstly, S-1004 feed stream nitrogen content is typically maintained at 1 ppmw, so significant NOx formation is very unlikely through this mechanism. Secondly, thermal NOx is unlikely because the regeneration temperatures are in the 750F to 1050F range, well below the temperature where significant thermal NOx is formed. Valero has performed testing to support these conclusions and found 0 ppm NO and 0 ppm NO2.

S-27 does produce CO emissions. During the regeneration burn-off, the temperature and the oxygen lean environment results in incomplete oxidation. Valero's preliminary testing found CO emissions in the 100 ppm to 1300 ppm range (0% O2). Based on the highest concentration of 1300 ppm, and 454 MMSCF of gas discharged (the highest annual discharge rate recorded in the past five years was in CY 2002), The CO emissions are:

(454,000,000 SCF gas/yr) X (1 mole gas/385.3 SCF gas) X (1300 moles CO / 1,000,000 moles gas) X (28 lb CO/mole CO) = 42,890 lb CO / yr = ~ 22 ton/yr

CO EF = 42,890 lb CO / 454 MM = 94.5 lb/MMSCF. Valero has agreed to use an emission factor of 95 lb/MMSCF.

III. PLANT CUMULATIVE INCREASE AFTER 4/5/91

There are no net changes to the plant cumulative emissions since S-27 is a grandfathered source.

IV. TOXIC SCREENING ANALYSIS

This proposed change is an alteration of S-27 and is not expected to emit toxic compounds in amounts different that previously emitted. Therefore, a toxic risk screen is not required. For information, toxic emissions are as follows:

HCl. MACT II (40 CFR 63 Subpart UUU 63.1567) requires HCl emissions to be below 10 ppm (3% O2).
10 ppm (20.95 – 0)/(20.95-3) = 11.67 ppm at 0% O2

28,000 SCFH (1/385.3)(11.67/1,000,000)(36.45 lb HCl/mole) = 0.031 lb HCl/hr
(Acute Toxic Trigger = 4.6 lb/hr)
454,000,000 SCFY(1/385.3)(11.67/1,000,000)(36.45) = 501 lb/yr (Chronic TT = 350)

If S-27 were not a grandfathered source, the potential to emit HCl would require a toxic risk screen. It is notable that a source test for S-27 was conducted in July 2005 and HCl emissions ranged from 0.31 to 1.29 ppm @ 3% O2.

H2S emissions are all sent to the fuel gas recovery system, so there are no toxic emissions.

PERC is used to rejuvenate the catalyst after regeneration, but is consumed during the process. Therefore, there are no PERC emissions.

V. BEST AVAILABLE CONTROL TECHNOLOGY

BACT is triggered for new or modified sources that emit criteria pollutants in excess of 10 lbs/day. However, Regulation 2-1-234 defines a modified source as one that results in an increase in daily or annual emissions of a regulated air pollutant. For this application, there is no expected change in emissions. Therefore, BACT does not apply.

VI. STATEMENT OF COMPLIANCE

This application will not change the compliance for the affected sources. Specifically, compliance with Regulations 6, Regulation 8, Rule 2, and MACT II 40 CFR 63 Subpart UUU is expected.

The alteration proposed by this application complies with **Regulation 12, Rule 12 - Flares at Petroleum Refineries** by recovering all potential flare gas except during emergency situations elsewhere in the refinery.

This project qualifies for a CEQA categorical exemption of Regulation 2-1-312.6 for permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, and therefore is not subject to CEQA review.

The closest school is over a mile from the facility, so the Public Notice requirements of Regulation 2-1-214 do not apply.

BACT, Offsets, and PSD are not applicable.

VII. CONDITIONS

Plant No. 12626, Valero Refining Company - California
Source No. 27, PFR REGENERATION FACILITIES
Application No. 15052

Condition No. 23326

1. The Owner/Operator of S-27 Powerformer Regeneration System shall limit CO emissions discharged to the atmosphere through emission point P-41 to no more than 22 tons per calendar year. The CO emission limit may be increased based on additional testing, if approved by the APCO. (Basis: Cumulative Increase)

2. To demonstrate compliance with Part 1, the Owner/Operator shall calculate CO emissions annually from the S-27 Powerformer Regeneration System waste gas discharged to atmosphere. This calculation shall be based on the P-41 waste gas vent rate and a CO emission factor of 95 lb/MMSCF (1300 ppmv), or an alternate calculation approved by the APCO, within 30 days after the end of each year. These emission calculation records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. (Basis: Recordkeeping)

VIII. RECOMMENDATION

It is recommended that an Authority to Construct be waived and Valero be allowed to alter:

S-27 Powerformer Regeneration Facilities

_____

Thu H. Bui
Senior Air Quality Engineer
Engineering Division

Date: _____

EVALUATION REPORT
VALERO REFINING CO.
Application #15317 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for the alteration to the Permit to Operate for the following equipment:

S-157 Sulfur Storage Pit

To be altered to:

S-157 Sulfur Storage Pit abated by either:

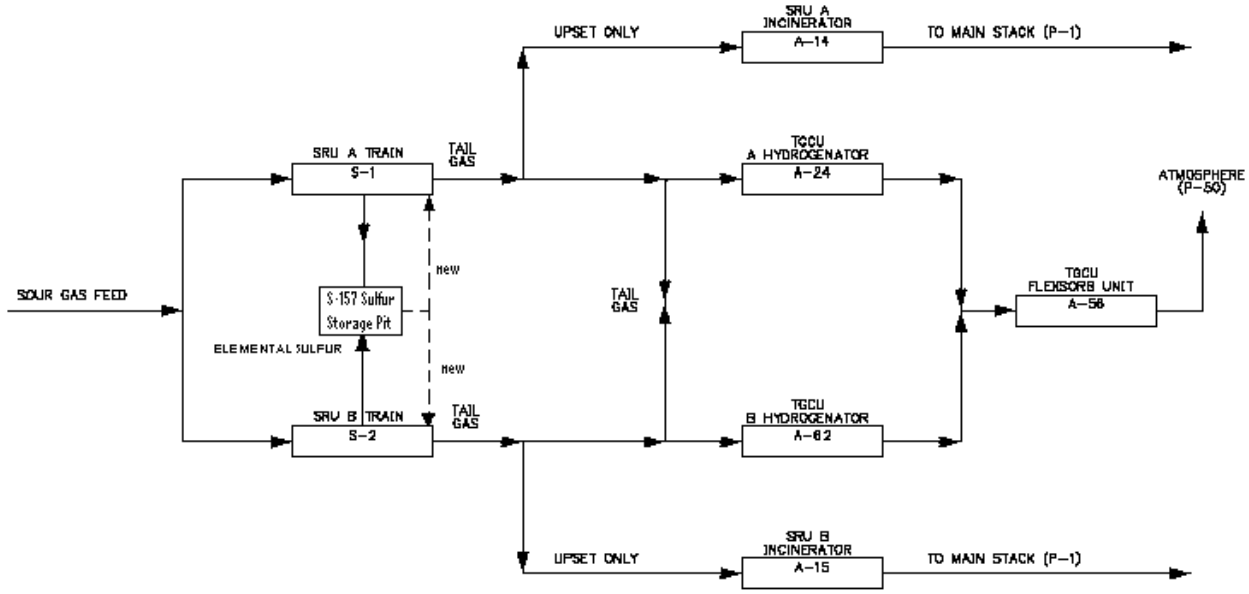
S-1 Sulfur Recovery Unit A Train Acid Gas Burner F-1301A, 240 short tons/day (VIP rate), 160 short tons/day (Title V) abated by A-24 and/or A-62 Tail Gas Hydrogenation units and TGCU Flexsorb Unit A-56

and/or

S-2 Sulfur Recovery Unit B Train Acid Gas Burner F-1301B, 240 short tons/day (VIP rate), 160 short tons/day (Title V) abated by A-24 and/or A-62 Tail Gas Hydrogenation units and TGCU Flexsorb Unit A-56

Valero requests to reroute an existing Sulfur Storage Pit (S-157) that is currently vented to the atmosphere through the main stack (P-1). Instead of venting to the atmosphere, piping will be added to route to the exhaust gas to either the Sulfur Recovery Unit (SRU) A Train Acid gas Burner (S-1) and/or the Sulfur Recovery Unit (SRU) B Train Acid gas Burner (S-2). This reroute will result in recovery of the element sulfur, hydrogen sulfide (H2S), and sulfur dioxide (SO2) in the sulfur pit.

This reroute project is required by the EPA under a consent decree. The consent decree requires that all sulfur collection pit emission be eliminated or included with the emissions subject to the New Source Performance Standard (NSPS), Subpart J SO2 limit. The requirements for a reduction control system not followed by incineration per 40 CFR 60.104 (a)(2)(ii) are 300 ppmv of total reduced sulfur compounds and 10 ppmv of hydrogen sulfide (H2S), each calculated as ppmv SO2 dry basis at zero percent oxygen excess air. Valero's Sulfur Recovery Unit is subjected to NSPS Subpart J per the Consent Decree on 12/31/05. Valero installed the CEM, located at the Tail Gas TGCU Flexsorb stack (P-50), to demonstrate compliance with the total reduce sulfur limitation as required by NSPS Subpart J. Subpart J only required initial source test compliance demonstration, and did not require any subsequent source tests compliance demonstration with the H2S limitation.



Impact of this project on SRU Acid Gas Burner (S-1 and S-2)

The Sulfur Storage Pit (S-157) is downstream of the SRU acid gas burners (S-1 and S-2). Therefore, the SRU controls the amount of gas from the Sulfur Storage Pit. If the Sulfur Storage Pit gases are vented to the SRU, the gases will react in the 3-stage Clause catalytic reactors, then further converted in the Clean Tail Gas Hydrogenator A-24 and/or A-62, then amine treated in the Flexsorb Unit A-56. In this process, the H2S reacts with Oxygen or SO2 to form elementary sulfur. The overall recovery for a Clause reactor is from 96 to 97.5 percent. The tail gas from the Clause reactor contains H2S, SO2, sulfur vapor, traces of other sulfur compounds formed in the combustion section and inert gases. The gases then pass to the Hydrogenators (A-24 or A-62), where the sulfur compounds are converted ("reduced") to H2S, which then will be treated in the amine flexsorb unit A-56.

The grandfathered throughput limit of the SRU as listed on the Title V permit is 320 tons/day for both A and B units. Valero will recycle 0.08 ton/day of sulfur into the SRU. This is a 0.025 percent increase of the current feed rate to the SRU. The District agreed with Valero that this small increase would not change the control performance of the hydrogenators and the TGCU Flexsorb unit.

Subpart J (40 CFR 60.104 (a)(2)(ii)) limits the reduction control system not followed by incineration to 300 ppmv of total reduced sulfur compounds and 10 ppmv of hydrogen sulfide (H2S), each calculated as ppmv SO2 dry basis at zero percent oxygen excess air. Valero submitted 8-month In Stack Monitoring Report from June 1, 2006 to January 31, 2007 that shows the SO2 emissions from the SRU is maintained at 15.5 ppmv as SO2 @ 0% O2 on a monthly average, which is way below the 300 ppmv as SO2 @ 0% O2 limit. In addition, the source tests performed by Best Environmental on April 7, 28, May 2 and 3, 2005 showed that the average total reduced sulfur was 10.62 ppmv as as SO2 @ 0% O2 and the H2S was 1.14 ppmv as SO2 @ 0% O2 (see attached CEM data and source test results). Both are well below the NSPS Subpart J level. Therefore, the small addition of the gases from the Sulfur Storage Pit will not exceed the 300 ppmv of total reduced sulfur compounds and 10 ppmv of hydrogen sulfide (H2S) limits for SRU.

Valero indicated that the implementation of the routing of the sulfur pit vapors to the SRU Acid Gas Burners S-1 and/or S-2 rather than to the atmosphere will slightly increase the throughput of process units downstream (S-1 and/or S-2). However, the higher throughput will not cause any of the upstream or downstream sources to exceed the current permitted limit. Therefore, no physical modification is required at all upstream and downstream units and no emission increase is associated with this change. There will be no physical modifications to the existing combustion chamber, absorber, reactor and incinerator that serve these units. The numbers of valves, flanges, pumps and compressors that will be added to this project will not contribute to the POC emissions since the gases are mostly inorganic compounds. The proposed project will decrease the sulfur compounds emissions since the SRU has high control efficiency.

II. EMISSION CALCULATIONS

Current S-157 emissions vented to the atmosphere:

Basis:
- Total sulfur production = 320 ton/day – Current Maximum
- H2S sulfur pit emission factor = 0.7 lb/ton – Valero's design
- Daily sulfur emissions = 0.7 lb/ton X 320 ton/day = 224 lbs/day
- Annual Sulfur emissions = 224 lbs/day X 365 day/yr = 81,760 lb/yr or 40.88 tpy

Future S-157 emissions abated by Sulfuric Recovery Unit (SRU) S-1 and S-2:

Basis:
- Control Efficiency = 99.8% BAAQMD data base inventory
- Hourly Sulfur emissions = 224 lb/day X (1-0.998) = 0.448 lb/day
- Annual Sulfur emissions = 0.448 lbs/day X 365 day/yr = 163.5 lb/yr or 0.082 tpy

Total H2S emission decreases:
Total H2S = 81,760 lb/yr – 163.5 lb/yr = (81,596.5 lbs/yr) or (40.798 tpy)

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

	Current Ton/yr	New Ton/yr	New Total tons/yr
POC =	0	0	0
NO_X =	0	0	0
H2S =	0	(40.798)	(40.798)
CO =	0	0	0
NPOC =	0	0	0
PM_{10} =	0	0	0

IV. TOXIC SCREENING ANALYSIS

Alterations to S-157 will not result in an increase in toxic air contaminant emissions from existing levels. Therefore, a Toxic RSA is not required.

V. BEST AVAILABLE CONTROL TECHNOLOGY

Alterations to S-157 will not result in an increase in SO_2 emissions from existing levels. Therefore, BACT is not triggered. This application does not require BACT since the emissions are inorganic compounds.

VI. OFFSETS

This application results in emission decreases. Therefore, offsets are not needed.

VII. STATEMENT OF COMPLIANCE

The Sulfur Storage Pit (S-157), the SRU Acid Gas Burners (S-1 and S-2) are expected to be in compliance with all requirements of Regulation 1 (General Provision), Regulation 6 (Particulate Matter and Visible Emissions), and Regulation 9-1 (Inorganic Gaseous Pollutants-Sulfur Dioxide). The SRU met 250 ppmv dry SO2 calculated at zero percent O2 per Regulation 9-1-307. The SRU is equipped with SO2 continuous emission monitoring systems.

This permit application is not subject to CEQA because the evaluation is a ministerial action conducted using fixed standards and objective measurements. This project is categorically exempt from CEQA per Regulation 2-1-312.3 for permit application for project undertaken the sole purpose of bringing an existing facility into compliance with newly adopted regulatory requirements of the federal agency, and/or Regulation 2-1-312.5 for permit application submitted pursuant to the requirement of an order for abatement issued by the District's Hearing Board or of a judicial enforcement order (EPA decree consent).

This project is over 1,000 ft from the nearest public school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

- Sources S-1 and S-2 will be subject to and expected to comply with the following Regulation 10: New Source Performance Standards (NSPS), (40 CFR, Part 60) by December 31, 2005.

- 40 CFR, Part 60, Subpart J Standards of Performance for Petroleum Refineries.

- Sources S-1 and S-2 (SRU) is subject to and expected to comply with the following Section 112 of the Clean Air Act, National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR Part 63, Subpart UUU

PSD is not triggered.

VIII. CONDITIONS

Permit condition for S-157, Sulfur Storage Pit, Valero Refining Company, Application # 15317, Plant # 12626.

S157 Sulfur Storage Pit

1. The owner/operator shall abate the Sulfur Storage Pit (S-157) by either the Sulfur Recovery Unit A Train Acid Gas Burner (S-1) and/or the Sulfur Recovery Unit B Train Acid Gas

Burner (S-2) at all times, when S-1 and/or S-2 is in operation. (basis: cumulative increase, EPA consent decree)

IX. RECOMMENDATION

Waive the Authority to Construct and issue a conditional Permit to Operate to Valero Refining Company for the following equipment:

S-157 Sulfur Storage Pit abated by either:

S-1 Sulfur Recovery Unit A Train Acid Gas Burner F-1301A, 240 short tons/day (VIP rate), 160 short tons/day (Title V) abated by A-24 and/or A-62 Tail Gas Hydrogenation units and TGCU Flexsorb Unit A-56

and/or

S-2 Sulfur Recovery Unit B Train Acid Gas Burner F-1301B, 240 short tons/day (VIP rate), 160 short tons/day (Title V) abated by A-24 and/or A-62 Tail Gas Hydrogenation units and TGCU Flexsorb Unit A-56

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

EVALUATION REPORT
VALERO REFINING CO.
Application #15961 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for the change of condition to the Permit to Operate for the following equipment:

S-7 Process Furnace F-103, Jet Fuel Hydrofining, 53 MMBtu/hr

The Valero Benicia Asphalt Plant (Valero) operates several furnaces that are subject to Regulation 9-10-301 that limits the facility wide NOx limit to 0.033 lb/MMBtu of fired duty. Regulation 9-10-502 requires the installation of a NOx, CO and O2 CEM to demonstrate compliance with Regulation 9-10-301. Regulation 9-10-502 also allows a CEM equivalent verification system to determine compliance with Regulation 9-10-301. The District and Valero have worked hard to produce the CEM equivalent verification system. This system is called the "NOx Box". The NOx Box is an operating window for the unit, expressed in terms of fired duty and oxygen content in the flue gas. The operating window is established by source tests for various operating conditions. The source tests demonstrate the NOx emissions are equal to or less than a specified emission factor. As long as the fired unit duty and oxygen content are in this NOx Box operating window, the specified emission factor is used to determine compliance with the 0.35 lb/MMBtu limit of Regulation 9-10-301. The Permit Condition that contains the details of the NOx Box is #21233.

Condition 21233, Part 4 required Valero to submit the initial NOx Box for the affected sources by December 1, 2004. Valero met this requirement via Application 11356, a Minor Revision to the Title V permit. Now, Valero requests a change in the NOx Box operating window for S-7 in this Application 15961 and the associated TV Application 15962.

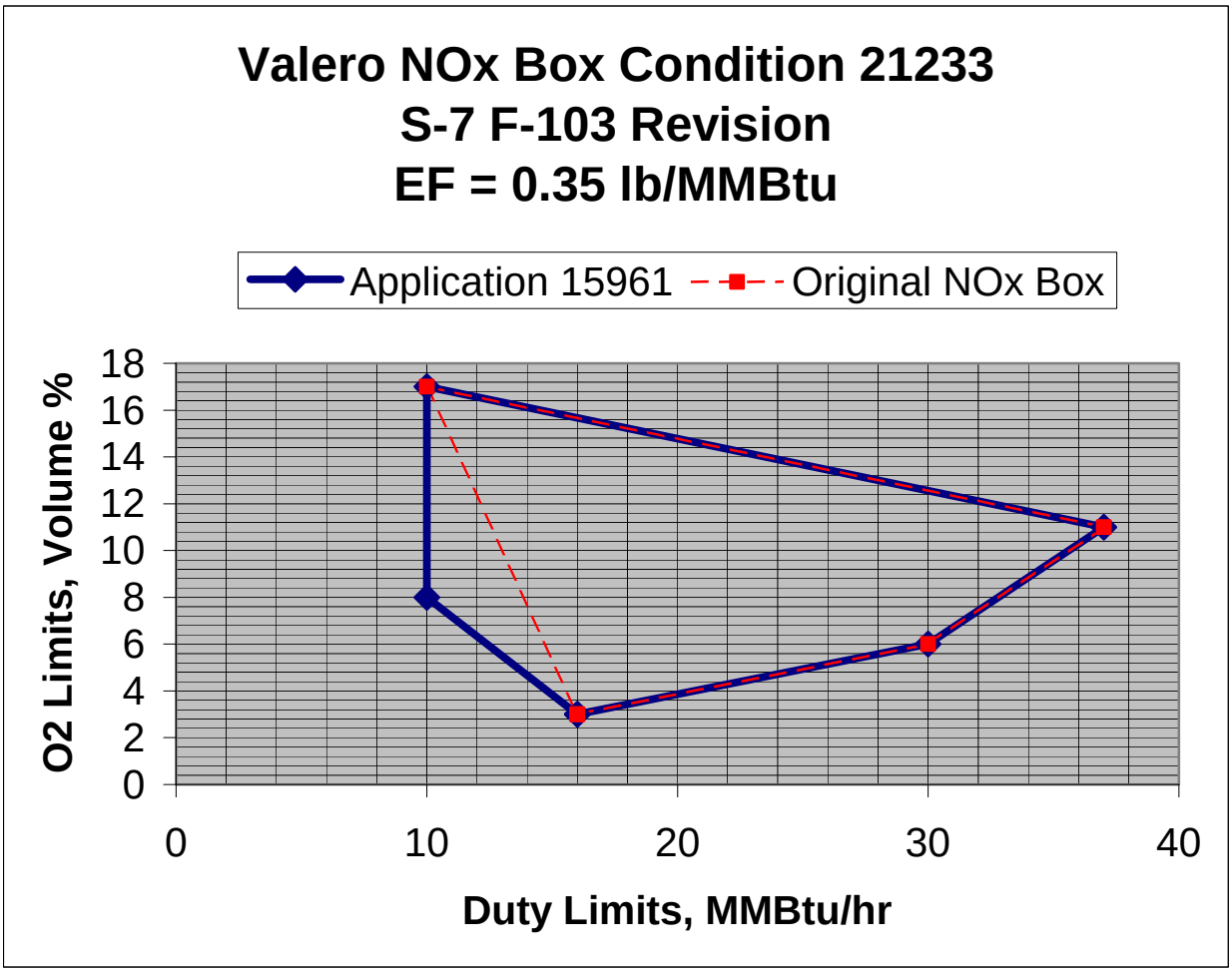
The changes are as follows:

Source No.	Emission Factor (lb/MMBtu)	Min O_2 at Low Firing (O2%, MMBtu/hr)	Max O_2 at Low Firing (O2%, MMBtu/hr)	Min O_2 at High Firing (O2%, MMBtu/hr)	Mid O_2 at Mid/High Firing (polygon) (O2%, MMBtu/hr)	Max O_2 at High Firing (O2%, MMBtu/hr)
Plant A0901 (13193)						
7 old	0.350	3, 16	17, 10	6, 30	N/A	11, 37
S-7 (A/N 15961)	0.350	3, 16	17, 10	6, 30	8, 10	11, 37

The changes are supported by source tests reviewed by the Source Test Section.

This application is being processed as an administrative change in conditions since there is no change to the specified NOx emission factor for this unit.

The following diagram summarizes the changes to the S-7 NOx Box:



II. EMISSION CALCULATIONS

There are no changes in emissions due to this application. The specified NOx Box emission factor for S-7 remains 0.35 lb/MMBtu and is not changed by this application.

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

There are no net changes to the plant cumulative emissions.

IV. TOXIC SCREENING ANALYSIS

This proposed NOx Box change would not emit toxic compounds in amounts different that previously emitted. Therefore, a toxic risk screen is not required.

V. BEST AVAILABLE CONTROL TECHNOLOGY

BACT is triggered for new or modified sources that emit criteria pollutants in excess of 10 lbs/day. However, Regulation 2-1-234 defines a modified source as one that results in an increase in daily or annual emissions of a regulated air pollutant. For this application, there is no change in emissions. Therefore, BACT does not apply.

VI. OFFSETS

This application does not result in emission increases. Therefore, offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIANCE

The change to the NOx Box will not change the compliance for Furnace S-7. Emissions from S-7 will comply with Regulation 2-9-303 (Alternative Compliance Plan using IERC's), Regulations 6 and Regulation 9, Rule 10 as before the change.

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 2.1.

The closest school is over 3000 feet from the facility, so the Public Notice requirements of Regulation 2-1-214 do not apply.

Toxics, CEQA, NESHAPS, BACT, Offsets and NSPS do not apply.

VIII. CONDITIONS

The NOx Box Condition 21233 will be modified as shown below. The S-7 change is in Part 5A of the condition. For clarity, the change is tracked from the condition 21233 of the B2626 Valero Refinery Title V permit, with the underline/strikeout removed. In addition, the changes approved in Application 12701 (revision to the B2626 S-20 NOx Box) are also included. (The condition with the underline/strikeout included is located in the application file if needed.)

Condition 21233
Valero Refining Company – California
3400 E. Second Street
Benicia, Ca 94510
Application 11307 (B2626)
Application 11356 (A0901, 13193)
S-20 (B2626) Modified by Application 12701
S-19 (A0901) Modified by Applications 13011 and 15805
S-7 (B2626) Modified by Application 15961
Plant B2626 and A0901
Regulation 9-10 Refinery-Wide Compliance

*1. The following sources are subject to the refinery-wide NOx emission rate and CO concentration limits in Regulation 9-10: (Basis: Regulation 9-10-301 & 305)

Facility No. B2626, Valero Refining Company

S#	Description	NOx CEM
7	F-103 Jet Fuel HF, 53 MMBtu/hr	No
20	F-104 Naphtha HF, 62 MMBtu/hr	No
21	F-301 Hydrogen, 614 MMBtu/hr	Yes
22	F-351 Hydrogen, 614 MMBtu/hr	Yes
23	F-401 Gas Oil HC, 200 MMBtu/hr	Yes
24	F-601 Cat Feed HF, 33 MMBtu/hr	No
25	F-701 Cat Feed, 230 MMBtu/hr	Yes

26	F-801 HCN HF, 33 MMBtu/hr	No
30	F-2901 PFR Preheat, 463 MMBtu/hr total	Yes
31	F-2902 PFR Preheat, 463 MMBtu/hr total	Yes
32	F-2903 PFR Preheat, 463 MMBtu/hr total	Yes
33	F-2904 PFR Preheat, 463 MMBtu/hr total	Yes
34	F-2905 PFR Regen Gas, 74 MMBtu/hr	No
35	F-2906 PFR React Gas, 14 MMBtu/hr	No
40	SG-2301 Steam Gen, 218 MMBtu/hr	Yes
41	SG-2302 Steam Gen, 218 MMBtu/hr	Yes
173	F-902 Coker Steam Superheat, 20 MMBtu/hr	No
220	F-4460 MRU Hot Oil, 351 MMBtu/hr	Yes

Facility No. A0901 (13193), Valero Benicia Asphalt Plant

S#	Description	NOx CEM
19	Vacuum Heater, 40 MMBtu/hr	No
20	Steam Boiler, 14.7 MMBtu/hr	No
21	Steam Boiler H-2B, 14.7 MMBtu/hr	No

A. Compliance with the daily refinery wide average NOx emission limit, 0.033 lb NOx/MMBtu fired duty is achieved through the use of an approved Alternate Compliance Plan using NOx IERCs in accordance with the provisions in Regulation 2-9-303.

B. The owner/operator of each source listed in Part 1 above shall determine compliance with Regulation 9-10 as follows:

1) Calculate NOx emissions from each furnace using measured fuel gas rates, and either:
   a. CEM data or
   b. NOx emission factors from Part 5A

2) The daily facility wide average emission rate shall be determined by dividing the combined total emissions from sources listed in Part 1 above by the combined total heat input.

3) Sufficient NOx IERC's will be provided in accordance with the provisions of Regulation 2-9-303 to ensure compliance with the refinery wide average NOx emission limit of 0.033 lb NOx/MMBtu fired duty.

*2. The Owner/Operator of each source with a maximum firing rate greater than 25 MMBtu/hr listed in Part 1 shall properly install, properly maintain, and properly operate an O2 monitor and recorder. (Basis: Regulation 9-10-502)

*3. The Owner/Operator shall operate each source listed in Part 1, which does not have a NOx CEM, within specified ranges of operating conditions (firing rate and oxygen content) as detailed in Part 5. The ranges shall be established by utilizing data from District-approved source tests. (Basis: Regulation 9-10-502)

A. The NOx Box for units with a maximum firing rate of 25 MMBtu/hr or more shall be established using the procedures in Part 4.

B. The NOx Box for units with a maximum firing rate less than 25MMBtu/hr shall be established as follows: High-fire shall be the maximum rated capacity. Low-fire shall be

20% of the maximum rated capacity (except for S-35, for which the low-fire shall be 8% of the maximum rated capacity). There shall be no maximum or minimum O2.

*4. The Owner/Operator shall establish the initial NOx box for each source subject to Part 3 by January 1, 2005. The NOx Box may consist of two operating ranges in order to allow for operating flexibility and to encourage emission minimization during standard operation. (Basis: Regulation 9-10-502) The procedure for establishing the NOx box is

A. Conduct District approved source tests for NOx and CO, while varying the oxygen concentration and firing rate over the desired operating ranges for the furnace;

B. Determine the minimum and maximum oxygen concentrations and firing rates for the desired operating ranges (Note that the minimum O_2 at low-fire may be different than the minimum O_2 at high-fire. The same is true for the maximum O_2). The Owner/Operator shall also verify the accuracy of the O2 monitor on an annual basis.

C. Determine the highest NOx emission factor (lb/MMBtu) over the preferred operating ranges while maintaining CO concentration below 200 ppm; the Owner/Operator may choose to use a higher NOx emission factor than tested.

D. Plot the points representing the desired operating ranges on a graph. The resulting polygon(s) are the NOx Box, which represents the allowable operating range(s) for the furnace under which the NOx emission factor from part 5a is deemed to be valid.

1). The NOx Box can represent/utilize either one or two emission factors.

2) The NOx Box for each emission factor can be represented either as a 4- or 5-sided polygon The NOx box is the area within the 4- or 5-sided polygon formed by connecting the source test parameters that lie about the perimeter of successful approved source tests. The source test parameters forming the corners of the NOx box are listed in Part 5.

E. Upon establishment of each NOx Box, the Owner/Operator shall prepare a graphical representation of the box. The representation shall be made available on-site for APCO review upon request. The box shall also be submitted to the BAAQMD with permit amendments.

*5. Except as provided in part 5B & C, the Owner/Operator shall operate each source within the NOx Box ranges listed below at all times of operation. This part shall not apply to any source that has a properly operated and properly installed NOx CEM. (Basis: Regulation 9-10-502)

A. NOx Box ranges. The limits listed below are based on a calendar day averaging period for both firing rate and O2%.

	Emission	**Min O_2 at Low Firing**	**Max O_2 at Low Firing**	**Min O_2 at High Firing**	**Mid O_2 at Mid/High Firing**	**Max O_2 at High Firing**

Source No.	Factor (lb/MMBtu)	(O2% , MMBtu/hr)	(O2% , MMBtu/hr)	(O2% , MMBtu/hr)	(polygon) (O2% , MMBtu/hr)	(O2% , MMBtu/hr)
Plant B2626						
7	0.350	3, 16	17, 10	6, 30	~~N/A~~8, 10	11, 37
20	0.28	2, 19	12, 23	2, 37	2, 50	5, 47
24	0.757	11,7	14, 8	3, 27	6, 12	7, 29
26	0.194	13, 9	17, 7	6, 21	8, 17	12, 24
34	0.250	17, 2	20, 2	4, 26	N/A	7, 38
35	0.200	(Note 1), 1	(Note 1), 1	(Note 1), 14	N/A	(Note 1), 14
173	0.050	(Note 1), 4	(Note 1), 4	(Note 1), 20	N/A	(Note 1), 20
Plant A0901 (13193)						
S-19	0.030	5.0, 14.29	7.6, 13.5	2.8, 38.5	7.7, 16.6	6.2, 38.8
S-20	0.055	(Note 1), 2.9	(Note 1), 2.9	(Note 1), 14.7	N/A	(Note 1), 14.7
S-21	0.055	(Note 1), 2.9	(Note 1), 2.9	(Note 1), 14.7	N/A	(Note 1), 14.7

Note 1: Per Part 3B, Oxygen limits do not apply to sources with maximum firing rates less than 25 MMBtu/hr.

B. Part 5A does not apply to low firing rate conditions (i.e., firing rate less than or equal to 20% of the unit's rated capacity), during startup or shutdown periods, or periods of curtailed operation (ex. during heater idling, refractory dry out, etc.) lasting 5 days or less. During these conditions the means for determining compliance with the refinery wide limit shall be accomplished using the method described in 9-10-301.2 (i.e. units out of service & 30-day averaging data).

C. Part 5A does not apply during any source test required or permitted by this condition. See Part 7 for the consequences of source test results that exceed the emission factors in Part 5.

*6. NOx Box Deviations (Basis: Regulation 9-10-502).

A. The Owner/Operator may deviate from the NOx Box (either the firing rate or oxygen limit) provided that the Owner/Operator conducts a District approved source test that reasonably represents the past operation outside of the established ranges. The source test representing the new conditions shall be conducted no later than the next regularly scheduled source test period, or within eight months, whichever is sooner. The source test results will establish whether the source was operating outside of the emission factor utilized for the source. The source test results shall be submitted to the District Source Test Manager within 45 days of the test. The Owner/Operator may request, and the APCO may grant, an extension of 15 days for submittal of results. As necessary, a permit amendment shall be submitted.

1) Source Test ≤ Emission Factor

If the results of this source test do not exceed the higher NOx emission factor in Part 5, or the CO limit in Part 9, the unit will not be considered to be in violation during this period for operating out of the "box."

The facility may submit an accelerated permit program permit application to request an administrative change of the permit condition to adjust the NOx Box operating range(s), based on the new test data.

2) Source Test > Emission Factor

If the results of this source test exceed the permitted emission concentrations or emission rates then the actions described below must be followed:

a. Utilizing the measured emission concentration or rate, the Owner/Operator shall perform an assessment of compliance with Regulation 9-10-301 as follows:

1. "Out of Box" Condition – for the day(s) in which the "out of box" condition(s) occurred, the Owner/Operator shall ensure sufficient NOx IERCs are provided to ensure the facility is in compliance with the refinery wide limit. The Owner/Operator will be in violation of Regulation 9-10-301 for each day there are insufficient NOx IERCs provided to bring the refinery wide average into compliance with Regulation 9-10-301.

2. Within the Box – for the case when the source is operated within the "box" but source test results indicate a higher emission factor, the Owner/Operator shall apply the higher emission factor retroactively to the date of the previous source test and provide sufficient NOx IERCs for that time period to ensure the facility is in compliance with the refinery wide limit specified in Regulation 9-10-301. The Owner/Operator will be in violation of Regulation 9-10-301 for each day there are insufficient NOx IERCs provided to bring the refinery wide average into compliance with Regulation 9-10-301.

b. The facility may submit a permit application to request an alteration of the permit condition to change the NOx emission factor and/or adjust the operating range, based on the new test data.

B. Reporting. The Owner/Operator must report conditions outside of box within 96 hours of occurrence.

*7. For each source subject to Part 3, the Owner/Operator shall conduct source tests on the schedule listed below. The source tests are performed in order to measure NOx, CO, and O2 at the as-found firing rate, or at conditions reasonably specified by the APCO. The source test results shall be submitted to the District Source Test Manager within 45 days of the test. The Owner/Operator may request, and the APCO may grant, an extension of 15 days for submittal of results. (Basis: Regulation 9-10-502)

A. Source Testing Schedule

1) Heater < 25 MMBtu/hr

One source test per consecutive 12 month period. The time interval between source tests shall not exceed 16 months. The source test results shall be submitted to the District Source Test Manager within 45 days of the test.

2) Heaters ≥ 25 MMBtu/hr

Two source tests per consecutive 12 month period. The time interval between source tests shall not exceed 8 months and not be less than 5 months apart. The source test results shall be submitted to the District Source Test Manager within 45 days of the test.

3) If a source has been shutdown longer than the period allowed between source testing periods (e.g. <25 MMBtu/hr - > 16 mos or > 25 MMBtu/hr - > 8 mos), the owner/operator shall conduct the required source test within 30 days of start up of the source.

B. Source Test Results > NOx Box Emission Factor

If the results of any source test under this part exceed the permitted concentrations or emission rates the Owner/Operator shall follow the requirements of Part 6A2. If the Owner/Operator chooses not to submit an application to revise the emission factor, the Owner/Operator shall conduct another Part 7 source test, at the same conditions, within 90 days of the initial test.

*8. For each source listed in Part 1 with a NOx CEM installed that does not have a CO CEM installed pursuant to Part 9, the Owner/Operator shall conduct semi-annual District approved CO source tests at as-found conditions. The time interval between source tests shall not exceed 8 months. District conducted CO emission tests associated with District-conducted NOx CEM field accuracy tests may be substituted for the CO semi-annual source tests. (Basis: Regulation 9-10-502)

*9. For any source listed in Part 1 with a maximum firing limit greater than 25 MMBtu/hr for which any two source test results over any consecutive five year period are greater than or equal to 200 ppmv CO at 3% O2, the Owner/Operator shall properly install, properly maintain, and properly operate a CEM to continuously measure CO and O2. The Owner/Operator shall install the CEM within the time period allowed in the District's Manual of Procedures. (Basis: Regulation 9-10-502, 1-522)

*10. In addition to records required by Regulation 9-10-504, the Owner/Operator must maintain records of all source tests conducted to demonstrate compliance with Parts 1 and 5. These records shall be kept on site for at least five years from the date of entry in a District approved log and be made available to District staff upon request. (Basis: Regulation 9-10-504)

IX. RECOMMENDATION

It is recommended that a Change of Conditions to the Permit to Operate be granted to Valero for:

S-7 Process Furnace F-103, Jet Fuel Hydrofining, 53 MMBtu/hr

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

EVALUATION REPORT
Valero Refining Company
Application #16056- Plant #12626

3400 E. Second St.,
Benicia, CA 94510

I. BACKGROUND

Valero has applied for a replacement of an abatement device for the following equipment:

A-66 Cyclone Separator, Buell #41 Series 729 Cyclone, 4,083 scfm or equivalent, to abate S-8 Coke Storage Tanks TK 1902 A/B

and the description of S-8 to be changed as follows:

S-8 Coke Storage Tanks TK-1902A/B abated by A-66 Cyclone Separator, Buell #41 Series 729 Cyclone, 4,083 scfm or equivalent, A-8 Bag Filter or A-10 Bag Filter, and A-9 Scrubber/Cyclone Separator

Source S-8 is currently abated by an existing cyclone separator, followed by A-8 or A-10 Bag Filters, and A-9 Scrubber/Cyclone Separator. The existing coke silos (Tank 1902 A/B) and the existing cyclone separator (CYC 1901) were inappropriately clumped together as one source, S-8. The existing cyclone functions as an ancillary abatement device, since it can be taken out of service briefly for repairs, while the Coker and Coke Silos continue to operate. With the replacement of the existing cyclone separator, the new abatement device will be assigned to a new name, A-66, Cyclone Separator, because it should be considered as an abatement device instead of a source.

The new cyclone will have the same inlet cross sectional area as the existing one. Valero is replacing the old one with the new one for better dust collection, reliability and safety. Valero would like to replace the cyclone during the Coker turnaround in fourth quarter of 2007. This new cyclone has a specified particulate control efficiency of 99.9% from the manufacturer, and was part of the VIP Application # 5846. This application will not result in emission increase of PM10 since the new cyclone is expected to perform better than the old one. In addition, S-8 is further abated by either A-8 or A-10 and then A-9; therefore, the emissions are not expected to change as a result of this project.

While preparing for this application, Valero discovered that several sections of the VIP permit evaluation have mentioned that the current daily throughput limit of 2,400 tons per day will not be exceeded, and the current annual limit (1680 tons per day) will be revised to allow for continuous operations up to 2400 tons/day (annual). However, the VIP permit Condition # 20820, Part 48 was not revised to include an annual coke throughput limit of 876,000 tons per year (2400 tons/day X 365 day/yr). Although the PM10 emissions may increase as annual coke throughput increases from 613,000 to 876,000 tons per year, the PM10 emissions will not exceed the Title V permit limits of 0.15 grain/dscf of Regulation 6-310 and 40 lbs/hr of Regulation 6-311. The VIP Application #5846 also confirmed that there would not be any emission increases associated with this reliability upgrade of the coke silos with the proposed upgrades to the current abatement devices. Therefore, this application will also correct the mistake mention above.
Figure I shows the current configuration, and Figure II shows the future configuration.

Per
Eas

FIGURE I
VALERO COKE SILOS
ACTUAL EMISSION TRAIN FOR S-8

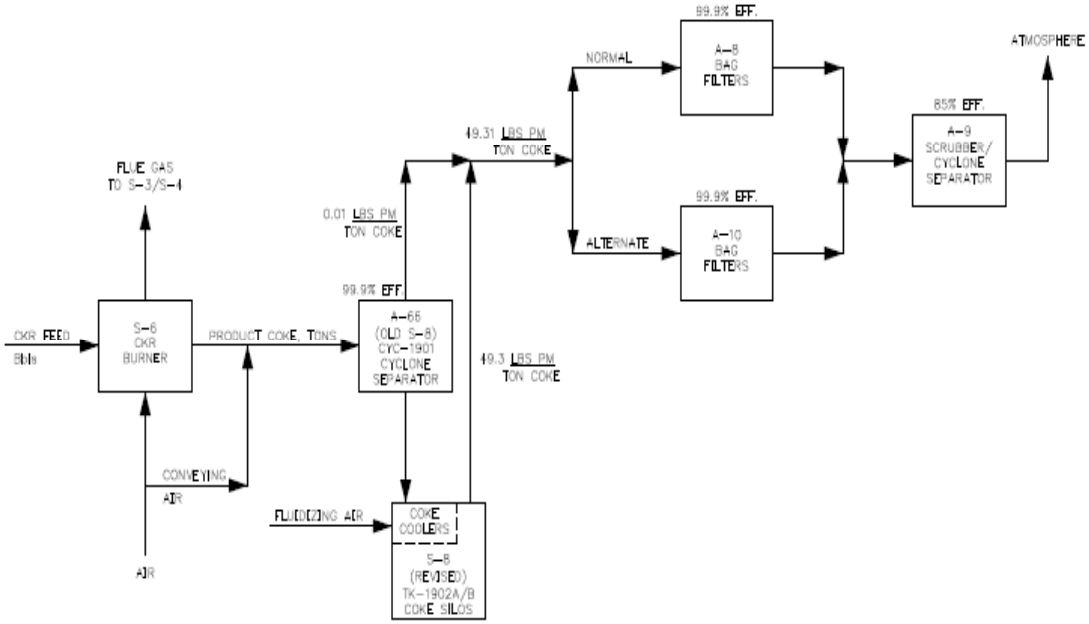
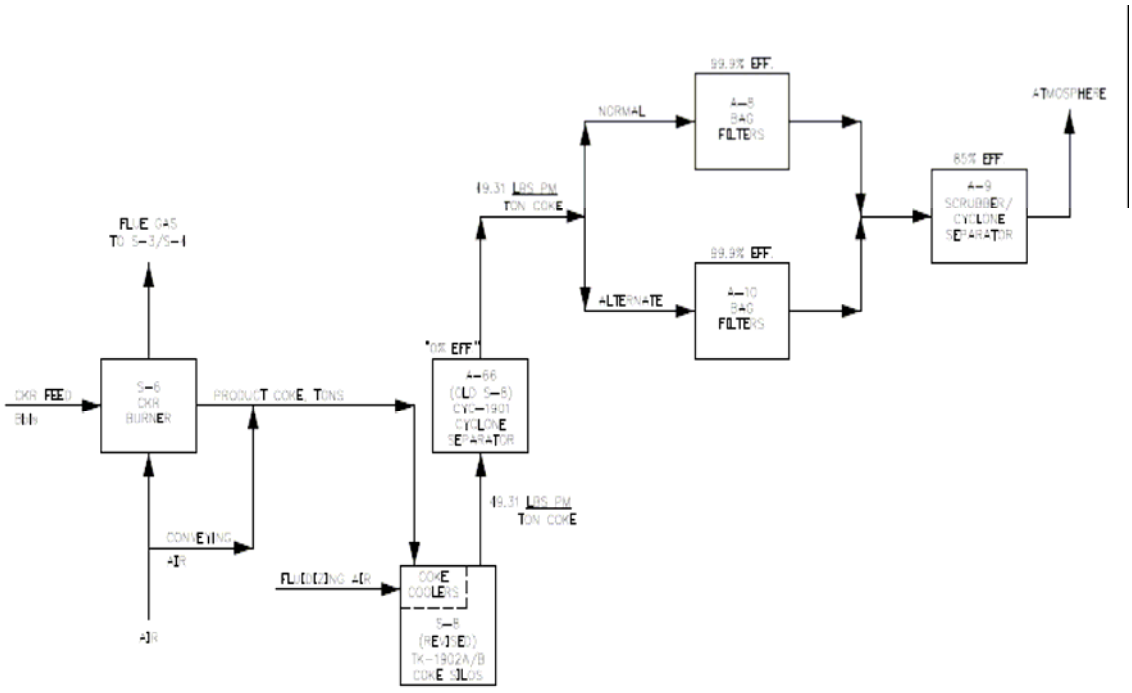


FIGURE II
VALERO COKE SILOS
REVISED EMISSION TRAIN FOR S-8
(FOR ESTIMATING PM EMISSIONS)



Valero would also like to take A-9 Wet Scrubber out of service for maintenance when ever necessary. Valero proposes to relocate the current compliance point for visible emissions, grain loading and PM10 emissions from the wet scrubber outlet to the baghouse outlet (upstream of the wet scrubber). All sampling requirements will be met according to the District's Manual of Procedures (MOP). This request is acceptable to the District since the baghouses A-8 and/or A-10 are the primary PM10 abatement devices. Condition 19466, Parts 3, 7 and 9 will be modified to reflect this change.

II. EMISSION CALCULATIONS

No emission increases due to replacement of an abatement device. The following emissions are calculated just for information.

III. PLANT CUMULATIVE INCREASE

No emissions are added to the plant's cumulative increase for this permit application. No new emissions of any pollutant will be generated as a result of replacement of the old cyclone separator with the new cyclone separator, A-66.

IV. TOXIC SCREENING ANALYSIS

A risk screen is not required for this project because there is no increase in emissions of toxic substances from this application per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

BACT is not triggered for the use of an abatement device pursuant to Regulation 2, Rule 2-301.

VI. OFFSETS

Offsets are not required for the replacement of an abatement device with no emission increase per Regulation 2-2-303.

VII. STATEMENT OF COMPLIANCE

Source 8 is subject to and expected to be in subject to and in compliance with Regulation 6-310, particulate matter and visible emissions, that requires a grain loading of less than or equal to 0.15 grain/dscf.

Source 8 is subject to and expected to be in subject to and in compliance with Regulation 6-311, process weight rate, that requires the PM emissions to less than or equal to 40 lbs/hr. Annual source test is required to demonstrate compliance with 0.15 grain/dscf and 40 lbs/hr per Condition # 19466, Part 7 and 9, respectively.

The proposed project will comply with Regulation 6-301, Ringelmann No. 1 Limitation; 6-302 Opacity Limitation; and 6-305 Visible Particles Limitation. Monthly visible compliance demonstration is required per Condition # 19466, Part 3.

This project is considered to be categorically exempt under the District's CEQA Regulation 2-1-312.2 and therefore is not subject to CEQA review. This permit application is to install air pollution control or abatement equipment.

This project is over 1,000 ft from the nearest public school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

A toxic risk screening analysis is not required.

BACT, PSD, and NESHAPS are not required

CONDITIONS

Condition # 19466

1. Deleted. (Basis: Sampling is a safety problem and there is reasonable assurance that compliance with Regulation 9-1-313.2 is achieved. See detailed analysis in Statement of Basis)

2a. Deleted. (Basis: S-188 vents to the refinery fuel gas system).

2b. Deleted. (Basis: S-189 vents to the refinery fuel gas system).

2c. Deleted. (Basis: S-160 was modified in May, 2005 and now vents to Vapor Recovery System A-13/A26)

2d. The Owner/Operator shall operate S-160 Seal Oil Sparger only when abated by A-13/A-26 Vapor Recovery Compressor to be returned to the refinery fuel gas system. (Basis: Cumulative Increase)

2e. The Owner/Operator shall abate emissions from S-8 coke storage tanks by A-8 and/or A-10 baghouses at all times. (Basis: Cumulative Increase)

3. The Owner/Operator shall monitor and record on a monthly basis the visible emissions from Sources S-1, S-2, S-8, S-11, S-176, S-233 and S-237 to demonstrate compliance with Regulation 6-301 (Ringlemann 1 or 20% opacity). For S-176 only, this monitoring is only required when dry salt is added to the tank. For S-8, compliance with Regulation 6-301 shall be demonstrated at the outlet of A-8/A-10 baghouses. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-301]

4. The owner/operator shall notify the District in writing by fax or email no less than three calendar days in advance of any scheduled startup or shutdown of any process unit and as soon as feasible for any unscheduled startup or shutdown of a process unit, but no later than 48 hours or within the next normal business day after the unscheduled startup/shutdown. The notification shall be sent in writing by fax or email to the Director of Enforcement and Compliance. The requirement is not federally enforceable. [Regulation 2-1-403]

5. The Owner/Operator shall abate the emissions from the S-3 and S-4, CO Boilers, by at least four of the five A-1 through A-5 Electrostatic Precipitators and the Owner/Operator shall exhaust those emissions through the main stack (P-1). [Basis: Regulation 6-301 and Regulation 6-304].

6. The Owner/Operator shall perform an annual source test on Sources S-5 and S-6 to demonstrate compliance with Regulation 6-310 (outlet grain loading no greater than 0.15 grain/dscf). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-310]

7. The Owner/Operator shall perform an annual source test on Sources S-8 and S-176 to demonstrate compliance with Regulation 6-310 (outlet grain loading no greater than 0.15 grain/dscf). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. For S-176 only, this source test is only required when dry salt is added to the tank. For S-8, compliance with Regulation 6-301 shall be demonstrated at the outlet of A-8/A-10 baghouses. [Basis: Regulation 6-310]

8. The Owner/Operator shall perform annually a source test on S-1 and S-2 to determine compliance with Regulation 6-330 (Outlet grain loading not to exceed 0.08 grain/dscf of SO3 and H2SO4). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-330]

9. The Owner/Operator shall perform an annual source test on Sources S-5, S-6 and S-8 to demonstrate compliance with Regulation 6-311 (PM mass emissions rate not to exceed $4.10P^{0.67}$ lb/hr). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. For S-8, compliance with Regulation 6-301 shall be demonstrated at the outlet of A-8/A-10 baghouses. [Basis: Regulation 6-311]

10. The Owner/Operator shall conduct a District-approved source test on a semi-annual basis on Sources S-7, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-30, S-31, S-32, S-33, S-34, S-40, S-41 and S-220 and on an annual basis on sources S-35 and S-173 to demonstrate compliance with Regulation 9-10-305 (CO not to exceed 400 ppmv, dry, at 3% O2, operating day average). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 9-10-305]

11. The Owner/Operator shall conduct a semi-annual District-approved source test on Sources S-43, S-44 and S-46 to demonstrate compliance with Regulation 9-9-301.1 (NOx not to exceed 55 ppmv, dry, at 15% O2, fired on refinery fuel gas). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records

shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 9-9-301.1]

12. The Owner/Operator shall abate the VOC emissions from the S-159 Lube Oil Reservoir using the S-36 Boiler. [Basis: Cumulative Increase]

13. The Owner/Operator shall vent the VOC emissions from S-167 and S-168 Seal Oil Spargers in a closed system to the flare gas recovery header to be returned to the refinery fuel gas system. [Basis: Cumulative Increase]

14. The Owner/Operator shall use the continuous emission monitors required by Regulation 9, Rule 10, to monitor compliance for all NOx limits at the following sources:
CO Furnaces: S-3, S-4
Process Furnaces: S-21, S-22, S-23, S-25, S-30, S-31, S-32, S-33, S-220
Steam Generators: S-40, S-41

15. The Owner/Operator shall use the continuous opacity monitors required by Regulation 1-520 to monitor compliance for the opacity limits at the Main Stack for the following sources:
S-5 Fluid Catalytic Cracking Unit, Catalyst Regenerator
S-6 Fluid Coker, Burner

16. To allow sufficient time to prepare test plans, train employees, and install any necessary equipment, the monitoring requirements Parts 1, 2c, 3, 6, 7, 8, 9, 10, 11, 14 and 15 are effective April 1, 2004.

Condition # 20820

FUGITIVE EQUIPMENT

1. a. The Owner/Operator shall equip all light hydrocarbon control valves installed as part of the VIP with live loaded packing systems and polished stems, or equivalent. [Basis: BACT, Cumulative Increase, offsets]
1.2. The Owner/Operator shall equip all flanges/connectors installed in the light hydrocarbon piping systems as a result of the VIP with graphitic-based gaskets unless the service requirements prevent this material. [Basis: BACT, Offsets, Cumulative Increase]
1.3. The Owner/Operator shall equip all new hydrocarbon centrifugal compressors installed as part of the VIP with "wet" dual mechanical seals with a heavy liquid barrier fluid, or dual dry gas mechanical seals buffered with inert gas. [Basis: BACT, Offsets, Cumulative Increase]
1.4. The Owner/Operator shall equip all new light hydrocarbon centrifugal pumps installed as part of the VIP with a seal-less design or with dual mechanical seals with a heavy liquid barrier fluid, or equivalent. [Basis: BACT, Offsets, Cumulative Increase]
1.5. The Owner/Operator shall integrate all new fugitive equipment installed as part of the VIP, in organic service, into the owner's fugitive equipment monitoring and repair program. [Basis: Compliance monitoring]

2. The Owner/Operator shall submit a count of installed pumps, compressors, valves, and flanges/connectors every 180 days until completion of the project. For flanges/connectors, the

owner/operator shall also provide a count of the number of graphitic-based and non-graphitic gaskets used. The Owner/Operator has been permitted to install fugitive components (2,000 valves, 6,000 flanges/connectors, 20 pumps) with a total POC emission rate of 3.0 TPY. If there is an increase in the total fugitive component emissions, the plant's cumulative emissions for the project shall be adjusted to reflect the difference between emissions based on predicted versus actual component counts. The Owner/operator may have enough remaining contemporaneous emissions reduction credits (ERC's) to cover any increase in POC fugitive emissions beyond the original projection. If not, the Owner/Operator shall provide to the District all additional required offsets at an offset ratio of 1.15:1 no later than 14 days after the submittal of the final POC fugitive equipment count. If the actual component count is less than the predicted, at the completion of the project, the total will be adjusted accordingly. Any ERC's applied by the facility in excess of the actual total fugitive emissions will be credited back to Owner/Operator prior to issuance of the permits. [Basis: Cumulative Increase, Toxics]

FUEL GAS SYSTEM

3. The Owner/Operator shall fire refinery low-pressure fuel gas in S-1046 at a concentration at or below the following: (a) 155 ppmv totaled reduced sulfur (TRS), averaged over a calendar day and (b) 160 ppmv H2S, averaged over any 3-hour period. [Basis: NSPS, BACT]

4. The Owner/Operator shall fire refinery low-pressure fuel gas in S-1046 at a concentration at or below 45 ppmv of total reduced sulfur, averaged over any rolling consecutive 365-day period. [Basis: BACT, Cumulative Increase]

5. The Owner/Operator shall install and operate a District approved continuous gaseous fuel monitor/recorder to determine the H2S content and total reduced sulfur content of the refinery low pressure fuel gas prior to combustion in S-1046 Furnace. [Basis: Refinery fuel gas monitoring for SO2, BACT]

6. To demonstrate compliance with parts 3 and 4, the Owner/Operator shall measure and record the 24-hour average TRS content, 3-hour H2S content and 365-day average TRS content of the refinery fuel gas fired in S-1046. On a quarterly basis, the Owner/Operator shall report: (a) the daily fuel consumption at S-1046, (b) daily averaged H2S content of the fired refinery fuel gas, (c) daily averaged TRS content, (d) quarterly daily averaged H2S content, (e) quarterly daily averaged TRS content, and (f) annual averaged TRS content using the last four quarters. The report shall be sent to the District's Director of Compliance and Enforcement, and the Manager of the Permit Evaluation Section no later than 60 days after the end of the quarter. [Basis: BACT, Offsets, Cumulative Increase, NSPS]

COMBUSTION SOURCE (S-1046)

7. The Owner/Operator shall fire only refinery fuel gas in the S-1046 Furnace. [Basis: BACT]

8. Total combustion emissions from this combustion source (S-1046), excluding secondary pollutants from abatement devices, shall not exceed the following annual limits in any calendar year: [Basis: Cumulative Increase, Offsets]

Pollutant	***Annual (tons)***
NOx	***12.4***
CO	***21.1***

SO2	***6.4***
PM10	***2.7***
POC	***2.5***

a. The Owner/Operator shall determine the annual emissions using continuous emission monitor (CEM) data for NOx, CO and SO2, and using source test data and fuel consumption for PM10 and POC. [Basis: Monitoring]

b. The Owner/Operator shall submit an annual report to the Compliance and Enforcement Division and Permit Services Division no later than 45 days following the end of each calendar year. The report shall include the actual daily emissions based on CEM data for NOx, CO and SO2, and the daily emissions of PM10 and POC based on the most recent source test data. Also, the report shall include the annual totals of each pollutant to demonstrate compliance with the above limits. The report shall also include the total daily heat input for S-1046 Process Furnace. [Basis: Reporting Requirements]

c. If S-1046 Furnace emissions for a calendar year are less than the above limits, the Owner/Operator may apply the difference as a credit toward the annual Main Stack emissions limit under Part 21.

9. The Owner/Operator shall equip the S-1046 Furnace with a District approved continuous fuel flow monitor and recorder in order to determine fuel consumption. (This is not a parametric monitor as defined in Regulation 1-238.) [Basis: Monitoring]

10. Startups and shutdowns of the S-1046 Furnace shall not exceed 24 consecutive hours. The 24-consecutive-hour startup period is in addition to furnace dryout/warmup periods,which shall not exceed 72 consecutive hours. [Basis: Time allowances for startup and shutdown periods]

10.1 This part does not apply until after the conclusion of the initial startup of S-1046.

11. Except during startup and shutdown, the Owner/Operator shall maintain emissions of nitrogen oxides from the S-1046 Furnace at or below 10 ppmv, dry, corrected to 3% oxygen (0.0118 lb/MM Btu), averaged over any 3 consecutive hours. [Basis: BACT]

12. Except during periods of startup and shutdown, the Owner/Operator shall maintain emissions from the S-1046 Furnace at or below the following levels: (a) CO emissions - 28 ppmv, dry, corrected to 3% oxygen (0.0201 lb/MM Btu), averaged over 8 hours, and (b) PM10 emissions - 0.0026 lb/MMBtu, and (c) POC emissions - 0.0024 lb/MMBtu.

13. The Owner/Operator shall monitor compliance with part 12 by using a District-approved CEM for CO, and annual source test and fuel consumption data for PM10 and POC. [Basis: BACT]

14. Except during periods of startup and shutdown, the Owner/Operator shall maintain ammonia emissions (ammonia slip) from the SCR unit (A-1046) at or below 10 ppmv of ammonia, dry, corrected to 3% oxygen, averaged over any rolling consecutive 3-hour period.

15. The Owner/Operator shall perform an initial source test in accordance with the requirements set forth in Part 17 to demonstrate compliance with the ammonia limitation in part 14. [Basis: Toxics, Source Tests]

16. For source S-1046, the Owner/Operator shall install, calibrate, maintain, and operate a

District-approved continuous emission monitor and recorder for NOx, CO and O2. [Basis: CEM Monitoring]

17. No later than 60 days from the startup of the S-1046 Furnace, the Owner/Operator shall conduct a District-approved source test to determine initial compliance with the limits in parts 11, 12, and 14 for NOx, CO, VOC and PM10. The Owner/Operator shall conduct the source tests in accordance with part 20. The Owner/Operator shall submit the source test results to the District staff no later than 60 days after the source test. [Basis: Compliance determination via source tests]

18. The Owner/Operator shall maintain the total combined heat input for S-1046 at or below the following limits: (1) 2,102,400 million BTUs (HHV) in any 365 consecutive day period and (2) 240 million BTUs (HHV)/hr averaged over any one hour period. [Basis: Cumulative Increase]

19. The Owner/Operator shall conduct an annual source test to demonstrate subsequent compliance with the POC and PM10 mass rates specified in part 12. The Owner/Operator shall submit the source test results to the District staff no later than 60 days after the source test. [Basis: Periodic Monitoring]

20. The owner/operator shall obtain approval for all source test procedures from the District's Source Test Section prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements for continuous emissions monitors as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing. [Basis: Source test compliance verification and accuracy]

MAIN STACK

21. The emission limitations in part 21 shall go into effect upon the implementation of any changes permitted in the Valero Improvement Project that have the potential to increase main stack emissions. These changes are reflected by any one of the following events: [Project Implementation]

1. VIP Triggers for Main Stack

a. Processing more than 135,000 barrels (BBL) of crude in any calendar day at S-1006 Pipestill.
b. Operation of a third air blower, or oxygen injection, to the FCCU Regenerator (S-5) or the Coker Burner (S-6), indicating a change to the combustion process in these units.
c. Operation of any physical changes to the combustion processes at the existing CO furnaces, F101 or F102 (S-3 or S-4).
d. Operation of the proposed new furnace, F102A (S-1046).

2. VIP Implemented – Main Stack Emissions Limitation

Upon implementation of the VIP as triggered in part 21, the Owner/Operator shall limit the Main Stack emissions, excluding emissions from S-1046 Furnace, to no more than the following based on the 3-year baseline (7/99 to 6/02), as adjusted by annual credits carried forward from Part 8c:

a. NOx – 150 ppm @ 3% O2, operating day average, determined by CEM. 1352.6 tons per calendar year.

b. SO2 –784 ppm @ 3% O2, operating day average, determined by CEM.
6,812.3 tons per calendar year, determined by CEM.. These values may be modified administratively after installation of the main stack scrubber. The modified values will reflect any ERCs granted due to installation of the scrubber.

c. PM10 – 40 lb/hr, as determined by source test
103.8 tons/calendar year, determined by summing each of the daily emissions, per the most recent source test.

d. POC – 4.2 tons/calendar year, determined by summing each of the daily emissions, per the most recent source test.

e. CO – 400 ppm @ 3%O2, operating day average, determined by CEM.
266.9 tons/calendar year.

3. PM10 and POC Periodic Monitoring: Initial & Annual Source Tests
The Owner/operator shall conduct a District approved source test for PM10 and POC emissions within 90 days following the effective date of the above limitations and annually thereafter. The owner/operator shall submit the Source test results to the Director of Compliance and Enforcement Division and the Manager of the Permit Evaluation Section within 60 days following completion of the source test. [Basis: Main stack baseline monitoring, reporting]

4. *Annual Emissions Reporting on Main Stack*
The owner/operator shall submit an annual report to the District no later than 45 days following the end of each applicable calendar year. The owner/operator shall list for each pollutant, the daily emissions and the annual emissions total, to document compliance with the above limitations. [Basis: Reporting Requirements]

5. *Main Stack: Surplus Reduction Used for Shipping Contingency*
If Main Stack emissions for a calendar year are less than the above limits, the owner/operator may apply the surplus reduction, if required, as an offset for the shipping contingency under part 24. [Basis: Offsets]

22. In accordance with Regulation 2-4-301.1, sulfur dioxide (SO2) emission reductions greater than those required by any District regulation, resulting from the installation of A-1047 Flue Gas Scrubber, shall be eligible for banking after being demonstrated by source testing or other means acceptable to the APCO. The baseline emissions shall be calculated in accordance with Regulation 2-2-605. [Basis: Banking]

CARGO CARRIER and DOCK

23. The emission limits in part 23 will begin on January 1 of the year when the owner/operator processes more than 135,000 BBL of crude oil at S-1006 on any one day or the moment that the storage tanks in part 32 (Sources S-57 through S-62, S-1047 and S-1048) exceed a combined total of 141.5 kbbl/day (annual daily average), whichever event occurs first.

Ship and barge emissions associated with the import of crude and gas oil across the plant's main Benicia crude dock, combined with the ship emissions associated with the export of product coke across the Plant's Benicia coke dock, will not exceed the following annual calendar year limits: [Basis Cumulative Increase, Offsets]

Pollutant	*Base Line*	*VIP Increase*	*Total Annual (tons)*
NOx	*96.14*	*39.98*	*136.12*
SOx	*32.87*	*16.19*	*49.06*
POC	*7.34*	*3.22*	*10.56*
PM10	*5.43*	*2.39*	*7.82*
CO	*13.83*	*5.88*	*19.71*

24. ***To accommodate any unforeseen changes in shipping requirements, the above total annual limits for each pollutant may be further increased to accommodate a shift in crude imports from pipeline to ships. All increases in combustion emissions from ships will need to be offset through contemporaneous emissions reductions. The VOC contingency has been provided as part of Application #5846. The emission reduction credits (ERC's) for the other pollutants will be provided by a corresponding reduction in the main stack annual emission limit (Part 21). However, in no event shall the Owner/Operator allow the total additional increase for the contingency to exceed the contingency allowance presented below. [Basis: Cumulative Increase, Offsets]***

Pollutant	*Base Line plus*	*VIP Increase*	*Contingency*	*Total Annual (tons)*
NOx		*136.12*	*32.95*	*169.07*
SOx		*49.06*	*15.76*	*64.82*
POC		*10.56*	*3.10*	*13.66*
PM10		*7.82*	*2.06*	*9.88*
CO		*19.71*	*5.21*	*24.92*

25. ***The Owner/Operator shall use the following emission factors for determining compliance with parts 23 and 24. [Basis: Compliance Verification]***

Crude and Gas Oil Ship Receipts at Main Benicia Crude Dock in pounds per 1000 BBL (lb/kBBL):
5.1 NOx, 1.8 SOx, 0.29 PM10, 0.42 POC, 0.76 CO.

Crude and Gas Oil Barge Receipts at Main Benicia Crude Dock in lb/kbbl:
12.78 NOx, 0.16 SOx, 0.56 PM10, 0.29 POC, 1.27 CO.

Coke Exports via Ship at Valero Coke Dock in lb/1000 tons:
44.2 NOx, 33.1 SOx, 3.6 PM10, 3.4 POC, 6.2 CO.

26. ***The Owner/Operator shall submit calendar year reports to the District, due the 45th day following the end of the year, detailing the annual emissions to document compliance with parts 23 and 24. [Basis: Annual Report]***

27. ***The owner/operator shall maintain daily records (calendar day), in a District approved log, for: (1) the total number of deliveries of crude oil by ship and barge, (2) the total number of deliveries of PGO by ship and barge, and (3) the total number of shipments of coke by ship. The daily throughput of crude oil transferred at the plant's dock from the cargo ship or barge to the crude storage tanks (S-57 through S-62, S-1047 and S-1048) shall be recorded in a District approved log. All records shall be retained for a period of at least five years from the***

date of entry. This log shall be kept on site and made available to District staff upon request. [Basis: Recordkeeping]

OFFSETS

28. Prior to the implementation of the VIP shipping, the Owner/Operator shall do the following to provide contemporaneous offsets for the ship, rail and barge emissions: [Basis: Contemporaneous Emissions Reduction Credits]

- ***a. Complete Light Ends Rail Rack Arm Drains (15.8 tpy POC).***
- ***b. Halt MTBE ship imports no later than 90 days following VIP implementation (36.7 TPY NOx, 3.48 TPY POC, 1.61 TPY PM10)***
- ***c. Shut down S-38 and S-39 Boilers, per Cogeneration Project Condition 19177, part 47 (0.99 tpy PM10)***
- ***d. Reduce Main Stack SO2 emissions per part 22 by 16.4 TPY.***

Note: VIP shipping is triggered as described in Part 23.

29. Prior to implementation of the VIP phase pertaining to POC fugitives or crude tankage, the Owner/Operator shall do the following to offset the POC emissions increase in part 2 from fugitives (3.0 tpy), and the S-1047 and S-1048 crude storage tanks (3.3 tpy): [Basis: Offsets]

a. Complete Light Ends Rail Rack Drains (15.8 tons POC/year)

Note: The VIP phase in part 29 is triggered upon commissioning the first VIP fugitive components, or the commissioning of the first crude tank (S-1047 or S-1048).

STORAGE TANKS

30. For the S-1047 and S-1048 Storage Tanks (external floating roof), the Owner/Operator shall comply with all applicable NSPS requirements of 40 CFR 60 Subpart Kb and the requirements of District Regulation 8-5. [Basis: BACT, NSPS]

31. Owner/Operator shall not store any material in S-1047 or S-1048 storage tanks other than crude oil if the new material will result in an emission increase of POC or an increase in toxicity. This prohibition includes (but is not limited to) the storage of a new material with a: a) Higher vapor pressure at actual storage temperature; (b) lower initial boiling point: (c) larger percentage of a toxic component; (d) new toxic compounds. Owner/Operator shall notify the District, in writing, of any proposed product storage changes, as prohibited herein, and received written authorization from the APCO in advance of any such use. [Basis: Cumulative Increase, Toxics]

32. The Owner/Operator shall limit the combined material throughput at storage tanks, S-57 through S-62, S-1047 and S-1048, to no more than 171.5 kbbl/day (annual daily average)or 62.6 Million Barrels per year. [Basis: Cumulative Increase]

33. The Owner/Operator shall maintain the daily combined material throughput at storage tanks, S-57 through S-62, S-1047 and S-1048, in a District approved log to demonstrate whether or not the VIP has been triggered per part 23 and compliance with part 32. The Owner/Operator

shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

MISCELLANEOUS UNITS, VESSELS AND REACTORS

34. For the new S-1057 Pressure Swing Absorption Unit, the Owner/Operator shall not operate the source beyond the following throughput limitations: [Basis: Cumulative Increase]

50 MMSCFD Feed Rate, Annual Average
50 MMSCFD Feed Rate, Daily Average

35. The Owner/Operator shall maintain the daily material throughput at the new Pressure Swing Absorption Unit, S-1057, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

36. For each new fractionation/stripping process vessel (S-1034 through S-1045), the Owner/Operator shall not operate the sources beyond the following throughput limitation: [Basis: Cumulative Increase]

100 kbbl/day, Daily Average, each vessel.

37. Upon startup of each source in part 36, the Owner/Operator shall submit documentation of the final design throughput for the source. The Owner/Operator may adjust the throughput limit for each source in part #36 as long as it does not exceed the 100 kbbl/day, daily average.

38. The Owner/Operator shall maintain the daily material throughputs for each new fractionation/stripping source, S-1034 through S-1045, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

39. For each new hydrofining reactor process vessel (S-1049 through S-1056), the Owner/Operator shall not operate the sources beyond the following throughput limitation: [Basis: Cumulative Increase]

100 kbbl/day, Daily Average, each vessel.

40. Upon startup of each source, the Owner/Operator shall submit documentation of the final design throughput for the source. The Owner/Operator may adjust the throughput limit for each source in part 39 as long as it does not exceed 100 kbbl/day, daily average.

41. The Owner/Operator shall maintain the daily material throughputs for each new hydrofining source, S-1049 through S-1056, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

42. For each individual sulfur plant train, S-1 and S-2, the Owner/Operator shall not operate the sources beyond the following sulfur production limits: [Basis: Cumulative Increase, odors]

240 short tons per day, daily maximum
87,600 short tons per year

Note: Registration #76227 limits the daily throughput of S-1 and S-2. This limit will be deleted when the VIP project is started up.

43. The Owner/Operator shall maintain the daily sulfur production at each individual sulfur plant train, S-1 and S-2, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

44. For the sulfur storage pit and product tank, S-157 and S-236, the Owner/Operator shall not operate the sources beyond the following throughput limits: [Basis: Cumulative Increase, Odors]

480 short tons per day, daily maximum
175,200 short tons per year

45. The Owner/Operator shall maintain the daily material throughput at the sulfur storage pit and product tank, S-157 and S-236, in a District approved log. The Owner/Operator shall maintain these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

46. For the FCCU, S-5, the Owner/Operator shall not operate the source beyond the following throughput limits:
[Basis: Cumulative Increase]
80 kbbl per day, daily maximum
77 kbbl per day, annual average

47. The Owner/Operator shall maintain the daily material throughput at the FCCU, S-5, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

48. For the coke silos, S-8, the Owner/Operator shall not operate the source beyond the following limits:
[Basis: Cumulative Increase]
2,400 tons per day, daily maximum
876 ktons per year

49. The Owner/Operator shall maintain the daily material throughput at the coke silos, S-8, in a District approved log. The Owner/Operator shall keep these records and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

50. The Owner/Operator shall not operate the S-9 Blow down system or the S-1006 Pipestill Unit beyond the following throughput limits: [Basis: Cumulative Increase]

180 kbbl per day, daily maximum
165 kbbl per day, annual average

Note: Condition #815, part 1 covers the daily throughput limit for S-1006.

Condition #815, part 1 will be deleted when the VIP project is implemented.

51. The Owner/Operator shall maintain the daily crude throughput at the S-9 Crude blow down system and the S-1006 pipestill unit in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made.

Note: Condition #815, part 2 covers the recordkeeping and reporting requirement for S-1006. This condition will be deleted when the VIP project is started up.

52. To demonstrate compliance with the throughput limit specified in part 50, the Owner/Operator shall submit a report to the District's Compliance and Enforcement Division and Permit Services Division on a monthly basis. The Owner/Operator shall forward the report to the District no later than 30 days after the close of each month. [Basis: Recordkeeping]

53. For the activated carbon drums and the hydrocracker unit, S-51, S-52 and S-1003, the Owner/Operator shall not operate the source beyond the following throughput limits: [Basis: Cumulative Increase]

44 kbbl per day, daily maximum
40 kbbl per day, annual average

54. The Owner/Operator shall maintain the daily material throughput at the activated carbon drums and the hydrocracker unit, S-51, S-52 and S-1003, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

55. For the powerformer unit, S-1004, the Owner/Operator shall not operate the source beyond the following throughput limits: [Basis: Cumulative Increase]

39.8 kbbl per day, daily maximum
14.5 MMBBL per year

Note: Condition #18794, part 1 covers the daily and annual throughput limits for S-1004. Part 1 of Condition #18794 will be deleted when the VIP project is implemented.

56. The Owner/Operator shall maintain the daily feed throughput at the powerformer unit, S-1004, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made.
[Basis: Recordkeeping]

Note: Condition #18794, part 2 covers the recordkeeping requirements for S-1004. Part 2 of Condition #18794 will be deleted when the VIP project is implemented.

57. For the hydrogen plant, S-1010, the Owner/Operator shall not operate the source beyond the following throughput limits , A and B trains combined: [Basis: Cumulative Increase]

190 MMSCF per day, daily maximum
69,350 MMSCF per year

58. The Owner/Operator shall maintain the daily throughput of product hydrogen at the hydrogen plant, S-1010, from both A and B trains combined, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

59. For the dimersol unit, S-1012, the Owner/Operator shall not operate the source beyond following throughput limits:
[Basis: Cumulative Increase]
7 kbbl per day, daily maximum
2.555 MMBBL per year

60. The Owner/Operator shall maintain the daily feed throughput at the Dimersol Unit, S-1012, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least five years. [Basis: Recordkeeping]

IX. RECOMMENDATION

Issue a conditional Authority to Construct to Valero Refining Company for the following equipment:

A-66 Cyclone Separator, Buell #41 Series 729 Cyclone, 4,083 scfm or equivalent, to abate S-8 Coke Storage Tanks TK 1902 A/B

_____
Thu H. Bui
Senior Air Quality Engineer
Permit Services Division
Date: _____

THB:disk-v\Valero\16056e

EVALUATION REPORT
VALERO REFINING COMPANY
Application #16302 - Plant #12626

3400 East Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for an increase in perchloroethylene (PERC) throughput to the Permit to Operate for the following equipment:

S-158 Fixed Roof Tank 2902, 2300 gallons capacity
S-27 Powerformer Regeneration Facilities

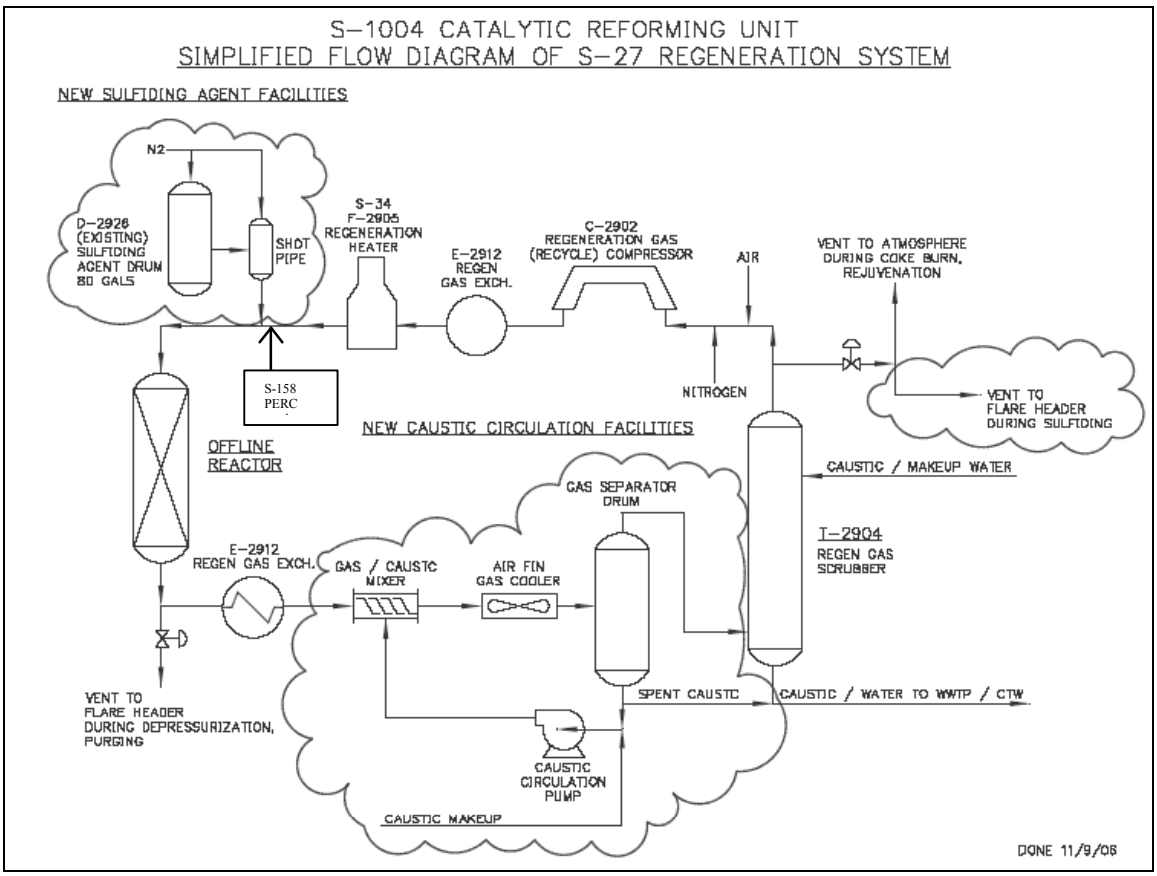
This application is for proposed changes to S-27 and S-158 to improve maintenance and reliability of the regeneration system at the Naphtha Reforming Unit. The improvements include increase catalyst activity and restore chloride levels by adding PERC at lower rate and during the first, second coke burn off and the rejuvenation stage instead of just adding PERC at higher rate during the rejuvenation in the past. The increase PERC usage required increase throughput in source S-158 (PERC storage tank). Valero proposed to increase the PERC throughput from 10,000 gallons per year (Condition # 9584) to 30,000 gallons per year at S-158. In addition, Valero requests that S-158 to be exempt from Regulation 8-5, because tank S-158 will only be storing PERC with a true vapor pressure of less than 0.5 psia at 68oF per Regulation 8-5-117 low vapor pressure exemption. S-158 will be subject to Regulation 8-2-301 - Miscellaneous Operations.

Valero has indicated that there will not be any un-reacted PERC left in the reactors or formation of any other component because all PERC material will decompose at the operating range from 800oF – 1000oF, based on the attached PERC's Material Safety Data Sheet decomposition temperature at 259oF.

Other Hazardous Air Pollutants from the catalytic reforming unit are controlled by the Maximum Achievable Control Technology II (MACT II) 40 CFR 63 Subpart UUU – Hazardous Air Pollutants from Petroleum Refineries. Valero's Naphtha Reforming Unit is subject to the HCL emission limit of 97 wt.% control efficiency or 10 ppmv in the regeneration vent using chlorinated agent such as PERC to rejuvenate catalyst. Valero indicated that the increased amount of PERC at the Naphtha Reforming Unit would not affect the control efficiency because it was equipped with a wet scrubber.

At this time, there is not much information regarding the formation of the dioxin/furan emission from the Naphtha Reforming Unit. EPA acknowledges the presence of dioxin/furan emission in the process, but did not establish a specific standard for dioxin/furan in the MACT II rule. EPA performed source tests and preliminary risk assessment on the catalytic reforming units but found no significant risk to justify the implementation of control. See June 21, 2001 final report on background information for the MACT II emission standards. (Section2.6)

A flow diagram showing regeneration system at the Naphtha Reforming Unit.



The operation of S-27 consists of the following steps:

12. The underperforming reactor isolated and swing reactor placed in service.
13. Reactor depressured to flare header.
14. Reactor is lined up to the regeneration circulation system.
15. System is filled with nitrogen to about 100 psi
16. C-2902 starts up and the regeneration circulation begins
17. Air is injected into the suction of C-2902 and the carbon burn off begins. Effluent gas from the reactor is cooled and the HCl is scrubbed in T-2904. (This application proposes HCl scrubbing in a new caustic mixing system upstream of T-2904.) Some of the cooled and scrubbed gas is vented to atmosphere on pressure control, but most of it returns to C-2902.
18. Air injection is increased step-wise based on reactor outlet temperature. When the regeneration is complete, temperature drops and oxygen breakthrough is detected at the outlet of the reactor.
19. PERC is injected into the hot circulation gas with oxygen present to rejuvenate the catalyst. The circulated gas contains about 5% oxygen so the vent to atmosphere is still utilized. Nitrogen is added to "O2 free" the regeneration circuit while venting to atmosphere. Then the vent to atmosphere is closed, the proposed new vent line to the sour fuel gas header is opened, and make-up hydrogen is added to the regeneration circuit to reduce (activate) the catalyst.
20. After the catalyst reduction step is complete, the proposed new sulfiding equipment is used to inject a small-predetermined amount of di-methyl di-sulfide (DMDS) into the circulation gas to temporarily and slightly deactivate the catalyst. This generates H2S so the gas is vented to the sour fuel gas system through the new vent line.
21. Once the catalyst sulfiding is complete, the reactor is isolated from the regeneration system and pressured up with hydrogen.

22. The regenerated reactor is returned to service.

Prior to issuance of this permit, Valero was provided an opportunity to review and accepted the proposed permit Conditions 9584 and 23326 below. Valero submitted TV's Application #16327 to modify the TV permit along with this application.

II. EMISSION CALCULATIONS

S-27 Powerformer Regeneration Facilities

There are three parts of the regeneration process that have potential to produce emissions. The first is the reactor depressurization which discharges to the flare header, but normally all the emissions are recovered by the flare gas recovery compressors (A-13 or A-26) and sent to fuel gas. The second is the catalyst reduction and sulfiding steps but during these steps all emissions are sent to the sour fuel gas system. The third is the discharge to atmosphere during the carbon burn, rejuvenation, and O2 freeing steps. This third part is the only part of the regeneration process that generates emissions from S-27.

There are no changes in emissions expected due to this application for S-27. Valero has certified that this modification does not result in an increase in any pollutants. However, S-27 is a grandfathered source. Therefore, there are no emissions associated with S-27. In order to certify that the S-27 emissions have not changed, baseline emissions need to be established. There are no records that can substantiate baseline emissions because the P-41 discharge from S-27 has not been monitored. Therefore, Valero has qualitatively addressed the likelihood of emissions of each criteria pollutant. With the exception of CO, all criteria pollutant emissions are expected to be zero or negligible:

- POC. The source of POC emissions is residual hydrocarbon left in the reactor after depressuring. These would be small to begin with, and once the regeneration burn-off begins, most, if not all, of the hydrocarbons would be oxidized immediately resulting in no POC emissions. Current databank emission calculations use a generic emission factor for organics. This emission factor is 0.1 lb Organics per million SCF of gas discharged to the atmosphere. This emission factor will remain and will be the basis for calculating POC emissions.
- SO2. The source of SO2 emissions would be any residual sulfur left in the reactor after depressuring. However, the reactor feed streams have a typical sulfur content of about 1 ppm because the S-1004 Powerformer catalyst is sensitive to sulfur. Therefore, there is little or no sulfur available to generate SO2 emissions.
- PM10. PM10 emissions are unlikely because the T-2904 wet scrubber acts as a particulate abatement device.
- NOx. There are two mechanisms for NOx emissions – oxidation of the nitrogen in the reactor from the residual process hydrocarbons after depressurization, and thermal NOx from the air/nitrogen regeneration gas during burn-off. Firstly, S-1004 feed stream nitrogen content is typically maintained at 1 ppmw, so significant NOx formation is very unlikely through this mechanism. Secondly, thermal NOx is unlikely because the regeneration temperatures are in the 750F to 1050F range, well below the temperature where significant thermal NOx is formed. Valero has performed testing to support these conclusions and found 0 ppm NO and 0 ppm NO2.

S-27 does produce CO emissions. During the regeneration burn-off, the temperature and the oxygen lean environment results in incomplete oxidation. Valero's preliminary testing found CO emissions in the 100 ppm to 1300 ppm range (0% O2). Based on the highest concentration of 1300 ppm, and 454 MMSCF of gas discharged (the highest annual discharge rate recorded in the past five years was in CY 2002), The CO emissions are:

(454,000,000 SCF gas/yr) X (1 mole gas/385.3 SCF gas) X (1300 moles CO / 1,000,000 moles gas) X (28 lb CO/mole CO) = 42,890 lb CO / yr = ~ 22 ton/yr

CO EF = 42,890 lb CO / 454 MM = 94.5 lb/MMSCF. Valero has agreed to use an emission factor of 95 lb/MMSCF.

S-158 Fixed Roof Tank 2902, 2300 gallons capacity

The emissions from S-158 are calculated by EPA Tank 4.0 program using PERC with maximum Reid Vapor Pressure of 0.27 psia and Sacramento meteorological data. (See attached calculations)

Tank Emissions (EPA Tank 4.0):
Current Throughput = 2,303 gal X 4.35 times/yr = 10,018 gal/yr for each tank

	Annual (lb/yr)	Daily (day/yr)	
Working loss	10.82	2.49	(4.35 time/yr)
Deck fitting loss	38.78	0.11	(365 day/yr)
Maximum emissions	49.61	2.60	

Future Throughput = 2,303 gal X 13 times/yr = 29,940 gal/yr for each tank

	Annual (lb/yr)	Daily (day/yr)	
Working loss	32.35	2.49	(13 time/yr)
Deck fitting loss	38.78	0.11	(365 day/yr)
Maximum emissions	71.13	2.60	

NPOC - PERC emission increase = 71.83 lb/yr – 49.61 lb/yr = 22.22 lb/yr NPOC

V. PLANT CUMULATIVE INCREASE AFTER 4/5/91

Current	**New Ton/yr**	**New Total Ton/yr**	**Lbs/yr**	**Tons/yr**
POC =	0.00	0.00	0.00	0.00
NO_x =	0.00	0.00	0.00	0.00
SO_2 =	0.00	0.00	0.00	0.00
CO =	0.00	0.00	0.00	0.00
NPOC =	0.00	0.011	22.22	0.011
TSP =	0.00	0.00	0.00	0.00
PM_{10} =	0.00	0.00	0.00	0.00

VI. TOXIC SCREENING ANALYSIS

Source S-158 required the health risk screening analysis because PERC emission increase from the project exceeds the toxic trigger level listed in Table 2.5.1 per Regulation 2-5-601.3.2.

Toxic Pollutant	Emission Rate	Trigger Level
S-158	**71.83 lb/yr PERC**	**30 lb/yr**

S-27 **501 lb/yr HCl** **350 lb/yr**

The cancer risk to the maximally exposed residential receptor is .006 in a million and the acute Hazard Index in 0.01. Thus, in accordance with Regulation 2-5, the screen passes. (See attached toxic report dated October 23, 2007)

The proposed change to modify S-27 is not expected to emit toxic compounds in amounts different that previously emitted. For information, toxic emissions for S-27 are as follows:

HCl. MACT II (40 CFR 63 Subpart UUU 63.1567) requires HCl emissions to be below 10 ppm (3% O2).
10 ppm (20.95 – 0)/(20.95-3) = 11.67 ppm at 0% O2

28,000 SCFH (1/385.3)(11.67/1,000,000)(36.45 lb HCl/mole) = 0.031 lb HCl/hr
(Acute Toxic Trigger = 4.6 lb/hr)
454,000,000 SCFY(1/385.3)(11.67/1,000,000)(36.45) = 501 lb/yr (Chronic TT = 350)

It is notable that a source test for S-27 was conducted in July 2005 and HCl emissions ranged from 0.31 to 1.29 ppm @ 3% O2 (see Application # 15052).

H2S emissions are all sent to the fuel gas recovery system, so there are no toxic emissions.

PERC is used to rejuvenate the catalyst after regeneration, but is consumed during the process. Therefore, there are no PERC emissions.

V. BEST AVAILABLE CONTROL TECHNOLOGY

BACT is triggered for new or modified sources that emit criteria pollutants in excess of 10 lbs/day. However, Regulation 2-1-234 defines a modified source as one that results in an increase in daily or annual emissions of a regulated air pollutant. For this application, the PERC anh HCl emissions are less than 10 lb/highest day each. Therefore, BACT does not apply.

VI. STATEMENT OF COMPLIANCE

This application will not change the compliance for the affected sources. Specifically, compliance with Regulations 6, Regulation 8, Rule 2, and MACT II 40 CFR 63 Subpart UUU is expected.

The modification proposed by this application complies with **Regulation 12, Rule 12 - Flares at Petroleum Refineries** by recovering all potential flare gas except during emergency situations elsewhere in the refinery.

Source S-158 is subject to and expected to comply with the requirement of Regulation 8-2-
Regulation 8-2-301 - Miscellaneous Operations since the emissions from S-158 are less than 15 lbs/day.

This project qualifies for a CEQA categorical exemption of Regulation 2-1-312.6 for permit applications relating exclusively to the repair, maintenance or minor modification of existing facilities, and therefore is not subject to CEQA review. The applicant has completed an

Appendix H. The form indicates that there are no significant impacts on its surrounding properties. The proposed operation will have no other significant environmental effect.

The closest school is over a mile from the facility, so the Public Notice requirements of Regulation 2-1-214 do not apply.

BACT, Offsets, and PSD are not applicable.

VII. CONDITIONS

Plant No. 12626, Valero Refining Company – California
Source S-158, Fixed Roof Storage Tank (PERC)
Application No. 16302

Condition No. 9584

1. The Owner/Operator shall limit the throughput at the storage tank S-158 to no more than 30,000 gallons of perchloroethylene during any rolling 12 consecutive month period. (Basis: Cumulative Increase, Toxics)

2. To demonstrate compliance with Part #1, the Owner/Operator shall maintain monthly throughput records of perchloroethylene at S-158 in a District approved log. These records shall be kept on site and made available for District inspection or a period of at least 5 years from the date on which a record is made. (Basis: Cumulative Increase)

IX. RECOMMENDATION

It is recommended that an Authority to Construct be waived and Valero be allowed to modify:

S-158 Fixed Roof Tank 2902, 2300 gallons capacity
S-27 Powerformer Regeneration Facilities

_____
Thu H. Bui
Senior Air Quality Engineer
Engineering Division

Date: _____

THB:C:\Valero\16302\16302e

EVALUATION REPORT
VALERO REFINING CO.
Application #16656 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for a change of condition to the Permit to Operate for the following equipment:

S-157 Sulfur Storage Pit abated by either:

S-1 Sulfur Recovery Unit A Train Acid Gas Burner F-1301A, 240 short tons/day (VIP rate), 160 short tons/day (Title V) abated by A-24 and/or A-62 Tail Gas Hydrogenation units and TGCU Flexsorb Unit A-56

and/or

S-2 Sulfur Recovery Unit B Train Acid Gas Burner F-1301B, 240 short tons/day (VIP rate), 160 short tons/day (Title V) abated by A-24 and/or A-62 Tail Gas Hydrogenation units and TGCU Flexsorb Unit A-56

On March 17, 2007, The District granted Valero's request to reroute an existing Sulfur Storage Pit (S-157) that is currently vented (or sparged) to the atmosphere to either the Sulfur Recovery Unit (SRU) A Train Acid gas Burner (S-1) and/or the Sulfur Recovery Unit (SRU) B Train Acid gas Burner (S-2). EPA required Valero to reroute the Sulfur Storage Pit under a consent decree. This reroute will result in recovery of the element sulfur, hydrogen sulfide (H2S), and sulfur dioxide (SO2) in the sulfur pit.

Condition # 23446 required that the owner/operator must abate S-157 at all times either by S-1 or S-2. However, within 6 month of operation, Valero discovered that the vapor recovery system (which includes two air compressors, an air powered eductor, and the existing sparger) is about to plug due to sulfur deposit in the sparger's pipe. Valero is seeking for ten days (240 hrs/yr) relief from equipment maintenance of the vapor recovery/sparger system. The proposed 10 days of vapor recovery/sparger maintenance seems to be a reasonable request; therefore, the District agreed to allow the condition change. The planned maintenance activities would ensure proper equipment operation and reduce more H2S emissions than an unscheduled equipment breakdown.

II. EMISSION CALCULATIONS

S-157 emissions vented to the atmosphere:

Basis:
- Total sulfur production = 320 ton/day – Current Maximum
- H2S sulfur pit emission factor = 0.7 lb/ton – Valero's design
- Daily sulfur emissions = 0.7 lb/ton X 320 ton/day = 224 lbs/day
- Annual Sulfur emissions = 224 lbs/day X 365 day/yr = 81,760 lb/yr or 40.88 tpy

S-157 emissions abated by Sulfuric Recovery Unit (SRU) S-1 and S-2:

Basis:
- Control Efficiency = 99.8% BAAQMD data base inventory
- Daily Sulfur emissions = 224 lb/day X (1-0.998) = 0.448 lb/day
- 355 days of abated sulfur emissions = 0.448 lbs/day X 355 day/yr = 159 lb/yr
- 10 days of unabated = 224 lb/day X 10 days = 2,240 lb
- Total annual sulfur emissions = 2,240 lb + 159 lb = 2,399 lb/yr H2S

Total H2S emission decreases:
Total H2S = 81,760 lb/yr – 2,399 lb/yr = (79,361 lbs/yr) or (39.680 tpy)

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

	Current Ton/yr	New Ton/yr	New Total tons/yr
POC =	0	0	0
NO_X =	0	0	0
H2S =	0	(39.68)	(39.68)
CO =	0	0	0
NPOC =	0	0	0
PM_{10} =	0	0	0

IV. TOXIC SCREENING ANALYSIS

This application will not result in an increase in toxic air contaminant emissions from existing levels. Therefore, a Toxic RSA is not required.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application will not result in an increase in SO_2 emissions from existing levels. Therefore, BACT is not triggered. This application does not require BACT since the emissions are inorganic compounds.

VI. OFFSETS

This application results in emission decreases. Therefore, offsets are not needed.

VII. STATEMENT OF COMPLIANCE

The Sulfur Storage Pit (S-157), the SRU Acid Gas Burners (S-1 and S-2) are expected to be in compliance with all requirements of Regulation 1 (General Provision), Regulation 6 (Particulate Matter and Visible Emissions), and Regulation 9-1 (Inorganic Gaseous Pollutants-Sulfur Dioxide). The SRU met 250 ppmv dry SO2 calculated at zero percent O2 per Regulation 9-1-307. The SRU is equipped with SO2 continuous emission monitoring systems.

This permit application is not subject to CEQA because the evaluation is a ministerial action conducted using fixed standards and objective measurements. This project is categorically exempt from CEQA per Regulation 2-1-312.3 for permit application for project undertaken the

sole purpose of bringing an existing facility into compliance with newly adopted regulatory requirements of the federal agency, and/or Regulation 2-1-312.5 for permit application submitted pursuant to the requirement of an order for abatement issued by the District's Hearing Board or of a judicial enforcement order (EPA decree consent).

This project is over 1,000 ft from the nearest public school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

- Sources S-1 and S-2 will be subject to and expected to comply with the following Regulation 10: New Source Performance Standards (NSPS), (40 CFR, Part 60) by December 31, 2005.

- 40 CFR, Part 60, Subpart J Standards of Performance for Petroleum Refineries.

- Sources S-1 and S-2 (SRU) is subject to and expected to comply with the following Section 112 of the Clean Air Act, National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR Part 63, Subpart UUU

PSD is not triggered.

VIII. CONDITIONS

Permit condition for S-157, Sulfur Storage Pit, Valero Refining Company, Application # 15317, amended by Application 16656, Plant # 12626.

S-157 Sulfur Storage Pit

1. The owner/operator shall abate the Sulfur Storage Pit (S-157) emissions by either the Sulfur Recovery Unit A Train Acid Gas Burner (S-1) and/or the Sulfur Recovery Unit B Train Acid Gas Burner (S-2) at all times, when S-1 and/or S-2 is in operation, except for up to 240 hours per calendar year to perform maintenance on S-157 vapor recovery/sparger system. (Basis: cumulative increase, EPA consent decree)

2. In order to demonstrate compliance with Part 1, the owner/operator of S-157 shall record the maintenance hours for S-157 vapor recovery/sparger system, summarized on a quarterly basis in a District approved log. These records shall be kept on site and made available for District inspection for at least five years from the date that the record was made. (Basis: Recordkeeping)

IX. RECOMMENDATION

Issue a conditional change to the Permit to Operate to Valero Refining Company for the following equipment:

S-157 Sulfur Storage Pit abated by either:

S-1 Sulfur Recovery Unit A Train Acid Gas Burner F-1301A, 240 short tons/day (VIP rate), 160 short tons/day (Title V) abated by A-24 and/or A-62 Tail Gas Hydrogenation units and TGCU Flexsorb Unit A-56

and/or

S-2 Sulfur Recovery Unit B Train Acid Gas Burner F-1301B, 240 short tons/day (VIP rate), 160 short tons/day (Title V) abated by A-24 and/or A-62 Tail Gas Hydrogenation units and TGCU Flexsorb Unit A-56

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:C:\Valero\16656\16656e\

EVALUATION REPORT
VALERO REFINING CO.
Application #16658 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for a change of condition to the Permit to Operate for the following equipment:

S-237 Boiler SG-1032, Babcock & Wilcox, 315 MMBtu/hr

Condition # 16027, Part 22 required that the owner/operator must submit the annual CO source test result within 30 days of the test. Valero requests that the submittal due date be increased from 30 days to 45 days for consistency with the majority of the source test requirements.

The proposed change is consistent with the District's policy; therefore, the District agreed to allow the condition change. Valero submitted an administrative change to the TV permit concurrently under Application # 16702.

II. EMISSION CALCULATIONS

This application will not result in an emission increase.

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

There are no net changes to the plant cumulative emissions.

IV. TOXIC SCREENING ANALYSIS

This application will not result in an increase in toxic air contaminant emissions from existing levels. Therefore, a Toxic RSA is not required.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application will not result in any emission increase from existing levels. Therefore, BACT is not triggered per Regulation 2-2-301.

VI. OFFSETS

This application does not result in emission increases. Therefore, offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIANCE

Source S-237, Steam Boiler, is subject to and expected to be in compliance with all requirements of Regulation 1 (General Provision), Regulation 6 (Particulate Matter and Visible Emissions), and Regulation 9-3-303 (Nitrogen Oxides From Heat Transfer Operations). Boiler S-237 will not exceed 125 ppmv of NOx when gaseous fuel is burned.

- Source S-237 is subject to and expected to comply with the following Regulation 10: New Source Performance Standards (NSPS), (40 CFR, Part 60).

- 40 CFR, Part 60, Subpart J Standards of Performance for Petroleum Refineries.

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 2.1, and therefore is not discretionary as defined by CEQA.

This project is over 1,000 ft from the nearest public school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

PSD is not triggered.

VIII. CONDITIONS

Permit condition # 16027 for S-237, Boiler SG-1032, Valero Refining Company, Application # 18888, amended by Application 16658, Plant # 12626.

1. Fugitive Emissions Components: The Owner/Operator shall install all hydrocarbon valves greater than 2 inches as one of the following types: (1) bellows sealed, (2) live loaded, (3) graphitic-packed, (4) teflon packed valves or (5) equivalent. All flanges installed in the piping systems by the Owner/Operator shall be equipped with graphitic-based gaskets, except in services that are not compatible with graphitic material. Asbestos type gaskets shall be used in service where graphitic-based gaskets are not compatible. [[Basis: BACT]

2. Completed.

3. Fuel Gas System: The Owner/Operator shall limit the refinery low-pressure fuel gas to no more than any of the following: (a) 100 ppmv H2S, averaged over a 24-hour calendar day and (b) the H2S concentration limitation specified in NSPS 40 CFR 60 Subpart J. [Basis: Cumulative Increase, BACT, NSPS]

4. Fuel Gas System: Owner/Operator shall limit the refinery low-pressure fuel gas to no more than 51 ppmv of total reduced sulfur, averaged over any consecutive four-quarter period. [Basis: BACT, Contemporaneous offsets for S02 and PM10 emissions]

5. Fuel Gas System: The Owner/Operator shall install and operate a District approved continuous gaseous fuel monitor/recorder to determine the H2S content and total reduced sulfur content of the refinery low pressure fuel gas prior to combustion in any downstream combustion source including the S-237 Boiler. [Basis: Cumulative Increase]

6. Fuel Gas System: The Owner/Operator shall calculate and record the 24-hour average H2S content and total reduced sulfur content of the refinery fuel gas, for determining compliance with Parts number 3 and 4, based on the previous 24 individual hourly averages. On a quarterly basis, the Permit Holder shall report: (a) the daily fuel consumption at S-237, (b) daily averaged H2S content of the refinery fuel gas,

(c) daily averaged total reduced sulfur content (d) quarterly daily averaged H2S content, (e) quarterly daily averaged total reduced sulfur content and (f) annual averaged total reduced sulfur content using the last four quarters. [Basis: Cumulative Increase]

7. The Owner/Operator shall only fire S-237 Boiler natural gas, LPG/pentane gases or refinery fuel gas. In no case shall any combustion source burn a fuel with a H2S concentration exceeding 100 ppmv, averaged over 24 hours (calendar day) or a TRS concentration exceeding 51 ppmv, averaged over any four consecutive quarters. [Basis: Cumulative Increase, Toxics, offsets]

8. The Owner/Operator shall limit total emissions from this combustion source (S-237) including startups and shutdowns, to no more than the following annual limits: [Basis: Cumulative Increase, Offsets]

Pollutant	Annual (tons)
NOx	13.278
CO	44.721
SO2	8.644
PM10	3.132
POC	2.881

Combustion emissions shall be calculated using the following emission factors:

NOx:	Summation of daily emissions using CEM data
CO	0.0200 lb/MMBtu
SO2	0.0069 lb/MMBtu
PM10	0.0025 lb/MMBtu
POC	0.0023 lb/MMBtu.

9. The Owner/Operator shall equip the S-237 Boiler with a District approved continuous fuel flow monitor and recorder in order to determine fuel consumption. (This is a parametric monitor as defined in Regulation 1-238.) [Basis: Monitoring and Records]

10. Except for no more than 3 minutes in any hour, the Owner/Operator shall limit the Visible emissions from the S-237 Boiler to at or below Ringelmann No. 1.0 or 20% opacity, as required by Regulation 6. [BAAQMD 6-301]

11. For startups and shutdowns, the Owner/Operator shall not exceed 24 consecutive hours. The 24-consecutive-hour startup period is in addition to boiler dryout/warmup periods that are limited to not exceed 72 consecutive hours. The 24-hour period does not apply during the initial startup of the Units.S-237 Boiler. [Basis: Cumulative Increase, offsets, operational allowances]

12. Except during startup and shutdown, the Owner/Operator shall limit the emissions of nitrogen oxides from the S-237 to no more than 9 ppmv, dry, corrected to 3% oxygen, (0.0106 lb/MMBtu) averaged over any 3 consecutive hours. [Basis: BACT, offsets]

13. For the S-237 Boiler, the Owner/Operator shall limit the CO emissions to no more than 50 ppmv, dry, corrected to 3% oxygen, (0.0357 lb/MMBtu) averaged over 8 hours, except during periods of startup and shutdown. Demonstration of

compliance will be based on source test data [Basis: BACT]

14. The Owner/Operator shall abate S-237 at all times by A-58 Selective Catalytic Reduction System when it is in operation. Operation of the A-58 Selective Catalytic System shall be in accordance with manufacturer's recommended procedures during periods of operation. [Basis: BACT]

15. Except during periods of startup and shutdown, Owner/Operator shall limit the ammonia emissions (ammonia slip) from the SCR unit (A-58) to no more than 10 ppmv of ammonia, dry, corrected to 3% oxygen, averaged over any consecutive 3-hour period. Demonstration of compliance shall be based on source test data. [Basis: Cumulative Increase, Monitoring, Toxics]

16. The Owner/Operator shall install, calibrate, maintain, and operate a District-approved continuous emission monitor and recorder for NOx and O2. [Basis: Monitoring and Records]

17. Completed.

Throughput Limitation

18. The Owner/Operator shall limit the total combined heat input for S-237 to no more than 2,505,360 million BTUs (HHV) in any 365 consecutive day period. [Basis: Cumulative Increase, Offsets]

19. The Owner/Operator shall limit the total combined heat input for S-237 to no more than 7560 million BTUs in any calendar day period. [Basis: Cumulative Increase]

20. Deleted. (Basis: same as Condition 16386, Part 1)

21. Deleted. (Basis: same as Condition 16386, Parts 2 and 3)

22. The Owner/Operator shall conduct a District-approved source test on an annual basis on Sources S-237 to demonstrate compliance with the limit in part 13 of this condition. The test results shall be provided to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 2-6-503]

IX. RECOMMENDATION

Issue a conditional change to the Permit to Operate to Valero Refining Company for the following equipment:

S-237 Boiler SG-1032, Babcock & Wilcox, 315 MMBtu/hr

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:C:\Valero\16658\16658e\12/12/07

EVALUATION REPORT
VALERO REFINING CO.
Application #16837 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for a title correction and a deletion of the condition to the Permit to Operate for the following equipment:

S-108 Fixed Roof Tank TK-1801, 16,800 gallons capacity, with submerged fill & pressure vacuum vent

S-124 Fixed Roof Tank TK-1735, 3,360 gallons capacity, abated by vapor recovery to fuel gas system

Valero would like to correct the source descriptions on the TV permit for Sources S-108 and S-124, which are incorrectly listed as pressure tanks. In addition, S-108 is no longer storing MMT, which is the name of a specific additive material that is no longer available on the market.

In 1997, Source S-108 was permitted under Application #26003 for MMT Octane Additive as a pressure tank with Condition #76003 that limits the organic emissions from loading to less than 4 lb/hr. Source S-108 is no longer loading MMT; therefore, Condition # 76003 should be deleted.

In March 23, 2006, Valero was granted a TV permit to add Condition # 20762 for refinery wide tanks that are potentially exempt from Regulation 8, Rule 5, Storage of Organic Liquids, per exemption of Regulation 8-5-117 for storage of organic liquids with a true vapor pressure of less than or equal to 25.8 mm Hg (0.5 psia). Both S-108 and S-124 tanks are permitted as storage tanks that are subject to Regulation 8-5, but are currently storing low vapor pressure additive materials with less than 0.5 psia; thus, they are subject to Condition #20762 when they store low vapor pressure (<0.5 psia) materials.

The proposed new source review changes are acceptable and considered as a minor modification to the current TV permit. Valero submitted a minor modification to the TV permit concurrently under Application # 16838.

II. EMISSION CALCULATIONS

This application will not result in an emission increase.

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

There are no net changes to the plant cumulative emissions.

IV. TOXIC SCREENING ANALYSIS

This application will not result in an increase in toxic air contaminant emissions from existing levels. Therefore, a Toxic RSA is not required.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application will not result in any emission increase from existing levels. Therefore, BACT is not triggered per Regulation 2-2-301.

VI. OFFSETS

This application does not result in emission increases. Therefore, offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIANCE

Sources S-108 and S-124, fixed roof tanks, are subject to and expected to be in compliance with Regulation 8, Rule 5 – Storage of Organic Liquid Bulk. Source S-108 is in compliance with Reg. 8-5-301 requirement because this tank is equipped with a submerged fill pipe, and a pressure vacuum valve. Source S-124 is in compliance with Regulation 8-5-301 requirement because this tank is abated by vapor recovery to fuel gas system.

Sources S-108 and S-124 are subject to expected to be in compliance with NESHAP Title 40 Part 63, Subpart CC for Petroleum Refineries.

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 4.2.

This project is over 1,000 ft from the nearest public school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

PSD is not triggered.

VIII. CONDITIONS

Condition # 20762
For Refinery:

This condition applies to tanks that are exempt from Regulation 8, Rule 5, Storage of Organic Liquids, due to the exemption in Regulation 8-5-117 for storage of organic liquids with a true vapor pressure of less than or equal to 25.8 mm Hg (0.5 psia).

1. **Whenever the type of organic liquid in the tank is changed, the owner/operator shall verify that the true vapor pressure at the storage temperature is less than or equal to 25.8 mm Hg (0.5 psia). The owner/operator shall use Lab Method 28 from Volume III of the District's Manual of Procedures, Determination of the Vapor Pressure of Organic Liquids from Storage Tanks. For materials listed in Table 1 of Regulation 8 Rule 5, the owner/operator may use Table 1 to determine vapor pressure, rather than Lab Method 28. If the results are above 25.8 mm Hg (0.5 psia), the owner/operator shall report non-compliance in accordance with Standard Condition I.F and shall submit an application**

to the District for a new permit to operate for the tank as quickly as possible. (Basis: Regulation 8-5-117)

2. **The results of the testing shall be maintained in a District-approved log for at least five years from the date of the record, and shall be made available to District staff upon request. (Basis: 8-5-117)**

IX. RECOMMENDATION

Issue a title correction to the Permit to Operate to Valero Refining Company for the following equipment:

S-108 Fixed Roof Tank TK-1801, 16,800 gallons capacity, with submerged fill & pressure vacuum vent
S-124 Fixed Roof Tank TK-1735, 3,360 gallons capacity, abated by vapor recovery to fuel gas system

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:C:\Valero\16837\16837e\12/13/07

EVALUATION REPORT
VALERO REFINING CO.
Application #16839 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for an exemption from Permit to Operate for the following equipment:

S-64 Tank TK-1712, External Floating Roof, 13,524,000 gallons capacity

S-66 Tank TK-1714, External Floating Roof, 8,400,000 gallons capacity

Source S-64 and S-66 are currently permitted for organic liquid storage and shown in the facility's Title V permit as being subject to Regulation 8-5, NESHAP 40 CFR 63 Subpart CC (Petroleum Refineries), and G (Refinery MACT). Valero has historically paid the permit fees for these sources to provide operational flexibility even though they have always stored gas oil materials with an initial boiling point greater than 302 ^{o}F. Valero does not plan to store materials other than exempt materials in these tanks in the future; therefore, Valero requested for tank exemptions from permit per Regulation 2-1-123.3.2. Valero submitted two Material Safety Data Sheets for Gas Oil and Heavy Cycle Oil to show that the materials stored at these tanks have initial boiling points greater than 302 ^{o}F.

The District will grant exemptions for S-64 and S-66 per Regulation 2-1-123.3.2 for storing and loading of organic liquid with initial boiling point greater than 302 ^{o}F. Valero submitted a minor modification to the TV permit concurrently under Application # 16897 to changes these tanks from permitted sources to exempt sources.

II. EMISSION CALCULATIONS

This application will not result in an emission increase.

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

There are no net changes to the plant cumulative emissions.

IV. TOXIC SCREENING ANALYSIS

This application will not result in an increase in toxic air contaminant emissions from existing levels. Therefore, a Toxic RSA is not required.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application will not result in any emission increase from existing levels. Therefore, BACT is not triggered per Regulation 2-2-301.

VI. OFFSETS

This application does not result in emission increases. Therefore, offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIANCE

Sources S-64 and S-66 are exempt from the permit requirement under Regulation 2-1-123.2 for storing and loading of organic liquid with initial boiling point greater than 302 ^{o}F

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 4.

This project is over 1,000 ft from the nearest public school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

NSPS, NESHAP, and PSD are not triggered.

VIII. EXEMPTIONS

It is recommended that an exemption be issued to Valero Refinery for the following equipment:

S-64 Tank TK-1712, External Floating Roof, 13,524,000 gallons capacity
S-66 Tank TK-1714, External Floating Roof, 8,400,000 gallons capacity

(This project is exempt from the permit requirement under Regulation 2-1-123.3.2 for storing or loading of organic liquids or mixtures containing organic liquids; where the initial boiling point of the organics is greater than 302^{o}F and exceeds the actual storage temperature by at least 180^{o}F. This exemption does not apply to the storage or loading of asphalt or asphalt emulsion with a sulfur content equal to or greater than 0.5 wt%.).

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:C:\Valero\16839\16839e\12/13/07

EVALUATION REPORT
VALERO REFINING CO.
Application #16879 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for a removal of the following equipment from the Permit to Operate:

S-234 Fixed Roof Tank, Demulsifier, 2,000 gallons capacity

S-235 Fixed Roof Tank, Demulsifier, 1,000 gallons capacity

And exemption for the following equipment:

S-249 Demulsifier totes (four at 550 gallons, located at the Oil Movement 13 (P-101's))

S-250 Demulsifier totes (two at 230 gallons and one at 330 gallons, located at the Dock)

Sources S-234 and S-235 are currently permitted for storage of demulsified material and shown in the facility's Title V permit as being subject to Regulation 8-5. Both tanks were never built. Instead S-234 was replaced with four 550-gallon totes, and S-235 was replaced with two 230-gallon totes and one 330-gallons tote.

Valero requested that S-234 and S-235 be removed from the current Permit to Operate. Valero does not plan to store materials other than exempt materials in sources S-249 and S-250 in the future; therefore they should be exempt from permit per Regulation 2-1-123.3.2 for storing and loading of organic liquid with initial boiling point greater than 302 ^{o}F. Currently, Valero is storing BPR 27140 Demulsifier, and the engineer at Baker Petrolite (manufacturer) specified BPR 27140 initial boiling point is 318 ^{o}F, which is greater than 302 ^{o}F. (See attached email)

The District will archive S-234 and S-235 and will grant exemptions for S-249 and S-250 per Regulation 2-1-123.3.2 for storing and loading of organic liquid with initial boiling point greater than 302 ^{o}F. Valero submitted a minor modification to the TV permit concurrently under Application # 16880 to reflect these changes.

II. EMISSION CALCULATIONS

This application will not result in an emission increase.

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

There are no net changes to the plant cumulative emissions.

IV. TOXIC SCREENING ANALYSIS

This application will not exceed any toxic air contaminant trigger levels. Therefore, a Toxic RSA is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application will not result in any emission increase from existing levels. Therefore, BACT is not triggered per Regulation 2-2-301.

VI. OFFSETS

This application does not result in emission increases. Therefore, offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIANCE

Sources S-249 and S-250 are exempt from the permit requirement under Regulation 2-1-123.2 for storing and loading of organic liquid with initial boiling point greater than 302 ^{o}F

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 4.

This project is over 1,000 ft from the nearest public school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

NSPS, NESHAP, and PSD are not triggered.

VIII. EXEMPTIONS

It is recommended that the following tanks be archived from the permitted sources:

S-234 Fixed Roof Tank, Demulsifier, 2,000 gallons capacity
S-235 Fixed Roof Tank, Demulsifier, 1,000 gallons capacity

It is recommended that an exemption be issued to Valero Refinery for the following equipment:

S-249 Demulsifier totes (four at 550 gallons, located at the Oil Movement 13 (P-101's))
S-250 Demulsifier totes (two at 230 gallons and one at 330 gallons, located at the Dock)

(This project is exempt from the permit requirement under Regulation 2-1-123.3.2 for storing or loading of organic liquids or mixtures containing organic liquids; where the initial boiling point of the organics is greater than 302^{o}F and exceeds the actual storage temperature by at least 180^{o}F. This exemption does not apply to the storage or loading of asphalt or asphalt emulsion with a sulfur content equal to or greater than 0.5 wt%.).

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

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