EVALUATION REPORT

VALERO ASPHALT COMPANY - BENICIA
PLANT #13193 APPLICATION #7471
Signed 10/28/03, Amended 6/15/04

INTRODUCTION

Valero Asphalt Company (Valero) has applied for a change in permit conditions for the following sources:

S-69 Asphalt Additive Open-Top Loading Bin
S-70 Asphalt Additive Mixing Tank; 2200 gallon capacity;
abated by S-24 Hot Oil Heater or A-31 Incinerator

Valero received a permit to operate for S-69 and S-70 on January 15, 2003 pursuant to Application #6310. Valero produces a modified asphalt product known as Polymer Modified Asphalt (PMA). Valero is requesting to produce up to 200,000 tons/year of PMA. To achieve this production rate, Valero is requesting to:

- Increase the throughput for the S-69 Asphalt Additive Bin from 2650 tons/year to 20,000 tons/year.

- Increase the throughput for the S-70 Asphalt Mixing Tank from 155,368 tons to 400,000 tons/year. To ensure a homogenous mixture from the S-70 Asphalt Additive Mixing Tank, the mixed product is circulated twice through the mixing tank for each batch of PMA produced.

A more detailed description of Valero's specific request is appended to the end of this engineering evaluation report.

ADDITIONAL INFORMATION

Valero also requested deletion of the hours of operation limit for S-70. This request is documented in Valero's letter of 5/2/03. This request was inadvertently not addressed in the evaluation of the application. The change in permit conditions was issued on 10/29/03. Valero responded to the permit conditions on 11/3/03 by email, pointing out that the request for the deletion of the hours of operation limit had not been addressed. The District engineer responded by email on 11/18/03, agreeing that since the calculations were based on annual asphalt throughput, the hours of operation limit was not necessary.

As shown in the calculations below, the estimated emissions at S-70 will be about 107 pounds POC per year. Since the emissions are very low, it was understood that daily emissions will not be above 10 pounds per day and therefore will not be subject to BAAQMD Regulation 2, Rule 2, New Source Review (NSR). However, in this amendment, to ensure that S-70 does not trigger NSR and Best Available Control Technology (BACT), a daily throughput limit of 18,500 tons per day will be imposed to ensure that emissions of POC at S-70 do not exceed 10 pounds per day. The monitoring for the new throughput limit will be recordkeeping, which is the same monitoring for the annual throughput limit.

Deletion of the hours of operation limit is a minor revision pursuant to BAAQMD Regulation 2-6-215. Therefore, the facility may operate without the limit as soon as the revision is proposed to EPA.

Valero also requested deletion of the monitoring for the hours of operation. This revision would be a significant revision pursuant to BAAQMD Regulation 2-6-226.3. Therefore, Valero has chosen to apply for this change at a later date.

EMISSIONS

S-69 Asphalt Additive Loading Bin

Only PM10 emissions for concrete aggregate loading bin are listed in AP-42, Section 13.2.4. The permit handbook Section 11, Chapter 2, calculated the emission factor based on AP-42 to be 0.000428 lb PM10 per ton of aggregate with 6.5 mile/hour of wind speed and 5% moisture content.

PM10
20,000 tons/year x 0.000428 lbs/ton = 8.56 lbs/year (0.004 ton/yr) PM10

0.004 ton/year (source total) minus 0.000 ton/year from App. #6310
= **0.004 ton/year PM10)**

S-70 Asphalt Additive Mixing Tank

Given
POC: 0.1% Di(2-ethylhexyl)phthalate [DEHP] in modified asphalt in the vapor space per information found in MSDS

Throughput: 200,000 tons/year

POC Control Efficiency: S-24 Hot Oil Heater or A-31 Incinerator
≥98.5% per Parts 32a, 32b, 32c of Condition #1240

POC
(200,000 tons/year) * (2000 lbs/ton) * (gal/7.73 lbs) * (Ft3/7.48 Gals) * (0.1%/100) * (Mole/379 SCF) * (390.56 lbs/Mole) * ([100 - 98.5]/100)
= 107 lbs/year (0.054 ton/year) POC

0.054 ton/year (source total) minus 0.003 ton/year from App. #6310 = **0.051 ton/year POC**

CUMULATIVE INCREASE

	Existing TPY		Proposed TPY	
POC	0.0	+	0.051	= 0.051 TPY
PM10	0.0	+	0.004	= 0.004 TPY

TOXICS

A toxic risk screen analysis was done for the air-borne release of 107 lbs/year of di(2-ethylhexyl)phthalate and 9.3 lbs/year of hydrogen sulfide. Results from the health risk screen analysis indicated that the maximum incremental cancer risk is estimated at 0.017 in a million. The Hazard Index was 0.001. In accordance with the District's Risk Management Policy, this cancer risk level is considered acceptable since the incremental cancer risk is less than one in a million and the Hazard Index is less than one.

COMPLIANCE

S-69 and S-70 should continue to be in compliance with all the applicable sections of Regulation 6, "Particulate Matter and Visible Emissions". Visible emissions should be less than Ringlemann 1. S-70 should continue to comply with the requirements of Regulation 2, Miscellaneous Operations. Pursuant to Section 8-2-301, source emissions are less than 15 pounds per day and less than 300 PPM of total carbon on a dry basis.

This application is considered to be ministerial under the District's proposed CEQA guidelines (Regulation 2-1-311) and therefore is not subject to CEQA review. The engineering review for this proposed project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Section 11, Chapter 2.

The project is over 1000 feet from the nearest public school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

~~BACT,~~ PSD, NSPS and NESHAPS are not triggered.

BACT is triggered if daily emissions exceed 10 pounds POC per day. Therefore, a daily throughput limit of 18,500 tons per day will be imposed to ensure that emissions of POC at S-70 do not exceed 10 pounds per day and BACT is not triggered.

OFFSETS

The POC offset required is 0.051 TPY * 1.15 = 0.059 TPY

The plant has elected to use the offset deferral provision allowed in Regulation 2-2-421. The facility has valid Banking Certificates to cover this small increase and the facility's cumulative increase is less than 15 tons/year (presently at zero). As discussed with the applicant, offsets will be provided at least 30 days prior to the date of the annual permit renewal (i.e., no later than July 1, 2004).

The cumulative increase for PM10 is 0.004 TPY. A review of the available information in the District's databank covering past projects for the Valero Asphalt Plant since April 5, 1991 revealed that there was no pre-existing cumulative increase for PM10. Pursuant to the provisions in Regulation 2-2-303, offsets will be deferred until the PM10 cumulative increase exceeds 1.0 ton/year.

CONDITION

COND# 20278 ----------

Conditions for S-69 (Additive Loading Bin) and S-70 (Asphalt Additive Mixing Tank; abated by S-24 (Hot Oil Heater) or A-31 (Incinerator):

1. The annual throughput of asphalt (excluding additives) at S-70 shall not exceed ~~17,591~~ 400,000 tons during any consecutive 12-month period. [Basis: Regulation 2-2-212, Cumulative Increase]

2. The annual throughput of additives at S-69 shall not exceed ~~2, 650~~ 20,000 tons during any consecutive 12-month period. [Basis: Regulation 2-2-212, Cumulative Increase]

3. Hot Oil Heater (S-24) or the Rail Road Thermal Oxidizer (A-31) shall abate emissions from S-70 at all times that S-70 is in operation. [Basis: Regulation 2-6-503, Monitoring]

4. Visible dust and smoke emissions from S-69 and S-70 shall not exceed Ringelmann 1 for a period or periods aggregating more than three minutes in any hour, or result in fallout on adjacent property in such quantities so as to cause a public nuisance as described in Regulation 1-301 [Basis: Regulation 1 and Regulation 6]

~~5. The total hours of operation of S-70 shall not exceed 1248 hours in any consecutive 12-month period. [Basis: Cumulative Increase]~~ 5. The daily throughput of asphalt (excluding additives) at S-70 shall not exceed 18,500 tons per calendar day. [Basis: Regulation 2-2-212, Cumulative Increase] Amended Application 7471, June 2004, effective upon proposal.

6. In order to demonstrate compliance with the above permit conditions, the following records 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 5 years from the date on which a record is made.

a. Total daily throughput of modified asphalt at S-70 and additives at S-69

b. Total daily hours of operation of S-70

c. The daily throughput of product and hours of operation shall be totaled on a monthly basis. [Basis: Regulation 2-6-501, Record-keeping]

RECOMMENDATION

I recommend that Valero Asphalt be allowed to increase the throughputs for the following two sources as depicted in the permit condition above.

S-69 Asphalt Additive Open-Top Loading Bin
S-70 Asphalt Additive Mixing Tank; 2200 gallon capacity; abated by S-24 Hot Oil Heater or A-31 Incinerator

Douglas W. Hall 10/28/03
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Douglas W. Hall Date
Supervising Air Quality Engineer

Brenda Cabral 6/15/04
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Brenda Cabral,
Senior Air Quality Engineer