

DRAFT ENGINEERING EVALUATION

Facility ID No. 111933
Costco Wholesale #1042
2300 Middlefield Road
Redwood City, CA 94063
Application No. 481419

BACKGROUND

The applicant has requested to modify the Permit to Operate for the following equipment:

S-1 Gasoline Dispensing Facility

The facility configurations are described below:

Current Configuration	Configuration after Modification
3 – 20,000 gallon gasoline USTs	No change
Phase I Phil-Tite EVR (VR-101)	No change
Phase II Assist EVR System with FFS Clean Air Separator (HCAS) and Veeder Root ISD (VR-202)	No change
20 dual product gasoline nozzles	No change
1 – 1,500 gallon Gasoline Additive Storage Tank	No change
29.8 million gallons per year throughput limit	36.0 million gallons per year throughput limit

This project involves increase of annual throughput limit from 29.8 million gallons per year to 36.0 million gallons per year.

No NOV has been issued to this facility.

This application is being processed as a modification as defined in Regulation 2-1-234.

ADMINISTRATIVE CHANGES

Plans for Application 405204 (submitted 7/5/2013 and PO issued 7/16/2014) include a 1,500 gallon tank for a gasoline additive, but the GDF forms did not include it. This tank has been added to the Current device record.

EMISSION CALCULATIONS

The owner submitted the following throughput levels for the past 3 years:

Table 1. Historic Material Throughput

Year	Throughput Level gallons per year
2016	13,143,438
2017	14,534,495
2018	15,141,917

Table 2 summarizes annual and daily permitted emissions.

Table 2. Annual and Daily Emissions

Criteria Pollutant	Emissions Factors (lb/thousand gallon)	Annual Average Emissions (lb/day)	Annual Emissions (lb/year)	Annual Emissions (ton/year)
POC	0.516	50.88	18,569.5	9.29

Basis:

- Annual throughput of Unleaded Gasoline: 36.0 million gallons per year
- Operation schedule: 16 hr/day (max), 16 hr/day (typical), 7 day/week, 52 week/yr
- Phase I EVR for UST
- Phase II EVR for UST
- POC is Precursor Organic Compound.
- Emissions of POC include emissions from loading, breathing, refueling and spillage
- Emission factors are taken from the California Air Resources Board's "Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities" (12/23/13).

FACILITY CUMULATIVE INCREASE

Table 3 summarizes the cumulative increase in criteria pollutant emissions that will result from this application.

Table 3. Facility Cumulative Emissions Increase, Post 4/5/91

Cumulative Increase	Existing Emissions (ton/yr)	Application Emissions (tons/yr)	Total Emissions (tons/yr)
POC	7.69	1.60	9.29

TOXIC EMISSIONS AND HEALTH RISK ASSESSMENT (HRA)

A Health Risk Assessment (HRA) is required when the emissions of toxic air contaminants (TACs) are at or exceed the trigger levels outlined in Regulation 2, Rule 5, Table 2-5-1. An HRA is required, based on the toxic emissions for this source, summarized in Table 4.

Table 4. Toxic Emissions

TACs	Category	Emissions (Chronic) (lb/yr)	Emissions (Maximum) (lb/hr) *	Reg 2-5 Chronic Trigger (lb/yr)	Reg 2-5 Acute Trigger (lb/hr)	HRA Required
Benzene	Both Carcinogen and Other	104.537	0.01616	2.9	0.06	Yes
Ethylbenzene	Both Carcinogen and Other	118.362	0.01420	33	n/a	Yes
Hexane	TAC - Other	333.110	0.05523	270000	n/a	No
Naphthalene	TAC - Other	14.502	0.00161	2.4	n/a	Yes
Toluene	TAC - Other	588.725	0.07653	12000	82	No
Xylene	TAC - Other	601.125	0.07081	27000	49	No

Basis:

- Emission factors are taken from the California Air Resources Board’s “Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities” (12/23/13).
- Composition Data is from ARB Organic Gas Speciation Profiles for E10 Gasoline Fuels (Liquid and Headspace for both Summer and Winter blends), revised 2013 and 2015
- Hourly emissions are calculated in accordance with BAAQMD’s Air Toxics NSR Program HRA Guidelines for GDFs, dated December 2016.

Health Risk estimates were calculated in accordance with BAAQMD’s Air Toxics NSR Program HRA Guidelines for Gasoline Dispensing Facilities, dated December 2016. The assessment was performed for this facility using site specific land use data and the report is attached to this application. Results are summarized in Table 5.

Table 5. Maximum Project Risk

Maximally Exposed Receptor	Cancer Risk	Chronic Non-Cancer Hazard Index
Worker	4.44 chances in a million	0.051

STATEMENT OF COMPLIANCE

The owner/operator is expected to comply with all applicable requirements. Key requirements are listed below:

California Environmental Quality Act (CEQA), Regulation 2-1-311

This permit application is not subject to CEQA because the evaluation is a ministerial action conducted using the fixed standards and objective measurements outlined in the Permit Handbook Chapter 3.2. The Procedures for Ministerial Evaluation (Section 2-1-427) and Criteria for Approval of Ministerial Permit Applications (Section 2-1-428) have been complied with in the determination that this application is exempt from CEQA

Public Notification, Regulation 2-1-412

The facility is located within 1000 feet of the outer boundary of Hoover Elementary School located at 701 Charter Street in Redwood City and is therefore subject to the public notification requirements.

Best Available Control Technology (BACT), Regulation 2-2-301

Because this GDF will emit less than 10 pounds of POC per day, the facility is not required to install BACT.

Offsets, Regulation 2-2-302

Because the total facility potential to emit will be less than 10 tons of POC per year, the facility is not required to provide offsets.

Best Available Control Technology for Toxics (TBACT), Regulation 2-5-301

The expected increased health risk from this project will exceed 1 per million, thus TBACT requirement is triggered. TBACT for GDFs requires the use of CARB certified Phase I and Phase II vapor recovery equipment.

Project Risk Requirement, Regulation 2-5-302

HRA results show that the increased cancer risk does not exceed 10 in one million, the chronic and acute hazard indexes do not exceed 1, and therefore the project complies with the project risk requirement.

District Rules (Limits to emissions of pollutants or performance standards)

Regulation 8-5 (Storage of Organic Liquids)

Section 8-5-117 – Limited Exemption, Low Vapor Pressure (True vapor pressure less than or equal to .5 psia)

Section 8-5-307.3 – Requirements for Fixed Roof Tanks, Pressure Tanks and Blanketed Tanks (Not a pressure tank nor a blanketed tank)

Regulation 8-7 (Organic Compounds – Gasoline Dispensing Facilities)

Section 8-7-301 – Phase I Requirements

Section 8-7-302 – Phase II Requirements

Section 8-7-304 – Certification Requirements

California Air Resources Board (CARB) Vapor Recovery Certification

Phase I and Phase II Vapor Recovery System Executive Orders VR-101 and VR-202.

Airborne Toxic Control Measure for Benzene for Retail Service Stations

ATCM, 5/13/1988, Section 93101, Title 17, CA Code of Regulations.

National Emissions Standards for Hazardous Air Pollutants (NESHAP)

40 CFR 63, Subpart CCCCCC (*Gasoline Dispensing Facilities*)

CONDITIONS**Operating Conditions**

This GDF is subject to the following Operating Conditions:

Condition Number #100013

The owner/operator shall not allow the total fuel dispensed at this source to exceed the following limits during any consecutive 12-month period:

- 36.0 million gallons of gasoline – unleaded

Condition Number #100015

The owner/operator shall ensure the Phase I Phil-Tite EVR is installed, operated, and maintained in accordance with the most recent revision of the California Air Resources Board (CARB) Executive Order (EO) VR-101.

Condition Number #100016

The owner/operator shall ensure the Phase II Assist EVR System with FFS Clean Air Separator and Veeder Root ISD is installed, operated, and maintained in accordance with the most recent revision of the California Air Resources Board (CARB) Executive Order (EO) VR-202.

Condition Number #100036

The owner/operator shall:

1. Notify Source Test by email (gdfnotice@baaqmd.gov) or Fax (510-758-3087), at least 48 hours prior to any required testing.
2. Submit test results in a District approved format within thirty (30) days of testing.
 - For start-up tests results, cover sheet shall include the facility number (Facility ID) and application number of the Authority to Construct permit.
 - For annual test results, cover sheet shall include the facility number (Facility ID) and identified as 'Annual' in lieu of the application number.
 - Test results shall be emailed (gdfresults@baaqmd.gov) or mailed to the Districts main office.

Condition Number #100037

The owner/operator shall conduct and pass the following tests at the indicated intervals:

1. A Static Pressure Performance Test, in accordance with CARB procedure TP-201.3 at least once in each 12-month period.
2. Phase I Adaptor Static Torque Test on all rotatable Phase I adaptors in accordance with CARB TP-201.1B at least once in each 36-month period.
3. One of the following tests in each 36-month period. The measured leak rate for each component shall be within the limits set in the applicable CARB Executive Order:
 - Stations equipped with drop tube overflow prevention devices ("flapper valves"): a Drop Tube Overflow Prevention Device and Spill Container Drain Valve Leak Test in accordance with CARB Test Procedure TP-201.1D and the applicable CARB Executive Order.
 - 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.

Condition Number #100040

The owner/operator shall ensure that the Phase II Assist EVR system with FFS Clean Air Separator (HCAS) and Veeder-Root ISD can demonstrate on-going compliance with the vapor integrity requirements of CARB Executive Order VR-202 by conducting and passing the following tests at least once in each consecutive 12-month period following successful completion of start-up testing. The owner/operator shall ensure tests are conducted and evaluated using the referenced test methods and standards from the latest version of the applicable executive order and/or test procedure.

1. Dispenser Integrity Test
2. Vapor-to-Liquid Test
3. HCAS Static Pressure Performance Test
4. Veeder-Root ISD Operability Test

Condition Number #100051

The owner/operator of the facility shall maintain the following records. Records shall be maintained on site and made available for inspection for a period of 24 months from the date the record is made.

1. Monthly totals of throughput (sales) of gasoline (all-grades) and other fuels pumped and summarized on an annual basis for each type of fuel (excluding diesel).
2. All scheduled testing and maintenance activities, including:
 - the date of maintenance, inspection, failure and, if applicable, ISD alarm history;
 - the date and time of maintenance call;

- the maintenance performed;
 - Certified Technician ID number or name of individual conducting maintenance and their phone number.
3. Weekly, quarterly and annual inspection sheets as required by the appropriate CARB Executive Orders.

RECOMMENDATION

The District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state and federal air quality-related regulations. The preliminary recommendation is to waive an Authority to Construct and issue a revised Permit to Operate for the equipment listed below. However, the source is located within 1000 feet of a school which triggers the public notification requirements of District Regulation 2-1-412. After the comments are received and reviewed, the District will make a final determination on the permit.

I recommend that the District initiate a public notice and consider any comments received prior to taking any final action on issuance of a Permit to Operate to change permit conditions for the following source:

S-1 Gasoline Dispensing Facility

By: Lorna Santiago, Air Quality Permit Technician Date: 4/17/2019