

DRAFT
ENGINEERING EVALUATION REPORT
TRINITY SOURCE GROUP, INC.
PLANT NUMBER 22963
APPLICATION NUMBER 28319

Portable SVE System
1634 Clay Street
Napa, CA

Background

Trinity Source Group, Inc. (Trinity) has submitted this application to obtain a Permit to Operate a permitted portable soil vapor extraction system consisting of a rotary displacement blower with a maximum capacity of 360 acfm and ancillary equipment abated by a pretreatment carbon adsorption system (Two 200 lb carbon vessels) and a main treatment carbon adsorption system (Two 1000 lb carbon vessels) at the above referenced former dry cleaner contaminated site. Since the site is within 1000 feet of a K-12 school, it requires public notice per Regulation 2-1-412. The source will comply with the updated permit condition ID #26075 as demonstrated by the latest pilot test results (report dated 6/8/2017)

The application covers the following source:

- S-1** Portable Soil Vapor Extraction System, Mako, Rotary Blower, Roots 56, 360 acfm, and ancillary equipment, abated by A-1 and/or A-2.
- A-1** Carbon Adsorption Vessels (2 in series, each 200 lb carbon).
- A-2** Carbon Adsorption Vessels (2 in series, each 1000 lb carbon).

Emission Calculations

Emissions were calculated and accounted for when the source was issued an authority to construct and a permit to operate (Application #27026).

Plant Cumulative Increase

Precursor Organic compound (POC) = 0.00002 tpy (current) + 0.0 tpy (new)
= 0.00002 tpy (new total)
Non-Precursor Organic Compound (NPOC) = 0.0003 tpy (current) + 0.0 tpy (new)
= 0.0003 tpy (new total)

Toxics Emissions and Health Risk Analysis

A health risk analysis is not required because the source will comply with the permit condition of not exceeding toxic trigger levels listed in the table 2-5-1 of Regulation 2, Rule 5.

TBACT

The source complies with the TBACT requirements of Regulation 2-5.

Offsets

Offsets requirements of Regulation 2-2-302 are not triggered for facility wide or permitted POC emissions < 10 tpy.

California Environmental Quality Act (CEQA)

The project is considered ministerial under the Districts 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 and therefore is not discretionary as defined by CEQA. This project is evaluated as per the guidance in Chapters 9.2 of the permit handbook.

Statement of Compliance

Based on the information submitted, this operation is expected to be in compliance with Regulation 8-47-301, Emission Control Requirements, Specific compounds, and 8-47-302, Organic compounds. The POC/NPOC emissions will be vented through a carbon adsorption system at all times of operation.

8-47-301 Emission Control Requirement, Specific Compounds: Any air stripping and soil vapor extraction operations which emit benzene, vinyl chloride, perchloroethylene, methylene chloride and/or trichloroethylene shall be vented to a control device which reduces emissions to the atmosphere by at least 90 percent by weight.

8-47-302 Organic Compounds: Any air stripping and soil vapor extraction operations with a total organic compound emission greater than 15 pounds per day shall be vented to a control device which reduces the total organic compound emissions to the atmosphere by at least 90 percent by weight.

Prevention of Significant Deterioration, New Source Performance Standards, and National Emission Standards of Hazardous Air Pollutants are not triggered.

Public Notification, Schools

The project will be located within 1000 feet of K-12 schools, and therefore is subject to the public notification requirements of Regulation 2-1-412. A public notice will be distributed to the parents and guardians of the students of the schools within $\frac{1}{4}$ mile of the project and to all the addresses within 1000 feet of the project.

Permit Conditions

Condition ID #26075

S-1 Portable Soil Vapor Extraction System, Mako, Rotary Blower, Roots 56, 360 acfm, and ancillary equipment, abated by A-1 and/or A-2.

A-1 Carbon Adsorption Vessels (2 in series, each 200 lb carbon).

A-2 Carbon Adsorption Vessels (2 in series, each 1000 lb carbon).

(Application 27026; Revision: A #28319)

1. The owner/operator of this source, S-1, shall notify the District Engineering Division in writing at least 3 days prior to start-up of operation at any new location. The notification shall include:

- a. Source Number S-1 and Plant Number 22963.
- b. Street address, including zip code, for the location where the source will be operated.
- c. The name and telephone number of a contact person where the source will be operated.
- d. The date of initial start-up and estimated duration of operations at that location.
- e. The distance from the source to the outer boundary of the nearest K-12 school, or indication that the distance is greater than 1500 feet.

In the event that the start-up is delayed less than 5 days, the operator may provide telephone notice of said change to the assigned District Permit Engineer. If the start-up is delayed more than 5 days, written notification ~~must~~ shall be resubmitted.

2. The owner/operator of this source, S-1, shall not operate or remain retain it at any single location for a period in excess of 12 consecutive months, following the date of initial operation ~~except as allowed under Section 2-1-220.10~~. If this portable source remains at any fixed location for more than 12 months, the portable multi-location permit will automatically revert to a conventional permanent location permit and will lose its portability.

[Basis: Regulation 2-1-~~413~~220-2]

3. The owner/operator of this source, S-1, shall operate it at all times in conformance with the eligibility requirements set forth in Regulation 2-1-~~220~~413 for ~~portable equipment~~ multi-location permits.

[Basis: Regulation 2-1-~~220~~413]

4. The owner/operator of this source, S-1, shall not is not to be operated it within 1000 feet of the outer boundary of any K-12 school. Such operation will require the submittal of an application so that the applicable requirements of the California Health and Safety Code Section 42301.6 shall be met. These notification

requirements have been satisfied for operation at 1634 Clay Street, Napa, CA.

[Basis: Regulation 2-1-~~220.4413.3~~]

5. The owner/operator of this source, S-1, shall ~~be used~~ it exclusively for the removal of volatile organic compounds (VOC) associated with extracted soil vapor. This shall be demonstrated by onsite sampling required in Part 8 below.
[basis: Regulation 2-5]
6. The owner/operator shall abate Precursor Organic Compound (POC) emissions and non-precursor organic compounds (NPOC) from Source, S-1, ~~shall be abated~~ by Abatement devices A-1 and/or A-2, Carbon adsorption vessels, during all periods of operation. Soil vapor flow rate shall not exceed 360 scfm.
[Basis: Cumulative increase; Regulation 8-47-301-~~1~~, and 8-47-30~~1.2~~2]
7. The owner/operator shall ensure to maintain ~~the~~ POC/NPOC abatement efficiency of abatement devices A-1 and A-2 ~~shall be maintained~~ at a minimum of 99% by weight. The minimum abatement efficiency shall be waived if outlet POC/NPOC concentrations are shown to be less than 10 ppmv (measured as hexane). In no event shall toxic compounds emissions to the atmosphere exceed the toxic trigger levels listed in ~~the~~ Table 2-5-1 of Regulation 2, Rule 5. In case, any toxic compound emissions are expected to exceed the trigger levels as per the pilot test or monitoring results for a proposed site of operation, then the owner/operator shall submit an application ~~shall be submitted to the District~~ so that the health risk screening analysis requirements of Regulation 2, Rule 5 shall be met before commencement or continued ~~of~~ operation at that site.
[Basis: Cumulative increase; TBACT; Regulations 2-5-302 and 2-5-401]
8. To determine compliance with Part 7, within 24 hours after start-up at any new location, the owner/operator of this source, S-1, shall:
 - a. Analyze the inlet gas to determine the vapor flow rate and concentration of POC/NPOC and toxic compounds present.
 - b. Analyze exhaust gas to determine the flow rate, and the concentration of toxic compounds and POC/NPOC present.
 - c. Calculate the toxic compounds emission rates in pounds per hour, per day, and per year based on the exhaust gas analysis and the operating exhaust flow rate. The soil vapor flow rate shall be decreased, if necessary, to demonstrate compliance with Part 7.
 - d. Calculate the POC/NPOC abatement efficiency based on the inlet and outlet gas sampling analysis. For the purpose of determining compliance with Part 7, the POC/NPOC concentration shall be reported as hexane.
 - e. Submit to the District the test results and emission calculations within one month from the testing date. Samples shall be analyzed according to modified EPA test methods 8015 and 8021 or their equivalent to determine the concentrations of POC/NPOC and toxic compounds.

[Basis: Cumulative increase; TBACT; Regulation 8-47-501]

9. Within 30 days from the completion of each treatment operation at a given location, the owner/operator of this source, S-1, shall provide the assigned District Permit Engineer in the Engineering Division with a summary showing the following information:
 - a. The dates and total number of days that the source was at that location and the dates, and total number of days that the source was operated at that location.
 - b. A summary of the abatement efficiency and POC/NPOC and toxic compounds emission rates as determined and reported in the start-up sampling report required by Part 8e above.
 - c. The results of any additionally performed emission test, analysis, or monitoring result logged in for the day of operation they were taken.
 - d. The total throughput of contaminated soil vapor processed by S-1 at that location (indicated in cubic feet).
 - e. The total emissions of POC/NPOC and toxic compounds at that location based on the sampling results required by Part 8 above (indicated in pounds).

[Basis: Cumulative increase; Regulation 2-5; Regulation 8-47-301-~~1~~; 8-47-301-~~2~~]

10. During operation of the Carbon Vessels, the owner/operator of this source shall monitor with a photo-ionization detector (PID), flame-ionization detector (FID), or other method approved in writing by the District's Source Test Manager at the following locations:
 - a. At the inlet to the second to last Carbon vessel in series.
 - b. At the inlet to the last Carbon vessel in series.
 - c. At the outlet of the Carbon vessel that is last in series prior to venting to the atmosphere.

When using an FID to monitor breakthrough, readings may be taken with and without a Carbon filter tip fitted on the FID probe. Concentrations measured with the Carbon filter tip in place shall be considered methane for the purposes of these permit conditions.

[Basis; Cumulative increase; Regulation 2-5; TBACT]

11. The owner/operator shall record ~~These~~ monitor readings ~~shall be recorded~~ in a monitoring log at the time they are taken. The monitoring results shall be used to estimate the frequency of Carbon change out necessary to maintain compliance with Parts 12 and 13, and shall be conducted on a daily basis. The owner/operator of this source may propose for District review, based on actual measurements taken at the site during operation of the source, that the monitoring schedule be changed based on the decline in

organic emissions and/or the demonstrated breakthrough rates of the carbon vessels. Written approval by the District must be received by the operator prior to a change to the monitoring schedule.

12. The owner/operator shall change out ~~the~~ the second to last Carbon vessel ~~shall be~~ immediately ~~changed out~~ with unspent carbon upon breakthrough, defined as the detection at its outlet in excess of the higher of the following limits:
 - a. 10 % of the inlet stream concentration to the carbon bed.
 - b. 10 ppmv (measured as hexane).
[Basis: Cumulative increase; Regulation 2-5; TBACT]

13. The owner/operator shall change out the last Carbon vessel ~~shall be~~ immediately ~~changed out~~ with unspent Carbon upon detection at its outlet of 10 ppmv or greater (measured as hexane).
[Basis: Cumulative increase; Regulation 2-5; TBACT]

14. The owner/operator of this source, S-1, shall maintain the following information for each month of operation of the Carbon Vessels:
 - a. Hours and time of operation.
 - b. Each emission test, analysis or monitoring results logged in for the day of operation they were taken.
 - c. The number of Carbon vessels removed from service.
Such records shall be retained and made available for inspection by the District for two years following the date the data is recorded.
[Basis: Regulation 8-47-501; Regulation 1-523]

15. Within 30 days after the end of every calendar year, the owner/operator of this source, S-1, shall provide the assigned District Permit Engineer in the Engineering Division a year end summary showing the following information:
 - a. The location(s) at which the source was operated including the dates operated at each location.
 - b. The total throughput of contaminated soil vapor for the previous four quarters (indicated in cubic feet).
 - c. The total POC/NPOC and toxic compounds emissions for the previous four quarters (indicated in pounds).
[Basis: Cumulative increase; Regulation 2-5; Regulation 1-523;
Regulation 8-47-501]

16. The owner/operator shall maintain a file containing all measurements, records and other data that are required to be collected pursuant to the various provisions of this conditional Permit to Operate. All measurements, records and data required to be maintained by the owner/operator shall be retained for at least two years

following the date the data is recorded.
[Basis: Cumulative increase; Regulation 8-47-501; Regulation 1-523]

17. The owner/operator shall report Aany non-compliance with these conditions ~~shall be reported~~ to the Compliance and Enforcement Division at the time that it is first discovered. The submittal shall detail the corrective action taken and shall include the data showing the exceedance as well as the time of occurrence.
[Basis: Cumulative increase; Regulation 2-5; TBACT]

Recommendations

The District has evaluated 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 the District, State, and federal air-quality related regulations, including toxic air contaminants emissions. The preliminary recommendation is to issue a permit for this project. Final determination/recommendation to issue a permit will be made after public notification and addressing all public comments received.

By: _____
Dharam Singh, PE
Air Quality Engineer II