



ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 535779 & 535781	DATE: October 26, 2012
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

EVALUATION REPORT FOR PERMIT TO CONSTRUCT

Applicant's Name: RHODIA INC. Facility ID: 114801

Mailing Address: 20720 SOUTH WILMINTON AVENUE
LONG BEACH, CALIFORNIA 90810-1034

Equipment Location: 20720 SOUTH WILMINTON AVENUE
CARSON, CALIFORNIA 90810

EQUIPMENT DESCRIPTION

Appl. No. 535781 – New SVE System (Process 13, System 1)

Equipment	ID No.	Connected to	RECLAIM Source Type/ Monitoring Unit	Emission and Requirements	Conditions
Process 11: Miscellaneous					
System 1: IN-SITU SOIL VAPOR EXTRACTION					S13.2
CARBON ADSORBER, 2 CHAMBERS IN SERIES, WITH A MOISTURE KNOCK-OUT DRUM WITH A/N: 535781 HEAT EXCHANGER, AIR-TO-AIR STACK, HEIGHT: 21 FT; DIAMETER: 4 INCH	C152 (NEW)	D153			A433.1, A433.2, B163.1, C1.6, D90.2, D90.3, D90.4, E224.1, E448.2, E448.3, K67.6
VAPOR EXTRACTION WELLS, WITH DUCTS A/N: 535781	D153 (NEW)	C152			E336.1

Appl. No. 535779 – De Minimis Title V Facility Permit Revision

Revision of Title V Facility Permit per Rule 301(l)(7).

PERMIT CONDITIONS

S13.2 All devices under this system are subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	1166

[RULE 1166, 5-1-2001]

[Systems subject to this condition: Process 13, System 1]



ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 535779 & 535781	DATE: October 26, 2012
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

A433.1 The operator shall limit the concentrations of the following compounds at the inlet of the vapor control system:

Contaminant	Concentration Limit (ppmV)	Measured as
VOC	2468	Hexane

To demonstrate compliance with this condition, the operator shall measure the VOC concentrations at the inlet of the adsorption system in accordance with the methods and schedules specified in Condition D90.2.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition: C152]

A433.2 The operator shall limit the concentrations of the following compounds at the outlet of the vapor control system (exhaust to atmosphere):

CAS No.	Compound	Emission Limit (ppmV)
127-18-4	Tetrachloroethylene (PCE)	12.83
79-01-6	Trichloroethylene (TCE)	20.00
75-35-4	1,1-Dichloroethylene	20.00
71-43-2	Benzene	1.85
56-23-5	Carbon Tetrachloride	1.85
67-66-3	Chloroform	5.00
75-01-4	Vinyl Chloride	2.00
108-88-3	Toluene	20.00

The laboratory detection limits shall be lower than the emission limits specified above.

[RULE 1401, 9-10-2010]

[Devices subject to this condition: C152]

B163.1 The operator shall only use in this equipment the adsorbent materials containing the following:

A minimum of 1,000 pounds of granular activated carbon in each adsorption chamber.

The activated carbon used in the adsorption chambers shall have a carbon tetrachloride activity number (CTC) of not less than 60% as measured by ASTM Method D3467-99 or a butane activity number of not less than 23.5% as measured by ASTM Method 5228-02.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition: C152]

C1.6 The operator shall limit the exhaust flow to no more than 250 cubic feet per minute.

To comply with this condition, the operator shall install and maintain a(n) flow meter to accurately indicate the flow rate at the outlet of the SVE blower.



ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 535779 & 535781	DATE: October 26, 2012
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

The flow rate shall be manually recorded with each monitoring visit.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition: C152]

D90.2 The operator shall monitor and record the VOC concentrations at the inlet and outlet of each adsorption chamber according to the following specifications:

The operator shall conduct the monitoring and recording event once a day except for the following:

The operator may conduct the monitoring and recording events according to the schedule listed in the table below, if all the wells being vapor-extracted at time have been through at least seven daily monitoring and recording events, which are conducted when no dilution air stream is added to the adsorption system inlet.

Inlet Concentrations (ppmV)	Monitoring Frequency
From 1234 to 2468	Daily
From 823 to 1234	Once in two days
From 617 to 823	Once in three days
From 494 to 617	Once in four days
From 411 to 494	Once in five days
From 353 to 411	Once in six days
From 0 to 353	Once in seven days

The VOC concentrations shall be monitored and recorded by using a Flame Ionization Detector (FID), Photoionization Detector (PID), or SCAQMD approved organic vapor analyzer calibrated in parts per million by volume (ppmV) as Hexane (if other calibrating agent was used, it shall be correlated to and expressed as Hexane).

Prior to monitoring, calibration of the instrument shall be performed using EPA Method 21.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition: C152]

D90.3 The operator shall sample and analyze the carcinogenic or toxic air contaminant and VOC concentrations at the inlet and outlet of the adsorption system according to the following specifications:

Samples shall be collected and analyzed once during the first week of operation under this permit.

The laboratory analytical results shall be used to establish operation of the equipment to be in compliance with condition nos. A433.2 and E448.2.

Sampling and analysis shall be conducted by an independent laboratory per Rule 304.

Sampling shall conform to CARB Method 422 or equivalent. Samples with high moisture shall be collected using an appropriate method such as SCAQMD Method 25.1/25.3 or other methods approved by SCAQMD.

Samples shall be analyzed by EPA Method TO-3 and EPA Method TO-15 or other methods approved by SCAQMD.

[RULE 1401, 9-10-2010]



ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 535779 & 535781	DATE: October 26, 2012
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

[Devices subject to this condition: C152]

D90.4 The operator shall sample and analyze the carcinogenic or toxic air contaminant and VOC concentrations at the inlet and outlet of the adsorption system according to the following specifications:

Samples shall be collected and analyzed once per month of operation.

The laboratory analytical results shall be used to verify the compliance with condition nos. A433.2 and E448.2.

Sampling shall conform to CARB Method 422 or equivalent. Samples with high moisture shall be collected using an appropriate method such as SCAQMD Method 25.1/25.3 or other methods approved by SCAQMD.

Samples shall be analyzed by EPA Method 8015/8021 and EPA Method 8260 or other methods approved by SCAQMD.

[RULE 1401, 9-10-2010]

[Devices subject to this condition: C152]

E224.1 The operator shall replace the carbon in the first chamber when the VOC concentration at the outlet of the first chamber indicates a control efficiency of less than 90 percent and reaches 25 ppmV, as Hexane. When the carbon replacement is completed, the operator shall rearrange the two chambers in a sequence of that the previous second chamber becomes the first chamber and the chamber with fresh carbon is used as second chamber.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition: C152]

E336.1 The operator shall vent the vent gases from this equipment as follows:

Vapor extraction wells and ducts shall be capped to prevent vapors from venting to the atmosphere. Vapors shall not be extracted from the soil unless they are vented to the vapor control system, with no detectable leak between the outlet of the blower and the outlet of the vapor control system.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition: D153]

E448.2 The operator shall comply with the following requirements:

Vapor extracted or treated by this equipment shall not contain any toxic air contaminants identified in Rule 1401, Table I, with an effective date of September 10, 2010 or earlier, except for Tetrachloroethylene (CAS No. 127-18-4), Trichloroethylene (CAS No. 79-01-6), 1,1-Dichloroethylene (CAS No. 75-35-4), Benzene (CAS No. 71-43-2), Carbon Tetrachloride (CAS No. 56-23-5), Chloroform (CAS No. 67-66-3), Vinyl Chloride (CAS No. 75-01-4), and Toluene (CAS No. 108-88-3).

Other trace Rule 1401 toxic or carcinogenic compounds, if reported, shall not exceed 20 ppbv each in the vapor extracted or treated by this equipment. Whenever trace carcinogenic compounds are detected greater than 20 ppbv, the applicant shall submit a screening risk analysis within 30 days to the SCAQMD. The risk from the permitted equipment shall be less than eight (8) in a million.



ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 535779 & 535781	DATE: October 26, 2012
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

[RULE 1401, 9-10-2010]

[Devices subject to this condition: C152]

E448.3 The operator shall comply with the following requirements:

Spent carbon removed from the system shall be stored in closed containers prior to disposal or regeneration. If disposed, disposal shall be conducted by a licensed contractor and shall be conducted in accordance with hazardous materials rules and regulations.

Wastewater removed from the knock-out drum shall be stored in closed containers prior to disposal. Disposal shall be conducted by a licensed contractor and shall be conducted in accordance with hazardous materials rules and regulations.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition: C152]

K67.6 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Name of the person, and time and date conducting each monitoring event

VOC concentrations, measured by a PID or FID, at inlet and outlet of each adsorption chamber with each monitoring event

Vapor extraction flow rate with each monitoring visit

Which wells are vapor-extracted at time of each monitoring event

Whether if a dilution air stream is added to the inlet of adsorption system at time of each monitoring event

Name of the person, and time and date conducting each air sampling event

Analytical laboratory air sample results

Air sample locations and time and date when it is collected

Proper Chain-of-Custody for handling air samples

Vapor extraction flow rate with each sampling event

Name of the person, and time and date conducting carbon replacement

Name of the contractor, and time and date conducting spent carbon removal

Name of the contractor, and time and date conducting wastewater removal

The operator shall submit to the District a report summarizing the first month (or part thereof) of operation and records. Submittal shall be within 90 days of initial operation of this equipment and shall be addressed to: South Coast Air Quality Management District, P.O. Box 4941, Diamond Bar, CA 91765.



ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 535779 & 535781	DATE: October 26, 2012
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

All records shall be kept on the premises for at least two years and shall be made available upon request of executive officer or his representative.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1401, 9-10-2010]

[Devices subject to this condition: C152]

BACKGROUND/HISTORY

Rhodia Inc., Carson facility (Rhodia) regenerates sulfuric acid for the refinery alkylation process and manufactures alum to be used as a flocculating agent in the drinking water purification and wastewater treatment plants. Rhodia currently operates one sulfuric acid plant, one alum (aluminum sulfate) manufacturing system and other equipment that associated with storage and handling of spent sulfuric acid and other raw materials.

Rhodia facility type:

<u>RECLAIM</u>		<u>Title V</u>
SOx	NOx	
Yes	Yes	Yes

Rhodia is a Title V facility. The renewal Title V Permit for the facility was issued on December 14, 2010.

The historic activities at Rhodia’s site resulted in the release of VOCs, which have impacted the site’s soil and groundwater. The VOCs involved primarily Perchloroethene (PCE), trichloroethene (TCE) and their degradation products. Because Rhodia is located at an industrial area, other compounds including benzene, methylbenzene, carbon tetrachloride, and chloroform have also been reported in the soil vapor, soil, and groundwater samples collected from the site. Under the oversight of the Department of Toxic Substances Control (DTSC), Rhodia has investigated the extent of the releases, evaluated preferred clean-up processes, and received approval to remediate impacted soil via soil vapor extraction (SVE).

On April 4, 2012, Rhodia submitted two applications indicated as follows:

<u>Appl. No.</u>	<u>Type</u>	<u>Previous P/O</u>	<u>Equipment</u>	<u>Fee Sch.</u>	<u>Expedited?</u>
535779	Plan	N/A	N/A	RECLAIM/Title V Rev.	N/A
535781	P/C	N/A	SVE System	Sch. C	No

Appl. No. 535781 – SVE System

Application no. 535781 is submitted in order to install a SVE system for the in-situ treatment of the contaminated soil. The SVE system consists of the following equipment:

- 14 vapor extraction wells;
- Ducts;
- A positive displacement blower;



ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 535779 & 535781	DATE: October 26, 2012
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

- An air/water separator;
- An air-to-air heat exchanger;
- A water pump (to convey condensed water to a storage tank);
- Two tanks holding a minimum of 1,000 pounds of granulated activated carbon (GAC) each;
- A discharge stack;
- Instruments and gauges to monitor the system performance.

The VOC's evaporated from underground soil will be reduced by the carbon adsorbers.

Appl. No. 535779

Application no. 535779 is submitted as a plan for the minor revision of the Title V/Reclaim permit as specified in Rule 301.

PROCESS DESCRIPTION

The proposed soil vapor extraction system will be used to remove halogenated compounds from the soil. There are several vapor extraction wells at the site. The wells will be single phase extraction wells and groundwater will not be extracted from these wells. The water collected from the knockout drum will be collected in drums and shipped offsite for disposal.

The vapor extraction blower (dresser roots 808 with 7.5 HP motor) with 350 scfm max flow, two carbon adsorbers in series with capacity of 1000 pounds of granulated activated carbon (GAC) each, and an exhaust stack (21 ft in height, 4 inch inner diameter) without a rain cap.

This remediation system will be used to treat organic vapors from a network of extraction wells. Vacuum will be applied to the extraction wells with the help of extraction blower, max flow 350 scfm, to create a pressure/concentration gradient resulting in diffusion of contaminant from soil.

Moisture that is carried over along with vapors is removed with a water knockout chamber. Water from the knock out chamber will be collected in drums and shipped offsite for disposal and treatment. The extracted gas is then treated by passing through activated carbon beds before being released into the atmosphere. The equipment will operate 24 hours per day, 365 days/yr.

EMISSION CALCULATIONS

Data:

- Operation: 24 hrs/day, 7 days/week, 52 weeks/yr
- Extraction blower flow rate: 250 scfm
- Carbon Adsorbers: Two tanks, each 1,000 pounds GAC minimum
- Soil Contaminants: Perchloroethylene (PCE) and trichloroethylene (TCE) - major
benzene, methylbenzene, carbon tetrachloride, and chloroform - minor

Assumption:

- Adsorption Efficiency: 99%



ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 535779 & 535781	DATE: October 26, 2012
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

- Adsorbent Capacity: 0.2 lb VOC / lb adsorbent (default value used by Waste Management Team)

VOC Adsorption capacity for each chamber = (0.2 lb VOC / lb) (1,000 lb) = 200 lb

$$M_{PCE} = 165.83 \text{ lb/lb-mole}$$

$$M_{Hexane} = 165.83 \text{ lb/lb-mole}$$

The maximum allowed VOC concentration is calculated as follows:

$$C_{Max} = \frac{200 \text{ lb}}{1 \text{ day}} \times \frac{1}{99\%} \times \frac{\text{lb-mole}}{165.83 \text{ lb}} \times \frac{1 \text{ day}}{1,440 \text{ min}} \times \frac{379 \text{ scf}}{\text{lb-mole}} \times \frac{\text{min}}{250 \text{ scf}} \times \frac{1,000,000}{\text{million}} = 1,282.5 \text{ ppm as PCE}$$

$$C_{Max} \text{ as Hexane} = 1,282.5 \text{ ppm} \times \frac{165.83 \text{ lb PCE}}{\text{lb-mole}} \times \frac{\text{lb-mole}}{86.17 \text{ lb hexane}} = 2,468 \text{ ppm as Hexane}$$

The monitoring frequency is calculated as follows:

Monitoring Frequency	Inlet Concentration as Hexane	
	Minimum (ppm)	Maximum (ppm)
1 day	1,234	2,468
2 day	823	1,234
3 day	617	823
4 day	494	617
5 day	411	494
6 day	353	411
7 day	0	353

VOC and Toxic Compound Emissions

Rhodia’s soil remediation contractor, Haley & Aldrich, Inc. submitted a Facility Investigation Report dated 12/16/2008. The report indicated that two areas with contaminated soil, SWMU 9a (northern area) and SWMU 10 and 9b (southern area), were required to perform in-situ soil remedial actions. In addition, the report indicated the following testing results:

Soil-Gas sample analytical results for SWMU 9a (northern area)



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 535779 & 535781	DATE: October 26, 2012
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

Compound	CAS No.	Rule 1401 Listed Compound?	MW g/mole	Highest Soil-Gas Sample Result	
				µg/L	ppmV
Tetrachloroethylene (PCE)	127-18-4	Yes	165.83	33,000	4,457.58
Trichloroethylene (TCE)	79-01-6	Yes	131.39	230	39.21
1,1-Dichloroethylene	75-35-4	Yes	96.95	0.5	0.12
Benzene	71-43-2	Yes	78.11	0.3	0.09
Carbon Tetrachloride	56-23-5	Yes	153.83	0.8	0.12
Chloroform	67-66-3	Yes	119.39	1.6	0.30
Cis-1,2-DCE	156-59-2	No	96.95	130	30.04
Trans-1,2-DCE	156-60-5	No	96.95	19	4.39
vinyl chloride	75-01-4	Yes	62.5	0.2	0.07

Soil sample analytical results for SWMU 9A (northern area)

Compound	CAS No.	Rule 1401 Listed Compound?	MW g/mole	Highest Soil Sample Result	
				µg/Kg	mol/Kg
PCE	127-18-4	Yes	165.83	77,000	4.64E-04
TCE	79-01-6	Yes	131.39	38	2.89E-07
Cis-1,2-DCE	156-59-2	No	96.95	350	3.61E-06
Trans-1,2-DCE	156-60-5	No	96.95	0.9	9.28E-09
Dichloromethane	75-09-2	Yes	84.93	6.2	7.30E-08

Soil-Gas sample analytical results for SWMU 10 and 9b (southern area)

Compound	CAS No.	Rule 1401 Listed Compound?	MW g/mole	Highest Soil-Gas Sample Result	
				µg/L	ppmV
PCE	127-18-4	Yes	165.83	1,800	243.14
TCE	79-01-6	Yes	131.39	9.8	1.67
Benzene	71-43-2	Yes	78.11	1.7	0.49
Chloroform	67-66-3	Yes	119.39	5.6	1.05
Toluene	108-88-3	Yes	92.14	1.1	0.27

Soil sample analytical results for SWMU 10 and 9b (southern area)

Compound	CAS No.	Rule 1401 Listed Compound?	MW g/mole	Highest Soil Sample Result	
				µg/Kg	mol/Kg
PCE	127-18-4	Yes	165.83	23,000	1.39E-04
Benzene	71-43-2	Yes	78.11	7.3	9.35E-08
Carbon Tetrachloride	56-23-5	Yes	153.83	41	2.67E-07
Chloroform	67-66-3	Yes	119.39	94	7.87E-07
Dichloromethane	75-09-2	Yes	84.93	6.1	7.18E-08
Toluene	108-88-3	Yes	92.14	41	4.45E-07



ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 535779 & 535781	DATE: October 26, 2012
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

Based on the soil testing results, Rhodia proposed the following maximum VOC/TAC concentrations of exhaust to the atmosphere from the carbon adsorption unit:

Compound	CAS No.	MW	Carbon Adsorption Unit Inlet Concentration ^α (ppmV)	Carbon Adsorption Unit Outlet Concentration (ppmV)
		g/mole		
PCE	127-18-4	165.83	1,283	12.83
TCE	79-01-6	131.39	2,000	20.00
1,1-Dichloroethylene	75-35-4	96.95	2,000	20.00
Benzene	71-43-2	78.11	185	1.85
Carbon Tetrachloride	56-23-5	153.83	185	1.85
Chloroform	67-66-3	119.39	500	5.00
vinyl chloride	75-01-4	62.5	200	2.00
Toluene	108-88-3	92.14	2,000	20.00

Note:

α: The carbon adsorption unit inlet concentration = (outlet concentration) / (1 – 99% eff.)

The VOC/TAC emissions are calculated using the following equation:

(Concentration, ppmV) (250 ft³/min) (60 min/hr) (M_i, Molecular Weight, lb/lb-mole) / (379 ft³/lb-mole)

And the results are indicated as follows:

Compound	CAS No.	MW	Carbon Bed Inlet Concentration (ppmV)	Carbon Bed Outlet Concentration (ppmV)	R1	R2
		lb/lb-mole			lb/hr	lb/hr
PCE	127-18-4	165.83	1,283	12.83	8.421E+00	8.421E-02
TCE	79-01-6	131.39	2,000	20.00	1.040E+01	1.040E-01
1,1-Dichloroethylene	75-35-4	96.95	2,000	20.00	7.674E+00	7.674E-02
Benzene	71-43-2	78.11	185	1.85	5.719E-01	5.719E-03
Carbon Tetrachloride	56-23-5	153.83	185	1.85	1.126E+00	1.126E-02
Chloroform	67-66-3	119.39	500	5.00	2.363E+00	2.363E-02
vinyl chloride	75-01-4	62.5	200	2.00	4.947E-01	4.947E-03
Toluene	108-88-3	92.14	2,000	20.00	7.293E+00	7.293E-02

EMISSION SUMMARY:

In order to be conservative, the VOC emissions were assumed to be equal to PCE emissions.



ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 535779 & 535781	DATE: October 26, 2012
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

A/N 535781		Hourly (lbs/hr)	Daily (lbs/day)	Annually (lbs/yr)	30 day ave. (lbs/day)	30day NSR (lbs/day)
VOC	R1	8.42	202.09	73,562	202.09	202
	R2	0.08	2.02	736	2.02	2
PCE	R1	8.42E+00	2.02E+02	73,562	2.02E+02	202
	R2	8.42E-02	2.02E+00	736	2.02E+00	2
TCE	R1	1.04E+01	3.40E-01	124	3.40E-01	0
	R2	1.04E-01	3.40E-03	1	3.40E-03	0
1,1-Dichloroethylene	R1	7.67E+00	1.84E+02	67,041	1.84E+02	184
	R2	7.67E-02	1.84E+00	670	1.84E+00	2
Benzene	R1	5.72E-01	1.34E+00	488	1.34E+00	1
	R2	5.72E-03	1.34E-02	5	1.34E-02	0
Carbon Tetrachloride	R1	1.13E+00	2.70E+01	9,840	2.70E+01	27
	R2	1.13E-02	2.70E-01	98	2.70E-01	0
Chloroform	R1	2.36E+00	2.34E+00	852	2.34E+00	2
	R2	2.36E-02	2.34E-02	9	2.34E-02	0
vinyl chloride	R1	4.95E-01	1.19E+01	4,322	1.19E+01	12
	R2	4.95E-03	1.19E-01	43	1.19E-01	0
Toluene	R1	7.29E+00	3.34E+00	1,216	3.34E+00	3
	R2	7.29E-02	3.34E-02	12	3.34E-02	0

Toxic Risk Analysis

Nearest Residential Receptor Distance: 1,500 ft. (457.2 m)
 Nearest Commercial Receptor Distance: 480 ft. (146.3 m)
 Stack height: 21 ft. (6.40 m)

Tier III analysis was used since the stack has a rain cap. Tier III risk analysis was based on the outlet concentrations listed in the above table. Excel program results (attached to this report) show that the MICR values of 4.56×10^{-6} for residential and 6.01×10^{-6} for commercial receptors. HIA and HIC were less than 1. Compliance is expected.

RULES AND REGULATIONS EVALUATION

Rule 212: **Standards for Approving Permits** – The facility is not located within 1,000 feet of a K-12 school. In addition, the TAC’s potential emission increases for this project which will not cause an individual cancer risk of the facility greater than, or equal to, ten (10) in a million. A Public Notice is not required.

Section (c)(3)(A)

The calculation shows that the MICR values of 4.56×10^{-6} for residential and 6.01×10^{-6} for commercial receptors. However, other unknown trace toxic or carcinogenic



ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 535779 & 535781	DATE: October 26, 2012
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

compounds may present in the exhaust due to degradation of the soil contaminants. Rhodia proposes, if any of these trace TACs reported, they shall not exceed 20 ppbv each in the vapor extracted or treated by this equipment. Whenever trace carcinogenic compounds are detected greater than 20 ppbv, Rhodia will submit a screening risk analysis within 30 days to the SCAQMD. The risk from this equipment will be less than eight (8) in a million.

Existing Facility Cancer Risk = 0.11×10^{-6} (Approved in 2006)
 MICR value for A/N: 535781 = 8.00×10^{-6}
 Total Facility Cancer Risk = 8.11×10^{-6}

Condition No. E448.2 is stipulated to ensure the compliance with this requirement.

Section (g)

Item	Lb/dy daily maximum	Allow limit-lb/dy	Trigger Public notice
NOx	+0	40	No
ROG	+2.02	30	No
CO	+0	220	No
PM10	+0	30	No
SOx	+0	60	No

Rule 401: **Visible Emissions** – Compliance is expected from well maintained and properly operated equipment.

Rule 402: **Public Nuisance** – The potential for public nuisance from the operation of this equipment is minimal. The facility is located in an industrial area.

Rule 1166: Volatile Organic Compound Emissions From Decontamination of Soil

Expected to follow requirements to control to emission of VOCs from excavating, grading, handling, and treating VOC contaminated soil as a result of leakage from storage or transfer operations, accidental spillage, or other deposition.

REG XIII: **BACT** – Carbon adsorption unit is considered as BACT for VOC control. BACT is achieved.

Modeling - Modeling for VOC is not required.

Offset – Offsets are not required for this facility since the criteria contaminant emissions will not exceed the limits in table A (rule 1304(d))

	VOC (lb/day)	PM10 (lb/day)	NOX (lb/day)	CO (lb/day)	SOX (lb/day)
Current NSR (PTE)	2	0	N/A	3	N/A
535781 – SVE System	+2.02	+0	N/A	+0	N/A
Total PTE	4.02	0	N/A	3	N/A
Threshold limit	22	22	N/A	159	N/A
Offset required	N/A	0	N/A	0	N/A



ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 535779 & 535781	DATE: October 26, 2012
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

Rule 1401: The carbon adsorption system is considered as T-BACT. Compliance is expected. Excel program results (attached to this report) show that the MICR values of 4.56×10^{-6} for residential and 6.01×10^{-6} for commercial receptors. HIA and HIC were less than 1.

Reg XXX: Title V Permit

Rhodia Inc. facility (Facility ID: 114801) has an active Title V permit. Based on the above evaluation, the proposed scrubber will not cause any emission increases. Therefore, application no. 535779 is considered “De Minimis Significant Permit Revision” of Title V Facility Permit and it is subject to a 45-day EPA review prior to final revision of the Title V Facility Permit (Application No. 535779).

CONCLUSION AND RECOMMENDATIONS

Based on my evaluation, the subject equipment will operate in compliance with all applicable District Rules and Regulations. A Permit to Construct/Operate is recommended.