

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT STATIONARY SOURCE COMPLIANCE DIVISION PERMIT APPLICATION PROCESSING AND CALCULATIONS	PAGES 6	PAGE 1
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	PROCESSED BY AK07	CHECKED BY JAT

ALTERATION/MODIFICATION PERMIT TO OPERATE (EXISTING A/N 392388 P/N F50780)

Applicant

Riverside County Waste Management Department
16411 Lamb Canyon Road,
Beaumont, CA 92223

Equipment Location (Facility ID 015793, Title V Facility)

16411 Lamb Canyon Road,
Beaumont, CA 92223

Equipment Description

See Sample Permit

Background

This application was filed for alteration/modification to the landfill leachate and condensate collection system. Applicant has filed this application as Class III as they had installed 3rd condensate tank prior to modifying the existing leachate and condensate collection system permit from SCAQMD.

This application came during the amnesty period at SCAQMD, so the 50% penalty will not be applied. This is a title V facility and applicant has also filed for title V revision application. Title V was renewed last time on August 29, 2008. This is an active landfill site. Please see the attached Conditional Usage Permit downloaded from Cal recycle Website. The site has several leachate and condensate tanks due to the terrain of the site and they are going to relocate most of the tanks to location where tanks will be closer except condensate tank no. 1 (see attached condensate/leachate system drawing – C2 in the application folder). As per the applicant, the bigger condensate/leachate tanks overflow to another big storage tank.

The changes made to the equipment description will be as following:

Current Equipment Description:

LANDFILL CONDENSATE STORAGE SYSTEM CONSISTING OF:

1. CONDENSATE TANK, 4000 GALLONS, HDPE, VENTED TO A CARBON CANISTER, WITH A SECONDARY CONTAINMENT TANK, HDPE, 4400 GALLONS, VENTED TO A CARBON CANISTER.
2. CONDENSATE TANK, 4500 GALLONS, HDPE, VENTED TO A CARBON CANISTER, WITH A SECONDARY CONTAINMENT TANK, HDPE, 5000 GALLONS, VENTED TO A CARBON CANISTER.
3. TWO LEACHATE TANKS, 5000 GALLONS EACH, VENTED TO A CARBON CANISTER, WITH A SECONDARY CONTAINMENT TANK, 6000 GALLONS.

Proposed Equipment Description:

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1. ONE (1) CONDENSATE TANK, 4000 GALLONS, HDPE, VENTED TO A 55 GALLONS ACTIVATED CARBON DRUM, WITH A SECONDARY CONTAINMENT TANK, HDPE, 4400 GALLONS, VENTED TO A 55 GALLONS ACTIVATED CARBON DRUM.
2. ONE (1) CONDENSATE TANK, 4500 GALLONS, HDPE, VENTED TO A 55 GALLONS ACTIVATED CARBON DRUM, WITH A SECONDARY CONTAINMENT TANK, HDPE, 5000 GALLONS, VENTED TO A 55 GALLONS ACTIVATED CARBON DRUM.
3. ONE (1) CONDENSATE TANK, 3800 GALLONS, HDPE, VENTED TO A 55 GALLONS ACTIVATED CARBON DRUM, WITH A SECONDARY CONTAINMENT TANK, HDPE, 4500 GALLONS, VENTED TO A 55 GALLONS ACTIVATED CARBON DRUM.
4. ONE (1) LEACHATE TANK, 10,500 GALLONS, VENTED TO A 55 GALLONS ACTIVATED CARBON DRUM, WITH A SECONDARY CONTAINMENT STRUCTURE.
5. ONE (1) CONDENSATE TANK, 10,500 GALLONS, VENTED TO A 55 GALLONS ACTIVATED CARBON DRUM, WITH A SECONDARY CONTAINMENT STRUCTURE.
6. ONE (1) BACKUP OVERFLOW TANK FOR THE LEACHATE AND CONDENSATE TANK, 10,000 GALLONS, VENTED TO A 55 GALLONS ACTIVATED CARBON DRUM, WITH A SECONDARY CONTAINMENT STRUCTURE.

Table – Showing Tank Volumes by Liquid Type:

No. of Tanks	Liquid type	Vented to APCD/Carbon drum	Tank Volume in Gallons	Secondary Containment/ Volume	Secondary Containment Tank Vented to 55 Gallon Carbon Drum
1	Condensate	Yes - 55 gallons passive Carbon	4000	4400	Yes
1	Condensate	Yes - 55 gallons passive Carbon	4500	5000	Yes
1	Condensate	Yes - 55 gallons passive Carbon	3800	4500	Yes
1	Condensate	Yes - 55 gallons passive Carbon	10500	Structure only	
1	Leachate	Yes - 55 gallons passive Carbon	10500	Structure only	
1	Back up/Overflow	Yes - 55 gallons passive Carbon	10500	Structure only	

Calculations

VOC emissions From Leachate Storage Tank:

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Applicant has attached the leachate/condensate analysis for several years in the application package. Based on very conservative lab results, vapor pressure of the leachate was calculated to get an idea of the VOC emissions from the leachate storage tank. Please see attached printout of the spreadsheet at the end of evaluation used to calculate VOC emissions from the storage tank (several of the concentrations were taken from 02/13/2012 report). The vapor pressure of the liquid in the leachate storage tank came out to be extremely low (in the range of 0.0028 psi) even though the concentrations of contaminants used were almost 20 times higher than those reported by the applicant and additional contaminants were also considered.

Calculations performed when previous application was processed:

When A/N 392388 (for leachate system) was evaluated, **breathing loss was not calculated, only working loss was calculated** and it was assumed that the pressure inside the leachate tank is 1.5 psi. Please see pertinent pages of previous evaluation in the application folder. Evaluation documents of the previous A/N 375381 (before A/N 392388) has also been attached in the application folder.

As per the applicant they are only generating 100,000 gallons of leachate/condensate every year, please see attached email in the A/N folder.

If we conservatively raise the volume of collected leachate/condensate to 250,000 gallons per year, and calculate the breathing losses based on same assumption that all the VOC's from water will be released to atmosphere for 250,000 gallons and assume 10,000 micro-gram/L of VOC's in the leachate/condensate;

$$\begin{aligned} \text{Emissions} &= 10,000 \text{ micro-gram/L} \times (250,000/365) \text{ gallons/day} \times 3.785 \text{ L/gal} \times 2.2 \text{ lbs/kg} \times 10^{-9} \text{ kg/micro-gram} \\ &= 0.05 \text{ lb/day.} \end{aligned}$$

Average height of liquid inside the tanks is unknown at this time, hence the conservative calculation completed above shall be used to calculate emissions.

Working Losses from these tanks:

Lw = working loss from fixed roof tank (lbs/day)

Assuming the annual consumption rate is 250,000 gallons per year and pressure inside is 1.5 psi (very conservative assumptions)

$$\begin{aligned} &= 2.4 \times 0.00001 \times (250,000/365) \text{ gallons /day} \times Mv \times P \text{ (assuming } Mv = 18 \text{ lb/lb-mol, } P = 1.5 \text{ psi)} \\ &= 0.443 \text{ lb/day} \end{aligned}$$

The applicant has indicated that all of the tanks have a 55 gallons active carbon drums. So it is reasonable to assume that 90 percent of the vapors get neutralized

$$\text{So total loss per day} = 0.1 \times (0.05 + 0.443) \text{ lb/day} = 0.0483 \text{ lb/day}$$

Toxic Risk analysis was completed for the VOC's emitted from the leachate storage tank. When application (A/N 392388) was processed, Rule 1401 analysis (toxic risk) was not calculated.

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Table – Concentrations of contaminants have been taken from (02/13/2012) leachate/condensate sample analysis, attached in the folder:

Conservative assumption has been made that 250,000 gallons of liquid throughput in these tanks.

Name	Micro gram /liter	Volume Processed in Gallons per year	Volume Processed in Liters	Weight in Lb/hr - assuming the 250,000 gallons of volume gets processed in one year
Benzene (including benzene from gasoline)	34	250,000	945000	8.07354E-06
Chlorobenzene	5.1	250,000	945000	1.21103E-06
Dichlorobenzene, p- (or 1,4-dichlorobenzene)	49	250,000	945000	1.16354E-05
Ethyl benzene	120	250,000	945000	2.84948E-05
Ethylene dichloride (or 1,2-dichloroethane)	75	250,000	945000	1.78093E-05
Napthalene	74	250,000	945000	1.75718E-05
Trichloroethylene	12	250,000	945000	2.84948E-06

There are no receptors nearby this site, so assumption was made that both residential and commercial receptors are 2500 feet away.

Nearest Residential Receptor Distance: 2500 ft. (762 m)

Nearest Commercial Receptor Distance: 2500 ft. (762 m)

Stack height: do not have the height for various tanks/final vent points.

Tier II analysis will be used to calculate the Rule 1401 cancer risk. HIA & HIC are both less than 1.0. MICR for residential and commercial receptors is 0.00133 & 0.000261 in a million respectively. Please see attached Rule 1401 spreadsheet.

Evaluation

Rule 212: Rule 212 (c)(1)- There is no school within 1000 feet of equipment location. Rule 212 (c)(2)- Not exceeding the following:

- Volatile Organic Compounds 30 lbs/day
- Nitrogen Oxides 40 lbs/day
- PM10 30 lbs/day
- Sulfur Dioxide 60 lbs/day
- Carbon Monoxide 220 lbs/day
- Lead 3 lbs/day

Rule 212 (c)(3)(A)(i)- MICR is below 1 in a million.

Public Notice is not required.

Rule 401: Visible Emissions
No violations are expected, limits are listed under Rule 401(b)(1).

Rule 402: Nuisance

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Nuisance is not expected. *(Conditions will be imposed on permit)*

Rule 1150: Compliance can be expected. Excavation of landfill to install leachate systems is allowed without getting 1150 excavation plan through SCAQMD *(exemption (c)(2))*.

Rule 1150.1: Applicant had submitted alteration to Rule 1150.1 landfill compliance plan on 05/06/2011. Previous inspection reports were reviewed and facility has been operating in compliance.

Reg. XIII: Rule 1303(a)(2)- installation of the GAC drums is considered as BACT.
 Rule 1303(b)(1)- Modeling for VOC is not required (1303 Appendix A).
 Rule 1303(b)(2)- Emissions are less than 22 lb/day for this facility. Offsets are not required.

Rule 1401: Toxic Air Contaminants
 Rule 1401(d)(1)(A)- MICR less than 1.0×10^{-6} .

Rule 1401(d)(1)(C)- Cancer burden is less than 0.5.

Rule 1401(d)(2) and Rule 1401(d)(3)- HIC and HIA values are estimated to be less than 1 respectively.

Statewide Compliance:

Riverside County Waste Management Department has provided us the list of landfills being operated in CA and has affirmed that all the facilities are in compliance with Clean Air Act.

Sensitive Zone Requirements:

Not applicable as credits will be provided from the Priority Reserve *(as applicable)*

Major Polluting Facility Alternative Analysis:

Not applicable.

Protection of Visibility:

Not applicable. Beaumont is not near any of the specified Federal Class I area, and there are no PM-10 & NOx emissions.

RULE 1401:

See above

RULE 1401.1: Not applicable. This is an existing facility.

REG. XVII: Preventative Significant Deterioration (PSD):

Rule 1701: Not applicable. This is not a new source or modification at an existing source where the

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increase in potential to emit is at least 100 or 250 tons of attainment air contaminants per year, depending on the source category.

Rule 1703: Not applicable as the emissions generated as a result of this tank replacement project are negligible.

Rule 1714: This project shall not emit any GHG's listed in Rule 1714.

REG XXX: This is a Title V facility and is in compliance with all requirements of Title V permit. This permit will be issued after EPA 45 day review period. Applicant has also filed A/N 525694 for title V revision and this will be a De-minimis Significant Revision. Please see A/N 525694 folder for further details.

FEDERAL REGULATIONS: 40 CFR PART 60 SUBPART WWW AND AAAA:

Title 40 part 63 subpart AAAA - 63.1955 - If the landfill is operated in compliance with 40 CFR part 60 subpart WWW, it is in compliance with Title 40 part 63 subpart AAAA.

Title 40 part 60 subpart WWW - 60.752 - the site has a gas collection and control system installed in compliance with this subpart and is able to destroy NMOC by 98 percent or 20 PPMV by volume. The site is in Title V program and the applicant is aware of federal requirements for compliance with title 40 part 60 subpart WWW. Gas collection system is expected to be operated in accordance with the provisions of 60.753, 60.755, & 60.756. Compliance is expected.

CONCLUSION/RECOMMENDATION:

This equipment is expected to be in compliance with applicable AQMD Rules and Regulations. Issue a permit to operate for modification of the leachate/condensate collection system after EPA commenting period. For Permit Conditions please see Sample Permits.