

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
ENGINEERING AND COMPLIANCE
APPLICATION PROCESSING AND CALCULATIONS

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APPL. NO 513860, 2	DATE 09-08-2010
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PO

COMPANY NAME AND ADDRESS

Pacific Terminals, LLC
5900 Cherry Avenue
Long Beach, CA 90805

ID 121727

mailing and equipment address

EQUIPMENT DESCRIPTION

APPLICATION NO. 513862

TITLE V REVISION

APPLICATION NO. 513860 (previous A/N 499360)

WASTE WATER TREATMENT SYSTEM CONSISTING OF:

1. INFLUENT EQUALIZATION WATER TANK, TK100, 16'-0"DIA. X 16'-0"H., 24,100 GALLONS CAPACITY.
2. TWO 55-GALLON VAPOR PHASE ACTIVATED CARBON ADSORPTION DRUMS, CONNECTED IN SERIES, PASSIVELY VENTING THE INFLUENT EQUALIZATION WATER TANK.
3. COVERED OIL WATER SEPARATOR, 3'-0"W. X 5'-0"L. X 5'-0"H., WITH AN INLET WATER TRANSFER PUMP AND AN OUTLET WATER TRANSFER PUMP.
4. FLOW CONTROL TANK, 6'-0"DIA. X 5'-0"H., 1,000 GALLONS CAPACITY.
5. FOUR LIQUID PHASE FILTERS, ROSEDALE MODEL LCO-8, EACH 1'-0"DIA. X 3'-0"H., AND EACH WITH A PARTICULATE FILTER BAG.
6. TWO LIQUID PHASE ADSORBER VESSELS, EACH 4'-0"DIA. X 6'-0"H., EACH CONTAINING 2,000 LBS ORGANO CLAY.
7. TWO LIQUID PHASE ADSORBER VESSELS, EACH 4'-0"DIA. X 6'-0"H., EACH CONTAINING 2,000 LBS ACTIVATED CARBON.
8. THREE 55-GALLON GAS PHASE ACTIVATED CARBON ADSORPTION DRUMS, CONNECTED IN SERIES, PASSIVELY VENTING THE OIL WATER SEPARATOR.

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9. EFFLUENT CONTROL WATER TANK, 35'-0"L. X 8'-0"W. X 12'-6"H., 21,000 GALLONS CAPACITY.
10. TWO 55-GALLON VAPOR PHASE ACTIVATED CARBON ADSORPTION DRUMS, CONNECTED IN SERIES, PASSIVELY VENTING THE EFFLUENT CONTROL TANK.

HISTORY

Application Nos. 513860 and 513862 were received on 8/18/2010 for an alteration to the waste water treatment system of A/N 499360 by the addition of influent and effluent water tanks, and the installation of additional carbon adsorber cannistors to passively vent vapors from the additional water tanks.

Previous A/N 499360 was received on 6/30/2009. A Permit to Operate (P/O G8733) was issued on 6/3/2010. A/N 499360 was submitted for the permit required to operate an oil/water separator used to treat rain water runoff. This equipment was installed in 2002 and operated under the 5 mg/L VOC exemption in Rule 1176 for a period of time ending around 2005. The equipment required maintenance before it could be operated again.

The exemption in Rule 1176 only applies to the VOC content of the water treated. However, there is no exemption in Rule 219 from written permit requirement for this equipment. Therefore, Rule 301 required the 50% penalty fee previously assessed under A/N 499360 for operating this equipment without a Permit to Construct or Operate.

PROCESS DESCRIPTION

This facility receives, stores, and transfers petroleum products using storage tanks and pipelines. The oil/water separator is not connected to any storage tanks in the tank farm. It will only be used to treat primarily rain water runoff.

The applicant has indicated that operation of this equipment cannot comply with the 5 mg/L VOC exemption listed in Rule 1176 regarding monitoring requirements. Therefore, monitoring requirements will be required to comply with Rule 1176 requirements.

The subject equipment will be used to filter VOC's from the rain water with clay adsorbent followed by activated carbon adsorbent, and will be filtered for particulates, prior to discharging to the city sewer lines.

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EVALUATION

CEQA

The CEQA form submitted did not indicate applicability, and emissions increases resulting from the installation and operation of this equipment are not expected to cause emission levels which will trigger the requirement for a CEQA EIR evaluation and associated notifications.

RULE 212

This equipment is not located within 1,000 feet of the outer boundary of a school, the increases of air contaminants are less than the significant levels indicated in this rule, the increase in cancer risk is less than one in a million, and all hazard indices are less than 1. Therefore, public notice pursuant to this rule is not required.

RULE 401

Based on the nature of this equipment, visible emissions are not expected. Therefore, compliance with this rule is expected.

RULE 402

Since this equipment will be vented to carbon canisters, odors at nuisance levels are not expected. Therefore, compliance with this rule is expected.

RULE 1176

Periodic monitoring, as described in permit conditions, will ensure compliance with this rule.

REGULATION XIII

The emissions from this equipment are only 0.17 lbs/day (30 day average). Since this is less than 1 lb/day, emission offsets are not required and a BACT evaluation is not required.

RULE 1401

Based on previous calculations, the oil water separator is in compliance with Rule 1401 and it has a previous negligible increase in health risk, in the worst case, which will be less than the amounts indicated below. The current alteration results in no health risk change:

	RECEPTOR	MICR
	Previous MICR, commercial (per million population)	0.019
	Previous MICR, residential (per million population)	0.099

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The MICR is due mainly to benzene. The acute and chronic hazard indices are all less than 0.001.

DISCUSSION

Previous calculations indicate that compliance is expected with all applicable rules and regulations. The oil water separator is passively vented to a carbon adsorber. The applicant has proposed a 500 PPMv limit on the carbon adsorber outlet to verify that breakthrough has occurred. There is no applicable rule requirement for this suggested condition. The oil water separator requires Rule 1176 monitoring. The 500 PPMv fugitive vapor concentration limit required by this rule will ensure that this equipment is vapor tight.

The main purpose for the carbon adsorber is to minimize the potential for odor nuisance. However, since the oil water separator is passively vented (no exhaust blower), the efficiency of the proposed carbon drums is questionable. It has been assumed that the overall control efficiency will be 50% (in contrast to the assumption of 99% made by the applicant.)

The applicant has previously chosen to use an EPA emission factor for a covered oil water separator and has estimated a maximum emission rate of 0.14 lbs/day. This is in agreement with the current estimate of 0.17 lbs/day using Tanks 4.09d and maximum operating conditions.

Permit conditions are required to ensure that emission levels do not trigger odor nuisance, due to excess vapor leaks, and to ensure compliance with Rule 1176. Rule 1176 is applicable because there is a possibility that small amounts of process water may become mixed with rain water runoff which is treated by the subject equipment. To ensure compliance, vapor monitoring, using an OVA, will be incorporated into recommended permit conditions.

RECOMMENDATION

APPLICATION NO. 513862

APPROVE TITLE V PERMIT REVISION

APPLICATION NO. 513860

Issue Permit to Construct and Operate in Section D of the Facility Permit subject to the following conditions:

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APPLICATION NO. 513860

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.

[RULE 204]

2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.

[RULE 204]

3. THIS EQUIPMENT SHALL ONLY BE USED TO PROCESS WASTE WATER CONSISTING PRIMARILY OF RAIN WATER RUNOFF.

[RULE 204]

4. THIS EQUIPMENT SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF RULE 1176.

[RULE 1176]

5. THE OPERATOR SHALL MONITOR THE HYDROCARBON CONCENTRATION AT THE OUTLET OF THE CARBON ADSORBERS FROM THE INFLUENT EQUALIZATION TANK, OIL WATER SEPARATOR, AND EFFLUENT CONTROL TANK AT LEAST ONCE PER MONTH. THE OPERATOR SHALL USE A DISTRICT APPROVED ORGANIC VAPOR ANALYZER (OVA) TO MONITOR THE HYDROCARBON CONCENTRATION. THE OVA SHALL MEET THE REQUIREMENTS OF EPA METHOD 21. THE OPERATOR SHALL CALIBRATE THE OVA USED TO MONITOR THE HYDROCARBON CONCENTRATION IN PPM_v METHANE.

[RULE 204, RULE 1176]

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6. THE OPERATOR SHALL REPLACE THE SPENT CARBON WITH FRESH ACTIVATED CARBON IN THE ADSORBER WHENEVER BREAKTHROUGH OCCURS. FOR THE PURPOSE OF THIS CONDITION, BREAKTHROUGH OCCURS WHEN THE OVA READING INDICATES A CONCENTRATION OF 500 PPM_v OR HIGHER, AS METHANE, AT THE OUTLET OF THE FINAL CARBON ADSORBER.

[RULE 204, RULE 1176]

7. THE OPERATOR SHALL KEEP ALL SPENT CARBON IN A TIGHTLY COVERED CONTAINER WHICH SHALL REMAIN CLOSED EXCEPT WHEN IT IS BEING TRANSFERRED INTO OR OUT OF THE CONTAINER.

[RULE 204]

8. THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETER(S) OR ITEM(S):

- A. DATE, TIME, AND OVA READING EACH TIME THE CONCENTRATION IS MEASURED AT THE OUTLET OF THE CARBON ADSORBER.
- B. DATE AND TIME THE SPENT CARBON IS REPLACED.

[RULE 3004(a)(4)-PERIODIC MONITORING, RULE 402]

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APPENDIX A:

Previous Calculations From
A/N's 499359-60

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TANKS 4.0.9d

Emissions Report - Detail Format

Tank Identification and Physical Characteristics

Identification

User Identification: AN499360
City: Long Beach
State: California
Company: PACIFIC PIPELINE SYSTEM LLC
Type of Tank: Vertical Fixed Roof Tank
Description: OIL WATER SEPARATOR

Tank Dimensions

Shell Height (ft): 5.00
Diameter (ft): 4.37
Liquid Height (ft): 3.60
Avg. Liquid Height (ft): 3.60
Volume (gallons): 404.00
Turnovers: 65,049.50
Net Throughput(gal/yr): 26,280,200.00

Is Tank Heated (y/n): N

Paint Characteristics

Shell Color/Shade: Aluminum/Specular
Shell Condition: Good
Roof Color/Shade: Aluminum/Specular
Roof Condition: Good

Roof Characteristics

Type: Dome
Height (ft): 0.00
Radius (ft) (Dome Roof): 4.37

Breather Vent Settings

Vacuum Settings (psig): -0.03
Pressure Settings (psig): 0.03

Meteorological Data used in Emissions Calculations: Long Beach, California (Avg Atmospheric Pressure = 14.7 psia)

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TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

AN499360 - Vertical Fixed Roof Tank
Long Beach, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Distillate fuel oil no. 2	All	69.90	62.04	77.76	65.65	0.0090	0.0070	0.0113	130.0000			188.00	Option 1: VP60 = .0065 VP70 = .009
1,2,4-Trimethylbenzene						0.0301	0.0222	0.0404	120.1900	0.0100	0.0485	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene						1.5273	1.2356	1.8738	78.1100	0.0000	0.0020	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1520	0.1165	0.1963	106.1700	0.0001	0.0032	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.4614	2.0174	2.9823	86.1700	0.0000	0.0004	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.4462	0.3517	0.5613	92.1300	0.0003	0.0230	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						0.0077	0.0068	0.0072	134.5098	0.9666	0.8636	189.60	
Xylene (-m)						0.1270	0.0971	0.1645	106.1700	0.0029	0.0593	106.17	Option 2: A=7.009, B=1462.266, C=215.11

AN499360 - Vertical Fixed Roof Tank
Long Beach, California

Annual Emission Calculations	
Standing Losses (lb):	0.1061
Vapor Space Volume (cu ft):	25.4938
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0556
Vented Vapor Saturation Factor:	0.9992
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	25.4938
Tank Diameter (ft):	4.3700
Vapor Space Outage (ft):	1.6997
Tank Shell Height (ft):	5.0000
Average Liquid Height (ft):	3.6000
Roof Outage (ft):	0.2997
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.2997
Dome Radius (ft):	4.3700
Shell Radius (ft):	2.1850
Vapor Density	
Vapor Density (lb/cu ft):	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	0.0090
Daily Avg. Liquid Surface Temp. (deg. R):	529.5710
Daily Average Ambient Temp. (deg. F):	64.3083
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	525.3183
Tank Paint Solar Absorptance (Shell):	0.3900
Tank Paint Solar Absorptance (Roof):	0.3900
Daily Total Solar Insulation	

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Factor (Btu/sqft day):	1,571.6498
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0556
Daily Vapor Temperature Range (deg. R):	31.4304
Daily Vapor Pressure Range (psia):	0.0043
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	0.0090
Vapor Pressure at Daily Minimum Liquid	
Surface Temperature (psia):	0.0070
Vapor Pressure at Daily Maximum Liquid	
Surface Temperature (psia):	0.0113
Daily Avg. Liquid Surface Temp. (deg R):	529.5710
Daily Min. Liquid Surface Temp. (deg R):	521.7134
Daily Max. Liquid Surface Temp. (deg R):	537.4286
Daily Ambient Temp. Range (deg. R):	19.8167
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9992
Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	0.0090
Vapor Space Outage (ft):	1.6997
Working Losses (lb):	122.0163
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	0.0090
Annual Net Throughput (gal/yr.):	26,280,200.0000
Annual Turnovers:	65,049.5000
Turnover Factor:	0.1671
Maximum Liquid Volume (gal):	404,0000
Maximum Liquid Height (ft):	3.6008
Tank Diameter (ft):	4.3700
Working Loss Product Factor:	1.0000
Total Losses (lb):	122.1224

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TANKS 4.0.9d

Emissions Report - Detail Format

Liquid Contents of Storage Tank

Emissions Report for: Annual

AN499360 - Vertical Fixed Roof Tank
Long Beach, California

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	122.02	0.11	122.12
Hexane (-n)	0.05	0.00	0.05
Benzene	0.24	0.00	0.24
Toluene	2.81	0.00	2.81
Ethylbenzene	0.39	0.00	0.39
Xylene (-m)	7.24	0.01	7.25
1,2,4-Trimethylbenzene	5.92	0.01	5.92
Unidentified Components	105.38	0.09	105.47