

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
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PERMIT TO OPERATE

APPLICANT	Equilon Enterprises, LLC, Co. Id. 800372
MAILING ADDRESS	20945 S. Wilmington Ave. Carson, CA 90810
EQUIPMENT LOCATION	Same as above

Equipment Description:

Equipment	ID No.	Connected To	RECLAIM Source Type / Monitoring Unit	Emissions and Requirements	Conditions
PROCESS 6: GROUNDWATER TREATMENT					
SYSTEM 3 GROUNDWATER BIOREACTOR TREATMENT SYSTEM					S13.4
REACTOR, BIOLOGICAL , WASTE WATER, 70,000 GALLON CAPACITY, FIBERGLASS PANEL FIXED ROOF COVER WITH PRV VALVE, WIDTH: 24 FT; HEIGHT: 11 FT; LENGTH: 42 FT A/N: 504107	D907	C915			D29.1, E193.3, K40.1
REACTOR, BIOLOGICAL , WASTE WATER, 70,000 GALLON CAPACITY, FIBERGLASS PANEL FIXED ROOF COVER WITH PRV VALVE, WIDTH: 24 FT; HEIGHT: 11 FT; LENGTH: 42 FT A/N: 504107	D908	C915			D29.1, E193.3, K40.1
BLOWER, THREE(3) AERATION, 350 CFM, MAXIMUM 2 IN OPERATION WITH ONE SPARE, 10 HP A/N: 504107	D909				E193.3
CLARIFIER, FOUR (4), COVERED, WIDTH: 12 FT; LENGTH: 12 FT A/N: 504107	D910				
TANK, SURGE, (BIOREACTOR SURGE TANK) EFFLUENT EQUALIZING, 1400 GALS; DIAMETER: 7 FT 2 IN; HEIGHT: 6 FT 4.25 IN A/N: 504107	D911				
PUMP, BIOREACTOR FEED, 3 HP A/N: 504107	D912				
PUMP, EFFLUENT, 15 HP A/N: 504107	D913				

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PUMP, SLUDGE DEWATERING, 0.5 HP, 2 TOTAL A/N: 504107	D914				
CARBON ADSORBER, TOTAL OF TWO CONNECTED IN SERIES, VENT SCRUB, MODEL VSC-3000, 3000 LBS A/N: 504107	C915	D907, D908			D90.3, D94.1, E128.1, E153.3, E440.1
BLOWER 1000 CFM. 5 HP, VENTING 2 BIOREACTORS A/N: 504107	D916				E193.3

- (1) Denotes RECLAIM emission factor
 - (2) Denotes RECLAIM emission rate
 - (3) Denotes RECLAIM concentration limit
 - (4) Denotes BACT emission limit
 - (5)(5A)(5B) Denotes command and control emission limit
 - (6) Denotes air toxic control rule limit
 - (7) Denotes NSR applicability limit
 - (8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 - (9) See App B for Emission Limits
 - (10) See Section J for NESHAP/MACT requirements
- ** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

Conditions

DEVICE CONDITIONS

S. System Conditions

S13.4

All devices under this system are subject to the applicable requirements of the following rules and regulations.

Contaminant	Rule	Rule/Subpart
HAP's	40CFR63, SUBPART	GGGGG

[40CFR63, SUBPART GGGGG]

[Systems subject to this condition: Process 6, System 1, 2, 3, 4, Process 8, System 6]

D29.1

The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location

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ROG emissions	District Method 25.1 or 25.3	District-approved averaging time	outlet of the bioreactor and outlet of the second carbon adsorber
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The test shall be conducted to determine the vent gas flow rate in acfm.

The test shall be conducted in accordance with AQMD approved source test protocol. The protocol shall be submitted to the AQMD permitting engineer no later than 45 days before the proposed test date and shall be approved by the AQMD before the test commences. The protocol shall include the proposed operating conditions of the bioreactor during the tests, the identity of the testing lab, a statement from the lab certify that it meets the criteria of R304, and a description of all sampling and analytical procedures.

The facility permit holder shall submit the protocol to the AQMD engineer no later than 45 days prior to the proposed test date, and notify the District of the date and time of the test at least 10 days prior to the test.

The test(s) shall be conducted within 10 days after achieving maximum production rate, but no later than 60 days after initial start-up.

The test shall be conducted after the biocell is established and after each time the biocell is reestablished.

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

[Devices subject to this condition : D907, D908]

D90.3 The operator shall monitor and record the VOC concentration at the inlet and the outlet of the first carbon canister according to the following specifications:

The operator shall monitor on the day of startup of the bioreactor in accordance with EPA Method 21.

The operator shall monitor once every week during the normal operation of the bioreactor in accordance with EPA Method 21.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : C915]

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D94.1 The operator shall install, maintain and operate a sampling line at the inlet and the outlet of the carbon canisters to allow measurement of the Volatile organic compounds.

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

[Devices subject to this condition : C915]

E. Equipment Operation/Construction Requirements

E128.1 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 1303(a)(1)-BACT,5-10-1996;RULE 1303(a)(1)-BACT,12-6-2002]

[Devices subject to this condition : C915]

E153.3 The operator shall change over the carbon in the adsorber whenever breakthrough occurs.

For the purpose of this condition, breakthrough occurs when the hydrocarbon monitor reading indicates a concentration of 500 ppmv at the outlet of either carbon canister measured as methane.

The operator shall replace the carbon as follows: the primary carbon canister shall be replaced with either a fresh carbon canister or the secondary carbon canister, and the secondary carbon canister shall be replaced with a fresh carbon.

Records for carbon replacement shall be kept and maintained for this equipment for a period of 5 years.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : C915]

E193.3 The operator shall operate and maintain this equipment as follows:

During periods of routine maintenance, the aeration blowers may remain in operation as long as the groundwater feed to the bioreactors has been stopped. Maintenance actions shall not exceed 72 hours for each repair period.

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

[Systems subject to this condition: D907, D908, D909, D916]

E440.1 The operator shall operate and maintain this equipment according to the following specifications:

During the carbon change out operation, the spent carbon shall be dropped onto the fabric filters with the use of a chute to minimize carbon particle release.

During the process of loading fresh carbon into the canister, the operator shall use a vacuum device vented to a cyclone around the canister opening to minimize carbon particle release.

The operator shall limit the carbon change out operation to once per month.

[RULE 1303(a)(1)-BACT,5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 401, 3-2-1984; RULE 401, 11-9-2001]

[Devices subject to this condition : C915]

K40.1 The operator shall provide to the District a source test report in accordance with the following specifications:

Source test results shall be submitted to the District no later than 60 days after the source test was conducted.

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

[Devices subject to this condition: D907, D908]

BACKGROUND & PROCESS DESCRIPTION

This facility is Title V and Reclaim facility which is primarily a tank storage farm and bulk loading terminal consisting of various size tanks used to store various refinery products and loading racks.

These applications are for a change of condition for a groundwater bioreactor treatment system and the air pollution control system it is vented to which consists of a two

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carbon adsorbers in series. This equipment was issued a permit to construct on November 24, 2004. The permit to construct application no. for the groundwater bioreactor treatment system is a/n 431329, and for the air pollution control system a/n 434049. The applicant has stated that this equipment is currently in operation.

The initial applications were submitted to improve the quality of discharged water to meet Los Angeles Sanitation District's requirements. Shell Carson facility extracts contaminated groundwater from several onsite wells. Contaminated groundwater is temporarily stored at the facility in existing holding tank 921 (D844) under application no. 364661, and discharged to Los Angeles County Sanitation District (LACSD) for treatment.

Please see the previous evaluation in this file dated 9/25/04 for a detailed description of this process. A summary of the process will be described below.

This waste water bioreactor system will receive ground water from existing tank 921. Groundwater is treated in one of two 70,000 gallon bio reactors using traditional activated sludge, in combination with a proprietary oxygenate degrading culture to treat extracted groundwater. The bioreactor is air sparged at 700 cfm. The estimated flow rate is 80 gallons per minute with a VOC content approximately 155 mg/l. The bioreactor will process 149 lbs/day of VOC emissions. The bio reactors will be vented to two 3000 lb. carbon beds in series.

The water treated in the bioreactors is next processed in four open-top gravity fed clarifier which are designed to separate any entrained biomass from the effluent. The collected biomass is returned to the bioreactor for reuse. From the clarifiers, the treated water is sent to a 5000 gallon fixed roof surge tank prior to discharged into the sewer system.

The applicant submitted the above applications for request to change a condition. The applicant would like to change condition E193.3 which states the following

E193.3 The operator shall operate and maintain this equipment as follows:

During periods of exhaust blower shutdown as a result of routine maintenance, the aeration blower may remain in operation as long as the groundwater feed to the bioreactors has been stopped. The exhaust blower shall be repaired within 72 hours each repair period.

The applicant would like to change this condition because it implies that the only time maintenance could performed that will allow the aeration blowers to continue to operate

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is when the maintenance is performed on the exhaust blower. The applicant would like to be able to do any type of maintenance/repairs that the system may require while continuing to operate the aeration blowers as long as the groundwater feed to the bioreactors has been stopped. This is needed because if aeration is not continued the living organisms will not receive the necessary oxygen they require to live and die-off will occur. If die-off occurs it will take several weeks to regenerate the live media to begin to operate this system again. Based on evaluating the information in this file and from the previous applications, changing the condition to allow the aeration blowers to is acceptable and the new condition will read as follows.

E193.3 The operator shall operate and maintain this equipment as follows:

During periods of routine maintenance, the aeration blower may remain in operation as long as the groundwater feed to the bioreactors has been stopped. Maintenance actions shall not exceed 72 hours for each repair period.

After reviewing all the information regarding the ground water treatment system and the air pollution control system, it has been determined that these system should be combined and will be processed as one system per Rule 301. These systems will be combined and approved in Section H of the facility permit in application no. 504107. Applications no. 431329 and 434049 will be cancelled.

Title V and RECLAIM amendment

The modification for the Title V and RECLAIM facility permit is under application no. 504109 and will be a de minimus permit revision.

ERC's will now be required

In the previous application for the bioreactor, VOC emissions were calculated to be less than 15 lbs/year, which came out to be less than 0.042 lbs/day. However based on the source test results, the emissions are actually 0.67 lbs/day. Because this exceed 4 tons/year for VOC emissions. Emission Reduction Credits will be required for the increase of VOC emissions the calculations are shown below.

EMISSION CALCULATIONS

This system will be operated:

24 hours/day
7 days/week

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365 days/year

A source test was required for this equipment and was performed for this equipment on November 2, 2005 by Horizon Air Measurement Services, Inc. Based on the results of the source test, it is determined that the emissions calculations in the previous applications were underestimated and will be adjusted in this application.

The source tests results are from the inlet and outlet of the carbon absorption unit

The previous emissions were as follows.

	lbs/hr	lbs/day
VOC	0.00168	0.04032

The source tests results are from the inlet and outlet of the carbon absorption unit

*VOC – measured as methane

VOC*	dscfm	Acfm	ppmv CH4	lbs/hr CH4	lbs/day CH4	lbs/day NSR
Inlet	1293	1412	17.3	0.0566	1.36	
Outlet	1282	1394	8.67	0.0281	0.67	1.00

Because at the outlet of the bioreactors (inlet of the carbon adsorption system) is greater than 1 pound per day, BACT is required for this system which is the carbon adsorption system.

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ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

Source Unit		Service	No. Of Existing Components (1)	Correlation Equation Factor 500 ppm Screening Value	Current Emissions Based on Correlation 500 ppm Screening Value (lbs/year)	Emissions based on 5% organic concentration (lbs/yr)
Valves	Sealed Bellows	All	0	0.00	-	0.00
	SCAQMD Approved I&M Program	Gas / Vapor	10	4.55	45.46	2.27
		Light Liquid (4)	40	4.55	181.83	9.09
		Heavy Liquid (5)		4.55	-	0.00
		> 8 inches			-	0.00
Pumps	Sealless Type	Light Liquid (4)		46.83	0	0.00
	Double Mechanical Seals or Equivalent Seals	Light Liquid (4)	6	46.83	280.95	14.05
	Single Mechanical Seals	Heavy Liquid (5)		46.83	0	0.00
Compressors	Gas / Vapor	1	9.09	9.09	0.45	
Flanges (ANSI 16.5-1988)	All	0	6.99	-	0.00	
Connectors	All		2.86	-	0.00	
Pressure Relief Valves	All	2		-	0.00	
Process Drains with P-Trap or Seal Pot	All	0	9.09	-	0.00	
Other (including fittings, hatches, sight-glasses, and meters)	All	46	9.09	418.12	20.91	
Total Emissions	lbs/year			935.45	46.77	
	lbs/day			2.60	0.13	

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Fugitive components

Total VOC emissions

$$0.67 \text{ lbs/day} + 0.13 \text{ lbs/day} = 0.80 \text{ lbs/day}$$

Because the system currently has emissions of 0.68 lbs/day of ROG and the previous system was calculated at 0.04 lb/day, offsets are now required. After reviewing the NSR for this facility, this facility currently has 1674.12 of ROG emissions, this facility is not eligible for the community bank, therefore Emission Reduction Credits are required.

Offsets required

$$0.80 \text{ lbs/day} \times 1.2 = 0.96 \text{ lbs/day}$$

1 pound of Emission Reduction Credits is required.

The applicant plans to offset these emissions by using the current ERC they have for the facility ERC no. _____

1401 Risk

Because the emissions are higher than in the previous permit to construct, the 1401 risk has increased. In order to calculate the new risk, the toxics from the old risk have been adjusted to reflect the new increase in emissions. The was done be using a ratio between the previous and current VOC emissions. The results are shown below.

Current VOC emissions	0.033	lbs/hr
Previous VOC emissions	0.00168	lbs/hr
Ratio	19.64	Increase

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	previous	Current
	lbs/hr	lbs/hr
Acetone	0.0000171	0.000336
Methyl ethyl ketone	0.000127	0.00249
methy isobutyl ketone	0.0000559	0.001098
disopropyl ether	0.00134	0.0263
isopropyl alcohol	0.00000457	0.0000898
20butanol	0.00000571	0.0001122
methyl tert-butyl-ether	0.0000228	0.000448
butanol-tert	0.0000308	0.000605
btex	0.0000936	0.00184
benzene		
toluene		
tethylbenzene		
xylene		
Total	0.00168038	0.0330

*- For 1401 risk assessment all of the btex will be considered benzene for a worst casa analysis.

Compounds requiring risk assessment

USER DEFINED CHEMICALS AND EMISSIONS				R1 - Uncontrolled	Efficiency Factor	R2 - Controlled
Cmpound Code	Compound	lb/hr	Molecular Weight	lbs/hr	Fraction range 0-1	lbs/hr
m9	Methyl ethyl ketone	2.86E-04	72.12	0.000286		0.000286
i2	Isopropyl alcohol	8.98E-05	60.09	0.0000764		0.0000764
b1	Benzene (including benzene from gasoline) *	1.84E-03	78.11	0.00157		0.00157

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MICR

$$\text{MICR} = \text{CP (mg/(kg-day))}^{-1} * \text{Q (ton/yr)} * (\text{X/Q}) * \text{AFann} * \text{MET} * \text{DBR} * \text{EVF} * 1.E-6 * \text{MP}$$

Compound	Residential	Commercial
Methyl ethyl ketone		
Isopropyl alcohol		
Benzene (including benzene from gasoline) *	5.389E-06	3.01E-07
Total	5.38E-06	3.52E-07
	PASS	PASS

* The emissions for benzene were actually reported as btex, since benzene is the worst case, all btex emissions will be evaluated as benzene.

Hazard Index

$$\text{HIA} = [\text{Q(lb/hr)} * (\text{X/Q})_{\text{max}}] *$$

AF / Acute REL

$$\text{HIC} = [\text{Q(ton/yr)} * (\text{X/Q}) * \text{MET} * \text{MP}] / \text{Chronic REL}$$

Target Organs	Acute	Chronic	Acute Pass/Fail	Chronic Pass/Fail
Alimentary system (liver) - AL			Pass	Pass
Bones and teeth - BN			Pass	Pass
Cardiovascular system - CV			Pass	Pass
Developmental - DEV	1.03E-03	3.09E-03	Pass	Pass
Endocrine system - END			Pass	Pass
Eye	2.20E-04		Pass	Pass
Hematopoietic system - HEM	1.03E-03	3.09E-03	Pass	Pass
Immune system - IMM	1.03E-03		Pass	Pass
Kidney - KID		1.29E-06	Pass	Pass
Nervous system - NS		3.09E-03	Pass	Pass
Reproductive system - REP	1.03E-03		Pass	Pass
Respiratory system - RES	2.20E-04		Pass	Pass
Skin			Pass	Pass

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The HIC and HIA for all compounds pass the screening analysis

For these emissions the following assumptions were made:

EVALUATION

Rule 212 The proposed modifications meet all criteria of Rule 212 for approval. The replaced equipment is designed so it can be expected to operate without emitting air contaminants in violation of sections 417, 41701 and 44300 of the State Health and Safety Code or in Violation of AQMD's Rules and Regulations. The project will result in an emissions decrease, therefore it does not exceed the daily maximum specified in subdivision (g) or Rule 212, and the new and modified permit unit does not have an increased cancer risk. There is no school within 1000 ft. of this project.

Rule 401 **Visible Emissions**
Visible emissions are not expected under normal operating conditions of the tank.

Rule 402 **Nuisance**
No nuisance complaints are expected provided that the operation is conducted according to design. Compliance with 402 is expected.

Rule 1173 Fugitive emissions of volatile organic compounds

This Rule Specifies leak control, identification, operator inspection, maintenance, and record keeping requirements for valves pumps, compressors, pressure relief valves, and other components from which fugitive VOC emissions may emanate. Since this project groundwater bioreactors and associated fugitive components will not contain VOC in excess of 10% by weight, the fugitive components are exempt from the requirements of this rule under rule 1173(1)(1)(D).

Rule 1176 VOC Emissions from wastewater systems

This rule is to limit volatile organic compound (VOC) emissions from waste water systems at the petroleum refineries and industrial facilities. The bioreactor is subject to the emissions limit in 1176(e)(1) which specifies that the wastewater systems and closed vent systems shall not emit VOC emissions to be greater than 500 ppm above background levels. By design, the bioreactor itself will not emit VOC concentration greater than 500 ppm, additionally, the bioreactor will be vented to a carbon adsorber which will further reduce VOC emissions from this system.

Regulation XIII New Source Review

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Rule 1303: Requirements

Rule 1303(a) – Best Available Control Technology

The carbon adsorber vessels venting the bioreactors are considered BACT.

Rule 1303(b)(1) - Modeling

Modeling is not required for VOC emissions.

Rule 1303 (b)(2) – Emissions Offsets

Based on test data submitted by the applicant, there is a 0.67 lb/day increase at the outlet of the carbon adsorber and after applying the 1.2 offset factor a 1 lb/day increase in VOC emissions results and is required to be offset. An Emission Reduction Credit (ERC) has been provided to offset the 1 lb/day VOC emission increase.

Rule 1303 (b)(4) – Facility Compliance

The subject facility complies with all applicable rules and regulations of the District.

Rule 1303 (b)(5) – Major Polluting Facilities

This rule requires that prior to the issuance of a Permit to Construct, that all major stationary sources, as defined in the jurisdiction where the facilities are located, that are owned or operated in the State of California are subject to emission limitations and are in compliance or on a schedule for compliance with all applicable emission limitations and standards under the Clean Air Act. Per letter submitted by the applicant, all facilities in California are in compliance or scheduled for compliance under the Clean Air Act.

Rule 1401 New Source Review of Carcinogenic Air Contaminants

This rule requires permit applicants to assess the cancer risks due to the cumulative emission impacts of new/modified sources in their facility. Based on the above risk assessment this cancer risk for commercial and residential will be less than 1 in a million, and the HIC and HIA will be less than 1, therefore this project will comply with Rule 1401.

Regulation XX – REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)

This facility is a RECLAIM facility. Therefore, it is subject to Reg. XX. This modification does not emit RECLAIM pollutants, therefore there will be no change

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Reg XXX: Title V Permits

The initial Title V permit has been issued for this facility. The RECLAIM/Title V amendment folder is a/n 504109. This groundwater bio-reactor system will be included with two storage tanks (a/n's 501511 and 509406) in the same RECLAIM/Title V amendment. There will be a net overall decrease in emissions from the two tanks and groundwater bioreactor included in this amendment, therefore this amendment will be a minor permit revision. The necessary Title V sections will be amended with the necessary revisions under application no. 504109.

CEQA - California Environment Quality Act.

CEQA requires that the environmental impacts of proposed projects be evaluated and that feasible methods to reduce, avoid or eliminate identified significant adverse impacts of these projects be considered. The CEQA Applicability Form (400-CEQA) indicates that the project does not have any impacts which trigger the preparation of a CEQA document. The expected impacts of the project on the environmental are not significant. Therefore a CEQA analysis is not required.

RECOMMENDATIONS

Based the information submitted and the above evaluation, it is recommended that this equipment should be issued a conditional Permit to Construct.

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APPLICANT	Equilon Enterprises, LLC, Co. Id. 800372
MAILING ADDRESS	20945 S. Wilmington Ave. Carson, CA 90810
EQUIPMENT LOCATION	Same as above

Equipment Description:

Equipment	ID No.	Connected To	RECLAIM Source Type / Monitoring Unit	Emissions and Requirements	Conditions
System 2: INTERNAL FLOATING ROOF TANKS					S13.2
PROCESS 3: STORAGE TANKS					
STORAGE TANK, INTERNAL FLOATING ROOF, NO. 505, 80143 BBL; DIAMETER: 117 FT 3 IN; HEIGHT: 41 FT 10 IN WITH A/N 501511 FLOATING ROOF PAN, RIVETED SHELL PRIMARY SEAL METALLIC SHOE SECONDARY SEAL, RIM MOUNTED	D174				B22.5, C1.37, C6.1, H23.13
STORAGE TANK, INTERNAL FLOATING ROOF, NO. 733, 117302 BBL; DIAMETER: 144 FT 2 IN; HEIGHT: 40 FT 2 IN WITH A/N 509406 FLOATING ROOF PAN, RIVETED SHELL PRIMARY SEAL, METALLIC SHOE SECONDARY SEAL, WIPER TYPE	D355				C1.37, C6.1, E.71.8, H23.13

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- (1) Denotes RECLAIM emission factor
- (2) Denotes RECLAIM emission rate
- (3) Denotes RECLAIM concentration limit
- (4) Denotes BACT emission limit
- (5)(5A)(5B) Denotes command and control emission limit
- (6) Denotes air toxic control rule limit
- (7) Denotes NSR applicability limit
- (8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
- (9) See App B for Emission Limits
- (10) See Section J for NESHAP/MACT requirements
- Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device

S. System Conditions

S13.2

All devices under this system are subject to the applicable requirements of the following rules and regulations.

Contaminant	Rule	Rule/Subpart
VOC	District Rule	463
VOC	District Rule	1149
VOC	District Rule	1178

[RULE 1149 7-14-1995; RULE 1149, 5-2-2008; RULE 1178, 4-7,2006; RULE 463,. 5-6-2005]
 [Systems subject to this condition: Process 3, System 1, 2, 3, 5]

DEVICE CONDITIONS

B. Material/Fuel Type Limits

B22.5

The operator shall not use this equipment with materials having a(n) true vapor pressure of 11 psia or greater under actual operating conditions.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 463, 5-6-2005]
 [Devices subject to this condition : D146, D148, D152, D174, D175, D176, D177, D178, D179, D180, D181, D182, D183, D184, D186, D187, D188, D189, D190, D192, D193, D194, D195, D196, D197, D198, D199, D200, D201, D203, D356, D750]

C. Throughput or Operating Parameter Limits

C1.37 The operator shall limit the throughput to no more than 9.125e + 06 barrels in any one year.

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[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 463, 5-6-2005]

[Devices subject to this condition : D146, D148, D152, D174, D175, D176, D177, D178, D179, D180, D181, D182, D183, D184, D186, D187, D188, D189, D190, D192, D193, D194, D195, D196, D197, D198, D199, D200, D201, D353, D354, D355, D356, D750]

C6.1 The operator shall use this equipment in such a manner the hydrocarbon concentration being monitored, as indicated below, does not exceed 50 percent of the Lower Explosive Limit.

The operator shall use an explosimeter or equivalent device to monitor the hydrocarbon concentration in the vapor space above the floating roof twice a year at 4 to 8 month intervals.

[RULE 463, 5-6-2005, RULE 1178, 4-7,2006]

[Devices subject to this condition : D148, D174, D175, D176, D177, D178, D179, D180, D181, D182, D184, D186, D187, D188, D189, D190, D192, D193, D194, D355, D750]

E. Equipment Operation/Construction Requirements

E.71.8 The operator shall only use this equipment for the storage of any of the following commodities: Alkylate, Diesel Fuel, Denatured Ethanol, Iso-Octane, Jet Fuel, and Gasoline.

[RULE 1303(b)(2)-Offset, 5-10-1996]

[Devices subject to this condition : D355]

H. Applicable Rules

H 23.13 This equipment is subject to the applicable requirements of the following rules or regulations.

Contaminant	Rule	Rule/Subpart
HAPs	40CFR63, SUBPART	R

[Devices subject to this condition : D148, D174, D175, D176, D177, D178, D179, D180, D181, D182, D183, D184, D186, D187, D188, D189, D190, D192, D193, D194, D195, D196, D197, D198, D199, D200, D201, D202, D355, D356, D750]

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BACKGROUND & PROCESS DESCRIPTION

This facility is Title V and Reclaim facility which is primarily a tank storage farm and bulk loading terminal consisting of various size tanks used to store various refinery products and loading racks.

A/N 501511
Device 174

This equipment is for an internal floating roof tank, application no. 501511 was submitted on 8/18/09. The equipment is currently permitted under P/O F19084, A/N 349383, and listed the facility permit as Tank no 505, device id no. D174. This application was submitted for a modification to the tank that was performed in 2001 (this application was filed PO no PC). The tank was modified by replacing the previous aluminum pontoon-type floating roof with a steel pan roof. Other modifications involved changing from a bolted deck-type to a welded deck-type, along with deck fittings and control methods. These changes were made without receiving a permit to construct to modify the tank. Equilon is now submitting this application in order to incorporate the changes into the Facility Permit. Based on the calculations performed by the applicant using the Tank 4.09 program, there is a net overall decrease in emissions for this storage tank.

A/N 509406
Device 355

This application is for an internal floating roof tank (Tank no. 733). When this permit was issued, prior to the facility becoming a RECLAIM facility, only product limit was, "This equipment shall not be used for storing organic liquids having a vapor pressure of 11 PSIA or greater under actual storage conditions." (See permit no. D88739 included in this file.) The original intent of Tank no. 733 was to store many different products with a vapor pressure of equal to or less than that of gasoline (11 psia). When the previous application no. 349434 was consolidated into the RECLAIM permit, the word "gasoline" was added to the equipment description. The equipment description, as currently written in the permit, only allows gasoline to be stored in this tank. Shell would like to change the equipment description, by removing "Gasoline" (which implies only gasoline will be stored in this tank), and for clarification of commodities that can be stored, adding condition no. E71.8 (see below).

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E.71.8 The operator shall only use this equipment for the storage of any of the following commodities: Alkylate, Diesel Fuel, Denatured Ethanol, Iso-Octane, Jet Fuel, and Gasoline.

[RULE 1303(b)(2)-Offset, 5-10-1996]

Alkylate, Diesel Fuel, Denatured Ethanol, Iso-Octane, and Jet Fuel, will be additional products that could be stored in this tank. Based on previous evaluations of these products, all of these products have criteria pollutant emissions and Rule 1401 toxic emissions less than that of gasoline. Therefore by storing these products in the tank, there will be no net increase in criteria pollutants nor Rule 1401 toxic emissions.

Shell would also like to make a correction to the equipment description for Tank no. 733. Currently it states that the shell is a "welded" shell, when actually it is a "riveted" shell. I reviewed the original application for this tank, a/n 258464 and it shows the type of tank is riveted (see old Tank Summary and Rule 463 Compliance Report dated January 4, 1995, both included in this file). This correction has been done as shown above.

EMISSIONS

A/N 501511

Device 174

Given:

24 hours/day

7 days/week

9,125,000 barrels/ year

The consultant for the applicant used the Tanks 4.09 program to calculate the emissions prior to the modification and after the modification. The data used in the program by the consultant has been approved by District permitting staff. The consultant chose the highest month emissions at 11 psia and used it as emissions for each of the 12 months.

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Tanks Program Results

Emissions lbs/yr	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Previous	768.97	594.68	16581.29	8417.52	26362.46
Current	1537.94	594.68	6912.66	0	9045.28
Difference	768.97	0	-9668.63	-8417.52	-17317.18

Monthly Emissions Based on the Highest Emissions Month.

	Monthly	Daily	30 day/ave*	Hourly
	lbs/mo	lbs/day	lbs/day	lbs/hr
Previous	2196.87	73.23	74.25	3.05
Current	753.77	25.13	25.47	1.05
Difference	-1443.10	-48.10	-48.77	-2.00

* 30 day/ave = daily x 365 days/360 days

A/n 509406

Device 355

Given:

24 hours/day

7 days/week

9,125,000 barrels/ year

There will be no changes to the throughput or emissions coming from this equipment, therefore the emissions will be the same as in the previous application. There is AEIS data and NSR data entered in the previous application and this same data will be used for this application, see below.

AEIS data from previous application

ROG

R1 = 2.6 lbs/day

R2 = 2.6 lbs/day

New Source Review

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Monthly Emissions Based on the Highest Emissions Month.

ROG	Hourly	Daily	30 day/ave	Annual
	lbs/hr	lbs/day	lbs/day	lbs/yr
R1	5.12	122.88	124.80	44,728.32
R2	5.12	122.88	124.80	44,728.32

1401 Toxics

There is no increase in toxic emissions as a result of these changes, no health risk assessment is required.

EVALUATION

Rule 212 The proposed changes meet all criteria of Rule 212 for approval. The equipment is designed so it can be expected to operate without emitting air contaminants in violation of sections 417, 41701 and 44300 of the State Health and Safety Code or in Violation of AQMD's Rules and Regulations. The project will result in an overall decrease emissions, therefore it will continue not exceed the daily maximum specified in subdivision (g) or Rule 212, and the new and modified permit unit does not have an increased cancer risk. There is no school within 1000 ft. of this project.

Rule 401 **Visible Emissions**
Visible emissions are not expected under normal operating conditions of the tanks.

Rule 402 **Nuisance**
No nuisance complaints are expected provided that the operation is conducted according to design. Compliance with 402 is expected.

Rule 463 **Organic Liquid Storage**

This rule applies to any above ground tank with a capacity of 19,815 gallons or greater for storing organic liquids. Internal Floating roof tanks are subject to the requirement of Rule 463 (d) – Other Performance Requirements. Continued compliance with Rule 463 is expected with proper record keeping and inspections.

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Regulation IX – NEW SOURCE PERFORMANCE STANDARDS

40 CFR 60 Subpart K Standards of Performance for Storage Vessels for Petroleum Liquids.

Subparts K, Ka, and Kb impose requirements for petroleum liquids storage vessels built after June 11, 1973. These storage tanks were constructed prior to this date, there will be no increase in emissions due to this modification therefore, these regulations do not apply.

40 CFR 63 Subpart R Standards of Performance for Gasoline Distribution Facilities

This equipment currently complies and will continue to comply with this rule.

Rule 1149 Storage Tank Cleaning and Degassing

This Rule has requirements for tank cleaning and degassing operations. Emissions from above ground tanks are required to be controlled by one of the following methods: liquid balance, negative pressure displacement and subsequent incinerations, vapor condensation with a refrigeration system, or any other method which controls VOC by at least 90%. A permit condition requires continued compliance with this rule.

Rule 1173 Fugitive Emissions of Volatile Organic Compounds

This Rule specifies leak control, identification, operator inspection, maintenance, and recordkeeping requirements for valves pumps, compressors, pressure relief valves, and other components from which fugitive VOC emissions may emanate. Based on the information provided in this application, this equipment will comply with this rule.

Rule 1178 Further reductions of VOC from Storage Tanks at Petroleum Refineries

This Rule applies to facilities with VOC emissions that exceed 20 tons per year. After reviewing the 2006 AER emissions, the emissions exceeded 20 tons per year therefore these tank are required to comply with this rule. Based on reviewing data submitted by the applicant, these tanks will continue to meet these and all of the other requirements of this Rule.

Rule 1303: Requirements

Rule 1303(a) – Best Available Control Technology

Since there are no increases in emissions from these tanks, BACT is not triggered for this equipment..

Rule 1303(b)(1) - Modeling

Modeling is not required for VOC emissions.

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Rule 1303 (b)(2) – Emissions Offsets

Since there is no increase in emissions, offsets are not required.

Rule 1303 (b)(4) – Facility Compliance

The subject facility complies with all applicable rules and regulations of the District.

Rule 1401 – New Source Review of Carcinogenic Air Contaminants

This rule requires permit applicants to assess the cancer risks due to the cumulative emission impacts of new/modified sources in their facility. Since there is no increase in Toxic Air Contaminants, the project is exempt from Rule 1401 assessment.

Regulation XVII – REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)

This facility is a RECLAIM facility. Therefore, it is subject to Reg. XX. This modification does not emit RECLAIM pollutants, therefore there will be no changes from its current status.

Reg XXX: Title V Permits

The initial Title V permit has been issued for this facility. The RECLAIM/Title V amendment folder is a/n 504109. These two tanks will be included with a groundwater bio-reactor system (a/n 504107) in the same RECLAIM/Title V amendment. There will be a net overall decrease in emissions from the two tanks and groundwater bioreactor included in this amendment, therefore this amendment will be a minor permit revision. The necessary Title V sections will be amended with the necessary revisions under application no. 504109.

CEQA – California Environment Quality Act.

CEQA requires that the environmental impacts of proposed projects be evaluated and that feasible methods to reduce, avoid or eliminate identified significant adverse impacts of these projects be considered. The CEQA Applicability Form (400-CEQA) indicates that the project does not have any impacts which trigger the preparation of a CEQA document. The expected impacts of the project on the environment are not significant. Therefore a CEQA analysis is not required.

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RECOMMENDATIONS

Based the information submitted and the above evaluation, it is recommended that this equipment should be issued a conditional Permit to Operate and issued in Section D of the Title V/RECLAIM Permit