

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 9	PAGE 1
ENGINEERING AND COMPLIANCE	APPL. NO 466121,466122 & 466123	DATE 4/23/2009
ENGINEERING EVALUATION AND REPORT	PROCESSED BY CL02	REVIEWED BY <i>MPH</i>

**PERMIT TO OPERATE**  
Cooling Towers (Existing Equipment Without Permit)  
and  
Facility Permit Revision

**APPLICANT'S NAME:** OWENS CORNING ROOFING AND ASPHALT, LLC  
(Fac. ID 35302)

**MAILING ADDRESS:** 1501 NORTH TAMARIND AVE.  
COMPTON, CA 90222

**EQUIPMENT LOCATION:** 1501 NORTH TAMARIND AVE.  
COMPTON, CA 90222

**EQUIPMENT DESCRIPTION (Facility Permit)**

See facility permit and following descriptions:

**Application 466121**

Application to reissue Reclaim Facility Permit with the additions below.

**Application 466122 (Permit to operate to an existing cooling tower without permit)**

Process 3: ASPHALT ROOFING MANUFACTURING					
Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions	Conditions
COOLING TOWER NO. 2, ASHPHALT ROOFING MANUFACTURING, BALTIMORE AIRCOIL , MODEL VTO-163-OC, ONE CELL, 12' L., 4'- 9"W, 13'-3" H., MAX RECIRCULATION 370 GPM.	D157			PM:5,NONE, 0.018,LBPER24HR	B.27.2, C.1.4

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**Application 466123 (Permit to operate to an existing cooling tower without permit)**

Process 1: ASPHALT MANUFACTURING					
Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions	Conditions
COOLING TOWER NO. 1, ASHPHALT MANUFACTURING, BALTIMORE AIRCOIL , MODEL 3547-HX, ONE CELL, 20' L., 9'- 9"W, 11'-4" H., MAX RECIRCULATION 332 GPM.	D156			PM:5,NONE, 0.034,LBPER24HR	B.27.1, C.1.2, C.1.3

**BACKGROUND**

Owens Corning, a Title V, and RECLAIM (NOx and SOx) facility, id #35302, filed application Nos. 466121, 466122 and 466123 on March 6, 2007. Application 466122 and 466123 were filed for two existing cooling towers: No.2 is used for asphalt roofing production line and No.1 is used for asphalt production line, respectively. The addition of these two cooling towers to the facility will be included in Application 466121 which was filed for a De minimus Significant Revision of the Facility Permit previously amended under Application No. 465078.

**Application 466122**

**PROCESS DESCRIPTION**

A/N 466122 (Cooling Tower No.2, Device D157)) is used to provide cooling during the asphalt roofing production process. Special heat resistant material (fiberglass mat) is coated with liquid asphalt (coating-asphalt with limestone) and aggregate materials (roofing granules and black dust) to produce asphalt roofing shingles. Water is sprayed onto the shingle sheet and circulated through cooling rolls to cool the sheet prior to shingles being cut. The water is then circulated through the cooling tower to be used again. This cooling tower circulates the water 4 cycles before being sent down the drain.

**OPERATION SCHEDULE**

**Maximum and Average:** 24 hrs/day, 7 days/wk, 52 wks/yr

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## EMISSION CALCULATIONS

*Data Provided by the Applicant and Manufacturer as below:*

Model:	VTO-163-OC
Materials of Construction:	Galvanized Steel
Cycles of Concentration:	4
Drift Factor:	0.005 %
Blowdown:	7,200 gals/day (5 gpm)
Water Evaporation Rate:	17,280 gals/day (12 gpm)
Make-Up Water:	23,599 gals/day (16.39 gpm)
Maximum cooling tower circulation rate: (all cells in tower)	370 gpm
Density of Water:	8.334 lbs/gal
Operating Time:	1440 mins/day (24 hrs/day)
Total Dissolved Solids circulating water:	196 ppm (see Table 1, lab analysis report)

### Lab Analysis Report

The emissions of particulate matter are generated when water droplets are emitted from the cooling tower. The water contains dissolved solids which are then emitted along with the water droplets. A laboratory analysis of the water sample from the Cooling Tower was performed and reported by Enviro-Chem, Inc. on 10/06/06. The purpose of the test is to determine the total dissolved solids (TDS) and to identify any air toxics, with the result, PM emissions and hazardous risk assessment can be determined. A copy of the lab analysis report is included for details. Table 1 is the summary of the analysis results.

**Table 1 Cooling Tower Water Sampling Analysis Report for Cooling Tower (VTO-163-OC)  
—Asphalt Plant**

Pollutants/Chemicals	Quantities Found, mg/liter
Total Dissolved Solids (TDS)	196
Soluble Sulfide	<0.01
Chromium Total	<0.01
Chromium VI	<0.02
Chromium III	<0.01

### **PM10 Emission Calculations**

To determine PM10 emissions from this cooling tower, we assume total dissolved solids (TDS) is the maximum amount of PM10. TDS shall represent PM or PM10.

#### **Drift:**

$$\text{Drift} = \text{Circulate Rate} \times \text{drift (\%)} / 100$$

$$\text{Drift} = 370 \times 0.005\% = 0.0185 \text{ gpm}$$

$$\begin{aligned} \text{Drift} &= \text{Drift (gpm)} \times \text{Operating time (mins/day)} \times \text{Density of water (lbs/gal)} \\ &= (0.0185 \text{ gpm}) \times (1440 \text{ min/day}) \times (8.334 \text{ lbs/gal}) \\ &= 222.02 \text{ lbs/day} \\ &= (222.02 \text{ lbs/day}) \times (365 \text{ days/yr}) \\ &= 81,036.48 \text{ lbs/yr} \end{aligned}$$

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**PM10:**

$$\begin{aligned}
 \text{PM10} &= [\text{Drift (lbs/yr)} \times \text{TDS Concentration in Circulating Water (ppm)}] / 1,000,000 \\
 &= [81,036.48 \text{ lbs/yr} \times 196 \text{ ppm}] / 1,000,000 \\
 &= \mathbf{15.88 \text{ lbs/yr}} \\
 &= (15.88 \text{ lbs/yr}) \times (1\text{yr}/365 \text{ days}) \\
 &= \mathbf{0.044 \text{ lb/day}}
 \end{aligned}$$

**For AEIS:**

$$\begin{aligned}
 \text{R1 (uncontrolled emissions)} &= \text{R2 (controlled emissions)} \\
 \text{R1} = \text{R2} &= 0.044 \text{ lbs/day} \times 1 \text{ days}/24 \text{ hrs} = \mathbf{0.00183 \text{ lb/hr}}
 \end{aligned}$$

**For NSR:**

$$\begin{aligned}
 \text{AV30} &= \text{R2} \times 24 \text{ hrs/day} \times 7 \text{ days/wk} \times 4.33 \text{ wks/mon} \times 1 \text{ mon}/30 \text{ days} \\
 &= 0.00183 \text{ lb/hr} \times 24 \text{ hrs/day} \times 7 \text{ days/wk} \times 4.33 \text{ wks/mon} \times 1 \text{ mon}/30 \text{ days} \\
 &= 0.044 \text{ lb/day} = \mathbf{0 \text{ lb/day}}
 \end{aligned}$$

**Table 2 NSR DATA for PM10**

AEIS		NSR
R1, lb/hr	R2, lb/hr	30 Day Average, lb/day
0.0018	0.0018	0

**Rule 1401 Risk Assessment**

Chromium VI (Cas No. 18540-29-9) is identified as a toxic air contaminant as screened against Table 1, Rule 1401, amended March 4, 2005.

**Emission Calculation**

Lab test found out that total chromium, Cr III and Cr VI are less than reporting limits. The Cr VI should not be more than total chromium, so the concentration of total chromium concentration is used for representing Cr VI concentration for evaluation of Rule 1401. According to the District policy on test result, a non-detect from one sample should be treated as half the limit. The total chromium concentration should be half of 0.01 mg/liter or 0.005 mg/liter.

$$\begin{aligned}
 \text{Chromium VI concentration in circulating water (mg/liter)} \\
 &= \text{total chromium concentration (mg/liter)} \times \text{cycles of concentration} \\
 &= 0.005 \text{ mg/liter} \times 1 \text{ cycle of concentration} = 0.005 \text{ mg/liter}
 \end{aligned}$$

$$\begin{aligned}
 \text{Chromium VI emissions} &= \text{Chromium concentration in circulating water (mg/liter)} \times \text{Drift (gpm)} \times \\
 &\quad (3.785 \text{ liter/gal}) \times (\text{g}/1000 \text{ mg}) \times (60 \text{ mins}/\text{hr}) \times (1 \text{ lb}/454 \text{ g}) \\
 &= (0.005) \times (0.0185) \times (3.785) \times (1/1000) \times (60) \times (1/454) \\
 &= \mathbf{4.63 \times 10^{-8} \text{ lb/hr}}
 \end{aligned}$$

There is no control device for this cooling tower, so controlled emissions shall be the same as uncontrolled emissions, which is  $4.63 \times 10^{-8}$  lb/hr.

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### Screening Result

Given Data for VTO-163-OC model,

Source:	Point
Stack Height:	13.25 feet
Distance to nearest resident:	325 feet (99.06 meters)
Distance to nearest commercial:	275 feet (83.82 meters)

The emissions of chromium meet the Tier I screening level (see attached spreadsheet for risk assessment). Cooling Tower No. 2 is expected to comply with Rule 1401.

### Application 466123

### PROCESS DESCRIPTION

A/N 466123 (Cooling Tower No.1, Device D156) is used to provide cooling during the asphalt manufacturing process. Cooling water is pumped through water jackets fitted to the asphalt converters to help control the oxidation process and through the knockout pots to help condense out moisture and oil prior to the fumes being incinerated. This cooling tower circulates the water 4 cycles before being sent down the drain.

### OPERATION SCHEDULE

**Maximum:** 24 hrs/day, 7 days/wk, 52 wks/yr

**Average:** 12 hrs/day, 7 days/wk, 52 wks/yr

### EMISSION CALCULATIONS

*Data Provided by the Applicant and Manufacturer as below:*

Model:	3547-HX
Materials of Construction:	Galvanized Steel
Cycles of Concentration:	4
Drift Factor:	0.005%
Blowdown:	7,200 gals/day (5gpm)
Water Evaporation Rate:	16,399 gals/day (11.39 gpm)
Make-Up Water:	23,599 gals/day (16.39 gpm)
Maximum cooling tower circulation rate: (all cells in tower)	332 gpm
Density of Water:	8.334 lbs/gal
Operating Time:	1440 mins/day (24 hrs/day)
Total Dissolved Solids circulating water:	818 ppm (see Table 1, lab analysis report)

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Lab Analysis Report

The emissions of particulate matter are generated when water droplets are emitted from the cooling tower. The water contains dissolved solids which are then emitted along with the water droplets. A laboratory analysis of the water sample from the Cooling Tower was performed and reported by Enviro-Chem, Inc. on 10/06/06. The purpose of the test is to determine the total dissolved solids (TDS) and to identify any air toxics, with the result, PM emissions and hazardous risk assessment can be determined. A copy of the lab analysis report is included for details. Table 3 is the summary of the analysis results.

**Table 3 Cooling Tower Water Sampling Analysis Report for Cooling Tower (3547-HX)  
—Asphalt Plant**

Pollutants/Chemicals	Quantities Found, mg/liter
Total Dissolved Solids (TDS)	818
Soluble Sulfide	<0.01
Chloride	535
Sodium	431

**PM10 Emission Calculations**

To determine PM10 emissions from this cooling tower, we assume total dissolved solids (TDS) is the maximum amount of PM10. TDS shall represent PM or PM10.

**Drift:**

$$\text{Drift} = \text{Circulate Rate} \times \text{drift (\%)} / 100$$

$$\text{Drift} = 332 \times 0.005\% = 0.0166 \text{ gpm}$$

$$\begin{aligned} \text{Drift} &= \text{Drift (gpm)} \times \text{Operating time (mins/day)} \times \text{Density of water (lbs/gal)} \\ &= (0.0166 \text{ gpm}) \times (1440 \text{ min/day}) \times (8.334 \text{ lbs/gal}) \\ &= 199.21 \text{ lbs/day} \\ &= (40 \text{ lbs/day}) \times (365 \text{ days/yr}) \\ &= 72,713.8 \text{ lbs/yr} \end{aligned}$$

**PM10:**

$$\begin{aligned} \text{PM10} &= [\text{Drift (lbs/yr)} \times \text{TDS Concentration in Circulating Water (ppm)}] / 1,000,000 \\ &= [72,713.8 \text{ lbs/yr} \times 818 \text{ ppm}] / 1,000,000 \\ &= 59.48 \text{ lbs/yr} \\ &= (59.48 \text{ lbs/yr}) \times (1\text{yr}/365 \text{ days}) \\ &= 0.163 \text{ lbs/day} \end{aligned}$$

**For AEIS:**

$$R1 \text{ (uncontrolled emissions)} = R2 \text{ (controlled emissions)}$$

$$R1 = R2 = 0.163 \text{ lbs/day} \times 1 \text{ days}/24 \text{ hrs} = 0.0068 \text{ lb/hr}$$

**For NSR:**

$$\begin{aligned} \text{AV30} &= R2 \times 24 \text{ hrs/day} \times 7 \text{ days/wk} \times 4.33 \text{ wks/mon} \times 1 \text{ mon}/30 \text{ days} \\ &= 0.0068 \text{ lb/hr} \times 24 \text{ hrs/day} \times 7 \text{ days/wk} \times 4.33 \text{ wks/mon} \times 1 \text{ mon}/30 \text{ days} \\ &= 0.165 \text{ lb/day} = 0 \text{ lb/day} \end{aligned}$$

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**Table 4 NSR DATA for PM10**

AEIS		NSR
R1, lb/hr	R2, lb/hr	30 Day Average, lb/day
0.0068	0.0068	0

**Rule 1401 Risk Assessment**

Soluble sulfide, chloride and sodium found in the water sampling from the cooling tower are not toxic air contaminant as screened against Table 1, Rule 1401, amended March 4, 2005. Cooling Tower No. 1 is expected to comply with Rule 1401.

**RULES AND REGULATIONS EVALUATION**

Operation of Cooling Towers No.1 and No.2 are expected to comply with all applicable District rules and regulations. Specific compliance with the following rules is as follows:

- Rule 401 Visible Emissions**  
With proper operation of this equipment, compliance is expected.
- Rule 402 Nuisance**  
With proper operation of this equipment, compliance is expected.
- Rule 404 Particular Matter –Concentration**  
The particulate matter released from the cooling tower is not discharged in gaseous form. Therefore, this rule does not apply.
- Rule 405 Particular Matter –Weight**  
Cooling Tower NO.2 will circulate water at a rate of 332 gallons per minutes or 166,013 lbs per hour and will result in an emission rate of 0.0068 lb of particulate matter per hour, which is much less than the rule limit-18.9 lbs per hour. Therefore, this cooling tower will be in compliance with this rule.

Cooling Tower No.2 (A/N 466122)		Rule 405	
Process Weight	Particulate Matter Emission Rate	Process Weight	Max. Discharge Rate for Solid Particulate Matter
166,013 lbs/hr	0.0068 lb/hr	154,300 lbs/hr	18.9 lbs/hr
		176,400 lbs/hr	19.5 lbs/hr

Cooling Tower NO.1 will circulate water at a rate of 370 gallons per minutes or 185,015 lbs per hour and will result in an emission rate of 0.0018 lb of particulate matter per hour, which is much less than the rule limit-18.9 lbs per hour. Therefore, this cooling tower will be in compliance with this rule.

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Cooling Tower No.1 (A/N 466123)		Rule 405	
Process Weight	Particulate Matter Emission Rate	Process Weight	Max. Discharge Rate for Solid Particulate Matter
185,015 lbs/hr	0.0018 lb/hr	176,400 lbs/hr	19.5 lbs/hr
		198,400 lbs/hr	20.1 lbs/hr

**Reg. 13 New Source Review**

**1303(a): BACT** is triggered whenever construction of new equipment results in a net emission increase of at least 1.0 lb/day of any criteria pollutant. The emissions from each cooling tower is particulate matter and is zero pound per day, therefore BACT is not applied to any one of the two cooling towers.

**1303(b)(1) & (2): Modeling and Offsets**—does not apply.

**Rule 1401 New Source Review of Toxic Air Contaminants**

Laboratory analysis reporting on the cooling tower water sample showed that non-detection for the toxic measured. Therefore, compliance is expected.

**Reg. 20 RECLAIM**

These two cooling towers do not emit RECLAIM pollutants.

**Reg. 30 Title V**

Rule 300(b)(6) defines a "De Minimis Significant Permit Revision" as any Title V permit revision where the cumulative emission increases on non-RECLAIM pollutants or hazardous air pollutants from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

Air Contaminant	Daily Maximum, lbs/day
HAP	30
VOC	30
NOX	40
PM10	30
SOX	60
CO	220

The two cooling towers will result in a total PM10 emission increases of 0.209 lb/day (= 0.165 + 0.044) which is negligible, the facility PTE of PM10 does not change after adding two cooling towers. This level of emissions would be classified as a De Minimus Significant Permit Revision.

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**New Source Review (NSR) Potential to Emit (PTE)**

**Table 5 PTE**

Emitter	PTE, lb/day		
	Before current applications	After current applications	Change in Emissions
CO	163.24	163.24	0
NOx	196.36	196.36	0
PM10	150.72	150.93	0.21
ROG	55.24	55.24	0
SO <sub>x</sub>	0	0	0

**RECOMMENDATION**

The proposed project that operation of two cooling towers (A/Ns 466122 and 466123) is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a "De Minimis Significant Permit Revision", it is exempt from the public participation requirements under Rule 3006(b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 300(j). If EPA does not have any objections within the review period, a revised Title V permit will be issued to this facility with the following permit condition changes:

**CONDITIONS**

**DEVICE D157 (A/N 466122)**

- B 27.2 THE OPERATOR SHALL NOT USE MATERIALS CONTAINING ANY TOXIC AIR CONTAMINANTS (TACs) IDENTIFIED IN THE SCAQMD RULE 1401, AS AMENDED 03-04-2005.
- C1.4 THE OPERATOR SHALL LIMIT THE MATERIAL PROCESSED TO NO MORE THAN 370 GALLONS PER MINUTE. FOR THE PURPOSE OF THIS CONDITION, MATERIAL PROCESSED SHALL BE DEFINED AS MAXIMUM COOLING TOWER WATER CIRCULATION RATE.

**DEVICE D156 (A/N 466123)**

- B 27.1 THE OPERATOR SHALL NOT USE MATERIALS CONTAINING ANY TOXIC AIR CONTAMINANTS (TACs) IDENTIFIED IN THE SCAQMD RULE 1401, AS AMENDED 03-04-2005.
- C1.3 THE OPERATOR SHALL LIMIT THE MATERIAL PROCESSED TO NO MORE THAN 332 GALLONS PER MINUTE. FOR THE PURPOSE OF THIS CONDITION, MATERIAL PROCESSED SHALL BE DEFINED AS MAXIMUM COOLING TOWER WATER CIRCULATION RATE.



**TIER 1 SCREENING RISK ASSESSMENT**

Receptor Distance (actual)	84
Receptor Distance (for X/Q lookup)	50

Tier 1 Results	
Cancer/Chronic ASI	Acute ASI
6.89E-01	
PASSED	PASSED

**APPLICATION SCREENING INDEX CALCULATION**

Compound	Average Annual Emission Rate (lbs/yr)	Max Hourly Emission Rate (lbs/hr)	Cancer / Chronic Pollutant Screening Level (lbs/yr)	Acute Pollutant Screening Level (lbs/hr)	Cancer / Chronic Pollutant Screening Index	Acute Pollutant Screening Index (PSI)
Chromium, hexavalent	4.04E-04	4.63E-08	5.87E-04		6.89E-01	

**TOTAL (APPLICATION SCREENING INDEX)**

**6.89E-01**

Oct. 11. 2005 12:27PM

ENVIRO-CHEM. INC.

SN. 186087 P. 2/2/06

Enviro - Chem, Inc.  
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 890-5805 Fax (909) 890-5807

LABORATORY REPORT

CUSTOMER: Owens Corning Compton Roofing  
P.O. BOX 5565  
Compton, CA 90224  
Tel (310) 631-5131 X3337 Fax (310) 631-1681

DISB

PROJECT: Cooling Tower Water Sampling Analysis-Asphalt Plant

NO. 1

DATE SAMPLED: 10/03/06 DATE RECEIVED: 10/03/06  
MATRIX: WATER DATE ANALYZED: 10/03-05/06  
REPORT TO: Mr. JACK IRON DATE REINVESTED: 10/06/06

SAMPLE I.D.: Asphalt Plant LAB I.D.: 061003-21

CODE	PARAMETER	REPORTING LIMIT	REPORTING UNIT	TEST RESULTS	EPA TEST METHOD
252	SOLUBLE SOLIDS	0.01	MG/L	40.01	276.3
403	TOTAL COD	5	MG/L	<5	410.4
---	DISSOLVED SOLIDS	1	MG/L	B18	160.1
---	CHLORIDE	1	MG/L	535	128.3
---	SODIUM (Na)	0.10	MG/L	433	300.4

COMMENTS  
\* : SAMPLING METHOD  
< = LESS THAN  
MG/L = MILLIGRAM PER LITER = PPM  
DEG. C = DEGREE CELSIUS  
UMHOS/CM = MICRO-HOS PER CENTIMETER  
COD = CHEMICAL OXYGEN DEMAND

DATA REVIEWED AND APPROVED BY: [Signature]  
LOS ANGELES COUNTY SANITATION DISTRICT LAB ID CODE: 10200  
CAL-DES SLAP CERTIFICATE No.: 1555

Oct. 11. 2006 12:27PM

ENVIRO-CHEM, INC.

No. 1860 P. 3/86

Enviro - Chem, Inc.  
1214 E. Lexington Avenue, Pomona, CA 91768 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Owens Corning Compton Roofing  
P.O. BOX 8665  
Compton, CA 90224  
Tel (310) 631-5131 X2337 Fax (310) 631-9691

D156

PROJECT: Cooling Tower Water Sampling Analysis-Asphalt Plant  
DATE SAMPLED: 10/03/06 DATE RECEIVED: 10/03/06  
MATRIX: WATER DATE ANALYZED: 10/03/06  
REPORT TO: Mr. JACK IGOR DATE REPORTED: 10/06/06

SAMPLE I.D.: Asphalt Plant LAB I.D.: 061003-21

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 8030B/8240B, PAGE 2 OF 2  
UNIT: ug/L = MICROGRAM PER LITER = PPM

PARAMETER	SAMPLE RESULT	POL #1
ACETONE	ND	10
BENZENE	ND	1
BROMOBENZENE	ND	1
BROMOCHLOROBENZENE	ND	1
BROMODICHLOROBENZENE	ND	1
BROMOBENZENE	ND	1
BROMODIBENZENE	ND	10
1-METHANOL (MEK)	ND	1
N-BUTYL BENZENE	ND	1
ISOPENTANE	ND	1
HEXANE	ND	5
CARBON DISULFIDE	ND	1
CARBON TETRACHLORIDE	ND	1
CHLOROBENZENE	ND	1
CHLOROETHANE	ND	1
CHLOROETHANE	ND	1
CHLOROPENTANE	ND	1
2-CHLOROPENTANE	ND	1
4-CHLOROPENTANE	ND	1
DIBROMODICHLOROBENZENE	ND	1
1,1-DIBROMO-2-CHLOROPROPANE	ND	1
1,2-DIBROMOETHANE	ND	1
DIBROMOETHANE	ND	1
1,2-DICHLOROBENZENE	ND	1
1,1-DICHLOROBENZENE	ND	1
1,4-DICHLOROBENZENE	ND	1
DICHLORODIFLUOROMETHANE	ND	1
1,1-DICHLOROETHANE	ND	1
1,2-DICHLOROETHANE	ND	1
1,1-DICHLOROETHANE	ND	1
CIS-1,2-DICHLOROETHANE	ND	1
TRANS-1,2-DICHLOROETHANE	ND	1
1,2-DICHLOROPROPANE	ND	1
1,1-DICHLOROPROPANE	ND	1

..... TO BE CONTINUED ON PAGE #1 .....

DATA REVIEWED AND APPROVED BY: 

Oct. 11. 2006 12:27PM

ENVIRO-CHEM, INC.

No. 18607 P. 4/06

**Enviro - Chem, Inc.**  
 1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 860-5303 Fax (909) 860-5307

**LABORATORY REPORT**

**CUSTOMER:** Owens Corning Compton Handling  
 P.O. BOX 8688  
 Compton, CA 90224  
 Tel (310) 631-5131 X3237 Fax (310) 631-9681

D156

**PROJECT:** Cooling Tower Water Sampling Analysis - Asphalt Plant  
**DATE SAMPLED:** 10/03/06 **DATE RECEIVED:** 10/03/06  
**MATRIX:** WATER **DATE ANALYSED:** 10/03/06  
**REPORT TO:** Mr. JACK IGOR **DATE REPORTED:** 10/06/06

**SAMPLE I.D.:** Asphalt Plant **LAB I.D.:** 061003-21

**ANALYSIS:** VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2  
**UNIT:** µG/L = MICROGRAM PER LITER - PPB

PARAMETER	SAMPLE RESULT	PQL XL
2,2-DICHLOROPROpane	ND	1
1,1-DICHLOROPROpane	ND	1
CIS-1,2-DICHLOROPROpane	ND	1
TRANS-1,2-DICHLOROPROpane	ND	1
BENZOENE	ND	1
2-HEXANONE	ND	10
BROMOCHLOROETHANE	ND	1
1,1-DIBROMOETHANE	ND	1
4-1,1-DIBROMOETHANE	ND	1
1-METHYL-2-BROMOETHANE (MIBK)	ND	10
METHYL tert-BUTYL ETHER (MTBE)	ND	1
METHYLENE CHLORIDE	ND	1
NAPHTHALENE	ND	1
N-PROPYLBENZENE	ND	1
STYRENE	ND	1
1,1,1,2-TETRACHLOROETHANE	ND	1
1,1,1,2-TETRACHLOROETHANE	ND	1
TETRACHLOROETHENE (PCE)	ND	1
TOLUENE	ND	1
1,2,3-TRICHLOROETHENE	ND	1
1,2,4-TRICHLOROETHENE	ND	1
1,1,1-TRICHLOROETHANE	ND	1
1,1,2-TRICHLOROETHANE	ND	1
TRICHLOROETHENE (TCE)	ND	1
TRICHLOROETHYLENE	ND	1
1,2,3-TRICHLOROETHANE	ND	1
1,2,4-TRIMETHYLBENZENE	ND	1
1,3,5-TRIMETHYLBENZENE	ND	1
VINYL CHLORIDE	ND	1
M/P-XYLENE	ND	2
O-XYLENE	ND	1

**COMMENTS:** PQL = PRACTICAL QUANTIFICATION LIMIT  
 ND = NON-DETECTED OR BELOW THE PQL  
 DATA REVIEWED AND APPROVED BY:   
 CAL-DEE CERTIFICATE # 1555

Oct. 11. 2006, 12:28PM

ENVIRO-CHEM, INC.

9eNo. 186077 P. 5/2/05

Enviro - Chem, Inc.  
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 500-5903 Fax (909) 530-5907

LABORATORY REPORT

CUSTOMER: Owens Corning Compton Roofing  
P.O. BOX 5665  
Compton, CA 90224  
Tel (310) 631-5131 x3337 Fax (310) 631-9681

DIF7

PROJECT: Cooling Tower Water Sampling Analysis-Roofing Plant

No. 2

DATE SAMPLED: 10/03/06  
MATRIX: WATER  
IMPORT TO: Mr. JACK YGGE

DATE RECEIVED: 10/03/06  
DATE ANALYZED: 10/03-04/06  
DATE REPORTED: 10/06/06

SAMPLE I.D.: Roofing plant

TAR T.D.: 061003-20

CODE	PARAMETER	REPORTING LIMIT	REPORTING UNIT	TEST RESULTS	EPA TEST METHOD
252	SOLUBLE SOLIDS	0.01	MG/L	<0.01	816.2
402	TOTAL COD	5	MG/L	<5	810.4
---	DISSOLVED SOLIDS	1	MG/L	196	160.2
---	CHROMIUM, TOTAL	0.01	MG/L	<0.01	200.7
---	CHROMIUM, VI	0.01	MG/L	<0.01	7136A
---	CHROMIUM, III	0.01	MG/L	<0.01	200.7

COMMENTS

\* : SAMPLING METHOD  
< = LESS THAN  
MG/L - MILLIGRAM PER LITER = PPM  
COD - CHEMICAL OXYGEN DEMAND

DATA REVIEWED AND APPROVED BY:   
LOS ANGELES COUNTY SANITATION DISTRICT LAB ID CODE: 10200  
CAL-DHS K1A? CERTIFICATE No.: 1955

Oct. 11. 2006 12:28PM

ENVIRO-CHEM, INC.

No. 1860 P. 6/23/05

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 680-6905 Fax (909) 690-6907

LABORATORY REPORT

2157

CUSTOMER: Owens Corning Compton Roofing
P.O. BOX 5655
Compton, CA 90224
Tel (310) 631-5131 X3337 Fax (310) 631-9681

PROJECT: Cooling Tower Water Sampling Analysis-Roofing Plant
DATE SAMPLED: 10/03/06 DATE RECEIVED: 10/03/06
MATRIX: WATER DATE ANALYZED: 10/03/06
REPORT TO: Mr. JACK KROE DATE REPORTED: 10/06/06

SAMPLE I.D.: Roofing Plant LAB I.D.: 061003-20

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
UNIT: ug/L - MICROGRAM PER LITER & PPM

Table with 3 columns: PARAMETER, SAMPLE RESULT, and PPT. XI. Lists various chemical compounds such as ACETONE, BENZENE, and CHLOROBENZENE with their respective results (ND) and ppt values.

----- TO BE CONTINUED ON PAGE 02 -----

DATA REVIEWED AND APPROVED BY: [Signature]

Oct. 11. 2006 12:28PM

ENVIRO-CHEM. INC.

No. 186087 P. 784/85

**Enviro - Chem, Inc.**

1214 E. Lexington Avenue, Pomona, CA 91768 Tel (909) 890-6905 Fax (909) 890-8907

**LABORATORY REPORT**

**CUSTOMER:** Owens Corning Compton Roofing  
 P.O. BOX 9665  
 Compton, CA 90224  
 Tel (310) 631-5131 Ext 337 Fax (310) 631-9161

**PROJECT:** Cooling Tower Water Sampling Analysis - Roofing Plant  
**DATE SAMPLED:** 10/03/06 **DATE RECEIVED:** 10/03/06  
**MATRIX:** WATER **DATE ANALYSED:** 10/03/06  
**REPORT TO:** MR. JACK LOOK **DATE REPORTED:** 10/06/06

D157

**SAMPLE I.D.:** Roofing Plant **LAB I.D.:** 061003-20

**ANALYSIS:** VOLATILE ORGANICS, EPA METHOD 8030B/8260A, PAGE 2 OF 2  
 UNIT: ug/L = MICROGRAM PER LITER = PPB

PARAMETER	SAMPLE RESULT	PQL XL
2,2-DICHLOROPROPANE	ND	1
1,1-DICHLOROPROPENE	ND	1
CIS-1,2-DICHLOROPROPENE	ND	1
TRANS-1,2-DICHLOROPROPENE	ND	1
ETHYLBENZENE	ND	2
2-HEXANONE	ND	10
HEXACHLOROETHYLENE	ND	1
ISOPROPYLBENZENE	ND	1
4-TERTBUTYLPHENOL	ND	1
n-HEXYL-2-BROMOANILINE (MIBK)	ND	10
HEXYL-1,1-DIBUTYL STER (DBS)	ND	2
METHYLENE CHLORIDE	ND	5
NAPHTHYLENE	ND	1
n-PROPYLBENZENE	ND	1
STYRENE	ND	1
1,1,1,2-TETRACHLOROETHANE	ND	1
1,1,1,2-TETRACHLOROETHANE	ND	1
TETRAHYDROTHIOPHENE (TCE)	ND	1
TOLUENE	ND	1
1,2,3-TRICHLOROETHANE	ND	1
1,2,4-TRICHLOROETHANE	ND	1
1,1,1-TRICHLOROETHANE	ND	1
1,1,2-TRICHLOROETHANE	ND	1
TRICHLOROETHYLENE (TCE)	ND	2
TRICHLOROETHYLENE	ND	1
1,2,3-TRICHLOROETHANE	ND	1
1,2,4-TRICHLOROETHANE	ND	1
1,1,1-TRICHLOROETHANE	ND	1
VINYL CHLORIDE	ND	1
m/p-XYLENE	ND	2
o-XYLENE	ND	1

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT  
 ND = NON-DETECTED OR BELOW THE PQL  
 DATA REVIEWED AND APPROVED BY:   
 CAL-DBS CERTIFICATE # 1595