



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 1 of 10)

To: Jason Low, Ph.D.
Assistant Deputy Executive Officer
Science & Technology Advancement

Laboratory No. 2005701-01 to -02

Requested By Rafael Reynosa

Rule No. R402

Sampling Location

ST No. NA

Facility ID 174655
Marathon Carson
2350 E. 223rd St
Carson, CA 90810

Report Created 02/27/2020

ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS, AND RESULTS

Volatile Organic Compounds (VOCs) in Ambient Air by EPA TO-15 (GC/MS)

Volatile Organic Compounds (VOCs) in Ambient Air by EPA TO-15 (GC/MS) - Tentatively
Identified

See attached results and sample information.

Reviewed By: Stephen Dutz for S. Dutz
Stephen Dutz
Principal A.Q. Chemist
Laboratory Services

Date Reviewed: 2/27/2020

Approved By: Aaron Katzenstein for AK
Aaron Katzenstein, Ph.D.
Senior Manager
Laboratory Services
(909) 396-2219

Date Approved: 02/27/2020



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 2 of 10)

Laboratory No. 2005701-01
Sample Description SILCO Canister 53491, Downwind sample
Sample Comments Level 2 out of 5 chemical odor, Marathon Refinery fire
Sample Date 02/26/2020 **Received Date 02/26/2020** **Analyzed Date 02/26/2020**

Volatile Organic Compounds (VOCs) in Ambient Air by EPA TO-15 (GC/MS)

<u>Analyte, Unit</u>	<u>Result</u>	<u>MDL</u>	<u>MRL</u>	<u>Ambient Avg</u>
1,1,1-Trichloroethane, ppbv	ND	0.2	0.6	0.1
1,1,2,2-Tetrachloroethane, ppbv	ND	0.2	0.6	<0.1
1,1,2-Trichloroethane, ppbv	ND	0.2	0.6	<0.1
1,1-Dichloroethane, ppbv	ND	0.2	0.6	<0.1
1,1-Dichloroethylene, ppbv	ND	0.2	0.6	
1,2,4-Trichlorobenzene, ppbv	ND (QX)	0.2	0.6	<0.1
1,2,4-Trimethylbenzene, ppbv	0.4	0.2	0.6	0.1
1,2-Dibromoethane, ppbv	ND	0.05	0.1	
1,2-Dichlorobenzene, ppbv	ND	0.08	0.2	
1,2-Dichloroethane, ppbv	0.08	0.03	0.1	
1,2-Dichloropropane, ppbv	ND	0.07	0.2	<0.1
1,3,5-Trimethylbenzene, ppbv	ND	0.2	0.6	0.1
1,3-Butadiene, ppbv	0.1	0.03	0.08	<0.1
1,3-Dichlorobenzene, ppbv	ND	0.2	0.6	
1,4-Dichlorobenzene, ppbv	ND	0.2	0.5	
1,4-Dioxane, ppbv	ND (QX)	0.2	0.6	<0.1
2-Butanone (MEK), ppbv	1.2	0.1	0.3	0.3
2-Hexanone (MBK), ppbv	ND	0.2	0.6	
Acetone, ppbv	17 (EH)	0.1	0.4	7.7
2-Propenal (SIM), ppbv	0.2	0.05	0.2	
Benzene, ppbv	0.8	0.05	0.1	0.6
Benzyl chloride, ppbv	ND	0.2	0.6	<0.1
Bromodichloromethane, ppbv	ND	0.2	0.6	<0.1
Bromoform, ppbv	ND	0.2	0.6	<0.1
Bromomethane, ppbv	1.1	0.07	0.2	<0.1
Carbon disulfide, ppbv	ND	0.2	0.6	<0.1
Carbon Tetrachloride, ppbv	0.1	0.04	0.1	0.1
Chlorobenzene, ppbv	ND	0.2	0.6	<0.1
Chloroethane, ppbv	ND	0.2	0.6	<0.1
Chloroform, ppbv	0.1	0.04	0.1	<0.1
Chloromethane, ppbv	0.7	0.2	0.6	0.6



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 3 of 10)

Laboratory No. 2005701-01 - continued
Sample Description SILCO Canister 53491, Downwind sample
Sample Comments Level 2 out of 5 chemical odor, Marathon Refinery fire
Sample Date 02/26/2020 **Received Date 02/26/2020** **Analyzed Date 02/26/2020**

Volatile Organic Compounds (VOCs) in Ambient Air by EPA TO-15 (GC/MS)

<u>Analyte, Unit</u>	<u>Result</u>	<u>MDL</u>	<u>MRL</u>	<u>Ambient Avg</u>
cis-1,2-Dichloroethylene, ppbv	ND	0.2	0.6	
cis-1,3-Dichloropropene, ppbv	ND	0.2	0.6	
Cyclohexane, ppbv	0.6	0.2	0.6	0.1
Dibromochloromethane, ppbv	ND	0.2	0.6	<0.1
Dichlorodifluoromethane (Freon 12), ppbv	0.5	0.2	0.6	0.5
Dichlorotetrafluoroethane (Freon 114), ppbv	ND	0.2	0.6	<0.1
Ethanol, ppbv	25 (LJ)	0.2	0.6	7.3
Ethyl Acetate, ppbv	0.2	0.2	0.6	<0.1
Ethylbenzene, ppbv	0.4	0.06	0.2	0.2
Hexachloro-1,3-butadiene, ppbv	ND (QX)	0.2	0.6	
Isopropanol, ppbv	2.0	0.2	0.6	
m+p-Xylene, ppbv	1.2	0.09	0.3	0.6
Methyl Isobutyl Ketone (MIBK), ppbv	ND	0.2	0.6	
Methyl Methacrylate, ppbv	ND	0.2	0.6	
Methyl tert-Butyl Ether (MTBE), ppbv	ND	0.2	0.6	
Methylene Chloride, ppbv	0.3	0.05	0.2	0.2
Naphthalene, ppbv	ND (QX)	0.2	0.6	
n-Heptane, ppbv	0.5	0.2	0.6	0.2
n-Hexane, ppbv	1.0	0.2	0.6	0.1
o-Xylene, ppbv	0.4	0.03	0.09	0.2
p-Ethyltoluene, ppbv	0.2	0.2	0.6	
Propylene, ppbv	1.1	0.2	0.6	0.5
Styrene, ppbv	0.2	0.09	0.3	0.1
Tetrachloroethylene, ppbv	ND	0.04	0.1	
Tetrahydrofuran, ppbv	ND	0.2	0.6	<0.1
Toluene, ppbv	3.4	0.06	0.2	1.6
trans-1,2-Dichloroethylene, ppbv	1.8	0.2	0.6	
trans-1,3-Dichloropropene, ppbv	ND	0.2	0.6	
Trichloroethylene, ppbv	ND	0.07	0.2	<0.2
Trichlorofluoromethane (Freon 11), ppbv	0.3	0.2	0.6	0.2
Trichlorotrifluoroethane (Freon 113), ppbv	ND	0.2	0.6	0.1



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 4 of 10)

Laboratory No. 2005701-01 - continued
Sample Description SILCO Canister 53491, Downwind sample
Sample Comments Level 2 out of 5 chemical odor, Marathon Refinery fire
Sample Date 02/26/2020 **Received Date 02/26/2020** **Analyzed Date 02/26/2020**

Volatile Organic Compounds (VOCs) in Ambient Air by EPA TO-15 (GC/MS)

<u>Analyte, Unit</u>	<u>Result</u>	<u>MDL</u>	<u>MRL</u>	<u>Ambient Avg</u>
Vinyl acetate, ppbv	ND	0.2	0.6	<0.1
Vinyl chloride, ppbv	ND	0.05	0.1	<0.1

* J = Value is between method detection and reporting limits.

EH = Estimated; Exceeds Upper Range, LJ = Identification of Analyte is Acceptable; Reported Value is an Estimate, QX = Does not meet QC criteria.



**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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**MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS**

(Page 5 of 10)

Laboratory No. 2005701-01 - continued
Sample Description SILCO Canister 53491, Downwind sample
Sample Comments Level 2 out of 5 chemical odor, Marathon Refinery fire
Sample Date 02/26/2020 **Received Date 02/26/2020** **Analyzed Date 02/26/2020**

Volatile Organic Compounds (VOCs) in Ambient Air by EPA TO-15 (GC/MS) - Tentatively Identified

~~—TENTATIVELY IDENTIFIED COMPOUNDS—~~
CONCENTRATIONS ARE APPROXIMATED

<u>Analyte, Unit</u>	<u>Result</u>
Butane, ppbv	4.8
Isopentane, ppbv	7.5

** J = Value is between method detection and reporting limits.*



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 6 of 10)

Laboratory No. 2005701-02
Sample Description SUMMA Canister 54077, Upwind sample
Sample Comments No odor, Marathon Refinery fire. Note: source level canister used - values may be artificially elevated.
Sample Date 02/26/2020 **Received Date 02/26/2020** **Analyzed Date 02/26/2020**

Volatile Organic Compounds (VOCs) in Ambient Air by EPA TO-15 (GC/MS)

<u>Analyte, Unit</u>	<u>Result</u>	<u>MDL</u>	<u>MRL</u>	<u>Ambient Avg</u>
1,1,1-Trichloroethane, ppbv	ND	0.2	0.6	0.1
1,1,2,2-Tetrachloroethane, ppbv	ND	0.2	0.6	<0.1
1,1,2-Trichloroethane, ppbv	ND	0.2	0.6	<0.1
1,1-Dichloroethane, ppbv	ND	0.2	0.6	<0.1
1,1-Dichloroethylene, ppbv	ND	0.2	0.6	
1,2,4-Trichlorobenzene, ppbv	ND (QX)	0.2	0.6	<0.1
1,2,4-Trimethylbenzene, ppbv	0.3 (LK)	0.2	0.6	0.1
1,2-Dibromoethane, ppbv	ND	0.05	0.1	
1,2-Dichlorobenzene, ppbv	ND	0.08	0.2	
1,2-Dichloroethane, ppbv	ND	0.03	0.1	
1,2-Dichloropropane, ppbv	ND	0.07	0.2	<0.1
1,3,5-Trimethylbenzene, ppbv	ND	0.2	0.6	0.1
1,3-Butadiene, ppbv	0.2 (LK)	0.03	0.08	<0.1
1,3-Dichlorobenzene, ppbv	ND	0.2	0.6	
1,4-Dichlorobenzene, ppbv	ND	0.2	0.5	
1,4-Dioxane, ppbv	ND (QX)	0.2	0.6	<0.1
2-Butanone (MEK), ppbv	1.9 (LK)	0.1	0.3	0.3
2-Hexanone (MBK), ppbv	ND	0.2	0.6	
2-Propenal (SIM), ppbv	0.3 (LK)	0.05	0.2	
Acetone, ppbv	25 (LK)	0.1	0.4	7.7
Benzene, ppbv	0.7 (LK)	0.05	0.1	0.6
Eenzyl chloride, ppbv	ND	0.2	0.6	<0.1
Bromodichloromethane, ppbv	ND	0.2	0.6	<0.1
Bromoform, ppbv	ND	0.2	0.6	<0.1
Bromomethane, ppbv	ND	0.07	0.2	<0.1
Carbon disulfide, ppbv	ND	0.2	0.6	<0.1
Carbon Tetrachloride, ppbv	0.08 (LK)	0.04	0.1	0.1
Chlorobenzene, ppbv	ND	0.2	0.6	<0.1
Chloroethane, ppbv	ND	0.2	0.6	<0.1
Chloroform, ppbv	0.08 (LK)	0.04	0.1	<0.1



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 7 of 10)

Laboratory No. 2005701-02 - continued
Sample Description SUMMA Canister 54077, Upwind sample
Sample Comments No odor, Marathon Refinery fire. Note: source level canister used - values may be artificially elevated.
Sample Date 02/26/2020 **Received Date 02/26/2020** **Analyzed Date 02/26/2020**

Volatile Organic Compounds (VOCs) in Ambient Air by EPA TO-15 (GC/MS)

<u>Analyte, Unit</u>	<u>Result</u>	<u>MDL</u>	<u>MRL</u>	<u>Ambient Avg</u>
Chloromethane, ppbv	0.9 (LK)	0.2	0.6	0.6
cis-1,2-Dichloroethylene, ppbv	ND	0.2	0.6	
cis-1,3-Dichloropropene, ppbv	ND	0.2	0.6	
Cyclohexane, ppbv	0.5 (LK)	0.2	0.6	0.1
Dibromochloromethane, ppbv	ND	0.2	0.6	<0.1
Dichlorodifluoromethane (Freon 12), ppbv	0.5 (LK)	0.2	0.6	0.5
Dichlorotetrafluoroethane (Freon 114), ppbv	ND	0.2	0.6	<0.1
Ethanol, ppbv	58 (LK)	0.2	0.6	7.3
Ethyl Acetate, ppbv	0.4 (LK)	0.2	0.6	<0.1
Ethylbenzene, ppbv	0.4 (LK)	0.06	0.2	0.2
Hexachloro-1,3-butadiene, ppbv	ND (QX)	0.2	0.6	
Isopropanol, ppbv	6.3 (LK)	0.2	0.6	
m+p-Xylene, ppbv	1.1 (LK)	0.09	0.3	0.6
Methyl Isobutyl Ketone (MIBK), ppbv	ND	0.2	0.6	
Methyl Methacrylate, ppbv	0.2 (LK)	0.2	0.6	
Methyl tert-Butyl Ether (MTBE), ppbv	ND	0.2	0.6	
Methylene Chloride, ppbv	0.5 (LK)	0.05	0.2	0.2
Naphthalene, ppbv	ND (QX)	0.2	0.6	
n-Heptane, ppbv	0.4 (LK)	0.2	0.6	0.2
n-Hexane, ppbv	1.1 (LK)	0.2	0.6	0.1
o-Xylene, ppbv	0.4 (LK)	0.03	0.09	0.2
p-Ethyltoluene, ppbv	0.2 (LK)	0.2	0.6	
Propylene, ppbv	2.3 (LK)	0.2	0.6	0.5
Styrene, ppbv	0.3 (LK)	0.09	0.3	0.1
Tetrachloroethylene, ppbv	0.04 (LK)	0.04	0.1	
Tetrahydrofuran, ppbv	0.3 (LK)	0.2	0.6	<0.1
Toluene, ppbv	6.0 (LK)	0.06	0.2	1.6
trans-1,2-Dichloroethylene, ppbv	ND	0.2	0.6	
trans-1,3-Dichloropropene, ppbv	ND	0.2	0.6	
Trichloroethylene, ppbv	ND	0.07	0.2	<0.2



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 8 of 10)

Laboratory No. 2005701-02 - continued
Sample Description SUMMA Canister 54077, Upwind sample
Sample Comments No odor, Marathon Refinery fire. Note: source level canister used - values may be artificially elevated.
Sample Date 02/26/2020 **Received Date 02/26/2020** **Analyzed Date 02/26/2020**

Volatile Organic Compounds (VOCs) in Ambient Air by EPA TO-15 (GC/MS)

<u>Analyte, Unit</u>	<u>Result</u>	<u>MDL</u>	<u>MRL</u>	<u>Ambient Avg</u>
Trichlorofluoromethane (Freon 11), ppbv	0.3 (LK)	0.2	0.6	0.2
Trichlorotrifluoroethane (Freon 113), ppbv	ND	0.2	0.6	0.1
Vinyl acetate, ppbv	ND	0.2	0.6	<0.1
Vinyl chloride, ppbv	ND	0.05	0.1	<0.1

* J = Value is between method detection and reporting limits.

LK = Analyte Identified; Reported Value May Be Biased High, QX = Does not meet QC criteria.



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 9 of 10)

Laboratory No. 2005701-02 - continued
Sample Description SUMMA Canister 54077, Upwind sample
Sample Comments No odor, Marathon Refinery fire. Note: source level canister used - values may be artificially elevated.
Sample Date 02/26/2020 **Received Date 02/26/2020** **Analyzed Date 02/26/2020**

Volatile Organic Compounds (VOCs) in Ambient Air by EPA TO-15 (GC/MS) - Tentatively Identified

--TENTATIVELY IDENTIFIED COMPOUNDS--
CONCENTRATIONS ARE APPROXIMATED

<u>Analyte, Unit</u>	<u>Result</u>
Pentane, ppbv	4.6 (LK)
Isopentane, ppbv	12 (LK)
Butane, ppbv	7.1 (LK)

** J = Value is between method detection and reporting limits.*
LK = Analyte Identified; Reported Value May Be Biased High

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
SAMPLE ANALYSIS REQUEST**

DISTRICT INFORMATION
 INVOICE SOURCE
 LABORATORY NO. 2005701

TO: SCAQMD LAB: OTHER:

SOURCE NAME: Marathon Carson I.D. No. 174655

Source Address: 2350 E. 229rd St City: Carson

Mailing Address: Same City: Same Zip: 90870

Contact Person: Connie Chow Title: Environment Tel: 760-847-5633

Analysis Requested by: Rafael Reyeso Date: 2/26/2020

Approved by: Rafael Reyeso Office: C&E Budget #: 50-375

REASON REQUESTED: Court/Hearing Board Permit Pending Hazardous/Toxic Spill

Suspected Violation Rule(s) 402 Other fire

Sample Collected by: Huy Dang Date: 2/26/2020 Time: 1:20 AM ~~2:24~~ 2:14 AM

Specify the description and location where the sample was collected:

Sample # 53491 @ 1:20 AM on corner of Sepulveda and within Wilmington
 - level 1 and 2 chemical odor downwind

Sample # 54077 @ 2:14 AM on corner of Marathon Blvd / 223rd St, no odor

Analysis Requested: upwind

Relinquished by	Received by	Firm/Agency	Date	Time
Huy Dang	J. Huffine	SCAQMD LAB	2/26/20	9:23

Remarks: email result to pcaballero@scamp.gov
 hdang@aqmd.gov