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Organization:	Walnut Creek Energy, LLC
Submitter Role:	Applicant
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Walnut Creek Energy LLC
911 Bixby Drive
City of Industry, CA 91745
Phone: 760-707-6833

March 11, 2021

Christian Aviles
Air Quality Engineer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: **Permit Application - Gas Turbine Uprate**
Walnut Creek Energy Park (Facility ID 146536)
Units 1-5 (Devices D1, D7, D13, D19 and D25)

Dear Mr. Aviles:

Walnut Creek Energy LLC (WCE) is pleased to submit the enclosed permit application to the South Coast Air Quality Management District (SCAQMD) for the uprate of gas turbine Units 1-5 at Walnut Creek Energy Park (WCEP). The uprate of these turbines will not necessitate physical modifications; rather the fuel input and ammonia flow rate on an hourly basis would increase, resulting in an increase in output of the respective gas turbines. An increase in the heat input rate will enable each turbine to achieve the permitted turbine output of 100.1 megawatts (MW) net – 500.5 MW net from Units 1-5 – across typical City of Industry temperature and relative humidity ranges. WCEP's net qualifying capacity is 483.1 MW; the permit modifications for Units 1-5 would increase the net output from WCEP by approximately 17.4 MW.

The uprate project is proposed as a minor modification. No changes are proposed to annual and monthly pollutant emissions, pollutant emission factors, or fuel use. Small changes to hourly and daily emissions would result. The modifications will trigger Best Available Control Technology (BACT) for NOx. WCE has proposed a reduction in the NOx concentration from 2.5 parts per million (ppm) to 2.3 ppm, which will also decrease hourly, daily, monthly and annual NOx emissions. A daily maximum fuel input will be added to the permit conditions that will minimize daily mass emission increases of CO, SOx, VOCs, and PM. Monthly CO, VOCs and PM emissions will decrease; SOx monthly emissions will not change.

WCE is seeking modifications of the Facility Permit to Operate to increase the fuel input and ammonia flow rate and the corresponding output from WCEP in time for summer 2021. The increase in output from WCEP is integral in addressing the State of California's urgent need for additional capacity. Southern California Edison has contracted WCE for the increased output starting June 1, 2021 in response to the California Public Utilities Commission's ruling (Rulemaking 20-11-003, dated December 28, 2020) directing the State's three large electric investor-owned utilities to seek contracts for additional power capacity.

The application includes the requisite SCAQMD forms. Due to the urgency for incremental generation, WCE is requesting Expedited Permit Processing (400-XPP). A check for $118,917.19 is enclosed.

If you have any questions or need further information, please don't hesitate to contact me at (760) 707-6833 or Heather Mostert at (949) 903-5701.

Best Regards,
On behalf of Walnut Creek Energy LLC

George L. Piantka, PE
Senior Director, Environmental

cc: Michael Murphy, Walnut Creek Energy LLC
Paul Mattesich, Walnut Creek Energy LLC

ATTN: AP
4900 N Scottsdale Rd Suite 5000
Scottsdale, AZ 85251

Check Date: 03/01/2021
Check Number: 1001363
Vendor Number: 237320

SOUTH COAST AIR QUALITY MANAGEMENT
Heather Mostert Walnut Creek Energy Park
911 Bixby Drive
City of Industry, CA 91745
US

INVOICE NO	VOUCHER NO	DATE	REFERENCE NO	MEMO	GROSS AMOUNT	DISCOUNT	NET PAY
4529-02232021	2000004648	2/23/2021	1700008020		118917.19		118917.19
				TOTALS	118917.19		$118,917.19

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Walnut Creek Energy, LLC - Costs Acc
300 Carnegie Center Suite 300
Princeton NJ 08540

Union Bank

03/01/2021

1001363

One hundred eighteen thousand nine hundred seventeen dollars and nineteen cents

$118,917.19

Pay to The order of: SOUTH COAST AIR QUALITY MANAGEMENT DISCTRICT

VOID 90 DAYS AFTER ISSUE DATE

PAYEE NAME & AMOUNT ARE ON FILE AT THE BANK

THIS CHECK IS PROTECTED BY PAYEE POSITIVE PAY

RDP

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⑈1001363⑈ ⑆122000496⑆ 443000557⑈

Walnut Creek Energy, LLC

911 Bixby Drive, City of Industry, CA 91745

SCAQMD Facility ID: 146536

March 2021

Prepared by:

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Applications for Modification: Increase Turbine Heat Input Rating

Applications for Modification: Increase Turbine Heat Input Rating

Prepared for:

Walnut Creek Energy, LLC
911 Bixby Drive,
City of Industry, CA 91745
SCAQMD Facility ID: 146536

March 2021

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Acronyms and Abbreviations

AQIA	Air Quality Impacts Analysis
ATC	Authority to Construct
BACT	Best Available Control Technology
BARCT	Best Available Retrofit Control Technology
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CEQA	California Environmental Quality Act
CO	Carbon monoxide
CO_2	Carbon dioxide
EPA	U.S. Environmental Protection Agency
HAP	Hazardous Air Pollutants
HHV	Higher heating value
HI	Hazard Index
HRA	Health Risk Assessment
Lb	Pound
MICR	Maximum Individual Cancer Risk
MMBtu	Million British thermal units
MMscf	Million standard cubic feet
Mo	Month
MW	Megawatts
MWh	Megawatt-hour
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NH_3	Ammonia
NO_2	Nitrogen dioxide
NOx	Nitrogen oxides
NSPS	New Source Performance Standards
O_2	Oxygen
PM10	Particulate matter
ppmv	Parts per million by volume
PUC	Public Utilities Commission
RECLAIM	Regional Clean Air Incentives Market
RTC	RECLAIM Trading Credit
SCAQMD	South Coast Air Quality Management District

SCE	Southern California Edison
SCR	Selective Catalytic Reduction
SCGT	Simple Cycle Gas Turbine
SO_2	Sulfur dioxide
SOx	Sulfur oxides
TAC	Toxic air contaminant
VOC	Volatile organic compound
WCE	Walnut Creek Energy, LLC

Applications for Modification: Increase Turbine Heat Input Rating

1.0 INTRODUCTION

1.1 Application Overview

Walnut Creek Energy, LLC (WCE) is submitting this application package to request modifications to the Permits to Operate for its five (5) natural gas-fired Simple Cycle Gas Turbines (SCGTs) [A/N's 581392, 581393, 581396, 581397, 581399; Device ID Nos. D1, D7, D13, D19, D25, respectively] to increase the allowable heat input to better align with the 100.1 net Megawatts (MW) per SCGT listed in the Equipment Description for each SCGT. The Equipment Description for each SCGT currently lists the heat input as 891.7 million British thermal units (MMBtu) per hour. With this application, WCE is requesting that the maximum heat input be updated to 951.0[1] MMBtu per hour. There are no physical modifications to the SCGTs associated with this request. The facility is currently dispatched to serve peak power demand and needs to be permitted to operate at the maximum possible load to service that demand.

The increase in hourly heat input would result in an increase in the hourly and daily emissions of nitrogen oxides (NOx), sulfur oxides (SOx), carbon monoxide (CO), volatile organic compounds (VOC) and particulate matter (PM10) emissions. The emission increases trigger Best Available Control Technology (BACT) requirements for NOx, CO, VOC, SOx, and PM10. Therefore, this permit action requires an update to the NOx emission concentration limit from the currently-permitted level of 2.5 parts per million by volume (ppmv) to 2.3 ppmv to satisfy BACT. The plant operates on natural gas and operates with an oxidation catalyst, so BACT is satisfied for CO, VOC, SOx, and PM10 emissions without physical or permit changes. WCE is proposing to incorporate tuning into the permit due to the decreased NOx limit and the requirement from Rule 1135(d)(3).

With the BACT adjustment, monthly and annual NOx emissions are expected to decrease following this modification. To ensure that there is no increase in the 30-day average emissions of CO, VOC, SOx and PM10, WCE will continue to operate under Condition C1.1, which limits monthly fuel use to 367 million standard cubic feet (MMscf) per month, per SCGT. Additionally, WCE will continue to operate under the monthly and annual emission limits from Conditions F2.1 and A63.1. As discussed in Section 4.7.3 of the application, the proposed project does not cause or make worse an exceedance of ambient air quality standards.

WCE is also requesting a change to the ammonia injection rate allowed by Condition D12.2 from 215 pounds per hour to 265 pounds per hour for each of the Selective Catalytic Reduction (SCR) units [A/N's 581387, 581388, 581389, 581390, 581391; Device ID Nos. C4, C10, C16, C22, and C28]. WCE believes that the additional ammonia will be required to come into compliance with the lower NOx concentration limit. WCE will continue to operate under Condition A195.4, which limits ammonia to 5.0 pppmv at 15% O2, dry basis.

[1] This is based on a heat rate of 9.5 MMBtu per hour per MW, Higher Heating Value (HHV). 9.5 x 100.1 net MW = 951.0 MMBtu per hour (HHV).

This application package contains the information necessary for the SCAQMD to process and approve the applications, including facility information (Section 1.0), equipment and process descriptions (Section 2.0), emission calculations (Section 3.0), and rule applicability and compliance determinations (Section 4.0). Recommended permit wording and permit conditions are included in Section 5.0. Application forms, supporting documentation, and calculations are provided in the appendices.

WCE is requesting Expedited Permit Processing for this application. A Form 400-XPP is included in Appendix A and additional fees are submitted.

1.2 Facility Information

1.2.1 Facility Contact Information

Facility contact information is listed in Table 1-1.

Table 1-1: Facility Contact Information

Applicant's Name:	Walnut Creek Energy, LLC
Applicant Contact Information:	Ms. Heather Mostert Environmental Specialist Phone: (626) 986-0373 E-mail: Heather.Mostert@NRG.com
Applicant Responsible Official:	Mr. George Piantka Senior Director Phone: (760) 707-6833 E-mail: George.Piantka@nrg.com
Facility ID:	146536
RECLAIM:	Yes (NOx and SOx)
Title V:	Yes
Mailing Address:	911 Bixby Drive, City of Industry, CA 91745-1702
Equipment Location:	911 Bixby Drive, City of Industry, CA 91745-1702

1.2.2 Background Information

WCE operates five (5) General Electric LMS100 PA SCGTs, each driving an electrical generator rated at 100.1 net MW [104 gross MW], for a total nominal plant generating capacity of 500.5 net MW (520 gross MW).

Each of the SCGTs is configured in simple cycle and, therefore, there are no heat recovery steam generators, duct burners, or steam turbines in operation at this plant. SCR systems and oxidation catalysts are utilized for control of NOx and CO/VOC emissions, respectively. One 16,000-gallon ammonia (NH_3) storage tank stores 19% aqueous ammonia for use in the SCR.

1.2.3 Location

WCE is located at 911 Bixby Drive in the City of Industry. The facility covers a total of approximately 11.2 acres and is bordered by industrial facilities on all sides. The nearest residential property is approximately 312 meters southwest of the facility boundary. The nearest school to the facility is Glen A. Wilson High School at 16455 Wedgeworth Dr in Hacienda Heights, approximately 770 meters to the south of the facility boundary. The nearest industrial property to the power plant is approximately 46 meters southwest of the facility boundary. An aerial photograph depicting the facility and the surrounding properties is provided as Figure 1.

1.3 Summary of Proposed Actions

The purpose of this application is to request a PTC/PTO for modifications to each of the five SCGTs and associated SCRs. The following specific changes are proposed:

- Update the maximum heat input rating shown in the Equipment Description from 891.7 MMBtu per hour to 951.0 MMBtu per hour for each of the five SCGTs (D1, D7, D13, D19, and D25);
- Change the NOx concentration limit in Condition A99.1 from 2.5 ppmv to 2.3 ppmv for each of the five SCGTs;
- Add language to Condition A99.1 exempting each of the five SCGTs from the 2.3 ppmv limit during tuning;
- Add an additional condition addressing tuning events;
- Change of Condition for condition D12.2 applicable to each of the five SCGTs SCRs (C4, C10, C16, C22, and C28) to change the ammonia injection rate from 215 pounds per hour to 265 pounds per hour; and
- Add an additional condition limiting daily heat input to each of the five SCGTs to no more than 22,350 MMBtu per day.

This application package contains the application forms necessary for application processing. A summary of the application forms is provided in Table 1-2; the application forms are included in Appendix A.

Table 1-2: SCAQMD Forms Accompanying this Application

Equipment Description	Requested Permit Action	Form No. - Title
Gas Turbine No. 1; Device ID No. D1	Alteration/Modification	400-A - Application for Permit or Plan Approval 400-E-12 – Gas Turbine 400-PS – Plot Plan and Stack Information Form
Gas Turbine No. 2; Device ID No. D7	Alteration/Modification	400-A - Application for Permit or Plan Approval 400-E-12 – Gas Turbine 400-PS – Plot Plan and Stack Information Form
Gas Turbine No. 3; Device ID No. D13	Alteration/Modification	400-A - Application for Permit or Plan Approval 400-E-12 – Gas Turbine 400-PS – Plot Plan and Stack Information Form

Equipment Description	Requested Permit Action	Form No. - Title
Gas Turbine No. 4; Device ID No. D19	Alteration/Modification	400-A - Application for Permit or Plan Approval 400-E-12 – Gas Turbine 400-PS – Plot Plan and Stack Information Form
Gas Turbine No. 5; Device ID No. D25	Alteration/Modification	400-A - Application for Permit or Plan Approval 400-E-12 – Gas Turbine 400-PS – Plot Plan and Stack Information Form
SCR No. 1; Device ID No. C4	Change of Condition	400-A - Application for Permit or Plan Approval 400-E-5 – Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst
SCR No. 2; Device ID No. C10	Change of Condition	400-A - Application for Permit or Plan Approval 400-E-5 – Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst
SCR No. 3; Device ID No. C16	Change of Condition	400-A - Application for Permit or Plan Approval 400-E-5 – Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst
SCR No. 4; Device ID No. C22	Change of Condition	400-A - Application for Permit or Plan Approval 400-E-5 – Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst
SCR No. 5; Device ID No. C28	Change of Condition	400-A - Application for Permit or Plan Approval 400-E-5 – Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst
RECLAIM/Title V Permit	RECLAIM/Title V Facility Permit Amendment	400-A - Application for Permit or Plan Approval
Project	Application Processing	400-CEQA - California Environmental Quality Act (CEQA) Applicability
Project	Application Processing	400-XPP - Express Permit Processing Request
Project	RECLAIM/Title V Facility Permit Amendment	500-C1 - Compliance Status Report
Project	RECLAIM/Title V Facility Permit Amendment	500-F1 (Title V) - Title IV - Acid Rain Phase II Facility Information Summary
Project	RECLAIM/Title V Facility Permit Amendment	500-A2 - Title V Application Certification

1.4 Application Preparation

This permit application was prepared by Eduardo Jimenez, with Peer Review by James Adams and Greg Wolffe of Yorke Engineering, LLC. If there are technical questions regarding this application, please use the contact information provided in Table 1-3.

Table 1-3: Application Preparers

Name:	Eduardo Jimenez CPP #E1905	James Adams CPP #M6901	Greg Wolffe CPP #D11338
Role:	Application Preparation	Application Review	Application Review
Phone:	(951) 742-7548	(949) 416-0963	(949) 248-8490
Cellular:	(949) 392-3059	(949) 573-7924	(714) 315-9049
Email:	EJimenez@YorkeEngr.com	JAdams@YorkeEngr.com	GWolffe@YorkeEngr.com

Figure 1: Location Diagram for WCE and Surrounding Area

2.0 PROCESS AND EQUIPMENT DESCRIPTION

Project and equipment details are provided in this section.

2.1 Process Description

WCE provides power to the grid during periods of peak electrical demand. WCE operates five SCGTs. There are no heat recovery steam generators, duct burners, or steam turbines in operation at this plant. Each SCGT is equipped with water injection, an inlet air filter, and an inlet air cooling system. SCR systems and CO oxidation catalysts are utilized for control of NOx and CO/VOC emissions, respectively. One 16,000-gallon NH_3 storage tank stores 19% aqueous ammonia for use in the SCRs.

2.2 Equipment Description

The equipment affected by this application is identified in Table 2-1. The information in Table 2-1 is the current equipment description: one purpose of this application is to change the heat input rating portion of the equipment description for each of the SCGTs. Please see Section 5 for the revised equipment description.

Table 2-1: Equipment Summary

Basic Equipment	NOx Control Equipment	CO/VOC Control Equipment
Gas Turbine, Unit No. 1, Natural Gas, General Electric, Model LMS100PA, Simple Cycle, Intercooled, 891.7 MMBtu/hr at 30 degrees F, with water injection, with generator, 100.1 net MW (104 gross MW).	Selective Catalytic Reduction, No. 1, Haldor-Topsoe DNX-629, 1,272 cubic feet, width: 19 ft-6 in; Height: 33 ft; Length: 2 ft 6 in with ammonia injection grid.	CO oxidation catalyst, No. 1, BASF CAMET, with 420 cubic feet of total catalyst volume
Gas Turbine, Unit No. 2, Natural Gas, General Electric, Model LMS100PA, Simple Cycle, Intercooled, 891.7 MMBtu/hr at 30 degrees F, with water injection, with generator, 100.1 net MW (104 gross MW).	Selective Catalytic Reduction, No. 2, Haldor-Topsoe DNX-629, 1,272 cubic feet, width: 19 ft-6 in; Height: 33 ft; Length: 2 ft 6 in with ammonia injection grid.	CO oxidation catalyst, No. 2, BASF CAMET, with 420 cubic feet of total catalyst volume
Gas Turbine, Unit No. 3, Natural Gas, General Electric, Model LMS100PA, Simple Cycle, Intercooled, 891.7 MMBtu/hr at 30 degrees F, with water injection, with generator, 100.1 net MW (104 gross MW).	Selective Catalytic Reduction, No. 3, Haldor-Topsoe DNX-629, 1,272 cubic feet, width: 19 ft-6 in; Height: 33 ft; Length: 2 ft 6 in with ammonia injection grid.	CO oxidation catalyst, No. 3, BASF CAMET, with 420 cubic feet of total catalyst volume
Gas Turbine, Unit No. 4, Natural Gas, General Electric, Model LMS100PA, Simple Cycle, Intercooled, 891.7 MMBtu/hr at 30 degrees F, with water injection, with generator, 100.1 net MW (104 gross MW).	Selective Catalytic Reduction, No. 4, Haldor-Topsoe DNX-629, 1,272 cubic feet, width: 19 ft-6 in; Height: 33 ft; Length: 2 ft 6 in with ammonia injection grid.	CO oxidation catalyst, No. 4, BASF CAMET, with 420 cubic feet of total catalyst volume
Gas Turbine, Unit No. 5, Natural Gas, General Electric, Model LMS100PA, Simple Cycle, Intercooled, 891.7 MMBtu/hr at 30 degrees F, with water injection, with generator, 100.1 net MW (104 gross MW).	Selective Catalytic Reduction, No. 5, Haldor-Topsoe DNX-629, 1,272 cubic feet, width: 19 ft-6 in; Height: 33 ft; Length: 2 ft 6 in with ammonia injection grid.	CO oxidation catalyst, No. 5, BASF CAMET, with 420 cubic feet of total catalyst volume

2.3 Process Operating Parameters

WCE is proposing to increase the hourly heat input rating to 951.0 MMBtu per hour; however, plans to continue to operate at the current monthly fuel throughput of 367 MMscf per month. WCE is proposing to add a condition limiting the daily heat input for each SCGT to 22,350 MMBtu per day.

WCE is also proposing a change of condition to Condition D12.2 to increase the allowable ammonia injection rate from 215 pounds per hour to 265 pounds per hour. This will allow WCE to meet the proposed lower BACT emission limit of 2.3 ppmv.

The pre-and post-project operating parameters are summarized in Table 2-2.

Table 2-2: Operating Parameters

Process Parameter	Pre-Project	Post-Project
Turbine Heat Input Rating (MMBtu/hr)	891.7	951.0
Daily Heat Input (MMBtu/day)	21,401	22,350
Monthly Fuel Usage (MMscf/mo)	367	367
Annual Fuel Usage (MMscf/yr)	3,396.95	3,396.95
Starts/stops per day	2	2
Starts/stops per month	40	40
Starts/stops per year	480	480
Startup Duration (minutes)	60	60
Shutdown Duration (minutes)	60	60
HHV (natural gas) (Btu/scf)	1,050	1,050
Ammonia Flow Rate (lbs/hr)	215	265

3.0 EMISSIONS

The equipment description currently lists the heat input rating of each SCGT as 891.7 MMBtu per hour. With this application, WCE is requesting that the heat input rating be updated to 951.0 MMBtu per hour. The increase in hourly heat input would result in an increase in the hourly and daily NOx, SOx, CO, VOC and PM10 emissions. The NOx increase triggers BACT. Therefore, the emission calculations reflect a change in the NOx emission limit from the currently-permitted level of 2.5 ppmv to 2.3 ppmv. With the BACT adjustment, monthly and annual NOx emissions are expected to decrease due to this modification. WCE is proposing to add a condition limiting the daily heat input for each SCGT to 22,350 MMBtu per day, which is used to estimate maximum daily emissions. To ensure that there is no increase in the 30-day average emissions of CO, VOC, SOx and PM10, WCE will continue to operate under Condition C1.1, which limits monthly fuel use to 367 million standard cubic feet (MMscf) per month, per SCGT. Additionally, WCE will continue to operate under the monthly and annual emission limits from Conditions F2.1 and A63.1.

3.1 Criteria Pollutants

WCE is proposing an increase in the maximum hourly heat input rating for each of the five SCGT's. This will result in a corresponding increase in maximum hourly emissions. WCE requires the operational flexibility to operate up to 24 hours per day, thus the increase in heat input rating will also increase daily emissions of each pollutant; daily emissions are estimated based on a maximum daily heat input for each SCGT of 22,350 MMBtu per day. WCE will continue to operate under the fuel use/emission limits of Conditions F2.1 and A63.1: 30-day average and annual emissions are unchanged compared to the currently-permitted operations.

3.1.1 Emission factors

The emission factors used to calculate pre-project and post-project emissions are summarized in Table 3-1. Note the following changes:

- The NOx concentration is adjusted from 2.5 ppmv to 2.3 ppmv to reflect current BACT.

Table 3-1: Summary of Emission Factors

Pollutant	Unit of measure	Pre-Project	Post-Project
NOx	ppmv @ 15% O_2	2.5	2.3
	lb/MMscf	9.67	8.9
CO	ppmv @ 15% O_2	4.0	4.0
	lb/MMscf	9.42	9.42
VOC	ppmv @ 15% O_2	2.0	2.0
	lb/MMscf	2.69	2.69
SOx	lb/MMscf	0.67	0.67
PM10	lb/MMscf	7.04	7.04

3.1.2 Summary of Emissions

Hourly emissions are summarized in Table 3-2 (normal operations only, i.e., excluding startup and shutdowns); daily emissions are summarized in Table 3-3; and monthly emissions are summarized in Table 3-4. All tables present emissions data per SCGT. Annual emissions of all pollutants are lower post-project than pre-project; emission reductions have no regulatory significance and are not presented in the body of this report. Emission calculation worksheets are provided in Appendix B for all averaging periods.

Table 3-2: Summary of Normal Operating Hourly Emissions – per SCGT

Pollutant	Pre-Project (lb/hr)	Post-Project (lb/hr)	Change (lb/hr)
NOx	8.21	8.06	-0.15
CO	8.00	8.53	0.53
VOC	2.28	2.44	0.16
SOx	0.57	0.61	0.04
PM10	6.00	6.38	0.38

Table 3-3: Summary of Daily Emissions – per SCGT

Pollutant	Pre-Project (lb/day)	Post-Project (lb/day)	Change (lb/day)
NOx	207.04	200.04	-7.00
CO	246.92	253.31	6.39
VOC	57.22	59.13	1.91
SOx	13.66	14.26	0.61
PM10	144.00	149.85	5.85

Table 3-4: Summary of Monthly Emissions – per SCGT

Pollutant	Pre-Project (lb/mo)	Post-Project (lb/mo)	Change (lb/mo)
NOx	3,746.72	3,477.12	-269.60
CO	4,554.34	4,511.81	-42.52
VOC	1,034.96	1,024.38	-10.58
SOx	245.80	245.80	0.00
PM10	2,592.00	2,582.77	-9.23

3.3 Toxic Air Contaminants

This project will result in an increase in maximum hourly emissions of Toxic Air Contaminants (TAC). TAC emissions are estimated using the SCAQMD default emission factors for combustion of natural gas in a combustion turbine. Ammonia emissions are estimated based on ammonia slip of 5 ppmv, as specified in Condition A195.4. TAC emissions are summarized in Table 3-5. Detailed emission calculations are provided in the spreadsheets in Appendix B.

Table 3-5: Summary of TAC Emissions – per SCGT

TAC	CAS	Pre-Project (lb/hr)	Post-Project (lb/hr)	Change (lb/hr)	Pre-Project (lb/yr)	Post-Project (lb/yr)	Change (lb/yr)
Benzene	71432	2.83E-03	3.02E-03	1.88E-04	1.13E+01	1.13E+01	0.00E+00
1,3-Butadiene	106990	3.73E-04	3.98E-04	2.48E-05	1.49E+00	1.49E+00	0.00E+00
Formaldehyde	50000	3.12E-01	3.32E-01	2.07E-02	1.25E+03	1.25E+03	0.00E+00
Naphthalene	91203	1.13E-03	1.20E-03	7.51E-05	4.52E+00	4.52E+00	0.00E+00
Total PAHs (excluding Naphthalene)	1151	7.80E-04	8.31E-04	5.18E-05	3.12E+00	3.12E+00	0.00E+00
Acetaldehyde	75070	3.46E-02	3.70E-02	2.30E-03	1.39E+02	1.39E+02	0.00E+00
Acrolein	107028	3.13E-03	3.34E-03	2.08E-04	1.25E+01	1.25E+01	0.00E+00
Ammonia	7664417	6.07E+00	6.48E+00	4.03E-01	2.43E+04	2.43E+04	0.00E+00
Ethylbenzene	100414	2.77E-02	2.95E-02	1.84E-03	1.11E+02	1.11E+02	0.00E+00
Propylene oxide	75569	2.51E-02	2.68E-02	1.67E-03	1.01E+02	1.01E+02	0.00E+00
Toluene	108883	1.13E-01	1.20E-01	7.51E-03	4.52E+02	4.52E+02	0.00E+00
Xylene	1330207	5.55E-02	5.91E-02	3.68E-03	2.22E+02	2.22E+02	0.00E+00

4.0 RULE COMPLIANCE EVALUATION

A review of the applicable requirements and a description of how the equipment and emissions will comply with applicable requirements is provided in this section.

4.1 Regulation II - Permits; Rule 212 - Standards for Approving Permits and Issuing Public Notice

Rule 212(c) requires public notice for:

- (c)(1). A project requesting installation of a new source or modification of an existing source, if the source is location within 1,000 feet of the outer boundary of a school; or
- (c)(2). A project resulting in a new or modified facility with on-site emission increases exceeding any of the daily maximums from Rule 212(g); or
- (c)(3). A project requesting installation of a new source or modification of an existing source, if the emission increases result in exposure to Maximum Individual Cancer Risk (MICR) greater than or equal to the applicable thresholds in (c)(3)(A), or substances that pose a potential risk of nuisance.

As discussed in Section 1.2.3 and shown in Figure 1-1, the project sources are not located within 1,000 feet of the outer boundary of a school. Rule 212(c)(1) does not apply.

Rule 212(g) lists daily maximum emission increases for criteria pollutants. As noted elsewhere in this application, WCE is proposing a limit of 22,350 MMBtu per day for each SCGT. With this limit, the daily emission increases are less than the rule limits for public notice. The daily emission increases are compared to the Rule 212(g) thresholds in Table 4-1.

Table 4-1: Rule 212(g) Threshold Comparison

Pollutant	Rule 212(g) Threshold (lb/day)	Project Increase (lb/day)	Exceed Threshold? (Yes/No)
NOx	40	-34.99	No
CO	220	31.95	No
VOC	30	9.57	No
SOx	60	3.03	No
PM10	30	29.26	No

As shown in Table 3-5, the proposed project does not result in an increase in annual emissions of TACs. Therefore, this project would not result in MICR greater than or equal to the applicable thresholds in (c)(3)(A).

Because the proposed project does not exceed any of the criteria for public notice, public notice is not required for the project.

4.2 Regulation III - Fees; Rule 301 - Permit Fees

The application processing fees were determined using Rule 301 (amended July 12, 2019) and are summarized in Table 4-2. The applicant is requesting expedited permit processing; additional fees are provided in accordance with Rule 301(v).

Table 4-2: Application Processing Fees

Equipment	Rule 301 Table IA/IB Description	Schedule	Requested Permit Action	Fee
Gas Turbine No. 1; Device ID No. D1	Gas Turbine, > 50 MW, other fuel	G	Alteration/Modification Title V FY2020-21	$22,654.61
Gas Turbine No. 2; Device ID No. D7	Gas Turbine, > 50 MW, other fuel	G Identical Equipment Discount	Alteration/Modification Title V FY2020-21	$11,327.31
Gas Turbine No. 3; Device ID No. D13	Gas Turbine, > 50 MW, other fuel	G Identical Equipment Discount	Alteration/Modification Title V FY2020-21	$11,327.31
Gas Turbine No. 4; Device ID No. D19	Gas Turbine, > 50 MW, other fuel	G Identical Equipment Discount	Alteration/Modification Title V FY2020-21	$11,327.31
Gas Turbine No. 5; Device ID No. D25	Gas Turbine, > 50 MW, other fuel	G Identical Equipment Discount	Alteration/Modification Title V FY2020-21	$11,327.31
SCR No. 1; Device ID No. C4	Selective Catalytic Reduction (SCR)	C	Change of Condition FY2020-21	$3,164.78
SCR No. 2; Device ID No. C10	Selective Catalytic Reduction (SCR)	C Identical Equipment Discount	Change of Condition FY2020-21	$1,582.39
SCR No. 3; Device ID No. C16	Selective Catalytic Reduction (SCR)	C Identical Equipment Discount	Change of Condition FY2020-21	$1,582.39
SCR No. 4; Device ID No. C22	Selective Catalytic Reduction (SCR)	C Identical Equipment Discount	Change of Condition FY2020-21	$1,582.39
SCR No. 5; Device ID No. C28	Selective Catalytic Reduction (SCR)	C Identical Equipment Discount	Change of Condition FY2020-21	$1,582.39
			Subtotal	$77,458.19
			RECLAIM & Title V Facility Permit Amendment Fee – 301, Table VII	$2,729.86

Expedited Permit Processing - 301(v)	$38,729.14
Total	**$118,917.19**

4.3 Regulation IV - Prohibitions

4.3.1 Rule 401 - Visible Emissions

This rule prohibits the discharge into the atmosphere from any single source of emissions of any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (b)(1)(A) of the rule.

The SCGTs combust natural gas and will continue to combust natural gas following implementation of the project. Visible emissions are not expected.

4.3.2 Rule 402 - Nuisance

Rule 402 prohibits the discharge from any source such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

The SCGTs combust natural gas and will continue to combust natural gas following implementation of the project. Nuisance emissions are not expected.

4.3.3 Rule 404 - Particulate Matter – Concentration

Rule 404 prohibits the discharge into the atmosphere from any source particulate matter in excess of the concentration at standard conditions, shown in Table 404(a) of the rule.

The provisions of this rule do not apply to emissions resulting from the combustion of liquid or gaseous fuels in steam generators or gas turbines.

4.3.4 Rule 407 - Liquid and Gaseous Air Contaminants

Rule 407 prohibits the discharge into the atmosphere from any equipment: 1) CO exceeding 2,000 ppmv measured on a dry basis, averaged over 15 consecutive minutes, and 2) Sulfur compounds which would exist as liquid or gas at standard conditions, calculated as sulfur dioxide (SO_2) exceeding 500 ppmv averaged over 15 consecutive minutes.

The SCGTs operate with oxidation catalysts that ensure compliance with the permit limit of 4.0 ppmv at 15% excess oxygen (O_2), thus ensuring compliance with the CO limits of this rule.

The sulfur compound limit does not apply to equipment which complies with the gaseous fuel sulfur content limits of Rule 431.1. The SCGTs described in this application combust Public Utilities Commission (PUC)-quality pipeline natural gas that complies with the sulfur limits of Rule 431.1; therefore, the sulfur limits of Rule 407 do not apply.

4.3.5 Rule 409 - Combustion Contaminants

This rule prohibits the discharge into the atmosphere from the burning of fuel, combustion contaminants exceeding 0.23 gram per cubic meter (0.1 grain per cubic foot) of gas calculated to 12 percent of carbon dioxide (CO_2) at standard conditions averaged over a minimum of 15 consecutive minutes.

The SCGTs described in this application combust PUC-quality pipeline natural gas that will ensure compliance with this rule.

4.3.6 Rule 431.1 - Sulfur Content of Gaseous Fuels

The purpose of this rule is to reduce SOx emissions from the burning of gaseous fuels in stationary equipment requiring a permit to operate by the SCAQMD. The rule prohibits the transfer, sell, or offer for sale for use in the jurisdiction of the District natural gas containing sulfur compounds calculated as hydrogen sulfide (H_2S) in excess of 16 ppmv.

The SCGTs described in this application combust PUC-quality pipeline natural gas that complies with the sulfur limits of Rule 431.1.

4.3.7 Rule 475 - Electric Power Generating Equipment

This rule limits emissions of particulate matter to the atmosphere from equipment having a maximum rating of more than 10 net MW used to produce electric power.

For new equipment, defined as equipment for which a permit is required after May 7, 1976, emissions of particulate matter may not exceed both of the limits from (a)(3)(A) [11 pounds per hour] and (a)(3)(B) [0.01 gr/SCF calculated at three percent oxygen on a dry basis and averaged over 15 consecutive minutes]. Test results show that neither limit is exceeded: compliance with the Rule 475 emission limits is expected.

4.4 Regulation IX - Standards of Performance for New Stationary Sources

Regulation IX incorporates federal New Source Performance Standards (NSPS) by reference. One NSPS is applicable to the subject equipment, as explained below.

4.4.1 Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

This subpart establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines with a heat input at peak load equal to or greater than 10 MMBtu per hour, based on the HHV of the fuel, that commenced construction, modification, or reconstruction after February 18, 2005. The pollutants regulated by this subpart are NOx and SO_2.

The rule limits NOx emissions from new, modified, or reconstructed turbines firing natural gas with a heat input greater than 850 MMBtu per hour to no more than 15 ppmv at 15 percent O_2 or 0.43 pound per megawatt-hour (lb/MWh) of useful output.

The rule prohibits the discharge of any gases which contain SO_2 in excess of 0.90 lb/MWh gross output; and prohibits the combustion of any fuel which contains total potential sulfur emissions in excess of 0.060 pounds SO_2 per MMBtu heat input.

The SCGTs discussed in this application operate with SCR to control NOx emissions to 2.3 ppmv; therefore, compliance with the NOx limits of Subpart KKKK are satisfied. The SCGTs combust PUC-quality pipeline natural gas that complies with the sulfur limits of Rule 431.1; therefore, compliance with the sulfur limits of Subpart KKKK are satisfied.

The rule imposes a number of other requirements on the SCGTs and facility including monitoring, recordkeeping, and reporting requirements. WCE complies with these requirements. The proposed project will not adversely impact continued compliance.

4.5 Regulation X - National Emission Standards for Hazardous Air Pollutants

Regulation X incorporates the federal National Emission Standards for Hazardous Air Pollutants (NESHAP) by reference. There are no federal NESHAP rules applicable to the proposed project or equipment.

Subpart YYYY - National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines applies to combustion turbines at major sources of hazardous air pollutants (HAP). WCE is not a major source of HAP; therefore, Subpart YYYY is not applicable to the facility. There are no other NESHAP applicable to combustion turbines.

4.6 Regulation XI - Source-Specific Standards

4.6.1 Rule 1134 - Emissions of Oxides of Nitrogen from Stationary Gas Turbines

The purpose of this rule is to reduce emissions of NOx from stationary gas turbines. The provisions of this rule shall apply to all stationary gas turbines, 0.3 megawatt (MW) and larger. This rule does not apply to stationary gas turbines: subject to Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities; located at petroleum refineries, landfills, or publicly owned treatment works; or fueled by landfill gas.

Because the SCGTs are subject to Rule 1135, they are not subject to Rule 1134.

4.6.2 Rule 1135 - Emissions of Oxides of Nitrogen from Electricity Generating Facilities

The purpose of this rule is to reduce emissions of NOx from electric generating units at electricity generating facilities. This rule applies to electric generating units at electricity generating facilities. While the facility is currently a RECLAIM facility and exempt from Rule 1135, Rule 1135 is the landing rule for gas turbines upon RECLAIM sunset. Thus, on and after January 1, 2024, or when required by a permit to operate issued to effectuate the requirements in this rule, whichever occurs first, the owner or operator of an electricity generating facility may not operate a gas turbine in a manner that exceeds the NOx and ammonia emissions limits listed in Table 1 of the rule: Emissions Limits for Boilers and Gas Turbines. For a simple cycle gas turbine, the NOx limit is 2.5 ppmv and the ammonia slip concentration limit is 5 ppmv, both at 15% excess O_2.

The SCGTs already comply with the 2.5 ppmv NOx limit and 5 ppmv ammonia slip limit pursuant to current permit conditions. The proposed project will require the SCGTs to meet a NOx concentration of 2.3 ppmv to comply with BACT requirements. Therefore, compliance is expected.

WCE will comply with the remaining applicable provisions of the rule in a timely manner. For example, WCE is aware of and will take the necessary actions to ensure that the SCAQMD permit include "…limitations for duration, mass emissions, and number of start-ups, shutdowns, and, if applicable, tunings…" by January 1, 2024, as required by paragraph (d)(3)[2] of the rule. WCE is also aware of and will comply with the requirement of paragraph (d)(7)[3] to submit a change of conditions application by July 1, 2022 to reconcile permit conditions with Rule 1135 requirements.

4.7 Regulation XIII - New Source Review; Rule 1303, Requirements

The purpose of this regulation is to achieve no net increases of nonattainment air contaminants or their precursors from new or modified permitted sources.

4.7.1 BACT

The increase in hourly heat input would result in an increase in the daily CO, VOC, and PM10 emissions in amounts exceeding 1 pound per day per pollutant. The emission increases trigger BACT for CO, VOC, and PM10. The SCGTs combust natural gas and operate with oxidation catalysts, so BACT is satisfied for CO, VOC, and PM10 emissions.

4.7.2 Offsets

The proposed project would increase the hourly heat input of each SCGT, but WCE is proposing to operate within the current monthly fuel use limit imposed by Condition C1.1. As a result of keeping the same fuel use limit, the change in 30-Day Average emissions for CO, VOC, and PM10 are each less than 1 pound per day (see Table 3-4 for the change in monthly emissions); therefore, offsets are not required for this project.

4.7.3 Air Quality Impacts Analysis (AQIA)

Dispersion modeling was conducted to predict project impacts to ambient air. The air dispersion model used for this Project is AERSCREEN, a screening dispersion model. AERSCREEN is based on AERMOD and is the screening dispersion model currently recommended by the Environmental Protection Agency (EPA). The Lakes Environmental Software (Lakes) implementation/user interface, AERSCREEN View™, Version 2.7.0, was used for this project. This version of AERSCREEN View™ implements the newest version of AERMOD (version 19191).

The AQIA evaluates criteria pollutant emissions over 1-hour, 8-hour, 24-hour, and Annual averaging periods, as appropriate for each California Ambient Air Quality Standard (CAAQS) and National Ambient Air Quality Standard (NAAQS). The AQIA assumes that the pre-project emissions are part of background and considers only emission increases. The criteria pollutant emissions used in the AQIA are summarized in Table 4-3. The complete AQIA is provided in Appendix C.

[2] Paragraph (d)(3) from the November 2, 2018 version of the rule.

[3] Paragraph (d)(7) from the November 2, 2018 version of the rule.

Table 4-3: AQIA Emissions Increases (per SCGT)

Pollutant	Averaging Period	Emissions Increase (lb/Avg. Period)
NO_2	1-Hr	No Increase
	Annual	No Increase
CO	1-Hr	0.53
	8-Hr	3.19
SO_2	1-Hr	0.04
	24-Hr	0.61
	Annual	No Increase
PM10	24-Hr	5.85
	Annual	No Increase

The project emissions were used in conjunction with the AERSCREEN output to calculate the worst-case impacts to ambient air quality for comparison with the 'Significant Change in Air Quality' thresholds from Rules 2005 and 1303. As shown in Tables 4-4 and 4-5, the Project is not expected to cause or make worse an exceedance of an ambient air quality standard.

Table 4-4: Ambient Air Quality Analysis (Project)

Pollutant	Averaging Period	NAAQS (Project + Background) < Standard?	CAAQS (Project + Background) < Standard?
NO_2	1-Hr	No Increase	No Increase
	Annual	No Increase	No Increase
CO	1-Hr	Yes	Yes
	8-Hr	Yes	Yes
SO_2	1-Hr	Yes	Yes
	24-Hr	Yes	Yes
	Annual	No Increase	No Standard Exists
PM10	24-Hr	Yes	Yes
	Annual	No Standard Exists	No Increase

Table 4-5: Significant Impact Level Analysis (Project)

Pollutant	Averaging Period	Project < Significant Impact Level?
PM10	24-Hr	Yes

4.8 Regulation XIV - Toxics and Other Non-Criteria Pollutants

Rule 1401 specifies limits for maximum individual cancer risk (MICR), cancer burden, and non-cancer acute and chronic hazard index (HI) from new permit units, relocations, or modifications to existing permit units that emit TAC listed in Table I of the rule. The rule establishes allowable risks for permit units requiring new permits pursuant to Rules 201 or 203.

As discussed in Section 3, the proposed changes would result in an increase in hourly emissions because the heat input rating of the SCGTs will increase. However, WCE is proposing no changes to the monthly or annual fuel consumption for the SCGTs, so the annual TAC emissions are expected to be unchanged.

The health risk impact of an increase in hourly emissions is evaluated using the emissions presented in Table 3-5 of this application and the Tier 3 Health Risk Assessment (HRA) methodology as prescribed in the Risk Assessment Procedures, Version 8.1, dated September 1, 2017; Procedures, Equations, and Assumptions Effective On or After October 1, 2017. The results are summarized in Table 4-6. As shown, the proposed project complies with the risk threshold of Rule 1401. The HRA analysis worksheet is provided in Appendix C.

Table 4-6: Summary of Results - Health Risk Assessment (per SCGT)

Risk Parameter	Result (Target Organ)	Rule 1401 Threshold	Exceed Threshold? (Yes/No)
HIA	Eye	1.0	No

4.9 Regulation XVII - Prevention of Significant Deterioration

The purpose of this regulation is to establish preconstruction review requirements for stationary sources to ensure that air quality in clean air areas does not significantly deteriorate while maintaining a margin for future industrial growth.

A Major Stationary Source is a stationary source that falls under one of the listed source categories from Rule 1702(m)(1) and has the potential to emit 100 tons per year or more of any air contaminant regulated by the Clean Air Act (CAA), or a stationary source that does not fall under one of the listed source categories from Rule 1702(m)(1) and has the potential to emit 250 tons per year or more of any air contaminant regulated by the CAA. Rule 1702(m)(1) lists 'fossil fuel-fired steam electric plants of more than 250 MMBtu per hour input,' and 'fossil fuel boilers (or combinations thereof) totaling more than 250 MMBtu per hour heat input.' WCE operates SCGT's. SCGT's are not 'steam electric plants' as there is no steam turbine and are no boilers; therefore, the potential to emit threshold for PSD applicability is 250 tons per year or more.

Table 4-7 summarizes the annual emissions for the facility, including the fire pump and cooling tower. The emissions for each pollutant are less than 250 tons per year and, since this project does not propose an increase in annual emissions, WCE is not considered to be a Major Stationary Source and further review of Regulation XVII is not required.

Table 4-7: Potential Annual Emissions - PSD Major Stationary Source Determination

Pollutant	Annual Emissions (ton/yr)	Basis
NOx	82.05	Calculated based on 2.3 ppmv
CO	112.96	Condition F2.1
VOC	23.97	Calculated based on 2 ppmv
SOx	5.69	Calculated based on 0.67 lb/mmscf Emission Factor
PM10	60.89	Condition F2.1

4.10 Regulation XX - RECLAIM

RECLAIM is a market-based incentive program designed to allow facilities flexibility in achieving emission reduction requirements for NOx and SOx under the Air Quality Management Plan using methods which include, but are not limited to: add-on controls, equipment modifications, reformulated products, operational changes, shutdowns, and the purchase of excess emission reductions.

Rule 2005 establishes the New Source Review Requirements for RECLAIM facilities. Rule 2005 requires that a new or modified source meet BACT, prohibits a new or modified source from causing a violation or making significantly worse an existing violation of the state or national ambient air quality standard at any receptor location in the District for NO_2 and requires that the facility holds sufficient RECAIM Trading Credits (RTCs) to offset the total facility emissions for the first year of operation at a 1-to-1 ratio.

BACT

The facility proposes to reduce the NOx concentration limit for each of the five SCGT to 2.3 ppmv at 15% excess O_2. A limit of 2.3 ppm is the most stringent limit achieved in practice for SCGTs. This limit was established in the permit for the City of Riverside Public Utilities Department facility (facility ID 139796) and has been achieved in practice.

The proposed project will result in an increase in the potential hourly emissions of SOx. The SCGTs consume pipeline quality natural gas. The use of pipeline quality natural gas satisfies BACT requirements for SOx.

Modeling

Modeling results are presented in Section 4.7.3 and Appendix C.

Offsets

The proposed project will result in a net decrease in NOx and SOx emissions on a monthly and annual basis due to the application of a more stringent NOx concentration limit and retaining existing fuel use limitations. The NOx and SOx emission reductions does not require the acquisition of additional RTC.

4.11 Regulation XXX - Title V Permits

The Title V Permit system is the air pollution control permit system implementing the federal Operating Permit Program as required by Title V of the federal CAA as amended in 1990 and to implement requirements for greenhouse gases pursuant to 40 CFR Parts 70. This regulation defines permit application and permit issuance procedures as well as compliance requirements associated with the program.

This application proposes a number of changes to the permit that impact emissions, including an increase in the maximum allowable hourly heat input per SCGT to 951.0 MMBtu per hour and a limit on the maximum daily heat input per SCGT to 22,350 MMBtu per day. As shown in Table 4-8, with these proposed changes, the maximum daily emissions of the non-RECLAIM pollutants are less than the Title V Significant Permit Revision threshold. The project will not result in an increase in annual emissions of NOx or SOx and would therefore not be considered a Significant Permit Revision due to an increase in the emissions of RECLAIM pollutants as defined in Rule 3000(b)(31)(D).

The proposed project is not a significant permit revision. The project should be evaluated as a de minimis significant permit revision under Title V. Per Rule 3003, the application will be processed by SCAQMD within 180 days following submittal of a complete application.

Table 4-8: Title V Significant Permit Revision Threshold Evaluation

Pollutant	Project Emission Increase (lb/day)	Title V Significant Permit Revision Threshold (lb/day)	Significant Revision? (Yes/No)
CO	31.95	220	No
VOC	9.57	30	No
PM10	29.26	30	No

4.12 California Environmental Quality Act (CEQA)

The proposed permit actions are ministerial. The equipment and operations are consistent with existing activities, zoning limitations and Conditional Use Permit limitations. Additional review under CEQA is not required. A Form 400-CEQA is provided in Appendix A.

5.0 PERMIT WORDING AND CONDITIONS

5.1 Proposed Permit Wording

WCE suggests the following changes to the equipment descriptions (~~deletions~~ **additions**). The requested changes reflect the maximum heat input for each of the SCGT of 951.0 MMBtu per hour.

GAS TURBINE, UNIT NO. 1,
NATURAL GAS, GENERAL
ELECTRIC, MODEL LMS100PA,
SIMPLE CYCLE, INTERCOOLED,
~~891.7~~ **951.0** MMBTU/HR AT 30 DEGREES F,
WITH WATER INJECTION, WITH
A/N: ~~581392~~
GENERATOR, 100.1 NET MW (104
GROSS MW).

GAS TURBINE, UNIT NO. 2,
NATURAL GAS, GENERAL
ELECTRIC, MODEL LMS100PA,
SIMPLE CYCLE, INTERCOOLED,
~~891.7~~ **951.0** MMBTU/HR AT 30 DEGREES F,
WITH WATER INJECTION, WITH
A/N: ~~581393~~
GENERATOR, 100.1 NET MW (104
GROSS MW).

GAS TURBINE, UNIT NO. 3,
NATURAL GAS, GENERAL
ELECTRIC, MODEL LMS100PA,
SIMPLE CYCLE, INTERCOOLED,
~~891.7~~ **951.0** MMBTU/HR AT 30 DEGREES F,
WITH WATER INJECTION, WITH
A/N: ~~581396~~
GENERATOR, 100.1 NET MW (104
GROSS MW).

GAS TURBINE, UNIT NO. 4,
NATURAL GAS, GENERAL
ELECTRIC, MODEL LMS100PA,
SIMPLE CYCLE, INTERCOOLED,
~~891.7~~ **951.0** MMBTU/HR AT 30 DEGREES F,
WITH WATER INJECTION, WITH
A/N: ~~581397~~
GENERATOR, 100.1 NET MW (104
GROSS MW).

GAS TURBINE, UNIT NO. 5,
NATURAL GAS, GENERAL
ELECTRIC, MODEL LMS100PA,
SIMPLE CYCLE, INTERCOOLED,
~~891.7~~ **951.0** MMBTU/HR AT 30 DEGREES F,
WITH WATER INJECTION, WITH
A/N: ~~581399~~
GENERATOR, 100.1 NET MW (104
GROSS MW).

5.2 Permit Conditions

WCE suggests the following changes to the permit conditions (~~deletions~~ **additions**).

The requested change to Condition A99.1 and A195.2 reflects the updated BACT emission limit for NOx of 2.3 ppmv.

A99.1 The ~~2.5~~ **2.3** PPM NOx emission limit(s) shall not apply during turbine start-up**,** ~~and~~ shutdown**, and tuning** periods. Start-up time shall not exceed 60 minutes. Shutdown time shall not exceed 10 minutes for each shutdown. The turbine shall be limited to a maximum of 480 start-ups per year. Written records of start-ups**,** ~~and~~ shutdowns**, and tunings** shall be maintained and made available upon request from the Executive Officer.

[**RULE 1703(a)(2)- PSD-BACT, 10-7-1988**; **RULE 2005, 6-3-2011**; RULE 2005, 12-4-2015]

[Devices subject to this condition: Dl, D7, D13, D19, D25]

A195.2 The ~~2.5~~ **2.3** PPMV NOX emission limit(s) is averaged over 60 minutes at 15% 02, dry.

[**RULE 1703(a)(2) - PSD-BACT, 10-7-1988**; **RULE 2005, 6-3-2011**; RULE 2005, 12-4-2015]

[Devices subject to this condition: Dl, D7, D13, D19, D25]

The requested change to Condition D12.2 reflects the updated ammonia injection rate from 215 pounds per hour to 265 pounds per hour.

D12.2 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

The ammonia injection rate shall not exceed ~~215 lb/hr~~ **265 lb/hr**.

[**RULE 1303(a)(l)-BACT, 5-10-1996**; RULE 1303(a)(l)-BACT, 12-6-2002; **RULE 1703(a)(2) - PSD-BACT, 10-7-1988**; **RULE 2005, 5-6-2005**]

[Devices subject to this condition: C4, C10, C16, C22, C28]

The addition of C1.xx reflects the proposed per-SCGT daily heat input limit of 22,350 MMBtu.

C1.xx The operator shall limit the heat input to no more than 22,350 MMBtu in any one day.

For the purpose of this condition, heat input shall be defined as the total heat input to a single turbine.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

[Devices subject to this condition: Dl, D7, D13, D19, D25]

The addition of C1.yy addresses tuning events.

C1.yy The operator shall limit the number of tuning events to no more than 2 in any one calendar year.

The total NOx emissions in any calendar day during which tuning occurs shall not exceed 200.04 lbs.

The total NOx emissions in any calendar month during which tuning occurs shall not exceed 3,477.08 lbs.

The total NOx emissions in any calendar year shall not exceed the RTC holding requirement specified in the applicable I298 conditions.

NOx emissions shall be measured with the certified NOx CEMS, except that NOx emissions calculated using the Missing Data Provisions of Regulation XX for periods during which the equipment is not in operation shall be excluded from the total NOx emissions used to determine compliance with this condition.

The operator shall maintain records to demonstrate compliance with this condition and shall make such records available to the Executive Officer upon request. The records shall be maintained for a minimum of 5 years in a manner approved by South Coast AQMD.

[RULE 1135, 11-2-2018]

[Devices subject to this condition: Dl, D7, D13, D19, D25]

APPENDIX A - SCAQMD APPLICATION FORMS

Equipment Description	Requested Permit Action	Form No. - Title
Gas Turbine No. 1; Device ID No. D1	Alteration/Modification	400-A - Application for Permit or Plan Approval 400-E-12 – Gas Turbine 400-PS – Plot Plan and Stack Information Form
Gas Turbine No. 2; Device ID No. D7	Alteration/Modification	400-A - Application for Permit or Plan Approval 400-E-12 – Gas Turbine 400-PS – Plot Plan and Stack Information Form
Gas Turbine No. 3; Device ID No. D13	Alteration/Modification	400-A - Application for Permit or Plan Approval 400-E-12 – Gas Turbine 400-PS – Plot Plan and Stack Information Form
Gas Turbine No. 4; Device ID No. D19	Alteration/Modification	400-A - Application for Permit or Plan Approval 400-E-12 – Gas Turbine 400-PS – Plot Plan and Stack Information Form
Gas Turbine No. 5; Device ID No. D25	Alteration/Modification	400-A - Application for Permit or Plan Approval 400-E-12 – Gas Turbine 400-PS – Plot Plan and Stack Information Form
SCR No. 1; Device ID No. C4	Change of Condition	400-A - Application for Permit or Plan Approval 400-E-5 – Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst
SCR No. 2; Device ID No. C10	Change of Condition	400-A - Application for Permit or Plan Approval 400-E-5 – Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst
SCR No. 3; Device ID No. C16	Change of Condition	400-A - Application for Permit or Plan Approval 400-E-5 – Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst
SCR No. 4; Device ID No. C22	Change of Condition	400-A - Application for Permit or Plan Approval 400-E-5 – Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst
SCR No. 5; Device ID No. C28	Change of Condition	400-A - Application for Permit or Plan Approval 400-E-5 – Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst
RECLAIM/Title V Permit	RECLAIM/Title V Facility Permit Amendment	400-A - Application for Permit or Plan Approval
Project	Permit Processing	400-XPP - Express Permit Processing Request
Project	Permit Processing	400-CEQA - California Environmental Quality Act (CEQA) Applicability

Equipment Description	Requested Permit Action	Form No. - Title
Project	RECLAIM/Title V Facility Permit Amendment	500-C1 - Compliance Status Report
Project	RECLAIM/Title V Facility Permit Amendment	500-F1 (Title V) - Title IV - Acid Rain Phase II Facility Information Summary
Project	RECLAIM/Title V Facility Permit Amendment	500-A2 - Title V Application Certification

SCAQMD Permit Processing Fees Portal

Hide Tooltip

Fee Sheet

Below are the permit fees calculated based on the information entered. Click the "Print" button to print the Fee Sheet for your records.

Print Restart

CPI Increase

- Due to COVID-19, the South Coast AQMD Governing Board voted to credit back the FY 2020-21 CPI-based increase of 2.8%.
- The amount due reflects this credit and shows FY 2019-20 rates.

Permit Unit	
Gas Turbine, 50 MW, other fuel	$22,654.61
Gas Turbine, 50 MW, other fuel (4 Identical)	$45,309.24
Expedited Processing Fee	$33,981.95
Permit Unit	
Selective Catalytic Reduction (SCR)	$3,164.78
Selective Catalytic Reduction (SCR) (4 Identical)	$6,329.56
Expedited Processing Fee	$4,747.19
Facility Permit Revision Fee	
Administrative Permit Revision Fee	$2,729.86

Summary

Permit Fees	$77,458.19
Expedited Processing Fees	$38,729.14
Higher Fees	$0.00
Small Business Discount	$0.00
Administrative Permit Revision Fee	$2,729.86
Total:	**$118,917.19**

Back

Generate Voucher

South Coast Air Quality Management District

Form 400-A

Application Form for Permit or Plan Approval

List only one piece of equipment or process per form.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

1. Facility Name (Business Name of Operator to Appear on the Permit): Walnut Creek Energy, LLC

2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

3. Owner's Business Name (If different from Business Name of Operator):

Section B - Equipment Location Address

4. Equipment Location Is: (●) Fixed Location ( ) Various Location
(For equipment operated at various locations, provide address of initial site.)

911 Bixby Drive
Street Address

City of Industry , CA 91745
City Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section C - Permit Mailing Address

5. Permit and Correspondence Information:
☒ Check here if same as equipment location address

911 Bixby Drive
Address

City of Industry , CA 91745
City State Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section D - Application Type

6. The Facility Is: ( ) Not In RECLAIM or Title V ( ) In RECLAIM ( ) In Title V (●) In RECLAIM & Title V Programs

7. Reason for Submitting Application (Select only ONE):

7a. New Equipment or Process Application:
- ( ) New Construction (Permit to Construct)
- ( ) Equipment On-Site But Not Constructed or Operational
- ( ) Equipment Operating Without A Permit *
- ( ) Compliance Plan
- ( ) Registration/Certification
- ( ) Streamlined Standard Permit

7b. Facility Permits:
- ( ) Title V Application or Amendment (Refer to Title V Matrix)
- ( ) RECLAIM Facility Permit Amendment

7c. Equipment or Process with an Existing/Previous Application or Permit:
- ( ) Administrative Change
- (●) Alteration/Modification
- ( ) Alteration/Modification without Prior Approval *
- ( ) Change of Condition
- ( ) Change of Condition without Prior Approval *
- ( ) Change of Location
- ( ) Change of Location without Prior Approval *
- ( ) Equipment Operating with an Expired/Inactive Permit *

Existing or Previous Permit/Application
If you checked any of the items in 7c., you MUST provide an existing Permit or Application Number: 581392

* A Higher Permit Processing Fee and additional Annual Operating Fees (up to 3 full years) may apply (Rule 301(c)(1)(D)(i)).

8a. Estimated Start Date of Construction (mm/dd/yyyy):

8b. Estimated End Date of Construction (mm/dd/yyyy):

8c. Estimated Start Date of Operation (mm/dd/yyyy):

9. Description of Equipment or Reason for Compliance Plan (list applicable rule):
CTG No. 1. Increase in Maximum Hourly Heat Input Rating.

10. For Identical equipment, how many additional applications are being submitted with this application? (Form 400-A required for each equipment / process): 4

11. Are you a Small Business as per AQMD's Rule 102 definition? (10 employees or less and total gross receipts are $500,000 or less OR a not-for-profit training center) (●) No ( ) Yes

12. Has a Notice of Violation (NOV) or a Notice to Comply (NC) been issued for this equipment? (●) No ( ) Yes
If Yes, provide NOV/NC#:

Section E - Facility Business Information

13. What type of business is being conducted at this equipment location?
Electric Power Generation

14. What is your business primary NAICS Code? (North American Industrial Classification System): 221112

15. Are there other facilities in the SCAQMD jurisdiction operated by the same operator? ( ) No (●) Yes

16. Are there any schools (K-12) within 1000 feet of the facility property line? (●) No ( ) Yes

Section F - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application are true and correct.

17. Signature of Responsible Official: George L Piantka

18. Title of Responsible Official: Senior Director

19. I wish to review the permit prior to issuance. (This may cause a delay in the application process.) ( ) No (●) Yes

20. Print Name: George Piantka

21. Date: 3/11/2021

22. Do you claim confidentiality of data? (If Yes, see instructions.) (●) No ( ) Yes

23. Check List: ☒ Authorized Signature/Date ☒ Form 400-CEQA ☒ Supplemental Form(s) (ie., Form 400-E-xx) ☒ Fees Enclosed

AQMD USE ONLY	APPLICATION TRACKING #	CHECK #	AMOUNT RECEIVED $	PAYMENT TRACKING #	VALIDATION

DATE	APP REJ	DATE	APP REJ	CLASS I III	BASIC CONTROL	EQUIPMENT CATEGORY CODE	TEAM	ENGINEER	REASON/ACTION TAKEN

South Coast Air Quality Management District

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator That Appears On Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive, City of Industry, CA, 91745 | CTG-1

(•) **Fixed Location** ( ) **Various Locations**

Section B - Equipment Description

Turbine

Manufacturer: General Electric **Model:** LMS100PA **Serial No.:**

Size (based on Higher Heating Value - HHV):

Manufacturer Maximum Input Rating: 951.00 MMBTU/hr _____ kWh

Manufacturer Maximum Output Rating: _____ MMBTU/hr _____ kWh

Function (Check all that apply)

☒ **Electrical Generation** ☐ **Driving Pump/Compressor** ☐ **Emergency Peaking Unit**
☐ **Steam Generation** ☐ **Exhaust Gas Recovery** ☐ **Other** (specify): _____

Cycle Type

(•) **Simply Cycle** ( ) **Regenerative Cycle**
( ) **Combined Cycle** ( ) **Other** (specify): _____

Combustion Type

( ) **Tubular** ( ) **Can-Annular** (•) **Annular**

Fuel (Turbine)

☒ **Natural Gas** ☐ **LPG** ☐ **Digester Gas***
☐ **Landfill Gas*** ☐ **Propane** ☐ **Refinery Gas*** ☐ **Other***: _____

* (If Digester Gas, Landfill Gas, Refinery Gas, and/or Other are checked, attach fuel analysis indicating higher heating value and sulfur content).

Heat Recovery Steam Generator (HRSG)

Steam Turbine Capacity: _____ MW

Low Pressure Steam Output Capacity: _____ lb/hr @ _____ °F

High Pressure Steam Output Capacity: _____ lb/hr @ _____ °F

Superheated Steam Output Capacity: _____ lb/hr @ _____ °F

Duct Burner

Manufacturer: **Model:**

Number of burners: _____ **Rating of each burner** (HHV): _____

Type: ( ) **Low NOx** (please attach manufacturer's specifications)

( ) **Other:** _____
Show all heat transfer surface locations with the HRSG and temperature profile

Fuel (Duct Burner)

( ) **Natural Gas** ( ) **LPG** ( ) **Digester Gas***
( ) **Landfill Gas*** ( ) **Propane** ( ) **Refinery Gas*** ( ) **Other***: _____

* (If Digester Gas, Landfill Gas, Refinery Gas, and/or Other are checked, attach fuel analysis indicating higher heating value and sulfur content).

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section B - Equipment Description (Cont.)

Air Pollution Control

○ **Selective Catalytic Reduction (SCR)*** ○ **Selective Non-Catalytic Reduction (SNCR)***

○ **Oxidation Catalyst*** ○ **Other** (specify)*:_____

◉ **Steam/Water Injection:** **Injection Rate:**_____ lbs. water/lbs. fuel, **or**_____ mole water/mole fuel

* Separate application is required.

Capital Cost:_____ **Installation Cost:**_____ **Annual Operating Cost:**_____

Oxidation Catalyst Data (If Applicable)

Manufacturer: See Original Permit Application **Model:**

Catalyst Dimensions: **Length:**_____ ft._____ in. **Width:**_____ ft._____ in. **Height:**_____ ft._____ in.

Catalyst Cell Density:_____ cells/sq.in. **Pressure Drop Across Catalyst:**_____

Manufacturer's Guarantee: **CO Control Efficiency:**_____ % **Catalyst Life:**_____ yrs

VOC Control Efficiency:_____ % **Operating Temp. Range:**_____ °F

Space Velocity (gas flow rate/catalyst volume):_____ **Area Velocity** (gas flow/wetted catalyst surface area):_____

VOC Concentration into Catalyst:_____ PPMVD@ 15%O_2 **CO Concentration inot Catalyst:**_____ PPMVD@ 15%O_2

Section C - Operation Information

On-line Emissions Data

Pollutants	Maximum Emissions Before Control *		Maximum Emissions After Control	
	PPM@15% O_2, dry	lb/hour	PPM@15% O_2, dry	lb/hour
ROG			2.0	
NOx			2.3	
CO			4.0	
PM_{10}				
SOx				
NH_3			5.0	

* Based on temperature, fuel consumption, and MW output.

Reference (attach data):

☐ **Manufacturer Emission Data** ☐ **EPA Emission Factors** ☐ **AQMD Emission Factors** ☐ **Source Test**

Stack or Vent Data

Stack Height:_____ ft._____ in. **Stack Diameter:**_____ ft. _____ in.

Exhaust Temperature:_____ °F **Exhaust Pressure:**_____ inches water column

Exhaust Flow Rate:_____ CFM **Oxygen Level:**_____ %

South Coast Air Quality Management District

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section C - Operation Information (cont.)

Startup Data

No. of Startups per day: 2 No. of Startups per year: 480 Duration of each startup: 1 hrs.

Shutdown Data

No. of Shutdowns per day: 2 No. of Shutdowns per year: 480 Duration of each Shutdown: 0.167 hrs.

Startup and Shutdown Emissions Data

Pollutants	Startup Emissions		Shutdown Emissions	
	PPM@15% O_2, dry	lb/hour	PPM@15% O_2, dry	lb/hour
ROG				
NOx				
CO				
PM_{10}				
SOx				
NH_3				

Monitoring and Reporting

Continuous Emission Monitoring System (CEMS): CEMS Make: CEMS Installed and Operating

CEMS Model:

Will the CEMS be used to measure both on-line and startup/shutdown emissions? ○ Yes ○ No

The following parameters will be continuously monitored:

☐ NOx ☐ CO ☐ O_2

☐ Fuel Flow Rate ☐ Ammonia Injection Rate ☐ Other (specify):

☐ Ammonia Stack Concentration: Ammonia CEMS Make:

Ammonia CEMS Model:

Operating Schedule

Normal: _____ hours/day _____ days/week _____ weeks/yr

Maximum: _____ hours/day _____ days/week _____ weeks/yr

Section D - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application is true and correct.

Preparer Info

Signature: Date: 03/10/2021

Title: Scientist Company Name: Yorke Engineering, LLC

Name: Eduardo Jimenez

Phone #: (949) 392-3059 Fax #:

Email: EJimenez@YorkeEngr.com

Contact Info

Name: Heather Mostert

Title: Env. Specialist Company Name: Walnut Creek Energy

Phone #: (626) 986-0373 Fax #:

Email: Heather.Mostert@nrg.com

THIS IS A PUBLIC DOCUMENT

Pursuant to the California Public Records Act, your permit application and any supplemental documentation are public records and may be disclosed to a third party. If you wish to claim certain limited information as exempt from disclosure because it qualifies as a trade secret, as defined in the District's Guidelines for Implementing the California Public Records Act, you must make such claim at the time of submittal to the District.

Check here if you claim that this form or its attachments contain confidential trade secret information. ☐

South Coast Air Quality Management District

Form 400-PS

Plot Plan And Stack Information Form

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Form 400A and Form 400-CEQA.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944
Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator To Appears On The Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive; City of Industry, CA 91745 | CTG-1

(●) **Fixed Location** ( ) **Various Locations**

Section B - Location Data

Plot Plan

Please attach a site map for the project with distances and scales. Identify and locate the proposed equipment on the map. A copy of the appropriate Thomas Brothers page, a web-based map, or a sketch that shows the major streets and location of the equipment is acceptable.

Location of Schools Nearby

Is the facility located within a 1/4 mile radius (1,320 feet) of the outer boundary of a school? ( ) Yes (●) No

If yes, please provide name(s) of school(s) below:

School Name: _____ **School Name:** _____

School Address: _____ **School Address:** _____

Distance from stack or equipment vent to the outer boundary of the school: _____ feet

Distance from stack or equipment vent to the outer boundary of the school: _____ feet

CA Health & Safety Code 42301.9: "School" means any public or private school used for purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes.

Population Density

(●) Urban ( ) Rural (<50% of land within 3 km radius accounted for by urban land use categories, i.e., multi-family dwelling or industrial.)

Zoning Classification

( ) **Mixed Use Residential Commercial Zone (M-U)** ( ) **Service and Professional Zone (C-S)** ( ) **Medium Commercial (C-3)**

( ) **Heavy Commercial (C-4)** (●) **Commercial Manufacturing (C-M)**

Section C - Emission Release Parameters - Stacks, Vents

Stack Data

Stack Height: 90.00 feet (above ground level) **What is the height of the closest building nearest the stack?** 50 feet

Stack Inside Diameter: 162.00 inches **Stack Flow:** 1,058,559 acfm **Stack Temperature:** 752 °F

Rain Cap Present: ( ) Yes (●) No **Stack Orientation:** (●) Vertical ( ) Horizontal

If the stack height is less than 2.5 times the closest building height (H), please provide information on any building within 5xH distance from the stack (attach additional sheet if necessary):

Building #/Name: See Appendix C **Building #/Name:** _____

Building Height: _____ feet (above ground level) **Building Height:** _____ feet (above ground level)

Building Width: _____ feet **Building Width:** _____ feet

Building Length: _____ feet **Building Length:** _____ feet

Receptor Distance From Equipment Stack or Roof Vents/Openings

Distance to nearest residence or sensitive receptor*: 1,500 feet

Distance to nearest business: 300 feet

Building Information

Are the emissions released from vents and/or openings from a building? ( ) Yes (●) No

If yes, please provide:

Building #/Name: _____ **Building Width:** _____ feet

Building Height: _____ feet (above ground level) **Building Length:** _____ feet

*AQMD Rule 1470 defines SENSITIVE RECEPTOR as meaning any residence including private homes, condominiums, apartments, and living quarters, schools as defined under paragraph (b)(57), preschools, daycare centers and health facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

South Coast Air Quality Management District

Form 400-PS

Plot Plan And Stack Information Form

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Form 400A and Form 400-CEQA.

Section D - Authorization/Signature			
I hereby certify that all information contained herein and information submittfgfed with this application is true and correct.			
Signature of Preparer: 	**Title of Preparer:** Scientist	**Preparer's Phone #:** (949) 392-3059 **Preparer's Email:** EJimenez@YorkeEngr.com	
Contact Person: Heather Mostert **Contact's Email:** Heather.Mostert@nrg.com	**Contact's Phone#:** (626) 986-0373 **Contact's Fax#:**	**Date Signed:** 03/10/2021	

THIS IS A PUBLIC DOCUMENT

Pursuant to the California Public Records Act, your permit application and any supplemental documentation are public records and may be disclosed to a third party. If you wish to claim certain limited information as exempt from disclosure because it qualifies as a trade secret, as defined in the District's Guidelines for Implementing the California Public Records Act, you must make such claim at the time of submittal to the District.

Check here if you claim that this form or its attachments contain confidential trade secret information. ☐

South Coast Air Quality Management District

Form 400-A

Application Form for Permit or Plan Approval

List only one piece of equipment or process per form.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

1. Facility Name (Business Name of Operator to Appear on the Permit): Walnut Creek Energy, LLC

2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

3. Owner's Business Name (If different from Business Name of Operator):

Section B - Equipment Location Address

4. Equipment Location Is: (●) Fixed Location ( ) Various Location
(For equipment operated at various locations, provide address of initial site.)

911 Bixby Drive
Street Address

City of Industry , CA 91745
City Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section C - Permit Mailing Address

5. Permit and Correspondence Information:
[X] Check here if same as equipment location address

911 Bixby Drive
Address

City of Industry , CA 91745
City State Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section D - Application Type

6. The Facility Is: ( ) Not In RECLAIM or Title V ( ) In RECLAIM ( ) In Title V (●) In RECLAIM & Title V Programs

7. Reason for Submitting Application (Select only ONE):

7a. New Equipment or Process Application:

- ( ) New Construction (Permit to Construct)
- ( ) Equipment On-Site But Not Constructed or Operational
- ( ) Equipment Operating Without A Permit *
- ( ) Compliance Plan
- ( ) Registration/Certification
- ( ) Streamlined Standard Permit

7b. Facility Permits:

- ( ) Title V Application or Amendment (Refer to Title V Matrix)
- ( ) RECLAIM Facility Permit Amendment

7c. Equipment or Process with an Existing/Previous Application or Permit:

- ( ) Administrative Change
- (●) Alteration/Modification
- ( ) Alteration/Modification without Prior Approval *
- ( ) Change of Condition
- ( ) Change of Condition without Prior Approval *
- ( ) Change of Location
- ( ) Change of Location without Prior Approval *
- ( ) Equipment Operating with an Expired/Inactive Permit *

Existing or Previous Permit/Application
If you checked any of the items in 7c., you MUST provide an existing Permit or Application Number: 581393

* A Higher Permit Processing Fee and additional Annual Operating Fees (up to 3 full years) may apply (Rule 301(c)(1)(D)(i)).

8a. Estimated Start Date of Construction (mm/dd/yyyy):

8b. Estimated End Date of Construction (mm/dd/yyyy):

8c. Estimated Start Date of Operation (mm/dd/yyyy):

9. Description of Equipment or Reason for Compliance Plan (list applicable rule):
CTG No. 2. Increase in Maximum Hourly Heat Input Rating.

10. For Identical equipment, how many additional applications are being submitted with this application? (Form 400-A required for each equipment / process): 4

11. Are you a Small Business as per AQMD's Rule 102 definition? (10 employees or less and total gross receipts are $500,000 or less OR a not-for-profit training center) (●) No ( ) Yes

12. Has a Notice of Violation (NOV) or a Notice to Comply (NC) been issued for this equipment? (●) No ( ) Yes
If Yes, provide NOV/NC#:

Section E - Facility Business Information

13. What type of business is being conducted at this equipment location?
Electric Power Generation

14. What is your business primary NAICS Code? (North American Industrial Classification System): 221112

15. Are there other facilities in the SCAQMD jurisdiction operated by the same operator? ( ) No (●) Yes

16. Are there any schools (K-12) within 1000 feet of the facility property line? (●) No ( ) Yes

Section F - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application are true and correct.

17. Signature of Responsible Official: George L. Piantka

18. Title of Responsible Official: Senior Director

19. I wish to review the permit prior to issuance. (This may cause a delay in the application process.) ( ) No (●) Yes

20. Print Name: George Piantka

21. Date: 3/11/2021

22. Do you claim confidentiality of data? (If Yes, see instructions.) (●) No ( ) Yes

23. Check List: [X] Authorized Signature/Date [X] Form 400-CEQA [X] Supplemental Form(s) (ie., Form 400-E-xx) [X] Fees Enclosed

AQMD USE ONLY	APPLICATION TRACKING #	CHECK #	AMOUNT RECEIVED $	PAYMENT TRACKING #	VALIDATION

DATE	APP REJ	DATE	APP REJ	CLASS I III	BASIC CONTROL	EQUIPMENT CATEGORY CODE	TEAM	ENGINEER	REASON/ACTION TAKEN

South Coast Air Quality Management District

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator That Appears On Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive, City of Industry, CA, 91745 | CTG-2

(•) **Fixed Location** ( ) **Various Locations**

Section B - Equipment Description

Turbine

Manufacturer: General Electric **Model:** LMS100PA **Serial No.:**

Size (based on Higher Heating Value - HHV):

Manufacturer Maximum Input Rating: 951.00 MMBTU/hr _____ kWh

Manufacturer Maximum Output Rating: _____ MMBTU/hr _____ kWh

Function (Check all that apply)

☒ **Electrical Generation** ☐ **Driving Pump/Compressor** ☐ **Emergency Peaking Unit**
☐ **Steam Generation** ☐ **Exhaust Gas Recovery** ☐ **Other** (specify): _____

Cycle Type

(•) **Simply Cycle** ( ) **Regenerative Cycle**
( ) **Combined Cycle** ( ) **Other** (specify): _____

Combustion Type

( ) **Tubular** ( ) **Can-Annular** (•) **Annular**

Fuel (Turbine)

☒ **Natural Gas** ☐ **LPG** ☐ **Digester Gas***
☐ **Landfill Gas*** ☐ **Propane** ☐ **Refinery Gas*** ☐ **Other***: _____

* (If Digester Gas, Landfill Gas, Refinery Gas, and/or Other are checked, attach fuel analysis indicating higher heating value and sulfur content).

Heat Recovery Steam Generator (HRSG)

Steam Turbine Capacity: _____ MW

Low Pressure Steam Output Capacity: _____ lb/hr @ _____ °F

High Pressure Steam Output Capacity: _____ lb/hr @ _____ °F

Superheated Steam Output Capacity: _____ lb/hr @ _____ °F

Duct Burner

Manufacturer: **Model:**

Number of burners: _____ **Rating of each burner** (HHV): _____

Type: ( ) **Low NOx** (please attach manufacturer's specifications)

( ) **Other:** _____
Show all heat transfer surface locations with the HRSG and temperature profile

Fuel (Duct Burner)

( ) **Natural Gas** ( ) **LPG** ( ) **Digester Gas***
( ) **Landfill Gas*** ( ) **Propane** ( ) **Refinery Gas*** ( ) **Other***: _____

* (If Digester Gas, Landfill Gas, Refinery Gas, and/or Other are checked, attach fuel analysis indicating higher heating value and sulfur content).

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section B - Equipment Description (Cont.)

Air Pollution Control

○ **Selective Catalytic Reduction (SCR)*** ○ **Selective Non-Catalytic Reduction (SNCR)***

○ **Oxidation Catalyst*** ○ **Other** (specify)*:_____

◉ **Steam/Water Injection:** **Injection Rate:**_____ lbs. water/lbs. fuel, **or**_____ mole water/mole fuel

* Separate application is required.

Capital Cost:_____ **Installation Cost:**_____ **Annual Operating Cost:**_____

Oxidation Catalyst Data (If Applicable)

Manufacturer: See Original Permit Application **Model:**

Catalyst Dimensions: **Length:**_____ ft._____ in. **Width:**_____ ft._____ in. **Height:**_____ ft._____ in.

Catalyst Cell Density:_____ cells/sq.in. **Pressure Drop Across Catalyst:**_____

Manufacturer's Guarantee: **CO Control Efficiency:**_____ % **Catalyst Life:**_____ yrs

VOC Control Efficiency:_____ % **Operating Temp. Range:**_____ °F

Space Velocity (gas flow rate/catalyst volume):_____ **Area Velocity** (gas flow/wetted catalyst surface area):_____

VOC Concentration into Catalyst:_____ PPMVD@ 15%O_2 **CO Concentration inot Catalyst:**_____ PPMVD@ 15%O_2

Section C - Operation Information

On-line Emissions Data

Pollutants	Maximum Emissions Before Control *		Maximum Emissions After Control	
	PPM@15% O_2, dry	lb/hour	PPM@15% O_2, dry	lb/hour
ROG			2.0	
NOx			2.3	
CO			4.0	
PM_{10}				
SOx				
NH_3			5.0	

* Based on temperature, fuel consumption, and MW output.

Reference (attach data):

☐ **Manufacturer Emission Data** ☐ **EPA Emission Factors** ☐ **AQMD Emission Factors** ☐ **Source Test**

Stack or Vent Data

Stack Height:_____ ft._____ in. **Stack Diameter:**_____ ft. _____ in.

Exhaust Temperature:_____ °F **Exhaust Pressure:**_____ inches water column

Exhaust Flow Rate:_____ CFM **Oxygen Level:**_____ %

South Coast Air Quality Management District

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section C - Operation Information (cont.)

Startup Data

No. of Startups per day: 2 No. of Startups per year: 480 Duration of each startup: 1 hrs.

Shutdown Data

No. of Shutdowns per day: 2 No. of Shutdowns per year: 480 Duration of each Shutdown: 0.167 hrs.

Startup and Shutdown Emissions Data

Pollutants	Startup Emissions		Shutdown Emissions	
	PPM@15% O_2, dry	lb/hour	PPM@15% O_2, dry	lb/hour
ROG				
NOx				
CO				
PM_{10}				
SOx				
NH_3				

Monitoring and Reporting

Continuous Emission Monitoring System (CEMS): CEMS Make: CEMS Installed and Operating

CEMS Model:

Will the CEMS be used to measure both on-line and startup/shutdown emissions? ○ Yes ○ No

The following parameters will be continuously monitored:

☐ NOx ☐ CO ☐ O_2

☐ Fuel Flow Rate ☐ Ammonia Injection Rate ☐ Other (specify):

☐ Ammonia Stack Concentration: Ammonia CEMS Make:

Ammonia CEMS Model:

Operating Schedule

Normal: _____ hours/day _____ days/week _____ weeks/yr

Maximum: _____ hours/day _____ days/week _____ weeks/yr

Section D - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application is true and correct.

Preparer Info

Signature: Date: 03/10/2021

Title: Scientist Company Name: Yorke Engineering, LLC

Name: Eduardo Jimenez

Phone #: (949) 392-3059 Fax #:

Email: EJimenez@YorkeEngr.com

Contact Info

Name: Heather Mostert

Title: Env. Specialist Company Name: Walnut Creek Energy

Phone #: (626) 986-0373 Fax #:

Email: Heather.Mostert@nrg.com

THIS IS A PUBLIC DOCUMENT

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Check here if you claim that this form or its attachments contain confidential trade secret information. ☐

South Coast Air Quality Management District

Form 400-PS

Plot Plan And Stack Information Form

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Form 400A and Form 400-CEQA.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944
Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator To Appears On The Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive; City of Industry, CA 91745 | CTG-2

(●) **Fixed Location** ( ) **Various Locations**

Section B - Location Data

Plot Plan

Please attach a site map for the project with distances and scales. Identify and locate the proposed equipment on the map. A copy of the appropriate Thomas Brothers page, a web-based map, or a sketch that shows the major streets and location of the equipment is acceptable.

Location of Schools Nearby

Is the facility located within a 1/4 mile radius (1,320 feet) of the outer boundary of a school? ( ) Yes (●) No

If yes, please provide name(s) of school(s) below:

School Name: _____ **School Name:** _____

School Address: _____ **School Address:** _____

Distance from stack or equipment vent to the outer boundary of the school: _____ feet

Distance from stack or equipment vent to the outer boundary of the school: _____ feet

CA Health & Safety Code 42301.9: "School" means any public or private school used for purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes.

Population Density

(●) Urban ( ) Rural (<50% of land within 3 km radius accounted for by urban land use categories, i.e., multi-family dwelling or industrial.)

Zoning Classification

( ) **Mixed Use Residential Commercial Zone (M-U)** ( ) **Service and Professional Zone (C-S)** ( ) **Medium Commercial (C-3)**

( ) **Heavy Commercial (C-4)** (●) **Commercial Manufacturing (C-M)**

Section C - Emission Release Parameters - Stacks, Vents

Stack Data

Stack Height: 90.00 feet (above ground level) **What is the height of the closest building nearest the stack?** 50 feet

Stack Inside Diameter: 162.00 inches **Stack Flow:** 1,042,849 acfm **Stack Temperature:** 759 °F

Rain Cap Present: ( ) Yes (●) No **Stack Orientation:** (●) Vertical ( ) Horizontal

If the stack height is less than 2.5 times the closest building height (H), please provide information on any building within 5xH distance from the stack (attach additional sheet if necessary):

Building #/Name: See Appendix C **Building #/Name:** _____

Building Height: _____ feet (above ground level) **Building Height:** _____ feet (above ground level)

Building Width: _____ feet **Building Width:** _____ feet

Building Length: _____ feet **Building Length:** _____ feet

Receptor Distance From Equipment Stack or Roof Vents/Openings

Distance to nearest residence or sensitive receptor*: 1,500 feet

Distance to nearest business: 300 feet

Building Information

Are the emissions released from vents and/or openings from a building? ( ) Yes (●) No

If yes, please provide:

Building #/Name: _____ **Building Width:** _____ feet

Building Height: _____ feet (above ground level) **Building Length:** _____ feet

*AQMD Rule 1470 defines SENSITIVE RECEPTOR as meaning any residence including private homes, condominiums, apartments, and living quarters, schools as defined under paragraph (b)(57), preschools, daycare centers and health facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

South Coast Air Quality Management District

Form 400-PS

Plot Plan And Stack Information Form

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Form 400A and Form 400-CEQA.

Section D - Authorization/Signature

I hereby certify that all information contained herein and information submittfgfed with this application is true and correct.

Signature of Preparer:	Title of Preparer:	Preparer's Phone #: (949) 392-3059 Preparer's Email: EJimenez@YorkeEngr.com
	Scientist	

Contact Person:	Contact's Phone#: (626) 986-0373	Date Signed:
Heather Mostert		03/10/2021
Contact's Email: Heather.Mostert@nrg.com	Contact's Fax#:	

THIS IS A PUBLIC DOCUMENT

Pursuant to the California Public Records Act, your permit application and any supplemental documentation are public records and may be disclosed to a third party. If you wish to claim certain limited information as exempt from disclosure because it qualifies as a trade secret, as defined in the District's Guidelines for Implementing the California Public Records Act, you must make such claim at the time of submittal to the District.

Check here if you claim that this form or its attachments contain confidential trade secret information. ☐

South Coast Air Quality Management District

Form 400-A

Application Form for Permit or Plan Approval

List only one piece of equipment or process per form.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

1. Facility Name (Business Name of Operator to Appear on the Permit): Walnut Creek Energy, LLC

2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

3. Owner's Business Name (If different from Business Name of Operator):

Section B - Equipment Location Address

4. Equipment Location Is: (●) Fixed Location ( ) Various Location
(For equipment operated at various locations, provide address of initial site.)

911 Bixby Drive
Street Address

City of Industry , CA 91745
City Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section C - Permit Mailing Address

5. Permit and Correspondence Information:
[X] Check here if same as equipment location address

911 Bixby Drive
Address

City of Industry , CA 91745
City State Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section D - Application Type

6. The Facility Is: ( ) Not In RECLAIM or Title V ( ) In RECLAIM ( ) In Title V (●) In RECLAIM & Title V Programs

7. Reason for Submitting Application (Select only ONE):

7a. New Equipment or Process Application:

- ( ) New Construction (Permit to Construct)
- ( ) Equipment On-Site But Not Constructed or Operational
- ( ) Equipment Operating Without A Permit *
- ( ) Compliance Plan
- ( ) Registration/Certification
- ( ) Streamlined Standard Permit

7b. Facility Permits:

- ( ) Title V Application or Amendment (Refer to Title V Matrix)
- ( ) RECLAIM Facility Permit Amendment

7c. Equipment or Process with an Existing/Previous Application or Permit:

- ( ) Administrative Change
- (●) Alteration/Modification
- ( ) Alteration/Modification without Prior Approval *
- ( ) Change of Condition
- ( ) Change of Condition without Prior Approval *
- ( ) Change of Location
- ( ) Change of Location without Prior Approval *
- ( ) Equipment Operating with an Expired/Inactive Permit *

Existing or Previous Permit/Application
If you checked any of the items in 7c., you MUST provide an existing Permit or Application Number: 581396

* A Higher Permit Processing Fee and additional Annual Operating Fees (up to 3 full years) may apply (Rule 301(c)(1)(D)(i)).

8a. Estimated Start Date of Construction (mm/dd/yyyy):

8b. Estimated End Date of Construction (mm/dd/yyyy):

8c. Estimated Start Date of Operation (mm/dd/yyyy):

9. Description of Equipment or Reason for Compliance Plan (list applicable rule):
CTG No. 3. Increase in Maximum Hourly Heat Input Rating.

10. For Identical equipment, how many additional applications are being submitted with this application? (Form 400-A required for each equipment / process): 4

11. Are you a Small Business as per AQMD's Rule 102 definition? (10 employees or less and total gross receipts are $500,000 or less OR a not-for-profit training center) (●) No ( ) Yes

12. Has a Notice of Violation (NOV) or a Notice to Comply (NC) been issued for this equipment? (●) No ( ) Yes
If Yes, provide NOV/NC#:

Section E - Facility Business Information

13. What type of business is being conducted at this equipment location?
Electric Power Generation

14. What is your business primary NAICS Code? (North American Industrial Classification System): 221112

15. Are there other facilities in the SCAQMD jurisdiction operated by the same operator? ( ) No (●) Yes

16. Are there any schools (K-12) within 1000 feet of the facility property line? (●) No ( ) Yes

Section F - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application are true and correct.

17. Signature of Responsible Official: George L. Piantka

18. Title of Responsible Official: Senior Director

19. I wish to review the permit prior to issuance. (This may cause a delay in the application process.) ( ) No (●) Yes

20. Print Name: George Piantka

21. Date: 3/11/2021

22. Do you claim confidentiality of data? (If Yes, see instructions.) (●) No ( ) Yes

23. Check List: [X] Authorized Signature/Date [X] Form 400-CEQA [X] Supplemental Form(s) (ie., Form 400-E-xx) [X] Fees Enclosed

AQMD USE ONLY	APPLICATION TRACKING #	CHECK #	AMOUNT RECEIVED $	PAYMENT TRACKING #	VALIDATION

DATE	APP REJ	DATE	APP REJ	CLASS I III	BASIC CONTROL	EQUIPMENT CATEGORY CODE	TEAM	ENGINEER	REASON/ACTION TAKEN

South Coast Air Quality Management District

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator That Appears On Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive, City of Industry, CA, 91745 | CTG-3

(•) **Fixed Location** ( ) **Various Locations**

Section B - Equipment Description

Turbine

Manufacturer: General Electric **Model:** LMS100PA **Serial No.:**

Size (based on Higher Heating Value - HHV):

Manufacturer Maximum Input Rating: 951.00 MMBTU/hr _____ kWh

Manufacturer Maximum Output Rating: _____ MMBTU/hr _____ kWh

Function (Check all that apply)

☒ **Electrical Generation** ☐ **Driving Pump/Compressor** ☐ **Emergency Peaking Unit**
☐ **Steam Generation** ☐ **Exhaust Gas Recovery** ☐ **Other** (specify): _____

Cycle Type

(•) **Simply Cycle** ( ) **Regenerative Cycle**
( ) **Combined Cycle** ( ) **Other** (specify): _____

Combustion Type

( ) **Tubular** ( ) **Can-Annular** (•) **Annular**

Fuel (Turbine)

☒ **Natural Gas** ☐ **LPG** ☐ **Digester Gas***
☐ **Landfill Gas*** ☐ **Propane** ☐ **Refinery Gas*** ☐ **Other***: _____

* (If Digester Gas, Landfill Gas, Refinery Gas, and/or Other are checked, attach fuel analysis indicating higher heating value and sulfur content).

Heat Recovery Steam Generator (HRSG)

Steam Turbine Capacity: _____ MW

Low Pressure Steam Output Capacity: _____ lb/hr @ _____ °F

High Pressure Steam Output Capacity: _____ lb/hr @ _____ °F

Superheated Steam Output Capacity: _____ lb/hr @ _____ °F

Duct Burner

Manufacturer: **Model:**

Number of burners: _____ **Rating of each burner** (HHV): _____

Type: ( ) **Low NOx** (please attach manufacturer's specifications)

( ) **Other:** _____
Show all heat transfer surface locations with the HRSG and temperature profile

Fuel (Duct Burner)

( ) **Natural Gas** ( ) **LPG** ( ) **Digester Gas***
( ) **Landfill Gas*** ( ) **Propane** ( ) **Refinery Gas*** ( ) **Other***: _____

* (If Digester Gas, Landfill Gas, Refinery Gas, and/or Other are checked, attach fuel analysis indicating higher heating value and sulfur content).

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section B - Equipment Description (Cont.)

Air Pollution Control

○ **Selective Catalytic Reduction (SCR)*** ○ **Selective Non-Catalytic Reduction (SNCR)***

○ **Oxidation Catalyst*** ○ **Other** (specify)*:_____

◉ **Steam/Water Injection:** **Injection Rate:**_____ lbs. water/lbs. fuel, **or**_____ mole water/mole fuel

* Separate application is required.

Capital Cost:_____ **Installation Cost:**_____ **Annual Operating Cost:**_____

Oxidation Catalyst Data (If Applicable)

Manufacturer: See Original Permit Application **Model:**

Catalyst Dimensions: **Length:**_____ ft._____ in. **Width:**_____ ft._____ in. **Height:**_____ ft._____ in.

Catalyst Cell Density:_____ cells/sq.in. **Pressure Drop Across Catalyst:**_____

Manufacturer's Guarantee: **CO Control Efficiency:**_____ % **Catalyst Life:**_____ yrs

VOC Control Efficiency:_____ % **Operating Temp. Range:**_____ °F

Space Velocity (gas flow rate/catalyst volume):_____ **Area Velocity** (gas flow/wetted catalyst surface area):_____

VOC Concentration into Catalyst:_____ PPMVD@ 15%O_2 **CO Concentration inot Catalyst:**_____ PPMVD@ 15%O_2

Section C - Operation Information

On-line Emissions Data

Pollutants	Maximum Emissions Before Control *		Maximum Emissions After Control	
	PPM@15% O_2, dry	lb/hour	PPM@15% O_2, dry	lb/hour
ROG			2.0	
NOx			2.3	
CO			4.0	
PM_{10}				
SOx				
NH_3			5.0	

* Based on temperature, fuel consumption, and MW output.

Reference (attach data):

☐ **Manufacturer Emission Data** ☐ **EPA Emission Factors** ☐ **AQMD Emission Factors** ☐ **Source Test**

Stack or Vent Data

Stack Height:_____ ft._____ in. **Stack Diameter:**_____ ft. _____ in.

Exhaust Temperature:_____ °F **Exhaust Pressure:**_____ inches water column

Exhaust Flow Rate:_____ CFM **Oxygen Level:**_____ %

South Coast Air Quality Management District

Form 400-E-12
Gas Turbine

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Section C - Operation Information (cont.)

Startup Data

No. of Startups per day: 2 No. of Startups per year: 480 Duration of each startup: 1 hrs.

Shutdown Data

No. of Shutdowns per day: 2 No. of Shutdowns per year: 480 Duration of each Shutdown: 0.167 hrs.

Startup and Shutdown Emissions Data

Pollutants	Startup Emissions		Shutdown Emissions	
	PPM@15% O_2, dry	lb/hour	PPM@15% O_2, dry	lb/hour
ROG				
NOx				
CO				
PM_{10}				
SOx				
NH_3				

Monitoring and Reporting

Continuous Emission Monitoring System (CEMS): CEMS Make: CEMS Installed and Operating

CEMS Model:

Will the CEMS be used to measure both on-line and startup/shutdown emissions? ○ Yes ○ No

The following parameters will be continuously monitored:

☐ NOx ☐ CO ☐ O_2

☐ Fuel Flow Rate ☐ Ammonia Injection Rate ☐ Other (specify):

☐ Ammonia Stack Concentration: Ammonia CEMS Make:

Ammonia CEMS Model:

Operating Schedule

Normal: _____ hours/day _____ days/week _____ weeks/yr

Maximum: _____ hours/day _____ days/week _____ weeks/yr

Section D - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application is true and correct.

Preparer Info

Signature: Date: 03/10/2021

Title: Scientist Company Name: Yorke Engineering, LLC

Name: Eduardo Jimenez

Phone #: (949) 392-3059 Fax #:

Email: EJimenez@YorkeEngr.com

Contact Info

Name: Heather Mostert

Title: Env. Specialist Company Name: Walnut Creek Energy

Phone #: (626) 986-0373 Fax #:

Email: Heather.Mostert@nrg.com

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South Coast Air Quality Management District

Form 400-PS

Plot Plan And Stack Information Form

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Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944
Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator To Appears On The Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive; City of Industry, CA 91745 | CTG-3

(●) **Fixed Location** ( ) **Various Locations**

Section B - Location Data

Plot Plan

Please attach a site map for the project with distances and scales. Identify and locate the proposed equipment on the map. A copy of the appropriate Thomas Brothers page, a web-based map, or a sketch that shows the major streets and location of the equipment is acceptable.

Location of Schools Nearby

Is the facility located within a 1/4 mile radius (1,320 feet) of the outer boundary of a school? ( ) Yes (●) No

If yes, please provide name(s) of school(s) below:

School Name: _____ **School Name:** _____

School Address: _____ **School Address:** _____

Distance from stack or equipment vent to the outer boundary of the school: _____ feet **Distance from stack or equipment vent to the outer boundary of the school:** _____ feet

CA Health & Safety Code 42301.9: "School" means any public or private school used for purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes.

Population Density

(●) Urban ( ) Rural (<50% of land within 3 km radius accounted for by urban land use categories, i.e., multi-family dwelling or industrial.)

Zoning Classification

( ) **Mixed Use Residential Commercial Zone (M-U)** ( ) **Service and Professional Zone (C-S)** ( ) **Medium Commercial (C-3)**

( ) **Heavy Commercial (C-4)** (●) **Commercial Manufacturing (C-M)**

Section C - Emission Release Parameters - Stacks, Vents

Stack Data

Stack Height: 90.00 feet (above ground level) **What is the height of the closest building nearest the stack?** 50 feet

Stack Inside Diameter: 162.00 inches **Stack Flow:** 1,106,660 acfm **Stack Temperature:** 754 °F

Rain Cap Present: ( ) Yes (●) No **Stack Orientation:** (●) Vertical ( ) Horizontal

If the stack height is less than 2.5 times the closest building height (H), please provide information on any building within 5xH distance from the stack (attach additional sheet if necessary):

Building #/Name: See Appendix C **Building #/Name:** _____

Building Height: _____ feet (above ground level) **Building Height:** _____ feet (above ground level)

Building Width: _____ feet **Building Width:** _____ feet

Building Length: _____ feet **Building Length:** _____ feet

Receptor Distance From Equipment Stack or Roof Vents/Openings

Distance to nearest residence or sensitive receptor*: 1,500 feet

Distance to nearest business: 300 feet

Building Information

Are the emissions released from vents and/or openings from a building? ( ) Yes (●) No

If yes, please provide:

Building #/Name: _____ **Building Width:** _____ feet

Building Height: _____ feet (above ground level) **Building Length:** _____ feet

*AQMD Rule 1470 defines SENSITIVE RECEPTOR as meaning any residence including private homes, condominiums, apartments, and living quarters, schools as defined under paragraph (b)(57), preschools, daycare centers and health facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

South Coast Air Quality Management District

Form 400-PS

Plot Plan And Stack Information Form

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Form 400A and Form 400-CEQA.

Section D - Authorization/Signature

I hereby certify that all information contained herein and information submittfgfed with this application is true and correct.

Signature of Preparer:	Title of Preparer:	Preparer's Phone #: (949) 392-3059 Preparer's Email: EJimenez@YorkeEngr.com
	Scientist	

Contact Person:	Contact's Phone#: (626) 986-0373	Date Signed:
Heather Mostert		03/10/2021
Contact's Email: Heather.Mostert@nrg.com	Contact's Fax#:	

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Check here if you claim that this form or its attachments contain confidential trade secret information. ☐

South Coast Air Quality Management District

Form 400-A
Application Form for Permit or Plan Approval

List only one piece of equipment or process per form.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

1. Facility Name (Business Name of Operator to Appear on the Permit): Walnut Creek Energy, LLC

2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

3. Owner's Business Name (If different from Business Name of Operator):

Section B - Equipment Location Address

4. Equipment Location Is: (●) Fixed Location ( ) Various Location
(For equipment operated at various locations, provide address of initial site.)

911 Bixby Drive
Street Address

City of Industry , CA 91745
City Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section C - Permit Mailing Address

5. Permit and Correspondence Information:
[X] Check here if same as equipment location address

911 Bixby Drive
Address

City of Industry , CA 91745
City State Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section D - Application Type

6. The Facility Is: ( ) Not In RECLAIM or Title V ( ) In RECLAIM ( ) In Title V (●) In RECLAIM & Title V Programs

7. Reason for Submitting Application (Select only ONE):

7a. New Equipment or Process Application:
- ( ) New Construction (Permit to Construct)
- ( ) Equipment On-Site But Not Constructed or Operational
- ( ) Equipment Operating Without A Permit *
- ( ) Compliance Plan
- ( ) Registration/Certification
- ( ) Streamlined Standard Permit

7b. Facility Permits:
- ( ) Title V Application or Amendment (Refer to Title V Matrix)
- ( ) RECLAIM Facility Permit Amendment

7c. Equipment or Process with an Existing/Previous Application or Permit:
- ( ) Administrative Change
- (●) Alteration/Modification
- ( ) Alteration/Modification without Prior Approval *
- ( ) Change of Condition
- ( ) Change of Condition without Prior Approval *
- ( ) Change of Location
- ( ) Change of Location without Prior Approval *
- ( ) Equipment Operating with an Expired/Inactive Permit *

Existing or Previous Permit/Application
If you checked any of the items in 7c., you MUST provide an existing Permit or Application Number: 581397

* A Higher Permit Processing Fee and additional Annual Operating Fees (up to 3 full years) may apply (Rule 301(c)(1)(D)(i)).

8a. Estimated Start Date of Construction (mm/dd/yyyy):

8b. Estimated End Date of Construction (mm/dd/yyyy):

8c. Estimated Start Date of Operation (mm/dd/yyyy):

9. Description of Equipment or Reason for Compliance Plan (list applicable rule):
CTG No. 4. Increase in Maximum Hourly Heat Input Rating.

10. For Identical equipment, how many additional applications are being submitted with this application? (Form 400-A required for each equipment / process): 4

11. Are you a Small Business as per AQMD's Rule 102 definition? (10 employees or less and total gross receipts are $500,000 or less OR a not-for-profit training center) (●) No ( ) Yes

12. Has a Notice of Violation (NOV) or a Notice to Comply (NC) been issued for this equipment? (●) No ( ) Yes
If Yes, provide NOV/NC#:

Section E - Facility Business Information

13. What type of business is being conducted at this equipment location?
Electric Power Generation

14. What is your business primary NAICS Code? (North American Industrial Classification System): 221112

15. Are there other facilities in the SCAQMD jurisdiction operated by the same operator? ( ) No (●) Yes

16. Are there any schools (K-12) within 1000 feet of the facility property line? (●) No ( ) Yes

Section F - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application are true and correct.

17. Signature of Responsible Official: George L Piantka

18. Title of Responsible Official: Senior Director

19. I wish to review the permit prior to issuance. (This may cause a delay in the application process.) ( ) No (●) Yes

20. Print Name: George Piantka

21. Date: 3/11/2021

22. Do you claim confidentiality of data? (If Yes, see instructions.) (●) No ( ) Yes

23. Check List: [X] Authorized Signature/Date [X] Form 400-CEQA [X] Supplemental Form(s) (ie., Form 400-E-xx) [X] Fees Enclosed

AQMD USE ONLY	APPLICATION TRACKING #	CHECK #	AMOUNT RECEIVED $	PAYMENT TRACKING #	VALIDATION

DATE	APP REJ	DATE	APP REJ	CLASS I III	BASIC CONTROL	EQUIPMENT CATEGORY CODE	TEAM	ENGINEER	REASON/ACTION TAKEN

South Coast Air Quality Management District

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator That Appears On Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive, City of Industry, CA, 91745 | CTG-4

(•) **Fixed Location** ( ) **Various Locations**

Section B - Equipment Description

Turbine

Manufacturer: General Electric **Model:** LMS100PA **Serial No.:**

Size (based on Higher Heating Value - HHV):

Manufacturer Maximum Input Rating: 951.00 MMBTU/hr _____ kWh

Manufacturer Maximum Output Rating: _____ MMBTU/hr _____ kWh

Function (Check all that apply)

☒ **Electrical Generation** ☐ **Driving Pump/Compressor** ☐ **Emergency Peaking Unit**
☐ **Steam Generation** ☐ **Exhaust Gas Recovery** ☐ **Other** (specify): _____

Cycle Type

(•) **Simply Cycle** ( ) **Regenerative Cycle**
( ) **Combined Cycle** ( ) **Other** (specify): _____

Combustion Type

( ) **Tubular** ( ) **Can-Annular** (•) **Annular**

Fuel (Turbine)

☒ **Natural Gas** ☐ **LPG** ☐ **Digester Gas***
☐ **Landfill Gas*** ☐ **Propane** ☐ **Refinery Gas*** ☐ **Other***: _____

* (If Digester Gas, Landfill Gas, Refinery Gas, and/or Other are checked, attach fuel analysis indicating higher heating value and sulfur content).

Heat Recovery Steam Generator (HRSG)

Steam Turbine Capacity: _____ MW

Low Pressure Steam Output Capacity: _____ lb/hr @ _____ °F

High Pressure Steam Output Capacity: _____ lb/hr @ _____ °F

Superheated Steam Output Capacity: _____ lb/hr @ _____ °F

Duct Burner

Manufacturer: **Model:**

Number of burners: _____ **Rating of each burner** (HHV): _____

Type: ( ) **Low NOx** (please attach manufacturer's specifications)

( ) **Other:** _____
Show all heat transfer surface locations with the HRSG and temperature profile

Fuel (Duct Burner)

( ) **Natural Gas** ( ) **LPG** ( ) **Digester Gas***
( ) **Landfill Gas*** ( ) **Propane** ( ) **Refinery Gas*** ( ) **Other***: _____

* (If Digester Gas, Landfill Gas, Refinery Gas, and/or Other are checked, attach fuel analysis indicating higher heating value and sulfur content).

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section B - Equipment Description (Cont.)

Air Pollution Control

○ **Selective Catalytic Reduction (SCR)*** ○ **Selective Non-Catalytic Reduction (SNCR)***

○ **Oxidation Catalyst*** ○ **Other** (specify)*:_____

◉ **Steam/Water Injection:** **Injection Rate:**_____ lbs. water/lbs. fuel, **or**_____ mole water/mole fuel

* Separate application is required.

Capital Cost:_____ **Installation Cost:**_____ **Annual Operating Cost:**_____

Oxidation Catalyst Data (If Applicable)

Manufacturer: See Original Permit Application **Model:**

Catalyst Dimensions: **Length:**_____ ft._____ in. **Width:**_____ ft._____ in. **Height:**_____ ft._____ in.

Catalyst Cell Density:_____ cells/sq.in. **Pressure Drop Across Catalyst:**_____

Manufacturer's Guarantee: **CO Control Efficiency:**_____ % **Catalyst Life:**_____ yrs

VOC Control Efficiency:_____ % **Operating Temp. Range:**_____ °F

Space Velocity (gas flow rate/catalyst volume):_____ **Area Velocity** (gas flow/wetted catalyst surface area):_____

VOC Concentration into Catalyst:_____ PPMVD@ 15%O_2 **CO Concentration inot Catalyst:**_____ PPMVD@ 15%O_2

Section C - Operation Information

On-line Emissions Data

Pollutants	Maximum Emissions Before Control *		Maximum Emissions After Control	
	PPM@15% O_2, dry	lb/hour	PPM@15% O_2, dry	lb/hour
ROG			2.0	
NOx			2.3	
CO			4.0	
PM_{10}				
SOx				
NH_3			5.0	

* Based on temperature, fuel consumption, and MW output.

Reference (attach data):

☐ **Manufacturer Emission Data** ☐ **EPA Emission Factors** ☐ **AQMD Emission Factors** ☐ **Source Test**

Stack or Vent Data

Stack Height:_____ ft._____ in. **Stack Diameter:**_____ ft. _____ in.

Exhaust Temperature:_____ °F **Exhaust Pressure:**_____ inches water column

Exhaust Flow Rate:_____ CFM **Oxygen Level:**_____ %

South Coast Air Quality Management District

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section C - Operation Information (cont.)

Startup Data

No. of Startups per day: 2 No. of Startups per year: 480 Duration of each startup: 1 hrs.

Shutdown Data

No. of Shutdowns per day: 2 No. of Shutdowns per year: 480 Duration of each Shutdown: 0.167 hrs.

Startup and Shutdown Emissions Data

Pollutants	Startup Emissions		Shutdown Emissions	
	PPM@15% O_2, dry	lb/hour	PPM@15% O_2, dry	lb/hour
ROG				
NOx				
CO				
PM_{10}				
SOx				
NH_3				

Monitoring and Reporting

Continuous Emission Monitoring System (CEMS): CEMS Make: CEMS Installed and Operating

CEMS Model:

Will the CEMS be used to measure both on-line and startup/shutdown emissions? ○ Yes ○ No

The following parameters will be continuously monitored:

☐ NOx ☐ CO ☐ O_2

☐ Fuel Flow Rate ☐ Ammonia Injection Rate ☐ Other (specify):

☐ Ammonia Stack Concentration: Ammonia CEMS Make:

Ammonia CEMS Model:

Operating Schedule

Normal: _____ hours/day _____ days/week _____ weeks/yr

Maximum: _____ hours/day _____ days/week _____ weeks/yr

Section D - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application is true and correct.

Preparer Info

Signature: Date: 03/10/2021

Title: Scientist Company Name: Yorke Engineering, LLC

Name: Eduardo Jimenez

Phone #: (949) 392-3059 Fax #:

Email: EJimenez@YorkeEngr.com

Contact Info

Name: Heather Mostert

Title: Env. Specialist Company Name: Walnut Creek Energy

Phone #: (626) 986-0373 Fax #:

Email: Heather.Mostert@nrg.com

THIS IS A PUBLIC DOCUMENT

Pursuant to the California Public Records Act, your permit application and any supplemental documentation are public records and may be disclosed to a third party. If you wish to claim certain limited information as exempt from disclosure because it qualifies as a trade secret, as defined in the District's Guidelines for Implementing the California Public Records Act, you must make such claim at the time of submittal to the District.

Check here if you claim that this form or its attachments contain confidential trade secret information. ☐

South Coast Air Quality Management District

Form 400-PS

Plot Plan And Stack Information Form

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Form 400A and Form 400-CEQA.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944
Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator To Appears On The Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive; City of Industry, CA 91745 | CTG-4

(●) **Fixed Location** ( ) **Various Locations**

Section B - Location Data

Plot Plan

Please attach a site map for the project with distances and scales. Identify and locate the proposed equipment on the map. A copy of the appropriate Thomas Brothers page, a web-based map, or a sketch that shows the major streets and location of the equipment is acceptable.

Location of Schools Nearby

Is the facility located within a 1/4 mile radius (1,320 feet) of the outer boundary of a school? ( ) Yes (●) No

If yes, please provide name(s) of school(s) below:

School Name: _____ **School Name:** _____

School Address: _____ **School Address:** _____

Distance from stack or equipment vent to the outer boundary of the school: _____ feet **Distance from stack or equipment vent to the outer boundary of the school:** _____ feet

CA Health & Safety Code 42301.9: "School" means any public or private school used for purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes.

Population Density

(●) Urban ( ) Rural (<50% of land within 3 km radius accounted for by urban land use categories, i.e., multi-family dwelling or industrial.)

Zoning Classification

( ) **Mixed Use Residential Commercial Zone (M-U)** ( ) **Service and Professional Zone (C-S)** ( ) **Medium Commercial (C-3)**

( ) **Heavy Commercial (C-4)** (●) **Commercial Manufacturing (C-M)**

Section C - Emission Release Parameters - Stacks, Vents

Stack Data

Stack Height: 90.00 feet (above ground level) **What is the height of the closest building nearest the stack?** 50 feet

Stack Inside Diameter: 162.00 inches **Stack Flow:** 1,118,437 acfm **Stack Temperature:** 775 °F

Rain Cap Present: ( ) Yes (●) No **Stack Orientation:** (●) Vertical ( ) Horizontal

If the stack height is less than 2.5 times the closest building height (H), please provide information on any building within 5xH distance from the stack (attach additional sheet if necessary):

Building #/Name: See Appendix C **Building #/Name:** _____

Building Height: _____ feet (above ground level) **Building Height:** _____ feet (above ground level)

Building Width: _____ feet **Building Width:** _____ feet

Building Length: _____ feet **Building Length:** _____ feet

Receptor Distance From Equipment Stack or Roof Vents/Openings

Distance to nearest residence or sensitive receptor*: 1,500 feet

Distance to nearest business: 300 feet

Building Information

Are the emissions released from vents and/or openings from a building? ( ) Yes (●) No

If yes, please provide:

Building #/Name: _____ **Building Width:** _____ feet

Building Height: _____ feet (above ground level) **Building Length:** _____ feet

*AQMD Rule 1470 defines SENSITIVE RECEPTOR as meaning any residence including private homes, condominiums, apartments, and living quarters, schools as defined under paragraph (b)(57), preschools, daycare centers and health facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

South Coast Air Quality Management District

Form 400-PS

Plot Plan And Stack Information Form

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Form 400A and Form 400-CEQA.

Section D - Authorization/Signature			
I hereby certify that all information contained herein and information submittfgfed with this application is true and correct.			
Signature of Preparer:	**Title of Preparer:** Scientist	**Preparer's Phone #:** (949) 392-3059 **Preparer's Email:** EJimenez@YorkeEngr.com	
Contact Person: Heather Mostert **Contact's Email:** Heather.Mostert@nrg.com	**Contact's Phone#:** (626) 986-0373 **Contact's Fax#:**	**Date Signed:** 03/10/2021	

THIS IS A PUBLIC DOCUMENT

Pursuant to the California Public Records Act, your permit application and any supplemental documentation are public records and may be disclosed to a third party. If you wish to claim certain limited information as exempt from disclosure because it qualifies as a trade secret, as defined in the District's Guidelines for Implementing the California Public Records Act, you must make such claim at the time of submittal to the District.

Check here if you claim that this form or its attachments contain confidential trade secret information. ☐

South Coast Air Quality Management District

Form 400-A

Application Form for Permit or Plan Approval

List only one piece of equipment or process per form.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

1. **Facility Name** (Business Name of Operator to Appear on the Permit): Walnut Creek Energy, LLC

2. **Valid AQMD Facility ID** (Available On Permit Or Invoice Issued By AQMD): 146536

3. **Owner's Business Name** (If different from Business Name of Operator):

Section B - Equipment Location Address

4. **Equipment Location Is:** (●) Fixed Location ( ) Various Location
(For equipment operated at various locations, provide address of initial site.)

911 Bixby Drive
Street Address

City of Industry , CA 91745
City Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section C - Permit Mailing Address

5. **Permit and Correspondence Information:**
[X] Check here if same as equipment location address

911 Bixby Drive
Address

City of Industry , CA 91745
City State Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section D - Application Type

6. **The Facility Is:** ( ) Not In RECLAIM or Title V ( ) In RECLAIM ( ) In Title V (●) In RECLAIM & Title V Programs

7. **Reason for Submitting Application** (Select only ONE):

7a. New Equipment or Process Application:

- ( ) New Construction (Permit to Construct)
- ( ) Equipment On-Site But Not Constructed or Operational
- ( ) Equipment Operating Without A Permit *
- ( ) Compliance Plan
- ( ) Registration/Certification
- ( ) Streamlined Standard Permit

7b. Facility Permits:

- ( ) Title V Application or Amendment (Refer to Title V Matrix)
- ( ) RECLAIM Facility Permit Amendment

7c. Equipment or Process with an Existing/Previous Application or Permit:

- ( ) Administrative Change
- (●) Alteration/Modification
- ( ) Alteration/Modification without Prior Approval *
- ( ) Change of Condition
- ( ) Change of Condition without Prior Approval *
- ( ) Change of Location
- ( ) Change of Location without Prior Approval *
- ( ) Equipment Operating with an Expired/Inactive Permit *

Existing or Previous Permit/Application
If you checked any of the items in 7c., you MUST provide an existing Permit or Application Number: 581399

* A Higher Permit Processing Fee and additional Annual Operating Fees (up to 3 full years) may apply (Rule 301(c)(1)(D)(i)).

8a. **Estimated Start Date of Construction** (mm/dd/yyyy):

8b. **Estimated End Date of Construction** (mm/dd/yyyy):

8c. **Estimated Start Date of Operation** (mm/dd/yyyy):

9. **Description of Equipment or Reason for Compliance Plan** (list applicable rule):
CTG No. 5. Increase in Maximum Hourly Heat Input Rating.

10. **For Identical equipment, how many additional applications are being submitted with this application?** (Form 400-A required for each equipment / process): 4

11. **Are you a Small Business as per AQMD's Rule 102 definition?** (10 employees or less and total gross receipts are $500,000 or less OR a not-for-profit training center) (●) No ( ) Yes

12. **Has a Notice of Violation (NOV) or a Notice to Comply (NC) been issued for this equipment?** (●) No ( ) Yes
If Yes, provide NOV/NC#:

Section E - Facility Business Information

13. **What type of business is being conducted at this equipment location?**
Electric Power Generation

14. **What is your business primary NAICS Code?** (North American Industrial Classification System): 221112

15. **Are there other facilities in the SCAQMD jurisdiction operated by the same operator?** ( ) No (●) Yes

16. **Are there any schools (K-12) within 1000 feet of the facility property line?** (●) No ( ) Yes

Section F - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application are true and correct.

17. **Signature of Responsible Official:** George L Piantka

18. **Title of Responsible Official:** Senior Director

19. **I wish to review the permit prior to issuance.** (This may cause a delay in the application process.) ( ) No (●) Yes

20. **Print Name:** George Piantka

21. **Date:** 3/11/2021

22. **Do you claim confidentiality of data?** (If Yes, see instructions.) (●) No ( ) Yes

23. **Check List:** [X] Authorized Signature/Date [X] Form 400-CEQA [X] Supplemental Form(s) (ie., Form 400-E-xx) [X] Fees Enclosed

AQMD USE ONLY	APPLICATION TRACKING #	CHECK #	AMOUNT RECEIVED $	PAYMENT TRACKING #	VALIDATION

DATE	APP REJ	DATE	APP REJ	CLASS I III	BASIC CONTROL	EQUIPMENT CATEGORY CODE	TEAM	ENGINEER	REASON/ACTION TAKEN

South Coast Air Quality Management District

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator That Appears On Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive, City of Industry, CA, 91745 | CTG-5

(•) **Fixed Location** ( ) **Various Locations**

Section B - Equipment Description

Turbine

Manufacturer: General Electric **Model:** LMS100PA **Serial No.:**

Size (based on Higher Heating Value - HHV):

Manufacturer Maximum Input Rating: 951.00 MMBTU/hr _____ kWh

Manufacturer Maximum Output Rating: _____ MMBTU/hr _____ kWh

Function (Check all that apply)

☒ **Electrical Generation** ☐ **Driving Pump/Compressor** ☐ **Emergency Peaking Unit**
☐ **Steam Generation** ☐ **Exhaust Gas Recovery** ☐ **Other** (specify): _____

Cycle Type

(•) **Simply Cycle** ( ) **Regenerative Cycle**
( ) **Combined Cycle** ( ) **Other** (specify): _____

Combustion Type

( ) **Tubular** ( ) **Can-Annular** (•) **Annular**

Fuel (Turbine)

☒ **Natural Gas** ☐ **LPG** ☐ **Digester Gas***
☐ **Landfill Gas*** ☐ **Propane** ☐ **Refinery Gas*** ☐ **Other***: _____

* (If Digester Gas, Landfill Gas, Refinery Gas, and/or Other are checked, attach fuel analysis indicating higher heating value and sulfur content).

Heat Recovery Steam Generator (HRSG)

Steam Turbine Capacity: _____ MW

Low Pressure Steam Output Capacity: _____ lb/hr @ _____ °F

High Pressure Steam Output Capacity: _____ lb/hr @ _____ °F

Superheated Steam Output Capacity: _____ lb/hr @ _____ °F

Duct Burner

Manufacturer: **Model:**

Number of burners: _____ **Rating of each burner** (HHV): _____

Type: ( ) **Low NOx** (please attach manufacturer's specifications)

( ) **Other:** _____
Show all heat transfer surface locations with the HRSG and temperature profile

Fuel (Duct Burner)

( ) **Natural Gas** ( ) **LPG** ( ) **Digester Gas***
( ) **Landfill Gas*** ( ) **Propane** ( ) **Refinery Gas*** ( ) **Other***: _____

* (If Digester Gas, Landfill Gas, Refinery Gas, and/or Other are checked, attach fuel analysis indicating higher heating value and sulfur content).

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section B - Equipment Description (Cont.)

Air Pollution Control

○ **Selective Catalytic Reduction (SCR)*** ○ **Selective Non-Catalytic Reduction (SNCR)***

○ **Oxidation Catalyst*** ○ **Other** (specify)*:_____

◉ **Steam/Water Injection:** **Injection Rate:**_____ lbs. water/lbs. fuel, **or**_____ mole water/mole fuel

* Separate application is required.

Capital Cost:_____ **Installation Cost:**_____ **Annual Operating Cost:**_____

Oxidation Catalyst Data (If Applicable)

Manufacturer: See Original Permit Application **Model:**

Catalyst Dimensions: **Length:**_____ ft._____ in. **Width:**_____ ft._____ in. **Height:**_____ ft._____ in.

Catalyst Cell Density:_____ cells/sq.in. **Pressure Drop Across Catalyst:**_____

Manufacturer's Guarantee: **CO Control Efficiency:**_____ % **Catalyst Life:**_____ yrs

VOC Control Efficiency:_____ % **Operating Temp. Range:**_____ °F

Space Velocity (gas flow rate/catalyst volume):_____ **Area Velocity** (gas flow/wetted catalyst surface area):_____

VOC Concentration into Catalyst:_____ PPMVD@ 15%O_2 **CO Concentration inot Catalyst:**_____ PPMVD@ 15%O_2

Section C - Operation Information

On-line Emissions Data

Pollutants	Maximum Emissions Before Control *		Maximum Emissions After Control	
	PPM@15% O_2, dry	lb/hour	PPM@15% O_2, dry	lb/hour
ROG			2.0	
NOx			2.3	
CO			4.0	
PM_{10}				
SOx				
NH_3			5.0	

* Based on temperature, fuel consumption, and MW output.

Reference (attach data):

☐ **Manufacturer Emission Data** ☐ **EPA Emission Factors** ☐ **AQMD Emission Factors** ☐ **Source Test**

Stack or Vent Data

Stack Height:_____ ft._____ in. **Stack Diameter:**_____ ft. _____ in.

Exhaust Temperature:_____ °F **Exhaust Pressure:**_____ inches water column

Exhaust Flow Rate:_____ CFM **Oxygen Level:**_____ %

South Coast Air Quality Management District

Form 400-E-12
Gas Turbine

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section C - Operation Information (cont.)

Startup Data

No. of Startups per day: 2 No. of Startups per year: 480 Duration of each startup: 1 hrs.

Shutdown Data

No. of Shutdowns per day: 2 No. of Shutdowns per year: 480 Duration of each Shutdown: 0.167 hrs.

Startup and Shutdown Emissions Data

Pollutants	Startup Emissions		Shutdown Emissions	
	PPM@15% O_2, dry	lb/hour	PPM@15% O_2, dry	lb/hour
ROG				
NOx				
CO				
PM_{10}				
SOx				
NH_3				

Monitoring and Reporting

Continuous Emission Monitoring System (CEMS): CEMS Make: CEMS Installed and Operating

CEMS Model:

Will the CEMS be used to measure both on-line and startup/shutdown emissions? ○ Yes ○ No

The following parameters will be continuously monitored:

☐ NOx ☐ CO ☐ O_2

☐ Fuel Flow Rate ☐ Ammonia Injection Rate ☐ Other (specify):

☐ Ammonia Stack Concentration: Ammonia CEMS Make:

Ammonia CEMS Model:

Operating Schedule

Normal: _____ hours/day _____ days/week _____ weeks/yr

Maximum: _____ hours/day _____ days/week _____ weeks/yr

Section D - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application is true and correct.

Preparer Info

Signature: Date: 03/10/2021

Name: Eduardo Jimenez

Title: Scientist Company Name: Yorke Engineering, LLC

Phone #: (949) 392-3059 Fax #:

Email: EJimenez@YorkeEngr.com

Contact Info

Name: Heather Mostert

Title: Env. Specialist Company Name: Walnut Creek Energy

Phone #: (626) 986-0373 Fax #:

Email: Heather.Mostert@nrg.com

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South Coast Air Quality Management District

Form 400-PS

Plot Plan And Stack Information Form

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Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944
Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator To Appears On The Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive; City of Industry, CA 91745 | CTG-5

(●) **Fixed Location** ( ) **Various Locations**

Section B - Location Data

Plot Plan

Please attach a site map for the project with distances and scales. Identify and locate the proposed equipment on the map. A copy of the appropriate Thomas Brothers page, a web-based map, or a sketch that shows the major streets and location of the equipment is acceptable.

Location of Schools Nearby

Is the facility located within a 1/4 mile radius (1,320 feet) of the outer boundary of a school? ( ) Yes (●) No

If yes, please provide name(s) of school(s) below:

School Name: _____ **School Name:** _____

School Address: _____ **School Address:** _____

Distance from stack or equipment vent to the outer boundary of the school: _____ feet

Distance from stack or equipment vent to the outer boundary of the school: _____ feet

CA Health & Safety Code 42301.9: "School" means any public or private school used for purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes.

Population Density

(●) Urban ( ) Rural (<50% of land within 3 km radius accounted for by urban land use categories, i.e., multi-family dwelling or industrial.)

Zoning Classification

( ) **Mixed Use Residential Commercial Zone (M-U)** ( ) **Service and Professional Zone (C-S)** ( ) **Medium Commercial (C-3)**

( ) **Heavy Commercial (C-4)** (●) **Commercial Manufacturing (C-M)**

Section C - Emission Release Parameters - Stacks, Vents

Stack Data

Stack Height: 90.00 feet (above ground level) **What is the height of the closest building nearest the stack?** 50 feet

Stack Inside Diameter: 162.00 inches **Stack Flow:** 1,079,821 acfm **Stack Temperature:** 780 °F

Rain Cap Present: ( ) Yes (●) No **Stack Orientation:** (●) Vertical ( ) Horizontal

If the stack height is less than 2.5 times the closest building height (H), please provide information on any building within 5xH distance from the stack (attach additional sheet if necessary):

Building #/Name: See Appendix C **Building #/Name:** _____

Building Height: _____ feet (above ground level) **Building Height:** _____ feet (above ground level)

Building Width: _____ feet **Building Width:** _____ feet

Building Length: _____ feet **Building Length:** _____ feet

Receptor Distance From Equipment Stack or Roof Vents/Openings

Distance to nearest residence or sensitive receptor*: 1,500 feet

Distance to nearest business: 300 feet

Building Information

Are the emissions released from vents and/or openings from a building? ( ) Yes (●) No

If yes, please provide:

Building #/Name: _____ **Building Width:** _____ feet

Building Height: _____ feet (above ground level) **Building Length:** _____ feet

*AQMD Rule 1470 defines SENSITIVE RECEPTOR as meaning any residence including private homes, condominiums, apartments, and living quarters, schools as defined under paragraph (b)(57), preschools, daycare centers and health facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

South Coast Air Quality Management District

Form 400-PS

Plot Plan And Stack Information Form

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Form 400A and Form 400-CEQA.

Section D - Authorization/Signature			
I hereby certify that all information contained herein and information submittfgfed with this application is true and correct.			
Signature of Preparer:	**Title of Preparer:** Scientist	**Preparer's Phone #:** (949) 392-3059 **Preparer's Email:** EJimenez@YorkeEngr.com	
Contact Person: Heather Mostert **Contact's Email:** Heather.Mostert@nrg.com	**Contact's Phone#:** (626) 986-0373 **Contact's Fax#:**	**Date Signed:** 03/10/2021	

THIS IS A PUBLIC DOCUMENT

Pursuant to the California Public Records Act, your permit application and any supplemental documentation are public records and may be disclosed to a third party. If you wish to claim certain limited information as exempt from disclosure because it qualifies as a trade secret, as defined in the District's Guidelines for Implementing the California Public Records Act, you must make such claim at the time of submittal to the District.

Check here if you claim that this form or its attachments contain confidential trade secret information. ☐

South Coast Air Quality Management District

Form 400-A

Application Form for Permit or Plan Approval

List only one piece of equipment or process per form.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

1. Facility Name (Business Name of Operator to Appear on the Permit):
Walnut Creek Energy, LLC

2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD):
146536

3. Owner's Business Name (If different from Business Name of Operator):

Section B - Equipment Location Address

4. Equipment Location Is: (●) Fixed Location ( ) Various Location
(For equipment operated at various locations, provide address of initial site.)

911 Bixby Drive
Street Address

City of Industry , CA 91745
City Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section C - Permit Mailing Address

5. Permit and Correspondence Information:
[X] Check here if same as equipment location address

911 Bixby Drive
Address

City of Industry , CA 91745
City State Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section D - Application Type

6. The Facility Is: ( ) Not In RECLAIM or Title V ( ) In RECLAIM ( ) In Title V (●) In RECLAIM & Title V Programs

7. Reason for Submitting Application (Select only ONE):

7a. New Equipment or Process Application:
- ( ) New Construction (Permit to Construct)
- ( ) Equipment On-Site But Not Constructed or Operational
- ( ) Equipment Operating Without A Permit *
- ( ) Compliance Plan
- ( ) Registration/Certification
- ( ) Streamlined Standard Permit

7b. Facility Permits:
- ( ) Title V Application or Amendment (Refer to Title V Matrix)
- ( ) RECLAIM Facility Permit Amendment

7c. Equipment or Process with an Existing/Previous Application or Permit:
- ( ) Administrative Change
- ( ) Alteration/Modification
- ( ) Alteration/Modification without Prior Approval *
- (●) Change of Condition
- ( ) Change of Condition without Prior Approval *
- ( ) Change of Location
- ( ) Change of Location without Prior Approval *
- ( ) Equipment Operating with an Expired/Inactive Permit *

Existing or Previous Permit/Application
If you checked any of the items in 7c., you MUST provide an existing Permit or Application Number:
581387

* A Higher Permit Processing Fee and additional Annual Operating Fees (up to 3 full years) may apply (Rule 301(c)(1)(D)(i)).

8a. Estimated Start Date of Construction (mm/dd/yyyy):

8b. Estimated End Date of Construction (mm/dd/yyyy):

8c. Estimated Start Date of Operation (mm/dd/yyyy):

9. Description of Equipment or Reason for Compliance Plan (list applicable rule):
SCR No. 1. Increase ammonia injection rate.

10. For Identical equipment, how many additional applications are being submitted with this application? (Form 400-A required for each equipment / process)
4

11. Are you a Small Business as per AQMD's Rule 102 definition? (10 employees or less and total gross receipts are $500,000 or less OR a not-for-profit training center) (●) No ( ) Yes

12. Has a Notice of Violation (NOV) or a Notice to Comply (NC) been issued for this equipment? (●) No ( ) Yes
If Yes, provide NOV/NC#:

Section E - Facility Business Information

13. What type of business is being conducted at this equipment location?
Electric Power Generation

14. What is your business primary NAICS Code? (North American Industrial Classification System)
221112

15. Are there other facilities in the SCAQMD jurisdiction operated by the same operator? ( ) No (●) Yes

16. Are there any schools (K-12) within 1000 feet of the facility property line? (●) No ( ) Yes

Section F - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application are true and correct.

17. Signature of Responsible Official:
George Piantka

18. Title of Responsible Official:
Senior Director

19. I wish to review the permit prior to issuance. (This may cause a delay in the application process.) ( ) No (●) Yes

20. Print Name:
George Piantka

21. Date:
3/11/2021

22. Do you claim confidentiality of data? (If Yes, see instructions.) (●) No ( ) Yes

23. Check List: [X] Authorized Signature/Date [X] Form 400-CEQA [X] Supplemental Form(s) (ie., Form 400-E-xx) [X] Fees Enclosed

AQMD USE ONLY	APPLICATION TRACKING #	CHECK #	AMOUNT RECEIVED $	PAYMENT TRACKING #	VALIDATION

DATE	APP REJ	DATE	APP REJ	CLASS I III	BASIC CONTROL	EQUIPMENT CATEGORY CODE	TEAM	ENGINEER	REASON/ACTION TAKEN

South Coast Air Quality Management District

Form 400-E-5
Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Mail To:
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P.O. Box 4944
Diamond Bar, CA 91765-0944
Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator That Appears On Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive, City of Industry, CA, 91745 | CTG-1

(●) Fixed Location ( ) Various Locations

Section B - Equipment Description

Selective Catalytic Reduction (SCR)

SCR Catalyst

Manufacturer: Haldor-Topsoe **Catalyst Active Material:** _____

Model Number: DNX-629 **Type:** See Original Permit Application

Size of Each Layer or Module: **L:** _____ ft. _____ in. **W:** _____ ft. _____ in. **H:** _____ ft. _____ in.

No. of Layers or Modules: _____ **Total Volume:** 1272 cu. ft. **Total Weight:** _____ lbs.

Reducing Agent

( ) Urea ( ) Anhydrous Ammonia (●) Aqueous Ammonia 19.00 % **Injection Rate:** 265 lb/hr

Reducing Agent Storage*

Diameter: _____ ft. _____ in. **Height:** _____ ft. _____ in. **Capacity:** _____ gal

Pressure Setting: _____ psia * **A separate permit may be needed for the storage equipment.**

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Area Velocity

Gas Flow Rate/Wetted Catalyst Surface Area: _____ ft/hr

Manufacturer's Guarantee

NOx: _____ ppm **%O_2:** _____ **NOx:** _____ gm/bhp-hr **Ammonia Slip:** _____ **ppm @** _____ **%O_2**

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ **Installation Cost:** _____ **Catalyst Replacement Cost:** _____

Oxidation Catalyst

Oxidation Catalyst

Manufacturer: BASF **Catalyst Active Material:** _____

Model Number: CAMET **Type:** _____

Size of Each Layer or Module: **L:** _____ ft. _____ in. **W:** _____ ft. _____ in. **H:** _____ ft. _____ in.

No. of Layers or Modules: _____ **Total Volume:** 420 cu. ft. **Total Weight:** _____ lbs.

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Manufacturer's Guarantee

VOC: _____ ppm **VOC:** _____ gm/bhp-hr **%O_2:** _____

CO: _____ ppm **CO:** _____ gm/bhp-hr **%O_2:** _____

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ **Installation Cost:** _____ **Catalyst Replacement Cost:** _____

South Coast Air Quality Management District

Form 400-E-5
Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section B - Equipment Description (cont.)

Ammonia Catalyst

Ammonia Catalyst

Manufacturer: _____ **Catalyst Active Material:** _____

Model Number: _____ **Type:** _____

Size of Each Layer or Module: **L:** _____ ft. _____ in. **W:** _____ ft. _____ in. **H:** _____ ft. _____ in.

No. of Layers or Modules: _____ **Total Volume:** _____ cu. ft. **Total Weight:** _____ lbs.

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Manufacturer's Guarantee

NH_3: _____ ppm **$\%O_2$:** _____

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ **Installation Cost:** _____ **Catalyst Replacement Cost:** _____

Section C - Operation Information

Operating Temperature

Minimum Inlet Temperature: _____ °F (from cold start) **Maximum Temperature:** _____ °F

Warm-up Time: _____ hr. _____ min. (maximum)

Operating Schedule

Normal: _____ hours/day _____ days/week _____ weeks/yr

Maximum: _____ hours/day _____ days/week _____ weeks/yr

Section D - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application is true and correct.

Preparer Info

Signature:  **Date:** 03/10/2021

Name: Eduardo Jimenez

Title: Scientist **Company Name:** Yorke Engineering, LLC

Phone #: (949) 392-3059 **Fax #:** (949) 248-8499

Email: EJimenez@YorkeEngr.com

Contact Info

Name: Heather Mostert

Title: Env. Specialist **Company Name:** NRG

Phone #: (626) 986-0373 **Fax #:**

Email: Heather.Mostert@nrg.com

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South Coast Air Quality Management District

Form 400-A

Application Form for Permit or Plan Approval

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Mail To:
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Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

1. Facility Name (Business Name of Operator to Appear on the Permit): Walnut Creek Energy, LLC

2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

3. Owner's Business Name (If different from Business Name of Operator):

Section B - Equipment Location Address

4. Equipment Location Is: (●) Fixed Location ( ) Various Location
(For equipment operated at various locations, provide address of initial site.)

911 Bixby Drive
Street Address

City of Industry , CA 91745
City Zip

Heather Mostert — Contact Name
Environmental Specialist — Title

(626) 986-0373 — Phone # Ext. Fax #

E-Mail: Heather.Mostert@nrg.com

Section C - Permit Mailing Address

5. Permit and Correspondence Information:
☒ Check here if same as equipment location address

911 Bixby Drive
Address

City of Industry , CA 91745
City State Zip

Heather Mostert — Contact Name
Environmental Specialist — Title

(626) 986-0373 — Phone # Ext. Fax #

E-Mail: Heather.Mostert@nrg.com

Section D - Application Type

6. The Facility Is: ( ) Not In RECLAIM or Title V ( ) In RECLAIM ( ) In Title V (●) In RECLAIM & Title V Programs

7. Reason for Submitting Application (Select only ONE):

7a. New Equipment or Process Application:

- ( ) New Construction (Permit to Construct)
- ( ) Equipment On-Site But Not Constructed or Operational
- ( ) Equipment Operating Without A Permit *
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- ( ) Registration/Certification
- ( ) Streamlined Standard Permit

7b. Facility Permits:

- ( ) Title V Application or Amendment (Refer to Title V Matrix)
- ( ) RECLAIM Facility Permit Amendment

7c. Equipment or Process with an Existing/Previous Application or Permit:

- ( ) Administrative Change
- ( ) Alteration/Modification
- ( ) Alteration/Modification without Prior Approval *
- (●) Change of Condition
- ( ) Change of Condition without Prior Approval *
- ( ) Change of Location
- ( ) Change of Location without Prior Approval *
- ( ) Equipment Operating with an Expired/Inactive Permit *

Existing or Previous Permit/Application
If you checked any of the items in 7c., you MUST provide an existing Permit or Application Number: 581388

* A Higher Permit Processing Fee and additional Annual Operating Fees (up to 3 full years) may apply (Rule 301(c)(1)(D)(i)).

8a. Estimated Start Date of Construction (mm/dd/yyyy):

8b. Estimated End Date of Construction (mm/dd/yyyy):

8c. Estimated Start Date of Operation (mm/dd/yyyy):

9. Description of Equipment or Reason for Compliance Plan (list applicable rule):
SCR No. 2. Increase ammonia injection rate.

10. For Identical equipment, how many additional applications are being submitted with this application? (Form 400-A required for each equipment / process): 4

11. Are you a Small Business as per AQMD's Rule 102 definition? (10 employees or less and total gross receipts are $500,000 or less OR a not-for-profit training center) (●) No ( ) Yes

12. Has a Notice of Violation (NOV) or a Notice to Comply (NC) been issued for this equipment? (●) No ( ) Yes
If Yes, provide NOV/NC#:

Section E - Facility Business Information

13. What type of business is being conducted at this equipment location?
Electric Power Generation

14. What is your business primary NAICS Code? (North American Industrial Classification System): 221112

15. Are there other facilities in the SCAQMD jurisdiction operated by the same operator? ( ) No (●) Yes

16. Are there any schools (K-12) within 1000 feet of the facility property line? (●) No ( ) Yes

Section F - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application are true and correct.

17. Signature of Responsible Official: George Piantka

18. Title of Responsible Official: Senior Director

19. I wish to review the permit prior to issuance. (This may cause a delay in the application process.) ( ) No (●) Yes

20. Print Name: George Piantka

21. Date: 3/11/2021

22. Do you claim confidentiality of data? (If Yes, see instructions.) (●) No ( ) Yes

23. Check List: ☒ Authorized Signature/Date ☒ Form 400-CEQA ☒ Supplemental Form(s) (ie., Form 400-E-xx) ☒ Fees Enclosed

AQMD USE ONLY	APPLICATION TRACKING #	CHECK #	AMOUNT RECEIVED $	PAYMENT TRACKING #	VALIDATION

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South Coast Air Quality Management District

Form 400-E-5
Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944
Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator That Appears On Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive, City of Industry, CA, 91745 | CTG-2

(●) Fixed Location ( ) Various Locations

Section B - Equipment Description

Selective Catalytic Reduction (SCR)

SCR Catalyst

Manufacturer: Haldor-Topsoe **Catalyst Active Material:** _____

Model Number: DNX-629 **Type:** See Original Permit Application

Size of Each Layer or Module: **L:** _____ ft. _____ in. **W:** _____ ft. _____ in. **H:** _____ ft. _____ in.

No. of Layers or Modules: _____ **Total Volume:** 1272 cu. ft. **Total Weight:** _____ lbs.

Reducing Agent

( ) Urea ( ) Anhydrous Ammonia (●) Aqueous Ammonia 19.00 % **Injection Rate:** 265 lb/hr

Reducing Agent Storage*

Diameter: _____ ft. _____ in. **Height:** _____ ft. _____ in. **Capacity:** _____ gal

Pressure Setting: _____ psia * **A separate permit may be needed for the storage equipment.**

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Area Velocity

Gas Flow Rate/Wetted Catalyst Surface Area: _____ ft/hr

Manufacturer's Guarantee

NOx: _____ ppm **%O_2:** _____ **NOx:** _____ gm/bhp-hr **Ammonia Slip:** _____ **ppm @** _____ **%O_2**

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ **Installation Cost:** _____ **Catalyst Replacement Cost:** _____

Oxidation Catalyst

Oxidation Catalyst

Manufacturer: BASF **Catalyst Active Material:** _____

Model Number: CAMET **Type:** _____

Size of Each Layer or Module: **L:** _____ ft. _____ in. **W:** _____ ft. _____ in. **H:** _____ ft. _____ in.

No. of Layers or Modules: _____ **Total Volume:** 420 cu. ft. **Total Weight:** _____ lbs.

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Manufacturer's Guarantee

VOC: _____ ppm **VOC:** _____ gm/bhp-hr **%O_2:** _____

CO: _____ ppm **CO:** _____ gm/bhp-hr **%O_2:** _____

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ **Installation Cost:** _____ **Catalyst Replacement Cost:** _____

South Coast Air Quality Management District

Form 400-E-5
Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section B - Equipment Description (cont.)

Ammonia Catalyst

Ammonia Catalyst

Manufacturer: _____ **Catalyst Active Material:** _____

Model Number: _____ **Type:** _____

Size of Each Layer or Module: **L:** _____ ft. _____ in. **W:** _____ ft. _____ in. **H:** _____ ft. _____ in.

No. of Layers or Modules: _____ **Total Volume:** _____ cu. ft. **Total Weight:** _____ lbs.

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Manufacturer's Guarantee

NH_3: _____ ppm **$\%O_2$:** _____

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ **Installation Cost:** _____ **Catalyst Replacement Cost:** _____

Section C - Operation Information

Operating Temperature

Minimum Inlet Temperature: _____ °F (from cold start) **Maximum Temperature:** _____ °F

Warm-up Time: _____ hr. _____ min. (maximum)

Operating Schedule

Normal: _____ hours/day _____ days/week _____ weeks/yr

Maximum: _____ hours/day _____ days/week _____ weeks/yr

Section D - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application is true and correct.

Preparer Info

Signature:  **Date:** 03/10/2021

Name: Eduardo Jimenez

Title: Scientist **Company Name:** Yorke Engineering, LLC

Phone #: (949) 392-3059 **Fax #:** (949) 248-8499

Email: EJimenez@YorkeEngr.com

Contact Info

Name: Heather Mostert

Title: Env. Specialist **Company Name:** NRG

Phone #: (626) 986-0373 **Fax #:**

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South Coast Air Quality Management District

Form 400-A

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Tel: (909) 396-3385
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Section A - Operator Information

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2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

3. Owner's Business Name (If different from Business Name of Operator):

Section B - Equipment Location Address

4. Equipment Location Is: (●) Fixed Location ( ) Various Location
(For equipment operated at various locations, provide address of initial site.)

911 Bixby Drive
Street Address

City of Industry , CA 91745
City Zip

Heather Mostert — Contact Name
Environmental Specialist — Title

(626) 986-0373 — Phone # Ext.
Fax #

E-Mail: Heather.Mostert@nrg.com

Section C - Permit Mailing Address

5. Permit and Correspondence Information:
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Address

City of Industry , CA 91745
City State Zip

Heather Mostert — Contact Name
Environmental Specialist — Title

(626) 986-0373 — Phone # Ext.
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- ( ) Equipment On-Site But Not Constructed or Operational
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- ( ) Change of Location without Prior Approval *
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If you checked any of the items in 7c,, you MUST provide an existing Permit or Application Number: 581389

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8a. Estimated Start Date of Construction (mm/dd/yyyy):

8b. Estimated End Date of Construction (mm/dd/yyyy):

8c. Estimated Start Date of Operation (mm/dd/yyyy):

9. Description of Equipment or Reason for Compliance Plan (list applicable rule):
SCR No. 3. Increase ammonia injection rate.

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If Yes, provide NOV/NC#:

Section E - Facility Business Information

13. What type of business is being conducted at this equipment location?
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Section F - Authorization/Signature

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17. Signature of Responsible Official: George L Piantka

18. Title of Responsible Official: Senior Director

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21. Date: 3/11/2021

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No. of Layers or Modules: _____ **Total Volume:** 1272 cu. ft. **Total Weight:** _____ lbs.

Reducing Agent

( ) Urea ( ) Anhydrous Ammonia (●) Aqueous Ammonia 19.00 % **Injection Rate:** 265 lb/hr

Reducing Agent Storage**

Diameter: _____ ft. _____ in. **Height:** _____ ft. _____ in. **Capacity:** _____ gal

Pressure Setting: _____ psia *** A separate permit may be needed for the storage equipment.**

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Area Velocity

Gas Flow Rate/Wetted Catalyst Surface Area: _____ ft/hr

Manufacturer's Guarantee

NOx: _____ ppm **%O_2:** _____ **NOx:** _____ gm/bhp-hr **Ammonia Slip:** _____ **ppm @** _____ **%O_2**

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ **Installation Cost:** _____ **Catalyst Replacement Cost:** _____

Oxidation Catalyst

Oxidation Catalyst

Manufacturer: BASF **Catalyst Active Material:** _____

Model Number: CAMET **Type:** _____

Size of Each Layer or Module: **L:** _____ ft. _____ in. **W:** _____ ft. _____ in. **H:** _____ ft. _____ in.

No. of Layers or Modules: _____ **Total Volume:** 420 cu. ft. **Total Weight:** _____ lbs.

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Manufacturer's Guarantee

VOC: _____ ppm **VOC:** _____ gm/bhp-hr **%O_2:** _____

CO: _____ ppm **CO:** _____ gm/bhp-hr **%O_2:** _____

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ **Installation Cost:** _____ **Catalyst Replacement Cost:** _____

South Coast Air Quality Management District

Form 400-E-5
Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section B - Equipment Description (cont.)

Ammonia Catalyst

Ammonia Catalyst

Manufacturer: _____ **Catalyst Active Material:** _____

Model Number: _____ **Type:** _____

Size of Each Layer or Module: **L:** _____ ft. _____ in. **W:** _____ ft. _____ in. **H:** _____ ft. _____ in.

No. of Layers or Modules: _____ **Total Volume:** _____ cu. ft. **Total Weight:** _____ lbs.

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Manufacturer's Guarantee

NH_3: _____ ppm **$\%O_2$:** _____

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ **Installation Cost:** _____ **Catalyst Replacement Cost:** _____

Section C - Operation Information

Operating Temperature

Minimum Inlet Temperature: _____ °F (from cold start) **Maximum Temperature:** _____ °F

Warm-up Time: _____ hr. _____ min. (maximum)

Operating Schedule

Normal: _____ hours/day _____ days/week _____ weeks/yr

Maximum: _____ hours/day _____ days/week _____ weeks/yr

Section D - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application is true and correct.

Preparer Info

Signature:  **Date:** 03/10/2021

Name: Eduardo Jimenez

Title: Scientist **Company Name:** Yorke Engineering, LLC

Phone #: (949) 392-3059 **Fax #:** (949) 248-8499

Email: EJimenez@YorkeEngr.com

Contact Info

Name: Heather Mostert

Title: Env. Specialist **Company Name:** NRG

Phone #: (626) 986-0373 **Fax #:**

Email: Heather.Mostert@nrg.com

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Check here if you claim that this form or its attachments contain confidential trade secret information. ☐

South Coast Air Quality Management District

Form 400-A

Application Form for Permit or Plan Approval

List only one piece of equipment or process per form.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

1. Facility Name (Business Name of Operator to Appear on the Permit): Walnut Creek Energy, LLC

2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

3. Owner's Business Name (If different from Business Name of Operator):

Section B - Equipment Location Address

4. Equipment Location Is: (●) Fixed Location ( ) Various Location
(For equipment operated at various locations, provide address of initial site.)

911 Bixby Drive
Street Address

City of Industry , CA 91745
City Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section C - Permit Mailing Address

5. Permit and Correspondence Information:
☒ Check here if same as equipment location address

911 Bixby Drive
Address

City of Industry , CA 91745
City State Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section D - Application Type

6. The Facility Is: ( ) Not In RECLAIM or Title V ( ) In RECLAIM ( ) In Title V (●) In RECLAIM & Title V Programs

7. Reason for Submitting Application (Select only ONE):

7a. New Equipment or Process Application:
- ( ) New Construction (Permit to Construct)
- ( ) Equipment On-Site But Not Constructed or Operational
- ( ) Equipment Operating Without A Permit *
- ( ) Compliance Plan
- ( ) Registration/Certification
- ( ) Streamlined Standard Permit

7b. Facility Permits:
- ( ) Title V Application or Amendment (Refer to Title V Matrix)
- ( ) RECLAIM Facility Permit Amendment

7c. Equipment or Process with an Existing/Previous Application or Permit:
- ( ) Administrative Change
- ( ) Alteration/Modification
- ( ) Alteration/Modification without Prior Approval *
- (●) Change of Condition
- ( ) Change of Condition without Prior Approval *
- ( ) Change of Location
- ( ) Change of Location without Prior Approval *
- ( ) Equipment Operating with an Expired/Inactive Permit *

Existing or Previous Permit/Application
If you checked any of the items in 7c., you MUST provide an existing Permit or Application Number: 581390

* A Higher Permit Processing Fee and additional Annual Operating Fees (up to 3 full years) may apply (Rule 301(c)(1)(D)(i)).

8a. Estimated Start Date of Construction (mm/dd/yyyy):	8b. Estimated End Date of Construction (mm/dd/yyyy):	8c. Estimated Start Date of Operation (mm/dd/yyyy):

9. Description of Equipment or Reason for Compliance Plan (list applicable rule):
SCR No. 4. Increase ammonia injection rate.

10. For Identical equipment, how many additional applications are being submitted with this application? (Form 400-A required for each equipment / process): 4

11. Are you a Small Business as per AQMD's Rule 102 definition? (10 employees or less and total gross receipts are $500,000 or less OR a not-for-profit training center) (●) No ( ) Yes

12. Has a Notice of Violation (NOV) or a Notice to Comply (NC) been issued for this equipment? (●) No ( ) Yes
If Yes, provide NOV/NC#:

Section E - Facility Business Information

13. What type of business is being conducted at this equipment location?
Electric Power Generation

14. What is your business primary NAICS Code? (North American Industrial Classification System): 221112

15. Are there other facilities in the SCAQMD jurisdiction operated by the same operator? ( ) No (●) Yes

16. Are there any schools (K-12) within 1000 feet of the facility property line? (●) No ( ) Yes

Section F - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application are true and correct.

17. Signature of Responsible Official: George Piantka

18. Title of Responsible Official: Senior Director

19. I wish to review the permit prior to issuance. (This may cause a delay in the application process.) ( ) No (●) Yes

20. Print Name: George Piantka

21. Date: 3/11/2021

22. Do you claim confidentiality of data? (If Yes, see instructions.) (●) No ( ) Yes

23. Check List: ☒ Authorized Signature/Date ☒ Form 400-CEQA ☒ Supplemental Form(s) (ie., Form 400-E-xx) ☒ Fees Enclosed

AQMD USE ONLY	APPLICATION TRACKING #	CHECK #	AMOUNT RECEIVED $	PAYMENT TRACKING #	VALIDATION

DATE	APP REJ	DATE	APP REJ	CLASS I III	BASIC CONTROL	EQUIPMENT CATEGORY CODE	TEAM	ENGINEER	REASON/ACTION TAKEN

South Coast Air Quality Management District

Form 400-E-5
Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944
Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator That Appears On Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive, City of Industry, CA, 91745 | CTG-4

(●) Fixed Location ( ) Various Locations

Section B - Equipment Description

Selective Catalytic Reduction (SCR)

SCR Catalyst

Manufacturer: Haldor-Topsoe Catalyst Active Material: _____

Model Number: DNX-629 Type: See Original Permit Application

Size of Each Layer or Module: L: _____ ft. _____ in. W: _____ ft. _____ in. H: _____ ft. _____ in.

No. of Layers or Modules: _____ Total Volume: 1272 cu. ft. Total Weight: _____ lbs.

Reducing Agent

( ) Urea ( ) Anhydrous Ammonia (●) Aqueous Ammonia 19.00 % Injection Rate: 265 lb/hr

Reducing Agent Storage*

Diameter: _____ ft. _____ in. Height: _____ ft. _____ in. Capacity: _____ gal

Pressure Setting: _____ psia * A separate permit may be needed for the storage equipment.

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Area Velocity

Gas Flow Rate/Wetted Catalyst Surface Area: _____ ft/hr

Manufacturer's Guarantee

NOx: _____ ppm $\%O_2$: _____ NOx: _____ gm/bhp-hr Ammonia Slip: _____ ppm @ _____ $\%O_2$

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ Installation Cost: _____ Catalyst Replacement Cost: _____

Oxidation Catalyst

Oxidation Catalyst

Manufacturer: BASF Catalyst Active Material: _____

Model Number: CAMET Type: _____

Size of Each Layer or Module: L: _____ ft. _____ in. W: _____ ft. _____ in. H: _____ ft. _____ in.

No. of Layers or Modules: _____ Total Volume: 420 cu. ft. Total Weight: _____ lbs.

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Manufacturer's Guarantee

VOC: _____ ppm VOC: _____ gm/bhp-hr $\%O_2$: _____

CO: _____ ppm CO: _____ gm/bhp-hr $\%O_2$: _____

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ Installation Cost: _____ Catalyst Replacement Cost: _____

South Coast Air Quality Management District

Form 400-E-5
Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section B - Equipment Description (cont.)

Ammonia Catalyst

Ammonia Catalyst

Manufacturer: _____ **Catalyst Active Material:** _____

Model Number: _____ **Type:** _____

Size of Each Layer or Module: **L:** _____ ft. _____ in. **W:** _____ ft. _____ in. **H:** _____ ft. _____ in.

No. of Layers or Modules: _____ **Total Volume:** _____ cu. ft. **Total Weight:** _____ lbs.

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Manufacturer's Guarantee

NH_3: _____ ppm **$\%O_2$:** _____

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ **Installation Cost:** _____ **Catalyst Replacement Cost:** _____

Section C - Operation Information

Operating Temperature

Minimum Inlet Temperature: _____ °F (from cold start) **Maximum Temperature:** _____ °F

Warm-up Time: _____ hr. _____ min. (maximum)

Operating Schedule

Normal: _____ hours/day _____ days/week _____ weeks/yr

Maximum: _____ hours/day _____ days/week _____ weeks/yr

Section D - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application is true and correct.

Preparer Info

Signature:  **Date:** 03/10/2021

Name: Eduardo Jimenez

Title: Scientist **Company Name:** Yorke Engineering, LLC

Phone #: (949) 392-3059 **Fax #:** (949) 248-8499

Email: EJimenez@YorkeEngr.com

Contact Info

Name: Heather Mostert

Title: Env. Specialist **Company Name:** NRG

Phone #: (626) 986-0373 **Fax #:**

Email: Heather.Mostert@nrg.com

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South Coast Air Quality Management District

Form 400-A

Application Form for Permit or Plan Approval

List only one piece of equipment or process per form.

Mail To:
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P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

1. Facility Name (Business Name of Operator to Appear on the Permit): Walnut Creek Energy, LLC

2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

3. Owner's Business Name (If different from Business Name of Operator):

Section B - Equipment Location Address

4. Equipment Location Is: (●) Fixed Location ( ) Various Location
(For equipment operated at various locations, provide address of initial site.)

911 Bixby Drive
Street Address

City of Industry , CA 91745
City Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section C - Permit Mailing Address

5. Permit and Correspondence Information:
☒ Check here if same as equipment location address

911 Bixby Drive
Address

City of Industry , CA 91745
City State Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section D - Application Type

6. The Facility Is: ( ) Not In RECLAIM or Title V ( ) In RECLAIM ( ) In Title V (●) In RECLAIM & Title V Programs

7. Reason for Submitting Application (Select only ONE):

7a. New Equipment or Process Application:
- ( ) New Construction (Permit to Construct)
- ( ) Equipment On-Site But Not Constructed or Operational
- ( ) Equipment Operating Without A Permit *
- ( ) Compliance Plan
- ( ) Registration/Certification
- ( ) Streamlined Standard Permit

7b. Facility Permits:
- ( ) Title V Application or Amendment (Refer to Title V Matrix)
- ( ) RECLAIM Facility Permit Amendment

7c. Equipment or Process with an Existing/Previous Application or Permit:
- ( ) Administrative Change
- ( ) Alteration/Modification
- ( ) Alteration/Modification without Prior Approval *
- (●) Change of Condition
- ( ) Change of Condition without Prior Approval *
- ( ) Change of Location
- ( ) Change of Location without Prior Approval *
- ( ) Equipment Operating with an Expired/Inactive Permit *

Existing or Previous Permit/Application
If you checked any of the items in 7c., you MUST provide an existing Permit or Application Number: 581391

* A Higher Permit Processing Fee and additional Annual Operating Fees (up to 3 full years) may apply (Rule 301(c)(1)(D)(i)).

8a. Estimated Start Date of Construction (mm/dd/yyyy):

8b. Estimated End Date of Construction (mm/dd/yyyy):

8c. Estimated Start Date of Operation (mm/dd/yyyy):

9. Description of Equipment or Reason for Compliance Plan (list applicable rule):
SCR No. 5. Increase ammonia injection rate.

10. For Identical equipment, how many additional applications are being submitted with this application? (Form 400-A required for each equipment / process): 4

11. Are you a Small Business as per AQMD's Rule 102 definition? (10 employees or less and total gross receipts are $500,000 or less OR a not-for-profit training center) (●) No ( ) Yes

12. Has a Notice of Violation (NOV) or a Notice to Comply (NC) been issued for this equipment? (●) No ( ) Yes
If Yes, provide NOV/NC#:

Section E - Facility Business Information

13. What type of business is being conducted at this equipment location?
Electric Power Generation

14. What is your business primary NAICS Code? (North American Industrial Classification System): 221112

15. Are there other facilities in the SCAQMD jurisdiction operated by the same operator? ( ) No (●) Yes

16. Are there any schools (K-12) within 1000 feet of the facility property line? (●) No ( ) Yes

Section F - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application are true and correct.

17. Signature of Responsible Official: George L Piantka

18. Title of Responsible Official: Senior Director

19. I wish to review the permit prior to issuance. (This may cause a delay in the application process.) ( ) No (●) Yes

20. Print Name: George Piantka

21. Date: 3/11/2021

22. Do you claim confidentiality of data? (If Yes, see instructions.) (●) No ( ) Yes

23. Check List: ☒ Authorized Signature/Date ☒ Form 400-CEQA ☒ Supplemental Form(s) (ie., Form 400-E-xx) ☒ Fees Enclosed

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South Coast Air Quality Management District

Form 400-E-5
Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst

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Diamond Bar, CA 91765-0944
Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator That Appears On Permit): Walnut Creek Energy, LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Address where the equipment will be operated (for equipment which will be moved to various location in AQMD's jurisdiction, please list the initial location site): 911 Bixby Drive, City of Industry, CA, 91745 | CTG-5

(●) Fixed Location ( ) Various Locations

Section B - Equipment Description

Selective Catalytic Reduction (SCR)

SCR Catalyst

Manufacturer: Haldor-Topsoe **Catalyst Active Material:** _____

Model Number: DNX-629 **Type:** See Original Permit Application

Size of Each Layer or Module: **L:** _____ ft. _____ in. **W:** _____ ft. _____ in. **H:** _____ ft. _____ in.

No. of Layers or Modules: _____ **Total Volume:** 1272 cu. ft. **Total Weight:** _____ lbs.

Reducing Agent

( ) Urea ( ) Anhydrous Ammonia (●) Aqueous Ammonia 19.00 % **Injection Rate:** 265 lb/hr

Reducing Agent Storage**

Diameter: _____ ft. _____ in. **Height:** _____ ft. _____ in. **Capacity:** _____ gal

Pressure Setting: _____ psia *** A separate permit may be needed for the storage equipment.**

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Area Velocity

Gas Flow Rate/Wetted Catalyst Surface Area: _____ ft/hr

Manufacturer's Guarantee

NOx: _____ ppm **%O_2:** _____ **NOx:** _____ gm/bhp-hr **Ammonia Slip:** _____ **ppm @** _____ **%O_2**

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ **Installation Cost:** _____ **Catalyst Replacement Cost:** _____

Oxidation Catalyst

Oxidation Catalyst

Manufacturer: BASF **Catalyst Active Material:** _____

Model Number: CAMET **Type:** _____

Size of Each Layer or Module: **L:** _____ ft. _____ in. **W:** _____ ft. _____ in. **H:** _____ ft. _____ in.

No. of Layers or Modules: _____ **Total Volume:** 420 cu. ft. **Total Weight:** _____ lbs.

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Manufacturer's Guarantee

VOC: _____ ppm **VOC:** _____ gm/bhp-hr **%O_2:** _____

CO: _____ ppm **CO:** _____ gm/bhp-hr **%O_2:** _____

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ **Installation Cost:** _____ **Catalyst Replacement Cost:** _____

South Coast Air Quality Management District

Form 400-E-5
Selective Catalytic Reduction (SCR) System, Oxidation Catalyst, and Ammonia Catalyst

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section B - Equipment Description (cont.)

Ammonia Catalyst

Ammonia Catalyst

Manufacturer: _____ **Catalyst Active Material:** _____

Model Number: _____ **Type:** _____

Size of Each Layer or Module: **L:** _____ ft. _____ in. **W:** _____ ft. _____ in. **H:** _____ ft. _____ in.

No. of Layers or Modules: _____ **Total Volume:** _____ cu. ft. **Total Weight:** _____ lbs.

Space Velocity

Gas Flow Rate/Catalyst Volume: _____ per hour

Manufacturer's Guarantee

NH_3: _____ ppm **$\%O_2$:** _____

Catalyst Life

_____ years (expected)

Cost

Capital Cost: _____ **Installation Cost:** _____ **Catalyst Replacement Cost:** _____

Section C - Operation Information

Operating Temperature

Minimum Inlet Temperature: _____ °F (from cold start) **Maximum Temperature:** _____ °F

Warm-up Time: _____ hr. _____ min. (maximum)

Operating Schedule

Normal: _____ hours/day _____ days/week _____ weeks/yr

Maximum: _____ hours/day _____ days/week _____ weeks/yr

Section D - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application is true and correct.

Preparer Info

Signature:  **Date:** 03/10/2021

Name: Eduardo Jimenez

Title: Scientist **Company Name:** Yorke Engineering, LLC

Phone #: (949) 392-3059 **Fax #:** (949) 248-8499

Email: EJimenez@YorkeEngr.com

Contact Info

Name: Heather Mostert

Title: Env. Specialist **Company Name:** NRG

Phone #: (626) 986-0373 **Fax #:**

Email: Heather.Mostert@nrg.com

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Check here if you claim that this form or its attachments contain confidential trade secret information. ☐

South Coast Air Quality Management District

Form 400-A

Application Form for Permit or Plan Approval

List only one piece of equipment or process per form.

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Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

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1. Facility Name (Business Name of Operator to Appear on the Permit):
Walnut Creek Energy, LLC

2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD):
146536

3. Owner's Business Name (If different from Business Name of Operator):

Section B - Equipment Location Address

4. Equipment Location Is: (●) Fixed Location ( ) Various Location
(For equipment operated at various locations, provide address of initial site.)

911 Bixby Drive
Street Address

City of Industry , CA 91745
City Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section C - Permit Mailing Address

5. Permit and Correspondence Information:
[X] Check here if same as equipment location address

911 Bixby Drive
Address

City of Industry , CA 91745
City State Zip

Heather Mostert — Environmental Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

E-Mail: Heather.Mostert@nrg.com

Section D - Application Type

6. The Facility Is: ( ) Not In RECLAIM or Title V ( ) In RECLAIM ( ) In Title V (●) In RECLAIM & Title V Programs

7. Reason for Submitting Application (Select only ONE):

7a. New Equipment or Process Application:

- ( ) New Construction (Permit to Construct)
- ( ) Equipment On-Site But Not Constructed or Operational
- ( ) Equipment Operating Without A Permit *
- ( ) Compliance Plan
- ( ) Registration/Certification
- ( ) Streamlined Standard Permit

7b. Facility Permits:

- (●) Title V Application or Amendment (Refer to Title V Matrix)
- ( ) RECLAIM Facility Permit Amendment

7c. Equipment or Process with an Existing/Previous Application or Permit:

- ( ) Administrative Change
- ( ) Alteration/Modification
- ( ) Alteration/Modification without Prior Approval *
- ( ) Change of Condition
- ( ) Change of Condition without Prior Approval *
- ( ) Change of Location
- ( ) Change of Location without Prior Approval *
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Existing or Previous Permit/Application
If you checked any of the items in 7c., you MUST provide an existing Permit or Application Number:

* A Higher Permit Processing Fee and additional Annual Operating Fees (up to 3 full years) may apply (Rule 301(c)(1)(D)(i)).

8a. Estimated Start Date of Construction (mm/dd/yyyy):

8b. Estimated End Date of Construction (mm/dd/yyyy):

8c. Estimated Start Date of Operation (mm/dd/yyyy):

9. Description of Equipment or Reason for Compliance Plan (list applicable rule):
RECLAIM/Title V FP Amendment. Increase in Maximum Hourly Heat Input Rating for CTG-1, CTG-2, CTG-3, CTG-4, and CTG-5.

10. For Identical equipment, how many additional applications are being submitted with this application?
(Form 400-A required for each equipment / process)

11. Are you a Small Business as per AQMD's Rule 102 definition?
(10 employees or less and total gross receipts are $500,000 or less **OR** a not-for-profit training center) (●) No ( ) Yes

12. Has a Notice of Violation (NOV) or a Notice to Comply (NC) been issued for this equipment? (●) No ( ) Yes
If Yes, provide NOV/NC#:

Section E - Facility Business Information

13. What type of business is being conducted at this equipment location?
Electric Power Generation

14. What is your business primary NAICS Code?
(North American Industrial Classification System) 221112

15. Are there other facilities in the SCAQMD jurisdiction operated by the same operator? ( ) No (●) Yes

16. Are there any schools (K-12) within 1000 feet of the facility property line? (●) No ( ) Yes

Section F - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application are true and correct.

17. Signature of Responsible Official: George L Piantka

18. Title of Responsible Official:
Senior Director

19. I wish to review the permit prior to issuance. ( ) No (●) Yes
(This may cause a delay in the application process.)

20. Print Name:
George Piantka

21. Date: 3/11/2021

22. Do you claim confidentiality of data? (If Yes, see instructions.) (●) No ( ) Yes

23. Check List: [X] Authorized Signature/Date [X] Form 400-CEQA [X] Supplemental Form(s) (ie., Form 400-E-xx) [X] Fees Enclosed

AQMD USE ONLY	APPLICATION TRACKING #	CHECK #	AMOUNT RECEIVED $	PAYMENT TRACKING #	VALIDATION

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South Coast Air Quality Management District

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California Environmental Quality Act (CEQA) Applicability

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Tel: (909) 396-3385
www.aqmd.gov

The SCAQMD is required by state law, the California Environmental Quality Act (CEQA), to review discretionary permit project applications for potential air quality and other environmental impacts. This form is a screening tool to assist the SCAQMD in clarifying whether or not the project [1] has the potential to generate significant adverse environmental impacts that might require preparation of a CEQA document [CEQA Guidelines § 15060(a)]. Form 400-CEQA and the instructions for guidance on completing this form are available at http://www.aqmd.gov/home/regulations/ceqa/ceqa-permit-forms or http://www.aqmd.gov/home/permits/permit-application-forms. For each Form 400-A application, also complete and submit one Form 400-CEQA. If submitting multiple Form 400-A applications for the same project at the same time, only one Form 400-CEQA is necessary for the entire project. If you need assistance completing this form, contact Permit Services at (909) 396-3385.

Section A – Facility Information

1. Facility Name (Business Name of Operator to Appear on the Permit): Walnut Creek Energy, LLC

2. SCAQMD Facility ID: 146536

3. Project Description: Increase in Maximum Hourly Heat Input Ratings for CTG-1, CTG-2, CTG-3, CTG-4, and CTG-5.

Section B – Review For Exemption From Further CEQA Action

Check "Yes" or "No" as applicable. If "Yes" is checked for any question in Section B, skip Section C and proceed to page 2 and complete Section D - Signatures.

	Yes	No	Is this application for:
1.	○	◉	**A request for a change of operator only (without equipment or process change modifications)?**
2.	○	◉	**A functionally identical permit unit replacement with no increase in equipment unit rating or emissions?**
3.	○	◉	**A change of daily VOC permit limit to a monthly VOC permit limit?**
4.	○	◉	**Equipment damaged as a result of a disaster during state of emergency?**
5.	○	◉	**A Title V** (e.g., SCAQMD Regulation XXX) **permit renewal without equipment or process change modifications?**
6.	○	◉	**A Title V administrative permit revision?**
7.	○	◉	**The conversion of an existing permit into an initial Title V permit?**

Section C – Review of Impacts Which May Trigger Further CEQA Review

Check "Yes" or "No" as applicable. To avoid delays in processing your application(s), explain all "Yes" responses on a separate sheet and attach it to this form.

	Yes	No	
1.	○	◉	**Is this project specifically evaluated in a previously certified or adopted CEQA document?** If "Yes" is checked, attach a copy of the signed Notice of Determination to this form.
2.	○	◉	**Is this project specifically exempted from CEQA by another entity (e.g., city or agency)?** If "Yes" is checked, attach a copy of the signed Notice of Exemption or other documentation from the entity to this form.
3.	○	◉	**Is this project part of a larger project?** If "Yes" is checked, attach a separate sheet to briefly describe the larger project.
4.	○	◉	**Will the project increase the QUANTITY of hazardous materials stored aboveground onsite or transported by mobile vehicle to or from the site by greater than or equal to the amounts associated with each compound listed on Form 400-CEQA, Table 1 - Regulated Substances List and Threshold Quantities for Accidental Release Prevention** [http://www.aqmd.gov/home/regulations/ceqa/ceqa-permit-forms]**?** If "Yes" is checked, attach a separate sheet to identify each hazardous material and corresponding quantity to be transported, stored, or used.
5.	○	◉	**Will the project emit any air toxic listed on Form 400-CEQA, Table 2 - Other Air Toxics and Their Screening Levels** [http://www.aqmd.gov/home/regulations/ceqa/ceqa-permit-forms] [2]**?** If "Yes" is checked, attach a separate sheet to identify each air toxic and corresponding quantity to be emitted.
6.	○	◉	**Will the project require any demolition, excavation, and/or grading construction activities that encompass an area exceeding 20,000 square feet?**

[1] A "project" means the whole of an action which has a potential for resulting in physical change to the environment, including construction activities, clearing or grading of land, improvements to existing structures, and activities or equipment involving the issuance of a permit. For example, a project might include installation of a new, or modification of an existing internal combustion engine, dry cleaning facility, boiler, gas turbine, spray coating booth, solvent cleaning tank, etc

[2] Form 400-CEQA, Table 2 – Other Air Toxics and Their Screening Levels, contains a list of air toxics that either do not have a cancer potency (CP) or reference exposure level (REL) approved by the Office of Environmental Health Hazards Assessment (OEHHA) or have a combination of OEHHA-approved and non-approved CPs or RELs.

Section C – Review of Impacts Which May Trigger Further CEQA (concluded)

	Yes	No	
7.	⊙	○	**Will the project utilize a boiler, engine, or other combustion equipment that uses fuel (e.g., gasoline, diesel, natural gas, liquefied petroleum gas (LPG), or landfill gas)?** If "Yes" is checked, then the applicant will need to calculate the amount of GHGs from fuel use via on the Greenhouse Gas (GHG) online estimator [http://www.aqmd.gov/home/regulations/ceqa/ceqa-permit-forms], and attaching the printout or by conducting hand calculations and providing the documentation. Refer to the Instructions for Form 400-CEQA for guidance.
8.	○	⊙	**Will the project utilize other types of equipment not addressed in Question 7 that require the use of, or will generate, any chemicals listed on Form 400-CEQA, Table 3 - Greenhouse Gases** [http://www.aqmd.gov/home/regulations/ceqa/ceqa-permit-forms]**?** If "Yes" is checked, attach a separate sheet to identify each equipment unit, the chemical name(s), and the quantity of each chemical identified.
9.	○	⊙	**Will the project include the open outdoor storage of dry bulk solid materials that could generate dust?** If "Yes" is checked, include a plot plan with the application package.
10.	○	⊙	**Will the project result in or make worse noticeable off-site odors from activities that may not be subject to SCAQMD permit requirements?** For example, landfills, materials recovery/recycling facilities (MRF), and compost materials or other types of greenwaste (e.g., lawn clippings, tree trimmings, etc.) have the potential to generate odor complaints subject to SCAQMD Rule 402 – Nuisance.
11.	○	⊙	**Will the project cause an increase of emissions from marine vessels, trains and/or airplanes?**
12.	○	⊙	**Will the project increase demand for potable water at the facility by more than 262,820 gallons per day?** The following examples identify some, but not all, types of projects that may result in a "Yes" answer to this question: 1) a project that generates steam; 2) a project that uses water as part of operating air pollution control equipment; 3) a project that requires water as part of the production process; 4) a project that requires a new, or the expansion of an existing, sewage treatment facility, new water lines, sewage lines, sewage hook-ups etc.; 5) a project where the water demand exceeds the capacity of the local water purveyor to supply sufficient water for the project; 6) a project that requires new or the expansion of existing, water supply and conveyance facilities; and, 7) a project that requires water to hydrotest pipelines, storage tanks etc. for structural integrity.
13.	○	⊙	**Will the project create an increase in the mass inflow of effluents to a public wastewater treatment facility that would require a new, or revision to an existing, National Pollutant Discharge Elimination System (NPDES) or other related permit at the facility?**
14.	○	⊙	**Will the project result in the need for more than 350 new employees?**
15.	○	⊙	**Will the project result in an increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round-trips per day?**
16.	○	⊙	**Will the project result in an increase in customer traffic by more than 700 visits per day?**
17.	○	⊙	**Will the project result in temporary or permanent noise or vibration in excess of what is allowed by the applicable local noise ordinance?**
18.	○	⊙	**Will the project create a permanent need for new or additional solid waste disposal?** Check "No" if the projected potential amount of solid waste to be generated by the project is less than five tons per day.
19.	○	⊙	**Will the project create a permanent need for new or additional hazardous waste disposal?** Check "No" if the projected potential amount of hazardous wastes to be generated by the project is less than 42 cubic yards per day (or equivalent in pounds).
20.	○	⊙	**Will the project include equipment that after installation or modification will change the visual character of the site and its surroundings or block views?**
21.	○	⊙	**Will the project have equipment that will create a new source of external lighting that will be visible at the property line?**

Section D – SIGNATURES

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. I UNDERSTAND THAT THIS FORM IS A SCREENING TOOL AND THAT THE SCAQMD RESERVES THE RIGHT TO CONSIDER OTHER PERTINENT INFORMATION IN DETERMINING CEQA APPLICABILITY.

1. Signature of Responsible Official of Firm: George L Piantka		2. Title of Responsible Official of Firm: Senior Director
3. Print Name of Responsible Official of Firm: George Piantka		4. Date Signed: 3/11/2021
5. Phone # of Responsible Official of Firm: (760) 707-6833	6. Fax # of Responsible Official of Firm:	7. Email of Responsible Official of Firm: George.Piantka@nrg.com
8. Signature of Preparer, (If prepared by person other than responsible official of firm):		9. Title of Preparer: Scientist, Yorke Engineering, LLC
10. Print Name of Preparer: Eduardo Jimenez		11. Date Signed: 03/10/2021
12. Phone # of Preparer: (949) 392-3059	13. Fax # of Preparer: (949) 248-8499	14. Email of Preparer: EJimenez@YorkeEngr.com

THIS CONCLUDES FORM 400-CEQA. INCLUDE THIS FORM AND ANY ATTACHMENTS WITH FORM 400-A.

South Coast Air Quality Management District

Form 400 - XPP

Express Permit Processing Request

Form 400-A, Form 400-CEQA and one or more 400-E-xx form(s) must accompany all submittals.

Mail To:
SCAQMD
P.O Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

1. Facility Name (Business Name of Operator To Appear On The Permit): Walnut Creek Energy, LLC

2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

Section B - Equipment Location Address

3. (•) **Fixed Location** ( ) **Various Location**
(For equipment operated at various locations, provide address of initial site.)

911 Bixby Drive
Street Address

City of Industry, **CA** 91745
City State Zip

Heather Mostert — Env. Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

Heather.Mostert@nrg.com
E-Mail

Section C - Permit Mailing Address

4. Permit and Correspondence Information:
☑ Check here if same as equipment location address

911 Bixby Drive
Address

City of Industry, CA 91745
City State Zip

Heather Mostert — Env. Specialist
Contact Name — Title

(626) 986-0373 — Ext. — Fax #
Phone #

Heather.Mostert@nrg.com
E-Mail

Section D - Authorization/Signature

I understand that the Expedited Permit Processing fees must be submitted at the time of application submittal, and that the application may be subject to additional fees per Rule 301. I understand that requests for Express Permit Processing neither guarantees action by any specific date nor does it guarantee permit approval; that Express Permit Processing is subject to availability of qualified staff; and that once Express Permit Processing has commenced, the expedited fees will not be refunded. I hereby certify that all information contained herein and information submitted with the application are true and correct.

5. Signature of Responsible Official: George L Piantka

6. Title of Responsible Official: Senior Director

7. Print Name of Responsible Official: George Piantka

8. Date: 3/11/2021

9. Phone #: (760) 707-6833

10. Fax #:

AQMD USE ONLY	APPLICATION TRACKING #		TYPE B C	EQUIPMENT CATEGORY CODE	FEE SCHEDULE: $		VALIDATION
ENG. DATE A R	ENG. DATE A R		CLASS I III	ASSIGNMENT Unit Engineer	CHECK/MONEY ORDER #	AMOUNT $	TRACKING #

South Coast Air Quality Management District

Form 500-C1

Title V Compliance Status Report

To provide the compliance status of your facility with applicable federally enforceable requirements and identify other local-only requirements, complete this form and attach it to a completed compliance certification Form 500-A2. As appropriate, all submittals of Form 500-C2 as appropriate should also be attached to this form.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section I - Operator Information

1. Facility Name (Business Name of Operator That Appears On Permit): Walnut Creek Energy, LLC

2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

PROCEDURES FOR DETERMINING COMPLIANCE STATUS

1. **Equipment verification:** Review the list of pending applications, and either the preliminary Title V facility permit or the list of current permits to operate that the AQMD provided you, to determine if they completely and accurately describe all equipment operating at the facility. Attach a statement to describe any discrepancies.
2. **Identify applicable requirements*:** Use the checklist in Section II to identify all applicable and federally-enforceable local, state, and federal rules and regulations, test methods, and monitoring, recordkeeping and reporting (MRR) requirements that apply to any equipment or process (including equipment exempt from a permit by Rule 219) at your facility.
   The potential applicable requirements, test methods and MRR requirements are identified and listed adjacent to each given equipment/process description. Check off each box adjacent to the corresponding requirement as it applies to your particular equipment/process.
   Note: Even if there is only one piece of equipment that is subject to a particular requirement, the appropriate box should be checked.
3. **Identify additional applicable requirements*:** Use Section III to identify any additional requirements not found in Section II. Section II is not a complete list of all applicable requirements. It does not include recently adopted NESHAP regulations by EPA or recent amendments to AQMD rules. Do not add rules listed in Section V here.
4. **Identify any requirements that do not apply to a specific piece of equipment or process:** Also use Section III to identify any requirements that are listed in Section II but that do not apply to a specific piece of equipment or process. Fill out Section III of this form and attach a separate sheet to explain the reason(s) why the identified rules do not apply. Note: Listing any requirement that does not apply to a specific piece of equipment will not provide the facility with a permit shield unless one is specifically requested by completing Form 500-D and is approved by AQMD.
5. **Identify SIP-approved rules that are not current AQMD rules:** Use Section IV to identify older versions of current AQMD rules that are the EPA-approved versions in the State Implementation Plan (SIP), and that are still applicable requirements as defined by EPA. The facility is not required to certify compliance with the items checked in Section IV provided that the non-SIP approved rule in Section II is at least as stringent as the older SIP-approved version in Section IV. **
6. **Identify Local-Only Enforceable Regulatory Requirements:** Use Section V to identify AQMD rules that are not SIP-approved and are not federally enforceable.
7. **Determine compliance:** Determine if all equipment and processes are complying with all requirements identified in Sections II and III. If each piece of equipment complies with all applicable requirements, complete and attach Form 500-A2 to certify the compliance status of the facility. If any piece of equipment is not in compliance with any of the applicable requirements, complete and attach Form 500-C2 in addition to Form 500-A2.

* The following AQMD rules and regulations are not required to be included in Section II and do not have to be added to Section III: Regulation I, List and Criteria in Regulation II, Rule 201, Rule 201.1, Rule 202, Rule 203, Rule 205, Rule 206, Rule 207, Rule 208, Rule 209, Rule 210, Rule 212, Rule 214, Rule 215, Rule 216, Rule 217, Rule 219, Rule 220, Rule 221, Regulation III, Regulation V, Regulation VIII, Regulation XII, Regulation XV, Regulation XVI, Regulation XIX, Regulation XXI, Regulation XXII, and Regulation XXX.

** Emission units adversely affected by the gap between current and SIP-approved versions of rules may initially be placed in a non-Title V portion of the permit

Section II - Applicable Requirements, Test Methods, & MRR Requirements

Equipment/Process	Applicable Requirement	Test Method	MRR Requirement
☐ All Air Pollution Control Equipment Using Combustion (RECLAIM & non-RECLAIM sources)	☐ Rule 480 (10/07/77)	N/A	N/A
☐ All Coating Operations (12/15/00)	☐ Rule 442	☐ Rule 442(f)	☐ Rule 442(g)
☐ All Combustion Equipment, ≥ 555 Mmbtu/Hr (except for NOx RECLAIM sources)	☐ Rule 474 (12/04/81)	☐ AQMD TM 7.1 or 100.1	
☑ All Combustion Equipment Except Internal Combustion Engines (RECLAIM & non-RECLAIM sources)	☑ Rule 407 (04/02/82) ☑ Rule 409 (08/07/81)	☑ AQMD TM 100.1 or 10.1, 307-91 ☑ AQMD TM 5.1, 5.2, or 5.3	
☐ All Combustion Equipment Using Gaseous Fuel (except SOx RECLAIM sources)	☐ Rule 431.1 (06/12/98)	☐ Rule 431.1(f)	☐ Rule 431.1(d) & (e)
☐ All Combustion Equipment Using Liquid Fuel (except SOx RECLAIM sources)	☐ Rule 431.2 (09/15/00)	☐ Rule 431.2(g)	☐ Rule 431.2(f)
☐ All Combustion Equipment Using Fossil Fuel (except SOx RECLAIM sources)	☐ Rule 431.3 (05/07/76)		
☑ All Equipment	☑ Rule 401 (11/09/01) ☐ Rule 405 (02/07/86) ☑ Rule 408 (05/07/76) ☑ Rule 430 (07/12/96) ☑ Rule 701 (06/13/97) ☑ New Source Review, BACT ☑ Rule 1703 (10/07/88) ☐ 40 CFR68 - Accidental Release Prevention	☑ California Air Resources Board Visible Emission Evaluation ☐ AQMD TM 5.1, 5.2, or 5.3 N/A See Applicable Subpart	☑ Rule 430(b) See Applicable Subpart
☐ All Equipment Processing Solid Materials	☐ Rule 403 (06/03/05)	☐ Rule 403(d)(3)	☐ Rule 403(f)
☑ All Equipment With Exhaust Stack (except cement kilns subject to Rule 1112.1)	☑ Rule 404 (02/07/86)	☑ AQMD TM 5.1, 5.2, or 5.3	
☑ All Facilities Using Solvents to Clean Various Items or Equipment	☑ Rule 109 (05/02/03) ☑ Rule 1171 (05/01/09) ☐ 40 CFR63 SUBPART T	☑ Rule 109(g) ☑ Rule 1171(e) See Applicable Subpart	☑ Rule 109(c) ☑ Rule 1171(c)(6) See Applicable Subpart
☑ All RECLAIM Equipment (NOx & SOx)	☑ Reg. XX - RECLAIM	☑ Rule 2011, App. A (05/06/05) ☑ Rule 2012, App. A (05/06/05)	☑ Rule 2011, App. A (05/06/05) ☑ Rule 2012, App. A (05/06/05)
☐ Abrasive Blasting	☐ Rule 1140 (08/02/85)	☐ Rule 1140(d) & (e), AQMD Visible Emission Method	

KEY ABBREVIATIONS: **Reg**. = AQMD Regulation; **Rule** = AQMD Rule; **App**. = Appendix; **AQMD TM** = AQMD Test Method; **CFR** = Code of Federal Regulations; **CCR** = California Code of Regulations

Section II - Applicable Requirements, Test Methods, & MRR Requirements

Equipment/Process	Applicable Requirement	Test Method	MRR Requirement
☐ Aggregate and Related Operations	☐ Rule 1157 (09/08/06)	☐ Rule 1157(f)	☐ Rule 1157(e)
☑ Appliances Containing Ozone Depleting Substances (except Motor Vehicle Air Conditioners): Manufacturing, Repair, Maintenance, Service, & Disposal	☑ 40 CFR82 SUBPART F	See Applicable Subpart	See Applicable Subpart
☐ Asphalt	See Manufacturing, Asphalt Processing & Asphalt Roofing		
☐ Asphalt Concrete/Batch Plants	☐ 40 CFR60 SUBPART I	See Applicable Subpart	See Applicable Subpart
☐ Benzene Emissions, Maleic Anhydride Plants, Ethylbenzene/Styrene Plants, Benzene Storage Vessels, Benzene Equipment Leaks, & Coke By-Product Recovery Plants	☐ Rule 1173 (02/06/09) ☐ Rule 1176 (09/13/96) ☐ 40 CFR61 SUBPART L ☐ 40 CFR61 SUBPART Y ☐ 40 CFR63 SUBPART R ☐ 40 CFR63 SUBPART CC	☐ Rule 1173(j) ☐ Rule 1176(h) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart	☐ Rule 1173(i) ☐ Rule 1176(f) & (g) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart
☐ Benzene Transfer Operations	☐ Rule 1142 (07/19/91) ☐ 40 CFR61 SUBPART BB ☐ 40 CFR63 SUBPART Y	☐ Rule 1142(e) See Applicable Subpart See Applicable Subpart	☐ Rule 1142(h) See Applicable Subpart See Applicable Subpart
☐ Benzene Waste Operations	☐ Rule 1176 (09/13/96) ☐ 40 CFR61 SUBPART FF ☐ 40 CFR63 SUBPART CC	☐ Rule 1176(h) See Applicable Subpart See Applicable Subpart	☐ Rule 1176(f) & (g) See Applicable Subpart See Applicable Subpart
☐ Beryllium Emissions	☐ 40 CFR61 SUBPART C	See Applicable Subpart	See Applicable Subpart
☐ Beryllium Emissions, Rocket Motor Firing	☐ 40 CFR61 SUBPART D	See Applicable Subpart	See Applicable Subpart
☐ Boiler, < 5 Mmbtu/Hr (non-RECLAIM sources)	☐ Rule 1146.1 (09/05/08) ☐ Rule 1146.2 (05/05/06) ☐ 40 CFR63 SUBPART DDDDD	☐ Rule 1146.1(d) N/A See Applicable Subpart	☐ Rule 1146.1(c)(2) & (c)(3) N/A See Applicable Subpart
☐ Boiler, < 5 Mmbtu/Hr (RECLAIM sources)	☐ Rule 1146.1 (09/05/08) - excluding NOx requirements ☐ 40 CFR63 SUBPART DDDDD	☐ Rule 1146.1(d) See Applicable Subpart	☐ Rule 1146.1(c)(2) & (c)(3) See Applicable Subpart

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Section II - Applicable Requirements, Test Methods, & MRR Requirements

Equipment/Process	Applicable Requirement	Test Method	MRR Requirement
☐ Boiler, ≥ 5 Mmbtu/Hr (non-RECLAIM sources)	☐ Rule 218 (05/14/99) ☐ Rule 429 (12/21/90) ☐ Rule 475 (08/07/78) ☐ Rule 476 (10/08/76) ☐ Rule 1146 (09/05/08) ☐ 40 CFR60 SUBPART D ☐ 40 CFR60 SUBPART Da ☐ 40 CFR60 SUBPART Dc ☐ 40 CFR63 SUBPART DDDDD	☐ AQMD TM 100.1 N/A ☐ AQMD TM 5.1, 5.2, or 5.3 ☐ AQMD TM 7.1, 100.1, 5.1, 5.2, or 5.3 ☐ Rule 1146(d) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart	☐ Rule 218(e) & (f) ☐ Rule 429(d) ☐ Rule 1146(c)(6) & (c)(7) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart
☐ Boiler, ≥ 5 Mmbtu/Hr (RECLAIM sources)	☐ Rule 475 (08/07/78) ☐ Rule 476 (10/08/76) - excluding NOx requirements ☐ Rule 1146 (09/05/08) - excluding NOx requirements ☐ Rule 2011 (05/06/05) ☐ or Rule 2012 (05/06/05) ☐ 40 CFR60 SUBPART D ☐ 40 CFR60 SUBPART Da ☐ 40 CFR60 SUBPART Dc ☐ 40 CFR63 SUBPART DDDDD	☐ AQMD TM 5.1, 5.2, or 5.3 ☐ AQMD TM 7.1, 100.1, 5.1, 5.2, or 5.3 ☐ Rule 1146(d) ☐ Rule 2011, App. A (05/06/05) ☐ or Rule 2012, App. A (05/06/05) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart	☐ Rule 1146(c)(6) & (c)(7) ☐ Rule 2011, App. A (05/06/05) ☐ or Rule 2012, App. A (05/06/05) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart
☐ Boiler, Petroleum Refining (non-RECLAIM sources)	☐ Rule 218 (05/14/99) ☐ Rule 429 (12/21/90) ☐ Rule 431.1 (06/12/98) ☐ Rule 475 (08/07/78) ☐ Rule 1146 (09/05/08) ☐ 40 CFR60 SUBBPART J ☐ 40 CFR63 SUBPART DDDDD	☐ AQMD TM 100.1 N/A ☐ Rule 431.1(f) ☐ AQMD TM 5.1, 5.2, or 5.3 ☐ Rule 1146(d) See Applicable Subpart See Applicable Subpart	☐ Rule 218(e) & (f) ☐ Rule 429(d) ☐ Rule 431.1(d) & (e) ☐ Rule 1146(c)(6) & (c)(7) See Applicable Subpart See Applicable Subpart

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Section II - Applicable Requirements, Test Methods, & MRR Requirements

Equipment/Process	Applicable Requirement	Test Method	MRR Requirement
☐ Boiler, Petroleum Refining (RECLAIM sources)	☐ Rule 1146 (09/05/08) - excluding NOx requirements ☐ Rule 2011 (05/06/05) ☐ or ☐ Rule 2012 (05/06/05) ☐ 40 CFR60 SUBPART J ☐ 40 CFR63 SUBPART DDDDD	☐ Rule 1146(d) ☐ Rule 2011, App. A (05/06/05) ☐ or ☐ Rule 2012, App. A (05/06/05) See Applicable Subpart See Applicable Subpart	☐ Rule 1146(c)(6) & (c)(7) ☐ Rule 2011, App. A (05/06/05) ☐ or ☐ Rule 2012, App. A (05/06/05) See Applicable Subpart See Applicable Subpart
☐ Boilers, Electric Utility (non-RECLAIM sources)	☐ Rule 218 (05/14/99) ☐ Rule 429 (12/21/90) ☐ Rule 1135 (07/19/91) ☐ 40 CFR60 SUBPART Db ☐ 40 CFR63 SUBPART DDDDD	☐ AQMD TM 100.1 N/A ☐ Rule 1135(e) See Applicable Subpart See Applicable Subpart	☐ Rule 218(e) & (f) ☐ Rule 429(d) ☐ Rule 1135(e) See Applicable Subpart See Applicable Subpart
☐ Boilers, Electric Utility (RECLAIM sources)	☐ Rule 2012 (05/06/05) ☐ 40 CFR60 SUBPART Db ☐ 40 CFR63 SUBPART DDDDD	☐ Rule 2012, App. A (05/06/05) See Applicable Subpart See Applicable Subpart	☐ Rule 2012, App. A (05/06/05) See Applicable Subpart See Applicable Subpart
☐ Bulk Loading Of Organic Liquids	☐ Rule 462 (05/14/99) ☐ 40 CFR60 SUBPART XX ☐ 40 CFR63 SUBPART R ☐ 40 CFR63 SUBPART BBBBBB ☐ 40 CFR63 SUBPART EEEE	☐ Rule 462(f) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart	☐ Rule 462(g) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart
☐ Cadmium Electroplating Operation	☐ Rule 1426 (05/02/03)		☐ Rule 1426(e)
☐ Calciner, Mineral Industries	☐ 40 CFR60 SUBPART UUU	See Applicable Subpart	See Applicable Subpart
☐ Calciner, Petroleum Coke	☐ Rule 477 (04/03/81) ☐ Rule 1119 (03/02/79) ☐ 40 CFR63 SUBPART L	☐ AQMD Visible Emissions, AQMD TM 5.1, 5.2, or 5.3 ☐ AQMD TM 6.1 or 100.1 See Applicable Subpart	See Applicable Subpart
☐ Charbroilers	☐ Rule 1174 (10/05/90) ☐ Rule 1138 (11/14/97)	☐ AQMD Test Protocol ☐ Rule 1138(g)	☐ Rule 1138(d)
☐ Chrome Plating & Chromic Acid Anodizing Operation	☐ Rule 1426 (05/02/03) ☐ Rule 1469 (12/05/08)	☐ Rule 1469(e)	☐ Rule 1426(e) ☐ Rule 1469(g), (j) & (k)

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Section II - Applicable Requirements, Test Methods, & MRR Requirements

Equipment/Process	Applicable Requirement	Test Method	MRR Requirement
☐ Coating Operation, Adhesive Application Operation	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1132 (05/05/06) ☐ Rule 1168 (01/07/05) ☐ Rule 1171 (05/01/09) ☐ 40 CFR60 SUBPART RR	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1132(f) ☐ Rule 1168(f) & (e) ☐ Rule 1171(e) See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1132(g) ☐ Rule 1168(d) ☐ Rule 1171(c)(6) See Applicable Subpart
☐ Coating Operation, Aerospace Assembly & Component Manufacturing	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1124 (09/21/01) ☐ Rule 1132 (05/05/06) ☐ Rule 1171 (05/01/09) ☐ 40 CFR63 SUBPART GG	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1124(e) & (f) ☐ Rule 1132(f) ☐ Rule 1171(e) See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1124(j) & (d) ☐ Rule 1132(g) ☐ Rule 1171(c)(6) See Applicable Subpart
☐ Coating Operation, Graphic Arts (Gravure, Letter Press, Flexographic & Lithographic Printing Process, Etc.)	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1130 (10/08/99) ☐ Rule 1132 (05/05/06) ☐ Rule 1171 (05/01/09) ☐ 40 CFR60 SUBPART QQ ☐ 40 CFR60 SUBPART RR ☐ 40 CFR60 SUBPART FFF ☐ 40 CFR60 SUBPART VVV ☐ 40 CFR63 SUBPART KK ☐ 40 CFR63 SUBPART JJJJ	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1130(h) ☐ Rule 1132(f) ☐ Rule 1171(e) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1130(e) ☐ Rule 1132(g) ☐ Rule 1171(c)(6) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart
☐ Coating Operation, Magnet Wire Coating	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1126 (01/13/95) ☐ Rule 1132 (05/05/06) ☐ Rule 1171 (05/01/09)	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1126(d) ☐ Rule 1132(f) ☐ Rule 1171(e)	☐ Rule 109(c) ☐ Rule 1126(c)(4) ☐ Rule 1132(g) ☐ Rule 1171(c)(6)

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Section II - Applicable Requirements, Test Methods, & MRR Requirements

Equipment/Process	Applicable Requirement	Test Method	MRR Requirement
☐ Coating Operation, Marine Coating (Except for recreational equipment)	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1106 (01/13/95) ☐ Rule 1132 (05/05/06) ☐ Rule 1171 (05/01/09) ☐ 40 CFR63 SUBPART II	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1106(e) ☐ Rule 1132(f) ☐ Rule 1171(e) See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1106(c)(5) ☐ Rule 1132(g) ☐ Rule 1171(c)(6) See Applicable Subpart
☐ Coating Operation, Metal Coating	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1107 (01/06/06) ☐ Rule 1132 (05/05/06) ☐ Rule 1171 (05/01/09) ☐ 40 CFR60 SUBPART EE ☐ 40 CFR60 SUBPART SS ☐ 40 CFR63 SUBPART NNNN ☐ 40 CFR63 SUBPART MMMM ☐ 40 CFR63 SUBPART RRRR	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1107(e) ☐ Rule 1132(f) ☐ Rule 1171(e) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1107(j) ☐ Rule 1132(g) ☐ Rule 1171(c)(6) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart
☐ Coating Operation, Metal Containers, Closure, & Coil Coating Operations	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1125 (03/07/08) ☐ Rule 1132 (05/05/06) ☐ Rule 1171 (05/01/09) ☐ 40 CFR60 SUBPART TT ☐ 40 CFR60 SUBPART WW ☐ 40 CFR63 SUBPART KKKK ☐ 40 CFR63 SUBPART SSSS	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1125(e) ☐ Rule 1132(f) ☐ Rule 1171(e) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1125(c)(6) ☐ Rule 1132(g) ☐ Rule 1171(c)(6) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart
☐ Coating Operation, Motor Vehicle & Mobile Equipment Non-Assembly Line Coating Operation	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1132 (05/05/06) ☐ Rule 1151 (12/02/05) ☐ Rule 1171 (05/01/09)	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1132(f) ☐ Rule 1151(h) ☐ Rule 1171(e)	☐ Rule 109© ☐ Rule 1132(g) ☐ Rule 1151(f) ☐ Rule 1171(c)(6)

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Section II - Applicable Requirements, Test Methods, & MRR Requirements

Equipment/Process	Applicable Requirement	Test Method	MRR Requirement
☐ Coating Operation, Motor Vehicle Assembly Line	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1115 (05/12/95) ☐ Rule 1132 (05/05/06) ☐ Rule 1171 (05/01/09) ☐ 40 CFR60 SUBPART MM ☐ 40 CFR63 SUBPART IIII	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1115(e) ☐ Rule 1132(f) ☐ Rule 1171(e) See Applicable Subpart See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1115(g) ☐ Rule 1132(g) ☐ Rule 1171(c)(6) See Applicable Subpart See Applicable Subpart
☐ Coating Operation, Paper, Fabric, & Film Coating Operations	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1128 (03/08/96) ☐ Rule 1132 (05/05/06) ☐ Rule 1171 (05/01/09) ☐ 40 CFR60 SUBPART VVV ☐ 40 CFR63 SUBPART OOOO	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1128(f) ☐ Rule 1132(f) ☐ Rule 1171(e) See Applicable Subpart See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1128(e) ☐ Rule 1132(g) ☐ Rule 1171(c)(6) See Applicable Subpart See Applicable Subpart
☐ Coating Operation, Plastic, Rubber, & Glass	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1145 (12/04/09) ☐ Rule 1132 (05/05/06) ☐ Rule 1171 (05/01/09) ☐ 40 CFR60 SUBPART TTT ☐ 40 CFR63 SUBPART NNNN ☐ 40 CFR63 SUBPART PPPP	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1145(e) ☐ Rule 1132(f) ☐ Rule 1171(e) See Applicable Subpart See Applicable Subpart See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1145(d) ☐ Rule 1132(g) ☐ Rule 1171(c)(6) See Applicable Subpart See Applicable Subpart See Applicable Subpart
☐ Coating Operation, Pleasure Craft	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1106.1 (02/12/99) ☐ Rule 1132 (05/05/06) ☐ Rule 1171 (05/01/09) ☐ 40 CFR63 SUBPART II	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1106.1(e) ☐ Rule 1132(f) ☐ Rule 1171(e) See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1106.1(d) ☐ Rule 1132(g) ☐ Rule 1171(c)(6) See Applicable Subpart

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Section II - Applicable Requirements, Test Methods, & MRR Requirements

Equipment/Process	Applicable Requirement	Test Method	MRR Requirement
☐ Coating Operation, Screen Printing	☐ Rule 109 (05/02/03) ☐ Rule 1130.1 (12/13/96) ☐ Rule 1132 (05/05/06) ☐ Rule 1171 (05/01/09) ☐ 40 CFR63 SUBPART KK	☐ Rule 109(g) ☐ Rule 1130.1(g) ☐ Rule 1132(f) ☐ Rule 1171(e) See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1130.1(c)(5) ☐ Rule 1132(g) ☐ Rule 1171(c)(6) See Applicable Subpart
☑ Coating Operation, Use Of Architectural Coating (Stationary Structures)	☑ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☑ Rule 1113 (07/13/07) ☐ Rule 1132 (05/05/06) ☑ Rule 1171 (05/01/09)	☑ Rule 109(g) ☐ Rule 481(d) ☑ Rule 1113(e) ☐ Rule 1132(f) ☑ Rule 1171(e)	☑ Rule 109(c) ☐ Rule 1132(g) ☑ Rule 1171(c)(6)
☐ Coating Operation, Wood Flat Stock	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1104 (08/13/99) ☐ Rule 1132 (05/05/06) ☐ Rule 1171 (05/01/09) ☐ 40 CFR63 SUBPART II	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1104(e) ☐ Rule 1132(f) ☐ Rule 1171(e) See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1104(d) ☐ Rule 1132(g) ☐ Rule 1171(c)(6) See Applicable Subpart
☐ Coating Operation, Wood Products (Commercial Furniture, Cabinets, Shutters, Frames, Toys)	☐ Rule 109 (05/02/03) ☐ Rule 481 (01/11/02) ☐ Rule 1132 (05/05/06) ☐ Rule 1136 (06/14/96) ☐ Rule 1171 (05/01/09) ☐ 40 CFR63 SUBPART JJ	☐ Rule 109(g) ☐ Rule 481(d) ☐ Rule 1132(f) ☐ Rule 1136(f) ☐ Rule 1171(e) See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1132(g) ☐ Rule 1136(d) & (g) ☐ Rule 1171(c)(6) See Applicable Subpart
☐ Coater	See Coating Operations		
☐ Columns	See Petroleum Refineries, Fugitive Emissions		
☐ Composting Operation	☐ Rule 1133 (01/10/03) ☐ Rule 1133.1 (01/10/03) ☐ Rule 1133.2 (01/10/03)	☐ Rule 1133.1(e) ☐ Rule 1133.2(g)	☐ Rule 1133.1(d) ☐ Rule 1133.2(h)
☐ Compressors	See Fugitive Emissions or Petroleum Refineries, Fugitive Emissions		
☐ Concrete Batch Plants	See Nonmetallic Mineral Processing Plants		
☐ Consumer Product Manufacturing	See Manufacturing, Consumer Product		
☐ Cooling Tower, Hexavalent Chromium	☐ 40 CFR63 SUBPART Q	See Applicable Subpart	See Applicable Subpart

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Section II - Applicable Requirements, Test Methods, & MRR Requirements

Equipment/Process	Applicable Requirement	Test Method	MRR Requirement
☐ Copper Electroplating Operation	☐ Rule 1426 (05/02/03)		☐ Rule 1426(e)
☐ Crude Oil Production	See Oil Well Operations		
☐ Crusher	See Nonmetallic Mineral Processing Plants		
☐ Dairy Farms and Related Operations	☐ Rule 1127 (08/06/04)	☐ Rule 1127(h)	☐ Rule 1127(g)
☐ Degreasers	☐ Rule 109 (05/02/03) ☐ Rule 1122 (05/01/09) ☐ Rule 1171 (05/01/09) ☐ 40 CFR63 SUBPART T	☐ Rule 109(g) ☐ Rule 1122(h) ☐ Rule 1171(e) See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1122(i) ☐ Rule 1171(c)(6) See Applicable Subpart
☐ Dry Cleaning, Perchloroethlyene	☐ Rule 1421 (12/06/02)	☐ Rule 1421(e) & (i)	☐ Rule 1421(g) & (h)
☐ Dry Cleaning, Petroleum Solvent	☐ Rule 109 (05/02/03) ☐ Rule 1102 (11/17/00) ☐ 40 CFR60 SUBPART JJJ	☐ Rule 109(g) ☐ Rule 1102(g) See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1102(f) See Applicable Subpart
☐ Dryers, Mineral Industries	☐ 40 CFR60 SUBPART UUU	See Applicable Subpart	See Applicable Subpart
☐ Ethylene Oxide Sterilizer	See Sterilizer, Ethylene Oxide		
☐ Flanges	See Fugitive Emissions or Petroleum Refineries, Fugitive Emissions		
☐ Fluid Catalytic Cracking Unit	☐ Rule 218 (05/14/99) ☐ Rule 1105 (09/01/84) ☐ Rule 1105.1 (11/07/03)	☐ AQMD TM 100.1 ☐ Rule 1105(c)(1) ☐ Rule 1105.1(f)	☐ Rule 218(e) & (f) ☐ Rule 1105(c)(2) ☐ Rule 1105.1(e)
☐ Foundries, Iron and Steel	☐ 40 CFR63 SUBPART EEEEE	See Applicable Subpart	See Applicable Subpart
☐ Friction Materials Manufacturing	See Manufacturing, Friction Materials		
☐ Fugitive Emissions, Benzene	☐ Rule 1173 (12/06/02) ☐ 40 CFR61 SUBPART L ☐ 40 CFR61 SUBPART V ☐ 40 CFR63 SUBPART R ☐ 40 CFR63 SUBPART CC	☐ Rule 1173(j) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart	☐ Rule 1173(i) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart

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Section II - Applicable Requirements, Test Methods, & MRR Requirements

Equipment/Process	Applicable Requirement	Test Method	MRR Requirement
☐ Fugitive Emissions, Chemical Plant	☐ Rule 466 (10/07/83)	☐ Rule 466(f)	☐ Rule 466(e)
	☐ Rule 466.1 (03/16/84)	☐ Rule 466.1(g)	☐ Rule 466.1(h)
	☐ Rule 467 (03/05/82)	☐ Rule 467(f)	☐ Rule 467(e)
	☐ Rule 1173 (02/06/09)	☐ Rule 1173(j)	☐ Rule 1173(i)
	☐ 40 CFR60 SUBPART VV	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR61 SUBPART V	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART F	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART G	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART H	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART I	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART R	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART CC	See Applicable Subpart	See Applicable Subpart
☐ Fugitive Emissions, Natural Gas Processing Plant	☐ Rule 466 (10/07/83)	☐ Rule 466(f)	☐ Rule 466(e)
	☐ Rule 466.1 (03/16/84)	☐ Rule 466.1(g)	☐ Rule 466.1(h)
	☐ Rule 467 (03/05/82)	☐ Rule 467(f)	☐ Rule 467(e)
	☐ Rule 1173 (02/06/09)	☐ Rule 1173(j)	☐ Rule 1173(i)
	☐ 40 CFR60 SUBPART KKK	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR61 SUBPART V	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART F	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART G	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART H	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART I	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART R	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART CC	See Applicable Subpart	See Applicable Subpart

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Section II - Applicable Requirements, Test Methods, & MRR Requirements

Equipment/Process	Applicable Requirement	Test Method	MRR Requirement
☐ Fugitive Emissions, Oil & Gas Production Facility	☐ Rule 466 (10/07/83)	☐ Rule 466(f)	☐ Rule 466(e)
	☐ Rule 466.1 (03/16/84)	☐ Rule 466.1(g)	☐ Rule 466.1(h)
	☐ Rule 467 (03/05/82)	☐ Rule 467(f)	☐ Rule 467(e)
	☐ Rule 1173 (02/06/09)	☐ Rule 1173(j)	☐ Rule 1173(i)
	☐ 40 CFR61 SUBPART V	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART F	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART G	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART H	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART I	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART R	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART CC	See Applicable Subpart	See Applicable Subpart
☐ Fugitive Emissions, Pipeline Transfer Station	☐ Rule 466 (10/07/83)	☐ Rule 466(f)	☐ Rule 466(e)
	☐ Rule 466.1 (03/16/84)	☐ Rule 466.1(g)	☐ Rule 466.1(h)
	☐ Rule 467 (03/05/82)	☐ Rule 467(f)	☐ Rule 467(e)
	☐ Rule 1173 (02/06/09)	☐ Rule 1173(j)	☐ Rule 1173(i)
	☐ 40 CFR61 SUBPART V	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART F	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART G	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART H	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART I	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART R	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART CC	See Applicable Subpart	See Applicable Subpart
☐ Furnace, Basic Oxygen Process	☐ 40 CFR60 SUBPART Na	See Applicable Subpart	See Applicable Subpart
☐ Furnace, Electric Arc, For Steel Plants: Constructed After August 17, 1983	☐ 40 CFR60 SUBPART AAa	See Applicable Subpart	See Applicable Subpart
☐ Furnace, Electric Arc, For Steel Plants: Constructed After Oct. 21, 1974, & On Or Before Aug. 17, 1983	☐ 40 CFR60 SUBPART AA	See Applicable Subpart	See Applicable Subpart
☐ Furnace, Glass Melting	☐ Rule 1117 (01/06/84)	☐ Rule 1117(c), AQMD TM 7.1 or 100.1	
	☐ 40 CFR60 SUBPART CC	See Applicable Subpart	See Applicable Subpart
☐ Furnace, Lead Melting, Automotive Batteries	☐ Rule 1101 (10/07/77)	☐ AQMD TM 6.1	
	☐ 40 CFR63 SUBPART X	See Applicable Subpart	See Applicable Subpart

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Section II - Applicable Requirements, Test Methods, & MRR Requirements			
Equipment/Process	**Applicable Requirement**	**Test Method**	**MRR Requirement**
☐ Gasoline Transfer & Dispensing Operation	☐ Rule 461 (06/03/05)	☐ Rule 461(f)	☐ Rule 461(e)(6) & (e)(7)
☐ Glass Manufacturing	See Manufacturing, Glass		
☐ Grain Elevators	☐ 40 CFR60 SUBPART DD	See Applicable Subpart	See Applicable Subpart
☐ Halon-containing Equipment, Use for Technician Training, Testing, Maintenance, Service, Repair, or Disposal	☐ 40 CFR82 SUBPART H	See Applicable Subpart	See Applicable Subpart
☐ Hazardous Waste Combustors	☐ 40 CFR63 SUBPART EEE	See Applicable Subpart	See Applicable Subpart
☐ Heater, Asphalt Pavement	☐ Rule 1120 (08/04/78)	☐ AQMD Visible Emissions, AQMD TM 6.2	☐ Rule 1120(f)
☐ Heaters, Petroleum Refinery Process	☐ Rule 429 (12/21/90) ☐ Rule 431.1 (06/12/98) ☐ Rule 1146 (09/05/08) ☐ 40 CFR60 SUBPART J ☐ 40 CFR63 SUBPART DDDDD	N/A ☐ Rule 431.1(f) ☐ Rule 1146(d) See Applicable Subpart See Applicable Subpart	☐ Rule 429(d) ☐ Rule 431.1(d) & (e) ☐ Rule 1146(c)(6) & (c)(7) See Applicable Subpart See Applicable Subpart
☐ Heaters, Process	See Boilers		
☐ Incinerators	☐ 40 CFR60 SUBPART E ☐ 40 CFR60 SUBPART CCCC	See Applicable Subpart See Applicable Subpart	See Applicable Subpart See Applicable Subpart
☐ Inorganic Arsenic Emissions, Arsenic Trioxide & Metallic Arsenic Production Facilities	☐ 40 CFR61 SUBPART P	See Applicable Subpart	See Applicable Subpart
☑ Internal Combustion Engines, Reciprocating	☑ Rule 1110.2 (07/09/10) ☑ 40 CFR60 SUBPART IIII and JJJJ ☐ 40 CFR63 SUBPART ZZZZ	Rule 1110.2(g) See Applicable Subpart See Applicable Subpart	Rule 1110.2(f) See Applicable Subpart See Applicable Subpart
☐ Kiln, Cement Plant	☐ Rule 1112 (06/06/86) ☐ Rule 1112.1 (12/04/09) ☐ 40 CFR60 SUBPART F	N/A N/A See Applicable Subpart	N/A N/A See Applicable Subpart

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Section II - Applicable Requirements, Test Methods, & MRR Requirements			
Equipment/Process	**Applicable Requirement**	**Test Method**	**MRR Requirement**
☐ Landfills	☐ Rule 1150 (10/15/82) ☐ Rule 1150.1 (03/17/00) ☐ 40 CFR60 SUBPART WWW ☐ 40 CFR63 SUBPART AAAA	☐ Rule 1150.1(j) See Applicable Subpart See Applicable Subpart	☐ Rule 1150.1(e) & (f) See Applicable Subpart See Applicable Subpart
☐ Lead Acid Battery Manufacturing Plants	See Manufacturing, Lead Acid Battery		
☐ Lead Electroplating Operation	☐ Rule 1426 (05/02/03)		☐ Rule 1426(e)
☐ Manufacturing, Asphalt Processing & Asphalt Roofing	☐ Rule 470 (05/07/76) ☐ Rule 1108 (02/01/85) ☐ Rule 1108.1 (11/04/83) ☐ 40 CFR60 SUBPART UU ☐ 40 CFR63 SUBPART LLLLL	N/A ☐ Rule 1108(b) ☐ Rule 1108.1 (b) See Applicable Subpart See Applicable Subpart	See Applicable Subpart See Applicable Subpart
☐ Manufacturing, Brick & Structural Clay Products	☐ 40 CFR63 SUBPART JJJJJ	See Applicable Subpart	See Applicable Subpart
☐ Manufacturing, Cement	☐ Rule 1156 (03/06/09)	☐ Rule 1156(g)	☐ Rule 1156(f)
☐ Manufacturing, Clay Ceramics	☐ 40 CFR63 SUBPART KKKKK	See Applicable Subpart	See Applicable Subpart
☐ Manufacturing, Coatings & Ink (SIC Code 2851)	☐ Rule 1141.1 (11/17/00) ☐ 40 CFR63 SUBPART HHHHH	N/A See Applicable Subpart	☐ Rule 1141.1(c) See Applicable Subpart
☐ Manufacturing, Consumer Product	☐ Title 17 CCR 94500		
☐ Manufacturing, Food Product	☐ Rule 1131 (06/06/03)	☐ Rule 1131(e)	☐ Rule 1131(d)
☐ Manufacturing, Friction Materials	☐ 40 CFR63 SUBPART QQQQQ	See Applicable Subpart	See Applicable Subpart
☐ Manufacturing, Glass	☐ Rule 1117 (01/06/84) ☐ 40 CFR60 SUBPART CC ☐ 40 CFR61 SUBPART N	☐ Rule 1117(c), AQMD TM 7.1 or 100.1 See Applicable Subpart See Applicable Subpart	 See Applicable Subpart See Applicable Subpart
☐ Manufacturing, Hydrochloric Acid	☐ 40 CFR63 SUBPART NNNNN	See Applicable Subpart	See Applicable Subpart
☐ Manufacturing, Lead-Acid Battery	☐ 40 CFR60 SUBPART KK	See Applicable Subpart	See Applicable Subpart

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Section II - Applicable Requirements, Test Methods, & MRR Requirements			
Equipment/Process	**Applicable Requirement**	**Test Method**	**MRR Requirement**
☐ Manufacturing, Lime	☐ 40 CFR63 SUBPART AAAAA	See Applicable Subpart	See Applicable Subpart
☐ Manufacturing, Magnetic Tape Industry	☐ 40 CFR60 SUBPART SSS ☐ 40 CFR63 SUBPART EE	See Applicable Subpart See Applicable Subpart	See Applicable Subpart See Applicable Subpart
☐ Manufacturing, Miscellaneous Organic Chemical	☐ 40 CFR63 SUBPART FFFF	See Applicable Subpart	See Applicable Subpart
☐ Manufacturing, Nitric Acid	☐ Rule 218 (05/14/99) ☐ Rule 1159 (12/06/85) ☐ 40 CFR60 SUBPART G	☐ AQMD TM 100.1 ☐ AQMD TM 7.1 or 100.1 See Applicable Subpart	☐ Rule 218(e) & (f) See Applicable Subpart
☐ Manufacturing, Plywood & Composite Wood Products	☐ Rule 1137 (02/01/02) ☐ 40 CFR63 SUBPART DDDD	N/A See Applicable Subpart	☐ Rule 1137(e) See Applicable Subpart
☐ Manufacturing, Polymer Industry	☐ 40 CFR60 SUBPART DDD ☐ 40 CFR63 SUBPART W ☐ 40 CFR63 SUBPART J	See Applicable Subpart See Applicable Subpart See Applicable Subpart	See Applicable Subpart See Applicable Subpart See Applicable Subpart
☐ Manufacturing, Polymeric Cellular Foam	☐ Rule 1175 (09/07/07) ☐ 40 CFR63 SUBPART UUUU	☐ Rule 1175(f) See Applicable Subpart	☐ Rule 1175(e) See Applicable Subpart
☐ Manufacturing, Products Containing Halon Blends	☐ 40 CFR82 SUBPART H	See Applicable Subpart	See Applicable Subpart
☐ Manufacturing, Products Containing Organic Solvents	☐ Rule 443.1 (12/05/86)	N/A	N/A
☐ Manufacturing, Products Containing Ozone Depleting Substances (ODS)	☐ 40 CFR82 SUBPART A ☐ 40 CFR82 SUBPART E	See Applicable Subpart See Applicable Subpart	See Applicable Subpart See Applicable Subpart
☐ Manufacturing, Reinforced Plastic Composites	☐ 40 CFR63 SUBPART WWWW	See Applicable Subpart	See Applicable Subpart
☐ Manufacturing, Refractory Products	☐ 40 CFR63 SUBPART SSSSS	See Applicable Subpart	See Applicable Subpart
☐ Manufacturing, Resin	☐ Rule 1141 (11/17/00) ☐ 40 CFR63 SUBPART W	☐ Rule 1141(d) See Applicable Subpart	☐ Rule 1141(c) See Applicable Subpart
☐ Manufacturing, Rubber Tire	☐ 40 CFR63 SUBPART XXXX	See Applicable Subpart	See Applicable Subpart
☐ Manufacturing, Semiconductors	☐ Rule 109 (05/02/03) ☐ Rule 1164 (01/13/95) ☐ Rule 1171 (05/01/09) ☐ 40 CFR63 SUBPART BBBBB	☐ Rule 109(g) ☐ Rule 1164(e) ☐ Rule 1171(e) See Applicable Subpart	☐ Rule 109(c) ☐ Rule 1164(c)(5) ☐ Rule 1171(c)(6) See Applicable Subpart
☐ Manufacturing, Solvent	☐ Rule 443 (05/07/76)	N/A	N/A

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Section II - Applicable Requirements, Test Methods, & MRR Requirements			
Equipment/Process	**Applicable Requirement**	**Test Method**	**MRR Requirement**
☐ Manufacturing, Sulfuric Acid	☐ Rule 469 (02/13/81) ☐ 40 CFR60 SUBPART H ☐ 40 CFR60 SUBPART Cd	☐ AQMD TM 6.1 or 6.2 See Applicable Subpart See Applicable Subpart	See Applicable Subpart See Applicable Subpart
☐ Manufacturing, Surfactant	☐ Rule 1141.2 (01/11/02)	☐ Rule 1141.2(e) ☐ AQMD TM 25.1	
☐ Manufacturing, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes	☐ 40 CFR60 SUBPART III ☐ 40 CFR60 SUBPART NNN	See Applicable Subpart See Applicable Subpart	See Applicable Subpart See Applicable Subpart
☐ Manufacturing, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes	☐ 40 CFR60 SUBPART RRR	See Applicable Subpart	See Applicable Subpart
☐ Manufacturing, Vinyl Chloride	☐ 40 CFR61 SUBPART F	See Applicable Subpart	See Applicable Subpart
☐ Manufacturing, Water Heaters	☐ Rule 1121 (09/03/04)	N/A	N/A
☐ Manufacturing, Wool Fiberglass Insulation	☐ 40 CFR60 SUBPART PPP	See Applicable Subpart	See Applicable Subpart
☐ Manure Processing Operations	☐ Rule 1127 (08/06/04)	☐ Rule 1127(h)	☐ Rule 1127(g)
☐ Marine Tank Vessel Operations	☐ Rule 1142 (07/19/91) ☐ Rule 1173 (02/06/09) ☐ 40 CFR63 SUBPART Y	☐ Rule 1142(e) ☐ Rule 1173(j) See Applicable Subpart	☐ Rule 1142(h) ☐ Rule 1173(i) See Applicable Subpart
☐ Mercury Emissions	☐ 40 CFR61 SUBPART E ☐ 40 CFR63 SUBPART IIII	See Applicable Subpart See Applicable Subpart	See Applicable Subpart See Applicable Subpart
☐ Motor Vehicle Air Conditioners with Ozone Depleting Substances (ODS): Repair, Service, Manufacturing, Maintenance, or Disposal	☐ 40 CFR82 SUBPART B ☐ 40 CFR82 SUBPART F	See Applicable Subpart See Applicable Subpart	See Applicable Subpart See Applicable Subpart
☐ Municipal Waste Combustors	☐ 40 CFR60 SUBPART Cb ☐ 40 CFR60 SUBPART Ea ☐ 40 CFR60 SUBPART Eb	See Applicable Subpart See Applicable Subpart See Applicable Subpart	See Applicable Subpart See Applicable Subpart See Applicable Subpart
☐ Negative Air Machines/HEPA, Asbestos	☐ 40 CFR61 SUBPART M	See Applicable Subpart	See Applicable Subpart
☐ Nickel Electroplating Operation	☐ Rule 1426 (05/02/03)		☐ Rule 1426(e)
☐ Nonmetallic Mineral Processing Plants	☐ Rule 404 (02/07/86) ☐ Rule 405 (02/07/86) ☐ 40 CFR60 SUBPART OOO	☐ AQMD TM 5.1, 5.2, or 5.3 ☐ AQMD TM 5.1, 5.2, or 5.3 See Applicable Subpart	See Applicable Subpart
☐ Off-site Waste and Recovery Operation	☐ 40 CFR63 SUBPART DD	See Applicable Subpart	See Applicable Subpart

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Section II - Applicable Requirements, Test Methods, & MRR Requirements			
Equipment/Process	**Applicable Requirement**	**Test Method**	**MRR Requirement**
☐ Oil and Gas Well Operation	☐ Rule 1148 (11/05/82) ☐ Rule 1148.1 (03/05/04)	☐ AQMD TM 25.1 ☐ Rule 1148.1 (g)	☐ Rule 1148.1 (f)
☐ Onshore Natural Gas Processing, SO2 Emissions	☐ 40 CFR60 SUBPART LLL	See Applicable Subpart	See Applicable Subpart
☐ Open Fires	☐ Rule 444 (11/07/08)		
☐ Open Storage, Petroleum Coke	☐ Rule 403 (06/03/05) ☐ Rule 403.1 (04/02/04) ☐ Rule 1158 (06/11/99)	☐ Rule 403(d)(4) ☐ Rule 1158(h)	☐ Rule 403(f) ☐ Rule 403.1(h) ☐ Rule 1158(j)
☐ Open Storage	☐ Rule 403 (06/03/05) ☐ Rule 403.1 (04/02/04)	☐ Rule 403(d)(4)	☐ Rule 403(f) ☐ Rule 403.1(h)
☐ Outer Continental Shelf Platform	☐ Rule 1183 (03/12/93) ☐ 40 CFR55	☐ 40 CFR55 See Applicable Subpart	☐ 40 CFR55 See Applicable Subpart
☐ Oven, Commercial Bakery	☐ Rule 1153 (01/13/95)	☐ Rule 1153(h)	☐ Rule 1153(g)
☐ Oven, Petroleum Coke	☐ Rule 477 (04/03/81) ☐ 40 CFR63 SUBPART L ☐ 40 CFR63 SUBPART CCCCC	☐ AQMD Visible Emissions, AQMD TM 5.1, 5.2, or 5.3 See Applicable Subpart See Applicable Subpart	See Applicable Subpart See Applicable Subpart
☐ Ozone Depleting Substances (ODS) or Alternative ODS, Use	☐ 40 CFR82 Subpart G	See Applicable Subpart	See Applicable Subpart

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Section II - Applicable Requirements, Test Methods, & MRR Requirements			
Equipment/Process	**Applicable Requirement**	**Test Method**	**MRR Requirement**
☐ Petroleum Refineries	☐ Rule 218 (05/14/99)	☐ AQMD TM 100.1	☐ Rule 218(e) & (f)
	☐ Rule 465 (08/13/99)		
	☐ Rule 468 (10/08/76)	☐ AQMD TM 6.1 or 6.2	
	☐ Rule 469 (02/13/81)	☐ AQMD TM 6.1 or 6.2	
	☐ Rule 1118 (11/04/05)	☐ Rule 1118(j)	☐ Rule 1118(f), (g), (h), & (i)
	☐ Rule 1123 (12/07/90)	N/A	☐ Rule 1123(c)
	☐ Rule 1189 (01/21/00)	☐ Rule 1189(f)	☐ Rule 1189(e)
	☐ 40 CFR60 SUBPART J	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART F	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART G	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART H	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART I	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART CC	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART EEEE	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART GGGGG	See Applicable Subpart	See Applicable Subpart
	☐ Title 13 CCR 2250		
☐ Petroleum Refineries, Fugitive Emissions	☐ Rule 1173 (02/06/09)	☐ Rule 1173(j)	☐ Rule 1173(i)
	☐ Rule 466 (10/07/83)	☐ Rule 466(f)	☐ Rule 466(e)
	☐ Rule 466.1 (03/16/84)	☐ Rule 466.1(g)	☐ Rule 466.1(h)
	☐ Rule 467 (03/05/82)	☐ Rule 467(f)	☐ Rule 467(e)
	☐ 40 CFR60 SUBPART GGG	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR61 SUBPART V	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART F	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART G	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART H	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART I	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART R	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART CC	See Applicable Subpart	See Applicable Subpart

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Section II - Applicable Requirements, Test Methods, & MRR Requirements

Equipment/Process	Applicable Requirement	Test Method	MRR Requirement
☐ Petroleum Refineries, Storage Tanks	☐ Rule 463 (05/06/05)	☐ Rule 463(g)	☐ Rule 463(e)(5)
	☐ Rule 1178 (04/07/06)	☐ Rule 1178(i)	☐ Rule 1178(f) & (h)
	☐ 40 CFR60 SUBPART K	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR60 SUBPART Ka	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR60 SUBPART Kb	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART F	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART G	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART H	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART I	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART R	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART CC	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART EEEE	See Applicable Subpart	See Applicable Subpart
☐ Petroleum Refineries, Wastewater Systems	☐ Rule 1176 (09/13/96)	☐ Rule 1176(h)	☐ Rule 1176(f) & (g)
	☐ Rule 464 (12/07/90)	N/A	
	☐ 40 CFR60 SUBPART QQQ	See Applicable Subpart	See Applicable Subpart
	☐ 40 CFR63 SUBPART CC	See Applicable Subpart	See Applicable Subpart
☐ Pharmaceuticals & Cosmetics Manufacturing	☐ Rule 1103 (03/12/99)	☐ Rule 1103(f)	☐ Rule 1103(e)
	☐ 40 CFR63 SUBPART GGG	See Applicable Subpart	See Applicable Subpart
☐ Polyester Resin Operation	☐ Rule 109 (05/02/03)	☐ Rule 109(g)	☐ Rule 109(c)
	☐ Rule 1162 (07/08/05)	☐ Rule 1162(f)	☐ Rule 1162(e)
	☐ Rule 1171 (05/01/09)	☐ Rule 1171(e)	☐ Rule 1171(c)(6)
☐ Primary Magnesium Refining	☐ 40 CFR63 SUBPART TTTTT	See Applicable Subpart	See Applicable Subpart
☐ Printing Press	See Coating Operations		
☐ Publicly Owned Treatment Works Operations	☐ Rule 1179 (03/06/92)	☐ Rule 1179(e)	☐ Rule 1179(c) & (d)
	☐ 40 CFR60 SUBPART O	See Applicable Subpart	See Applicable Subpart
☐ Pumps	See Fugitive Emissions or Petroleum Refineries, Fugitive Emissions		

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Section II - Applicable Requirements, Test Methods, & MRR Requirements			
Equipment/Process	**Applicable Requirement**	**Test Method**	**MRR Requirement**
☐ Recycling & Recovery Equipment for Ozone Depleting Substances (ODS),	☐ 40 CFR82 SUBPART F	See Applicable Subpart	See Applicable Subpart
☐ Refrigerant Reclaimers for Ozone Depleting Substances (ODS)	☐ 40 CFR82 SUBPART F	See Applicable Subpart	See Applicable Subpart
☐ Rendering Plant	☐ Rule 472 (05/07/76)	N/A	☐ Rule 472(b)
☐ Rock Crushing	See Nonmetallic Mineral Processing Plants		
☐ Secondary Aluminum Production	☐ 40 CFR63 SUBPART LL	See Applicable Subpart	See Applicable Subpart
☐ Semiconductor Manufacturing	See Manufacturing, Semiconductors		
☐ Sewage Treatment Plants	See Publicly Owned Treatment Works Operation		
☐ Site Remediation	☐ 40 CFR63 SUBPART GGGGG	See Applicable Subpart	See Applicable Subpart
☐ Smelting, Primary Copper	☐ 40 CFR63 SUBPART QQQ	See Applicable Subpart	See Applicable Subpart
☐ Smelting, Secondary Lead	☐ 40 CFR60 SUBPART L ☐ 40 CFR63 SUBPART X	See Applicable Subpart See Applicable Subpart	See Applicable Subpart See Applicable Subpart
☐ Soil Decontamination / Excavation	☐ Rule 1166 (05/11/01) ☐ 40 CFR63 SUBPART GGGGG	☐ Rule 1166(e) See Applicable Subpart	☐ Rule 1166(c)(1)(C) See Applicable Subpart
☐ Spray Booth	See Coating Operations		
☐ Sterilizer, Ethylene Oxide	☐ 40 CFR63 SUBPART O	See Applicable Subpart	See Applicable Subpart
☐ Storage Tank, Degassing Operation	☐ Rule 1149 (07/14/95) ☐ 40 CFR63 SUBPART CC	See Applicable Subpart	See Applicable Subpart

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Section II - Applicable Requirements, Test Methods, & MRR Requirements

Equipment/Process	Applicable Requirement	Test Method	MRR Requirement
☐ Storage Tank, Greater Than 19,815 Gallon Capacity	☐ Rule 463 (05/06/05) ☐ Rule 1178 (04/07/06) ☐ 40 CFR63 SUBPART F ☐ 40 CFR63 SUBPART G ☐ 40 CFR63 SUBPART H ☐ 40 CFR63 SUBPART I ☐ 40 CFR60 SUBPART K ☐ 40 CFR60 SUBPART Ka ☐ 40 CFR60 SUBPART Kb ☐ 40 CFR63 SUBPART R ☐ 40CFR63 SUBPART BBBBBB ☐ 40 CFR63 SUBPART CC	☐ Rule 463(g) ☐ Rule 1178(i) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart	☐ Rule 463(e)(5) ☐ Rule 1178(h) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart
☐ Synthetic Fiber Production Facilities	☐ 40 CFR60 SUBPART HHH	See Applicable Subpart	See Applicable Subpart
☐ Taconite Iron Ore Processing Facilities	☐ 40 CFR63 SUBPART RRRRR	See Applicable Subpart	See Applicable Subpart
☑ Turbine, Stationary Gas-Fired	☐ Rule 1134 (08/08/97) ☑ Rule 475 (08/07/78) ☐ 40 CFR60 SUBPART GG ☑ 40 CFR60 SUBPART KKKK ☐ 40 CFR63 SUBPART YYYY	☐ Rule 1134(e) & (g) ☑ AQMD TM 5.1, 5.2, or 5.3 See Applicable Subpart See Applicable Subpart See Applicable Subpart	☐ Rule 1134(d) & (f) See Applicable Subpart See Applicable Subpart See Applicable Subpart
☐ Turbine, Stationary Oil-Fired	☐ 40 CFR63 SUBPART YYYY	See Applicable Subpart	See Applicable Subpart
☐ Valves	See Fugitive Emissions or Petroleum Refineries, Fugitive Emissions		
☐ Vessel, Refinery Process	☐ Rule 1123 (12/07/90)	N/A	☐ Rule 1123(c)
☐ Vessels	See Petroleum Refineries, Fugitive Emissions		

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Section II - Applicable Requirements, Test Methods, & MRR Requirements			
Equipment/Process	**Applicable Requirement**	**Test Method**	**MRR Requirement**
☐ Wastewater, Chemical Plant	☐ Rule 464 (12/07/90) ☐ Rule 1176 (09/13/96) ☐ 40 CFR63 SUBPART F ☐ 40 CFR63 SUBPART G ☐ 40 CFR63 SUBPART H ☐ 40 CFR63 SUBPART I ☐ 40 CFR63 SUBPART CC	N/A ☐ Rule 1176(h) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart	☐ Rule 1176(f) & (g) See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart See Applicable Subpart
☐ Wastewater Treatment, Other	☐ Rule 464 (12/07/90) ☐ Rule 1176 (09/13/96)	N/A ☐ Rule 1176(h)	☐ Rule 1176(f) & (g)
☐ Woodworking Operations	☐ Rule 1137 (02/01/02)	N/A	☐ Rule 1137(e)

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Section III - Supplemental Identification of Specific Requirements

Complete this section only if there is a specific requirement (i.e., rule reference, test method, or MRR requirement) that is:

1. Listed for a specific type of equipment or process in Section II of this form & **DOES NOT** pertain to a specific device at your facility*; OR,
2. Is **NOT** Listed for a specific type of equipment or process in Section II of this form but it **IS** applicable to a specific device at your facility.

NOTES:

1. For any specific requirement, test method, or MRR requirement that is identified as "Remove," attach additional sheets to explain the reasons why the specific requirement does not pertain to the device listed.
2. All boxes that are checked in Section II and any additional requirements identified in this section as "Add" will be used to determine the facility's compliance status. This information will be used to verify the certification statements made on Form 500-A2.
3. Do not use this section to identify equipment that is exempt from specific rule requirements. Your equipment is automatically considered to be in compliance with the rule that specifically exempts the equipment from those requirements.
4. Listing any requirement that does not apply to a specific piece of equipment in this section will not provide the facility with a permit shield unless one is specifically requested by completing Form 500-D and approved by the AQMD.

* If this section is completed as part of the initial Title V application & there is no device number assigned, refer to the existing permit or application number in this column.

Device No.*	Specific Requirement (Rule Number & Date)	Add (A) or Remove (R) (Check one)	Test Method	Add (A) or Remove (R) (Check one)	MRR Requirement	Add (A) or Remove (R) (Check one)
		O A O R		O A O R		O A O R
		O A O R		O A O R		O A O R
		O A O R		O A O R		O A O R
		O A O R		O A O R		O A O R
		O A O R		O A O R		O A O R
		O A O R		O A O R		O A O R
		O A O R		O A O R		O A O R
		O A O R		O A O R		O A O R
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		O A O R		O A O R		O A O R
		O A O R		O A O R		O A O R

Section IV - SIP-Approved Rules That Are Not The Most Current AQMD Rules					
Check off each SIP-Approved Rule as it applies to the facility. Use the blanks at the end of this form to fill-in new items.					
SIP - Approved Rule	**Adoption/ Amendment Date**	**Check (✓) If Applies**	**SIP - Approved Rule**	**Adoption/ Amendment Date**	**Check (✓) If Applies**
401	03/02/84	☑			☐
431.2	05/04/90	☐			☐
461	6/3/05	☐			☐
466.1	05/02/80	☐			☐
469	04/07/76	☐			☐
475	10/08/76	☑			☐
1112	01/06/84	☐			☐
1112.1	2/7/86	☐			☐
1113	11/08/96	☑			☐
1117	1/6/83	☐			☐
1122	07/11/97	☐			☐
1132	03/05/04	☐			☐
1140	02/01/80	☐			☐
1146	11/17/00	☐			☐
1146.1	5/13/94	☐			☐
1151	12/11/98	☐			☐
1158	6/11/99	☐			☐
1162	11/17/00	☐			☐
1166	07/14/95	☐			☐
1171	11/07/03	☑			☐
1175	05/13/94	☐			☐
1186	09/10/99	☐			☐

Section V - AQMD Rules That Are Not SIP-Approved (Continued on Following Page)					
Check off each AQMD Rule as it applies to the facility. Use the blanks at the end of this form to fill-in new items.					
Non SIP - Approved Rule	**Adoption/ Amendment Date**	**Check (✓) If Applies**	**Non SIP - Approved Rule**	**Adoption/ Amendment Date**	**Check (✓) If Applies**
53 Los Angeles Co.	N/A	☑	1192	06/16/00	☐
53 Orange Co.	N/A	☐	1193	07/09/10	☐
53 Riverside Co.	N/A	☐	1194	10/20/00	☐
53 San Bernardino Co.	N/A	☐	1195	05/05/06	☐
53A San Bernardino Co.	N/A	☐	1196	06/06/08	☐
402	05/07/76	☑	1401	09/10/10	☑
429	12/21/90	☐	1401.1	11/04/05	☐
430	07/12/96	☑	1402	03/04/05	☐
441	05/07/76	☐	1403	10/05/07	☐
473	05/07/76	☐	1404	04/06/90	☐
477	04/03/81	☐	1405	01/04/91	☐
480	10/07/77	☐	1406	07/08/94	☐
1109	08/05/88	☐	1407	07/08/94	☐
1110.2	07/09/10	☑	1411	03/01/91	☐
1116.1	10/20/78	☐	1414	05/03/91	☐
1127	08/06/04	☐	1415	10/14/94	☐
1143	07/09/10	☐	1418	09/10/99	☐
1147	12/05/08	☐	1420	09/11/92	☐
1148.1	03/05/04	☐	1420.1	11/05/10	☐
1150	10/15/82	☐	1421	12/06/02	☐
1155	12/04/09	☐	1425	03/16/01	☐
1156	03/06/09	☐	1426	05/02/03	☐
1157	09/08/06	☐			☐
1163	06/07/85	☐			☐
1170	05/06/88	☐			☐
1183	03/12/93	☐			☐
1186.1	01/09/09	☐			☐
1191	06/16/00	☐			☐

Section V - AQMD Rules That Are Not SIP-Approved (Continued on Following Page)					
Check off each AQMD Rule as it applies to the facility. Use the blanks at the end of this form to fill-in new items.					
Non SIP - Approved Rule	**Adoption/ Amendment Date**	**Check (✓) If Applies**	**Non SIP - Approved Rule**	**Adoption/ Amendment Date**	**Check (✓) If Applies**
1469	12/05/08	☐	2009.1	05/11/01	☐
1469.1	03/04/05	☐	2501	05/09/97	☐
1470	06/01/07	☑	2506	12/10/99	☐
1472	03/07/08	☐			☐
2009	01/07/05	☑			☐
		☐			☐
		☐			☐
		☐			☐
		☐			☐
		☐			☐

South Coast Air Quality Management District

Form 500-F1 (Title V)

Title IV - Acid Rain Phase II Facility Information Summary

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944
Tel: (909) 396-3385
www.aqmd.gov

This form shall be completed by Acid Rain facilities ONLY and shall accompany all requests for Phase II permit actions unique to Acid Rain facilities. Also attach a completed Form 500-A2. In addition, if an initial Title V permit, permit renewal, or permit revision is requested, attach Form 500-A1 and any supplemental Acid Rain forms (Forms 500-F2, 500-F3, and 500-F4), as appropriate.

Section I - General Information

1. Facility Name (Business Name of Operator That Appears On Permit): Walnut Creek Energy, LLC

2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

3. ORIS Code (5-Digit): 57515

4. This is an application for a (Check all that apply to the facility):

- **a.** ☑ Phase II Acid Rain Permit or Revision (Complete Section II of this form)
- **b.** ☐ Repowering Extension Plan or Revision (Complete Form 500-F2)
- **c.** ☐ New Unit Exemption or Revision (Complete Form 500-F3)
- **d.** ☐ Retired Unit Exemption or Revision (Complete Form 500-F4)

5. The requested permit action involves a(n) (Check one):

- **a.** ○ Administrative Permit Revision
- **b.** ○ Significant Permit Revision
- **c.** ○ Fast Track Permit Revision
- **d.** ○ Automatic Permit Revision
- **e.** ◉ Other (specify): See below.

6. For all applications requesting a permit revision, provide a general description of the proposed changes (Attach additional sheets as necessary):

Increase in Heat Input Rating for CTG-1, CTG-2, CTG-3, CTG-4, and CTG-5.

Section II - Phase II Acid Rain Device Summary

1. The following information is (Check one): **a.** ○ New **b.** ○ Revised

AQMD Device #	EPA Unit #	Will device need a Repowering Extension Plan?	Has device started operations on or after 11/15/90?	Device Operations Start Date (mo/day/yr)	For devices starting-up after 11/15/90, provide date when Monitoring Certification will begin (mo/day/yr)
		○ Yes ○ No	○ Yes ○ No		
		○ Yes ○ No	○ Yes ○ No		
		○ Yes ○ No	○ Yes ○ No		
		○ Yes ○ No	○ Yes ○ No		
		○ Yes ○ No	○ Yes ○ No		

To complete this application, type or print the information in the appropriate blanks.

Section I - General Information

1. **Facility Name:** Provide the name of the legal entity that operates the facility.

   AQMD Facility ID: Complete only if the facility has been issued a 6-digit identification or ID number by AQMD. If not, leave these boxes blank. An ID number will be assigned when the application is submitted.

   ORIS Code: Provide the 5-digit code that has been assigned to facility by Department of Energy.

2. Check all applicable boxes to indicate the type of Acid Rain application filed. If box 1a. is checked, complete Section II of this form. If box 1b. is checked, complete and attach Form 500-F2 - Title IV Phase II Acid Rain Repowering Extension Plan. If box 1c. is checked, complete and attach Form 500-F3 - Title IV Phase II Acid Rain New Unit Exemption Request. If box 1d. is checked, complete and attach Form 500-F4 - Title IV Phase II Acid Rain Retired Unit Exemption Request.

3. Check one box that best represents the type of permit action requested. If box 1e. is checked, in the space provided identify any additional elements regarding the application or the facility that need to be considered during the processing of this application (i.e., Initial Title V Permit Application).

4. If the application is a revision request, describe in general terms the changes that are proposed in the application revision request. Attach additional sheets as necessary.

Section II - Phase II Acid Rain Device Summary

1. Before completing this section, check one box to indicate whether this is a new application or a revision.

AQMD Device #:	Provide the identification number for each AQMD-assigned device subject to Phase II requirements.
EPA Unit #:	Provide the identification number for each EPA-assigned device subject to Phase II requirements.
Will device need a Repowering Extension Plan?:	Indicate with a "yes" or "no" if the device is or will be participating under a Repowering Extension Plan.
Has device started operations on or after 11/15/90?:	Indicate with a "yes" or "no" if the device was source tested or started operating on or after November 15, 1990.
Device Operations Start Date:	Complete this column only if the device was source tested or started operating on or after November 15, 1990. Provide the date (mo/day/yr) when the device started or will start operating. Note: If the date of beginning operations changes, an administrative permit revision application will be required.
For Devices starting-up after 11/15/90, provide date when Monitoring Certification will begin:	Complete this column only if the device was source tested or started operating on or after November 15, 1990. Provide the date (mo/day/yr) when compliance with the monitoring procedures for the device will begin. Refer to 40 CFR Part 75.4 to determine this date. Note: If the monitoring certification date changes, an administrative permit revision application will be required.

South Coast Air Quality Management District

Form 500-A2
Title V Application Certification

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section I - Operator Information

1. Facility Name (Business Name of Operator That Appears On Permit): Walnut Creek Energy, LLC

2. Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 146536

3. This Certification is submitted with a (Check one):
- a. (●) Title V Application (Initial, Revision or Renewal)
- b. ( ) Supplement/Correction to a Title V Application
- c. ( ) MACT Part 1

4. Is Form 500-C2 included with this Certification? ( ) Yes (●) No

Section II - Responsible Official Certification Statement

Read each statement carefully and check each that applies – ***You must check 3a or 3b.***

1. For Initial, Permit Renewal, and Administrative Application Certifications:

a. ( ) The facility, including equipment that are exempt from written permit per Rule 219, is currently operating and will continue to operate in compliance with all applicable requirement(s) identified in Section II and Section III of Form 500-C1,

i. [ ] except for those requirements that do not specifically pertain to such devices or equipment and that have been identified as "Remove" on Section III of Form 500-C1.

ii. [ ] except for those devices or equipment that have been identified on the completed and attached Form 500-C2 that will not be operating in compliance with the specified applicable requirement(s).

b. ( ) The facility, including equipment that are exempt from written permit per Rule 219, will meet in a timely manner, all applicable requirements with future effective dates.

2. For Permit Revision Application Certifications:

a. [✓] The equipment or devices to which this permit revision applies, will in a timely manner comply with all applicable requirements identified in Section II and Section III of Form 500-C1.

3. For MACT Hammer Certifications:

a. ( ) The facility is subject to Section 112(j) of the Clean Air Act (Subpart B of 40 CFR part 63), also known as the MACT "hammer." The following information is submitted with a Title V application to comply with the Part 1 requirements of Section 112(j).

b. (●) The facility is not subject to Section 112(j) of the Clean Air Act (Subpart B of 40 CFR part 63).

Section III - Authorization/Signature

I certify under penalty of law that I am the responsible official for this facility as defined in AQMD Regulation XXX and that based on information and belief formed after reasonable inquiry, the statement and information in this document and in all attached application forms and other materials are true, accurate, and complete.

1. Signature of Responsible Official: George L Piantka	**2. Title of Responsible Official:** Senior Director
3. Print Name: George Piantka	**4. Date:** 3/11/2021
5. Phone #: (760) 707-6833	**6. Fax #:**

7. Address of Responsible Official:

Street #	City	State	Zip
911 Bixby Drive	City of Industry	CA	91745

Acid Rain Facilities Only: Please Complete Section IV

Acid Rain facilities must certify their compliance status of the devices subject to applicable requirements under Title IV by an individual who meets the definition of Designated (or Alternate) Representative in 40 CFR Part 72.

Section IV - Designated Representative Certification Statement	
For Acid Rain Facilities Only: I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.	
1. Signature of Designated Representative or Alternate:	2. Title of Designated Representative or Alternate: Senior Director
3. Print Name of Designated Representative or Alternate: George Piantka	4. Date: 3/11/2021
5. Phone #: (760) 707-6833	6. Fax #:
7. Address of Designated Representative or Alternate: 911 Bixby Drive (Street #)	City of Industry (City) CA (State) 91745 (Zip)

APPENDIX B - EMISSION CALCULATIONS

Facility: Walnut Creek Energy, LLC
Facility ID: 146536

Walnut Creek Energy, LLC
Application for Increase to Heat Input Rating

Appendix B - Emission Calculations

Table B.1 - Fuel Usage & Criteria Pollutant Emissions (per Turbine)

NO = Normal Operations ; SU = Start-up ; SD = Shutdown

	Start-ups per Day		Shutdowns per Day		Start-ups per Month		Shutdowns per Month		Start-ups per Year		Shutdowns per Year	
Pre-/Post-	Count	Hours per Day	Count	Hours per Day	Count	Hours per Month	Count	Hours per Month	Count	Hours per Year	Count	Hours per Year
Pre-	2	2.0	2	2.0	40	40.0	40	40.0	480	480.0	480	480.0
Post-	2	2.0	2	2.0	40	40.0	40	40.0	480	480.0	480	480.0

Pre-Project

Hourly Heat Input Ratings		Maximum Daily Operations			Monthly Operations			Annual Operations		
Heat Input Rating (mmBtu/hr)	Hourly Fuel Usage (mmscf/hr)	Normal Operations Hours per Day	Total Hours per Day	Daily Fuel Usage (mmscf/day)	Normal Operations Hours per Month	Total Hours per Month	Monthly Fuel Usage (mmscf/mo)	Normal Operations Hours per Year	Total Hours per Year	Annual Fuel Usage (mmscf/yr)
891.7	0.8492	20.0	24.0	20.38	352.0	432.0	366.87	3,040.0	4,000.0	3,396.95

Pre-Project hours of operation and fuel usage per A/N 450894

Post-Project

Hourly Heat Input Ratings		Maximum Daily Operations				Monthly Operations				Annual Operations			
Heat Input Rating (mmBtu/hr)	Hourly Fuel Usage (mmscf/hr)	Daily Heat Input (mmBtu/day)	Daily Fuel Use NO (mmscf/day)	Daily Fuel Use SU (mmscf/day)	Daily Fuel Use SD (mmscf/day)	Monthly Fuel Use (mmscf/mo)	Monthly Fuel Use NO (mmscf/mo)	Monthly Fuel Use SU (mmscf/mo)	Monthly Fuel Use SD (mmscf/mo)	Annual Fuel Use (mmscf/yr)	Annual Fuel Use NO (mmscf/yr)	Annual Fuel Use SU (mmscf/yr)	Annual Fuel Use SD (mmscf/yr)
951.0	0.9057	22,350	17.6629	1.8114	1.8114	367	294.4137	36.2286	36.2286	3,396.95	2,527.4667	434.7429	434.7429

SU/SD Fuel Use (mmscf/Time) = Total Event Hours per Time x Heat Input Rating (mmBtu/hr) / HHV
NO Fuel Use (mmscf/Time) = Fuel Use (mmscf/Time) - SU Fuel Use (mmscf/Time) - SD Fuel Use (mmscf/Time)

Facility: Walnut Creek Energy, LLC
Facility ID: 146536

Walnut Creek Energy, LLC
Application for Increase to Heat Input Rating

Appendix B - Emission Calculations

Table B.1 - Fuel Usage & Criteria Pollutant Emissions (per Turbine)

NO = Normal Operations ; SU = Start-up ; SD = Shutdown

Emissions

				Peak Hourly NO Emissions			Maximum Daily Emissions			Monthly Emissions			Annual Emissions		
Pollutant	**Operating Mode**	**Pre-Project Emission Factor (NO = lb/hr) (SU/SD = lb/event)**	**Post-Project Emission Factor (NO = lb/hr) or (NO = lb/mmscf) (SU/SD = lb/event)**	**Pre-Project (lb/hr)**	**Post-Project (lb/hr)**	**Change (lb/hr)**	**Pre-Project (lb/day)**	**Post-Project (lb/day)**	**Change (lb/day)**	**Pre-Project (lb/mo)**	**Post-Project (lb/mo)**	**Change (lb/mo)**	**Pre-Project (lb/yr)**	**Post-Project (lb/yr)**	**Change (lb/yr)**
NOx	Normal Operations (lb/hr)	8.21	8.06	8.21	8.06	-0.15	164.20	--	-7.00	2,889.920	--	-269.64	24,958.40	--	-2,463.95
	Normal Operations (lb/mmscf)	--	8.90	--	--	--	--	157.20		--	2,620.28		--	22,494.45	
	Startup	10.42	10.42	--	--	--	20.84	20.84	0.00	416.80	416.80	0.00	5,001.60	5,001.60	0.00
	Shutdown	11.00	11.00	--	--	--	22.00	22.00	0.00	440.00	440.00	0.00	5,280.00	5,280.00	0.00
			NOx Totals			-0.15	207.04	200.04	-7.00	3,746.72	3,477.08	-269.64	35,240.00	32,776.05	-2,463.95
CO	Normal Operations (lb/hr)	8.00	8.53	8.00	8.53	0.53	160.00	--	6.39	2,815.94	--	-42.56	24,319.46	--	-510.73
	Normal Operations (lb/mmscf)	--	9.42	--	--	--	--	166.38		--	2,773.38		--	23,808.74	
	Startup	18.73	18.73	--	--	--	37.46	37.46	0.00	749.20	749.20	0.00	8,990.40	8,990.40	0.00
	Shutdown	24.73	24.73	--	--	--	49.46	49.46	0.00	989.20	989.20	0.00	11,870.40	11,870.40	0.00
			CO Totals			**0.53**	246.92	253.30	**6.39**	4,554.34	4,511.78	-42.56	45,180.26	44,669.54	-510.73
VOC	Normal Operations (lb/hr)	2.28	2.44	2.28	2.44	0.16	45.60	--	1.91	802.56	--	-10.59	6,931.20	--	-132.31
	Normal Operations (lb/mmscf)	--	2.69	--	--	--	--	47.51		--	791.97		--	6,798.89	
	Startup	2.81	2.81	--	--	--	5.62	5.62	0.00	112.40	112.40	0.00	1,348.80	1,348.80	0.00
	Shutdown	3.00	3.00	--	--	--	6.00	6.00	0.00	120.00	120.00	0.00	1,440.00	1,440.00	0.00
			VOC Totals			**0.16**	57.22	59.13	**1.91**	1,034.96	1,024.37	-10.59	9,720.00	9,587.69	-132.31
SOx	Normal Operations (lb/hr)	0.57	0.61	0.57	0.61	0.04	11.38	--	0.45	200.28	--	-3.03	1,729.73	--	-36.33
	Normal Operations (lb/mmscf)	0.67	0.67	--	--	--	--	11.83		--	197.26		--	1,693.40	
	Startup	0.57	0.61	--	--	--	1.14	1.21	0.08	22.76	24.27	1.51	273.11	291.28	18.16
	Shutdown	0.57	0.61	--	--	--	1.14	1.21	0.08	22.76	24.27	1.51	273.11	291.28	18.16
			SOx Totals			**0.04**	13.66	14.26	**0.61**	245.80	245.80	0.00	2,275.96	2,275.96	0.00
PM10	Normal Operations (lb/hr)	6.00	6.38	6.00	6.38	0.38	120.00	--	4.35	2,112.00	--	-39.33	18,240.00	--	-446.63
	Normal Operations (lb/mmscf)	7.04	7.04	--	--	--	--	124.35		--	2,072.67		--	17,793.37	
	Startup	6.00	6.38	--	--	--	12.00	12.75	0.75	240.00	255.05	15.05	2,880.00	3,060.59	180.59
	Shutdown	6.00	6.38	--	--	--	12.00	12.75	0.75	240.00	255.05	15.05	2,880.00	3,060.59	180.59
			PM10 Totals			**0.38**	144.00	149.85	**5.85**	2,592.00	2,582.77	-9.23	24,000.00	23,914.54	-85.46

Facility: Walnut Creek Energy, LLC
Facility ID: 146536

Walnut Creek Energy, LLC
Application for Increase to Heat Input Rating

Appendix B - Emission Calculations

Table B.1 - Fuel Usage & Criteria Pollutant Emissions (per Turbine)

NO = Normal Operations ; SU = Start-up ; SD = Shutdown

Constants

	Pre-Project	Post-Project	
HHV	1,050	1,050	mmBtu/mmscf
F-Factor (68)	8,710	dscf/mmBtu	
Ref O2	15		
Molar Volume (68)	385.3	scf/lbmol	
NOx MW	46		
CO MW	28		
VOC MW	16		Number of Turbines 5
NH3 MW	17		

Rule 212(g) - Public Notice

Pollutant	Project (lb/day)	Threshold (lb/day)
NOx	-35	40
CO	31.94	220
VOC	9.57	30
SOx	3.03	60
PM10	29.26	30
Project Exceeds Thresholds?		No

Turbines PTE (tpy)

Pollutant	Pre-Project	Post-Project
NOx	88.10	81.94
CO	112.95	111.67
VOC	24.30	23.97
SOx	5.69	5.69
PM10	60.00	59.79

Emission Factors

NOx, CO, VOC

Emission Factor = ppmv @ 15% O2 x 20.9 / (20.9 - Ref O2) x HHV x F-Factor (68) x MW / Molar Volume (68) x 10^{-6}

	Pre-Project	Post-Project	
NOx ppmv	2.5	2.3	ppmv @ 15% O2 (Conditions A99.1 and A195.2)
NOx EF	9.67	8.9	lb/mmscf
CO ppmv	4.0	4.0	ppmv @ 15% O2 (Conditions A99.2 and A195.1)
CO EF	9.42	9.42	lb/mmscf
VOC ppmv	2.0	2.0	ppmv @ 15% O2 (Conditions A99.5 and A195.3)
VOC EF	2.69	2.69	lb/mmscf
SOx EF	0.67	0.67	lb/mmscf (Condition A63.1)
PM10 EF	6.00	6.00	PM10 EF based on manufacturer guarantee of 6lbs/hr at 891.7 MMBTU/hr = 0.00673 lb/MMBTU. Refer to Page 82 of 102, Table 4 for Eng. Eval for A/N 450894, rev. 3-4-2011.
PM10 EF	7.04	7.04	lb/mmscf (Condition A63.1)

Fire Pump PTE (tpy)

Pollutant	Pre-Project	Post-Project
NOx	0.109	0.109
CO	0.009	0.009
VOC	0.001	0.001
SOx	0.0002	0.0002
PM10	0.001	0.001

Start-ups

Please refer to Page 87 of 102, Table 15 for Eng. Eval for A/N 450894, rev. 3-4-2011.

NOx	10.42	lb/start-up
CO	18.73	lb/start-up
VOC	2.81	lb/start-up
Pre-Project	60	min
Post-Project	60	min

Cooling Tower PTE (tpy)

Pollutant	Pre-Project	Post-Project
NOx	0.000	0.000
CO	0.000	0.000
VOC	0.000	0.000
SOx	0.0000	0.0000
PM10	0.888	0.888

Shutdowns

Please refer to Page 87 of 102, Table 15 for Eng. Eval for A/N 450894, rev. 3-4-2011.

NOx	11.00	lb/shut-down
CO	24.73	lb/shut-down
VOC	3.00	lb/shut-down
Pre-Project	60	min
Post-Project	60	min

Facility PTE (tpy)

Pollutant	Pre-Project	Post-Project
NOx	88.21	82.05
CO	112.96	111.68
VOC	24.30	23.97
SOx	5.69	5.69
PM10	60.89	60.68

Equations

Pre-Project

NO (lb/hr)	Heat Input Rating / HHV x Emission Factor
NO (lb/Time)	NO (lb/hr) x NO Hours per Time
SU (lb/Event)	See above
SU (lb/Time)	SU (lb/Event) x SU Events per Time
SD (lb/Event)	See above
SD (lb/Time)	SD (lb/Event) x SD Events per Time

Post-Project

NO (lb/mmscf)	Per 'Emission Factors' Calculations
NO (lb/Time)	NO (lb/mmscf) x Fuel Use (mmscf/Time)
SU (lb/Event)	See above
SU (lb/Time)	SU (lb/Event) x SU Events per Time
SD (lb/Event)	See above
SD (lb/Time)	SD (lb/Event) x SD Events per Time

Facility: Walnut Creek Energy, LLC
Facility ID: 146536

Walnut Creek Energy, LLC
Application for Increase to Heat Input Rating

Appendix B - Emission Calculations

Table B.2 - Toxic Air Contaminant (TAC) Emission Calculations (per Turbine)

			Maximum Hourly TAC Emissions			Annual TAC Emissions		
Pollutant	**CAS No.**	**Emission Factor (lb/mmscf)**	**Pre-Project[1] (lb/hr)**	**Post-Project[2] (lb/hr)**	**Increase (lb/hr)**	**Pre-Project[1] (lb/yr)**	**Post-Project[2] (lb/yr)**	**Increase (lb/yr)**
Benzene[b]	71432	3.33E-03	2.83E-03	3.02E-03	1.88E-04	1.13E+01	1.13E+01	0.00E+00
1,3-Butadiene[a]	106990	0.000439	3.73E-04	3.98E-04	2.48E-05	1.49E+00	1.49E+00	0.00E+00
Formaldehyde[b]	50000	3.67E-01	3.12E-01	3.32E-01	2.07E-02	1.25E+03	1.25E+03	0.00E+00
Naphthalene[a]	91203	0.00133	1.13E-03	1.20E-03	7.51E-05	4.52E+00	4.52E+00	0.00E+00
Total PAHs (excluding Naphthalene)[a]	1151	0.000918	7.80E-04	8.31E-04	5.18E-05	3.12E+00	3.12E+00	0.00E+00
Acetaldehyde[a]	75070	0.0408	3.46E-02	3.70E-02	2.30E-03	1.39E+02	1.39E+02	0.00E+00
Acrolein[b]	107028	3.69E-03	3.13E-03	3.34E-03	2.08E-04	1.25E+01	1.25E+01	0.00E+00
Ammonia[c]	7664417	--	6.07E+00	6.48E+00	4.04E-01	2.43E+04	2.43E+04	0.00E+00
Ethylbenzene[a]	100414	0.0326	2.77E-02	2.95E-02	1.84E-03	1.11E+02	1.11E+02	0.00E+00
Propylene oxide[a]	75569	0.0296	2.51E-02	2.68E-02	1.67E-03	1.01E+02	1.01E+02	0.00E+00
Toluene[a]	108883	0.133	1.13E-01	1.20E-01	7.51E-03	4.52E+02	4.52E+02	0.00E+00
Xylene[a]	1330207	0.0653	5.55E-02	5.91E-02	3.69E-03	2.22E+02	2.22E+02	0.00E+00

Constants

	Pre-Project	Post-Project	
HHV	1,050	1,050	mmBtu/mmscf
F-Factor (68)	8,710	dscf/mmBtu	
Ref O2	15		
Molar Volume (68)	385.3		
Ammonia MW	17		

Emission Factors

[a] Emission Factors from: SCAQMD Supplemental Instructions - Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emission Inventory, December 2016
Table B-1 - Source: Turbine
https://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/supplemental-instructions-for-ab2588-facilities.pdf?sfvrsn=12

[b] Emission Factors from: USEPA - Emission Factor Documentation for AP-42 Section 3.1 Stationary Gas Turbines, April 2000
Table 3.4-1 - Control Method: CO Catalyst
https://www3.epa.gov/ttn/chief/ap42/ch03/bgdocs/b03s01.pdf

[c] Ammonia Slip

Pre-Project	Post-Project	
5	5	ppmv @ 15% O2

Ammonia EF = Ammonia Slip x 20.9 / (20.9 - Ref O2) x HHV x F-Factor (68) x Ammonia MW / Molar Volume (68) x 10^{-6}

Ammonia EF	7.15	7.15	lb/mmscf

Calculations

[1] Pre-Project (lb/hr) = Heat Input Rating / HHV x Emission Factor
Pre-Project (lb/yr) = Annual Fuel Use x Emission Factor

Heat Input Rating	891.7	mmBtu/hr
Annual Fuel Use	3,396.95	mmscf/yr

[2] Post-Project (lb/hr) = Heat Input Rating / HHV x Emission Factor
Post-Project (lb/yr) = Annual Fuel Use x Emission Factor

Heat Input Rating	951.0	mmBtu/hr
Annual Fuel Use	3,396.95	mmscf/yr

APPENDIX C - AMBIENT AIR QUALITY AND HEALTH RISK MODELING

Walnut Creek Energy, LLC

911 Bixby Drive, City of Industry, CA 91745

SCAQMD Facility ID: 146536

March 2021

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Appendix C
Health Risk Assessment & Air Quality Impact Analysis

Health Risk Assessment & Air Quality Impact Analysis

Prepared in Support of Application to Increase Turbine Heat Input Rating

Prepared for:

Walnut Creek Energy, LLC
911 Bixby Drive,
City of Industry, CA 91745
SCAQMD Facility ID: 146536

March 2021

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Health Risk Assessment & Air Quality Impact Analysis
Application to Increase Turbine Heat Input Rating

1.0 INTRODUCTION

Yorke Engineering, LLC (Yorke) has prepared this Health Risk Assessment (HRA) and Air Quality Impact Analysis (AQIA) support of the application to the SCAQMD for the proposed Project.

1.1 Project Overview

Walnut Creek Energy, LLC (WCE) is submitting this application package to request modifications to the Permits to Operate for its five (5) natural gas-fired Simple Cycle Gas Turbines (SCGTs) [A/N's 581392, 581393, 581396, 581397, 581399; Device ID Nos. D1, D7, D13, D19, D25, respectively] to increase the allowable heat input to better align with the 100.1 net Megawatts (MW) per SCGT listed in the Equipment Description for each SCGT. The Equipment Description for each SCGT currently lists the heat input as 891.7 million British thermal units (MMBtu) per hour. With this application, WCE is requesting that the maximum heat input be updated to 951.0[1] MMBtu per hour. There are no physical modifications to the SCGTs associated with this request. The facility is currently dispatched to serve peak power demand and needs to be permitted to operate at the maximum possible load to service that demand.

The proposed Project will result in an increase in the maximum hourly heat input rating for each of the SCGT and a corresponding increase in the maximum hourly emissions of Toxic Air Contaminants (TAC). The Project requires a Rule 1401 HRA.

The proposed Project is expected to result in an increase in the maximum hourly Potential to Emit (PTE) for NOx, CO, VOC, SOx, and PM10 and, since each unit must be available to operate for up to 24 hours per day, the maximum daily PTE[2] for CO, VOC, SOx, and PM10 is also expected to increase. Therefore, the Project requires an AQIA for all short-term (1 to 24-hour) Ambient Air Quality Standards (AAQS).

Appendix C contains emission data (Section 2.0), a discussion of dispersion modeling methodology (Section 3.0), a summary of the HRA (Section 4.0), and a summary of the AQIA (Section 5.0). Attachment 1 contains detailed calculation tables; Attachment 2 contains reference materials.

[1] This is based on a heat rate of 9.5 MMBtu per hour per MW, Higher Heating Value (HHV). 9.5 x 100.1 net MW = 951.0 MMBtu per hour (HHV).

[2] Daily emissions of NOx are not expected to increase due to a reduced BACT limit.

1.2 Facility Location

WCE is located at 911 Bixby Drive in the City of Industry. The facility covers a total of approximately 11.2 acres and is bordered by industrial facilities on all sides. The nearest residential property is approximately 312 meters southwest of the facility boundary. The nearest school to the facility is Glen A. Wilson High School at 16455 Wedgeworth Dr in Hacienda Heights, approximately 770 meters to the south of the facility boundary. The nearest industrial property to the power plant is approximately 46 meters southwest of the facility boundary. An aerial photograph depicting the facility and the surrounding properties is provided as Figure 1-1.

Figure 1-1 shows the approximate facility boundary and the locations of the five exhaust stacks.

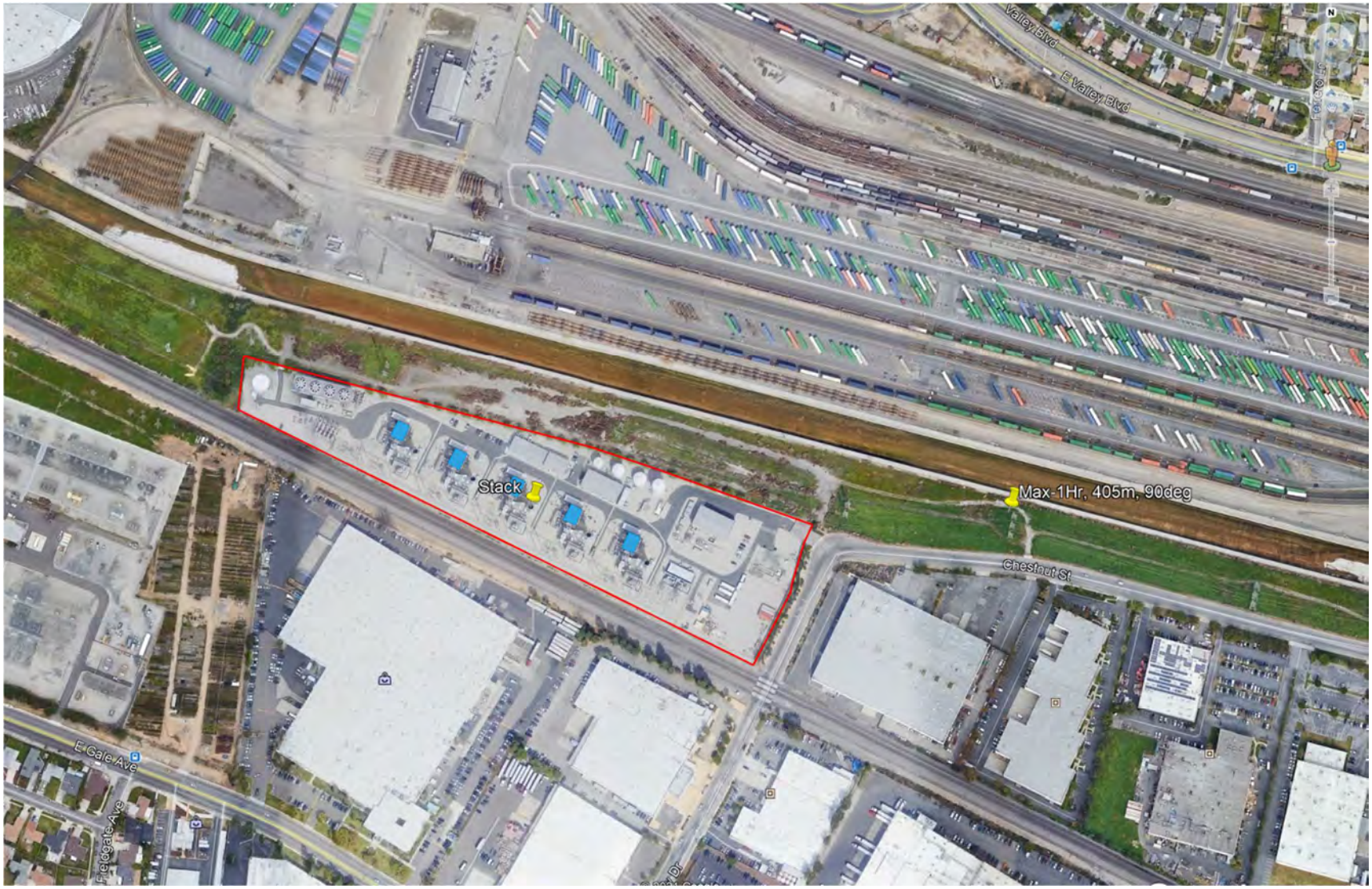

Figure 1-1: Facility Location

2.0 EMISSION INFORMATION

The emission sources associated with the Project are the five SCGT's described in Section 1.1 of Appendix C (this document) of the permit application. The methodologies used to estimate emissions from the Project sources are presented in Section 3.0 of the application and Appendix B of the application.

Rule 1401(f)(4) requires the noncancer acute health index (HIA) to be estimated from post-project emissions for a permit unit rather than the increase (post-project – pre-project). The hourly Toxic Air Contaminants (TAC) emissions used to estimate HIA are shown in Table 2-1.

Rule 1401(f)(3) allows long-term health risks [Maximum Individual Cancer Risk (MICR) and noncancer chronic health index (HIC)] to be estimated from the difference between post-project emissions and permitted pre-project emissions when pre-project emissions are limited by permit condition. Condition F2.1 limits facility-wide PM2.5 emissions using a direct limit on fuel consumption. The Project does not propose a change to this condition: annual TAC emissions are not expected to increase.

The AQIA requires the evaluation of criteria pollutant emissions over 1-Hour, 8-Hour, 24-Hour, and Annual averaging periods, as appropriate for each California Ambient Air Quality Standard (CAAQS) and National Ambient Air Quality Standard (NAAQS). The AQIA assumes that the pre-project emissions are part of background and considers only emission increases. The criteria pollutant emissions used in the AQIA are summarized in Table 2-2, with calculation details shown in Tables C.4, C.5, C.6, and C.7 in Attachment 1.

Table 2-1: Rule 1401 HRA - Hourly TAC Emissions (per SCGT)

Pollutant	CAS No.	Post-Project Emissions (lb/hr)
Benzene	71432	3.02E-03
1,3-Butadiene	106990	3.98E-04
Formaldehyde	50000	3.32E-01
Naphthalene	91203	1.20E-03
Total PAHs (excluding Naphthalene)	1151	8.31E-04
Acetaldehyde	75070	3.70E-02
Acrolein	107028	3.34E-03
Ammonia	7664417	6.48E+00
Ethylbenzene	100414	2.95E-02
Propylene oxide	75569	2.68E-02
Toluene	108883	1.20E-01
Xylene	1330207	5.91E-02

Table 2-2: AQIA Emissions Increases (per SCGT)

Pollutant	Averaging Period	Emissions Increase (lb/AvgPeriod)
	1-Hr	No Increase
	Annual	No Increase
CO	1-Hr	0.53
	8-Hr	3.19
SO2	1-Hr	0.04
	24-Hr	0.61
	Annual	No Increase
PM10	24-Hr	5.85
	Annual	No Increase

3.0 DISPERSION MODELING

Dispersion modeling was conducted to estimate project impacts to ambient air. Dispersion modeling methodology is discussed in this section. Electronic files can be provided upon request.

3.1 Dispersion Model Input

The air dispersion model used for this Project is AERSCREEN, a screening dispersion model. AERSCREEN is based on AERMOD and is the screening dispersion model currently recommended by EPA.

The Lakes Environmental Software (Lakes) implementation/user interface, AERSCREEN View™, Version 2.7.0, was used for this project. This version of AERSCREEN View™ implements the newest version of AERMOD (version 19191).

AERSCREEN was run with a single source emitting unit emissions [1 gram per second (g/s)] to obtain the "Chi/Q" (*X*/Q) values that are necessary for subsequent calculations.

3.1.1 Scenario Options

This Project used the "Urban" option. The facility is located in the County of Los Angeles. The population of the County of Los Angeles as of the 2010 census was 9,818,605. This value was used as the population of the urban area.

3.1.2 Terrain Data

Digital elevation data was imported into AERSCREEN and elevations were assigned to receptors, buildings, and emission sources, as necessary. Shuttle Radar Topography Mission 1 (SRTM1) elevation data was obtained through the AERSCREEN View™ WebGIS import feature. This dataset has a resolution of approximately 30 meters.

3.1.3 Source Parameters

The SCGT's are subject to triennial testing per Condition D29.3. The last triennial tests were conducted in 2019. Source parameters are based on data from the 2019 triennial tests.

An AERSCREEN scenario may be based on a single emission source. The 'merged stack parameter', M, was calculated for each SCGT. The parameters that resulted in the lowest value of M were used in the AERSCREEN model. The source parameter calculations are shown in detail in Table C.1 in Attachment 1 and summarized in Table 3-1. The coordinates are the approximate midpoint between the five stacks.

Table 3-1: Source Parameters

UTM E (m)	UTM N (m)	Stack Diameter (ft)	Release Height (ft)	Stack Temperature (Deg F)	Exit Velocity (fps)
412,713	3,763,500	13.5	90	758.8	121.43

3.1.4 Building Downwash

The buildings identified as blue polygons in Figure 1-1 were included in the AERSCREEN scenario. The vertices of the buildings are provided in Table 3-2; building height is entered as 50 feet. The buildings are numbered from West (1) to East (5).

Table 3-2: Building Vertices

Building ID	Point No.	UTM E (m)	UTM N (m)
BLD1	1	412,600.39	3,763,560.17
	2	412,606.41	3,763,573.09
	3	412,617.78	3,763,567.79
	4	412,611.75	3,763,554.87
BLD2	1	412,649.36	3,763,536.32
	2	412,655.54	3,763,548.98
	3	412,666.97	3,763,543.40
	4	412,660.80	3,763,530.74
BLD3	1	412,715.76	3,763,519.36
	2	412,709.41	3,763,506.89
	3	412,698.73	3,763,512.33
	4	412,705.08	3,763,524.81
BLD4	1	412,747.75	3,763,487.90
	2	412,754.23	3,763,500.61
	3	412,764.97	3,763,495.14
	4	412,758.49	3,763,482.43
BLD5	1	412,796.39	3,763,463.93
	2	412,802.62	3,763,476.69
	3	412,813.75	3,763,471.26
	4	412,807.5	3,763,458.50

3.1.5 Meteorology

AERSCREEN View™ requires the user to input a set of Meteorology Parameters and select from one of three Surface Characteristic options.

Meteorology Parameters are shown in Table 3-3. Temperature data was obtained from meteorological temperature data available for the Pico Rivera Station.

Table 3-3: Meteorology Parameters

Parameter	Value	Reference
Minimum Temperature (Deg F)	33.89	Meteorological Temperature Data for Pico Rivera Station
Maximum Temperature (Deg F)	109.85	Meteorological Temperature Data for Pico Rivera Station
Minimum Wind Speed (m/s)	0.5	Default

Parameter	Value	Reference
Anemometer Height (m)	10	Default
Adjust Surface Friction Velocity (ADJ_U*)	Yes	

This Project used user-specified Surface Characteristics. The District provides values for these parameters (Albedo, Bowen Ratio, and Surface Roughness) for each of its meteorological stations. The values for the Pico Rivera Station were used as the Surface Characteristics for this Project. Surface Characteristics are shown in Table 3-4.

Table 3-4: Surface Characteristics

Parameter	Value
Albedo	0.18
Bowen Ratio	1.28
Surface Roughness (m)	0.339

3.1.6 Receptors

Ground-level impacts were evaluated every 25 meters from the emission source, out to a maximum of 5,000 meters. Flagpole receptors were not considered.

3.1.7 Fumigation Options

The District recommends evaluation of the effects of Inversion Break-up Fumigation and Shoreline Fumigation for projects located on the Pacific Coast shoreline. The emission source is not located on the Pacific Coast shoreline. As a result, Inversion Break-up Fumigation and Shoreline Fumigation were not used.

3.1.8 AERSCREEN Scenarios

AERSCREEN Scenarios are summarized in Table 3-6.

Table 3-5: AERSCREEN Scenarios

Scenario No.	Receptors	Fumigation Options
1	Ground-Level	No Fumigation

3.2 Dispersion Model Output

The results of the dispersion model output are shown in detail in Table C.2 in Attachment 1 and summarized in Table 3-7.

Table 3-6: AERSCREEN Output (Unitized)

Averaging Period	Maximum Impact (ug/m^3)
1-Hour	1.924E+00
8-Hour	1.731E+00
24-Hour	1.154E+00

4.0 RULE 1401 HEALTH RISK ASSESSMENT

Rule 1401 specifies limits for maximum individual cancer risk (MICR), cancer burden, and non-cancer acute and chronic hazard index (HI) from new permit units, relocations, or modifications to existing permit units which emit TAC listed in Table I of the rule. The rule establishes allowable risks for permit units requiring new permits pursuant to Rules 201 or 203.

As described in Section 2.0, the proposed Project is expected to result in an increase in maximum hourly TAC emission. The total post-Project hourly TAC emissions from Table 2-1 and the 1-Hour AERSCREEN output from Table 3-7 were used to estimate the HIA. The HIA calculations for all organs are shown in Table C.3 in Attachment 1. The maximum HIA occurred with target organ eye and is summarized in Table 4-1.

As shown in Table 4-1, the HIA is less than the Rule 1401(d)(3) limit of 1.0. The proposed Project complies with Rule 1401.

Table 4-1: Rule 1401 HRA - HIA Summary (per SCGT)

Pollutant	CAS No.	HIA (Target Organ Eye)
Benzene	71432	
1,3-Butadiene	106990	
Formaldehyde	50000	1.47E-03
Naphthalene	91203	
Total PAHs (excluding Naphthalene)	1151	
Acetaldehyde	75070	1.91E-05
Acrolein	107028	3.24E-04
Ammonia	7664417	4.91E-04
Ethylbenzene	100414	
Propylene oxide	75569	2.10E-06
Toluene	108883	5.84E-06
Xylene	1330207	6.52E-07
Total Target Organ: Eye	--	2.31E-03
	Rule 1401(d)(3) Limit	1.0
	HIA < Limit?	Yes

5.0 AIR QUALITY IMPACT ANALYSIS

WCE is a NOx RECLAIM facility. Rule 2005 requires an AQIA for NOx emissions when a project results in an increase in the maximum hourly emissions of NOx. Rule 1306(b) specifies the methodology used to determine when a Rule 1303 AQIA [Rule 1303 (b)(1)] is required. Per Rule 1306(b), a Rule 1303 AQIA is required when a project proposes to increase maximum daily emissions of a permit unit by more than 1 lb/day.

The proposed Project is not expected to result in an increase in the maximum hourly PTE for NOx. Therefore, a Rule 2005 AQIA is not required for NOx emission.

Each unit at WCE must be available to operate for up to 24 hours per day. With the increase in heat input rating, this results in an increase in the maximum daily CO, SOx, and PM10 emissions. A Rule 1303 AQIA is required for CO, SOx, and PM10 emissions. Please note that the Project is not requesting an increase in annual PTE for CO, SOx, or PM10. The AQIA was performed for the 1-Hour, 8-Hour, and 24-Hour averaging periods only.

5.1 Significant Change in Air Quality Analysis (per SCGT)

The emissions from Table 2-2 were combined with the AERSCREEN output from Table 3-7 to calculate the worst-case impacts to ambient air quality for comparison with the 'Significant Change in Air Quality' thresholds from Rules 2005 and 1303. This calculation is shown in detail in Table C.8 in Attachment 1 and summarized in Table 5-1.

As shown in Table 5-1, the proposed Project is not expected to cause a significant change in air quality for any of the listed pollutants over their respective averaging periods.

Table 5-1: Significant Change in Air Quality Analysis (per SCGT)

Pollutant	Averaging Period	Project Impact (ug/m^3)	Significant Change in Air Quality (ug/m^3)	Exceeds Standard?
CO	1-Hr	0.1291	1,100	No
	8-Hr	0.0871	500	No
PM10	24-Hr	0.0355	2.5	No
	Annual	No Increase	1	No Increase

5.2 Ambient Air Quality Analysis (Project)

The emissions from Table 2-2 were multiplied by five (to account for all five SCGT's) and combined with the AERSCREEN output from Table 3-7 and background data to evaluate the Project impacts to ambient air quality for comparison with the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS). Where the background exceeded the standard, the Project impacts were compared to the Significant Impact Level.

Background data is shown in Table C.9 in Attachment 1. Calculations are shown in detail in Tables C.10 and C.11 in Attachment 1 and summarized in Tables 5-2 and 5-3.

As shown in Tables 5-2 and 5-3, the Project is not expected to cause or make worse an exceedance to an ambient air quality standard.

Table 5-2: Ambient Air Quality Analysis (Project)

Pollutant	Averaging Period	NAAQS (Project + Background) < Standard?	CAAQS (Project + Background) < Standard?
NO2	1-Hr	No Increase	No Increase
	Annual	No Increase	No Increase
CO	1-Hr	Yes	Yes
	8-Hr	Yes	Yes
SO2	1-Hr	Yes	Yes
	24-Hr	Yes	Yes
	Annual	No Increase	No Standard Exists
PM10	24-Hr	Yes	Background > Standard. See SIL Analysis
	Annual	No Standard Exists	No Increase

Table 5-3: Significant Impact Level Analysis (Project)

Pollutant	Averaging Period	Project < Significant Impact Level?
PM10	24-Hr	Yes

ATTACHMENT 1 - CALCULATION TABLES

Table No.	Title
C.1	AERSCREEN Stack Parameters
C.2	AERSCREEN Output
C.3	Rule 1401 HIA Calculation
C.4	AQIA Emission Rates - 1-Hour (per SCGT)
C.5	AQIA Emission Rates - 8-Hour (per SCGT)
C.6	AQIA Emission Rates - 24-Hour (per SCGT)
C.7	AQIA Emission Rates - Annual (per SCGT)
C.8	Rule 2005/1303 Significant Change in Air Quality Analysis (per SCGT)
C.9	Background Data for AQIA
C.10	Air Quality Impact Analysis (Project)
C.11	Significant Impact Level Analysis (Project)

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Appendix C - HRA & AQIA

Table C.1 - AERSCREEN Stack Parameters

Unit	Device ID	Stack Area (ft^2)[1]	Stack Temperature 2019 Triennial Test (Deg F)	Exit Velocity (fps)[2]	Stack Diameter[1] (ft)	Release Height from Permit (ft)	Triennial Source Test Report 2019 (acfm)	Avg Fuel Use During 2019 Triennial Test[3] (mscfh)	Avg Heat Input During 2019 Triennial Test[4] (mmBtu/hr)	Scaled Exhaust Flow[5] (acfm)	Scaled Exit Velocity[6] (fps)	Merged Stack Parameter[7] M
Unit 1	D1	143.14	751.9	114.57	13.5	90	983,999	841.9	884.0	1,058,559	123.26	71,633,742,725
Unit 2	D7	143.14	758.8	113.23	13.5	90	972,435	844.6	886.8	1,042,849	121.43	71,218,221,266
Unit 3	D13	143.14	754	118.29	13.5	90	1,015,956	831.5	873.1	1,106,660	128.86	75,097,964,417
Unit 4	D19	143.14	775	120.01	13.5	90	1,030,694	834.7	876.4	1,118,437	130.23	78,010,951,801
Unit 5	D25	143.14	779.7	117.24	13.5	90	1,006,911	844.6	886.8	1,079,821	125.73	75,774,283,468

[1] Stack Diameter (ft) from permit and source test reports ; Stack Area (ft^2) = pi / 4 x Stack Diameter (ft)
[2] Exit Velocity (fps) = Exhaust Flow (acfm) / Stack Area (ft2) / 60
[3] From 1-hr average CEMS data
[4] Avg Heat Input During Test (mmBtu/hr) = Avg Fuel Use During Test (mscfh) / 1,000 x HHV
HHV 1,050 mmBtu/mmscf
[5] Scaled Exhaust Flow (acfm) = Exhaust Flow During Test (acfm) x Post-Project Heat Input Rating (mmBtu/hr) / Avg Heat Input During Test (mmBtu/hr)
Post-Project HI Rating 951
[6] Scaled Exit Velocity (fps) = Scaled Exhaust Flow (acfm) / 60 / Stack Area (ft^2)
[7] M = Release Height x Scaled Exhaust Flow x Stack Temperature / Emission Rate
The stacks have identical pollutant emission rates and will be modeled using unitized emission rates.
M = Release Height x Scaled Exhaust Flow x Stack Temperature

Unit 2 has the lowest value of M and is therefore the worst-case stack. AERSCREEN will use the stack parameters for Unit 2.

Stack Diameter (ft)	Release Height (ft)	Stack Temperature (Deg F)	Exit Velocity (fps)
13.500	90.000	758.8	121.43

Table C.2 - AERSCREEN Output

Averaging Period	Impact (ug/m^3)
1-Hr	1.924E+00
8-Hr	1.731E+00
24-Hr	1.154E+00

Scalars

8-Hr	0.90
24-Hr	0.60

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Appendix C - HRA & AQIA

Table C.3 - Rule 1401 HIA Calculation

Rule 1401(f)(4) requires acute health risk for modifications to be based on the total emissions from a permit unit.

						Target Organ									
Pollutant	**CAS No.**	**Post-Project (lb/hr)**	**Post-Project[1] (g/s)**	**Acute REL (ug/m^3)**	**HIA[2] (ug/m^3)**	**AL**	**CV**	**DEV**	**EYE**	**HEM**	**IMM**	**NS**	**REP**	**RESP**	**SKIN**
Benzene	71432	3.02E-03	3.80E-04	2.70E+01	2.71E-05			x			x	x	x		
1,3-Butadiene	106990	3.98E-04	5.01E-05	6.60E+02	1.46E-07			x					x		
Formaldehyde	50000	3.32E-01	4.19E-02	5.50E+01	1.47E-03				x						
Naphthalene	91203	1.20E-03	1.52E-04	--	--										
Total PAHs (excluding Naphthalene)	1151	8.31E-04	1.05E-04	--	--										
Acetaldehyde	75070	3.70E-02	4.66E-03	4.70E+02	1.91E-05				x					x	
Acrolein	107028	3.34E-03	4.21E-04	2.50E+00	3.24E-04				x					x	
Ammonia	7664417	6.48E+00	8.17E-01	3.20E+03	4.91E-04				x					x	
Ethylbenzene	100414	2.95E-02	3.72E-03	--	--										
Propylene oxide	75569	2.68E-02	3.38E-03	3.10E+03	2.10E-06			x	x				x	x	
Toluene	108883	1.20E-01	1.52E-02	5.00E+03	5.84E-06				x			x		x	
Xylene	1330207	5.91E-02	7.46E-03	2.20E+04	6.52E-07				x			x		x	

[1] Post-Project (g/s) = Post-Project (lb/hr) x 454 / 3,600

[2] Post-Project (g/s) x Unitized GLC (ug/m^3) / Acute REL (ug/m^3)
Unitized GLC 1.9236 ug/m^3

		Target Organ									
Pollutant	**CAS No.**	**AL**	**CV**	**DEV**	**EYE**	**HEM**	**IMM**	**NS**	**REP**	**RESP**	**SKIN**
Benzene	71432			2.71E-05			2.71E-05	2.71E-05	2.71E-05		
1,3-Butadiene	106990			1.46E-07					1.46E-07		
Formaldehyde	50000				1.47E-03						
Naphthalene	91203										
Total PAHs (excluding	1151										
Acetaldehyde	75070				1.91E-05					1.91E-05	
Acrolein	107028				3.24E-04					3.24E-04	
Ammonia	7664417				4.91E-04					4.91E-04	
Ethylbenzene	100414										
Propylene oxide	75569			2.10E-06	2.10E-06				2.10E-06	2.10E-06	
Toluene	108883				5.84E-06			5.84E-06		5.84E-06	
Xylene	1330207				6.52E-07			6.52E-07		6.52E-07	
		0.00E+00	0.00E+00	2.93E-05	2.31E-03	0.00E+00	2.71E-05	3.36E-05	2.93E-05	8.43E-04	0.00E+00

Acute Reference Exposure Levels are from OEHHA's Consolidated Table, Last Updated October 2, 2020
https://ww2.arb.ca.gov/sites/default/files/classic//toxics/healthval/contable.pdf
Target Organs are from OEHHA's Target Organs Tables, Last Updated August 21, 2020
https://ww2.arb.ca.gov/sites/default/files/classic//toxics/healthval/totables.pdf

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Facility ID: 146536

Walnut Creek Energy, LLC
Application for Increase to Heat Input Rating

Appendix C - HRA & AQIA

Table C.4 - AQIA Emission Rates - 1-Hour (per SCGT)

Pollutant	Pre-Project (lb/hr)	Post-Project (lb/hr)	Increase (lb/hr)	Increase[1] (g/s)
NO2	8.21	8.06	No Increase	No Increase
CO	8.00	8.53	0.53	6.71E-02
SO2	0.57	0.61	0.04	4.77E-03

[1] Increase (g/s) = Increase (lb/hr) x 454 / 3,600

Table C.5 - AQIA Emission Rates - 8-Hour (per SCGT)

Pollutant	Pre-Project[1] (lb/8-hr)	Post-Project[2] (lb/8-hr)	Increase (lb/8-hr)	Increase[3] (g/s)
CO	85.46	88.65	3.19	5.03E-02

[1] Pre-Project (lb/8-hr) = SU Count x SU Emissions (lb/event) + (8 - SU Count x Minutes per SU / 60) x NO Emissions (lb/hr)

SU Count	2	
Minutes per SU	60	
SU Emissions	18.73	lb/event
NO Emissions	8.00	lb/hr

[2] Post-Project (lb/8-hr) = SU Count x SU Emissions (lb/event) + (8 - SU Count x Minutes per SU / 60) x NO Emissions (lb/hr)

SU Count	2	
Minutes per SU	60	
SU Emissions	18.73	lb/event
NO Emissions	8.53	lb/hr

[3] Increase (g/s) = Increase (lb/8-hr) / 8 x 454 / 3,600

Table C.6 - AQIA Emission Rates - 24-Hour (per SCGT)

Pollutant	Pre-Project[1] (lb/24-hr)	Post-Project[2] (lb/24-hr)	Increase (lb/24-hr)	Increase[3] (g/s)
SO2	13.66	14.26	0.61	3.18E-03
PM10	144.00	149.85	5.85	3.07E-02

[1] Calculated in Table B.1
[2] Calculated in Table B.1
[3] Increase (g/s) = Increase (lb/24-hr) / 24 x 454 / 3,600

Table C.7 - AQIA Emission Rates - Annual (per SCGT)

Pollutant	Pre-Project (lb/yr)	Post-Project (lb/yr)	Increase (lb/yr)	Increase (g/s)
NO2	--	--	No Increase	No Increase
SO2	--	--	No Increase	No Increase
PM10	--	--	No Increase	No Increase

Facility: Walnut Creek Energy, LLC
Facility ID: 146536

Appendix C - HRA & AQIA

Table C.8 - Rule 2005/1303 Significant Change in Air Quality Analysis (per SCGT)

Pollutant	Averaging Period	Increase (g/s)	Unitized Ground-Level Concentration (ug/m^3)	Ground-Level Impact[1] (ug/m^3)	Significant Change in Air Quality (ug/m^3)	Exceeds Standard?
CO	1-Hr	6.71E-02	1.924E+00	0.1291	1,100	No
CO	8-Hr	5.03E-02	1.731E+00	0.0871	500	No
PM10	24-Hr	3.07E-02	1.154E+00	0.0355	2.5	No
PM10	Annual	No Increase	--	No Increase	1	No Increase

[1] Ground-Level Impact (ug/m^3) = Increase (g/s) x Unitized Ground-Level Concentration (ug/m^3)

Facility: Walnut Creek Energy, LLC
Facility ID: 146536

Walnut Creek Energy, LLC
Application for Increase to Heat Input Rating

Appendix C - HRA & AQIA

Table C.9 - Background Data for AQIA

Pollutant	Units	Averaging Time	Standard	Data Source	2017	2018	2019	Summary	Ambient Air Quality Standards	Over / Under Standard	Notes	Background[1] (ug/m^3)	Standard[1] (ug/m^3)
CO	ppm	1-Hour	Federal	SCAQMD	2.5	2.0	1.9	2.5	35	Equal or Under	3-Year Max	2,862.99	40,000
CO	ppm	1-Hour	California	SCAQMD	2.5	2.0	1.9	2.5	20	Equal or Under	3-Year Max	2,862.99	23,000
CO	ppm	8-Hour	Federal	SCAQMD	2.2	1.8	1.5	2.2	9	Equal or Under	3-Year Max	2,519.43	10,000
CO	ppm	8-Hour	California	SCAQMD	2.2	1.8	1.5	2.2	9	Equal or Under	3-Year Max	2,519.43	10,000
PM10	ug/m^3	24-Hour	Federal	SCAQMD	140	101	97	140	150	Equal or Under	3-Year Max	140.00	150
PM10	ug/m^3	24-Hour	California	SCAQMD	140	101	97	140	50	Over	3-Year Max	140.00	50
PM10	ug/m^3	Annual	Federal	--	--	--	--	--	No Standard Exists	--	--	--	--
PM10	ug/m^3	Annual	California	SCAQMD	31.7	27.1	20.8	31.7	20	Over	3-Year Max	31.70	20
SO2	ppb	1-Hour	Federal	SCAQMD	2.6	2.8	2.3	3	75	Equal or Under	3-Yr Avg ; 99th%	7.85	196
SO2	ppb	1-Hour	California	SCAQMD	5.7	17.9	10.0	17.9	250	Equal or Under	3-Year Max	46.85	655
SO2	ppb	24-Hour	Federal	EPA	1.5	1.3	1.4	1.5	140	Equal or Under	3-Year Max	3.93	366
SO2	ppb	24-Hour	California	EPA	1.5	1.3	1.4	1.5	40	Equal or Under	3-Year Max	3.93	105
SO2	ppb	Annual	Federal	EPA	0.36	0.34	0.33	0.36	30	Equal or Under	3-Year Max	0.94	79
SO2	ppb	Annual	California	--	--	--	--	--	No Standard Exists	--	--	--	--

[1] C (ug/m3) = C (ppb) x MW / 24.45
C (ug/m3) = C (ppm) x MW / 0.02445

MW CO	28
MW SO2	64

'SCAQMD' data from the District's historical Air Quality Data Tables. Station 085 for CO, 087 for SOx, and 591 for PM10.
http://www.aqmd.gov/home/air-quality/historical-air-quality-data/historical-data-by-year
'EPA' data from EPA's Monitor Values Report. Site ID 060371103.
https://www.epa.gov/outdoor-air-quality-data/monitor-values-report

Facility: Walnut Creek Energy, LLC
Facility ID: 146536

Appendix C - HRA & AQIA

Table C.10 - Air Quality Impact Analysis (Project)

						Federal				State			
Pollutant	**Averaging Period**	**Increase (per Turbine) (g/s)**	**Increase (Project)[1] (g/s)**	**Unitized Ground-Level Concentration (ug/m³)**	**Ground-Level Impact (Project)[2] (ug/m³)**	**Background (ug/m³)**	**Project + Background (ug/m³)**	**Standard (ug/m³)**	**Exceeds Standard?**	**Background (ug/m³)**	**Project + Background (ug/m³)**	**Standard (ug/m³)**	**Exceeds Standard?**
CO	1-Hr	6.71E-02	3.35E-01	1.924E+00	0.6453	2,862.99	2,863.63	40,000	No	2,862.99	2,863.63	23,000	No
CO	8-Hr	5.03E-02	2.52E-01	1.731E+00	0.4356	2,519.43	2,519.86	10,000	No	2,519.43	2,519.86	10,000	No
PM10	24-Hr	3.07E-02	1.54E-01	1.154E+00	0.1774	140.00	140.18	150	No	140.00	140.18	50	See SIL Analysis
PM10	Annual	No Increase	No Increase	--	No Increase	--	--	No Standard Exists	--	31.70	No Increase	20	No Increase
SO2	1-Hr	4.77E-03	2.39E-02	1.924E+00	0.0459	7.85	7.90	196	No	46.85	46.90	655	No
SO2	24-Hr	3.18E-03	1.59E-02	1.154E+00	0.0184	3.93	3.94	366	No	3.93	3.94	105	No
SO2	Annual	No Increase	No Increase	--	No Increase	0.94	No Increase	79	No Increase	--	--	No Standard Exists	--

[1] Increase (Project) = Increase (per Turbine) x Number of Turbines
Number of Turbines 5

[2] Ground-Level Impact (ug/m³) = Increase (Project) (g/s) x Unitized Ground-Level Concentration (ug/m³)

Table C.11 - Significant Impact Level Analysis (Project)

Pollutant	**Averaging Period**	**Project Impact (ug/m³)**	**Significant Impact Level (ug/m³)**	**Exceeds Standard?**
PM10	24-Hr	0.1774	5	No

ATTACHMENT 2 - REFERENCES

Page Nos.	Contains	Used For
1-10 of 57	2019 Triennial Test Data	Stack Parameters Table C.1
11 of 57	Surface Characteristics for Pico Rivera Station Population of County of Los Angeles	AERSCREEN
12 of 57	Temperature Data for Pico Rivera Station	AERSCREEN
13-28 of 57	OEHHA's Consolidated Table	Table C.3
29-47 of 57	OEHHA's Target Organ Tables	Table C.3
48-57 of 57	Background Data for AQIA	Table C.9/C.10

SCAQMD METHOD 5.1 PARTICULATE TEST DATA SUMMARY

Client/Location.	WCEP			Reference Temp (F).	60
				Fuel	Nat. Gas
Sample Location	Unit 1			Data By	AA
Test No.	1-PM-WCEP Unit 1	2-PM-WCEP Unit 1	3-PM-WCEP Unit 1	**Average**	**Limits**
Test Method	SCAQMD 5.1	SCAQMD 5.1	SCAQMD 5.1		
Date	5/22/2019	5/23/2019	5/23/2019	*	
Start Time	4:58	4:50	9:20		
Stop Time	9:04	9:02	13:26		
Sample Train	14-WCS	14-WCS	14-WCS	*	
Pilot Factor	0.84	0.84	0.84	*	
Meter Cal Factor	0.991	0.991	0.991	*	
Stack Area (sq ft)	143.14	143.14	143.14	*	
Sample Time (Min)	240	240	240	*	
Bar Press (in Hg)	29.32	29.47	29.47	*	
Nozzle Diam (in)	0.204	0.204	0.204	*	
Stack Press (iwg)	-0.78	-0.78	-0.78	-0.78	
Stack Temp (F)	753.7	751.0	751.0	751.9	
Vel Head (iwg)	1.6606	1.7686	1.7901	1.7398	
Stack O2 (%)	13.41	13.53	13.48	13.47	
Stack CO2 (%)	4.24	4.17	4.19	4.20	
Meter Vol (acf)	147.970	148.835	149.480	148.762	
Meter Temp (F)	60.1	53.0	57.3	56.8	
Meter Press (iwg)	0.99	1.02	1.04	1.02	
Liquid Vol (ml)	347.4	324.9	351.2	341.2	
Std Sample Vol (SCF)	144.022	147.612	147.040	146.225	
Moisture Fraction	0.101	0.093	0.100	0.098	
Stack Gas Mol Wt	28.08	28.17	28.09	28.11	
Stack Gas Velocity (ft/sec)	112.29	115.29	116.14	114.57	
Stack Flow Rate (wacfm)	964,417	990,111	997,469	983,999	
Stack Flow Rate (dscfm)	363,306	379,054	378,902	373,754	
Isokinetic Ratio (%)	**104.1**	**102.3**	**101.9**	**102.8**	
Facility Average Gas Flow (hscfh).....	8,350.8	8,165.0	8,294.4	8,279.4	
Facility Average Gas Flow (MMscfh).....	0.838	0.816	0.829	0.828	
Total Weight Gain, mg.....	2.9	1.9	4.0		
Particulate Emissions					
Grain Loading, gr/dscf.....	0.0003	0.0002	0.0004	0.0003	Limits
Grain Loading @ 3% O2.....	0.0007	0.0005	0.0010	0.0007	0.01
Grain Loading @ 15% O2.....	0.0002	0.0002	0.0003	0.0002	
Grain Loading @ 12% CO2.....	0.0009	0.0006	0.0012	0.0009	0.1
Mass Emissions, lb/hr[1].....	0.97	0.65	1.36	0.99	11
Emission Rate, lb/MMSCF	1.15	0.79	1.64	1.20	7.04

1) 11 lb/hr per Rule 475 PM Limit

SO_x Data and Calculations
WCEP
Unit 1

MONTROSE AIR QUALITY SERVICES

		Test 1	Test 2	100%	75%	50%
TRS as H_2S	ppm	2.31	1.11	1.71	1.71	1.71
Load	nMW			103.5	78.3	55.7
Oxygen	%			13.37	13.95	14.50
Stack Flow	kscfh			21,372	18,632	15,862
Stack Flow	dscfm			356,200	310,533	264,367
H_2S MW	lb/lb-mole			34	34	34
SV	SCF/lb-mole			379.5	379.5	379.5
F-Factor	dscf/MMBtu			8,710	8,710	8,710
HHV	Btu/SCF			1,050	1,050	1,050
Fuel Flow	scfm			14,032	11,282	8,843
Fuel Flow	kscfh			841.9	676.9	530.6
SO_2	MW			64	64	64
H_2S	lb/hr			0.13	0.10	0.08
H_2S	gr/100 scf			0.107	0.107	0.107
SO_2	lb/hr			0.24	0.20	0.15
SO_2	ppm			0.07	0.06	0.06
SO_2	ppmc			0.05	0.05	0.05
SO_2	lb/MMBtu			0.00027	0.00027	0.00027
SO_2	lb/MMSCF			0.29	0.29	0.29
SO_2	lb/nMW-hr			0.0023	0.0025	0.0027

SCAQMD METHOD 5.1 PARTICULATE TEST DATA SUMMARY

Client/Location.	WCEP			**Reference Temp (F).**	60
				Fuel	Nat. Gas
Sample Location	Unit 2			**Data By**	AA
Test No.	1-PM-WCEP Unit 2	2-PM-WCEP Unit 2	3-PM-WCEP Unit 2	**Average**	**Limits**
Test Method	SCAQMD 5.1	SCAQMD 5.1	SCAQMD 5.1		
Date	5/28/2019	5/29/2019	5/29/2019	*	
Start Time	7:25	6:10	10:30		
Stop Time	11:31	10:16	14:36		
Sample Train	14-WCS	14-WCS	14-WCS	*	
Pitot Factor	0.84	0.84	0.84	*	
Meter Cal Factor	0.991	0.991	0.991	*	
Stack Area (sq ft)	143.14	143.14	143.14	*	
Sample Time (Min)	240	240	240	*	
Bar Press (in Hg)	29.54	29.47	29.47	*	
Nozzle Diam (in)	0.204	0.204	0.204	*	
Stack Press (iwg)	-0.82	-0.82	-0.82	-0.82	
Stack Temp (F)	749.6	757.7	769.1	758.8	
Vel Head (iwg)	1.6534	1.6922	1.7270	1.6909	
Stack O2 (%)	13.30	13.31	13.19	13.27	
Stack CO2 (%)	4.28	4.29	4.35	4.31	
Meter Vol (acf)	147.550	148.875	150.095	148.840	
Meter Temp (F)	79.9	75.8	79.3	78.3	
Meter Press (iwg)	0.97	0.99	1.00	0.99	
Liquid Vol (ml)	334.2	347.8	348.3	343.4	
Std Sample Vol (SCF)	139.375	141.381	141.598	140.785	
Moisture Fraction	0.100	0.103	0.103	0.102	
Stack Gas Mol Wt	28.09	28.07	28.07	28.08	
Stack Gas Velocity (ft/sec)	111.43	113.29	114.97	113.23	
Stack Flow Rate (wacfm)	956,067	972,930	987,408	972,435	
Stack Flow Rate (dscfm)	384,804	366,411	368,401	366,472	
Isokinetic Ratio (%)	**100.4**	**101.4**	**101.0**	**100.9**	
Facility Average Gas Flow (hscfh).....	8,445.6	8,439.6	8,552.4	8,479.2	
Facility Average Gas Flow (MMscfh).....	0.845	0.844	0.855	0.848	
Total Weight Gain, mg.....	4.6	3.4	2.9		
Particulate Emissions					
Grain Loading, gr/dscf.....	0.0005	0.0004	0.0003	0.0004	Limits
Grain Loading @ 3% O2.....	0.0012	0.0009	0.0007	0.0009	0.01
Grain Loading @ 15% O2.....	0.0004	0.0003	0.0002	0.0003	
Grain Loading @ 12% CO2.....	0.0014	0.0010	0.0009	0.0011	0.1
Mass Emissions, lb/hr[1].....	1.59	1.17	1.00	1.25	11
Emission Rate, lb/MMSCF	1.88	1.38	1.17	1.48	7.04

1) 11 lb/hr per Rule 475 PM Limit

SO_x Data and Calculations
WCEP
Unit 2

MONTROSE AIR QUALITY SERVICES

		Test 1	Test 2	100%	75%	50%
TRS as H_2S	ppm	2.49	1.06	1.78	1.78	1.78
Load	nMW			102.8	79.1	53.8
Oxygen	%			13.30	13.77	14.28
Stack Flow	kscfh			21,268	18,478	18,250
Stack Flow	dscfm			354,467	307,967	304,167
H_2S MW	lb/lb-mole			34	34	34
SV	SCF/lb-mole			379.5	379.5	379.5
F-Factor	dscf/MMBtu			8,710	8,710	8,710
HHV	Btu/SCF			1,050	1,050	1,050
Fuel Flow	scfm			14,076	11,482	8,786
Fuel Flow	kscfh			844.6	688.9	527.2
SO_2	MW			64	64	64
H_2S	lb/hr			0.13	0.11	0.08
H_2S	gr/100 scf			0.111	0.111	0.111
SO_2	lb/hr			0.25	0.21	0.16
SO_2	ppm			0.07	0.07	0.05
SO_2	ppmc			0.05	0.05	0.05
SO_2	lb/MMBtu			0.00028	0.00028	0.00024
SO_2	lb/MMSCF			0.30	0.30	0.25
SO_2	lb/nMW-hr			0.0025	0.0026	0.0029

SCAQMD METHOD 5.1 PARTICULATE TEST DATA SUMMARY

Client/Location.	WCEP			Reference Temp (F).	60
				Fuel	Nat. Gas
Sample Location	Unit 3			Data By	AA
Test No.	1-PM-WCEP Unit 3	2-PM-WCEP Unit 3	3-PM-WCEP Unit 3	**Average**	**Limits**
Test Method	SCAQMD 5.1	SCAQMD 5.1	SCAQMD 5.1		
Date	4/16/2019	4/17/2019	4/17/2019	*	
Start Time	5:08	5:00	9:20		
Stop Time	9:14	9:06	13:26		
Sample Train	18-WCS	18-WCS	18-WCS	*	
Pitot Factor	0.84	0.84	0.84	*	
Meter Cal Factor	1.013	1.013	1.013	*	
Stack Area (sq ft)	143.14	143.14	143.14	*	
Sample Time (Min)	240	240	240	*	
Bar Press (in Hg)	29.52	29.71	29.71	*	
Nozzle Diam (in)	0.204	0.204	0.204	*	
Stack Press (iwg)	-2.60	-2.60	-2.60	-2.60	
Stack Temp (F)	751.9	752.3	757.9	754.0	
Vel Head (iwg)	1.7659	1.8632	1.9280	1.8524	
Stack O2 (%)	13.48	13.48	13.37	13.44	
Stack CO2 (%)	4.19	4.19	4.25	4.21	
Meter Vol (acf)	144.445	147.080	150.575	147.367	
Meter Temp (F)	64.0	65.5	79.8	69.8	
Meter Press (iwg)	1.01	1.07	1.10	1.06	
Liquid Vol (ml)	353.2	384.2	358.9	365.4	
Std Sample Vol (SCF)	143.604	146.775	146.308	145.562	
Moisture Fraction	0.103	0.108	0.102	0.104	
Stack Gas Mol Wt	28.06	27.99	28.07	28.04	
Stack Gas Velocity (ft/sec)	115.83	118.55	120.71	118.29	
Stack Flow Rate (wacfm)	993,034	1,018,140	1,036,893	1,015,956	
Stack Flow Rate (dscfm)	374,744	384,029	391,907	383,560	
Isokinetic Ratio (%)	**100.7**	**100.4**	**98.1**	**99.7**	
Facility Average Gas Flow (hscfh).....	8,274.6	8,371.8	8,437.8	8,361.4	
Facility Average Gas Flow (MMscfh).....	0.827	0.837	0.844	0.836	
Total Weight Gain, mg	2.5	2.5	2.4		
Particulate Emissions					
Grain Loading, gr/dscf.....	0.0003	0.0003	0.0003	0.0003	Limits
Grain Loading @ 3% O2.....	0.0006	0.0006	0.0006	0.0006	0.01
Grain Loading @ 15% O2.....	0.0002	0.0002	0.0002	0.0002	
Grain Loading @ 12% CO2.....	0.0008	0.0008	0.0007	0.0007	0.1
Mass Emissions, lb/hr[1].....	0.86	0.87	0.85	0.86	11
Emission Rate, lb/MMSCF	1.04	1.03	1.01	1.03	7.04

1) 11 lb/hr per Rule 475 PM Limit

SO_x Data and Calculations
WCEP
Unit 3

		Test 1	Test 2	100%	75%	50%
TRS as H_2S	ppm	0.89	0.86	0.88	0.88	0.88
Load	nMW			102.9	78.0	54.7
Oxygen	%			13.40	13.94	14.45
Stack Flow	kscfh			21,214	18,415	15,484
Stack Flow	dscfm			353,567	306,917	258,067
H_2S MW	lb/lb-mole			34	34	34
SV	SCF/lb-mole			379.5	379.5	379.5
F-Factor	dscf/MMBtu			8,710	8,710	8,710
HHV	Btu/SCF			1,050	1,050	1,050
Fuel Flow	scfm			13,858	11,163	8,694
Fuel Flow	kscfh			831.5	669.8	521.6
SO_2	MW			64	64	64
H_2S	lb/hr			0.07	0.05	0.04
H_2S	gr/100 scf			0.055	0.055	0.055
SO_2	lb/hr			0.12	0.10	0.08
SO_2	ppm			0.03	0.03	0.03
SO_2	ppmc			0.03	0.03	0.03
SO_2	lb/MMBtu			0.00014	0.00014	0.00014
SO_2	lb/MMSCF			0.15	0.15	0.15
SO_2	lb/nMW-hr			0.0012	0.0013	0.0014

SCAQMD METHOD 5.1 PARTICULATE TEST DATA SUMMARY

Client/Location.	WCEP			**Reference Temp (F).**	60
				Fuel	Nat. Gas
Sample Location	Unit 4			**Data By**	AA
Test No.	1-PM-WCEP Unit 4	2-PM-WCEP Unit 4	3-PM-WCEP Unit 4	**Average**	**Limits**
Test Method	SCAQMD 5.1	SCAQMD 5.1	SCAQMD 5.1		
Date	4/18/2019	4/22/2019	4/22/2019	*	
Start Time	5:02	4:58	9:16		
Stop Time	9:08	9:04	13:22		
Sample Train	18-WCS	18-WCS	18-WCS	*	
Pitot Factor	0.84	0.84	0.84	*	
Meter Cal Factor	1.013	1.013	1.013	*	
Stack Area (sq ft)	143.14	143.14	143.14	*	
Sample Time (Min)	240	240	240	*	
Bar Press (in Hg)	29.58	29.59	29.59	*	
Nozzle Diam (in)	0.204	0.204	0.204	*	
Stack Press (iwg)	-2.50	-2.50	-2.50	-2.50	
Stack Temp (F)	775.2	772.3	777.6	775.0	
Vel Head (iwg)	1.7836	1.8685	1.9593	1.8698	
Stack O2 (%)	13.19	13.26	13.17	13.21	
Stack CO2 (%)	4.37	4.34	4.37	4.36	
Meter Vol (acf)	148.920	148.435	152.475	149.943	
Meter Temp (F)	75.5	69.7	81.4	75.6	
Meter Press (iwg)	1.06	1.07	1.12	1.08	
Liquid Vol (ml	379.6	369.6	380.5	376.6	
Std Sample Vol (SCF)	145.155	146.358	147.108	146.207	
Moisture Fraction	0.108	0.105	0.107	0.107	
Stack Gas Mol Wt	28.01	28.04	28.02	28.03	
Stack Gas Velocity (ft/sec)	117.29	119.75	123.00	120.01	
Stack Flow Rate (wacfm)	1,007,293	1,028,414	1,056,375	1,030,694	
Stack Flow Rate (dscfm)	371,403	381,625	389,320	380,782	
Isokinetic Ratio (%)	**102.7**	**100.7**	**99.3**	**100.9**	
Facility Average Gas Flow (hscfh).....	8,328.6	8,353.2	8,481.6	8,387.8	
Facility Average Gas Flow (MMscfh).....	0.833	0.835	0.848	0.839	
Total Weight Gain, mg.....	1.8	2.5	2.5		
Particulate Emissions					
Grain Loading, gr/dscf.....	0.0002	0.0003	0.0003	0.0002	Limits
Grain Loading @ 3% O2.....	0.0004	0.0006	0.0006	0.0006	0.01
Grain Loading @ 15% O2.....	0.0001	0.0002	0.0002	0.0002	
Grain Loading @ 12% CO2.....	0.0005	0.0007	0.0007	0.0007	0.1
Mass Emissions, lb/hr[1].....	0.61	0.86	0.88	0.78	11
Emission Rate, lb/MMSCF	0.73	1.03	1.03	0.93	7.04

1) 11 lb/hr per Rule 475 PM Limit

SO_x Data and Calculations
WCEP
Unit 4

MONTROSE AIR QUALITY SERVICES

		Test 1	Test 2	100%	75%	50%
TRS as H_2S	ppm	0.99	0.94	0.97	0.97	0.97
Load	nMW			101.7	77.6	53.9
Oxygen	%			13.11	13.51	13.94
Stack Flow	kscfh			20,494	17,501	14,415
Stack Flow	dscfm			341,567	291,683	240,250
H_2S MW	lb/lb-mole			34	34	34
SV	SCF/lb-mole			379.5	379.5	379.5
F-Factor	dscf/MMBtu			8,710	8,710	8,710
HHV	Btu/SCF			1,050	1,050	1,050
Fuel Flow	scfm			13,911	11,266	8,741
Fuel Flow	kscfh			834.7	676.0	524.5
SO_2	MW			64	64	64
H_2S	lb/hr			0.07	0.06	0.05
H_2S	gr/100 scf			0.061	0.061	0.061
SO_2	lb/hr			0.14	0.11	0.09
SO_2	ppm			0.04	0.04	0.04
SO_2	ppmc			0.03	0.03	0.03
SO_2	lb/MMBtu			0.00015	0.00015	0.00015
SO_2	lb/MMSCF			0.16	0.16	0.16
SO_2	lb/nMW-hr			0.0013	0.0014	0.0016

SCAQMD METHOD 5.1 PARTICULATE TEST DATA SUMMARY

Client/Location.	WCEP			Reference Temp (F).	60
				Fuel	Nat. Gas
Sample Location	Unit 5			Data By	AA
Test No.	1-PM-WCEP Unit 5	2-PM-WCEP Unit 5	3-PM-WCEP Unit 5	**Average**	**Limits**
Test Method	SCAQMD 5.1	SCAQMD 5.1	SCAQMD 5.1		
Date	4/24/2019	4/25/2019	4/25/2019	*	
Start Time	4:58	4:42	9:00		
Stop Time	9:04	8:48	13:06		
Sample Train	18-WCS	18-WCS	18-WCS	*	
Pitot Factor	0.84	0.84	0.84	*	
Meter Cal Factor	1.013	1.013	1.013	*	
Stack Area (sq ft)	143.14	143.14	143.14	*	
Sample Time (Min)	240	240	240	*	
Bar Press (in Hg)	29.58	29.56	29.56	*	
Nozzle Diam (in)	0.204	0.204	0.204	*	
Stack Press (iwg)	-2.60	-2.60	-2.60	-2.60	
Stack Temp (F)	773.5	778.7	787.0	779.7	
Vel Head (iwg)	1.7682	1.7268	1.8242	1.7731	
Stack O2 (%)	13.18	13.17	13.07	13.14	
Stack CO2 (%)	4.36	4.37	4.43	4.39	
Meter Vol (acf)	143.855	144.495	149.590	145.980	
Meter Temp (F)	74.8	67.5	93.6	78.7	
Meter Press (iwg)	1.02	0.98	1.03	1.01	
Liquid Vol (ml)	363.0	370.1	402.7	378.6	
Std Sample Vol (SCF)	140.424	142.887	140.970	141.427	
Moisture Fraction	0.107	0.107	0.117	0.111	
Stack Gas Mol Wt	28.02	28.02	27.91	27.99	
	116.69	115.60	119.44	117.24	
Stack Flow Rate (wacfm)	1,002,183	992,799	1,025,751	1,006,911	
Stack Flow Rate (dscfm)	370,375	365,062	370,574	368,670	
Isokinetic Ratio (%)	**99.6**	**102.8**	**99.9**	**100.8**	
Facility Average Gas Flow (hscfh).....	8,406.6	8,380.8	8,472.6	8,420.0	
Facility Average Gas Flow (MMscfh).....	0.841	0.838	0.847	0.842	
Total Weight Gain, mg.....	2.4	3.3	4.2		
Particulate Emissions					
Grain Loading, gr/dscf.....	0.0003	0.0004	0.0005	0.0004	Limits
Grain Loading @ 3% O2.....	0.0006	0.0008	0.0011	0.0008	0.01
Grain Loading @ 15% O2.....	0.0002	0.0003	0.0003	0.0003	
Grain Loading @ 12% CO2.....	0.0007	0.0010	0.0012	0.0010	0.1
Mass Emissions, lb/hr[1].....	0.84	1.12	1.46	1.14	11
Emission Rate, lb/MMSCF	1.00	1.33	1.72	1.35	7.04

1) 11 lb/hr per Rule 475 PM Limit

SO_x Data and Calculations
WCEP
Unit 5

MONTROSE AIR QUALITY SERVICES

		Test 1	Test 2	100%	75%	50%
TRS as H_2S	ppm	1.19	1.19	1.19	1.19	1.19
Load	nMW			101.6	78.8	53.1
Oxygen	%			13.11	13.55	14.12
Stack Flow	kscfh			20,725	17,915	14,741
Stack Flow	dscfm			345,417	298,583	245,683
H_2S MW	lb/lb-mole			34	34	34
SV	SCF/lb-mole			379.5	379.5	379.5
F-Factor	dscf/MMBtu			8,710	8,710	8,710
HHV	Btu/SCF			1,050	1,050	1,050
Fuel Flow	scfm			14,076	11,468	8,704
Fuel Flow	kscfh			844.6	688.1	522.2
SO_2	MW			64	64	64
H_2S	lb/hr			0.09	0.07	0.06
H_2S	gr/100 scf			0.075	0.075	0.075
SO_2	lb/hr			0.17	0.14	0.10
SO_2	ppm			0.05	0.05	0.04
SO_2	ppmc			0.04	0.04	0.04
SO_2	lb/MMBtu			0.00019	0.00019	0.00019
SO_2	lb/MMSCF			0.20	0.20	0.20
SO_2	lb/nMW-hr			0.0017	0.0018	0.0020

Station Abbr.	Station Name	Station Type	Year Availability							Surface Location				Ave. Surface Characteristics		
			2016	2015	2014	2013	2012	2011	2010	Lat.	Long.	Elev (m)	WBAN ID	Albedo	Bowen	Sfc. Rough.
KBUR	Burbank Arpt.	ASOS	X	X	X	X	X			34.1997	-118.3654	236	23152	0.18	1.43	0.156
KCNO	Chino Arpt.	ASOS	X	X	X	X	X			33.9756	-117.6249	198	03179	0.18	0.74	0.093
KCQT	USC/Downtown L.A.	ASOS	X	X	X	X	X			34.0236	-118.2912	55	93134	0.18	1.33	0.268
KFUL	Fullerton Arpt.	ASOS	X	X	X	X	X			33.8715	-117.9856	29	03166	0.18	1.18	0.262
KHHR	Hawthorne Arpt.	ASOS	X	X	X	X	X			33.9235	-118.3329	19	03167	0.18	1.29	0.238
KLAX	Los Angeles Int'l Arpt.	ASOS	X	X	X	X	X			33.9382	-118.3866	30	23174	0.18	1.25	0.099
KLGB	Long Beach Arpt.	ASOS	X	X	X	X	X			33.8118	-118.1472	10	23129	0.18	1.24	0.104
KONT	Ontario Arpt.	ASOS	X	X	X	X	X			34.0531	-117.5769	289	03102	0.19	1.12	0.092
KPSP	Palm Springs Arpt.	ASOS	X	X	X	X	X			33.8222	-116.5043	125	93138	0.20	2.08	0.130
KRAL	Riverside Arpt.	ASOS	X	X	X	X	X			33.9528	-117.4352	245	03171	0.18	1.07	0.148
KSMO	Santa Monica Arpt.	ASOS	X	X	X	X	X			34.0210	-118.4471	53	93197	0.17	1.08	0.173
KSNA	John Wayne Int'l Arpt.	ASOS	X	X	X	X	X			33.6798	-117.8675	17	93184	0.18	1.24	0.117
KTRM	Desert Hot Springs Arpt.	ASOS	X	X	X	X	X			33.6317	-116.1641	-36	03104	0.18	0.70	0.079
KVNY	Van Nuys Arpt.	ASOS	X	X	X	X	X			34.2123	-118.4915	235	23130	0.18	1.18	0.113
AZUS	Azusa	SCAQMD	X	X	X	X	X			34.1365	-117.9239	182	99999	0.19	1.68	0.362
BNAP	Banning	SCAQMD		X	X	X	X	X		33.9208	-116.8584	660	99999	0.22	2.26	0.148
CELA	Central L.A.	SCAQMD	X	X	X			X	X	34.0664	-118.2267	87	99999	0.18	1.42	0.559
ELSI	Lake Elsinore	SCAQMD	X	X	X	X	X			33.6765	-117.3310	406	99999	0.20	1.50	0.232
FONT	Fontana	SCAQMD	X	X		X	X	X		34.1001	-117.4920	367	99999	0.19	1.30	0.250
MSVJ	Mission Viejo	SCAQMD	X		X	X	X	X		33.6300	-117.6756	170	99999	0.18	1.32	0.293
PERI	Perris	SCAQMD	X	X	X			X	X	33.7889	-117.2278	442	99999	0.20	1.24	0.192
PICO	Pico Rivera	SCAQMD	X	X			X	X	X	34.0103	-118.0686	58	99999	0.18	1.28	0.339
RDLD	Redlands	SCAQMD	X	X	X	X	X			34.0597	-117.1472	481	99999	0.20	1.54	0.316
UPLA	Upland	SCAQMD	X	X	X	X	X			34.1036	-117.6292	379	99999	0.18	1.15	0.341

County	2010 Population
Los Angeles	9,818,605
Orange	3,010,232
Riverside	2,189,641
San Bernardino	2,035,210

Upper Air Location (Abbr: NKX)			
Lat.	Long.	Elev (m)	WBAN ID
32.8700	-117.1500	134	03190

34.010N 118.069W UA_ID: 3190 SF_ID: 3166 OS_ID: 00099999 VERSION: 16216 THRESH_1MIN = 0.50 m/s; ADJ_U* TEMP_Sub 316.4 Max, K 109.85 Max, degF
274.2 Min, K 33.89 Min, degF

																	Temp (K)							
10	9	27	270	13	153.5	0.291	1.981	0.005	1809	377	-14.2	0.339	0.73	0.18	1.8	181	9.1	316.4	5.5	0	0	11	999	7 NAD-OS NoSubs
10	9	27	270	14	139.6	0.386	2.047	0.005	2191	576	-36.8	0.339	0.73	0.19	2.7	220	9.1	316.4	5.5	0	0	12	998	8 NAD-OS NoSubs
10	12	31	365	5	-22.4	0.218	-9	-9	-999	244	52.1	0.339	0.73	1	1.8	107	9.1	274.2	5.5	0	0	75	1007	0 NAD-OS NoSubs
10	12	31	365	6	-27.6	0.269	-9	-9	-999	334	79.4	0.339	0.73	1	2.2	344	9.1	274.2	5.5	0	0	81	1008	0 NAD-OS NoSubs
10	12	31	365	7	-22.4	0.218	-9	-9	-999	244	52.1	0.339	0.73	1	1.8	172	9.1	274.2	5.5	0	0	81	1008	0 NAD-OS NoSubs
11	2	27	58	7	-5.6	0.104	-9	-9	-999	81	18.1	0.339	2.73	0.76	0.9	183	9.1	274.2	5.5	0	0	85	1009	0 NAD-OS NoSubs
11	12	23	357	7	-28.1	0.269	-9	-9	-999	361	79.4	0.339	2.73	1	2.2	28	9.1	274.2	5.5	0	0	56	1023	0 NAD-OS NoSubs

Table 1
CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

Substance	Chemical[b] Abstract Number	Noncancer Effects								Cancer Risk					
		Acute Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	8-Hour Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Oral (mg/kg-d)	Date[c] Value Reviewed [Added]	Inhalation[d] Unit Risk $(\mu g/m^3)^{-1}$	Inhalation[d] Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	Oral Slope Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	MWAF[e]
ACETALDEHYDE	75-07-0	4.7E+02	12/08	3.0E+02	12/08	1.4E+02	12/08			2.7E-06	1.0E-02	4/99 [5/93]			1
ACETAMIDE	60-35-5									2.0E-05	7.0E-02	4/99			1
ACROLEIN	107-02-8	2.5E+00	12/08	7.0E-01	12/08	3.5E-01	12/08								1
ACRYLAMIDE	79-06-1									1.3E-03	4.5E+00	4/99 [7/90]			1
ACRYLIC ACID	79-10-7	6.0E+03	4/99												1
ACRYLONITRILE	107-13-1					5.0E+00	12/01			2.9E-04	1.0E+00	4/99 [1/91]			1
ALLYL CHLORIDE	107-05-1									6.0E-06	2.1E-02	4/99			1
2-AMINOANTHRAQUINONE	117-79-3									9.4E-06	3.3E-02	4/99			1
AMMONIA	7664-41-7	3.2E+03	4/99			2.0E+02	2/00								1
ANILINE	62-53-3									1.6E-06	5.7E-03	4/99			1
ARSENIC AND COMPOUNDS (INORGANIC)[TAC]	7440-38-2 1016 [1015]	2.0E-01	12/08	1.5E-02	12/08	1.5E-02	12/08	3.5E-06	12/08	3.3E-03 TAC	1.2E+01	7/90	1.5E+00	10/00	1
ARSINE	7784-42-1	2.0E-01	12/08	1.5E-02	12/08	1.5E-02	12/08								1
ASBESTOS[TAC, f]	1332-21-4									1.9E-04 TACf	2.2E+02	3/86			333.33
BENZENE[TAC]	71-43-2	2.7E+01	6/14	3.0E+00	6/14	3.0E+00	6/14			2.9E-05[TAC]	1.0E-01	1/85			1
BENZIDINE (AND ITS SALTS) *values also apply to:*	92-87-5									1.4E-01	5.0E+02	4/99 [1/91]			1
Benzidine based dyes	*1020*									*1.4E-01*	*5.0E+02*	*4/99 [1/91]*			*1*
Direct Black 38	*1937-37-7*									*1.4E-01*	*5.0E+02*	*4/99 [1/91]*			*1*
Direct Blue 6	*2602-46-2*									*1.4E-01*	*5.0E+02*	*4/99 [1/91]*			*1*
Direct Brown 95 (technical grade)	*16071-86-6*									*1.4E-01*	*5.0E+02*	*4/99 [1/91]*			*1*
BENZYL CHLORIDE	100-44-7	2.4E+02	4/99							4.9E-05	1.7E-01	4/99			1
BERYLLIUM AND COMPOUNDS	7440-41-7 [1021]					7.0E-03	12/01	2.0E-03	12/01	2.4E-03	8.4E+00	4/99 [7/90]			1
BIS(2-CHLOROETHYL)ETHER (Dichloroethyl ether)	111-44-4									7.1E-04	2.5E+00	4/99			1
BIS(CHLOROMETHYL)ETHER	542-88-1									1.3E-02	4.6E+01	4/99 [1/91]			1
BROMINE AND COMPOUNDS	7726-95-6 [1040]														1
POTASSIUM BROMATE	7758-01-2									1.4E-04	4.9E-01	4/99 [10/93]			1

Table last updated: October 2, 2020

Table 1
CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

Substance	Chemical[b] Abstract Number	Noncancer Effects								Cancer Risk					
		Acute Inhalation (µg/m³)	Date[c] Value Reviewed [Added]	8-Hour Inhalation (µg/m³)	Date[c] Value Reviewed [Added]	Chronic Inhalation (µg/m³)	Date[c] Value Reviewed [Added]	Chronic Oral (mg/kg-d)	Date[c] Value Reviewed [Added]	Inhalation[d] Unit Risk (µg/m³)⁻¹	Inhalation[d] Cancer Potency Factor (mg/kg-d)⁻¹	Date[c] Value Reviewed [Added]	Oral Slope Factor (mg/kg-d)⁻¹	Date[c] Value Reviewed [Added]	MeWAF
1,3-BUTADIENE[TAC]	106-99-0	6.6E+02	7/13	9.0E+00	7/13	2.0E+00	7/13			1.7E-04 TAC	6.0E-01	7/92			1
CADMIUM AND COMPOUNDS[TAC]	7440-43-9 [1045]					2.0E-02	1/01	5.0E-04	10/00	4.2E-03 TAC	1.5E+01	1/87			1
CAPROLACTAM	105-60-2	5.0E+01	10/13	7.0E+00	10/13	2.2E+00	10/13								
CARBON DISULFIDE	75-15-0	6.2E+03	4/99			8.0E+02	5/02								1
CARBON MONOXIDE	630-08-0	2.3E+04	4/99												1
CARBON TETRACHLORIDE[TAC] (Tetrachloromethane)	56-23-5	1.9E+03	4/99			4.0E+01	1/01			4.2E-05 TAC	1.5E-01	9/87			1
CARBONYL SULFIDE	463-58-1	6.6E+02	2/17	1.0E+01	2/17	1.0E+01	2/17								
CHLORINATED PARAFFINS	108171-26-2									2.5E-05	8.9E-02	4/99			1
CHLORINE	7782-50-5	2.1E+02	4/99			2.0E-01	2/00								1
CHLORINE DIOXIDE	10049-04-4					6.0E-01	1/01								1
4-CHLORO-O-PHENYLENEDIAMINE	95-83-0									4.6E-06	1.6E-02	4/99			1
CHLOROBENZENE	108-90-7					1.0E+03	1/01								1
CHLOROFORM[TAC]	67-66-3	1.5E+02	4/99			3.0E+02	4/00			5.3E-06 TAC	1.9E-02	12/90			1
Chlorophenols	*1060*														*1*
PENTACHLOROPHENOL	87-86-5									5.1E-06	1.8E-02	4/99			1
2,4,6-TRICHLOROPHENOL	88-06-2									2.0E-05	7.0E-02	4/99 [1/91]			1
CHLOROPICRIN	76-06-2	2.9E+01	4/99			4.0E-01	12/01								1
p-CHLORO-o-TOLUIDINE	95-69-2									7.7E-05	2.7E-01	4/99			1
CHROMIUM 6+[TAC] *values also apply to:*[g]	18540-29-9					2.0E-01	1/01	2.0E-02	10/00	1.5E-01 TAC	5.1E+02	1/86	5.0E-01	*1/14*	1
Barium chromate	*10294-40-3*					*2.0E-01*	*1/01*	*2.0E-02*	*10/00*	*1.5E-01 TAC*	*5.1E+02*	*1/86*	*5.0E-01*	*1/14*	*0.2053*
Calcium chromate	*13765-19-0*					*2.0E-01*	*1/01*	*2.0E-02*	*10/00*	*1.5E-01 TAC*	*5.1E+02*	*1/86*	*5.0E-01*	*1/14*	*0.3332*
Lead chromate	*7758-97-6*					*2.0E-01*	*1/01*	*2.0E-02*	*10/00*	*1.5E-01 TAC*	*5.1E+02*	*1/86*	*5.0E-01*	*1/14*	*0.1609*
Sodium dichromate	*10588-01-9*					*2.0E-01*	*1/01*	*2.0E-02*	*10/00*	*1.5E-01 TAC*	*5.1E+02*	*1/86*	*5.0E-01*	*1/14*	*0.397*
Strontium chromate	*7789-06-2*					*2.0E-01*	*1/01*	*2.0E-02*	*10/00*	*1.5E-01 TAC*	*5.1E+02*	*1/86*	*5.0E-01*	*1/14*	*0.2554*
CHROMIUM TRIOXIDE (as chromic acid mist)	1333-82-0					2.0E-03	1/01	2.0E-02	10/00	1.5E-01 TAC	5.1E+02	1/86	5.0E-01	*1/14*	0.52
COBALT	7440-48-4									7.7E-3	2.7E+01	10/20			1
COPPER AND COMPOUNDS	7440-50-8 [1067]	1.0E+02	4/99												1
p-CRESIDINE	120-71-8									4.3E-05	1.5E-01	4/99			1

Table last updated: October 2, 2020

Table 1
CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

Substance	Chemical[b] Abstract Number	Noncancer Effects								Cancer Risk					
		Acute Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	8-Hour Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Oral (mg/kg-d)	Date[c] Value Reviewed [Added]	Inhalation[d] Unit Risk $(\mu g/m^3)^{-1}$	Inhalation[d] Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	Oral Slope Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	MeWAF
CRESOLS (mixtures of)	1319-77-3					6.0E+02	1/01								1
m-CRESOL	108-39-4					6.0E+02	1/01								1
o-CRESOL	95-48-7					6.0E+02	1/01								1
p-CRESOL	106-44-5					6.0E+02	1/01								1
CUPFERRON	135-20-6									6.3E-05	2.2E-01	4/99			1
Cyanide Compounds (inorganic)	*57-12-5 1073*	*3.4E+02*	*4/99*			*9.0E+00*	*4/00*								*1*
HYDROGEN CYANIDE (Hydrocyanic acid)	74-90-8	3.4E+02	4/99			9.0E+00	4/00								1
2,4-DIAMINOANISOLE	615-05-4									6.6E-06	2.3E-02	4/99			1
2,4-DIAMINOTOLUENE	95-80-7									1.1E-03	4.0E+00	4/99			1
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	96-12-8									2.0E-03	7.0E+00	4/99 [1/92]			1
p-DICHLOROBENZENE	106-46-7					8.0E+02	1/01			1.1E-05	4.0E-02	4/99 [1/91]			1
3,3-DICHLOROBENZIDINE	91-94-1									3.4E-04	1.2E+00	4/99 [1/91]			1
1,1,-DICHLOROETHANE (Ethylidene dichloride)	75-34-3									1.6E-06	5.7E-03	4/99			1
1,1-DICHLOROETHYLENE … (see Vinylidene Chloride)															
DI(2-ETHYLHEXYL)PHTHALATE (DEHP)	117-81-7									2.4E-06	8.4E-03	4/99 [1/92]	8.4E-03	10/00	1
DIESEL EXHAUST … (see Particulate Emissions from Diesel-Fueled Engines)															
DIETHANOLAMINE	111-42-2					3.0E+00	12/01								
p-DIMETHYLAMINOAZOBENZENE	60-11-7									1.3E-03	4.6E+00	4/99			1
N,N-DIMETHYL FORMAMIDE	68-12-2					8.0E+01	1/01								1
2,4-DINITROTOLUENE	121-14-2									8.9E-05	3.1E-01	4/99			1
1,4-DIOXANE: (1,4-Diethylene dioxide)	123-91-1	3.0E+03	4/99			3.0E+03	4/00			7.7E-06	2.7E-02	4/99 [1/91]			1
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)	106-89-8	1.3E+03	4/99			3.0E+00	1/01			2.3E-05	8.0E-02	4/99 [1/92]			1
1,2-EPOXYBUTANE	106-88-7					2.0E+01	1/01								1
ETHYL BENZENE	100-41-4					2.0E+03	2/00			2.5E-06	8.7E-3	11/07			1
ETHYL CHLORIDE (Chloroethane)	75-00-3					3.0E+04	4/00								1
ETHYLENE DIBROMIDE[TAC] (1,2-Dibromoethane)	106-93-4					8.0E-01	12/01			7.1E-05 TAC	2.5E-01	7/85			1
ETHYLENE DICHLORIDE[TAC] (1,2-Dichloroethane)	107-06-2					4.0E+02	1/01			2.1E-05 TAC	7.2E-02	9/85			1

Table last updated: October 2, 2020

Table 1
CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

Substance	Chemical[b] Abstract Number	Noncancer Effects								Cancer Risk					
		Acute Inhalation (µg/m³)	Date[c] Value Reviewed [Added]	8-Hour Inhalation (µg/m³)	Date[c] Value Reviewed [Added]	Chronic Inhalation (µg/m³)	Date[c] Value Reviewed [Added]	Chronic Oral (mg/kg-d)	Date[c] Value Reviewed [Added]	Inhalation[d] Unit Risk (µg/m³)⁻¹	Inhalation[d] Cancer Potency Factor (mg/kg-d)⁻¹	Date[c] Value Reviewed [Added]	Oral Slope Factor (mg/kg-d)⁻¹	Date[c] Value Reviewed [Added]	M[e] W A F
ETHYLENE GLYCOL	107-21-1					4.0E+02	4/00								1
ETHYLENE GLYCOL BUTYL ETHER … (see Glycol ethers)															
ETHYLENE OXIDE[TAC] (1,2-Epoxyethane)	75-21-8					3.0E+01	1/01			8.8E-05 TAC	3.1E-01	11/87			1
ETHYLENE THIOUREA	96-45-7									1.3E-05	4.5E-02	4/99			1
Fluorides and compounds	1101	*2.4E+02*	*4/99*			1.3E+01	8/03	4.0E-02	8/03						*1*
HYDROGEN FLUORIDE (Hydrofluoric acid)	7664-39-3	2.4E+02	4/99			1.4E+01	8/03	4.0E-02	8/03						1
FORMALDEHYDE[TAC]	50-00-0	5.5E+01	12/08	9.0E+00	12/08	9.0E+00	12/08			6.0E-06 TAC	2.1E-02	3/92			1
GLUTARALDEHYDE	111-30-8					8.0E-02	1/01								1
GLYCOL ETHERS	1115														1
ETHYLENE GLYCOL BUTYL ETHER – EGBE	111-76-2	4.7E+03	5/18	1.64E+02	5/18	8.2E+01	5/18								1
ETHYLENE GLYCOL ETHYL ETHER – EGEE	110-80-5	3.7E+02	4/99[1/92]			7.0E+01	2/00								1
ETHYLENE GLYCOL ETHYL ETHER ACETATE – EGEEA	111-15-9	1.4E+02	4/99			3.0E+02	2/00								1
ETHYLENE GLYCOL METHYL ETHER – EGME	109-86-4	9.3E+01	4/99			6.0E+01	2/00								1
ETHYLENE GLYCOL METHYL ETHER ACETATE – EGMEA	110-49-6					9.0E+01	2/00								1
HEXACHLOROBENZENE	118-74-1									5.1E-04	1.8E+00	4/99 [1/91]			1
HEXACHLOROCYCLOHEXANES (mixed or technical grade)	608-73-1									1.1E-03	4.0E+00	4/99 [1/91]	4.0E+00	10/00 [1/92]	1
alpha-HEXACHLOROCYCLOHEXANE	319-84-6									1.1E-03	4.0E+00	4/99 [1/91]	4.0E+00	10/00 [1/92]	1
beta-HEXACHLOROCYCLOHEXANE	319-85-7									1.1E-03	4.0E+00	4/99 [1/91]	4.0E+00	10/00 [1/92]	1
gamma-HEXACHLOROCYCLOHEXANE (Lindane)	58-89-9									3.1E-04	1.1E+00	4/99	1.1E+00	10/00	1
1,6-HEXAMETHYLENE DIISOCYANATE (monomer)[n]	822-06-0	0.3	9/19	0.06	9/19	0.03	9/19								1
n-HEXANE	110-54-3					7.0E+03	4/00								1
HYDRAZINE	302-01-2					2.0E-01	1/01			4.9E-03	1.7E+01	4/99 [7/90]			1
HYDROCHLORIC ACID (Hydrogen chloride)	7647-01-0	2.1E+03	4/99			9.0E+00	2/00								1

Table 1
CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

Substance	Chemical[b] Abstract Number	Noncancer Effects								Cancer Risk					
		Acute Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	8-Hour Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Oral (mg/kg-d)	Date[c] Value Reviewed [Added]	Inhalation[d] Unit Risk $(\mu g/m^3)^{-1}$	Inhalation[d] Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	Oral Slope Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	MWAF[e]
HYDROGEN BROMIDE … (see Bromine & Compounds)															
HYDROGEN CYANIDE … (see Cyanide & Compounds)															
HYDROGEN FLUORIDE … (see Fluorides & Compounds)															
HYDROGEN SELENIDE … (see Selenium & Compounds)															
HYDROGEN SULFIDE	7783-06-4	4.2E+01	4/99[7/90]			1.0E+01	4/00								1
ISOPHORONE	78-59-1					2.0E+03	12/01								
ISOPROPYL ALCOHOL (Isopropanol)	67-63-0	3.2E+03	4/99			7.0E+03	2/00								1
LEAD AND COMPOUNDS[TAC, h] (inorganic) *values also apply to:*	7439-92-1 1128 [1130]									1.2E-05 TAC	4.2E-02	4/97	8.5E-03	10/00	1
Lead acetate	*301-04-2*									*1.2E-05 TAC*	*4.2E-02*	*4/97*	*8.5E-03*	*10/00*	*0.637*
Lead phosphate	*7446-27-7*									*1.2E-05 TAC*	*4.2E-02*	*4/97*	*8.5E-03*	*10/00*	*0.7659*
Lead subacetate	*1335-32-6*									*1.2E-05 TAC*	*4.2E-02*	*4/97*	*8.5E-03*	*10/00*	*0.7696*
LINDANE ... (see gamma-Hexachlorocyclohexane)															
MALEIC ANHYDRIDE	108-31-6					7.0E-01	12/01								1
MANGANESE AND COMPOUNDS	7439-96-5 [1132]			1.7E-01	12/08	9.0E-02	12/08								1
MERCURY AND COMPOUNDS (INORGANIC)	7439-97-6 [1133]	6.0E-01	12/08	6.0E-02	12/08	3.0E-02	12/08	1.6E-04	12/08						1
Mercuric chloride	*7487-94-7*	*6.0E-01*	*12/08*	*6.0E-02*	*12/08*	*3.0E-02*	*12/08*	*1.6E-04*	*12/08*						*1*
METHANOL	67-56-1	2.8E+04	4/99			4.0E+03	4/00								1
METHYL BROMIDE (Bromomethane)	74-83-9	3.9E+03	4/99			5.0E+00	2/00								1
METHYL tertiary-BUTYL ETHER	1634-04-4					8.0E+03	2/00			2.6E-07	1.8E-03	11/99			1
METHYL CHLOROFORM (1,1,1-Trichloroethane)	71-55-6	6.8E+04	4/99			1.0E+03	2/00								1
METHYL ETHYL KETONE (2-Butanone)	78-93-3	1.3E+04	4/99												1
METHYL ISOCYANATE	624-83-9					1.0E+00	12/01								1
4,4'-METHYLENE BIS (2-CHLOROANILINE) (MOCA)	101-14-4									4.3E-04	1.5E+00	4/99			1
METHYLENE CHLORIDE[TAC] (Dichloromethane)	75-09-2	1.4E+04	4/99			4.0E+02	2/00			1.0E-06 TAC	3.5E-03	7/89			1
4,4'-METHYLENE DIANILINE (AND ITS DICHLORIDE)	101-77-9					2.0E+01	12/01			4.6E-04	1.6E+00	4/99	1.6E+00	10/00	1

Table 1
CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

Substance	Chemical[b] Abstract Number	Noncancer Effects								Cancer Risk					
		Acute Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	8-Hour Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Oral (mg/kg-d)	Date[c] Value Reviewed [Added]	Inhalation[d] Unit Risk $(\mu g/m^3)^{-1}$	Inhalation[d] Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	Oral Slope Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	MWAF[e]
METHYLENE DIPHENYL DIISOCYANATE	101-68-8	1.2E+01	3/16	1.6E-01	3/16	8.0E-02	3/16								1
MICHLER'S KETONE (4,4'-Bis(dimethylamino)benzophenone)	90-94-8									2.5E-04	8.6E-01	4/99			1
N-NITROSODI-n-BUTYLAMINE	924-16-3									3.1E-03	1.1E+01	4/99 [1/92]			1
N-NITROSODI-n-PROPYLAMINE	621-64-7									2.0E-03	7.0E+00	4/99 [1/91]			1
N-NITROSODIETHYLAMINE	55-18-5									1.0E-02	3.6E+01	4/99 [1/91]			1
N-NITROSODIMETHYLAMINE	62-75-9									4.6E-03	1.6E+01	4/99 [1/91]			1
N-NITROSODIPHENYLAMINE	86-30-6									2.6E-06	9.0E-03	4/99			1
N-NITROSO-N-METHYLETHYLAMINE	10595-95-6									6.3E-03	2.2E+01	4/99 [7/90]			1
N-NITROSOMORPHOLINE	59-89-2									1.9E-03	6.7E+00	4/99 [7/92]			1
N-NITROSOPIPERIDINE	100-75-4									2.7E-03	9.4E+00	4/99 [7/92]			1
N-NITROSOPYRROLIDINE	930-55-2									6.0E-04	2.1E+00	4/99 [7/90]			1
NAPHTHALENE ... (see Polycyclic aromatic hydrocarbons)															
NICKEL AND COMPOUNDS[TAC] *values also apply to:*	7440-02-0 [1145]	2.0E-01	3/12	6.0E-02	3/12	1.4E-02	3/12	1.1E-02	3/12	2.6E-04 TAC	9.1E-01	8/91			1
Nickel acetate	*373-02-4*	*2.0E-01*	*3/12*	*6.0E-02*	*3/12*	*1.4E-02*	*3/12*	*1.1E-02*	*3/12*	*2.6E-04 TAC*	*9.1E-01*	*8/91*			*0.3321*
Nickel carbonate	*3333-67-3*	*2.0E-01*	*3/12*	*6.0E-02*	*3/12*	*1.4E-02*	*3/12*	*1.1E-02*	*3/12*	*2.6E-04 TAC*	*9.1E-01*	*8/91*			*0.4945*
Nickel carbonyl	*13463-39-3*	*2.0E-01*	*3/12*	*6.0E-02*	*3/12*	*1.4E-02*	*3/12*	*1.1E-02*	*3/12*	*2.6E-04 TAC*	*9.1E-01*	*8/91*			*0.3438*
Nickel hydroxide	*12054-48-7*	*2.0E-01*	*3/12*	*6.0E-02*	*3/12*	*1.4E-02*	*3/12*	*1.1E-02*	*3/12*	*2.6E-04 TAC*	*9.1E-01*	*8/91*			*0.6332*
Nickelocene	*1271-28-9*	*2.0E-01*	*3/12*	*6.0E-02*	*3/12*	*1.4E-02*	*3/12*	*1.1E-02*	*3/12*	*2.6E-04 TAC*	*9.1E-01*	*8/91*			*0.4937*
NICKEL OXIDE	1313-99-1	*2.0E-01*	*3/12*	*6.0E-02*	*3/12*	2.0E-02	3/12	*1.1E-02*	*3/12*	*2.6E-04 TAC*	*9.1E-01*	*8/91*			0.7859
Nickel refinery dust from the pyrometallurgical process	*1146*	*2.0E-01*	*3/12*	*6.0E-02*	*3/12*	*1.4E-02*	*3/12*	*1.1E-02*	*3/12*	*2.6E-04 TAC*	*9.1E-01*	*8/91*			*1*
Nickel subsulfide	*12035-72-2*	*2.0E-01*	*3/12*	*6.0E-02*	*3/12*	*1.4E-02*	*3/12*	*1.1E-02*	*3/12*	*2.6E-04 TAC*	*9.1E-01*	*8/91*			*0.2443*
NITRIC ACID	7697-37-2	8.6E+01	4/99												1
NITROGEN DIOXIDE	10102-44-0	4.7E+02	4/99[1/92]												1
p-NITROSODIPHENYLAMINE	156-10-5									6.3E-06	2.2E-02	4/99			1
OZONE	10028-15-6	1.8E+02	4/99[1/92]												1

Table 1
CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

Substance	Chemical[b] Abstract Number	Noncancer Effects								Cancer Risk					
		Acute Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	8-Hour Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Oral (mg/kg-d)	Date[c] Value Reviewed [Added]	Inhalation[d] Unit Risk $(\mu g/m^3)^{-1}$	Inhalation[d] Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	Oral Slope Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	MWAF[e]
PARTICULATE EMISSIONS FROM DIESEL-FUELED ENGINES[TAC, i]	9901					5.0E+00 TAC	8/98			3.0E-04 TAC	1.1E+00	8/98			1
PENTACHLOROPHENOL ... (see Chlorophenols)															
PERCHLOROETHYLENE[TAC] (Tetrachloroethylene)	127-18-4	2.0E+04	4/99			3.5E+01 TAC	10/91			6.1E-06 TAC	2.1E-02	10/91			1
PHENOL	108-95-2	5.8E+03	4/99			2.0E+02	4/00								1
PHOSGENE	75-44-5	4.0E+00	4/99												1
PHOSPHINE	7803-51-2					8.0E-01	9/02								1
PHOSPHORIC ACID	7664-38-2					7.0E+00	2/00								1
PHTHALIC ANHYDRIDE	85-44-9					2.0E+01	1/01								1
PCB (POLYCHLORINATED BIPHENYLS) (unspeciated mixture) [j]	1336-36-3									2.0E-05 [lowest risk] 1.1E-04 [low risk] 5.7E-04 [high risk]	7.0E-02 [lowest risk] 4.0E-01 [low risk] 2.0E+00 [high risk]	4/99	7.0E-02 [lowest risk] 4.0E-01 [low risk] 2.0E+00 [high risk]	10/00	1
PCB (POLYCHLORINATED BIPHENYLS (speciated)[k]															
3,3',4,4'-TETRACHLOROBIPHENYL (PCB 77)	32598-13-3					4.0E-01	8/03	1.0E-04	8/03	3.8E-03	1.3E+01	8/03	1.3E+01	8/03	1
3,4,4',5-TETRACHLOROBIPHENYL (PCB 81)	70362-50-4					1.3E-01	1/11	3.3E-05	1/11	1.1E-02	3.9E+01	1/11	3.9E+01	1/11	1
2,3,3',4,4'-PENTACHLOROBIPHENYL (PCB 105)	32598-14-4					1.3E+00	1/11	3.3E-04	1/11	1.1E-03	3.9E+00	1/11	3.9E+00	1/11	1
2,3,4,4',5-PENTACHLOROBIPHENYL (PCB 114)	74472-37-0					1.3E+00	1/11	3.3E-04	1/11	1.1E-03	3.9E+00	1/11	3.9E+00	1/11	1
2,3',4,4',5-PENTACHLOROBIPHENYL (PCB 118)	31508-00-6					1.3E+00	1/11	3.3E-04	1/11	1.1E-03	3.9E+00	1/11	3.9E+00	1/11	1
2,3',4,4',5'-PENTACHLOROBIPHENYL (PCB 123)	65510-44-3					1.3E+00	1/11	3.3E-04	1/11	1.1E-03	3.9E+00	1/11	3.9E+00	1/11	1
3,3',4,4',5-PENTACHLOROBIPHENYL (PCB 126)	57465-28-8					4.0E-04	8/03	1.0E-07	8/03	3.8E+00	1.3E+04	8/03	1.3E+04	8/03	1
2,3,3',4,4',5-HEXACHLOROBIPHENYL (PCB 156)	38380-08-4					1.3E+00	1/11	3.3E-04	1/11	1.1E-03	3.9E+00	1/11	3.9E+00	1/11	1

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CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

Substance	Chemical[b] Abstract Number	Noncancer Effects								Cancer Risk					
		Acute Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	8-Hour Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Oral (mg/kg-d)	Date[c] Value Reviewed [Added]	Inhalation[d] Unit Risk $(\mu g/m^3)^{-1}$	Inhalation[d] Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	Oral Slope Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	MeWAF
2,3,3',4,4',5'-HEXACHLOROBIPHENYL (PCB 157)	69782-90-7					1.3E+00	1/11	3.3E-04	1/11	1.1E-03	3.9E+00	1/11	3.9E+00	1/11	1
2,3',4,4',5,5'-HEXACHLOROBIPHENYL (PCB 167)	52663-72-6					1.3E+00	1/11	3.3E-04	1/11	1.1E-03	3.9E+00	1/11	3.9E+00	1/11	1
3,3',4,4',5,5'-HEXACHLOROBIPHENYL (PCB 169)	32774-16-6					1.3E-03	1/11	3.3E-07	1/11	1.1E+00	3.9E+03	1/11	3.9E+03	1/11	1
2,3,3',4,4',5,5'-HEPTACHLOROBIPHENYL (PCB 189)	39635-31-9					1.3E+00	1/11	3.3E-04	1/11	1.1E-03	3.9E+00	1/11	3.9E+00	1/11	1
POLYCHLORINATED DIBENZO-*P*-DIOXINS (PCDD) (Treated as 2,3,7,8-TCDD for HRA)[TAC, k]	1085 1086					4.0E-05	2/00	1.0E-08	10/00	3.8E+01 TAC	1.3E+05	8/86	1.3E+05 TAC	8/86	1
2,3,7,8-TETRACHLORODIBENZO-*P*-DIOXIN[TAC]	1746-01-6					4.0E-05	2/00	1.0E-08	10/00	3.8E+01 TAC	1.3E+05	8/86	1.3E+05 TAC	8/86	1
1,2,3,7,8-PENTACHLORODIBENZO-*P*-DIOXIN	40321-76-4					4.0E-05	8/03	1.0E-08	8/03	3.8E+01	1.3E+05	8/03	1.3E+05	8/03	1
1,2,3,4,7,8-HEXACHLORODIBENZO-*P*-DIOXIN	39227-28-6					4.0E-04	2/00	1.0E-07	10/00	3.8E+00	1.3E+04	4/99	1.3E+04	10/00	1
1,2,3,6,7,8-HEXACHLORODIBENZO-*P*-DIOXIN	57653-85-7					4.0E-04	2/00	1.0E-07	10/00	3.8E+00	1.3E+04	4/99	1.3E+04	10/00	1
1,2,3,7,8,9-HEXACHLORODIBENZO-*P*-DIOXIN	19408-74-3					4.0E-04	2/00	1.0E-07	10/00	3.8E+00	1.3E+04	4/99	1.3E+04	10/00	1
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-*P*-DIOXIN	35822-46-9					4.0E-03	2/00	1.0E-06	10/00	3.8E-01	1.3E+03	4/99	1.3E+03	10/00	1
1,2,3,4,6,7,8,9-OCTACHLORODIBENZO-*P*-DIOXIN	3268-87-9					1.3E-01	1/11	3.3E-05	1/11	1.1E-02	3.9E+01	1/11	3.9E+01	1/11	1
POLYCHLORINATED DIBENZOFURANS (PCDF)[TAC, k] (Treated as 2,3,7,8-TCDD for HRA)	1080					4.0E-05	2/00	1.0E-08	10/00	3.8E+01 TAC	1.3E+05	8/86	1.3E+05 TAC	8/86	1
2,3,7,8-TETRACHLORODIBENZOFURAN	5120-73-19					4.0E-04	2/00	1.0E-07	10/00	3.8E+00	1.3E+04	4/99	1.3E+04	10/00	1
1,2,3,7,8-PENTACHLORODIBENZOFURAN	57117-41-6					1.3E-03	1/11	3.3E-07	1/11	1.1E+00	3.9E +03	1/11	3.9E +03	1/11	1
2,3,4,7,8-PENTACHLORODIBENZOFURAN	57117-31-4					1.3E-04	1/11	3.3E-08	1/11	1.1E+01	3.9E +04	1/11	3.9E +04	1/11	1
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	70648-26-9					4.0E-04	2/00	1.0E-07	10/00	3.8E+00	1.3E+04	4/99	1.3E+04	10/00	1
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	57117-44-9					4.0E-04	2/00	1.0E-07	10/00	3.8E+00	1.3E+04	4/99	1.3E+04	10/00	1

Table 1
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Substance	Chemical[b] Abstract Number	Noncancer Effects								Cancer Risk					
		Acute Inhalation (µg/m³)	Date[c] Value Reviewed [Added]	8-Hour Inhalation (µg/m³)	Date[c] Value Reviewed [Added]	Chronic Inhalation (µg/m³)	Date[c] Value Reviewed [Added]	Chronic Oral (mg/kg-d)	Date[c] Value Reviewed [Added]	Inhalation[d] Unit Risk (µg/m³)$^{-1}$	Inhalation[d] Cancer Potency Factor (mg/kg-d)$^{-1}$	Date[c] Value Reviewed [Added]	Oral Slope Factor (mg/kg-d)$^{-1}$	Date[c] Value Reviewed [Added]	MWAF[e]
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	72918-21-9					4.0E-04	2/00	1.0E-07	10/00	3.8E+00	1.3E+04	4/99	1.3E+04	10/00	1
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	60851-34-5					4.0E-04	2/00	1.0E-07	10/00	3.8E+00	1.3E+04	4/99	1.3E+04	10/00	1
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	67562-39-4					4.0E-03	2/00	1.0E-06	10/00	3.8E-01	1.3E+03	4/99	1.3E+03	10/00	1
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	55673-89-7					4.0E-03	2/00	1.0E-06	10/00	3.8E-01	1.3E+03	4/99	1.3E+03	10/00	1
1,2,3,4,6,7,8,9-OCTACHLORODIBENZOFURAN	39001-02-0					1.3E-01	1/11	3.3E-05	1/11	1.1E-02	3.9E +01	1/11	3.9E +01	1/11	1
POLYCYCLIC AROMATIC HYDROCARBON (PAH)[l] [Treated as B(a)P for HRA][l]	1150 1151									1.1E-03	3.9E+00	4/99 [4/94]	1.2E+01	10/00 [4/94]	1
BENZ(A)ANTHRACENE[l]	56-55-3									1.1E-04	3.9E-01	4/99 [4/94]	1.2E+00	10/00 [4/94]	1
BENZO(A)PYRENE[l]	50-32-8									1.1E-03	3.9E+00	4/99 [4/94]	1.2E+01	10/00 [4/94]	1
BENZO(B)FLUORANTHENE[l]	205-99-2									1.1E-04	3.9E-01	4/99 [4/94]	1.2E+00	10/00 [4/94]	1
BENZO(J)FLUORANTHENE[l]	205-82-3									1.1E-04	3.9E-01	4/99 [4/94]	1.2E+00	10/00 [4/94]	1
BENZO(K)FLUORANTHENE[l]	207-08-9									1.1E-04	3.9E-01	4/99 [4/94]	1.2E+00	10/00 [4/94]	1
CHRYSENE[l]	218-01-9									1.1E-05	3.9E-02	4/99 [4/94]	1.2E-01	10/00 [4/94]	1
DIBENZ(A,H)ACRIDINE[l]	226-36-8									1.1E-04	3.9E-01	4/99 [4/94]	1.2E+00	10/00 [4/94]	1
DIBENZ(A,H)ANTHRACENE[l]	53-70-3									1.2E-03	4.1E+00	4/99 [4/94]	4.1E+00	10/00 [4/94]	1
DIBENZ(A,J)ACRIDINE[l]	224-42-0									1.1E-04	3.9E-01	4/99 [4/94]	1.2E+00	10/00 [4/94]	1
DIBENZO(A,E)PYRENE[l]	192-65-4									1.1E-03	3.9E+00	4/99 [4/94]	1.2E+01	10/00 [4/94]	1
DIBENZO(A,H)PYRENE[l]	189-64-0									1.1E-02	3.9E+01	4/99 [4/94]	1.2E+02	10/00 [4/94]	1

Table 1
CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

Substance	Chemical[b] Abstract Number	Noncancer Effects								Cancer Risk					
		Acute Inhalation (µg/m³)	Date[c] Value Reviewed [Added]	8-Hour Inhalation (µg/m³)	Date[c] Value Reviewed [Added]	Chronic Inhalation (µg/m³)	Date[c] Value Reviewed [Added]	Chronic Oral (mg/kg-d)	Date[c] Value Reviewed [Added]	Inhalation[d] Unit Risk (µg/m³)⁻¹	Inhalation[d] Cancer Potency Factor (mg/kg-d)⁻¹	Date[c] Value Reviewed [Added]	Oral Slope Factor (mg/kg-d)⁻¹	Date[c] Value Reviewed [Added]	MeWAF
DIBENZO(A,I)PYRENE[l]	189-55-9									1.1E-02	3.9E+01	4/99 [4/94]	1.2E+02	10/00 [4/94]	1
DIBENZO(A,L)PYRENE[l]	191-30-0									1.1E-02	3.9E+01	4/99 [4/94]	1.2E+02	10/00 [4/94]	1
7H-DIBENZO(C,G)CARBAZOLE[l]	194-59-2									1.1E-03	3.9E+00	4/99 [4/94]	1.2E+01	10/00 [4/94]	1
7,12-DIMETHYLBENZ(A)ANTHRACENE[l]	57-97-6									7.1E-02	2.5E+02	4/99 [4/94]	2.5E+02	10/00 [4/94]	1
1,6-DINITROPYRENE[l]	42397-64-8									1.1E-02	3.9E+01	4/99 [4/94]	1.2E+02	10/00 [4/94]	1
1,8-DINITROPYRENE[l]	42397-65-9									1.1E-03	3.9E+00	4/99 [4/94]	1.2E+01	10/00 [4/94]	1
INDENO(1,2,3-C,D)PYRENE[l]	193-39-5									1.1E-04	3.9E-01	4/99 [4/94]	1.2E+00	10/00 [4/94]	1
3-METHYLCHOLANTHRENE[l]	56-49-5									6.3E-03	2.2E+01	4/99 [4/94]	2.2E+01	10/00 [4/94]	1
5-METHYLCHRYSENE[l]	3697-24-3									1.1E-03	3.9E+00	4/99 [4/94]	1.2E+01	10/00 [4/94]	1
NAPHTHALENE	91-20-3					9.0E+00	4/00			3.4E-05	1.2E-01	8/04			1
5-NITROACENAPHTHENE[l]	602-87-9									3.7E-05	1.3E-01	4/99 [4/94]	1.3E-01	10/00 [4/94]	1
6-NITROCHRYSENE[l]	7496-02-8									1.1E-02	3.9E+01	4/99 [4/94]	1.2E+02	10/00 [4/94]	1
2-NITROFLUORENE[l]	607-57-8									1.1E-05	3.9E-02	4/99 [4/94]	1.2E-01	10/00 [4/94]	1
1-NITROPYRENE[l]	5522-43-0									1.1E-04	3.9E-01	4/99 [4/94]	1.2E+00	10/00 [4/94]	1
4-NITROPYRENE[l]	57835-92-4									1.1E-04	3.9E-01	4/99 [4/94]	1.2E+00	10/00 [4/94]	1
POTASSIUM BROMATE.... ... (see Bromine & Compounds)															
1,3-PROPANE SULTONE	1120-71-4									6.9E-04	2.4E+00	4/99			1
PROPYLENE (PROPENE)	115-07-1					3.0E+03	4/00								1
PROPYLENE GLYCOL MONOMETHYL ETHER	107-98-2					7.0E+03	2/00								1
PROPYLENE OXIDE	75-56-9	3.1E+03	4/99			3.0E+01	2/00			3.7E-06	1.3E-02	4/99 [7/90]			1
SELENIUM AND COMPOUNDS[m]	7782-49-2 [1170]					2.0E+01	12/01	5.0E-03	12/01						1
HYDROGEN SELENIDE	7783-07-5	5.0E+00	4/99												1
Selenium sulfide	*7446-34-6*					*2.0E+01*	*12/01*	*5.0E-03*	*12/01*						*1*

Table last updated: October 2, 2020

Table 1
CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

Substance	Chemical[b] Abstract Number	Noncancer Effects								Cancer Risk					
		Acute Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	8-Hour Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Oral (mg/kg-d)	Date[c] Value Reviewed [Added]	Inhalation[d] Unit Risk $(\mu g/m^3)^{-1}$	Inhalation[d] Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	Oral Slope Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	MWAF[e]
SILICA [CRYSTALLINE, RESPIRABLE]	1175					3.0E+00	2/05								1
SODIUM HYDROXIDE	1310-73-2	8.0E+00	4/99												1
STYRENE	100-42-5	2.1E+04	4/99			9.0E+02	4/00								1
SULFATES	9960	1.2E+02	4/99												1
SULFUR DIOXIDE	7446-09-5	6.6E+02	4/99[1/92]												1
SULFURIC ACID	7664-93-9	1.2E+02	4/99			1.0E+00	12/01								1
SULFUR TRIOXIDE	*7446-71-9*	*1.2E+02*	*4/99*			*1.0E+00*	*12/01*								*1*
OLEUM	8014-95-7	1.2E+02	4/99												1
TERTIARY BUTYL-ACETATE (TBAc)	540-88-5									1.3E-06	4.7E-03	8/18	5.0E-03	8/18	1
1,1,2,2-TETRACHLOROETHANE	79-34-5									5.8E-05	2.0E-01	4/99			1
TETRACHLOROPHENOLS ... (see Chlorophenols)															
2,4,5-TRICHLOROPHENOL ... (see Chlorophenols)															
2,4,6-TRICHLOROPHENOL ... (see Chlorophenols)															
THIOACETAMIDE	62-55-5									1.7E-03	6.1E+00	4/99			1
TOLUENE	108-88-3	5.0E+03	8/20	8.3E+02	8/20	4.2E+02	8/20								1
Toluene diisocyantates	*26471-62-5*	*2.0E+00*	*3/16*	*1.5E-02*	*3/16*	*8.0E-03*	*3/16*			*1.1E-05*	*3.9E-02*	*4/99*			*1*
TOLUENE-2,4-DIISOCYANATE	584-84-9	*2.0E+00*	3/16	1.5E-02	3/16	8.0E-03	3/16			1.1E-05	3.9E-02	4/99			1
TOLUENE-2,6-DIISOCYANATE	91-08-7	*2.0E+00*	3/16	1.5E-02	3/16	8.0E-03	3/16			1.1E-05	3.9E-02	4/99			1
1,1,2-TRICHLOROETHANE (Vinyl trichloride)	79-00-5									1.6E-05	5.7E-02	4/99			1
TRICHLOROETHYLENE[TAC]	79-01-6					6.0E+02	4/00			2.0E-06 TAC	7.0E-03	10/90			1
TRIETHYLAMINE	121-44-8	2.8E+03	4/99			2.0E+02	9/02								1
URETHANE (Ethyl carbamate)	51-79-6									2.9E-04	1.0E+00	4/99 [7/90]			1
Vanadium Compounds	*N/A*														*1*
Vanadium (fume or dust)	*7440-62-2*	*3.0E+01*	*4/99*												*1*
VANADIUM PENTOXIDE	1314-62-1	3.0E+01	4/99												1
VINYL ACETATE	108-05-4					2.0E+02	12/01								1
VINYL CHLORIDE[TAC] (Chloroethylene)	75-01-4	1.8E+05	4/99							7.8E-05 TAC	2.7E-01	12/90			1
VINYLIDENE CHLORIDE (1,1-Dichloroethylene)	75-35-4					7.0E+01	1/01								1

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Substance	Chemical[b] Abstract Number	Noncancer Effects								Cancer Risk					
		Acute Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	8-Hour Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Inhalation ($\mu g/m^3$)	Date[c] Value Reviewed [Added]	Chronic Oral (mg/kg-d)	Date[c] Value Reviewed [Added]	Inhalation[d] Unit Risk $(\mu g/m^3)^{-1}$	Inhalation[d] Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	Oral Slope Factor $(mg/kg\text{-}d)^{-1}$	Date[c] Value Reviewed [Added]	MeWAF
XYLENES (mixed isomers)	1330-20-7	2.2E+04	4/99			7.0E+02	4/00								1
m-XYLENE	108-38-3	2.2E+04	4/99			7.0E+02	4/00								1
o-XYLENE	95-47-6	2.2E+04	4/99			7.0E+02	4/00								1
p-XYLENE	106-42-3	2.2E+04	4/99			7.0E+02	4/00								1

Table 1
CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

Purpose:	The purpose of this reference table is to provide a quick list of all health values that have been approved by the Office of Environmental Health Hazard Assessment (OEHHA) and the Air Resources Board (ARB) for use in facility health risk assessments conducted for the AB 2588 Air Toxics Hot Spots Program. The OEHHA has developed and adopted new risk assessment guidelines that update and replace the California Air Pollution Control Officers Association's (CAPCOA) *Air Toxics "Hot Spots" Program Revised 1992 Risk Assessment Guidelines, October 1993*. The OEHHA has adopted three technical support documents for these guidelines, which can be found on their website (http://www.oehha.ca.gov/air/hot_spots/index.html). This table lists the OEHHA adopted inhalation and oral cancer slope factors, noncancer acute Reference Exposure Levels (RELs), and inhalation and oral noncancer chronic RELs. OEHHA is still in the process of adopting new health values. Therefore, new health values will periodically be added to, or deleted from, this table. Users of this table are advised to monitor the OEHHA website (*www.oehha.ca.gov*) for any updates to the health values. May 2008 update: The Air Resources Board adopted amendments to the AB 2588 Air Toxics "Hot Spots" Emission Inventory Criteria and Guidelines Regulation (Title 17, California Code of Regulations, Section 93300.5) on November 16, 2006. The amendments became effective on September 26, 2007, after approval from the Office of Administrative Law. Under the new amendments, the substances previously listed in Appendix A-I *(Substances For Which Emissions Must Be Quantified*) and Appendix F (*Criteria For Inputs For Risk Assessment Using Screening Air Dispersion Modeling*) of the ARB's *Air Toxics* "*Hot Spots" Emission Inventory Criteria and Guidelines (EICG) (July 1997)* have been removed from this table.
a	The *italic* font used in this table clarify applicability of OEHHA adopted health effects values to individual or grouped substances listed in the *Air Toxics* "*Hot Spots" Emission Inventory Criteria and Guidelines*, Appendix A-I list of "*Substances For Which Emissions Must Be Quantified*".
b	Chemical Abstract Service Number (CAS): For chemical groupings and mixtures where a CAS number is not applicable, the 4-digit code used in the *Air Toxics* "*Hot Spots" Emission Inventory Criteria and Guidelines (EICG) Report* is listed. The 4-digit codes enclosed in brackets [ ] are codes that have been phased out, but may still appear on previously reported Hot Spots emissions. For information on the origin and use of the 4-digit code, see the EICG report.

Table 1
CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

c Date Value Reviewed [Added]: These columns list the date that the health value was last reviewed by OEHHA, and/or the Scientific Review Panel, and/or approved for use in the AB 2588 Air Toxics Hot Spots Program. If the health value is unchanged since it was first approved for use in the Hot Spots Program, then the date that the value was first approved for use by CAPCOA is listed within the brackets [ ].

- April 1999 is listed for the cancer potency values and noncancer acute RELs, which have been adopted by the OEHHA as part of the AB 2588 Hot Spot Risk Assessment Guidelines.
- February 2000, April 2000, January 2001, and December 2001 are listed for the first set of 22, the second set of 16, the third set of 22, and the fourth set of 12 noncancer chronic RELs, respectively. The chronic REL for carbon disulfide was adopted in May 2002. Chronic RELs for phosphine and triethylamine were adopted in September 2002. Chronic RELs for fluorides including hydrogen fluoride were adopted August 2003. Chronic REL for silica [crystalline respirable] was adopted February 2005.
- October 2000 is listed for the oral chronic RELs and oral cancer slope factors.
- Cancer potency value adopted for naphthalene in August 2004. The inhalation and oral cancer potency values for ethyl benzene were adopted in November 2007.
- For the substances identified as Toxic Air Contaminants, the Air Resources Board hearing date is listed. The dates for acetaldehyde, benzo[a]pyrene, and methyl tertiary-butyl ether represent the dates the values were approved by the Scientific Review Panel.
- On December 19, 2008, OEHHA adopted new acute, 8-hour, and chronic RELs for acetaldehyde, acrolein, arsenic, formaldehyde, manganese, and mercury. The most current health values can be found at: http://www.oehha.ca.gov/air/allrels.html.

  Note: 1. We present the new oral RELs only in milligrams (mg/kg-d), although OEHHA has presented them in other tables in either micrograms (μg/kg-d) or milligrams.

  2. All acute RELs use a 1-hour averaging period (OEHHA, 2008). RELs which were developed using earlier guidelines and specified a different averaging time are unchanged in concentration value, but now refer to the 1-hour averaging period. As of 8/1/2013, the affected chemicals are: benzene, carbon disulfide, carbon tetrachloride, chloroform, ethylene glycol monoethyl ether, ethylene glycol monoethyl ether acetate, and ethylene glycol monomethyl ether: These may be replaced by updated RELs following the OEHHA (2008) guidelines in due course.

  3. At OEHHA's direction, the chronic oral REL for arsenic does not apply to arsine because arsine is a gas and not particle associated.
- OEHHA's adoption of the World Health Organization's 2005 Toxicity Equivalency Factors for polychlorinated dibenzo-p-dioxins (PCDDs), dibenzofurans (PCDFs), and dioxin-like polychlorinated biphenyls (PCBs) occurred in January 2011. See Appendix C of OEHHA's *Air Toxics Hot Spots Program Technical Support Document for Cancer Potencies* at http://www.oehha.ca.gov/air/hot_spots/pdf/AppCdioxinTEFs013111.pdf for more information.
- On March 23, 2012, OEHHA adopted revised acute, 8-hour and chronic RELs for nickel and nickel compounds. The values of the RELs are listed in the table at: http://www.oehha.ca.gov/air/chronic_rels/032312CREL.html.
- On July 29, 2013, OEHHA adopted an acute and 8-hour REL, and a revised chronic REL for 1,3-butadiene. The REL values and summary can be found online at: http://www.oehha.ca.gov/air/hot_spots/index.html.
- On October 18, 2013 (February 2014 table update), OEHHA adopted acute, 8-hour, and chronic RELs for caprolactam. The REL values and summary can be found at: http://www.oehha.ca.gov/air/chronic_rels/pdf/Caprolactam2013.pdf. Changes have been made to target organs to the following substances with no change to health factors: Chloroform, Diethanolamine, Fluorides and Hydrogen Fluoride, Methylene Chloride, Styrene, Xylenes. The "date added" in this table reflects the date of the health factor only.
- On June 27, 2014, OEHHA adopted a new 8-hour REL and revised acute and chronic RELs for benzene. The REL values and summary can be found at: http://www.oehha.ca.gov/air/chronic_rels/BenzeneJune2014.html.
- On March 28, 2016, OEHHA adopted new and revised RELs for toluene diisocyanate (TDI) and methylene diphenyl diisocyanate (MDI). The REL values and summaries can be found at: http://www.oehha.ca.gov/air/chronic_rels/032816TDI_MDI_RELs.html. On March 30, 2016, the name of MDI was changed from methylene diphenyl isocyanate to a more accurate name: methylene diphenyl diisocyanate.
- On September 8, 2016, OEHHA adopted an updated inhalation cancer unit risk factor (URF) for perchloroethylene (PCE or tetrachloroethylene). The updated URF and summary can be found at: http://oehha.ca.gov/air/crnr/notice-adoption-inhalation-cancer-unit-risk-factor-perchloroethylene.
- On February 21, 2017, OEHHA adopted new acute, 8-hour, and chronic inhalation RELs for carbonyl sulfide. The REL values and summary can be found at: http://oehha.ca.gov/air/crnr/notice-adoption-reference-exposure-levels-carbonyl-sulfide.
- On May 4 2018, OEHHA adopted new 8-hour and chronic inhalation REL, and a revised acute REL for ethylene glycol butyl ether. The REL values and summary can be found at: https://oehha.ca.gov/air/chemicals/ethylene-glycol-monobutyl-ether.
- On August 16, 2018 OEHHA adopted an inhalation URF, inhalation cancer potency factor, and oral cancer potency factor for tertiary-butyl acetate (TBAc). Although OEHHA has adopted an oral cancer potency value for tertiary butyl acetate, its chemical/biological properties do not fit the multipathway scheme. Therefore, non-inhalation pathway risks calculated from this value will be zero because the transfer factors are set to zero. Please contact OEHHA for more information. The values can be found at: https://oehha.ca.gov/air/crnr/notice-adoption-cancer-inhalation-unit-risk-and-slope-factors-and-cancer-oral-slope-factor
- On September 6, 2019, OEHHA adopted new RELs for xexamethylene diisocyanate. The REL values and summary can be found at: https://oehha.ca.gov/air/crnr/notice-adoption-reference-exposure-levels-hexamethylene-diisocyanate.
- On August 20, 2020, OEHHA adopted new and revised RELs for toluene. The REL values and summary can be found at: https://oehha.ca.gov/air/crnr/notice-adoption-reference-exposure-levels-toluene.
- On October 2, 2020, OEHHA adopted a new inhalation URF for Cobalt. The updated URF and summary can be found at: https://oehha.ca.gov/air/crnr/notice-adoption-cancer-inhalation-unit-risk-factors-cobalt-and-cobalt-compounds

d Inhalation cancer potency factor: The "unit risk factor" has been replaced in the new risk assessment algorithms by a factor called the "inhalation cancer potency factor". Inhalation cancer potency factors are expressed as units of inverse dose [i.e., $(mg/kg\text{-}day)^{-1}$]. They were derived from unit risk factors [units = $(ug/m^3)^{-1}$] by assuming that a receptor weighs 70 kilograms and breathes 20 cubic meters of air per day. The inhalation potency factor is used to calculate a potential inhalation cancer risk using the new risk assessment algorithms defined in the OEHHA, *Air Toxics Hot Spots Program; Technical Support Document for Exposure Assessment and Stochastic Analysis (August 2012)*.

Table 1
CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

e	Molecular Weight Adjustment Factor: For most of the Hot Spots toxic metals, the OEHHA cancer potency factors and noncancer RELs apply to the weight of the toxic metal atom contained in the overall compound. Some of the Hot Spots compounds contain various elements along with the toxic metal atom (e.g., "Nickel hydroxide", CAS number 12054-48-7, has a formula of H2NiO2). Therefore, an adjustment to the reported pounds of the overall compound is needed before applying the OEHHA cancer potency factor and noncancer RELs for "Nickel and compounds" to such a compound. This ensures that the cancer potency factor and noncancer RELs are applied only to the fraction of the overall weight of the emissions that are associated with health effects of the metal. In other cases, the Hot Spots metals are already reported as the metal atom equivalent (e.g., CAS 7440-02-0, "Nickel"), and these cases do not use any further molecular weight adjustment. (Refer to Note [7] in Appendix A, List of Substances in the EICG Report for further information on how the emissions of various Hot Spots metal compounds are reported.) The appropriate molecular weight adjustment factors (MWAF) to be used along with the OEHHA cancer potency factors and noncancer RELs for Hot Spots metals can be found in the MWAF column of this table. So, for example, assume that 100 pounds of "Nickel hydroxide" emissions are reported under CAS number 12054-48-7. To get the Nickel atom equivalent of these emissions, multiply by the listed MWAF (0.6332) for Nickel hydroxide: • 100 pounds x 0.6332 = 63.32 pounds of Nickel atom equivalent. This step should be completed prior to applying the OEHHA cancer potency factor and noncancer RELs for "Nickel and compounds" in a calculation for a prioritization score or risk assessment calculation. (Note -The HARP software automatically applies the appropriate MWAF for each Hot Spots chemical (by CAS number), so the emissions should not be manually adjusted when using HARP. Therefore, if using HARP, you would use 100 pounds for Nickel hydroxide and HARP will make the MWAF adjustment for you. If not using HARP, you would use 63.32 pounds.) For more information on MWAF please refer to Section 4.2.1.1.1 of OEHHA's document The Air Toxics Hot Spots Program Guidance Manual for the Preparation of Risk Assessments (Guidance Manual) (February 2015). Note: The value listed in the MWAF column for Asbestos is not a molecular weight adjustment. This is a conversion factor for adjusting mass and fibers or structures. See Appendix C of OEHHA's Guidance Manual (February 2015) for more information on Asbestos reporting and risk assessment information or see the EICG report for reporting guidance. Also see the Asbestos footnote (designated by the letter f).
TAC	Toxic Air Contaminant: The Air Resources Board has identified this substance as a Toxic Air Contaminant.
f	Asbestos: The units for the Inhalation Cancer Potency factor for asbestos are (100 PCM fibers/m^3)$^{-1}$. A conversion factor of 100 fibers/0.003 µg can be multiplied by a receptor concentration of asbestos expressed in µg/m^3. Unless other information necessary to estimate the concentration (fibers/m^3) of asbestos at receptors of interest is available. A unit risk factor of 1.9 E 10^{-4} (µg/m^3)$^{-1}$ and an inhalation cancer potency factor of 2.2 E 10^{+2} (mg/kg BW * day)$^{-1}$ are available. For more information on asbestos quantity conversion factors, see Appendix F of OEHHA's *The Air Toxics Hot Spots Program Risk Assessment Guidelines; Part II; Technical Support Document for Cancer Potency Factors (May 2009)*, and Appendix C of OEHHA's Guidance Manual (February 2015)
g	Hexavalent Chromium: In July 2011, OEHHA developed the oral cancer slope factor for chromium 6+ and compounds for the California Public Health Goal in drinking water. As of February 2014, OEHHA states it should also be used for the Hot Spots program.
h	Inorganic Lead: Inorganic Lead was identified by the Air Resources Board as a Toxic Air Contaminant in April 1997. Since information on noncancer health effects show no identified threshold, no Reference Exposure Level has been developed. The document, *Risk Management Guidelines for New, Modified, and Existing Sources of Lead, March 2001*, has been developed by ARB and OEHHA staff for assessing noncancer health impacts from sources of lead. See Appendix F of OEHHA's document *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (2003)* for an overview of how to evaluate noncancer impacts from exposure to lead using these risk management guidelines.
i	Particulate Emissions from Diesel-Fueled Engines: The inhalation cancer potency factor was derived from whole diesel exhaust and should be used only for impacts from the inhalation pathway (based on diesel PM measurements). The inhalation impacts from speciated emissions from diesel-fueled engines are already accounted for in the inhalation cancer potency factor. However, at the discretion of the risk assessor, speciated emissions from diesel-fueled engines may be used to estimate acute noncancer health impacts or the contribution to cancer risk or chronic noncancer health impacts for the non-inhalation exposure pathway. See Appendix D of OEHHA's document *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (2003) for more information. The noncancer chronic REL for diesel exhaust is based on assumptions of contributions of diesel PM to ambient PM. It should be used with diesel PM measurement.
j	Cancer Potency Factors (CPFs) for unspeciated mixtures of Polychlorinated Biphenyls: High Risk: For use in cases where congeners with more than four chlorines comprise more than one-half percent of total polychlorinated biphenyls. Use as default CPF for Tier 1 assessments. Low Risk: This number would not ordinarily be used in the Hot Spots program. Lowest Risk: For use in cases where congeners with more than four chlorines comprise less than one-half percent of total polychlorinated biphenyls. As of February, 2014, there is no approved method that can be used to assess the noncancer hazard of an unspeciated PCB mixture. Persons preparing HRAs for the Hot Spots Program should consult with OEHHA and the local Air Pollution Control or Air Quality Management District if an assessment of the noncancer hazard for unspeciated PCB mixtures is needed.
k	Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans (also referred to as chlorinated dioxins and dibenzofurans) and dioxin-like PCB congeners: The OEHHA has adopted the World Health Organization 2005 (WHO-05) Toxicity Equivalency Factor scheme for evaluating the risk due to exposure to samples containing mixtures of polychlorinated dibenzo-p-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF) and a number of dioxin-like PCB congeners. See Appendix A of OEHHA's Technical Support Document For Describing Available Cancer Potency Factors for more information about the scheme. See Appendix C (revised 01/20/11) of OEHHA's Technical Support Document: Methodologies for Derivation, Listing of Available Values, and Adjustments to Allow for Early Life Exposures (2009) online at http://oehha.ca.gov/air/hot_spots/tsd052909.html for more information about the scheme. The two numbers (i.e., 1085 and 1086) in the column listing Chemical Abstracts Numbers are used for reporting and risk assessment purposes. Be sure to input emissions under the proper code when using the HARP software. ID code 1085 has no health values associated with it in the HARP software; therefore, no health impacts will be calculated when using ID 1085. See the Emissions Inventory Criteria and Guidelines for more information on reporting emissions.

Table 1
CONSOLIDATED TABLE OF OEHHA/ARB APPROVED RISK ASSESSMENT HEALTH VALUES[a]

l	Polycyclic Aromatic Hydrocarbons (PAHs): These substances are PAH or PAH-derivatives that have OEHHA-developed Potency Equivalency Factors (PEFs) which were approved by the Scientific Review Panel in April 1994 (see ARB document entitled *Benzo[a]pyrene as a Toxic Air Contaminant*). PAH inhalation slope factors listed here have been adjusted by the PEFs. See OEHHA's Technical Support Document: Methodologies for Derivation, Listing of Available Values, and Adjustments to Allow for Early Life Exposures (2009) for more information about the scheme. Section 8.2.3 and Appendix G of OEHHA's *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (2003)* also contains information on PAHs. The two numbers (i.e., 1150 and 1151) in the column listing Chemical Abstracts Numbers are used for reporting and risk assessment purposes. Be sure to input emissions under the proper code when using the HARP software. ID code 1150 has no health values associated with it in the HARP software; therefore, no health impacts will be calculated when using ID 1150. See the Emissions Inventory Criteria and Guidelines for more information on reporting emissions.
m	SELENIUM AND COMPOUNDS: In February 2014, an oral REL was added to the consolidated table. The REL was adopted in Dec 2001, but could not be used by the Hot Spots Program (or HARP software) until transfer factors for the oral and dermal routes were adopted. Transfer factors are included in the OEHHA's Technical Support Document for Exposure Assessment and Stochastic Analysis (August 2012) and are added to the HARP software in March 2015.
n	1,6-HEXAMETHYLENE DIISOCYANATE (HDI): On September 19, 2019, acute, 8-hour, and chronic RELs were added to the table and HARP for the HDI (monomer). OEHHA adopted these RELs and others for HDI polyisocyanates on September 6, 2019. The Acute, 8-hour, and chronic RELs for HDI polyisocyanates will be added to the consolidated table and HARP when the Air Toxics "Hot Spots" Program Emission Inventory Criteria and Guidelines is updated to include HDI polyisocyanates.
N/A	Not Applicable.

Other Changes:

- 10/18/2010, removed CHLORODIFLUOROMETHANE, which should have been removed in May 2008.

February 2014:

- Removed applicability of oleum to the sulfuric acid chronic inhalation REL because oleum represents only an acute health hazard.
- Removed "METHYL MERCURY (see Mercury & Compounds)" entry because methyl mercury has different chemical properties, potency, and toxicity compared to elemental mercury and mercury salts, and it is not emitted directly from any California facilities.
- 9/1/2017, changed the "1101 Fluorides" entry back to "1101 Fluorides and compounds" to keep the consistency with the Emission Inventory Guidelines. The substance name for CAS# 1101 was changed from "Fluorides and compounds" as in 2002 to "Fluorides" in 2003 without footnotes about the change.

Table 2
OEHHA/ARB APPROVED ACUTE REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Service Number (CAS)	Acute REL ($\mu g/m^3$)	Date[c] Value Reviewed	Target Organs								
				Alimentary	Cardiovascular	Reproductive/[d] Development	Eye	Hematologic	Immune	Nervous	Respiratory	Skin
ACETALDEHYDE	75-07-0	4.7E+02	12/08				X				X	
ACROLEIN	107-02-8	2.5E+00	12/08				X				X	
ACRYLIC ACID	79-10-7	6.0E+03	4/99				X				X	
AMMONIA	7664-41-7	3.2E+03	4/99				X				X	
ARSENIC AND COMPOUNDS (INORGANIC)[TAC]	7440-38-2 1016 [1015]	2.0E-01	12/08		X	X				X		
ARSINE	7784-42-1	2.0E-01	12/08		X	X				X		
BENZENE[TAC]	71-43-2	2.7E+01	6/14			X		X	X			
BENZYL CHLORIDE	100-44-7	2.4E+02	4/99				X				X	
1,3-BUTADIENE[TAC]	106-99-0	6.6E+02	7/13			X						
CAPROLACTAM	105-60-2	5.0E+01	10/13				X					
CARBON DISULFIDE	75-15-0	6.2E+03	4/99			X				X		
CARBON MONOXIDE	630-08-0	2.3E+04	4/99		X							
CARBON TETRACHLORIDE[TAC] (Tetrachloromethane)	56-23-5	1.9E+03	4/99	X		X				X		
CARBONYL SULFIDE	463-58-1	6.6E+02	2/17							X		
CHLORINE	7782-50-5	2.1E+02	4/99				X				X	
CHLOROFORM[TAC]	67-66-3	1.5E+02	4/99			X				X	X	
CHLOROPICRIN	76-06-2	2.9E+01	4/99				X				X	
COPPER AND COMPOUNDS	7440-50-8 [1067]	1.0E+02	4/99								X	
Cyanide Compounds (inorganic)	*57-12-5 1073*	*3.4E+02*	*4/99*							✓		
HYDROGEN CYANIDE (Hydrocyanic acid)	74-90-8	3.4E+02	4/99							X		
1,4-DIOXANE (1,4-Diethylene dioxide)	123-91-1	3.0E+03	4/99				X				X	
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)	106-89-8	1.3E+03	4/99				X				X	
Fluorides and Compounds	*1101*	*2.4E+02*	*4/99*				✓				✓	
HYDROGEN FLUORIDE (Hydrofluoric acid)	7664-39-3	2.4E+02	4/99				X				X	
FORMALDEHYDE[TAC]	50-00-0	5.5E+01	12/08				X					

Last updated: August 21, 2020

Table 2
OEHHA/ARB APPROVED ACUTE REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Service Number (CAS)	Acute REL ($\mu g/m^3$)	Date[c] Value Reviewed	Target Organs								
				Alimentary	Cardiovascular	Reproductive/[d] Development	Eye	Hematologic	Immune	Nervous	Respiratory	Skin
GLYCOL ETHERS	1115											
ETHYLENE GLYCOL BUTYL ETHER – EGBE	111-76-2	4.7E+03	5/18				X				X	
ETHYLENE GLYCOL ETHYL ETHER – EGEE	110-80-5	3.7E+02	4/99 [1/92]			X						
ETHYLENE GLYCOL ETHYL ETHER ACETATE - EGEEA	111-15-9	1.4E+02	4/99			X				X		
ETHYLENE GLYCOL METHYL ETHER – EGME	109-86-4	9.3E+01	4/99			X						
1,6-HEXAMETHYLENE DIISOCYANATE[e] (monomer)	822-06-0	3.0E-01	9/19								X	
HYDROCHLORIC ACID (Hydrogen chloride)	7647-01-0	2.1E+03	4/99				X				X	
HYDROGEN CYANIDE (Hydrocyanic acid) (see Cyanide Compounds)												
HYDROGEN FLUORIDE (Hydrofluoric acid) (see Fluorides & Compounds)												
HYDROGEN SELENIDE (see Selenium & Compounds)												
HYDROGEN SULFIDE	7783-06-4	4.2E+01	4/99 [7/90]							X		
ISOPROPYL ALCOHOL (Isopropanol)	67-63-0	3.2E+03	4/99				X				X	
MERCURY AND COMPOUNDS (INORGANIC)	7439-97-6 [1133]	6.0E-01	12/08			X				X		
Mercuric chloride	*7487-94-7*	*6.0E-01*	*12/08*			✓				✓		
METHANOL	67-56-1	2.8E+04	4/99							X		
METHYL BROMIDE (Bromomethane)	74-83-9	3.9E+03	4/99			X				X	X	
METHYL CHLOROFORM (1,1,1-Trichloroethane)	71-55-6	6.8E+04	4/99							X		
METHYL ETHYL KETONE (2-Butanone)	78-93-3	1.3E+04	4/99				X				X	
METHYLENE CHLORIDE[TAC] (Dichloromethane)	75-09-2	1.4E+04	4/99		X					X		
METHYLENE DIPHENYL DIISOCYANATE	101-68-8	1.2E+01	3/16								X	
NICKEL AND COMPOUNDS[TAC]	7440-02-0 [1145]	2.0E-01	3/12						X			
Nickel acetate	*373-02-4*	*2.0E-01*	*3/12*						✓			
Nickel carbonate	*3333-67-3*	*2.0E-01*	*3/12*						✓			
Nickel carbonyl	*13463-39-3*	*2.0E-01*	*3/12*						✓			
Nickel hydroxide	*12054-48-7*	*2.0E-01*	*3/12*						✓			

Table 2
OEHHA/ARB APPROVED ACUTE REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Service Number (CAS)	Acute REL ($\mu g/m^3$)	Date[c] Value Reviewed	Target Organs								
				Alimentary	Cardiovascular	Reproductive/[d] Development	Eye	Hematologic	Immune	Nervous	Respiratory	Skin
Nickelocene	*1271-28-9*	*2.0E-01*	*3/12*						✓			
NICKEL OXIDE	*1313-99-1*	*2.0E-01*	*3/12*						✓			
Nickel refinery dust from the pyrometallurgical process	*1146*	*2.0E-01*	*3/12*						✓			
Nickel subsulfide	*12035-72-2*	*2.0E-01*	*3/12*						✓			
NITRIC ACID	7697-37-2	8.6E+01	4/99								X	
NITROGEN DIOXIDE	10102-44-0	4.7E+02	4/99 [1/92]								X	
OZONE	10028-15-6	1.8E+02	4/99 [1/92]				X				X	
PERCHLOROETHYLENE[TAC] (Tetrachloroethylene)	127-18-4	2.0E+04	4/99				X			X	X	
PHENOL	108-95-2	5.8E+03	4/99				X				X	
PHOSGENE	75-44-5	4.0E+00	4/99								X	
PROPYLENE OXIDE	75-56-9	3.1E+03	4/99			X	X				X	
Selenium and Compounds	*7782-49-2 [1170]*											
HYDROGEN SELENIDE	7783-07-5	5.0E+00	4/99				X				X	
SODIUM HYDROXIDE	1310-73-2	8.0E+00	4/99				X				X	X
STYRENE	100-42-5	2.1E+04	4/99			X	X				X	
SULFATES	9960	1.2E+02	4/99								X	
SULFUR DIOXIDE	7446-09-5	6.6E+02	4/99 [1/92]								X	
SULFURIC ACID	7664-93-9	1.2E+02	4/99								X	
SULFUR TRIOXIDE	*7446-71-9*	*1.2E+02*	*4/99*								✓	
OLEUM	8014-95-7	1.2E+02	4/99								X	
TOLUENE	108-88-3	5.0E+03	8/20				X			X	X	
Toluene diisocyanates	*26471-62-5*	*2.0E+00*	*3/16*								✓	
TOLUENE-2,4-DIISOCYANATE	584-84-9	2.0E+00	3/16								X	
TOLUENE-2,6-DIISOCYANATE	91-08-7	2.0E+00	3/16								X	
TRIETHYLAMINE	121-44-8	2.8E+03	4/99				X			X		
Vanadium Compounds	*N/A*											

Table 2
OEHHA/ARB APPROVED ACUTE REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Service Number (CAS)	Acute REL ($\mu g/m^3$)	Date[c] Value Reviewed	Target Organs								
				Alimentary	Cardiovascular	Reproductive/[d] Development	Eye	Hematologic	Immune	Nervous	Respiratory	Skin
Vanadium (fume or dust)	*7440-62-2*	*3.0E+01*	*4/99*				✓				✓	
VANADIUM PENTOXIDE	1314-62-1	3.0E+01	4/99				X				X	
VINYL CHLORIDE[TAC] (Chloroethylene)	75-01-4	1.8E+05	4/99				X			X	X	
XYLENES (mixed isomers)	1330-20-7	2.2E+04	4/99				X			X	X	
m-Xylene	108-38-3	2.2E+04	4/99				X			X	X	
o-Xylene	95-47-6	2.2E+04	4/99				X			X	X	
p-Xylene	106-42-3	2.2E+04	4/99				X			X	X	

Purpose: The purpose of this reference table is to provide a quick list of all health values that have been approved by the Office of Environmental Health Hazard Assessment (OEHHA) and the Air Resources Board (ARB) for use in facility health risk assessments conducted for the AB 2588 Air Toxics "Hot Spots" Program. The OEHHA has developed and adopted new risk assessment guidelines that update and replace the California Air Pollution Control Officers Association's (CAPCOA) *Air Toxics "Hot Spots" Program Revised 1992 Risk Assessment Guidelines, October 1993*. The OEHHA has adopted three technical support documents for these guidelines, which can be found on their website (http://www.oehha.ca.gov/air/hot_spots/index.html). This table lists the OEHHA adopted noncancer acute Reference Exposure Levels (RELs). OEHHA is still in the process of adopting new health values. Therefore, new health values will periodically be added to, or deleted from, this table. Users of this table are advised to monitor the OEHHA website (*www.oehha.ca.gov*) for any updates to the health values.

May 2008 update: The Air Resources Board adopted amendments to the AB 2588 Air Toxics "Hot Spots" Emission Inventory Criteria and Guidelines Regulation (Title 17, California Code of Regulations, Section 93300.5) on November 16, 2006. The amendments became effective on September 26, 2007, after approval from the Office of Administrative Law. Under the new amendments, the substances previously listed in Appendix A-I *(Substances For Which Emissions Must Be Quantified*) and Appendix F (*Criteria For Inputs For Risk Assessment Using Screening Air Dispersion Modeling*) of the ARB's *Air Toxics* "*Hot Spots" Emission Inventory Criteria and Guidelines (EICG) (July 1997)* have been removed from this table.

a The checkmarks included in this table clarify applicability of OEHHA adopted health effects values to individual or grouped substances listed in the *Air Toxics* "*Hot Spots" Emission Inventory Criteria and Guidelines*, Appendix A-I list of *"Substances For Which Emissions Must Be Quantified"*.

b Chemical Abstract Service Number (CAS): For chemical groupings and mixtures where a CAS number is not applicable, the 4-digit code used in the *Air Toxics* "*Hot Spots" Emission Inventory Criteria and Guidelines (EICG) Report* is listed. The 4-digit codes enclosed in brackets [ ] are codes that have been phased out, but may still appear on previously reported Hot Spots emissions. For information on the origin and use of the 4-digit code, see the EICG report.

Table 2
OEHHA/ARB APPROVED ACUTE REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

c	Date Value Reviewed [Added]: This column lists the date that the health value was last reviewed by OEHHA and the Scientific Review Panel, and/or approved for use in the AB 2588 Air Toxics Hot Spots Program. If the health value is unchanged since it was first approved for use in the "Hot Spots" Program, then the date that the value was first approved for use by CAPCOA is listed within the brackets [ ]. • April 1999 is listed for the noncancer acute RELs which have been adopted by the OEHHA as part of the AB 2588 Hot Spot Risk Assessment Guidelines. • On December 19, 2008, OEHHA adopted new acute RELs for acetaldehyde, acrolein, arsenic, formaldehyde, and mercury. The most current health values can be found at: http://www.oehha.ca.gov/air/allrels.html. Note: All acute RELs use a 1-hour averaging period (OEHHA, 2008). RELs which were developed using earlier guidelines and specified a different averaging time are unchanged in concentration value, but now refer to the 1-hour averaging period. As of 8/1/2013, the affected chemicals are: benzene, carbon disulfide, carbon tetrachloride, chloroform, ethylene glycol monoethyl ether, ethylene glycol monoethyl ether acetate, and ethylene glycol monomethyl ether: These may be replaced by updated RELs following the OEHHA (2008) guidelines in due course. • On March 23, 2012, OEHHA adopted revised acute, 8-hour and chronic RELs for nickel and nickel compounds. The values of the RELs are listed in the table at: http://www.oehha.ca.gov/air/chronic_rels/032312CREL.html. • On July 29, 2013, OEHHA adopted an acute and an 8-hour REL and a revised chronic REL for 1,3-butadiene. The REL value and summary can be found online at: http://www.oehha.ca.gov/air/hot_spots/index.html. • On October 18, 2013 (February 2014 table update), OEHHA adopted acute, 8-hour, and chronic RELs for caprolactam. The REL values and summary can be found at: http://www.oehha.ca.gov/air/chronic_rels/pdf/Caprolactam2013.pdf. Changes have been made to target organs to the following substances with no change to health factors: Chloroform, Methylene Chloride, Styrene, and Xylenes. The "date added" in this table reflects the date of the health factor only. See footnotes below that discuss changes to substance target organs only. • On June 27, 2014, OEHHA adopted a new 8-hour REL and revised acute and chronic RELs for benzene. The REL values and summary can be found at: http://www.oehha.ca.gov/air/chronic_rels/BenzeneJune2014.html. • On March 28, 2016, OEHHA adopted new and revised RELs for toluene diisocyanate (TDI) and methylene diphenyl diisocyanate (MDI). The REL values and summaries can be found at: http://www.oehha.ca.gov/air/chronic_rels/032816TDI_MDI_RELs.html. • On February 21, 2017, OEHHA adopted new acute, 8-hour, and chronic inhalation RELs for carbonyl sulfide. The REL values and summary can be found at: http://oehha.ca.gov/air/crnr/notice-adoption-reference-exposure-levels-carbonyl-sulfide. • On May 4, 2018, OEHHA adopted new 8-hour and chronic inhalation RELs, and a revised acute REL for ethylene glycol butyl ether. The REL values and summary can be found at: https://oehha.ca.gov/air/chemicals/ethylene-glycol-monobutyl-ether. • On September 6, 2019, OEHHA adopted new RELs for xexamethylene diisocyanate. The REL values and summary can be found at: https://oehha.ca.gov/air/crnr/notice-adoption-reference-exposure-levels-hexamethylene-diisocyanate. • On August 20, 2020, OEHHA adopted new and revised RELs for toluene. The REL values and summary can be found at: https://oehha.ca.gov/air/crnr/notice-adoption-reference-exposure-levels-toluene.
d	February 2014. Per OEHHA's current policy, substances with Reproductive System and/or Development as the hazard Index target organ(s) are represented under the single endpoint "Reproductive/Development"
e	1,6-HEXAMETHYLENE DIISOCYANATE (HDI): On September 19, 2019, acute, 8-hour, and chronic RELs were added to the table and HARP for the HDI (monomer). OEHHA adopted these RELs and others for HDI polyisocyanates on September 6, 2019. The Acute, 8-hour, and chronic RELs for HDI polyisocyanates will be added to the consolidated table and HARP when the Air Toxics "Hot Spots" Program Emission Inventory Criteria and Guidelines is updated to include HDI polyisocyanates.
TAC	Toxic Air Contaminant: The Air Resources Board has identified this substance as a Toxic Air Contaminant.
N/A	Not Applicable.
Other Changes:	
	February 2014 corrections based on original REL summaries: • Chloroform – added respiratory system as a target organ. • Methylene chloride – the cardiovascular system was added as a target organ. • Entry of SULFURIC ACID AND OLEUM is removed to be consistent with Consolidated Table 1. This entry is removed from Table 1 because oleum represents only an acute health hazard. • Styrene – added reproductive/development as a target organ. • Xylenes – add nervous system as a target organ.

Table 3
OEHHA/ARB APPROVED 8-HOUR REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Number	8-Hour Inhalation REL (µg/m³)	Date[c] Value Reviewed [Added]	Target Organs											
				Alimentary	Bone and Teeth	Cardiovascular	Reproductive/[d] Development	Endocrine	Eye	Hematologic	Immune	Kidney	Nervous	Respiratory	Skin
ACETALDEHYDE	75-07-0	3.0E+02	12/08											X	
ACROLEIN	107-02-8	7.0E-01	12/08											X	
ARSENIC AND COMPOUNDS (INORGANIC)[TAC]	7440-38-2 1016	1.5E-02	12/08			X	X						X	X	X
ARSINE	7784-42-1	1.5E-02	12/08			X	X						X	X	X
BENZENE[TAC]	71-43-2	3.0E+00	6/14							X					
1,3-BUTADIENE[TAC]	106-99-0	9.0E+00	7/13				X								
CAPROLACTAM	105-60-2	7.0E+00	10/13											X	
CARBONYL SULFIDE	463-58-1	1.0E+01	2/17										X		
FORMALDEHYDE[TAC]	50-00-0	9.0E+00	12/08											X	
GLYCOL ETHERS	1115														
ETHYLENE GLYCOL BUTYL ETHER – EGBE	111-76-2	1.64E+02	5/18											X	
1,6-HEXAMETHYLENE DIISOCYANATE[e] (monomer)	822-06-0	6.0E-02	9/19											X	
MANGANESE AND COMPOUNDS	7439-96-5 [1132]	1.7E-01	12/08										X		
MERCURY AND COMPOUNDS (INORGANIC)	7439-97-6 [1133]	6.0E-02	12/08				X					X	X		
Mercuric chloride	*7487-94-7*	*6.0E-02*	*12/08*				✓					✓	✓		
METHYLENE DIPHENYL DIISOCYANATE	101-68-8	1.6E-01	3/16											X	
NICKEL AND COMPOUNDS[TAC]	7440-02-0 [1145]	6.0E-02	3/12								X			X	
Nickel acetate	*373-02-4*	*6.0E-02*	*3/12*								✓			✓	
Nickel carbonate	*3333-67-3*	*6.0E-02*	*3/12*								✓			✓	
Nickel carbonyl	*13463-39-3*	*6.0E-02*	*3/12*								✓			✓	
Nickel hydroxide	*12054-48-7*	*6.0E-02*	*3/12*								✓			✓	
Nickelocene	*1271-28-9*	*6.0E-02*	*3/12*								✓			✓	
NICKEL OXIDE	*1313-99-1*	*6.0E-02*	*3/12*								✓			✓	
Nickel refinery dust from the pyrometallurgical process	*1146*	*6.0E-02*	*3/12*								✓			✓	
Nickel subsulfide	*12035-72-2*	*6.0E-02*	*3/12*								✓			✓	

Table 3
OEHHA/ARB APPROVED 8-HOUR REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Number	8-Hour Inhalation REL (µg/m³)	Date[c] Value Reviewed [Added]	Target Organs											
				Alimentary	Bone and Teeth	Cardiovascular	Reproductive/[d] Development	Endocrine	Eye	Hematologic	Immune	Kidney	Nervous	Respiratory	Skin
TOLUENE	108-88-3	8.3E+02	8/20						X						
Toluene diisocyanates	*26471-62-5*	*1.5E-02*	*3/16*											✓	
TOLUENE-2,4-DIISOCYANATE	584-84-9	1.5E-02	3/16											X	
TOLUENE-2,6-DIISOCYANATE	91-08-7	1.5E-02	3/16											X	

Table 3
OEHHA/ARB APPROVED 8-HOUR REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Purpose:	The purpose of this reference table is to provide a quick list of all health values that have been approved by the Office of Environmental Health Hazard Assessment (OEHHA) and the Air Resources Board (ARB). The OEHHA has developed and adopted new risk assessment guidelines that update and replace the California Air Pollution Control Officers Association's (CAPCOA) *Air Toxics "Hot Spots" Program Revised 1992 Risk Assessment Guidelines, October 1993*. The OEHHA has adopted three technical support documents for these guidelines, which can be found on their website (http://www.oehha.ca.gov/air/hot_spots/index.html). This table lists the OEHHA adopted 8-hour RELs. The methodology for the development and use of 8-hour RELs in Health Risk Assessments can be found in the OEHHA 2008 document *Air Toxics Hot Spots Program Technical Support Document for the Derivation of Noncancer Reference Exposure Levels* online at: http://oehha.ca.gov/air/hot_spots/rels_dec2008.html. OEHHA is still in the process of adopting new health values. Therefore, new health values will periodically be added to, or deleted from, this table. Users of this table are advised to monitor the OEHHA website (*www.oehha.ca.gov*) for any updates to the health values.
a	The checkmarks included in this table clarify applicability of OEHHA adopted health effects values to individual or grouped substances listed in the *Air Toxics "Hot Spots" Emission Inventory Criteria and Guidelines*, Appendix A-I list of *"Substances For Which Emissions Must Be Quantified"*.
b	Chemical Abstract Service Number (CAS): For chemical groupings and mixtures where a CAS number is not applicable, the 4-digit code used in the *Air Toxics "Hot Spots" Emission Inventory Criteria and Guidelines (EICG) Report* is listed. The 4-digit codes enclosed in brackets [ ] are codes that have been phased out, but may still appear on previously reported Hot Spots emissions. For information on the origin and use of the 4-digit code, see the EICG report.
c	Date Value Reviewed [Added]: This column lists the date that the health value was last reviewed by OEHHA and the Scientific Review Panel, and/or approved for use in the AB 2588 Air Toxics Hot Spots Program. If the health value is unchanged since it was first approved for use in the "Hot Spots" Program, then the date that the value was first approved for use by CAPCOA is listed within the brackets [ ]. • On December 19, 2008, OEHHA adopted new 8-hour RELs for acetaldehyde, acrolein, arsenic, formaldehyde, manganese, and mercury. The most current health values can be found at: http://www.oehha.ca.gov/air/allrels.html. • On March 23, 2012, OEHHA adopted revised acute, 8-hour and chronic RELs for nickel and nickel compounds. The values of the RELs are listed in the table at: http://www.oehha.ca.gov/air/chronic_rels/032312CREL.html. • On July 29, 2013, OEHHA adopted an acute and an 8-hour REL and a revised chronic REL for 1,3-butadiene. The REL value and summary can be found online at: http://www.oehha.ca.gov/air/hot_spots/index.html. • On October 18, 2013, OEHHA adopted acute, 8-hour, and chronic RELs for caprolactam. The REL values and summary can be found at: http://www.oehha.ca.gov/air/chronic_rels/pdf/Caprolactam2013.pdf. • On June 27, 2014, OEHHA adopted a new 8-hour REL and revised acute and chronic RELs for benzene. The REL values and summary can be found at: http://www.oehha.ca.gov/air/chronic_rels/BenzeneJune2014.html. • On March 28, 2016, OEHHA adopted new and revised RELs for toluene diisocyanate (TDI) and methylene diphenyl diisocyanate (MDI). The REL values and summaries can be found at: http://www.oehha.ca.gov/air/chronic_rels/032816TDI_MDI_RELs.html. • On February 21, 2017, OEHHA adopted new acute, 8-hour, and chronic inhalation RELs for carbonyl sulfide. The REL values and summary can be found at: http://oehha.ca.gov/air/crnr/notice-adoption-reference-exposure-levels-carbonyl-sulfide. • On May 4, 2018, OEHHA adopted new 8-hour and chronic inhalation RELs, and a revised acute REL for ethylene glycol butyl ether. The REL values and summary can be found at: https://oehha.ca.gov/air/chemicals/ethylene-glycol-monobutyl-ether. • On September 6, 2019, OEHHA adopted new RELs for xexamethylene diisocyanate. The REL values and summary can be found at: https://oehha.ca.gov/air/crnr/notice-adoption-reference-exposure-levels-hexamethylene-diisocyanate. • On August 20, 2020, OEHHA adopted new and revised RELs for toluene. The REL values and summary can be found at: https://oehha.ca.gov/air/crnr/notice-adoption-reference-exposure-levels-toluene.
d	February 2014. Per OEHHA's current policy, substances with Reproductive System and/or Development as the hazard Index target organ(s) are represented under the single endpoint "Reproductive/Development".
e	1,6-HEXAMETHYLENE DIISOCYANATE (HDI): On September 19, 2019, acute, 8-hour, and chronic RELs were added to the table and HARP for the HDI (monomer). OEHHA adopted these RELs and others for HDI polyisocyanates on September 6, 2019. The Acute, 8-hour, and chronic RELs for HDI polyisocyanates will be added to the consolidated table and HARP when the Air Toxics "Hot Spots" Program Emission Inventory Criteria and Guidelines is updated to include HDI polyisocyanates.
TAC	Toxic Air Contaminant: The Air Resources Board has identified this substance as a Toxic Air Contaminant.

Last updated: August 21, 2020

Table 4
OEHHA/ARB APPROVED CHRONIC REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Number	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Oral REL (mg/kg-d)	Date[c] Value Reviewed [Added]	Target Organs											
					Alimentary	Bone and Teeth	Cardiovascular	Reproductive/[d] Development	Endocrine	Eye	Hematologic	Immune	Kidney	Nervous	Respiratory	Skin
ACETALDEHYDE	75-07-0	1.4E+02		12/08											X	
ACROLEIN	107-02-8	3.5E-01		12/08											X	
ACRYLONITRILE	107-13-1	5.0E+00		12/01											X	
AMMONIA	7664-41-7	2.0E+02		2/00											X	
ARSENIC AND COMPOUNDS (INORGANIC)[TAC]	7440-38-2 1016 [1015]	1.5E-02		12/08			X	X						X	X	X
			3.5E-06	12/08			X	X						X	X	X
ARSINE	7784-42-1	1.5E-02		12/08			X	X						X	X	X
BENZENE[TAC]	71-43-2	3.0E+00		6/14							X					
BERYLLIUM AND COMPOUNDS	7440-41-7 [1021]	7.0E-03		12/01								X			X	
			2.0E-03	12/01	X											
1,3-BUTADIENE[TAC]	106-99-0	2.0E+00		7/13				X								
CADMIUM AND COMPOUNDS[TAC]	7440-43-9 [1045]	2.0E-02		1/01									X		X	
			5.0E-04	10/00									X			
CAPROLACTAM	105-60-2	2.2E+00		10/13											X	
CARBON DISULFIDE	75-15-0	8.0E+02		5/02				X						X		
CARBON TETRACHLORIDE[TAC] (Tetrachloromethane)	56-23-5	4.0E+01		1/01	X			X						X		
CARBONYL SULFIDE	463-58-1	1.0E+01		2/17										X		
CHLORINE	7782-50-5	2.0E-01		2/00											X	
CHLORINE DIOXIDE	10049-04-4	6.0E-01		1/01											X	
CHLOROBENZENE	108-90-7	1.0E+03		1/01	X			X					X			
CHLOROFORM[TAC]	67-66-3	3.0E+02		4/00	X			X					X			
CHLOROPICRIN	76-06-2	4.0E-01		12/01											X	
CHROMIUM 6+[TAC]	18540-29-9	2.0E-01		1/01											X	
			2.0E-02	10/00							X					
Barium chromate	*10294-40-3*	*2.0E-01*		*1/01*											✓	
			2.0E-02	*10/00*							✓					
Calcium chromate	*13765-19-0*	*2.0E-01*		*1/01*											✓	

Last updated: August 21, 2020

Table 4
OEHHA/ARB APPROVED CHRONIC REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Number	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Oral REL (mg/kg-d)	Date[c] Value Reviewed [Added]	Target Organs											
					Alimentary	Bone and Teeth	Cardiovascular	Reproductive/[d] Development	Endocrine	Eye	Hematologic	Immune	Kidney	Nervous	Respiratory	Skin
			2.0E-02	*10/00*							✓					
Lead chromate	*7758-97-6*	*2.0E-01*		*1/01*											✓	
			2.0E-02	*10/00*							✓					
Sodium dichromate	*10588-01-9*	*2.0E-01*		*1/01*											✓	
			2.0E-02	*10/00*							✓					
Strontium chromate	*7789-06-2*	*2.0E-01*		*1/01*											✓	
			2.0E-02	*10/00*							✓					
CHROMIUM TRIOXIDE (as chromic acid mist)	1333-82-0	2.0E-03		1/01											X	
			2.0E-02	*10/00*							✓					
CRESOLS (mixtures of)	1319-77-3	6.0E+02		1/01										X		
m-CRESOL	108-39-4	6.0E+02		1/01										X		
o-CRESOL	95-48-7	6.0E+02		1/01										X		
p-CRESOL	106-44-5	6.0E+02		1/01										X		
Cyanide Compounds (inorganic)	*57-12-5 1073*	*9.0E+00*		*4/00*			✓		✓					✓		
HYDROGEN CYANIDE (Hydrocyanic acid)	74-90-8	9.0E+00		4/00			X		X					X		
p-DICHLOROBENZENE	106-46-7	8.0E+02		1/01	X								X	X	X	
1,1,-DICHLOROETHYLENE … (see Vinylidene Chloride)																
DIESEL EXHAUST … (see Particulate Emissions from Diesel-Fueled Engines)																
DIETHANOLAMINE	111-42-2	3.0E+00		12/01							X				X	
N,N-DIMETHYL FORMAMIDE	68-12-2	8.0E+01		1/01	X										X	
1,4-DIOXANE; (1,4-Diethylene dioxide)	123-91-1	3.0E+03		4/00	X		X						X			
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)	106-89-8	3.0E+00		1/01						X					X	
1,2-EPOXYBUTANE	106-88-7	2.0E+01		1/01			X								X	
ETHYL BENZENE	100-41-4	2.0E+03		2/00	X			X	X				X			
ETHYL CHLORIDE (Chlorethane)	75-00-3	3.0E+04		4/00	X			X								

Table 4
OEHHA/ARB APPROVED CHRONIC REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Number	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Oral REL (mg/kg-d)	Date[c] Value Reviewed [Added]	Target Organs											
					Alimentary	Bone and Teeth	Cardiovascular	Reproductive/[d] Development	Endocrine	Eye	Hematologic	Immune	Kidney	Nervous	Respiratory	Skin
ETHYLENE DIBROMIDE[TAC] (1,2-Dibromoethane)	106-93-4	8.0E-01		12/01				X								
ETHYLENE DICHLORIDE[TAC] (1,2-Dichloroethane)	107-06-2	4.0E+02		1/01	X											
ETHYLENE GLYCOL	107-21-1	4.0E+02		4/00				X					X		X	
ETHYLENE OXIDE[TAC] (1,2-Epoxyethane)	75-21-8	3.0E+01		1/01										X		
Fluorides and Compounds	1101	1.3E+01				X									X	
			4.0E-02	8/03		X										
HYDROGEN FLUORIDE (Hydrofluoric acid)	7664-39-3	1.4E+01				X									X	
			4.0E-02	8/03		X										
FORMALDEHYDE[TAC]	50-00-0	9.0E+00		12/08											X	
GLUTARALDEHYDE	111-30-8	8.0E-02		1/01											X	
GLYCOL ETHERS	1115															
ETHYLENE GLYCOL BUTYL ETHER – EGBE	111-76-2	8.2E+01		5/18											X	
ETHYLENE GLYCOL ETHYL ETHER – EGEE	110-80-5	7.0E+01		2/00				X			X					
ETHYLENE GLYCOL ETHYL ETHER ACETATE - EGEEA	111-15-9	3.0E+02		2/00				X								
ETHYLENE GLYCOL METHYL ETHER – EGME	109-86-4	6.0E+01		2/00				X								
ETHYLENE GLYCOL METHYL ETHER ACETATE - EGMEA	110-49-6	9.0E+01		2/00				X								
1,6-HEXAMETHYLENE DIISOCYANATE[i] (monomer)	822-06-0	3.0E-02		9/19											X	
n-HEXANE	110-54-3	7.0E+03		4/00										X		
HYDRAZINE	302-01-2	2.0E-01		1/01	X				X							
HYDROCHLORIC ACID (Hydrogen chloride)	7647-01-0	9.0E+00		2/00											X	
HYDROGEN CYANIDE (Hydrocyanic acid) (see Cyanide Compounds)																
HYDROGEN BROMIDE ... (see Bromine & Compounds)																
HYDROGEN FLUORIDE (Hydrofluoric acid) (see Fluorides & Compounds)																
HYDROGEN SULFIDE	7783-06-4	1.0E+01		4/00											X	
ISOPHORONE	78-59-1	2.0E+03		12/01	X			X								

Table 4
OEHHA/ARB APPROVED CHRONIC REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Number	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Oral REL (mg/kg-d)	Date[c] Value Reviewed [Added]	Target Organs											
					Alimentary	Bone and Teeth	Cardiovascular	Reproductive/[d] Development	Endocrine	Eye	Hematologic	Immune	Kidney	Nervous	Respiratory	Skin
ISOPROPYL ALCOHOL (Isopropanol)	67-63-0	7.0E+03		2/00				X					X			
LINDANE ... (see gamma-Hexachlorocyclohexane)																
MALEIC ANHYDRIDE	108-31-6	7.0E-01		12/01											X	
MANGANESE AND COMPOUNDS	7439-96-5 [1132]	9.0E-02		12/08										X		
MERCURY AND INORGANIC COMPOUNDS	7439-97-6 [1133]	3.0E-02		12/08				X					X	X		
			1.6E-04	12/08				X					X	X		
Mercuric chloride	*7487-94-7*	*3.0E-02*		*12/08*				✓					✓	✓		
			1.6E-04	*12/08*				✓					✓	✓		
METHANOL	67-56-1	4.0E+03		4/00				X								
METHYL BROMIDE (Bromomethane)	74-83-9	5.0E+00		2/00				X						X	X	
METHYL tertiary-BUTYL ETHER	1634-04-4	8.0E+03		2/00	X					X			X			
METHYL CHLOROFORM (1,1,1-Trichloroethane)	71-55-6	1.0E+03		2/00										X		
METHYL ISOCYANATE	624-83-9	1.0E+00		12/01				X							X	
METHYLENE CHLORIDE[TAC] (Dichloromethane)	75-09-2	4.0E+02		2/00			X							X		
4,4'-METHYLENE DIANILINE (AND ITS DICHLORIDE)	101-77-9	2.0E+01		12/01	X					X						
METHYLENE DIPHENYL DIISOCYANATE	101-68-8	8.0E-02		3/16											X	
NAPHTHALENE	91-20-3	9.0E+00		4/00											X	
NICKEL AND COMPOUNDS[TAC]	7440-02-0 [1145]	1.4E-02		3/12							X				X	
			1.1E-02	3/12				X								
Nickel acetate	*373-02-4*	*1.4E-02*		*3/12*							✓				✓	
			1.1E-02	*3/12*				✓								
Nickel carbonate	*3333-67-3*	*1.4E-02*		*3/12*							✓				✓	
			1.1E-02	*3/12*				✓								
Nickel carbonyl	*13463-39-3*	*1.4E-02*		*3/12*							✓				✓	
			1.1E-02	*3/12*				✓								
Nickel hydroxide	*12054-48-7*	*1.4E-02*		*3/12*							✓				✓	

Table 4
OEHHA/ARB APPROVED CHRONIC REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Number	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Oral REL (mg/kg-d)	Date[c] Value Reviewed [Added]	Target Organs											
					Alimentary	Bone and Teeth	Cardiovascular	Reproductive/[d] Development	Endocrine	Eye	Hematologic	Immune	Kidney	Nervous	Respiratory	Skin
			1.1E-02	*3/12*				✓								
Nickelocene	*1271-28-9*	*1.4E-02*		*3/12*							✓				✓	
			1.1E-02	*3/12*				✓								
NICKEL OXIDE	1313-99-1	2.0E-02		3/12											X	
			1.1E-02	*3/12*				✓								
Nickel refinery dust from pyrometallurgical process	*1146*	*1.4E-02*		*3/12*							✓				✓	
			1.1E-02	*3/12*				✓								
Nickel subsulfide	*12035-72-2*	*1.4E-02*		*3/12*							✓				✓	
			1.1E-02	*3/12*				✓								
PARTICULATE EMISSIONS FROM DIESEL-FUELED ENGINES[TAC, e]	9901	5.0E+00 TAC		8/98											X	
PERCHLOROETHYLENE[TAC] (Tetrachloroethylene)	127-18-4	3.5E+01 TAC		10/91	X								X			
PHENOL	108-95-2	2.0E+02		4/00	X		X						X	X		
PHOSPHINE	7803-51-2	8.0E-01		9/02	X						X		X	X	X	
PHOSPHORIC ACID	7664-38-2	7.0E+00		2/00											X	
PHTHALIC ANHYDRIDE	85-44-9	2.0E+01		1/01											X	
DIOXIN-LIKE POLYCHLORINATED BIPHENYLS (PCBS)[f, g]	1336-36-3															
3,3',4,4'-TETRACHLOROBIPHENYL (PCB 77)	32598-13-3	4.0E-01		8/03	X			X	X		X				X	
			1.0E-04	8/03	X			X	X		X				X	
3,4,4',5-TETRACHLOROBIPHENYL (PCB 81)	70362-50-4	1.3E-01		1/11	X			X	X		X				X	
			3.3E-05	1/11	X			X	X		X				X	
2,3,3',4,4'-PENTACHLOROBIPHENYL (PCB 105)	32598-14-4	1.3E+00		1/11	X			X	X		X				X	
			3.3E-04	1/11	X			X	X		X				X	
2,3,4,4',5-PENTACHLOROBIPHENYL (PCB 114)	74472-37-0	1.3E+00		1/11	X			X	X		X				X	
			3.3E-04	1/11	X			X	X		X				X	

Table 4
OEHHA/ARB APPROVED CHRONIC REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Number	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Oral REL (mg/kg-d)	Date[c] Value Reviewed [Added]	Target Organs											
					Alimentary	Bone and Teeth	Cardiovascular	Reproductive/[d] Development	Endocrine	Eye	Hematologic	Immune	Kidney	Nervous	Respiratory	Skin
2,3',4,4',5-PENTACHLOROBIPHENYL (PCB 118)	31508-00-6	1.3E+00		1/11	X			X	X		X				X	
			3.3E-04	1/11	X			X	X		X				X	
2,3',4,4',5'-PENTACHLOROBIPHENYL (PCB 123)	65510-44-3	1.3E+00		1/11	X			X	X		X				X	
			3.3E-04	1/11	X			X	X		X				X	
3,3',4,4',5-PENTACHLOROBIPHENYL (PCB 126)	57465-28-8	4.0E-04		8/03	X			X	X		X				X	
			1.0E-07	8/03	X			X	X		X				X	
2,3,3',4,4',5-HEXACHLOROBIPHENYL (PCB 156)	38380-08-4	1.3E+00		1/11	X			X	X		X				X	
			3.3E-04	1/11	X			X	X		X				X	
2,3,3',4,4',5'-HEXACHLOROBIPHENYL (PCB 157)	69782-90-7	1.3E+00		1/11	X			X	X		X				X	
			3.3E-04	1/11	X			X	X		X				X	
2,3',4,4',5,5'-HEXACHLOROBIPHENYL (PCB 167)	52663-72-6	1.3E+00		1/11	X			X	X		X				X	
			3.3E-04	1/11	X			X	X		X				X	
3,3',4,4',5,5'-HEXACHLOROBIPHENYL (PCB 169)	32774-16-6	1.3E-03		1/11	X			X	X		X				X	
			3.3E-07	1/11	X			X	X		X				X	
2,3,3',4,4',5,5'-HEPTACHLOROBIPHENYL (PCB 189)	39635-31-9	1.3E+00		1/11	X			X	X		X				X	
			3.3E-04	1/11	X			X	X		X				X	
POLYCHLORINATED DIBENZO-P-DIOXINS (PCDD) (Treated as 2,3,7,8-TCDD for HRA)[TAC, f]	1085 1086	4.0E-05		2/00	X			X	X		X				X	
			1.0E-08	10/00	X			X	X		X				X	
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN[TAC]	1746-01-6	4.0E-05		2/00	X			X	X		X				X	
			1.0E-08	10/00	X			X	X		X				X	
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN	40321-76-4	4.0E-05		8/03	X			X	X		X				X	
			1.0E-08	8/03	X			X	X		X				X	
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN	39227-28-6	4.0E-04		2/00	X			X	X		X				X	
			1.0E-07	10/00	X			X	X		X				X	
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	57653-85-7	4.0E-04		2/00	X			X	X		X				X	
			1.0E-07	10/00	X			X	X		X				X	
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	19408-74-3	4.0E-04		2/00	X			X	X		X				X	
			1.0E-07	10/00	X			X	X		X				X	

Table 4
OEHHA/ARB APPROVED CHRONIC REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Number	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Oral REL (mg/kg-d)	Date[c] Value Reviewed [Added]	Target Organs											
					Alimentary	Bone and Teeth	Cardiovascular	Reproductive/[d] Development	Endocrine	Eye	Hematologic	Immune	Kidney	Nervous	Respiratory	Skin
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN	35822-46-9	4.0E-03		2/00	X			X	X		X				X	
			1.0E-06	10/00	X			X	X		X				X	
1,2,3,4,6,7,8,9-OCTACHLORODIBENZO-P-DIOXIN	3268-87-9	1.3E-01		1/11	X			X	X		X				X	
			3.3E-05	1/11	X			X	X		X				X	
POLYCHLORINATED DIBENZOFURANS (PCDF) (Treated as 2,3,7,8-TCDD for HRA) [TAC, f]	1080	4.0E-05		2/00	X			X	X		X				X	
			1.0E-08	10/00	X			X	X		X				X	
2,3,7,8-TETRACHLORODIBENZOFURAN	5120-73-19	4.0E-04		2/00	X			X	X		X				X	
			1.0E-07	10/00	X			X	X		X				X	
1,2,3,7,8-PENTACHLORODIBENZOFURAN	57117-41-6	1.3E-03		1/11	X			X	X		X				X	
			3.3E-07	1/11	X			X	X		X				X	
2,3,4,7,8-PENTACHLORODIBENZOFURN	57117-31-4	1.3E-04		1/11	X			X	X		X				X	
			3.3E-08	1/11	X			X	X		X				X	
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	70648-26-9	4.0E-04		2/00	X			X	X		X				X	
			1.0E-07	10/00	X			X	X		X				X	
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	57117-44-9	4.0E-04		2/00	X			X	X		X				X	
			1.0E-07	10/00	X			X	X		X				X	
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	72918-21-9	4.0E-04		2/00	X			X	X		X				X	
			1.0E-07	10/00	X			X	X		X				X	
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	60851-34-5	4.0E-04		2/00	X			X	X		X				X	
			1.0E-07	10/00	X			X	X		X				X	
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	67562-39-4	4.0E-03		2/00	X			X	X		X				X	
			1.0E-06	10/00	X			X	X		X				X	
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	55673-89-7	4.0E-03		2/00	X			X	X		X				X	
			1.0E-06	10/00	X			X	X		X				X	
1,2,3,4,6,7,8,9-OCTACHLORODIBENZOFURAN	39001-02-0	1.3E-01		1/11	X			X	X		X				X	
			3.3E-05	1/11	X			X	X		X				X	
POTASSIUM BROMATE ... (see Bromine & Compounds)																

Last updated: August 21, 2020

Table 4
OEHHA/ARB APPROVED CHRONIC REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Substance	Chemical[b] Abstract Number	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Oral REL (mg/kg-d)	Date[c] Value Reviewed [Added]	Target Organs											
					Alimentary	Bone and Teeth	Cardiovascular	Reproductive/[d] Development	Endocrine	Eye	Hematologic	Immune	Kidney	Nervous	Respiratory	Skin
PROPYLENE (PROPENE)	115-07-1	3.0E+03		4/00											X	
PROPYLENE GLYCOL MONOMETHYL ETHER	107-98-2	7.0E+03		2/00	X											
PROPYLENE OXIDE	75-56-9	3.0E+01		2/00											X	
SELENIUM AND COMPOUNDS (other than hydrogen selenide)[h]	7782-49-2 [1170]	2.0E+01		12/01	X		X							X		
			5.0E-03	12/01	X		X							X		
Selenium sulfide	*7446-34-6*	*2.0E+01*		*12/01*	✓		✓							✓		
			5.0E-03	*12/01*	✓		✓							✓		
SILICA [CRYSTALLINE, RESPIRABLE]	1175	3.0E+00		2/05											X	
STYRENE	100-42-5	9.0E+02		4/00										X		
Sulfuric Acid	7664-93-9	1.0E+00		12/01											X	
Sulfuric Trioxide	*7446-71-9*	*1.0E+00*		*12/01*											✓	
TOLUENE	108-88-3	4.2E+02		8/20						X						
Toluene diisocyanates	*26471-62-5*	*8.0E-03*		*3/16*											✓	
TOLUENE-2,4-DIISOCYANATE	584-84-9	8.0E-03		3/16											X	
TOLUENE-2,6-DIISOCYANATE	91-08-7	8.0E-03		3/16											X	
TRICHLOROETHYLENE[TAC]	79-01-6	6.0E+02		4/00						X				X		
TRIETHYLAMINE	121-44-8	2.0E+02		9/02						X						
VINYL ACETATE	108-05-4	2.0E+02		12/01											X	
VINYLIDENE CHLORIDE (1,1,-Dichloroethylene)	75-35-4	7.0E+01		1/01	X											
XYLENES (mixed isomers)	1330-20-7	7.0E+02		4/00						X				X	X	
m-XYLENE	108-38-3	7.0E+02		4/00						X				X	X	
o-XYLENE	95-47-6	7.0E+02		4/00						X				X	X	
p-XYLENE	106-42-3	7.0E+02		4/00						X				X	X	

Table 4
OEHHA/ARB APPROVED CHRONIC REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

Purpose:	The purpose of this reference table is to provide a quick list of all health values that have been approved by the Office of Environmental Health Hazard Assessment (OEHHA) and the Air Resources Board (ARB) for use in facility health risk assessments conducted for the AB 2588 Air Toxics "Hot Spots" Program. The OEHHA has developed and adopted new risk assessment guidelines that update and replace the California Air Pollution Control Officers Association's (CAPCOA) *Air Toxics "Hot Spots" Program Revised 1992 Risk Assessment Guidelines, October 1993*. The OEHHA has adopted three technical support documents for these guidelines, which can be found on their website (http://www.oehha.ca.gov/air/hot_spots/index.html). This table lists the OEHHA adopted inhalation and oral noncancer chronic RELs. OEHHA is still in the process of adopting new health values. Therefore, new health values will periodically be added to, or deleted from, this table. Users of this table are advised to monitor the OEHHA website (*www.oehha.ca.gov*) for any updates to the health values. May 2008 update: The Air Resources Board adopted amendments to the AB 2588 Air Toxics "Hot Spots" Emission Inventory Criteria and Guidelines Regulation (Title 17, California Code of Regulations, Section 93300.5) on November 16, 2006. The amendments became effective on September 26, 2007, after approval from the Office of Administrative Law. Under the new amendments, the substances previously listed in Appendix A-I *(Substances For Which Emissions Must Be Quantified*) and Appendix F (*Criteria For Inputs For Risk Assessment Using Screening Air Dispersion Modeling*) of the ARB's *Air Toxics* "*Hot Spots" Emission Inventory Criteria and Guidelines (EICG) (July 1997)* have been removed from this table.
a	The checkmarks included in this table clarify applicability of OEHHA adopted health effects values to individual or grouped substances listed in the *Air Toxics* "*Hot Spots" Emission Inventory Criteria and Guidelines*, Appendix A-I list of *"Substances For Which Emissions Must Be Quantified"*.
b	Chemical Abstract Service Number (CAS): For chemical groupings and mixtures where a CAS number is not applicable, the 4-digit code used in the *Air Toxics* "*Hot Spots" Emission Inventory Criteria and Guidelines (EICG) Report* is listed. The 4-digit codes enclosed in brackets [ ] are codes that have been phased out, but may still appear on previously reported Hot Spots emissions. For information on the origin and use of the 4-digit code, see the EICG report.

Table 4
OEHHA/ARB APPROVED CHRONIC REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

c	Date Value Reviewed [Added]: This column lists the date that the health value was last reviewed by OEHHA and the Scientific Review Panel, and/or approved for use in the AB 2588 Air Toxics Hot Spots Program. If the health value is unchanged since it was first approved for use in the "Hot Spots" Program, then the date that the value was first approved for use by CAPCOA is listed within the brackets [ ]. • February 2000, April 2000, January 2001, and December 2001 are listed for the first set of 22, the second set of 16, the third set of 22, and the fourth set of 12 noncancer chronic RELs, respectively. The chronic REL for carbon disulfide was adopted in May 2002. Chronic RELs for phosphine and triethylamine were adopted in September 2002. Chronic RELs for fluorides including hydrogen fluoride were adopted August 2003. Chronic REL for silica [crystalline respirable] was adopted February 2005. • October 2000 is listed for the oral chronic RELs. • For the substances identified as Toxic Air Contaminants, the Air Resources Board hearing date is listed. The date for acetaldehyde represents the date the value was approved by the Scientific Review Panel. • On December 19, 2008, OEHHA adopted new chronic RELs for acetaldehyde, acrolein, arsenic, formaldehyde, manganese, and mercury. The most current health values can be found at: http://www.oehha.ca.gov/air/allrels.html. Note that the 8-hour RELs are not included in the HARP program. These health factors will be added after OEHHA approves the Guidelines Manual (Part V). Note: 1. We present the new oral RELs only in milligrams (mg/kg-d), although OEHHA has presented oral RELs in other tables in either micrograms (μg/kg-d) or mg/kg-d . 2. At OEHHA's direction, the chronic oral REL for arsenic does not apply to arsine, because arsine is a gas and not particle associated. • January 2011 is listed to reflect OEHHA's adoption of the World Health Organization's 2005 Toxicity Equivalency Factors for polychlorinated dibenzo-p-dioxins (PCDDs), dibenzofurans (PCDFs), and dioxin-like polychlorinated biphenyls (PCBs). See Appendix C of OEHHA's *Air Toxics Hot Spots Program Technical Support Document for Cancer Potencies* at: http://www.oehha.ca.gov/air/hot_spots/pdf/AppCdioxinTEFs013111.pdf for more information. • On March 23, 2012, OEHHA adopted revised acute, 8-hour and chronic RELs for nickel and nickel compounds, a separate chronic inhalation REL for nickel oxide, and a revised chronic oral REL for nickel and nickel compounds (including nickel oxide). The values of the RELs are listed in the table at: http://www.oehha.ca.gov/air/chronic_rels/032312CREL.html. • On July 29, 2013, OEHHA adopted an acute and an 8-hour REL and a revised chronic REL for 1,3-butadiene. The REL value and summary can be found online at: http://www.oehha.ca.gov/air/hot_spots/index.html. • On October 18, 2013 (February 2014 table update), OEHHA adopted acute, 8-hour, and chronic RELs for caprolactam. The REL values and summary can be found at: http://www.oehha.ca.gov/air/chronic_rels/pdf/Caprolactam2013.pdf. Changes have been made to target organs to the following substances with no change to health factors: Diethanolamine, Fluorides and Hydrogen Fluoride, and Xylenes. The "date added" in this table reflects the date of the health factor only. See footnotes below that discuss changes to substance target organs only. • On June 27, 2014, OEHHA adopted a new 8-hour REL and revised acute and chronic RELs for benzene. The REL values and summary can be found at: http://www.oehha.ca.gov/air/chronic_rels/BenzeneJune2014.html. • On March 28, 2016, OEHHA adopted new and revised RELs for toluene diisocyanate (TDI) and methylene diphenyl diisocyanate (MDI). The REL values and summaries can be found at: http://www.oehha.ca.gov/air/chronic_rels/032816TDI_MDI_RELs.html. • On February21, 2017, OEHHA adopted new acute, 8-hour, and chronic inhalation RELs for carbonyl sulfide. The REL values and summary can be found at: http://oehha.ca.gov/air/crnr/notice-adoption-reference-exposure-levels-carbonyl-sulfide. • On May 4, 2018, OEHHA adopted new 8-hour and chronic inhalation RELs, and a revised acute REL for ethylene glycol butyl ether. The REL values and summary can be found at: https://oehha.ca.gov/air/chemicals/ethylene-glycol-monobutyl-ether. • On September 6, 2019, OEHHA adopted new RELs for xexamethylene diisocyanate. The REL values and summary can be found at: https://oehha.ca.gov/air/crnr/notice-adoption-reference-exposure-levels-hexamethylene-diisocyanate. • On August 20, 2020, OEHHA adopted new and revised RELs for toluene. The REL values and summary can be found at: https://oehha.ca.gov/air/crnr/notice-adoption-reference-exposure-levels-toluene.
d	February 2014. Per OEHHA's current policy, substances with Reproductive System and/or Development as the hazard Index target organ(s) are represented under the single endpoint "Reproductive/Development".
TAC	Toxic Air Contaminant: The Air Resources Board has identified this substance as a Toxic Air Contaminant.

Table 4
OEHHA/ARB APPROVED CHRONIC REFERENCE EXPOSURE LEVELS AND TARGET ORGANS[a]

e	Particulate Emissions from Diesel-Fueled Engines: The inhalation cancer potency factor was derived from whole diesel exhaust and should be used only for impacts from the inhalation pathway (based on diesel PM measurements). The inhalation impacts from speciated emissions from diesel-fueled engines are already accounted for in the inhalation cancer potency factor and REL. However, at the discretion of the risk assessor, speciated emissions from diesel-fueled engines may be used to estimate acute noncancer health impacts or the contribution to cancer risk or chronic noncancer health impacts for the non-inhalation exposure pathway. The noncancer chronic REL for diesel exhaust is based on assumptions of contributions of diesel PM to ambient PM. It should be used with diesel PM measurement. There is not an oral chronic REL for diesel exhaust. See Appendix D of OEHHA's document *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* for more information.
f	Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans (also referred to as chlorinated dioxins and dibenzofurans) and dioxin-like PCB congeners: The OEHHA has adopted the World Health Organization 2005 (WHO-05) Toxicity Equivalency Factor scheme for evaluating the risk due to exposure to samples containing mixtures of polychlorinated dibenzo-p-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF) and a number of dioxin-like PCB congeners. See Appendix A of OEHHA's Technical Support Document For Describing Available Cancer Potency Factors for more information about the scheme. See Appendix C (revised 01/20/11) of OEHHA's Technical Support Document: Methodologies for Derivation, Listing of Available Values, and Adjustments to Allow for Early Life Exposures (2009) online at http://oehha.ca.gov/air/hot_spots/tsd052909.html for more information about the scheme.
g	Polychlorinated Biphenyls (unspeciated): As of February, 2014, there is no approved method that can be used to assess the noncancer hazard of an unspeciated PCB mixture. Persons preparing HRAs for the Hot Spots Program should consult with OEHHA and the local Air Pollution Control or Air Quality Management District if an assessment of the noncancer hazard for unspeciated PCB mixtures is needed.
h	SELENIUM AND COMPOUNDS: In February 2014, an oral REL was added to the consolidated table. The REL was adopted in Dec 2001, but could not be used by the Hot Spots Program (or HARP software) until transfer factors for the oral and dermal routes were adopted. Transfer factors are included in the OEHHA's Technical Support Document for Exposure Assessment and Stochastic Analysis (August 2012) and will be added to the HARP software in the future.
i	1,6-HEXAMETHYLENE DIISOCYANATE (HDI): On September 19, 2019, acute, 8-hour, and chronic RELs were added to the table and HARP for the HDI (monomer). OEHHA adopted these RELs and others for HDI polyisocyanates on September 6, 2019. The Acute, 8-hour, and chronic RELs for HDI polyisocyanates will be added to the consolidated table and HARP when the Air Toxics "Hot Spots" Program Emission Inventory Criteria and Guidelines is updated to include HDI polyisocyanates.

Other Changes:

February 2014 corrections based on original REL summaries:

- Removed applicability of oleum to the sulfuric acid chronic inhalation REL because oleum represents only an acute health hazard.
- Diethanolamine – deleted cardiovascular and nervous system as target organs, and added hematologic and respiratory systems as target organs.
- Fluorides and Hydrogen Fluoride – target organ for these substances was reconfigured so that "Bone and Teeth" are a combined target organ.
- Xylenes (mixed isomers) – added eye as a target organ.
- Removed "METHYL MERCURY …(see Mercury & Compounds)" entry because methyl mercury has different chemical properties, potency, and toxicity compared to elemental mercury and mercury salts, and it is not emitted directly from any California facilities.
- 9/1/2017, changed the "1101 Fluorides" entry back to "1101 Fluorides and compounds" to keep the consistency with the Emission Inventory Guidelines. The substance name for CAS# 1101 was changed from "Fluorides and compounds" as in 2002 to "Fluorides" in 2003 without footnotes about the change.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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Air Quality Reporting

Since 1977, the South Coast Air Quality Management District has served as the local government agency responsible for measuring, reporting and taking steps to improve air quality.

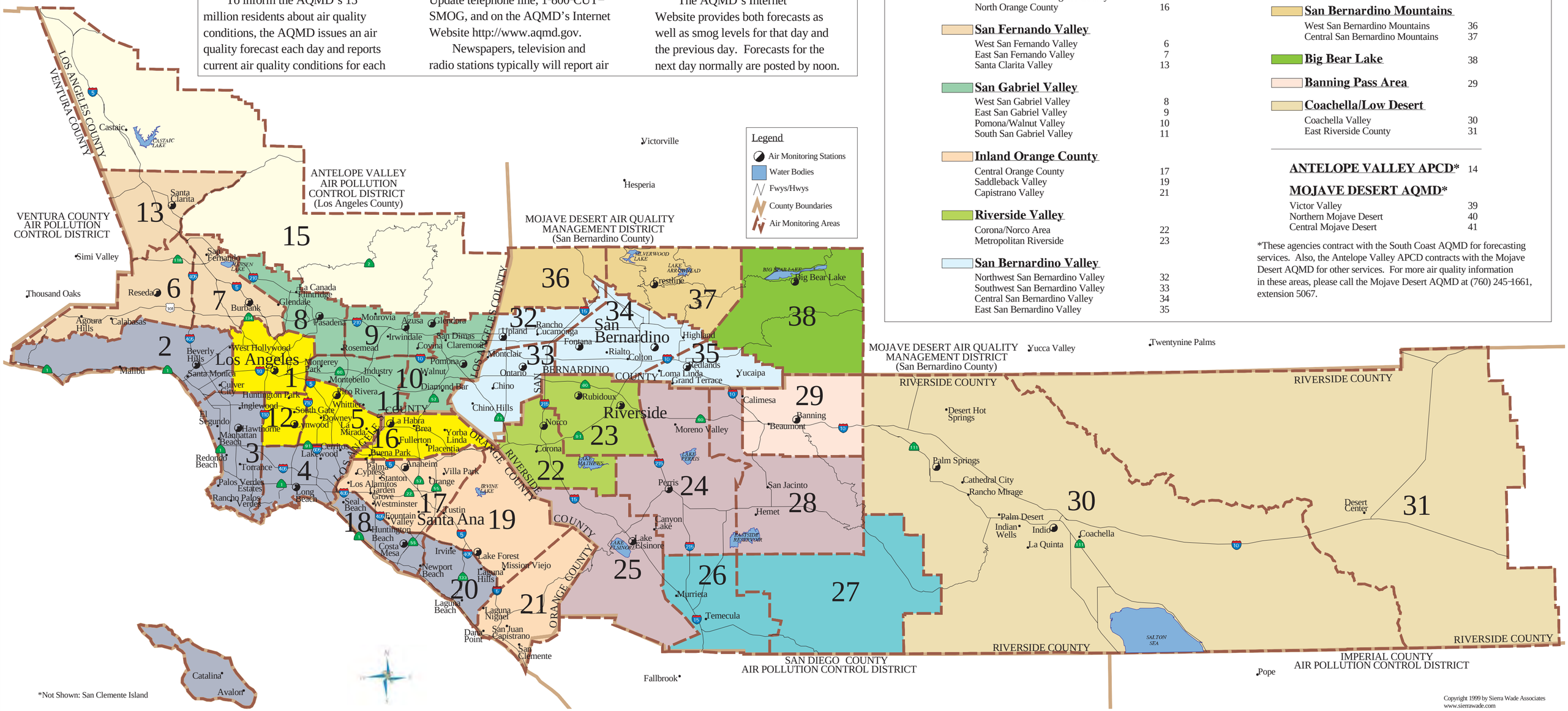
To inform the AQMD's 15 million residents about air quality conditions, the AQMD issues an air quality forecast each day and reports current air quality conditions for each numbered Monitoring Area and General Forecast Area depicted here.

This air quality information is transmitted to the public through newspapers, television, radio and pager services, through faxes to schools, through recorded messages on the AQMD's toll-free Smog Update telephone line, 1-800-CUT-SMOG, and on the AQMD's Internet Website http://www.aqmd.gov.

Newspapers, television and radio stations typically will report air quality information using the General Forecast Areas, shown in color below, which are larger groupings of the more specific Air Monitoring Areas.

The 1-800-CUT-SMOG (1-800-288-7664) line also provides smog forecast and current smog level information by ZIP code.

The AQMD's Internet Website provides both forecasts as well as smog levels for that day and the previous day. Forecasts for the next day normally are posted by noon.



General Forecast Areas & Air Monitoring Areas

Coastal

Northwest Los Angeles County Coastal	2
Southwest Los Angeles County Coastal	3
South Los Angeles County Coastal	4
North Orange County Coastal	18
Central Orange County Coastal	20

Metropolitan

Central Los Angeles County	1
Southeast Los Angeles County	5
South Central Los Angeles County	12
North Orange County	16

San Fernando Valley

West San Fernando Valley	6
East San Fernando Valley	7
Santa Clarita Valley	13

San Gabriel Valley

West San Gabriel Valley	8
East San Gabriel Valley	9
Pomona/Walnut Valley	10
South San Gabriel Valley	11

Inland Orange County

Central Orange County	17
Saddleback Valley	19
Capistrano Valley	21

Riverside Valley

Corona/Norco Area	22
Metropolitan Riverside	23

San Bernardino Valley

Northwest San Bernardino Valley	32
Southwest San Bernardino Valley	33
Central San Bernardino Valley	34
East San Bernardino Valley	35

Hemet/Elsinore Area

Perris Valley	24
Lake Elsinore	25
Hemet/San Jacinto Valley	28

Temecula/Anza Area

Temecula Valley	26
Anza Area	27

San Gabriel Mountains 15

San Bernardino Mountains

West San Bernardino Mountains	36
Central San Bernardino Mountains	37

Big Bear Lake 38

Banning Pass Area 29

Coachella/Low Desert

Coachella Valley	30
East Riverside County	31

ANTELOPE VALLEY APCD* 14

MOJAVE DESERT AQMD*

Victor Valley	39
Northern Mojave Desert	40
Central Mojave Desert	41

*These agencies contract with the South Coast AQMD for forecasting services. Also, the Antelope Valley APCD contracts with the Mojave Desert AQMD for other services. For more air quality information in these areas, please call the Mojave Desert AQMD at (760) 245-1661, extension 5067.

2017 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2017

Source/Receptor Area No.	Location	Station No.	Carbon Monoxide [a]			Ozone [b]										Nitrogen Dioxide [c]				Sulfur Dioxide [d]		
										No. Days Standard Exceeded												
												2008										
			No. Days of Data	Max Conc. in ppm 1-hour	Max Conc. in ppm 8-hour	No. Days of Data	Max. Conc. in ppm 1-hour	Max. Conc. in ppm 8-hour	Fourth High Conc. ppm 8-hour	Old Federal > 0.124 ppm 1-hour	Current Federal > 0.070 ppm 8-hour	Federal > 0.075 ppm 8-hour	1997 Federal > 0.084 ppm 8-hour	Current State > 0.09 ppm 1-hour	Current State > 0.070 ppm 8-hour	No. Days of Data	Max Conc. in ppb 1-hour	98th Percentile Conc. ppb 1-hour	Annual Average AAM Conc. ppb	No. Days of Data	Max. Conc. in ppb 1-hour	99th Percentile Conc. ppb 1-hour
LOS ANGELES COUNTY																						
1	Central LA	087	365	1.9	1.6	364	0.116	0.086	0.080	0	14	9	2	6	14	364	80.6	61.7	20.5	356	5.7	2.6
2	Northwest Coastal LA County	091	227*	2.0	1.2	228*	0.099	0.077	0.069	0	3	1	0	1	3	229*	55.7	46.2	10.2	--	--	--
3	Southwest Coastal LA County	820	361	2.1	1.6	364	0.086	0.070	0.064	0	0	0	0	0	0	324	72.2	54.8	9.3	365	9.5	6.6
4	South Coastal LA County 1	072	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	South Coastal LA County 2	077	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--
4	South Coastal LA County 3	033	357	3.9	2.6	362	0.082	0.068	0.062	0	0	0	0	0	0	358	89.5	72.9	17.9	361	19.7	14.3
4	I-710 Near Road##	032	--	--	--	--	--	--	--	--	--	--	--	--	--	364	115.5	82.5	25.4	--	--	--
6	West San Fernando Valley	074	365	3.0	2.5	365	0.140	0.114	0.095	4	64	44	15	26	64	337	62.5	54.2	12.9	--	--	--
8	West San Gabriel Valley	088	365	2.2	1.7	365	0.139	0.100	0.092	2	36	25	6	18	36	361	72.3	59.3	15.3	--	--	--
9	East San Gabriel Valley 1	060	365	1.8	0.9	365	0.152	0.114	0.107	7	62	43	21	38	62	365	65.6	51.1	15.8	--	--	--
9	East San Gabriel Valley 2	591	365	0.8	0.6	365	0.157	0.121	0.111	9	60	48	23	45	60	365	55.5	44.5	10.0	--	--	--
10	Pomona/Walnut Valley	075	365	2.0	1.6	360	0.147	0.114	0.106	5	35	20	11	18	35	360	81.2	62.9	20.5	--	--	--
11	South San Gabriel Valley	085	357	2.5	2.2	354	0.118	0.086	0.079	0	9	4	1	7	9	357	75.0	63.7	19.6	--	--	--
12	South Central LA County	112	365	6.1	4.6	352	0.092	0.076	0.072	0	5	1	0	0	5	365	99.1	66.8	16.1	--	--	--
13	Santa Clarita Valley	090	354	1.3	0.8	365	0.151	0.128	0.104	5	73	53	31	45	73	354	57.6	38.3	10.5	--	--	--
ORANGE COUNTY																						
16	North Orange County	3177	365	3.8	1.7	357	0.113	0.086	0.082	0	12	8	1	5	12	365	76.2	61.3	14.5	--	--	--
17	Central Orange County	3176	365	2.5	2.1	365	0.090	0.076	0.073	0	4	2	0	0	4	353	81.2	63.5	14.2	--	--	--
17	I-5 Near Road##	3131	364	3.0 e	2.6	--	--	--	--	--	--	--	--	--	--	365	86.4	64.1	22.5	--	--	--
18	North Coastal Orange County	3195	181*	1.7	1.4	181*	0.088	0.080	0.073	0	4	1	0	0	4	181*	45.3	42.2	7.9	181*	1.9	1.7
19	Saddleback Valley	3812	340	1.4	0.9	365	0.103	0.083	0.082	0	25	14	0	3	25	--	--	--	--	--	--	--
RIVERSIDE COUNTY																						
22	Corona/Norco Area	4155	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	365	1.9	1.7	365	0.145	0.118	0.102	2	81	58	32	47	81	365	63.0	57.9	15.0	365	2.5	1.9
23	Metropolitan Riverside County 3	4165	365	2.2	2.0	362	0.144	0.111	0.102	2	64	48	21	41	64	365	65.1	51.9	13.2	--	--	--
24	Perris Valley	4149	--	--	--	365	0.120	0.105	0.094	0	80	52	22	33	80	--	--	--	--	--	--	--
25	Lake Elsinore	4158	365	1.2	0.8	365	0.121	0.098	0.093	0	54	35	15	23	54	365	49.0	38.3	8.2	--	--	--
26	Temecula Valley	4031	--	--	--	365	0.104	0.088	0.086	0	47	26	6	4	47	--	--	--	--	--	--	--
29	San Gorgonio Pass	4164	--	--	--	365	0.128	0.105	0.101	2	82	64	32	50	82	359	56.3	46.0	8.0	--	--	--
30	Coachella Valley 1**	4137	365	1.0	0.5	365	0.113	0.097	0.093	0	57	36	13	18	57	362	42.5	37.7	6.5	--	--	--
30	Coachella Valley 2**	4157	--	--	--	365	0.107	0.093	0.087	0	44	27	8	8	44	--	--	--	--	--	--	--
30	Coachella Valley 3**	4032	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY																						
32	Northwest San Bernardino Valley	5175	365	1.9	1.4	365	0.150	0.127	0.112	9	87	72	42	66	87	365	64.1	48.7	15.3	--	--	--
33	I-10 Near Road##	5035	359	4.2	1.3	--	--	--	--	--	--	--	--	--	--	362	86.0	77.3	28.8	--	--	--
33	CA-60 Near Road##	5036	--	--	--	--	--	--	--	--	--	--	--	--	--	358	93.2	76.3	32.1	--	--	--
34	Central San Bernardino Valley 1	5197	365	1.6	1.3	361	0.137	0.118	0.095	2	49	38	16	33	49	345	69.2	58.4	18.3	365	3.9	2.1
34	Central San Bernardino Valley 2	5203	357	2.5	2.3	365	0.158	0.136	0.114	14	112	88	57	81	112	365	65.8	56.5	15.9	--	--	--
35	East San Bernardino Valley	5204	--	--	--	363	0.156	0.135	0.109	9	114	89	60	79	114	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	--	--	--	359	0.146	0.121	0.114	11	110	90	63	76	110	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--
99	DISTRICT MAXIMUM			6.1	4.6		0.158	0.136	0.114	14	114	90	63	81	114		115.5	82.5	32.1		19.7	14.3
99	SOUTH COAST AIR BASIN			6.1	4.6		0.158	0.136	0.114	26	145	122	82	109	145		115.5	82.5	32.1		19.7	14.3

* Incomplete data ** Salton Sea Air Basin -- Pollutant not monitored ppm - Parts Per Million parts of air, by volume ppb – Parts Per Billion parts of air, by volume
AAM = Annual Arithmetic Mean ## Four near-road sites measuring one or more of the pollutants $PM_{2.5}$, CO and/or NO_2 are operating near freeways: I-5, I-10, I-710 and CA-60.

a) - The federal and state 8-hour standards (9 ppm and 9.0 ppm) were not exceeded. The federal and state 1-hour CO standards (35 ppm and 20 ppm) were not exceeded either.
b) - The current (2015) O_3 federal standard was revised effective December 28, 2015.
c) - The NO_2 federal 1-hour standard is 100 ppb and the annual standard is annual arithmetic mean NO_2 > 0.0534 ppm (53.4 ppb). The state 1-hour and annual standards are 0.18 ppm and 0.030 ppm.
d) – The federal SO_2 1-hour standard is 75 ppb (0.075 ppm). The state standards are 1-hour average SO_2 > 0.25 ppm (250 ppb) and 24-hour average SO_2 > 0.04 ppm (40 ppb).
e) - Previous value of 8.4 ppm was invalidated due to data quality issues

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182
www.aqmd.gov

For information on the current standard levels and most recent revisions please refer to "Appendix II – Current Air Quality" of the "2016 AQMP" which can be accessed at http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/appendix-ii-final-2012.pdf?sfvrsn=4. Maps showing the source/receptor area boundaries can be accessed via the Internet by entering your address in the AQMD Current Hourly Air Quality Map, at http://www.aqmd.gov/aqimap. A printed map or copy of the AQMP Appendix II is also available free of charge from the AQMD Public Information Center at 1-800-CUT-SMOG.

2017 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2017

Source/Receptor Area No.	Location	Station No.	Suspended Particulates PM10 [e] No. Days of Data	Max. Conc. in µg/m³ 24-hour	No. (%) Samples Exceeding Standards Federal > 150 µg/m³ 24-hour	No. (%) Samples Exceeding Standards State > 50 µg/m³ 24-hour	Annual. Average Conc. [f] (AAM) µg/m³	Fine Particulates PM2.5 [g] No. Days of Data	Max. Conc. in µg/m³ 24-hour	98th Percentile Conc. in µg/m³ 24-hour	No (%) Samples Exceeding Federal Std > 35 µg/m³ 24-hour	Annual. Average Conc. [h] (AAM) µg/m³	Lead [i] Max. Monthly Average Conc. µg/m³	Max. 3-Months Rolling Averages µg/m³	PM10 Sulfate [j] No. Days of Data	Max. Conc. in µg/m³ 24-hour
LOS ANGELES COUNTY																
1	Central LA	087	340	96	0	41 (12%)	34.4	358	49.20	27.80	5 (1.4%)	11.94	0.017	0.01	58	5.1
2	Northwest Coastal LA County	091	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Southwest Coastal LA County	820	57	46	0	0	19.8	--	--	--	--	--	0.005	0.00	57	5.2
4	South Coastal LA County 1	072	--	--	--	--	--	348	55.30	32.30	4 (1.1%)	10.90	--	--	--	--
4	South Coastal LA County 2	077	34*	70	0	2 (6%)	27.3	356	56.30	31.10	5 (1.4%)	11.02	0.010	0.01	34	3.1
4	South Coastal LA County 3	033	57	79	0	9 (16%)	33.3	--	--	--	--	--	--	--	45	3.8
4	I-710 Near Road##	032	--	--	--	--	--	365	85.40	35.60	8 (2.2%)	12.90	--	--	--	--
6	West San Fernando Valley	074	--	--	--	--	--	109	35.20	20.70	0	9.70	--	--	--	--
8	West San Gabriel Valley	088	--	--	--	--	--	121	22.80	18.80	0	9.68	--	--	--	--
9	East San Gabriel Valley 1	060	55	83	0	6 (11%)	31.4	115	24.90	21.20	0	10.42	0.018	0.01	55	3.9
9	East San Gabriel Valley 2	591	347	140	0	36 (10%)	31.7	--	--	--	--	--	--	--	--	--
10	Pomona/Walnut Valley	075	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	South San Gabriel Valley	085	--	--	--	--	--	119	49.50	29.50	1 (0.8%)	12.23	0.010	0.01	--	--
12	South Central LA County	112	--	--	--	--	--	119	66.70	41.30	4 (3.4%)	12.92	0.016	0.01	--	--
13	Santa Clarita Valley	090	54*	66	0	2 (4%)	23.6	--	--	--	--	--	--	--	53	4.5
ORANGE COUNTY																
16	North Orange County	3177	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Central Orange County	3176	332	128	0	17 (5%)	26.3	305*	53.90	31.20	6 (2%)	11.39	--	--	58	3.3
17	I-5 Near Road##	3131	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Saddleback Valley	3812	57	58	0	1 (2%)	18.4	113	19.50	15.00	0	8.11	--	--	57	3.0
RIVERSIDE COUNTY																
22	Norco/Corona	4155	56	85	0	7 (13%)	31.2	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	366	138	0	103 (28%)	41.6	353	50.30	29.50	6 (1.7%)	12.18	0.008	0.01	119	4.0
23	Metropolitan Riverside County 3+	4165	359	144	0	194 (54%)	54.4	358	62.20	39.80	9 (2.5%)	13.40	--	--	58	3.3
24	Perris Valley	4149	59	75	0	11 (19%)	32.2	--	--	--	--	--	--	--	59	3.0
25	Lake Elsinore	4158	364	133	0	9 (2%)	22.5	--	--	--	--	--	--	--	--	--
26	Temecula Valley	4031	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29	San Gorgonio Pass	4164	59	97	0	1 (2%)	22.4	--	--	--		--	--	--	59	2.8
30	Coachella Valley 1**	4137	363	93	0	7 (2%)	21.0	114	14.50	12.80	0	6.05	--	--	56	2.8
30	Coachella Valley 2**	4157	363	128	0	43 (12%)	34.0	110	18.80	14.70	0	8.10	--	--	118	3.4
30	Coachella Valley 3**+	4032	317	150	0	76 (24%)	42.0	--	--	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY																
32	Northwest San Bernardino Valley	5175	320	106	0	26 (8%)	31.5	--	--	--	--	--	0.004	0.00	--	--
33	I-10 Near Road##	5035	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33	CA-60 Near Road##	5036	--	--	--	--	--	359	44.80	34.50	7 (1.9%)	14.43	--	--	--	--
34	Central San Bernardino Valley 1	5197	43*	75	0	7 (16%)	39.3	120	39.20	26.50	1 (0.8%)	12.04	--	--	43	3.7
34	Central San Bernardino Valley 2+	5203	356	86	0	35 (10%)	30.9	116	38.20	25.60	1 (0.9%)	11.43	0.010	0.01	59	3.6
35	East San Bernardino Valley	5204	59	77	0	2 (3%)	25.8	--	--	--	--	--	--	--	59	3.2
37	Central San Bernardino Mountains	5181	55	56	0	2 (4%)	17.6	--	--	--	--	--	--	--	55	2.4
38	East San Bernardino Mountains	5818	--	--	--	--	--	49	23.50	23.50	0	5.85	--	--	--	--
	DISTRICT MAXIMUM			150	0	194	54.4		85.40	41.3	9	14.43	0.018	0.01		5.2
	SOUTH COAST AIR BASIN			144	0	207	54.4		85.40	41.3	15	14.43	0.018	0.01		5.2

* Incomplete data ** Salton Sea Air Basin µg/m³ - Micrograms per cubic meter of air AAM = Annual Arithmetic Mean -- - Pollutant not monitored

Four near-road sites measuring one or more of the pollutants PM2.5, CO and/or NO2 are operating near the following freeways: I-5, I-10, I-710 and CA-60.

\+ High PM10 (≥ 155 µg/m3) data recorded in Coachella Valley (due to high winds) and the Basin (due to Independence Day fireworks and high winds) are excluded in accordance with the U.S. EPA Exceptional Event Rule.

e) – PM10 statistics listed above are based on combined Federal Reference Method (FRM) and Federal Equivalent Method (FEM) data.

f) - State annual average (AAM) PM10 standard is > 20 µg/m³. Federal annual PM10 standard (AAM > 50 µg/m³) was revoked in 2006.

g) - PM2.5 statistics listed above are for the FRM data only. FEM PM2.5 continuous monitoring instruments were operated at some of the above locations for real-time alerts and forecasting only.

h) - Both Federal and State standards are annual average (AAM) > 12.0 µg/m³.

i) - Federal lead standard is 3-months rolling average > 0.15 µg/m³; state standard is monthly average ≥ 1.5 µg/m³. .Lead standards were not exceeded.

j) - State sulfate standard is 24-hour ≥ 25 µg/m³. There is no federal standard for sulfate. Sulfate data is not available at this time.

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2018 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2018

Source/Receptor Area No.	Location	Station No.	Carbon Monoxide a)			Ozone b)										Nitrogen Dioxide c)				Sulfur Dioxide d)		
										No. Days Standard Exceeded												
			No. Days of Data	Max Conc. in ppm 1-hour	Max Conc. in ppm 8-hour	No. Days of Data	Max. Conc. in ppm 1-hour	Max. Conc. in ppm 8-hour	Fourth High Conc. ppm 8-hour	Old Federal > 0.124 ppm 1-hour	Current Federal > 0.070 ppm 8-hour	2008 Federal > 0.075 ppm 8-hour	1997 Federal > 0.084 ppm 8-hour	Current State > 0.09 ppm 1-hour	Current State > 0.070 ppm 8-hour	No. Days of Data	Max Conc. in ppb 1-hour	98th Percentile Conc. ppb 1-hour	Annual Average AAM Conc. ppb	No. Days of Data	Max. Conc. in ppb 1-hour	99th Percentile Conc. ppb 1-hour
LOS ANGELES COUNTY																						
1	Central LA	087	365	2.0	1.7	359	0.098	0.073	0.071	0	4	0	0	2	4	365	70.1	57.2	18.5	358	17.9	2.8
2	Northwest Coastal LA County	091	359	1.6	1.3	364	0.094	0.073	0.068	0	2	0	0	0	2	242	64.7	46.1	12.6	--	--	--
3	Southwest Coastal LA County	820	342	1.8	1.5	365	0.074	0.065	0.060	0	0	0	0	0	0	338	59.6	49.8	9.2	365	11.5	5.3
4	South Coastal LA County 1	072	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	South Coastal LA County 2	077	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	South Coastal LA County 3	033	364	4.7	2.1	363	0.074	0.063	0.053	0	0	0	0	0	0	359	85.3	62.7	17.3	365	10.5	9.4
4	I-710 Near Road##	032	--	--	--	--	--	--	--	--	--	--	--	--	--	355	90.3	79.1	22.3	--	--	--
6	West San Fernando Valley	074	359	3.4	2.1	362	0.120	0.101	0.094	0	49	23	12	14	49	365	57.2	50.1	12.1	--	--	--
8	West San Gabriel Valley	088	365	2.0	1.4	365	0.112	0.090	0.085	0	19	8	4	8	19	364	68.2	54.4	14.4	--	--	--
9	East San Gabriel Valley 1	060	365	1.4	1.0	364	0.139	0.099	0.097	3	42	23	10	24	42	363	70.8	56.8	14.9	--	--	--
9	East San Gabriel Valley 2	591	365	1.0	0.8	365	0.140	0.104	0.102	5	46	27	10	32	46	349	55.2	44.2	9.7	--	--	--
10	Pomona/Walnut Valley	075	365	2.1	1.8	362	0.112	0.092	0.081	0	10	8	3	7	10	365	67.9	60.4	19.4	--	--	--
11	South San Gabriel Valley	085	344	2.0	1.8	352	0.115	0.082	0.074	0	5	2	0	3	5	356	76.8	59.7	18.3	--	--	--
12	South Central LA County	112	357	4.7	3.5	365	0.075	0.063	0.058	0	0	0	0	0	0	335	68.3	55.6	15.0	--	--	--
13	Santa Clarita Valley	090	365	1.0	0.8	365	0.132	0.106	0.097	3	52	36	12	21	52	365	58.9	37.9	10.9	--	--	--
ORANGE COUNTY																						
16	North Orange County	3177	365	3.0	1.4	365	0.111	0.077	0.071	0	4	3	0	3	4	365	67.1	50.4	13.0	--	--	--
17	Central Orange County	3176	358	2.3	1.9	365	0.112	0.071	0.065	0	1	0	0	1	1	365	66.0	54.5	13.7	--	--	--
17	I-5 Near Road##	3131	320	2.7	2.2	--	--	--	--	--	--	--	--	--	--	348	61.7	55.8	20.8	--	--	--
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Saddleback Valley	3812	300	1.2	0.9	365	0.121	0.088	0.074	0	9	2	2	2	9	--	--	--	--	--	--	--
RIVERSIDE COUNTY																						
22	Corona/Norco Area	4155	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	365	2.2	2.0	365	0.123	0.101	0.096	0	53	34	14	22	53	364	55.4	50.5	14.3	360	1.7	1.6
23	Metropolitan Riverside County 3	4165	358	2.6	2.4	355	0.129	0.107	0.097	1	57	32	12	21	57	358	54.5	50.4	13.7	--	--	--
24	Perris Valley	4149	--	--	--	365	0.117	0.103	0.095	0	67	47	19	31	67	--	--	--	--	--	--	--
25	Lake Elsinore	4158	361	1.1	0.8	365	0.116	0.095	0.089	0	30	26	7	16	30	359	41.3	36.4	8.5	--	--	--
26	Temecula Valley	4031	--	--	--	363	0.107	0.085	0.077	0	15	5	1	2	15	--	--	--	--	--	--	--
29	San Gorgonio Pass	4164	--	--	--	363	0.119	0.106	0.100	0	69	43	22	33	69	344	50.6	46.5	8.5	--	--	--
30	Coachella Valley 1**	4137	349	1.1	0.8	362	0.111	0.099	0.093	0	56	22	10	11	56	364	42.6	35.4	6.8	--	--	--
30	Coachella Valley 2**	4157	--	--	--	359	0.106	0.091	0.089	0	49	28	8	4	49	--	--	--	--	--	--	--
30	Coachella Valley 3**	4032	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY																						
32	Northwest San Bernardino Valley	5175	365	1.7	1.2	363	0.133	0.111	0.106	6	52	32	14	25	52	355	58.7	48.9	14.7	--	--	--
33	I-10 Near Road##	5035	339	1.6	1.3	--	--	--	--	--	--	--	--	--	--	339	88.3	67.7	27.2	--	--	--
33	CA-60 Near Road##	5036	--	--	--	--	--	--	--	--	--	--	--	--	--	357	79.4	71.3	30.4	--	--	--
34	Central San Bernardino Valley 1	5197	365	1.9	1.1	365	0.141	0.111	0.106	7	69	47	18	38	69	365	63.0	55.9	18.3	362	2.9	2.5
34	Central San Bernardino Valley 2	5203	362	2.7	2.5	362	0.138	0.116	0.107	7	102	71	33	63	102	362	57.3	49.9	15.8	--	--	--
35	East San Bernardino Valley	5204	--	--	--	365	0.136	0.114	0.111	4	94	66	26	53	94	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	--	--	--	362	0.142	0.125	0.105	3	113	91	46	57	113	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	DISTRICT MAXIMUM			4.7	3.5		0.142	0.125	0.111	7	113	91	46	63	113		90.3	79.1	30.4		17.9	9.4
	SOUTH COAST AIR BASIN			4.7	3.5		0.142	0.125	0.111	10	141	108	59	84	141		90.3	79.1	30.4		17.9	9.4

** Salton Sea Air Basin -- Pollutant not monitored ppm - Parts Per Million parts of air, by volume ppb – Parts Per Billion parts of air, by volume
AAM = Annual Arithmetic Mean ## Four near-road sites measuring one or more of the pollutants $PM_{2.5}$, CO and/or NO_2 are operating near freeways: I-5, I-10, I-710 and CA-60.

a) - The federal and state 8-hour CO standards (9 ppm and 9.0 ppm) and the federal and state 1-hour CO standards (35 ppm and 20 ppm) were not exceeded.
b) - The current (2015) O_3 federal standard was revised effective December 28, 2015.
c) - The NO_2 federal 1-hour standard is100 ppb and the federal annual standard is 53.4 ppb. The state 1-hour and annual standards are 0.18 ppm and 0.030 ppm, respectively.
d) – The federal SO_2 1-hour standard is 75 ppb (0.075 ppm). The state 1-hour SO standard is 0.25 ppm (250 ppb) and the state 24-hour SO_2 standard is 0.04 ppm (40 ppb).

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182
www.aqmd.gov

For information on the current standard levels and most recent revisions please refer to "Appendix II – Current Air Quality" of the "2016 AQMP" which can be accessed athttps://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp . Maps showing the source/receptor area boundaries can be accessed via the Internet by entering your address in the South Coast AQMD Current Hourly Air Quality Map, at https://www.aqmd.gov/aqimap. A printed map or copy of the AQMP Appendix II is also available free of charge from the South Coast AQMD Public Information Center at 1-800-CUT-SMOG.

2018 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2018

Source/Receptor Area No.	Location	Station No.	Suspended Particulates PM10 e)+ No. Days of Data	Max. Conc. in µg/m³ 24-hour	No. (%) Samples Exceeding Standards Federal > 150 µg/m³ 24-hour	No. (%) Samples Exceeding Standards State > 50 µg/m³ 24-hour	Annual. Average Conc. f) (AAM) µg/m³	Fine Particulates PM2.5 g)# No. Days of Data	Max. Conc. in µg/m³ 24-hour	98th Percentile Conc. in µg/m³ 24-hour	No (%) Samples Exceeding Federal Std. > 35 µg/m³ 24-hour	Annual. Average Conc. h) (AAM) µg/m³	Lead i)++ Max. Monthly Average Conc. µg/m³	Max. 3-Months Rolling Averages µg/m³	PM10 Sulfate j) No. Days of Data	Max. Conc. in µg/m³ 24-hour
LOS ANGELES COUNTY																
1	Central LA	087	363	81	0	31 (9%)	34.1	344	43.80	30.50	3 (0.9%)	12.58	0.011	0.011	53	4.5
2	Northwest Coastal LA County	091	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Southwest Coastal LA County	820	48	45	0	0	20.5	--	--	--	--	--	0.005	0.004	48	5.2
4	South Coastal LA County 1	072	--	--	--	--	--	342	46.40	29.80	2 (0.6%)	10.99	--	--	--	--
4	South Coastal LA County 2	077	58	55	0	1 (2%)	23.9	330	47.10	27.70	2 (0.6%)	11.15	0.006	0.007	58	4.0
4	South Coastal LA County 3	033	57	84	0	4 (7%)	32.3	--	--	--	--	--	--	--	57	5.0
4	I-710 Near Road##	032	--	--	--	--	--	359	46.10	31.90	4 (1.1%)	12.75	--	--	--	--
6	West San Fernando Valley	074	--	--	--	--	--	106	31.00	22.60	0	10.32	--	--	--	--
8	West San Gabriel Valley	088	--	--	--	--	--	121	32.50	29.50	0	10.28	--	--	--	--
9	East San Gabriel Valley 1	060	60	78	0	10 (17%)	32.2	119	30.20	25.90	0	10.35	--	--	60	4.0
9	East San Gabriel Valley 2	591	317	101	0	20 (6%)	27.1	--	--	--	--	--	--	--	--	--
10	Pomona/Walnut Valley	075	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	South San Gabriel Valley	085	--	--	--	--	--	113	35.40	28.10	0	12.31	0.009	0.009	--	--
12	South Central LA County	112	--	--	--	--	--	117	43.00	34.20	1 (0.9%)	12.96	0.009	0.011	--	--
13	Santa Clarita Valley	090	54	49	0	0	23.4	--	--	--	--	--	--	--	54	3.5
ORANGE COUNTY																
16	North Orange County	3177	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Central Orange County	3176	320	129	0	13 (4%)	27.2	353	54.10	28.90	3 (0.8%)	11.02	--	--	61	4.1
17	I-5 Near Road##	3131	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Saddleback Valley	3812	59	55	0	1 (2%)	19.0	107	20.80	18.50	0	8.31	--	--	59	4.0
RIVERSIDE COUNTY																
22	Corona/Norco Area	4155	58	100	0	3 (5%)	30.2	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	356	126	0	132 (37%)	44.0	354	50.70	26.30	2 (0.6%)	12.41	0.009	0.007	117	4.1
23	Metropolitan Riverside County 3	4165	354	148	0	168 (47%)	49.4	349	64.80	32.80	4 (1.1%)	13.87	--	--	59	3.5
24	Perris Valley	4149	60	64	0	3 (5%)	29.7	--	--	--	--	--	--	--	60	3.2
25	Elsinore Valley	4158	342	104	0	9 (3%)	22.4	--	--	--	--	--	--	--	--	--
26	Temecula Valley	4031	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29	San Gorgonio Pass	4164	61	39	0	0	19.4	--	--	--	--	--	--	--	61	2.9
30	Coachella Valley 1**	4137	359	117	0	7 (2%)	21.0	122	30.20	14.30	0	6.02	--	--	61	2.7
30	Coachella Valley 2**	4157	353	146	0	43 (12%)	33.2	122	28.70	17.00	0	8.32	--	--	118	3.7
30	Coachella Valley 3**	4032	352	274	2 (1%)	63 (18%)	38.8	--	--	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY																
32	Northwest San Bernardino Valley	5175	322	73	0	14 (4%)	32.3	--	--	--	--	--	--	--	--	--
33	I-10 Near Road##	5035	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33	CA-60 Near Road##	5036	--	--	--	--	--	357	47.90	30.40	5 (1.4%)	14.31	--	--	--	--
34	Central San Bernardino Valley 1	5197	56	64	0	9 (16%)	34.1	110	29.20	26.80	0	11.13	--	--	56	3.9
34	Central San Bernardino Valley 2	5203	355	129	0	25 (7%)	30.2	114	30.10	22.90	0	11.17	0.008	0.008	58	3.8
35	East San Bernardino Valley	5204	59	74	0	2 (3%)	25.9	--	--	--	--	--	--	--	59	3.6
37	Central San Bernardino Mountains	5181	59	78	0	1 (2%)	19.5	--	--	--	--	--	--	--	59	2.4
38	East San Bernardino Mountains	5818	--	--	--	--	--	54	17.30	16.00	0	6.80	--	--	--	--
	DISTRICT MAXIMUM			148	0	168	49.4		64.8	34.2	5	14.31	0.011	0.011		5.2
	SOUTH COAST AIR BASIN			148	0	185	49.4		64.8	34.2	11	14.31	0.011	0.011		5.2

** Salton Sea Air Basin µg/m3 – Micrograms per cubic meter of air AAM – Annual Arithmetic Mean -- Pollutant not monitored

+ High PM10 (≥ 155 µg/m3) data recorded in the Coachella Valley and the Basin attributed to high winds are excluded because they likely meet the exclusion criteria specified in the U.S. EPA Exceptional Event Rule. Exceptional event demonstrations will be submitted to U.S. EPA for events that have regulatory significance.

PM2.5 concentrations above the 24-hour standard attributed to wildfire smoke and fireworks are excluded because they likely meet the exclusion criteria specified in the U.S. EPA Exceptional Event Rule. Exceptional event demonstrations will be submitted to U.S. EPA for events that have regulatory significance.

++ Higher lead concentrations were recorded at near-source monitoring sites immediately downwind of stationary lead sources. Maximum monthly and 3-month rolling averages recorded were 0. 096 µg/m3 and 0.059 µg/m3, respectively.

Four near-road sites measuring one or more of the pollutants PM2.5, CO and/or NO2 are operating near the following freeways: I-5, I-10, CA-60 and I-710.

e) PM10 statistics listed above are based on combined Federal Reference Method (FRM) and Federal Equivalent Method (FEM) data.

f) State annual average (AAM) PM10 standard is 20 µg/m3. Federal annual PM10 standard (50 µg/m3) was revoked in 2006.

g) PM2.5 statistics listed above are for the FRM data only. FEM PM2.5 continuous monitoring instruments were operated at some of the above locations for real-time alerts and forecasting only.

h) The federal and state annual standards are 12.0 µg/m3.

i) Federal lead standard is 3-months rolling average > 0.15 µg/m3; state standard is monthly average ³ 1.5 µg/m3. Lead standards were not exceeded.

j) State sulfate standard is 24-hour ³ 25 µg/m3. There is no federal standard for sulfate.

2019 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2019

Source/Receptor Area No.	Location	Station No.	Carbon Monoxide [a]			Ozone [b]										Nitrogen Dioxide [c]				Sulfur Dioxide [d]		
										No. Days Standard Exceeded												
			No. Days of Data	Max Conc. in ppm 1-hour	Max Conc. in ppm 8-hour	No. Days of Data	Max. Conc. in ppm 1-hour	Max. Conc. in ppm 8-hour	Fourth High Conc. ppm 8-hour	Old Federal > 0.124 ppm 1-hour	Current Federal > 0.070 ppm 8-hour	2008 Federal > 0.075 ppm 8-hour	1997 Federal > 0.084 ppm 8-hour	Current State > 0.09 ppm 1-hour	Current State > 0.070 ppm 8-hour	No. Days of Data	Max Conc. in ppb 1-hour	98th Percentile Conc. ppb 1-hour	Annual Average AAM Conc. ppb	No. Days of Data	Max. Conc. in ppb 1-hour	99th Percentile Conc. ppb 1-hour
LOS ANGELES COUNTY																						
1	Central LA	87	364	2.0	1.6	364	0.085	0.080	0.065	0	2	1	0	0	2	365	69.7	55.5	17.7	365	10.0	2.3
2	Northwest Coastal LA County	91	364	1.9	1.2	360	0.086	0.075	0.064	0	1	0	0	0	1	365	48.8	43.0	9.7	--	--	--
3	Southwest Coastal LA County	820	364	1.8	1.3	365	0.082	0.067	0.060	0	0	0	0	0	0	363	56.6	48.9	9.5	365	8.2	3.7
4	South Coastal LA County 1	72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	South Coastal LA County 2	77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	South Coastal LA County 3	33	340	3.0	2.1	343	0.074	0.064	0.055	0	0	0	0	0	0	255	71.8	56.3	16.2	344	8.9	7.7
4	I-710 Near Road##	32	--	--	--	--	--	--	--	--	--	--	--	--	--	365	97.7	78.3	22.8	--	--	--
6	West San Fernando Valley	74	363	2.6	2.2	267	0.101	0.087	0.076	0	6	4	1	1	6	365	64.4	43.8	10.7	--	--	--
8	West San Gabriel Valley	88	361	1.5	1.2	302	0.120	0.098	0.086	0	12	8	4	4	12	361	59.1	50.6	13.2	--	--	--
9	East San Gabriel Valley 1	60	361	1.6	1.1	362	0.123	0.094	0.090	0	39	21	10	34	39	365	59.7	49.8	13.7	--	--	--
9	East San Gabriel Valley 2	591	360	1.2	0.8	356	0.130	0.102	0.097	1	58	38	17	46	58	360	52.9	36.5	8.6	--	--	--
10	Pomona/Walnut Valley	75	364	1.7	1.3	365	0.096	0.083	0.077	0	12	4	0	1	12	365	64.4	57.8	17.9	--	--	--
11	South San Gabriel Valley	85	364	1.9	1.5	364	0.108	0.091	0.073	0	7	3	1	5	7	364	61.8	55.1	17.6	--	--	--
12	South Central LA County	112	363	3.8	3.2	363	0.100	0.079	0.064	0	1	1	0	1	1	363	70.0	52.8	14.1	--	--	--
13	Santa Clarita Valley	90	359	1.5	1.2	359	0.128	0.106	0.101	1	56	42	17	34	56	357	46.3	35.3	9.1	--	--	--
ORANGE COUNTY																						
16	North Orange County	3177	364	2.6	1.2	364	0.107	0.094	0.074	0	6	3	1	2	6	362	59.4	44.5	12.1	--	--	--
17	Central Orange County	3176	363	2.4	1.3	365	0.096	0.082	0.064	0	1	1	0	1	1	365	59.4	49.2	12.7	--	--	--
17	I-5 Near Road##	3131	350	2.6	1.6	--	--	--	--	--	--	--	--	--	--	365	59.4	50.4	19.2	--	--	--
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Saddleback Valley	3812	363	1.0	0.8	365	0.106	0.087	0.082	0	11	7	1	3	11	--	--	--	--	--	--	--
RIVERSIDE COUNTY																						
22	Corona/Norco Area	4155	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	364	1.5	1.2	360	0.123	0.096	0.092	0	59	37	15	24	59	365	56.0	52.8	13.5	365	1.8	1.4
23	Metropolitan Riverside County 3	4165	364	2.0	1.3	365	0.131	0.099	0.096	2	64	42	19	26	64	346	56.0	49.4	12.2	--	--	--
24	Perris Valley	4149	--	--	--	365	0.118	0.095	0.090	0	64	38	13	26	64	--	--	--	--	--	--	--
25	Lake Elsinore	4158	364	1.6	0.7	365	0.108	0.089	0.079	0	28	11	1	4	28	365	38.0	33.3	6.8	--	--	--
26	Temecula Valley	4031	--	--	--	365	0.091	0.079	0.074	0	6	2	0	0	6	--	--	--	--	--	--	--
29	San Gorgonio Pass	4164	--	--	--	365	0.119	0.096	0.093	0	59	37	11	24	59	364	56.0	43.3	7.5	--	--	--
30	Coachella Valley 1**	4137	360	1.3	0.7	364	0.100	0.084	0.083	0	34	17	0	5	34	361	41.4	32.2	7.3	--	--	--
30	Coachella Valley 2**	4157	--	--	--	365	0.103	0.087	0.083	0	43	15	2	4	43	--	--	--	--	--	--	--
30	Coachella Valley 3**	4032	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY																						
32	Northwest San Bernardino Valley	5175	337	1.5	1.1	338	0.131	0.107	0.097	1	52	34	13	31	52	328	57.9	46.4	14.0	--	--	--
33	I-10 Near Road##	5035	364	1.5	1.1	--	--	--	--	--	--	--	--	--	--	346	86.3	70.5	27.6	--	--	--
33	CA-60 Near Road##	5036	--	--	--	--	--	--	--	--	--	--	--	--	--	364	87.7	73.9	29.0	--	--	--
34	Central San Bernardino Valley 1	5197	359	2.7	1.0	364	0.124	0.109	0.097	0	67	46	20	41	67	365	76.1	57.7	17.2	358	2.4	1.9
34	Central San Bernardino Valley 2	5203	352	1.3	1.1	354	0.127	0.114	0.103	2	96	73	37	63	96	352	59.3	46.3	14.3	--	--	--
35	East San Bernardino Valley	5204	--	--	--	364	0.137	0.117	0.106	8	109	88	63	73	109	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	--	--	--	365	0.129	0.112	0.106	2	99	79	44	53	99	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	DISTRICT MAXIMUM[e]			3.8	3.2		0.137	0.117	0.106	8	109	88	63	73	109		97.7	78.3	29.0		10.0	7.7
	SOUTH COAST AIR BASIN[f]			3.8	3.2		0.137	0.117	0.106	10	126	101	71	82	126		97.7	78.3	29.0		10.0	7.7

*Incomplete Data ** Salton Sea Air Basin -- Pollutant not monitored ppm - Parts Per Million parts of air, by volume ppb – Parts Per Billion parts of air, by volume

AAM = Annual Arithmetic Mean ## Four near-road sites measuring one or more of the pollutants $PM_{2.5}$, CO and/or NO_2 are operating near freeways: I-5, I-10, I-710 and CA-60.

a) - The federal and state 8-hour CO standards (9 ppm and 9.0 ppm) and the federal and state 1-hour CO standards (35 ppm and 20 ppm) were not exceeded.

b) - The current (2015) O_3 federal standard was revised effective December 28, 2015.

c) - The NO_2 federal 1-hour standard is100 ppb and the federal annual standard is 53.4 ppb. The state 1-hour and annual standards are 0.18 ppm and 0.030 ppm.

d) - The federal SO_2 1-hour standard is 75 ppb (0.075 ppm). The state 1-hour SO standard is 0.25 ppm (250 ppb) and the state 24-hour SO_2 standard is 0.04 ppm (40 ppb).

e) - District Maximum is the maximum value calculated at any station in the South Coast AQMD Jurisdiction

f) - Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.

For information on the current standard levels and most recent revisions please refer to "Appendix II – Current Air Quality" of the "2016 AQMP" which can be accessed at https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp . Maps showing the source/receptor area boundaries can be accessed via the Internet by entering your address in the South Coast AQMD Current Hourly Air Quality Map, at https://www.aqmd.gov/aqimap. A printed map or copy of the AQMP Appendix II is also available free of charge from the South Coast AQMD Public Information Center at 1-800-CUT-SMOG.

2019 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2019

Source/Receptor Area No.	Location	Station No.	Suspended Particulates PM10 e)+ No. Days of Data	Max. Conc. in µg/m³ 24-hour	No. (%) Samples Exceeding Standards Federal > 150 µg/m³ 24-hour	No. (%) Samples Exceeding Standards State > 50 µg/m³ 24-hour	Annual. Average Conc. f) (AAM) µg/m³	Fine Particulates PM2.5 g)# No. Days of Data	Max. Conc. in µg/m³ 24-hour	98th Percentile Conc. in µg/m³ 24-hour	No (%) Samples Exceeding Federal Std. > 35 µg/m³ 24-hour	Annual. Average Conc. h) (AAM) µg/m³	Lead i)++ Max. Monthly Average Conc. µg/m³	Max. 3-Months Rolling Averages µg/m³	PM10 Sulfate j) No. Days of Data	Max. Conc. in µg/m³ 24-hour
LOS ANGELES COUNTY																
1	Central LA	087	9	62	0	3 (6%)	25.5	360	43.50	28.30	1 (0.3%)	10.85	0.012	0.010	55	5.1
2	Northwest Coastal LA County	091	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Southwest Coastal LA County	820	59	62	0	2 (3%)	19.2	--	--	--	--	--	0.004	0.004	--	--
4	South Coastal LA County 1	072	--	--	--	--	--	159	28.00	20.70	0	9.23	--	--	--	--
4	South Coastal LA County 2	077	60	72	0	2 (3%)	21.0	354	30.60	23.20	0	9.22	0.006	0.005	--	--
4	South Coastal LA County 3	033	58	74	0	3 (5%)	26.9	--	--	--	--	--	--	--	59	5.8
4	I-710 Near Road##	032	--	--	--	--	--	365	36.70	26.40	1 (0.3%)	10.99	--	--	--	--
6	West San Fernando Valley	074	--	--	--	--	--	118	30.00	26.30	0	9.16	--	--	--	--
8	West San Gabriel Valley	088	--	--	--	--	--	118	30.90	24.60	0	8.90	--	--	--	--
9	East San Gabriel Valley 1	060	61	82	0	4 (7%)	28.1	120	28.30	21.20	0	9.18	--	--	61	6.2
9	East San Gabriel Valley 2	591	308	97	0	3 (1%)	20.8	--	--	--	--	--	--	--	--	--
10	Pomona/Walnut Valley	075	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	South San Gabriel Valley	085	--	--	--	--	--	119	29.60	24.40	0	10.34	0.009	0.007	--	--
12	South Central LA County	112	--	--	--	--	--	303	39.50	26.60	1 (0.3%)	10.87	0.009	0.007	--	--
13	Santa Clarita Valley	090	60	62	0	1 (2%)	18.4	--	--	--	--	--	--	--	--	--
ORANGE COUNTY																
16	North Orange County	3177	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Central Orange County	3176	364	127	0	13 (4%)	21.9	346	36.10	23.30	3 (0.9%)	9.32	--	--	60	5.1
17	I-5 Near Road##	3131	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Saddleback Valley	3812	60	45	0	0	16.6	111	20.80	14.70	0	7.11	--	--	--	--
RIVERSIDE COUNTY																
22	Corona/Norco Area	4155	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	120	99	0	21 (18%)	34.4	352	46.70	31.80	4 (1.1%)	11.13	0.008	0.007	121	14.6
23	Metropolitan Riverside County 3	4165	362	143	0	130 (36%)	43.1	356	46.70	36.20	9 (2.5%)	12.53	--	--	--	--
24	Perris Valley	4149	61	97	0	4 (7%)	25.3	--	--	--	--	--	--	--	--	--
25	Elsinore Valley	4158	301	93	0	5 (2%)	18.7	--	--	--	--	--	--	--	--	--
26	Temecula Valley	4031	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29	San Gorgonio Pass	4164	56	63	0	2 (4%)	17.9	--	--	--	--	--	--	--	--	--
30	Coachella Valley 1**	4137	346	75	0	5 (1%)	19.5	119	15.50	12.40	0	6.05	--	--	--	--
30	Coachella Valley 2**	4157	361	141	0	27 (7%)	27.8	118	15.00	13.50	0	7.37	--	--	119	3.2
30	Coachella Valley 3**	4032	324	154	0	44 (14%)	33.3	--	--	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY																
32	Northwest San Bernardino Valley	5175	306	125	0	7 (2%)	28.1	--	--	--	--	--	--	--	--	--
33	I-10 Near Road##	5035	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33	CA-60 Near Road##	5036	--	--	--	--	--	364	41.30	30.70	5 (1.4%)	12.70	--	--	--	--
34	Central San Bernardino Valley 1	5197	61	88	0	12 (20%)	34.8	114	46.50	29.70	2 (1.8%)	10.84	--	--	62	5.2
34	Central San Bernardino Valley 2	5203	269	112	0	36 (13%)	29.9	97	34.80	33.00	0	10.06	0.013	0.011	--	--
35	East San Bernardino Valley	5204	59	44	0	0	21.2	--	--	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	54	38	0	0	16.1	--	--	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	46	31.00	31.00	0	5.94	--	--	--	--
	DISTRICT MAXIMUM k)			154	0	130	43.1		46.7	36.2	9	12.70	0.013	0.011		14.6
	SOUTH COAST AIR BASIN m)			143	0	137	43.1		46.7	36.2	10	12.70	0.013	0.011		14.6

* Incomplete data due to the site improvement. ** Salton Sea Air Basin µg/m³ – Micrograms per cubic meter of air AAM – Annual Arithmetic Mean -- Pollutant not monitored

\+ High PM10 (≥ 155 µg/m3) data recorded in the Coachella Valley and the Basin (due to high winds) are excluded because they likely meet the exclusion criteria specified in the U.S. EPA Exceptional Event Rule. Exceptional event demonstrations will be submitted to U.S. EPA for events that have regulatory significance.

\# PM2.5 concentrations above the 24-hour standard attributed to wildfire smoke and fireworks are excluded because they likely meet the exclusion criteria specified in the U.S. EPA Exceptional Event Rule. Exceptional event demonstrations will be submitted to U.S. EPA for events that have regulatory significance.

e) PM10 statistics listed above are based on combined Federal Reference Method (FRM) and Federal Equivalent Method (FEM) data.

f) State annual average (AAM) PM10 standard is > 20 µg/m3. Federal annual PM10 standard (AAM > 50 µg/m3) was revoked in 2006.

g) PM2.5 statistics listed above are for the FRM data only. FEM PM2.5 continuous monitoring instruments were operated at some of the above locations for real-time alerts and forecasting only.

h) Both Federal and State standards are annual average (AAM) > 12.0 µg/m3.

i) Federal lead standard is 3-months rolling average > 0.15 µg/m3; state standard is monthly average ³ 1.5 µg/m3. Lead standards were not exceeded.

j) State sulfate standard is 24-hour ³ 25 µg/m3. There is no federal standard for sulfate.

k) District Maximum is the maximum value calculated at any station in the South Coast AQMD Jurisdiction

m) Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.

++ Higher lead concentrations were recorded at near-source monitoring sites immediately downwind of stationary lead sources. Maximum monthly and 3-month rolling averages recorded were 0. 021 µg/m3 and 0.017 µg/m3, respectively.

Four near-road sites measuring one or more of the pollutants PM2.5, CO and/or NO2 are operating near the following freeways: I-5, I-10, CA-60 and I-710.

Monitor Values Report

Geographic Area: Los Angeles County, CA
Pollutant: SO2
Year: 2017
Exceptional Events: Included (if any)

Note: The * indicates the mean does not satisfy minimum data completeness criteria.

Obs 1hr	First Max 1hr	Second Max 1hr	99th Percentile	Obs 24hr	First Max 24hr	Second Max 24hr	Days >STD	Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
8383	5.7	3	3	350	1.5	1.4	0	0.36	None	9	060371103	1630 N Main St, Los Angeles	Los Angeles	Los Angeles	CA	09
8557	19.7	15.7	14	360	3.2	2.9	0	0.85	None	1	060374006	2425 Webster St., Long Beach, Ca	Long Beach	Los Angeles	CA	09
8459	9.5	7.8	7	352	2.5	1.9	0	0.67	None	1	060375005	7201 W. Westchester Parkway	Los Angeles	Los Angeles	CA	09

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated: January 26, 2021

Monitor Values Report

Geographic Area: Los Angeles County, CA
Pollutant: SO2
Year: 2018
Exceptional Events: Included (if any)

Note: The * indicates the mean does not satisfy minimum data completeness criteria.

Obs 1hr	First Max 1hr	Second Max 1hr	99th Percentile	Obs 24hr	First Max 24hr	Second Max 24hr	Days >STD	Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
8392	17.9	2.9	3	350	1.3	1	0	0.34	None	9	060371103	1630 N Main St, Los Angeles	Los Angeles	Los Angeles	CA	09
8634	10.5	9.9	9	359	2	2	0	0.7	None	1	060374006	2425 Webster St., Long Beach, Ca	Long Beach	Los Angeles	CA	09
8580	11.5	5.8	5	358	2	1.3	0	0.51	None	1	060375005	7201 W. Westchester Parkway	Los Angeles	Los Angeles	CA	09

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Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated: January 26, 2021

Monitor Values Report

Geographic Area: Los Angeles County, CA
Pollutant: SO2
Year: 2019
Exceptional Events: Included (if any)

Note: The * indicates the mean does not satisfy minimum data completeness criteria.

Obs 1hr	First Max 1hr	Second Max 1hr	99th Percentile	Obs 24hr	First Max 24hr	Second Max 24hr	Days >STD	Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
8621	10	2.8	2	361	1.4	1.1	0	0.33	None	9	060371103	1630 N Main St, Los Angeles	Los Angeles	Los Angeles	CA	09
8094	8.9	8.7	8	339	2.2	2.1	0	0.45	None	1	060374006	2425 Webster St., Long Beach, Ca	Long Beach	Los Angeles	CA	09
8625	8.2	5.5	4	360	1.1	1.1	0	0.29	None	1	060375005	7201 W. Westchester Parkway	Los Angeles	Los Angeles	CA	09

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