


ENGINEERING EVALUATION AUTHORITY TO CONSTRUCT

Facility Name: South Bay Union School District
Equipment Type: 34H – Emergency Diesel Engine
Application #: APCD2023-APP-007801
ID#: APCD2017-SITE-02550
Equipment/Facility Address: 601 Elm Ave, Imperial Beach, CA 91932
Facility Contact: Francisco Franco
(619) 628-5382
ffranco@sbusd.org
 Recoverable Signature

X Fahmy Attar

Air Pollution Control Engineer

Permit Engineer:

Signed by: Fahmy Attar

3/26/2024

X Nicholas Horres

Senior Air Pollution Control Engineer

Senior Engineer Signature:

Signed by: NHorres

1.0 Background

1.1 Type of Application: Replacement of an emergency natural gas engine with an emergency diesel engine/generator.

1.2 Permit History: This application is to replace APCD2018-PTO-003119.

1.3 Facility Description: This site is a school district office. There is only one active emergency natural gas engine permitted under APCD2018-PTO-003119, and it is being replaced by this application.

1.4 Other Background Info: The facility does not have any active permits with APCD. There are no hearing board actions, permit denials, legal settlements, NOV, or nuisance complaints. This site is not a Title V facility.

2.0 Process Description

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2.1 Equipment Description.

Emergency Diesel Engine Generator replacing engine under APCD2018-PTO-003119:
 Make: Mitsubishi,
 Model: D04EG-TAA,
 S/N: 51455,
 Maximum Horsepower Rating: 85 bhp,
 EPA Certification: Tier 3, Engine Family NMVXL03.3CBB;
 Engine equipped with a MIRATECH® LTR™ DOC/DPF diesel particulate filter, CARB executive order DE-14-005-07, EPA Family CA/MES/2014/PM3+/N00/ST/DPF01;
 Driving a 50-kW emergency electrical generator.

2.2 Process Description.

This is a diesel powered generator to be used in situations of emergency and for limited operations for maintenance and testing purposes.

2.3 Emissions Controls.

This is a Tier 3 certified diesel engine. It is equipped with a DPF aftermarket control.

2.4 Attachments.

Generator specification sheet.

3.0 Emissions

3.1 Emissions estimate summary. Estimated emissions from the process are shown below.

Table 3.1: Estimated PTE for APCD2023-APP-007801 criteria pollutants

Compound	Emission Factor	Hourly Emissions	Daily Emissions	Annual Emissions	
	g/bhp-hr	lbs/hr	lbs/day	tons/year	lbs/yr
NO _x	2.35	0.44	10.57	0.011	22.02
CO	0.32	0.060	1.44	0.0015	3.01
NMHC	0.12	0.023	0.56	0.00058	1.16
PM10	0.013	0.0025	0.060	0.000063	0.126
SO _x	NA	0.00097	0.023	0.000024	0.048

Table 3.2: Estimated Pre-Project PTE for APCD2017-APP-005191 criteria pollutants

Compound	Hourly Emissions	Daily Emissions	Annual Emissions	
	lbs/hr	lbs/day	tons/year	lbs/yr
NO _x	0.040	0.95	0.0010	2.07
CO	0.12	2.78	0.0030	6.02
NMHC	0.00027	0.0066	0.0000071	0.014
PM10	0.0079	0.19	0.00020	0.41
SO _x	0.0018	0.044	0.000047	0.095

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Table 3.3: net increase/decreases for criteria pollutants

Compound	Hourly Emissions	Daily Emissions	Annual Emissions	
	lbs/hr	lbs/day	tons/year	lbs/yr
NO _x	0.40	9.61	0.010	19.95
CO	-0.056	-1.33	-0.0015	-3.01
NMHC	0.023	0.55	0.00057	1.14
PM ₁₀	0.003	0.06	0.00006	0.13
SO _x	-0.001	-0.021	-0.000023	-0.047

3.2 Estimated Emissions Assumptions.

- Pre-Project PTE obtained from APCD2017-APP-005191. (Manufacturer guaranteed emissions, assuming full load operation with 24 hours per day and 52 hours per year)
- Emission factors obtained from Manufacturer specs. PM emissions reduced by 85% as guaranteed by Miratech specs for the aftermarket DPF.
- District default toxic emission factors (Method E10).
- Calculations assume full load operation, 24 hours per day and total of 50 hours per year.
- 15 ppmw sulfur fuel.
- Other standard assumptions as stated in calculation sheets.
- Expected actual emissions same as PTE.

3.3 Emissions Calculations.

Calculations were performed using the attached spreadsheets using standard calculation methods.

3.4 Attachments.

Emission Calculations.

4.0 Applicable Rules

4.1 District Prohibitory Rules

Emergency diesel engines at non-major sources are subject to the following District prohibitory rules: 50, 51, 53, 62 and 69.4.1. The proposed engine is expected to comply with all applicable requirements as shown in the table on the following page with standard permit conditions for this equipment type.

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Table 2: Prohibitory Rule Discussion

Applicable Section	Requirement	Engine Complies?	Explanation	Condition
Rule 50	Visible Emissions not to exceed 20% opacity or Ringlemann 1 for more than 3 minutes in a 60 minute period	Yes	Compliance with this requirement is achieved through the use of an EPA certified engine, and permit conditions will specify this requirement.	C28413
Rule 51	Cannot cause or contribute to a public nuisance	Yes	Due to the intermittent operation of an emergency engine that meets all emission requirements, it is anticipated that this will not cause a public nuisance. Permit conditions will prohibit this engine from causing a public nuisance.	C28414
Rule 53	Emissions of sulfur compounds calculated as SO ₂ on a dry basis shall not exceed 0.05 % by volume on a dry basis.	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412
Rule 62	Sulfur content of liquid fuel shall not exceed 0.5 % sulfur by weight.	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412
Rule 69.4.1: Stationary Reciprocating Internal Combustion Engines				
69.4.1(a)(1)	Except as provided in Section (b) - Exemptions, this rule shall apply to stationary internal combustion engines with a brake horsepower (bhp) rating of 50 or greater.	Applicable	Rule 69.4.1 applies to this stationary engine above 50 bhp.	NA
69.4.1(c) (24)	"New Engine" means an engine for which a complete application was submitted to the District after July 8, 2020.	Applicable	Applies to this engine with a complete application dated after July 8, 2020.	NA
69.4.1(c) (33)	"Stationary Internal Combustion Engine" or "Engine" means a spark or compression ignited, reciprocating internal combustion engine which is not a portable emission unit.	Applicable	Applies to this engine that does not meet the definition of a Portable Emission Unit.	NA

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69.4.1(c) (27)	"Portable Emission Unit" means the same as defined in Rule 20.1 – New Source Review (NSR) – General Provisions. [Refer to Rule 20.1 NSR (c)(57) "Portable Emission Unit", and Rule 12.1(c)(12) "Location" definitions]	Does not meet the "Portable Emission Unit" definition	This engine is attached to a foundation, so it does not meet the definition of a Portable Emission Unit. Therefore, this engine is a Stationary Internal Combustion Engine.	NA
69.4.1(d)(1)(ii)(E)	Emission standards for NOx and CO emissions. For a new or replacement certified diesel engine, NOx emissions shall not exceed: 3.5 g/bhp-hr if 50≤bhp<100; 3.0 g/bhp-hr if 100≤bhp<175; 3.0 g/bhp-hr if 175≤bhp<750; 4.8 g/bhp-hr if bhp≥750. For a new or replacement certified diesel engine, CO emissions shall not exceed: 3.7 g/bhp-hr if 50≤bhp<100; 3.7 g/bhp-hr if 100≤bhp<175; 2.6 g/bhp-hr if 175≤bhp<750; 2.6 g/bhp-hr if bhp≥750.	Yes	Use of an EPA certified tier 3 engine (tier 2 for engines with a rated power in excess of 750 bhp) ensures that NOx emissions comply with this requirement	NA
69.4.1(d)(2)	Engines operated on diesel fuel shall use only California Diesel Fuel.	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412
69.4.1(e)(3)	All engines must be equipped with a non-resettable totalizing fuel or hour meter which shall be replaced in accordance with subsection (g)(7) of this rule.	Yes	Permit conditions will require installation of a non-resettable hour meter and specify the requirements for replacement.	C28419
69.4.1(f)(2)	The owner or operator must conduct specific maintenance on the engine and control equipment, including oil change/analysis, and checking hoses and belts. Maintenance is required according to engine/control equipment manufacturer's instructions or other written procedure, at least once each calendar year.	Yes	Annual maintenance of engine according to written procedure will be required by permit conditions.	C43433

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69.4.1(g)(1)	Specifies engine information that must be maintained on-site.	Yes	Manufacturer and model number, brake horsepower rating, combustion method and fuel type are contained in the permit application. Documentation of CARB diesel fuel certification and manual of recommended maintenance will be specified in permit conditions.	C45251
69.4.1(g)(2)	Requires keeping an operating log containing dates and times and purpose of each period of engine operation, cumulative operation of engine for each calendar year and maintenance records including dates maintenance is performed. Engines within 500 feet of schools must record the time of day when the engine is operated for testing and maintenance. Specific records for internal, external, and partial external power outages is required.	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C45252
69.4.1(g)(6)	Requires records of the dates and times when fuel is being combusted and cumulative operating time if claiming a commissioning exemption.	NA	The applicant has not claimed a commissioning period is needed.	NA
69.4.1(g)(7)	Requires notification to APCD within 10 calendar days of replacing an hour meter.	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C28419
69.4.1(g)(9)	Requires specified records to be maintained on-site for at least three years and made available to the District upon request.	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C43432
69.4.1(i)(1)	Requires periodic source testing to confirm compliance with applicable emission standards.	NA	This subsection does not apply to certified emergency engines.	NA

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4.2 New Source Review (NSR) Rule 20.1-20.4

This application is subject to District NSR rules. This site is considered a non-major stationary source, for each pollutant, as shown in the following table, and is therefore subject to District Rule 20.2. Calculation of emissions and determination of applicable requirements is performed in accordance with District Rule(s) 20.1 through 20.3.

Table 3: Classification of Major/PSD Source and Modification New Source Review (NSR) Requirements

	NO_x	VOC	PM-10	PM-2.5	SO_x	CO	Lead
<i>Major Source Threshold (ton/year)</i>	50	50	100	100	100	100	100
Major Source? (yes/no)	No	No	No	No	No	No	No
<i>Major Modification Threshold (ton/year)</i>	25	25	15	10	40	100	0.6
Major Modification at a Major Source?	No	No	No	No	No	No	No
Contemporaneous Calculations Performed?	No	No	No	No	No	No	No
Federal Major Stationary Source Threshold (ton/year) (Severe non-attainment status)	25	25	100	100	100	100	100
Federal Major Stationary Source?	No	No	No	No	No	No	No
<i>Federal Major Modification Threshold (ton/year) (Severe non-attainment status)</i>	25	25	15	10	40	100	0.6
Federal Major Modification?	No	No	No	No	No	No	No
Contemporaneous Net Calculations Performed	No	No	No	No	No	No	No
<i>PSD Threshold (ton/year)</i>	250	250	250	--	250	250	--
<i>PSD Modification Threshold (ton/year)</i>	40	40	15	--	40	100	0.6
PSD New or Modification?	No	No	No	No	No		No

District Rule 20.2 contains requirements for Best Available Control Technology (BACT), Air Quality Impact Assessment (AQIA), Prevention of Significant Deterioration (PSD) and public notification. No requirements of this rule apply as shown in the table on the following page.

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Table 4: New Source Review Discussion				
Rule/Requirement	Requirement	Applicability	Discussion	Condition
Applicability	Rule 20.2 applies to non-major sources	Yes	This is not a major source, so Rule 20.2 applies.	NA
Type of application	New	NA	NA	NA
Exemptions	No exemptions apply to this equipment	NA	NA	NA
20.2(d)(1) – BACT				
BACT - NO_x	Installation of BACT is required if emissions of NO _x exceed 10 lbs/day	Not Triggered	The potential to emit for this pollutant does not exceed this trigger level, so BACT is not required.	NA
BACT - VOC	Installation of BACT is required if emissions of VOC exceed 10 lbs/day	Not Triggered	The potential to emit for this pollutant does not exceed this trigger level, so BACT is not required.	NA
BACT - PM-10	Installation of BACT is required if emissions of PM-10 exceed 10 lbs/day	Not Triggered	The potential to emit for this pollutant does not exceed this trigger level, so BACT is not required.	NA
BACT - SO_x	Installation of BACT is required if emissions of SO _x exceed 10 lbs/day	Not Triggered	The potential to emit for this pollutant does not exceed this trigger level, so BACT is not required.	NA
20.2(d)(2) – AQIA				
AQIA - NO_x	Required for project emission increases in excess of 25 lbs/hr, 250 lbs/day or 40 ton/yr of NO _x calculated as NO ₂	Not Triggered	Estimated emissions of this air contaminant from this project does not exceed any of these levels, so no AQIA is required.	NA
AQIA - PM-10	Required for project emission increases in excess of 100 lbs/day or 15 ton/yr of PM-10	Not Triggered	Estimated emissions of this air contaminant from this project does not exceed any of these levels, so no AQIA is required.	NA
AQIA - SO_x	Required for project emission increases in excess of 25 lbs/hr, 250 lbs/day or 40 ton/yr of SO _x calculated as SO ₂	Not Triggered	Estimated emissions of this air contaminant from this project does not exceed any of these levels, so no AQIA is required.	NA
AQIA - CO	Required for project emission increases in excess of 100 lbs/hr, 550 lbs/day or 1000 ton/yr of CO	Not Triggered	Estimated emissions of this air contaminant from this project does not exceed any of these levels, so no AQIA is required.	NA
20.2(d)(3) - PSD	Applicable to source that may have a significant impact on a class I area	NA	This is not a PSD source and emissions are not expected to impact a class I area	NA

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20.2(d)(4) - Public Notice	Requires 30 day public notice if an AQIA was required or if increase in VOC emissions from the project exceed 250 lbs/day or 40 ton/year	NA	AQIA was not required and VOC emission increase from this project does not exceed these levels.	NA
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4.3 Toxic New Source Review – Rule 1200

District Rule 1200 applies to any application that is part of a project which results in an emission increase of toxic air contaminants. The rule limits the increase in acute and chronic health hazard index (HHI) to no more than one from the project and limits the increase in cancer risk from the project to no more than one in one million if the engine is not equipped with Toxics BACT (T-BACT) or no more than ten in one million if the project meets T-BACT requirements. The following table contains an in-depth review of Rule 1200 requirements. If a refined HRA was required, then the HRA report is attached.

Table 5: Rule 1200 Applicable Requirements and Discussion

Question	Answer	Discussion
Does the application result in an increase in toxic emissions?	Yes	The application results in an increase in toxic emissions of Diesel Particulate Matter and specific trace heavy metals and organics (as shown in emission calculations section)
Do any special exemptions apply to this equipment?	No	NA
Are there any other applications that are part of the project?	None	NA
What type of HRA was used?	Refined	NA
Is the Project Equipped with T-BACT?	No	The engine is not equipped with a DPF which is typically considered T-BACT for the equipment type.
Cancer Risk increase (per one million)	0.113	Project meets standard of one in one million.
Chronic HHI	0.0000304	Project meets standard of one.
Acute HHI	0.144	Project meets standard of one.
Passes Rule 1200?	Yes	Maintenance and testing (non-emergency operation) must be limited by permit conditions to 50 hours per calendar year.

Based on this analysis, the proposed engine complies with all applicable requirements of District Rule 1200.

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4.4 AB3205

Requirements in the California Health and Safety Code in sections 42301.6 through 42301.9 (a.k.a. "AB3205 requirements") specify that prior to issuing an authority to construct for sources located within 1000 feet of a K-12 school, a 30-day public notification process must be conducted.

This project is located within 1000 feet of two schools (Imperial Beach Charter School and Mar Vista High School), so public notice is required for this section. A copy of the public notice is attached to the file and when the notice is issued, this evaluation and relevant attachments will be made available on the District's website for review. If any comments are received, they will be reviewed, considered and responded to prior to taking action on the permit including revising any requirements as necessary in response to comments received.

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4.5 State and Federal Regulations.

This engine is subject to both the State Air Toxic Control Measure for Stationary Engines (Stationary ATCM) and federal EPA issued National Emission Standards for Hazardous Air Pollutants (NESHAPs) and New Source Performance Standards (NSPS).

Applicable requirements of the Stationary ATCM include purchasing an engine certified to EPA standards and meeting specified emission standards of the rule, installing an hour meter, conducting maintenance according to a written plan, restrictions on operating the engine for purposes other than emergency use and limited (50 hours/year) use for maintenance and testing, and maintaining records to substantiate compliance with these requirements. This engine is expected to comply with all these requirements as described in the detailed analysis shown in the table following the discussion of NESHAP/NSPS requirements.

The NESHAP (subpart ZZZZ) requires that all new emergency engines comply with the rule by complying with the NSPS (subpart IIII). Applicable requirements of the NSPS include purchasing a certified engine, operating it as directed by the manufacturer, and maintaining records to substantiate compliance. These requirements closely mirror the ATCM requirements, except that the NSPS is somewhat less stringent in regards to allowable PM emission rate and contains some allowance for other types of operation not allowed by the ATCM. This means the more stringent ATCM requirements apply. A detailed analysis of NESHAP and NSPS requirements is shown in the following table.

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Table 6a: State and Federal Requirement Discussion (Stationary ATCM)

Applicable Section	Requirement	Engine Complies/Expected to Comply??	Explanation	Condition
Stationary ATCM				
93115.2	(a) Except as provided in section 93115.3, this ATCM applies to any person who either sells a stationary CI engine, offers a stationary CI engine for sale, leases a stationary CI engine, or purchases a stationary CI engine for use in California, unless such engine is: (1) a portable CI engine, (2) a CI engine used to provide motive power, (3) an auxiliary CI engine used on a marine vessel, or (4) an agricultural wind machine as defined in section 93115.4. (b) Except as provided in sections 93115.3 and 93115.9, this ATCM applies to any person who owns or operates a stationary CI engine in California with a rated brake horsepower greater than 50 (>50 bhp).	Applicable	Title 17 CCR 93115 (Stationary ATCM) applies to this stationary engine above 50 bhp.	NA
93115.3	There are no exemptions that apply to this engine	NA	This engine is not one of the engines exempted from any applicable requirements	NA
93115.4	Definitions. Permit conditions ensure that the engine only operates in a manner allowed for engines designated as "Emergency Standby" (72) "Stationary CI Engine" means a CI engine that is designed to stay in one location, or remains in one location. (46) "Location" means any single site at a facility.	Yes	Permit conditions require that the engine operate only as an emergency engine. This is a stationary IC engine.	C40239
93115.5	Requires the use of CARB diesel as fuel.	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412

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93115.6(a)(1)	Prohibits non-emergency operation of an emergency engine between 7:30 AM and 3:30 PM during school days if within 500 feet of school and during all school sponsored activities if located on school grounds	Yes	The engine meets the alternative compliance demonstration requirements in 93115.13(f) and is therefore exempt from this requirement.	C28415
93115.6(a)(2)	Allows for engine to be started 30 minutes prior to rotating outage	Yes	Permit conditions specify this requirement.	C28560
93115.6(a)(3)(A)(1) (b)	Requires that all engines used for emergency purposes be certified to at least tier 3 standards (tier 2 for engines with a rated power in excess of 750 bhp) and have Diesel PM emissions less than 0.15 g/bhp-hr	Yes	Use of an EPA certified tier 3 engine (tier 2 for engines with a rated power in excess of 750 bhp) with PM emission below this level satisfies this requirement	NA
93115.6(a)(3)(A)(1) (c)	Restricts maintenance and testing operation to no more than 50 hours per calendar year	Yes	Permit conditions specify this requirement.	C28643
93115.6 (c)	Does not allow emergency standby engines to operate as part of "demand response programs" unless additional requirements are met	Yes	Permit conditions specify this requirement.	C40907
93115.10 (a)-(b)	Requires that specified information is submitted to the District as part of application package	Yes	The submitted application contained all of the required contact/location information, engine data, and emission information	NA
93115.10 (d)	Requires installation of a non-resettable hour meter and for engines with DPFs, a backpressure monitor that alerts the operator when the backpressure limit of the engine is approached	Yes	Permit conditions require the installation and use of a non-resettable hour meter and a backpressure monitor for the DPF.	C28419 and C40721
93115.10 (f)	Specifies that the owner or operator must keep records and prepare a monthly summary of hours of operation and purpose (emergency, maintenance and testing, emission testing, start-up testing, other, demand response) of each period of operation	Yes	Permit conditions require that these records be kept and the summary updated monthly	C45252
93115.10 (f)	Requires records of CARB diesel fuel certification	Yes	Permit conditions require that documentation of the CARB diesel	C43434

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			certification for all fuel used be maintained	
93115.10 (f)	States that records must be kept on-site for at least 24 months and off-site for an additional 12 months (total 36 months)	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C43432
93115.13 (a)	Allows the use of certification data or other emission test data to demonstrate compliance with emission limits	Yes	The manufacturer's engine rating specific emission data was used to determine compliance and for emission calculations	NA
93115.13 (f)	For engines equipped with DPFs, allows the use of an engine certified to a PM-10 emission level of no more than 0.15 g/bhp-hr and a verified DPF in lieu of source testing (or other alternative means as listed)	NA	The engine is in compliance with this limit.	NA

Table 6b: State and Federal Requirement Discussion (NESHAP/NSPS)

Applicable Section	Requirement	Engine Complies/Expected to Comply?	Explanation	Condition
NESHAP ZZZZ				
40 CFR 63.6590 (b)-(c)	Requires that new emergency engines comply with the NESHAP by complying with the applicable NSPS	Yes	See NSPS section below.	NA
NSPS IIII				
40 CFR 60.4205	Requires that engines meet emission limits equivalent to tier 3 levels (tier 2 for engines 750 bhp or higher)	Yes	Use of an EPA certified tier 3 engine (tier 2 for engines with a rated power in excess of 750 bhp) satisfies this requirement	NA
40 CFR 60.4207	Sets maximum fuel sulfur limits for fuel equivalent to CARB diesel requirements	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412

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40 CFR 60.4209	Requires installation of a non-resettable hour meter	Yes	Permit conditions require the installation and use of a non-resettable hour meter.	C28419
40 CFR 60.4211(a)	Requires that the engine be operated according to manufacturer's emission related instructions and that no changes are made to emission related settings unless allowed by manufacturer	Yes	Permit conditions specify this requirement.	C43433
40 CFR 60.4211(c)	Requires that the engine be certified under EPA regulations	Yes	Use of an EPA certified tier 3 engine (tier 2 for engines with a rated power in excess of 750 bhp)	NA
40 CFR 60.4211(e)	Restricts operation of emergency engines for non-emergency purposes	Yes	Compliance ensured by permit conditions for ATCM limiting operation for maintenance and testing to no more than 50 hours per calendar year and restricting non-emergency operation for only those uses allowed by the permit (maintenance and testing). ATCM requirements more stringent than NSPS.	C40239, C40907, C28643
40 CFR 60.4214(b)	Requires records of operation to show that engine is operated as an emergency engine	Yes	Compliance is expected and specified in permit conditions.	C40239
40 CFR 60.4214(c)	For engines with DPFs, requires records of corrective actions taken when the high backpressure limit is approached	NA	Permit conditions specify following manufacturer instructions which ensures compliance with this requirement.	C40725
40 CFR 60.7(f)	Requires that all records be maintained for at least 2 years	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C43432

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4.6 Title V.

This is not a Title V facility therefore this requirement does not apply.

5.0 Recommendations

This equipment is expected to comply with all rules and regulations (Pending completion of the AB3205 noticing and comment process), and therefore it is recommended that an authority to construct be issued with the following conditions.

6.0 Recommended Conditions

Standard BEC APCD2020-CON-001659 with a 50 hour/year limit for non-emergency/maintenance and testing use and DPF conditions with 20" H2O back pressure limit is recommended.

Rule 1200 Health Risk Assessment

Facility Name: South Bay Union School District
Facility ID: APCD2017-SITE-02550
Application: APCD2023-APP-007801
Project Engineer: Fahmy Attar
Modeler: Bill Reeve
Toxics Risk Analyst: Maria Galvez
Date Submitted to Toxics: 9/28/2023
Date Completed by Toxics: 10/19/2023
HRA Tools Used: Lakes-AERMOD (Version 22112)/HARP (v22118)

The following estimated risks are valid only for the input data provided by the Project Engineer.

Estimated worker risk does not exceed the residential risk. Therefore, only residential risk is presented in the following results.

Estimated Risk Levels:

Maximum Individual Cancer Risk (Resident)	0.113 in one million
Chronic Noncancer Health Hazard Index (Resident)	= 3.04E-05
8-Hour Noncancer Health Hazard Index (Worker)	= NA*
Maximum Acute Health Hazard Index	= 0.144

*8-Hour Non-Cancer Health Hazard Index is only applicable when calculating worker risk

The proposed application is for a stationary diesel emergency engine. The ARB Air Toxics Control Measure (ATCM) limits non-emergency operations to 50 hours per year.

Rule 1200 Health Risk Assessment Report

South Bay Union School District, 02550

Application Number 007801

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Input Data Provided by Project Engineer:

Type of Source: Emergency Diesel IC Engine.

Controls Description: DPF

Worst-Case TAC Emissions Increase:

Toxic Air Contaminant	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
DIESEL PARTICULATE		9.36E-02
ACETALDEHYDE	3.58E-03	1.79E-01
ACROLEIN	1.55E-04	7.75E-03
ARSENIC COMPOUNDS	7.31E-06	3.66E-04
BENZENE	8.51E-04	4.26E-02
BUTADIENE, 1,3-	9.92E-04	4.96E-02
CADMIUM AND COMPOUNDS	6.86E-06	3.43E-04
CHLOROBENZENE	9.14E-07	4.57E-05
CHROMIUM (HEXAVALENT)	4.57E-07	2.29E-05
COPPER AND COMPOUNDS	1.87E-05	9.37E-04
ETHYL BENZENE	4.98E-05	2.49E-03
FORMALDEHYDE	7.89E-03	3.94E-01
HEXANE-N	1.23E-04	6.15E-03
HYDROCHLORIC ACID	8.51E-04	4.26E-02
LEAD & COMPOUNDS	3.79E-05	1.90E-03
MANGANESE AND COMPOUNDS	1.42E-05	7.08E-04
MERCURY AND COMPOUNDS	9.14E-06	4.57E-04
NAPHTHALENE	9.00E-05	4.50E-03
NICKEL AND NICKEL COMPOUNDS	1.78E-05	8.91E-04
POLYCYCLIC AROM. HC (PAH) [Treat as B(a)P for HRA]	1.65E-04	8.27E-03
PROPYLENE	2.13E-03	1.07E-01
SELENIUM AND COMPOUNDS	1.01E-05	5.03E-04
TOLUENE	4.82E-04	2.41E-02
XYLENES	1.94E-04	9.69E-03

Source: Acute TACs – Ventura County, 5/17/01.

Diesel particulate exhaust is a surrogate for all toxic air contaminant annual emissions from diesel-fueled engines when determining the potential cancer risk and noncancer chronic hazard index. Speciated toxic air contaminant hourly emissions are used when determining the potential noncancer acute hazard index.

Process Data:

Operation Parameter	Value
Diesel particulate emission factor (g/hp-hr)	0.01
Engine horsepower (bhp)	85
Fuel Consumption (gal/hr)	4.57
Annual hours of operation	50

Release Parameters:

Exhaust Flow Rate, cfm:	230
Exhaust Temperature, °F:	900
Stack Height above ground, ft:	6.8
Stack Diameter, ft:	0.21

Discussion

The HRA was conducted in accordance with EPA and OEHHA guidance and District standard procedures. A point source was modeled with refined air dispersion modeling using EPA's AERMOD model, AERMET (Version 22112) processed Chula Vista 2010/2012 sigma theta updated meteorology data, AERMAP terrain processing, and rural dispersion coefficients. Building downwash effects were calculated using the EPA BPIP-Prime model. The receptor grid was sufficiently dense to identify maximum impacts.

These risk results are based on the risk scenario calculations and health data at the time of the review, and should not be scaled with revised emissions rates without consulting with the Toxics Section.

*HARP - HRACalc v22118 10/19/2023 10:14:03 AM - Cancer Risk

INDEX	GRP1	GRP2	POLID	POLABBRE	CONC	RISK_SUM	SCENARIO
1	Engine		9901	DieselExhP	0.000152	1.13E-07	30YrCancerRMP_InhSoilDermMMilk_FAH16to70

*HARP - HRACalc v22118 10/19/2023 10:14:03 AM - Chronic Risk

INDEX	GRP1	GRP2	POLID	POLABBRE	CONC	RESP	SCENARIO
1	Engine		9901	DieselExhP	0.000152	3.04E-05	NonCancerChronicDerived_InhSoilDermMMilk

*HARP - HRACalc v22118 10/19/2023 10:14:03 AM - Acute Risk

INDEX	GRP1	GRP2	POLID	POLABBRE	CONC	EYE	SCENARIO
1	Engine		9901	DieselExhP		0	0.00E+00 NonCancerAcute
2	Engine		75070	Acetaldehy	2.41	5.13E-03	NonCancerAcute
3	Engine		107028	Acrolein	0.105	4.20E-02	NonCancerAcute
4	Engine		7440382	Arsenic	0.00493	0.00E+00	NonCancerAcute
5	Engine		71432	Benzene	0.574	0.00E+00	NonCancerAcute
6	Engine		106990	1,3-Butadie	0.669	0.00E+00	NonCancerAcute
7	Engine		7440439	Cadmium	0.00462	0.00E+00	NonCancerAcute
8	Engine		108907	Chlorobenz	0.000617	0.00E+00	NonCancerAcute
9	Engine		18540299	Cr(VI)	0.000308	0.00E+00	NonCancerAcute
10	Engine		7440508	Copper	0.0126	0.00E+00	NonCancerAcute
11	Engine		100414	Ethyl Benz	0.0336	0.00E+00	NonCancerAcute
12	Engine		50000	Formaldehy	5.32	9.67E-02	NonCancerAcute
13	Engine		110543	Hexane	0.0829	0.00E+00	NonCancerAcute
14	Engine		7647010	HCl	0.574	2.73E-04	NonCancerAcute
15	Engine		7439921	Lead	0.0256	0.00E+00	NonCancerAcute
16	Engine		7439965	Manganese	0.00956	0.00E+00	NonCancerAcute
17	Engine		7439976	Mercury	0.00617	0.00E+00	NonCancerAcute
18	Engine		91203	Naphthaler	0.0607	0.00E+00	NonCancerAcute
19	Engine		7440020	Nickel	0.012	0.00E+00	NonCancerAcute
20	Engine		1151	PAHs-w/o	0.112	0.00E+00	NonCancerAcute
21	Engine		115071	Propylene	1.44	0.00E+00	NonCancerAcute
22	Engine		7782492	Selenium	0.00678	0.00E+00	NonCancerAcute
23	Engine		108883	Toluene	0.325	6.50E-05	NonCancerAcute
24	Engine		1330207	Xylenes	0.131	5.95E-06	NonCancerAcute
						1.44E-01	

PROJECT TITLE:
APP007801
Hourly x/q

COMMENTS:



SOURCES:

1

RECEPTORS:

17961

OUTPUT TYPE:

Concentration

MAX:

7079 ug/m³

COMPANY NAME:

MODELER:

DATE:

10/19/2023

SCALE:

1:905

0 0.02 km

PROJECT NO.:

PROJECT TITLE:
APP007801
Annual x/q

COMMENTS:



SOURCES:

1

RECEPTORS:

17961

OUTPUT TYPE:

Concentration

MAX:

547 ug/m³

COMPANY NAME:

MODELER:

DATE:

10/19/2023

SCALE:

1:1,141

0  0.03 km

PROJECT NO.:

FACILITY NAME: South Bay Union School District

Fuel Consumption (gal/hr): 4.57
 Diesel Particulate Emission Factor (g/hp-hr): 0.01
 Brake Horsepower (hp): 85
 Annual Hours of Operation (hrs): 50

FACILITY ID: APCD2017-SITE-02550
 APPLICATION NO.: APCD2023-APP-007801
 ENGINEER: Fahmy Attar

RISK ANALYST ONLY

DISPERSION MODELING DATA

Annual Receptor Type: Resident
 ANNUAL DISPERSION FACTOR (µg/m3)/(g/s): 112.7
 Distance (m):
 Hourly Receptor Type: PMI
 HOURLY DISPERSION FACTOR (µg/m3)/(g/s): 5353.5
 Distance (m):

CHEMICAL NAME	Emission Factor lb/1000 gal	Acute Emission Rate lb/hr	Annual Emission Rate lb/yr	Acute Emissions Rate g/s	Annual Emission Rate g/s	Hourly GLC µg/m ³	Annual GLC µg/m ³
DIESEL PARTICULATE			9.36E-02		1.35E-06		1.52E-04
ACETALDEHYDE	7.83E-01	3.58E-03	1.79E-01	4.51E-04		2.41E+00	
ACROLEIN	3.39E-02	1.55E-04	7.75E-03	1.95E-05		1.05E-01	
ARSENIC COMPOUNDS	1.60E-03	7.31E-06	3.66E-04	9.21E-07		4.93E-03	
BENZENE	1.86E-01	8.51E-04	4.26E-02	1.07E-04		5.74E-01	
BUTADIENE, 1,3-	2.17E-01	9.92E-04	4.96E-02	1.25E-04		0.668941	
CADMIUM AND COMPOUNDS	1.50E-03	6.86E-06	3.43E-04	8.64E-07		4.62E-03	
CHLOROBENZENE	2.00E-04	9.14E-07	4.57E-05	1.15E-07		6.17E-04	
CHROMIUM (HEXAVALENT)	1.00E-04	4.57E-07	2.29E-05	5.76E-08		3.08E-04	
COPPER AND COMPOUNDS	4.10E-03	1.87E-05	9.37E-04	2.36E-06		1.26E-02	
ETHYL BENZENE	1.09E-02	4.98E-05	2.49E-03	6.28E-06		3.36E-02	
FORMALDEHYDE	1.73E+00	7.89E-03	3.94E-01	9.94E-04		5.32E+00	
HEXANE-N	2.69E-02	1.23E-04	6.15E-03	1.55E-05		8.29E-02	
HYDROCHLORIC ACID	1.86E-01	8.51E-04	4.26E-02	1.07E-04		5.74E-01	
LEAD & COMPOUNDS	8.30E-03	3.79E-05	1.90E-03	4.78E-06		2.56E-02	
MANGANESE AND COMPOUNDS	3.10E-03	1.42E-05	7.08E-04	1.79E-06		9.56E-03	
MERCURY AND COMPOUNDS (INORGANIC)	2.00E-03	9.14E-06	4.57E-04	1.15E-06		6.17E-03	
NAPHTHALENE	1.97E-02	9.00E-05	4.50E-03	1.13E-05		6.07E-02	
NICKEL AND NICKEL COMPOUNDS	3.90E-03	1.78E-05	8.91E-04	2.25E-06		1.20E-02	
POLYCYCLIC AROM. HC (PAH) [Treat as B(a)P for	3.62E-02	1.65E-04	8.27E-03	2.08E-05		1.12E-01	
PROPYLENE	4.67E-01	2.13E-03	1.07E-01	2.69E-04		1.44E+00	
SELENIUM AND COMPOUNDS	2.20E-03	1.01E-05	5.03E-04	1.27E-06		6.78E-03	
TOLUENE	1.05E-01	4.82E-04	2.41E-02	6.07E-05		3.25E-01	
XYLENES	4.24E-02	1.94E-04	9.69E-03	2.44E-05		1.31E-01	

Facility Name: South Bay Union School District
 Application Number: APCD2023-APP-007801
 Site ID Number: APCD2017-SITE-02550
 Equipment Address: 601 Elm Ave, Imperial Beach, CA 91932
 Project Description: Modification to APCD2018-PTO-003119. 85 bhp Emergency Diesel Engine.

Project Engineer: Fahmy Attar

Make: Mitsubishi
 Model: D04EG-TAA
 S/N: 51455
 Fuel Type: diesel
 BHP Rating: 85
 Model Year: 2022
 Tier Level: 3
 Engine Family Number: NMMVXL03.3CBB
 Device Driven: 50-kWe generator
 Emissions Controls: NA

Based on Manufacturer Efs

NOx, g/BHP-hr:	2.35	3.15	g/kW-hr
CO, g/BHP-hr:	0.32	0.43	g/kW-hr
NMHC, g/BHP-hr:	0.12	0.1658	g/kW-hr
PM10, g/BHP-hr:	0.01	0.018	g/kW-hr

PM emissions reduced by 85% based on provided DPF information.

NOx, g/BHP-hr: + NMHC, g/BHP-hr: 2.47

Rule 69.4.1 Standards:	g/BHP-hr	Pass
NOx	3.50	Yes
CO	3.70	Yes

Fuel Usage, gal/hr: 4.57
 Operating Schedule, hrs/day: 24
 Operating Schedule, hrs/yr: 50

Exhaust Flow Rate, cfm: 230
 Exhaust Temperature, °F: 900
 Stack Height above ground, ft: 6.8
 Stack Diameter, ft: 0.21

Nearest School, ft: 0.00
 Residential Receptor, m: 25.00 67 ft
 Occupational Receptor, m: 263.65 865 ft
 Acute Receptor, m: 25.00 67 ft

AB3205? AB3205 is Required

Consult Toxics? Consult Toxics

Vertical Exhaust? (yes/no): yes
 Flapper Valve? (flapper/raincap): Flapper
 Plot Plan? (yes/no): yes
 Flow Obstructions: no

**San Diego Air Pollution Control District
Supplemental Application Information
Rule 1200 Toxics Evaluation**

(ALL REQUESTED INFORMATION IS IMPORTANT - PLEASE FILL BLUE CELLS)

Facility Name:	South Bay Union School District			
Equipment Location:	601 Elm Ave, Imperial Beach, CA 91932			
Project Description:	Emergency Diesel Engine			
Control Equipment:	None			
Operating Schedule:	Hours per Day:	1	Weeks per Year:	50
	Days per Week:	1	Days per Year:	50

RELEASE POINT DATA

How are the emissions from this project released into the outdoor air? (Check all that apply)

Point Source	Non-Point Source		
<input checked="" type="checkbox"/> Exhaust Stack or Duct	<input type="checkbox"/> Passive Ventilation	<input type="checkbox"/> Released through windows and/or roll-up doors	<input type="checkbox"/> Fugitive Emissions

Point Source

Parameter	Point Source #1	Point Source #2	Point Source #3
Height of release above ground (ft)	6.80		
Stack Diameter (or length x width) (ft)	0.21		
Exhaust Gas Temperature (°F) ¹	900.000		
Exhaust Gas Flow (ACFM)	230.000		
Direction of Flow ²	vertical		
Flow Obstruction ³	no		
Distance to Nearest Property Line (+/- 10ft)	67.00		

¹ Use "70 °F" or "Ambient" if unknown

² if "other" describe:

³ if "other" describe:

AERIAL MAP AND FACILITY PLOT PLAN must be attached and labeled with **Release Point(s) and Building(s)**
(includes facility and neighboring buildings within 5x the release height of a point source(s)).

Parameter	Building A	Building B	Building C
Point Source(s)			
Point Source Location			
Building Length (ft) (optional)			
Building Width (ft) (optional)			
Building Height above ground (ft)			

San Diego APCD Use Only

Additional Rule 1200 Submittal Information

Submittal Date:		Site ID:	APCD2017-SITE-02550
Project Engineer:	Fahmy Attar	Appl. Number(s):	APCD2023-APP-007801
Fees Collected:		PTO No. (if existing):	

HARP2 - HRACalc (dated 22118) 10/19/2023 10:14:03 AM - Output Log

GLCs loaded successfully

Pollutants loaded successfully

RISK SCENARIO SETTINGS

Receptor Type: Resident

Scenario: All

Calculation Method: Derived

EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25

Total Exposure Duration: 30

Exposure Duration Bin Distribution

3rd Trimester Bin: 0.25

0<2 Years Bin: 2

2<9 Years Bin: 0

2<16 Years Bin: 14

16<30 Years Bin: 14

16 to 70 Years Bin: 0

PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True

Soil: True

Dermal: True

Mother's milk: True

Water: False

Fish: False

Homegrown crops: False

Beef: False

Dairy: False

Pig: False

Chicken: False

Egg: False

INHALATION

Daily breathing rate: RMP

Worker Adjustment Factors

Worker adjustment factors enabled: NO

Fraction at time at home

3rd Trimester to 16 years: OFF

16 years to 70 years: ON

SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02

Soil mixing depth (m): 0.01

Dermal climate: Warm

TIER 2 SETTINGS

Tier2 not used.

Calculating cancer risk

Cancer risk saved to: C:\Users\E088126\OneDrive - County of San Diego\Desktop\7801_South Bay Union School District\RAST\resident_CancerRisk.csv

Calculating chronic risk

Chronic risk saved to: C:\Users\E088126\OneDrive - County of San Diego\Desktop\7801_South Bay Union School District\RAST\resident_NCChronicRisk.csv

Calculating acute risk

Acute risk saved to: C:\Users\E088126\OneDrive - County of San Diego\Desktop\7801_South Bay Union School District\RAST\resident_NCAcuteRisk.csv

HRA ran successfully

*** AERMOD - VERSION 22112 *** *** C:\Modeling Projects\7801_South_Bay_USD\7801_South_Bay_USD.isc *** 10/17/23
 *** AERMET - VERSION 22112 *** *** *** 15:55:05
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*** MODELOPTs: RegDEFAULT CONC ELEV RURAL SigA Data

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BLDG EXISTS	URBAN SOURCE	CAP/ HOR	EMIS RATE SCALAR VARY BY
STCK1	0	0.10000E+01	488728.7	3604749.6	7.4	2.07	755.37	33.73	0.06	YES	NO	NO	

*** AERMOD - VERSION 22112 *** *** C:\Modeling Projects\7801_South_Bay_USD\7801_South_Bay_USD.isc *** 10/17/23
 *** AERMET - VERSION 22112 *** *** *** 15:55:05
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*** MODELOPTs: RegDEFAULT CONC ELEV RURAL SigA Data

*** MODEL SETUP OPTIONS SUMMARY ***

** Model Options Selected:

- * Model Uses Regulatory DEFAULT Options
- * Model Is Setup For Calculation of Average CONCentration Values.
- * NO GAS DEPOSITION Data Provided.
- * NO PARTICLE DEPOSITION Data Provided.
- * Model Uses NO DRY DEPLETION. DDPLETE = F
- * Model Uses NO WET DEPLETION. WETDPLT = F
- * Stack-tip Downwash.
- * Model Accounts for ELEVated Terrain Effects.
- * Use Calms Processing Routine.
- * Use Missing Data Processing Routine.
- * No Exponential Decay.
- * Model Uses RURAL Dispersion Only.
- * CCVR_Sub - Meteorological data includes CCVR substitutions
- * TEMP_Sub - Meteorological data includes TEMP substitutions
- * Model Assumes No FLAGPOLE Receptor Heights.

* The User Specified a Pollutant Type of: OTHER

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 1 Source(s); 1 Source Group(s); and 17956 Receptor(s)

with: 1 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 0 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 RLINE/RLINEXT source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with a total of 0 line(s)
and: 0 SWPOINT source(s)

**Model Set To Continue RUNNING After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 22112

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 55.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 5.5 MB of RAM.

**Input Runstream File: aermod.inp

Profile format: FREE

Surface station no.: 23188

Name: SAN_DIEGO/LINDBERGH_FIELD

Year: 2010

Upper air station no.: 3190

Name: UNKNOWN

Year: 2010

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF	WS	WD	HT	REF	TA	HT
10	01	01	1	01	-1.0	0.031	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	48.	10.0	283.1	10.0			
10	01	01	1	02	-1.0	0.030	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	62.	10.0	283.1	10.0			
10	01	01	1	03	-1.0	0.031	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	45.	10.0	282.5	10.0			
10	01	01	1	04	-1.0	0.030	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	79.	10.0	281.9	10.0			
10	01	01	1	05	-0.2	0.015	-9.000	-9.000	-999.	4.	1.3	0.03	0.98	1.00	0.44	356.	10.0	280.8	10.0			
10	01	01	1	06	-1.0	0.031	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	45.	10.0	280.8	10.0			
10	01	01	1	07	-0.8	0.031	-9.000	-9.000	-999.	13.	3.3	0.03	0.98	1.00	0.89	47.	10.0	281.9	10.0			
10	01	01	1	08	-0.6	0.030	-9.000	-9.000	-999.	13.	4.3	0.03	0.98	0.49	0.89	78.	10.0	282.5	10.0			
10	01	01	1	09	19.1	0.086	0.293	0.014	47.	61.	-3.1	0.03	0.98	0.30	0.89	24.	10.0	286.4	10.0			
10	01	01	1	10	60.3	0.098	0.561	0.010	106.	73.	-1.4	0.03	0.98	0.23	0.89	351.	10.0	288.1	10.0			
10	01	01	1	11	59.0	0.158	0.715	0.009	224.	150.	-6.0	0.03	0.98	0.21	1.78	311.	10.0	290.8	10.0			
10	01	01	1	12	67.1	0.189	0.858	0.008	341.	197.	-9.1	0.03	0.98	0.20	2.23	313.	10.0	292.5	10.0			
10	01	01	1	13	66.4	0.159	0.922	0.008	427.	153.	-5.5	0.03	0.98	0.20	1.78	305.	10.0	293.6	10.0			
10	01	01	1	14	57.3	0.187	0.919	0.008	490.	193.	-10.2	0.03	0.98	0.21	2.23	278.	10.0	294.8	10.0			
10	01	01	1	15	38.8	0.237	0.827	0.008	526.	277.	-31.0	0.03	0.98	0.24	3.12	289.	10.0	293.1	10.0			
10	01	01	1	16	20.7	0.173	0.678	0.008	543.	174.	-22.7	0.03	0.98	0.33	2.23	296.	10.0	291.4	10.0			
10	01	01	1	17	-1.5	0.046	-9.000	-9.000	-999.	46.	5.7	0.03	0.98	0.60	1.34	337.	10.0	291.4	10.0			
10	01	01	1	18	-1.6	0.046	-9.000	-9.000	-999.	23.	5.4	0.03	0.98	1.00	1.34	337.	10.0	290.3	10.0			
10	01	01	1	19	-0.2	0.015	-9.000	-9.000	-999.	5.	1.8	0.03	0.98	1.00	0.44	252.	10.0	288.6	10.0			
10	01	01	1	20	-0.2	0.015	-9.000	-9.000	-999.	4.	1.8	0.03	0.98	1.00	0.44	113.	10.0	287.5	10.0			
10	01	01	1	21	-0.8	0.030	-9.000	-9.000	-999.	13.	3.3	0.03	0.98	1.00	0.89	122.	10.0	286.9	10.0			
10	01	01	1	22	-2.1	0.046	-9.000	-9.000	-999.	23.	4.0	0.03	0.98	1.00	1.34	99.	10.0	286.4	10.0			
10	01	01	1	23	-1.0	0.030	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	331.	10.0	285.3	10.0			
10	01	01	1	24	-1.0	0.031	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	40.	10.0	285.3	10.0			

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
10	01	01	01	10.0	1	48.	0.89	283.2	30.0	-99.00	0.41

F indicates top of profile (=1) or below (=0)

▲ *** AERMOD - VERSION 22112 *** C:\Modeling Projects\7801_South_Bay_USD\7801_South_Bay_USD.isc ***
 *** AERMET - VERSION 22112 *** ***

10/17/23
 15:55:05
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*** MODELOPTs: RegDEFAULT CONC ELEV RURAL SigA Data

*** THE SUMMARY OF MAXIMUM PERIOD (26304 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS 547.27151 AT (488723.50, 3604742.50, 7.29, 7.29, 0.00)		DC	
	2ND HIGHEST VALUE IS 523.17319 AT (488723.50, 3604727.50, 7.31, 7.31, 0.00)		DC	
	3RD HIGHEST VALUE IS 523.08631 AT (488708.50, 3604727.50, 6.89, 6.89, 0.00)		DC	
	4TH HIGHEST VALUE IS 448.54419 AT (488708.50, 3604712.50, 6.89, 6.89, 0.00)		DC	
	5TH HIGHEST VALUE IS 428.83404 AT (488693.50, 3604712.50, 6.65, 6.65, 0.00)		DC	
	6TH HIGHEST VALUE IS 426.79044 AT (488708.50, 3604742.50, 6.95, 6.95, 0.00)		DC	
	7TH HIGHEST VALUE IS 426.54607 AT (488693.50, 3604727.50, 6.67, 6.67, 0.00)		DC	
	8TH HIGHEST VALUE IS 388.42944 AT (488723.50, 3604712.50, 7.11, 7.11, 0.00)		DC	
	9TH HIGHEST VALUE IS 385.37768 AT (488738.50, 3604727.50, 7.55, 7.55, 0.00)		DC	
	10TH HIGHEST VALUE IS 378.50610 AT (488693.50, 3604742.50, 6.68, 6.68, 0.00)		DC	

*** RECEPTOR TYPES: GC = GRIDCART
 GP = GRIDPOLR
 DC = DISCCART
 DP = DISCPOLR

▲ *** AERMOD - VERSION 22112 *** C:\Modeling Projects\7801_South_Bay_USD\7801_South_Bay_USD.isc ***
 *** AERMET - VERSION 22112 *** ***

10/17/23
 15:55:05
 PAGE 5

*** MODELOPTs: RegDEFAULT CONC ELEV RURAL SigA Data

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
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ALL HIGH 1ST HIGH VALUE IS 7079.05308 ON 12101505: AT (488723.50, 3604697.50, 7.22, 7.22, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
 GP = GRIDPOLR
 DC = DISCCART
 DP = DISCPOLR

*** AERMOD - VERSION 22112 *** C:\Modeling Projects\7801_South_Bay_USD\7801_South_Bay_USD.isc *** 10/17/23
 *** AERMET - VERSION 22112 *** *** 15:55:05
 PAGE 6

*** MODELOPTs: RegDFault CONC ELEV RURAL SigA Data

*** Message Summary : AERMOD Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
 A Total of 1 Warning Message(s)
 A Total of 456 Informational Message(s)
 A Total of 26304 Hours Were Processed
 A Total of 161 Calm Hours Identified
 A Total of 295 Missing Hours Identified (1.12 Percent)

***** FATAL ERROR MESSAGES *****
 *** NONE ***

***** WARNING MESSAGES *****
 MX W403 99 PFLCNV: Turbulence data is being used w/o ADJ_U* option SigA Data

Vicinity Map

601 Elm Ave.
Imperial Beach, CA 91932

Legend

-  1,000 ft Radius
-  601 Elm Ave
-  Property Boundary
-  Replacement Generator



Google Earth

Image Landsat / Copernicus
Data IDEO-Columbia, NSF NOAA


Imperial Beach Blvd
1000 ft

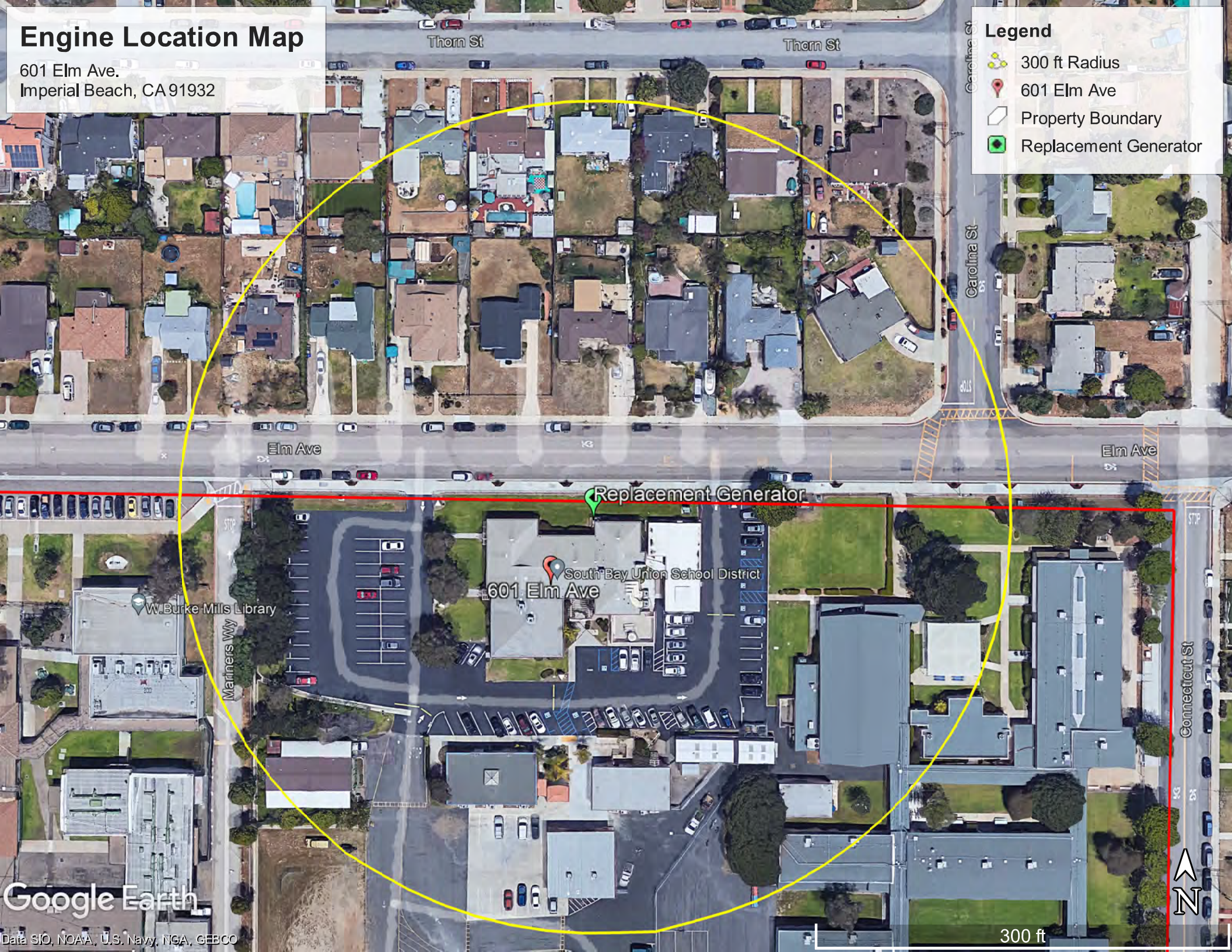


Engine Location Map

601 Elm Ave.
Imperial Beach, CA 91932

Legend

-  300 ft Radius
-  601 Elm Ave
-  Property Boundary
-  Replacement Generator



Google Earth

Data SIO, NOAA, U.S. Navy, NGA, GEBCO

300 ft

Galvez, Maria

From: Attar, Fahmy
Sent: Thursday, September 28, 2023 2:41 PM
To: Reeve, Bill; Nguyen, Tony
Cc: Canter, Adam; Swaney, Jim
Subject: 7801_South Bay Union School District HRA Request

Hello,

Please post the results in [7801 South Bay Union School District](#)
Please let me know if extra TNS funds are necessary for the HRA.

Thank you,

Fahmy Attar | Associate APC Engineer
Fahmy.Attar@sdapcd.org | M: (858) 736-6108
In-Office: T/W | Telework: M/Thu | 7:30 a.m. - 6:00 p.m.
<http://www.sdapcd.org> | 10124 Old Grove Rd, San Diego CA, 92131

