Application for Alternative Control of Emissions (ACE) for the Commercial Harbor Craft Regulation

Submit your application by e-mail to harborcraft@arb.ca.gov.

Company Information

Company name:	BAE Systems Maritime Solutions San Diego Inc.
Contact name:	Sandor (Shaun) Halvax
Mailing address:	2205 East Belt Street
City, state and zip code:	San Diego, CA 92113
Telephone number:	619-288-5274
Company email address:	Sandor.Halvax@baesystems.us

For CARB Use Only:

Date received:	
Application number:	

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Alternative Control of Emissions (ACE)

ACE strategy or strategies (list all strategies from the list in section (f)(1)(E) being used in the ACE plan)**:**	5.shore-side power 8.any other measures that sufficiently reduce emissions
Number of vessels in ACE plan:	1
Approved Feasibility Extension (maximum of 2 years)**:**	
Nominal Compliance Baseline – NOx (lbs.) fleet total from 2023 – 2034:	35,805.42
ACE Scenario – NOx (lbs.) fleet total from 2023 – 2024:	28,587.20
NOx Reduction in lbs.:	7,218.22
Nominal Compliance Baseline – PM (lbs.) fleet total from 2023 – 2034	1,004.83
ACE Scenario – PM (lbs.) fleet total from 2023 – 2024	977.57
PM Reduction in lbs.:	27.26

See workbook "Att1_POSD Drydock Generators_Crane ACE_Calculations_2025.10.15.xlsx" for detailed calculations.

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ACE Vessel Information

Copy and paste this table as needed for each vessel in your ACE plan.	
Vessel name:	Pride of San Diego Dry Dock
Vessel category (primary use)**:**	Floating Dry Dock
CARB Unique Vessel Identifier (UVI):	CARB02338
Other types of identification such as Coast Guard number, IMO number, or Maritime Mobile Service Identity Number:	N/A
Number of engines on vessel:	3
Proposed operating hours in Regulated California Waters (RCW) each calendar year:	ACE Scenario requests 40 hours per engine per year for the two POSD engines from 1/1/2024 until 12/31/2025 (Note: in 2024 the engines operated 39.62 and 39.28 hours). Anticipating one docking event in 2026 utilizing each engine 10 hours, starting 4/1/2026, the operation would be fully electric and the two engines would be only used in emergency situations, limited to 12 hours per year for maintenance and testing (i.e., 1 hour per month for each engine). Additionally, the exiting Tier 2 engine on the Kobelco wingwall crane would maintain operation at 1600 hours per year and converted to a Tier 4 Final no later than 1/1/2026 (note: engine operated 1066 and 1106.4 hours in 2023 and 2024, respectively).
Whether the vessel operates exclusively or periodically in RCW, and where the vessel primarily operates within RCW:	100% in RCW
Homebase:	San Diego Bay
Does this vessel operate in any Disadvantaged Communities (DACs)?	Yes
Check https://oehha.ca.gov/calenviroscreen/sb535 to see if your homebase or regularly scheduled stops are in a disadvantaged community (DAC).	

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ACE Engine Information

Copy and paste this table as needed for each engine in your ACE plan.	
Vessel UVI:	CARB02338
Engine location:	2205 E. Belt Street San Diego CA 92113
Auxiliary or main engine:	Main Engine #1
Engine type:	Compression Ignition Engine
Engine make:	Detroit Diesel
Engine family number:	N/A
Engine model:	16V-149TI
Engine model year:	1983
Engine horsepower:	1200
Engine tier:	Non-certified
Engine serial number:	16E0007583
Engine aftertreatment, if applicable:	None
Engine zero-emission and advanced technology (ZEAT) information, if applicable:	N/A
Engine compliance date, if applicable:	12/31/2023
Engine Compliance Alternative Emission Control Strategy (CAECS), if applicable:	Operate engine 80 hours per year from 1/1/2023 through 12/31/2023 (note: engine actual operation was 21.77 hours in 2023), then 40 hours per year through 12/31/2025 thereafter (note: engine actual operation was 39.62 hours in 2024); Repower floating dry-dock to fully electric by 4/1/2026; Operate 10 hours for a single docking evening, then convert engines to emergency use only with 12 hours per year for maintenance and testing beginning 4/1/2026.
Engine compliance extension applied, if	N/A

Vessel UVI:	CARB02338
Engine location:	2205 E. Belt Street San Diego CA 92113
Auxiliary or main engine:	Main Engine #2
Engine type:	Compression Ignition Engine
Engine make:	Detroit Diesel
Engine family number:	N/A
Engine model:	16V-149TI

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ACE Engine Information

Engine model year:	1983
Engine horsepower:	1200
Engine tier:	Non-certified
Engine serial number:	16E0007582
Engine aftertreatment, if applicable:	None
Engine zero-emission and advanced	N/A
Engine compliance date, if applicable:	12/31/2023
Engine Compliance Alternative Emission Control Strategy (CAECS), if applicable:	Operate engine 80 hours per year from 1/1/2023 through 12/31/2023 (note: engine actual operation was 16.11 hours in 2023), then 40 hours per year through 12/31/2025 thereafter (note: engine actual operation was 39.28 hours in 2024); Repower floating dry-dock to fully electric by 4/1/2026; Operate 10 hours for a single docking evening, then convert engines to emergency use only with 12 hours per year for maintenance and testing beginning 4/1/2026.
Engine compliance extension applied, if	N/A

Vessel UVI:	CARB02338
Engine location:	2205 E. Belt Street San Diego CA 92113
Auxiliary or main engine:	Crane Engine
Engine type:	Compression Ignition Engine
Engine make:	Mitsubishi Fuso
Engine family number:	4MFTL11.9D2A
Engine model:	6D24-TLA2F
Engine model year:	2004
Engine horsepower:	316
Engine tier:	Tier 2
Engine serial number:	6D24359428
Engine aftertreatment, if applicable:	None
Engine zero-emission and advanced	N/A
Engine compliance date, if applicable:	12/31/2028

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ACE Engine Information

Engine Compliance Alternative Emission Control Strategy (CAECS), if applicable:	Operate engine 1600 hours per year, no change from baseline. Repower Kobelco wingwall crane with a Tier 4F engine by 1/1/2026. (note: engine operated 1066 and 1106.4 hours in 2023 and 2024, respectively).
Engine compliance extension applied, if applicable:	N/A

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Baseline Vessel Information

Copy and paste this table as needed for each vessel in your ACE plan.	
Vessel name:	Pride of San Diego Dry Dock
Vessel category (primary use)**:**	Floating Dry Dock
CARB Unique Vessel Identifier (UVI):	CARB02338
Other types of identification such as Coast Guard number, IMO number, or Maritime Mobile Service Identity Number:	N/A
Number of engines on vessel:	3
Proposed operating hours in Regulated California Waters (RCW) each calendar year:	80 hours per year for Main Engines (2) in 2023 (note: actual operation in 2023 was 21.77 and 16.11), then 40 hours per year each year thereafter (note: in 2024 engines operated 39.62 and 39.28 hours) 1600 hours per year for Crane Engine (note: engine operated 1066 and 1106.4 hours in 2023 and 2024 respectively)
Whether the vessel operates exclusively or periodically in RCW, and where the vessel primarily operates within RCW:	100% in RCW
Homebase:	San Diego Bay
Does this vessel operate in any Disadvantaged Communities (DACs)?	Yes
Check https://oehha.ca.gov/calenviroscreen/sb535 to see if your homebase or regularly scheduled stops are in a disadvantaged community (DAC).	

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Baseline Engine Information

Copy and paste this table as needed for each engine in your ACE plan.	
Vessel UVI:	CARB02338
Engine location:	2205 E. Belt Street San Diego CA 92113
Auxiliary or main engine:	Main Engine #1
Engine type:	Compression Ignition Engine
Engine make:	Detroit Diesel
Engine family number:	N/A
Engine model:	16V-149TI
Engine model year:	1983
Engine horsepower:	1200
Engine tier:	Non-certified
Engine serial number:	16E0007583
Engine aftertreatment, if applicable:	None
Engine zero-emission and advanced technology (ZEAT) information, if applicable:	N/A
Engine compliance date, if applicable:	12/31/2023
Engine Compliance Alternative Emission Control Strategy (CAECS), if applicable:	For Baseline scenarion, engines would meet Tier 4 Marine with VDECS starting 1/1/2024.
Engine compliance extension applied, if applicable:	N/A

Vessel UVI:	CARB02338
Engine location:	2205 E. Belt Street San Diego CA 92113
Auxiliary or main engine:	Main Engine #2
Engine type:	Compression Ignition Engine
Engine make:	Detroit Diesel
Engine family number:	N/A
Engine model:	16V-149TI
Engine model year:	1983
Engine horsepower:	1200
Engine tier:	Non-certified
Engine serial number:	16E0007582

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Baseline Engine Information

Engine aftertreatment, if applicable:	None
Engine zero-emission and advanced technology (ZEAT) information, if applicable:	N/A
Engine compliance date, if applicable:	12/31/2023
Engine Compliance Alternative Emission Control Strategy (CAECS), if applicable:	For Baseline scenarion, engines would meet Tier 4 Marine with VDECS starting 1/1/2024.
Engine compliance extension applied, if applicable:	N/A

Vessel UVI:	CARB02338
Engine location:	2205 E. Belt Street San Diego CA 92113
Auxiliary or main engine:	Crane Engine
Engine type:	Compression Ignition Engine
Engine make:	Mitsubishi Fuso
Engine family number:	4MFTL11.9D2A
Engine model:	6D24-TLA2F
Engine model year:	2004
Engine horsepower:	316
Engine tier:	Tier 2
Engine serial number:	6D24359428
Engine aftertreatment, if applicable:	None
Engine zero-emission and advanced	N/A
Engine compliance date, if applicable:	12/31/2028
Engine Compliance Alternative Emission Control Strategy (CAECS), if applicable:	For Baseline scenarion, engine would meet Tier 4 Final starting 1/1/2029.
Engine compliance extension applied, if applicable:	N/A

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Attestations

Confirm each of the following statement by selecting TRUE from the dropdown menu to the left of each statement.	
TRUE	I, an authorized representative of **BAE Systems Maritime Solutions San Diego Inc.**, attest to the veracity of the information submitted in the ACE application packet and declaring that the information submitted accurately represents the actual and/or intended long-term operation of the ACE plan described in the application packet.
TRUE	Emission reductions included in this ACE only includes diesel PM and NOx emissions from harbor craft within the applicant's fleet that operate within a single specified California air basin, or another defined geographic area approved by the E.O *93118.5 section (f)(1)(G)*
TRUE	Applicant will maintain operating records of: 1. all the reporting and recordkeeping requirements specified in subsection (m) and (o) on and after January 1, 2023; 2. maintenance procedures; and 3. emissions test results *93118.5 section (f)(1)(H)*
TRUE	Applicant will retain records and reports for the lifetime of each engine and must submit these records and reports to the E.O. in the manner specified in the approved ACE or upon request by the E.O. *93118.5 section (f)(1)(H)*
TRUE	Emission reductions included in this ACE does not include reductions that are otherwise required by any local, State, or federal rule, regulation, or statute, or that are achieved or estimated from equipment not located in the region to which the ACE applies. *93118.5 section (f)(1)(I)*
TRUE	The ACE application does not use equipment acquired by funds or grants that prohibit use of funds to comply with State regulations, laws, or mandates. *93118.5 section (f)(1)(I)*
TRUE	Applicant will not operate any harbor craft under the ACE unless the person has first been notified in writing by the E.O. of the ACE's approval. Prior to such approval, the applicant must comply with the requirements in the CHC regulation on and after January 1, 2023. *93118.5 section (f)(1)(J)*

			Nominal Compliance Baseline Annual Emissions											
		Year of Operation	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
		Engine Scenario	Drydock: Non-certified Crane: Tier 2	Drydock: Tier 4 Marine w/VDECS Crane: Tier 2	Drydock: Tier 4 Marine w/VDECS Crane: Tier 2	Drydock: Tier 4 Marine w/VDECS Crane: Tier 2	Drydock: Tier 4 Marine w/VDECS Crane: Tier 2	Drydock: Tier 4 Marine w/VDECS Crane: Tier 2	Drydock: Tier 4 Marine w/VDECS Crane: Tier 4F	Drydock: Tier 4 Marine w/VDECS Crane: Tier 4F	Drydock: Tier 4 Marine w/VDECS Crane: Tier 4F	Drydock: Tier 4 Marine w/VDECS Crane: Tier 4F	Drydock: Tier 4 Marine w/VDECS Crane: Tier 4F	Drydock: Tier 4 Marine w/VDECS Crane: Tier 4F
			Drydock Engines											
		Engine BHP	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
		030067 (Starting Hours)	3687.26	0.00	39.62	79.62	119.62	159.62	199.62	239.62	279.62	319.62	359.62	399.62
		030064 (Starting Hours)	3687.78	0.00	39.28	79.28	119.28	159.28	199.28	239.28	279.28	319.28	359.28	399.28
		NO_x Zero EF (g/bhp-hr)	10.37	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
		Deterioration Rate (g/bhp-hr[2])	1.72E-04	1.73E-05	1.73E-05	1.73E-05	1.73E-05	1.73E-05	1.73E-05	1.73E-05	1.73E-05	1.73E-05	1.73E-05	1.73E-05
		NO_x EF (lb/hr) - 030067	29.11	2.75	2.75	2.76	2.76	2.76	2.76	2.76	2.76	2.77	2.77	2.77
		NO_x EF (lb/hr) - 030064	29.11	2.75	2.75	2.75	2.76	2.76	2.76	2.76	2.76	2.77	2.77	2.77
		PM Zero EF (g/bhp-hr)	0.42	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
		Deterioration Rate (g/bhp-hr[2])	2.25E-05	2.39E-07	2.39E-07	2.39E-07	2.39E-07	2.39E-07	2.39E-07	2.39E-07	2.39E-07	2.39E-07	2.39E-07	2.39E-07
		PM EF (lb/hr) - 030067	1.34	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012
		PM EF (lb/hr) - 030064	1.34	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012
		030067 or Replacement (hr)	21.77	39.62	40	40	40	40	40	40	40	40	40	40
		030064 or Replacement (hr)	16.11	39.28	40	40	40	40	40	40	40	40	40	40
			Kobelco Crane Engine											
		Engine BHP	316	316	316	316	316	316	316	316	316	316	316	316
		Starting Hours	31,502	32,568	33,674.4	35,274	36,874	38,474	0	1,600	3,200	4,800	6,400	8,000
		NO_x Zero EF (g/bhp-hr)	4.40	4.40	4.40	4.40	4.40	4.40	0.30	0.30	0.30	0.30	0.30	0.30
		Deterioration Rate (g/bhp-hr[2])	7.32E-05	7.32E-05	7.32E-05	7.32E-05	7.32E-05	7.32E-05	4.96E-06	4.96E-06	4.96E-06	4.96E-06	4.96E-06	4.96E-06
		NO_x EF (lb/hr)	3.71	3.71	3.71	3.71	3.71	3.71	0.21	0.21	0.22	0.22	0.23	0.24
		PM Zero EF (g/bhp-hr)	0.12	0.12	0.12	0.12	0.12	0.12	0.015	0.015	0.015	0.015	0.015	0.015
		Deterioration Rate (g/bhp-hr[2])	6.37E-06	6.37E-06	6.37E-06	6.37E-06	6.37E-06	6.37E-06	7.91E-07	7.91E-07	7.91E-07	7.91E-07	7.91E-07	7.91E-07
		PM EF (lb/hr)	0.14	0.14	0.14	0.14	0.14	0.14	0.010	0.011	0.012	0.013	0.014	0.015
		962075 or Replacement (hr)	1066	1106.4	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
		Renewable Diesel Reduction on NO_x[1]	5%	5%	5%	5%	5%	5%	--	--	--	--	--	--
		Renewable Diesel Reduction on PM[1]	30%	30%	30%	30%	30%	30%	--	--	--	--	--	--
Pollutant	SDAPCD Permit	Units												
NO_x	APCD2005-PTO-030067	lb	602.04	109.01	110.13	110.20	110.27	110.35	110.42	110.49	110.57	110.64	110.71	110.79
	APCD2005-PTO-030064	lb	445.52	108.07	110.13	110.20	110.27	110.35	110.42	110.49	110.57	110.64	110.71	110.79
	APCD2007-PTO-962075	lb	3,754.72	3,898.48	5,637.71	5,637.71	5,637.71	5,637.71	332.48	341.33	350.18	359.03	367.87	376.72
	Total	lb	4,802.27	4,115.56	5,857.97	5,858.11	5,858.26	5,858.41	553.32	562.31	571.31	580.30	589.30	598.29
PM	APCD2005-PTO-030067	lb	20.47	0.47	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.49	0.49
	APCD2005-PTO-030064	lb	15.15	0.47	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.49	0.49
	APCD2007-PTO-962075	lb	104.14	108.13	156.36	156.36	156.36	156.36	16.62	18.04	19.45	20.86	22.27	23.68
	Total	lb	139.76	109.07	157.32	157.32	157.32	157.32	17.59	19.00	20.41	21.83	23.24	24.65

ACE Scenario requests 40 hours per engine per year for the two POSD drydock engines until 12/31/2025. Anticipating one docking event in early 2026 for 10 hours of use for each engines then in April 2026 the drydock operation would be fully electric and the two engines would be only used in emergency situations, limited to 12 hours per year for maintenance and testing. Additionally, the existing Tier 2 engine on the Kobelco wingwall crane will be replaced with a Tier 4F engine no later than 1/1/2026 and operated approximately 1,600 hours per year.

Annual M&T Hours per drydock engine: **12** for ACE Scenario

Annual Kobelco wingwall crane hours: **1600** for ACE Scenario

			ACE Scenario Annual Emissions											
		Year of Operation	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
		Engine Scenario	Drydock: Non-certified Crane: Tier 2	Drydock: Non-certified Crane: Tier 2	Drydock: Non-certified Crane: Tier 2	Drydock: One docking event in 2026, then Electric w/M&T for Non-cert Crane: Tier 4F	Drydock: Electric w/ M&T for Non-cert Crane: Tier 4F	Drydock: Electric w/ M&T for Non-cert Crane: Tier 4F	Drydock: Electric w/ M&T for Non-cert Crane: Tier 4F	Drydock: Electric w/ M&T for Non-cert Crane: Tier 4F	Drydock: Electric w/ M&T for Non-cert Crane: Tier 4F	Drydock: Electric w/ M&T for Non-cert Crane: Tier 4F	Drydock: Electric w/ M&T for Non-cert Crane: Tier 4F	Drydock: Electric w/ M&T for Non-cert Crane: Tier 4F
			Drydock Engines											
		Engine BHP	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
		030067 (Starting Hours)	3687.26	3709.03	3748.65	3788.65	3810.65	3822.65	3834.65	3846.65	3858.65	3870.65	3882.65	3894.65
		030064 (Starting Hours)	3687.78	3703.89	3743.17	3783.17	3805.17	3817.17	3829.17	3841.17	3853.17	3865.17	3877.17	3889.17
		NO_x Zero EF (g/bhp-hr)	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37
		Deterioration Rate (g/bhp-hr^2)	1.72E-04	1.72E-04	1.72E-04	1.72E-04	1.72E-04	1.72E-04	1.72E-04	1.72E-04	1.72E-04	1.72E-04	1.72E-04	1.72E-04
		NO_x EF (lb/hr) - 030067	29.11	29.12	29.14	29.16	29.17	29.17	29.18	29.18	29.19	29.19	29.20	29.20
		NO_x EF (lb/hr) - 030064	29.11	29.12	29.14	29.15	29.16	29.17	29.17	29.18	29.19	29.19	29.20	29.20
		PM Zero EF (g/bhp-hr)	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
		Deterioration Rate (g/bhp-hr^2)	2.25E-05	2.25E-05	2.25E-05	2.25E-05	2.25E-05	2.25E-05	2.25E-05	2.25E-05	2.25E-05	2.25E-05	2.25E-05	2.25E-05
		PM EF (lb/hr) - 030067	1.34	1.34	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.36
		PM EF (lb/hr) - 030064	1.34	1.34	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.36
		030067 or Replacement (hr)	21.77	39.62	40	22	12	12	12	12	12	12	12	12
		030064 or Replacement (hr)	16.11	39.28	40	22	12	12	12	12	12	12	12	12
			Kobelco Crane Engine											
		Engine BHP	316	316	316	316	316	316	316	316	316	316	316	316
		Starting Hours	31,502	32,568	33,674.4	0	1,600	3,200	4,800	6,400	8,000	9,600	11,200	12,800
		NO_x Zero EF (g/bhp-hr)	4.40	4.40	4.40	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
		Deterioration Rate (g/bhp-hr^2)	7.32E-05	7.32E-05	7.32E-05	4.96E-06	4.96E-06	4.96E-06	4.96E-06	4.96E-06	4.96E-06	4.96E-06	4.96E-06	4.96E-06
		NO_x EF (lb/hr)	3.71	3.71	3.71	0.21	0.21	0.22	0.22	0.23	0.24	0.24	0.25	0.25
		PM Zero EF (g/bhp-hr)	0.12	0.12	0.12	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
		Deterioration Rate (g/bhp-hr^2)	6.37E-06	6.37E-06	6.37E-06	7.91E-07	7.91E-07	7.91E-07	7.91E-07	7.91E-07	7.91E-07	7.91E-07	7.91E-07	7.91E-07
		PM EF (lb/hr)	0.14	0.14	0.14	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.017
		962075 or Replacement (hr)	1066	1106.4	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
		Renewable Diesel Reduction on NO_x[1]	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
		Renewable Diesel Reduction on PM[1]	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Pollutant	**SDAPCD Permit**	**Units**												
NO_x	APCD2005-PTO-030067	lb	602.04	1,096.04	1,107.24	609.36	332.49	332.56	332.62	332.68	332.74	332.81	332.87	332.93
	APCD2005-PTO-030064	lb	445.52	1,086.55	1,107.15	609.31	332.47	332.53	332.59	332.65	332.72	332.78	332.84	332.90
	APCD2007-PTO-962075	lb	3,754.72	3,898.48	5,637.71	332.48	341.33	350.18	359.03	367.87	376.72	385.57	394.42	402.30
	Total	lb	4,802.27	6,081.07	7,852.10	1,551.16	1,006.29	1,015.26	1,024.24	1,033.21	1,042.18	1,051.16	1,060.13	1,068.14
PM	APCD2005-PTO-030067	lb	20.47	37.29	37.71	20.78	11.34	11.35	11.36	11.36	11.37	11.37	11.38	11.39
	APCD2005-PTO-030064	lb	15.15	36.96	37.70	20.77	11.34	11.35	11.35	11.36	11.37	11.37	11.38	11.38
	APCD2007-PTO-962075	lb	104.14	108.13	156.36	16.62	18.04	19.45	20.86	22.27	23.68	25.09	26.50	27.76
	Total	lb	139.76	182.38	231.78	58.18	40.72	42.15	43.57	44.99	46.42	47.84	49.26	50.53

	lb	tons
Nominal Compliance Baseline NOx Emissions (lb) fleet total from 2023 – 2034	**35,805**	**17.90**
ACE Scenario – NOx Emissions (lb) fleet total from 2023 – 2034	**28,587**	**14.29**
NOx Emissions Reduction in lb	**(7,218)**	**(3.61)**

Nominal Compliance Baseline – PM Emissions (lbs.) fleet total from 2023 – 2034	**1,005**	**0.50**
ACE Scenario – PM Emissions (lbs.) fleet total from 2023 – 2034	**978**	**0.49**
PM Emissions Reduction in lbs.	**(27.3)**	**(0.01)**

Emission Factors for APCD2005-PTO-030067 and APCD2005-PTO-030064 (referred to as 030067 and 030064)

	Existing[1]	New w/o VDECS[2]	New w/VDECS[3]
MY Data/Tier	1984	4	4
Units	g/bhp-hr	g/bhp-hr	g/bhp-hr
NO_x EF*	10.37	1.04	1.04
PM EF*	0.42	0.03	0.005

MY	NOX	MY	DPM
1984	11.00	1984	0.53

Note: Engines were Built in 1983; therefore 1984 was chosen as the most representative model year.

**Note, since EF are based on sulfur content of 3%, used CARB fuel correction factors. See values and reference below.*

[1] *CARB, 2017 Off-Road Diesel Emission Factor Update for NOx and PM w/ Fuel Correction Factor*

[2] *CARB, CHC, Appendix H, Table H-5. Emission Factors (gram/bhp-hr) of CHC Engines by Horsepower Bin and Tier Standard*

[3] *VDECS considered Level 3 as required under Section 93118.5(e)(12)(C)(2) of the CHC*

CHC Appendix H for NOX and PM, Table H-5.For Tier 0 (pre-MY1988) engines, in the HP bin of >=800 is based on an average of 1969, 1971. 1979, 1984, and 1988 data.

Pollutant	Horsepower Bin	Tier Standard	Main Engine	Auxiliary Engine
NOx	175-799	0 (MY 1988-1999)	7.34	7.34
NOx	175-799	0 (MY 2000-2003)	5.62	5.62
NOx	175-799	1	5.20	4.17
NOx	175-799	2	4.76	3.02
NOx	175-799	3	3.73	3.22
NOx	25-49	0 (pre-MY 2000)	8.00	8.00
NOx	25-49	0 (MY 2000-2003)	4.67	4.67
NOx	25-49	1	4.52	4.52
NOx	25-49	2	4.57	4.57
NOx	25-49	3	4.29	4.29
NOx	50-99	0 (pre-MY 1988)	13.00	13.00
NOx	50-99	0 (MY 1988-1999)	8.30	8.30
NOx	50-99	0 (MY 2000-2003)	5.33	5.33
NOx	50–99	1	4.26	4.26
NOx	50–99	2	4.02	4.02
NOx	50–99	3	3.75	3.75
NOx	>=800	0 (pre- MY1988)	12.20	12.20
NOx	>=800	0 (MY 1988-2003)	7.34	7.34
NOx	>=800	1	6.97	6.97
NOx	>=800	2	5.08	5.08
NOx	>=800	3	3.69	3.69
NOx	>=800	4	1.04	1.04

Pollutant	Horsepower Bin	Tier Standard	Main Engine	Auxiliary Engine
DPM	175-799	3	0.05	0.07
DPM	25-49	0 (pre-MY 2000)	0.76	0.76
DPM	25-49	0 (MY 2000-2003)	0.28	0.28
DPM	25-49	1	0.26	0.26
DPM	25-49	2	0.19	0.19
DPM	25-49	3	0.17	0.17
DPM	50-99	0 (pre-MY 1988)	0.84	0.84
DPM	50-99	0 (MY 1988-1999)	0.72	0.72
DPM	50-99	0 (MY 2000-2003)	0.72	0.72
DPM	50–99	1	0.17	0.17
DPM	50–99	2	0.17	0.17
DPM	50–99	3	0.12	0.12
DPM	>=800	0 (pre-MY 1988)	0.59	0.59
DPM	>=800	0 (MY 1988-2003)	0.37	0.37
DPM	>=800	1	0.12	0.12
DPM	>=800	2	0.09	0.09
DPM	>=800	3	0.05	0.05
DPM	>=800	4	0.03	0.03

Fuel Correction Factor

NO_x	0.9425
PM	0.8012

CARB, CALIFORNIA'S EMISSIONS INVENTORY FOR OFF-ROAD LARGE COMPRESSION-IGNITED (CI) ENGINES (>25HP), TABLE 16

Table 16: Statewide Off-Road Fuel Correction Factors (Uncontrolled and Controlled) For Calendar Years 1993+

Model Year	NOX	PM
Pre-Tier I	0.9425	0.8012
	NOX	PM
Post-Tier I	0.8749	0.8972

Deterioration Factor

NO_x	0.21	Source:
PM	0.67	Source:
Useful Hours	12625	Source:

CARB, CALIFORNIA'S EMISSIONS INVENTORY FOR OFF-ROAD LARGE COMPRESSION-IGNITED (CI) ENGINES (>25HP), TABLE 17
CARB, CALIFORNIA'S EMISSIONS INVENTORY FOR OFF-ROAD LARGE COMPRESSION-IGNITED (CI) ENGINES (>25HP), TABLE 18

Table 17: Deterioration Rates for Diesel Engines (% increase per % useful life consumed)

HP	Deterioration Factor HC	CO	NOX	PM	On-Road Equivalent
25-50	0.51	0.41	0.06	0.31	LDDT
51-120	0.28	0.16	0.14	0.44	MHDT
121-250	0.28	0.16	0.14	0.44	MHDT
>250	0.44	0.25	0.21	0.67	HHDT

LDDT - Compared to pre-1980 light-duty diesel trucks
MHDT - Compared to pre-1984 medium-heavy-duty diesel trucks
HHDT - Compared to pre-1984 heavy-heavy-duty diesel trucks

Table 18: On-Road Diesel Engine Average Speed and Useful Life

	Avg Speed (mph)	Useful Life (mi)	Useful Hours (hr)
LHDD	30.00	120000	4000
MHDD	30.57	185000	6052
HHDD	22.97	290000	12625

LHDD - Light-heavy-duty diesel
MHDD - Medium-heavy-duty diesel
HHDD - Heavy-heavy-duty diesel

The following is an example of how to calculate the HC deterioration rate for uncontrolled 1987 engines between 121-175 hp:

$$DR_{121\text{-}175} = (ZH_{1987} * 0.28) / 6052$$

Since ZH_{1987} = 0.88 gm/hp-hr, the DR for 1987 model year engines is calculated to equal 4.07E-5 gm/hp-hr[2].

2. Engine Deterioration

As engines age, the pollutant-specific emission factors slowly increase with age. This deterioration is primarily due to the wear on the various parts of an engine associated with its day-to-day activities and is a result of malfunction of emissions related components. Deterioration occurs at different rates for different pollutant.

Deterioration factors were adopted from the previous CARB inventory[33], as shown in Table H-7. The values represent the increase of emission factors at the end of the useful life of engines. For example, for an engine larger than 250 horsepower, the NOx and PM, emission factors will increase 21 percent and 67 percent respectively, at the end of its useful life. Useful life is defined as the age when 50 percent of the engines retire in the fleet. The inventory reflects that engines continue to deteriorate until they reach their useful life, and rebuilding engines will not reset the deterioration. Useful life for each vessel and engine type was determined using the survival curves developed from CARB Reporting data and are summarized in Table H-8.

Table H-7. CHC Deterioration Rates by Horsepower Bin (percentage increase by end of useful life)

Horsepower Bin	NOx	PM
0–50	6	31
51–250	14	44
>250	21	67

CARB, Appendix H 2021 Update to the Emission Inventory for Commercial Harbor Craft: Methodology and Results, Pages H-16 to H-17

"Because of limited number of Tier 0 engines (also known as pre-Tier 1 engines or uncontrolled), their EFs were adopted from general off-road EFs[2930]..."

The value used in Appendix H for NOX and PM, for Tier 0 (pre-MY1988) engines, in the HP bin of >=800 is based on an average of 1969, 1971. 1979, 1984, and 1988 data.

NOX	12.20	=AVERAGE(14,13,12,11,11) - See Table 2 below.
PM	0.592	=AVERAGE(0.74,0.63,0.53,0.53,0.53) - See Table 2 below.

https://ww2.arb.ca.gov/sites/default/files/classic/msei/ordiesel/ordas_ef_fcf_2017.pdf

Table 2. Zero-hour emission rates for pre-1988 uncontrolled engines

Power	Model year	Emission factors (g/hp-hr) HC	CO	NO_x	PM
25<hp<50		1.84	5.0	7	0.76
50≤hp<100		1.44	4.8	13	0.84
	1969	1.32	4.4	14	0.77
	1971	1.10	4.4	13	0.66
	1979	1.00	4.4	12	0.55
	1984	0.94	4.3	11	0.55
	1988	0.88	4.2	11	0.55
	1969	1.26	4.2	14	0.74
	1971	1.05	4.2	13	0.63
	1979	0.95	4.2	12	0.53
	1984	0.90	4.2	11	0.53
	1988	0.84	4.1	11	0.53

Emission Factors for APCD2007-PTO-962075 (referred to as 962075)

Tier 2 Certification

EPA Family	4MFTL11.9D2A		
NO_x	4.40 g/bhp-hr	Source:	https://www.epa.gov/sites/default/files/2018-02/nonroad-compression-ignition-archive1996-2011.xlsx
PM	0.120 g/bhp-hr	Source:	https://www.epa.gov/sites/default/files/2018-02/nonroad-compression-ignition-archive1996-2011.xlsx

EPA Model Ye	Manufacturer	Engine Family	Units	Certification Levels (The cert. levels include the first test. Sometimes a manufacturer will perform more than one test) OMHC	OMNMHC	NOx	CO	NOx	PM	FORM	ACC	LUG	Peak	Idle CO	CO2
2004	Mitsubishi Fuso Truck and Bus Corporation	4MFTL05.8D3B	g/bhp-hr			4.5	2.5		0.13		16	4	38		
2004	Mitsubishi Fuso Truck and Bus Corporation	4MFTL07.5D6A	g/bhp-hr			4.5	1.2		0.12		4	1	10		
2004	Mitsubishi Fuso Truck and Bus Corporation	4MFTL07.5D6D	g/bhp-hr			4.6	1.0		0.10		10	2	23		
2004	Mitsubishi Fuso Truck and Bus Corporation	4MFTL07.5D6E	g/bhp-hr			4.4	1.4		0.20		6	2	13		
2004	Mitsubishi Fuso Truck and Bus Corporation	4MFTL11.9D2A	g/bhp-hr			4.4	0.6		0.12		9	1	33		
2004	Mitsubishi Heavy Industries,Ltd	4MVXL00.6BBB	g/kW-hr			5.5	1.54		0.586		3.7	4.7	4.8		
2004	Mitsubishi Heavy Industries,Ltd	4MVXL01.0AAA	g/kW-hr			5.52	3.08		0.464		3.3	5.2	6.3		
2004	Mitsubishi Heavy Industries,Ltd	4MVXL01.0BBB	g/kW-hr			4.88	2.18		0.398		3.1	5.0	5.2		
2004	Mitsubishi Heavy Industries,Ltd	4MVXL01.3AAA	g/kW-hr			5.36	0.76		0.218		3.2	2.9	4.6		

Tier 4F Non-road CI Standards

NO_x	0.40 g/kW-hr		Source: https://ww2.arb.ca.gov/resources/documents/non-road-diesel-engine-certification-tier-chart
	0.30 g/bhp-hr	Convert:	1 bhp = 0.7457 kW
PM	0.02 g/kW-hr		Source: https://ww2.arb.ca.gov/resources/documents/non-road-diesel-engine-certification-tier-chart
	0.015 g/bhp-hr	Convert:	1 bhp = 0.7457 kW

Reference (1):
https://ww2.arb.ca.gov/resources/documents/low-emission-diesel-led-study-biodiesel-and-renewable-diesel-emissions-legacy

CALIFORNIA AIR RESOURCES BOARD

Contract No. 18ISD027

CARB Notice

Low Emission Diesel (LED) Study: Biodiesel and Renewable Diesel Emissions in Legacy and New Technology Diesel Engines

Background

The California Air Resources Board (CARB) contracted with the University of California at Riverside (UCR) Bourns College of Engineering – Center for Environmental Research and Technology (CE-CERT) to evaluate oxides of nitrogen (NOx) and particulate matter (PM) emissions from the use of renewable diesel (RD)/biodiesel (BD) blends in one on-road and one off-road new technology diesel engine[1] (NTDE) with selective catalytic reduction (SCR) and diesel particulate filter (DPF) exhaust aftertreatment systems, and one off-road non-NTDE (legacy engine) without DPF and SCR.

Previous studies using diesel engines with experimental or first generation SCR indicated that SCR fully controls NOx emissions from BD (i.e., NOx emissions due to BD do not exceed those from conventional diesel in the same engine). However, more recent studies with newer, more mature original engine manufacture SCR systems indicate that NOx emissions from BD may not be fully controlled in NTDEs. To further investigate NOx emissions from NTDEs, CARB contracted CE-CERT to evaluate NOx and PM emissions from the use of RD/BD blends in NTDEs with mature, modern emissions control systems.

Testing Results Summary

In both NTDEs tested, excess NOx emissions from BD were shown to be not fully controlled relative to reference CARB diesel. Excess NOx is any additional NOx produced from the use of BD in NTDEs relative to conventional CARB diesel.

In both NTDEs tested, blending of RD with BD was shown to not reduce excess NOx emissions from BD. This differs from legacy engines, where RD reduces excess NOx from BD. In the NTDEs tested, PM emissions were shown to be very low and near background levels for all blends and there were no statistically significant differences.

In the non-NTDE (legacy) engine tested, results were shown to be within the range of prior studies. RD100 reduced NOx emissions by about 5 percent and PM by about

[1] New technology diesel engine (NTDE) means a diesel engine that meets at least one of the following criteria (in summary):
(1) 2010 CARB emission standards for on-road heavy duty diesel engines (0.20 g/bhp-hr NOx and 0.01 g/bhp-hr PM),
(2) Tier 4 emission standards for non-road compression ignition engines (2014 and higher – 0.30 g/bhp-hr NOx and 0.01 g/bhp-hr PM for 130-560 hp engines), or
(3) employs a diesel emissions control strategy which uses selective catalytic reduction (SCR) to control NOx.

30 percent. In the legacy engine tested RD was shown to also reduce excess NOx from BD in the RD/BD blends. In the legacy engine tested, for PM, the greater the BD concentration in the RD/BD blends, the greater the observed PM emissions benefits.

San Diego County Air Pollution Control District
10124 Old Grove Road, San Diego, CA 92131-1649
Phone (858) 586-2600 www.sdapcd.org

Sectors: 5, P
Site Record: APCD1980-SITE-00204
Application Record: APCD2001-APP-976428

Permit Record: APCD2005-PTO-030064
APCD2005-PTO-030064

BAE Systems San Diego Ship Repair Inc
Environmental Manager
2205 East Belt Street
Foot of Sampson
San Diego, CA 92113

Equipment Address:
BAE Systems SDSR
Environmental Manager Lydia Pellecer
2205 E Belt St
Foot of Sampson
San Diego, CA 92113

PERMIT TO OPERATE

EXPIRES: September 30, 2025

This permit is not valid until required fees have been paid.

The above is hereby granted a Permit To Operate the article, machine, equipment or contrivance described below. This permit is not transferable to a new owner nor is it valid for operation of the equipment at another location except as specified. This Permit To Operate or copy must be posted on or within 25 feet of the equipment, or readily available on the operating premises.

Annual Operating Fees are due on an annual basis and shall be paid by any person who is required to maintain a Permit to Operate or Temporary Authorization pursuant to Rule 10 – Permits Required, Section (b) – Permit to Operate. Annual Operating Fees are due on the date the permit expires. If Annual Operating Fees are not paid by the permit expiration date, the permit will expire on that date and late fees will be incurred. An expired permit may be renewed within six months of the expiration date. If Annual Operating Fees are not paid within six months from the permit expiration date, the permit will be retired on the day following the last day of the six-month period from the permit expiration date. A retired permit may be reinstated within six months of the retirement date. If a permit is not reinstated within six months of the expiration date a new application for a Permit to Operate will be required. Facilities that operate with expired or retired permits may be subject to a Notice of Violation and civil penalties.

Owner or operator must receive District approval in writing prior to implementing any of the following changes including but not limited to Operational Changes, Conditions Changes, Additions, Alterations, and Replacement of Equipment, Ownership Changes, Location Changes, Like-Kind Replacement Units, and Contact Updates.

Equipment Owner:
BAE Systems SDSR Lydia Pellecer 2205 E Belt St, San Diego, CA 92113

Equipment Description:
Prime Engine
Mfr: DETROIT DIESEL,
Model: 16V-149TI,
S/N: 16E0007583,
fuel: diesel

Located in floating dry dock (Pride of San Diego, engine #1)
Every person who owns or operates this equipment is required to comply with the conditions listed below and all applicable requirements and District rules, including but not limited to Rules 10, 20, 40, 50, 51.

Fee Schedules:

1 [34D] Engine for Non-Emergency & Non-Cogeneration

FAILURE TO OPERATE IN COMPLIANCE IS A MISDEMEANOR SUBJECT TO CIVIL AND CRIMINAL PENALTIES

1. Operation of this internal combustion engine shall not exceed 40 hours per calendar year for any purpose including emergency operations. Records substantiating that the engine has not and will not exceed this limit shall be maintained and provided to District personnel upon request.
[17 CCR § 93118.5(e)(14)(B)1.-Table 22]

2. Any requirements of the Commercial Harbor Craft Regulation described in this permit, as denoted by being exclusively based on 17 CCR § 93118.5, shall not apply if an alternative to the specific requirement is approved by CARB under the Alternative Control of Emissions (ACE) provisions of 17 CCR § 93118.5(f) and the engine is operated in compliance with all stipulations of the CARB approved ACE. The owner or operator shall maintain a record of the ACE and records to substantiate compliance with applicable requirements if claiming exemption from requirements of this permit in accordance with this condition.
3. Operation of this internal combustion engine shall not exceed 80 hours per calendar year for any purpose, including emergency operations. The owner or operator shall maintain records on at least a calendar year basis of engine hours of operation.
[Rule 1200]
4. This engine shall only use CARB diesel fuel. (Rule 69.4.1, 17 CCR 93118.5)
5. Visible emissions including crank case smoke shall comply with Air Pollution Control District Rule 50. (Rule 50)
6. The equipment described above shall not cause or contribute to a public nuisance. (Rule 51)
7. A non-resettable engine hour meter shall be installed on this engine, maintained in good working order, and used for recording engine operation hours. If a meter is replaced, the Air Pollution Control District's Compliance Division shall be notified in writing within 10 calendar days. The written notification shall include the following information:
(a) old meter's hour reading
(b) replacement meter's manufacturer name, model and serial number if available and current hour reading on replacement meter
(c) copy of receipt of new meter or of installation work order. A copy of the meter replacement notification shall be maintained onsite and made available to the Air Pollution Control District upon request.
(17 CCR 93118.5)
8. If an existing hour meter is replaced, the owner/operator must comply with any requirements for notification to CARB described in 17 CCR § 93118.5.
[17 CCR § 93118.5(e)(2)]
9. The owner or operator of this engine shall conduct periodic inspections of the engine and add-on control equipment, if any, as recommended by the engine and control equipment manufacturers or as specified by the engine servicing company's maintenance procedures. The periodic inspections shall be conducted at least once every 4000 hours of operation, or every six months, whichever occurs first. (Rule 69.4.1)
10. The owner or operator of this engine shall conduct periodic maintenance of the engine and add-on control equipment, if any, as recommended by the engine and control equipment manufacturers or as specified by the engine servicing company's maintenance procedures. Maintenance shall be conducted at least once each calendar year, and shall include, but is not limited to, the following:
1) Change oil and filter, or test in accordance with the requirements of 40 CFR §63.6625(i) or (j);
2) Inspect and clean air filters, replacing as necessary; and
3) Inspect all hoses and belts, replacing as necessary.
Documentation of oil and filter changes or copies of the oil test analysis shall be kept on site and made available upon request. If testing in accordance with 40 CFR §63.6625(i) or (j), the oil analysis program must analyze the Total Base Number, viscosity and percent water content (for compression ignition engines) and the Total Acid Number, viscosity and percent water content (for spark ignited engines). If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
(Rule 12, Rule 69.4.1, 40 CFR 63 Subpart ZZZZ)
11. The owner or operator of the engine shall maintain records of periodic inspection and maintenance of the engine and control equipment, including dates inspection and maintenance were performed. [Rule 69.4.1]

12. The owner or operator of the engine shall maintain the following records on site for at least the same period of time as the engine to which the records apply is located at the site:
(a) documentation shall be maintained identifying the fuel as CARB diesel, and
(b) manual of recommended maintenance provided by the manufacturer.
(Rule 12, Rule 69.4.1, 17 CCR 93115, 40 CFR 60 Subpart IIII)
13. All records required by this permit shall be maintained on site and readily available for District inspection for a minimum of 36 months from their date of creation unless otherwise indicated by the conditions of this permit. (Rule 12, Rule 69.4.1, 40 CFR 60 Subpart IIII)
14. Access, facilities, utilities and any necessary safety equipment for source testing and inspection shall be provided upon request of the Air Pollution Control District.
15. This Air Pollution Control District Permit does not relieve the holder from obtaining permits or authorizations required by other governmental agencies.
16. The permittee shall, upon determination of applicability and written notification by the District, comply with all applicable requirements of the Air Toxics "Hot Spots" Information and Assessment Act (California Health and Safety Code Section 44300 et seq.)

San Diego County Air Pollution Control District
10124 Old Grove Road, San Diego, CA 92131-1649
Phone (858) 586-2600 www.sdapcd.org

Sectors: 5, P
Site Record: APCD1980-SITE-00204
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APCD2005-PTO-030067

BAE Systems San Diego Ship Repair Inc
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Equipment Address:
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PERMIT TO OPERATE

EXPIRES: September 30, 2025

This permit is not valid until required fees have been paid.

The above is hereby granted a Permit To Operate the article, machine, equipment or contrivance described below. This permit is not transferable to a new owner nor is it valid for operation of the equipment at another location except as specified. This Permit To Operate or copy must be posted on or within 25 feet of the equipment, or readily available on the operating premises.

Annual Operating Fees are due on an annual basis and shall be paid by any person who is required to maintain a Permit to Operate or Temporary Authorization pursuant to Rule 10 – Permits Required, Section (b) – Permit to Operate. Annual Operating Fees are due on the date the permit expires. If Annual Operating Fees are not paid by the permit expiration date, the permit will expire on that date and late fees will be incurred. An expired permit may be renewed within six months of the expiration date. If Annual Operating Fees are not paid within six months from the permit expiration date, the permit will be retired on the day following the last day of the six-month period from the permit expiration date. A retired permit may be reinstated within six months of the retirement date. If a permit is not reinstated within six months of the expiration date a new application for a Permit to Operate will be required. Facilities that operate with expired or retired permits may be subject to a Notice of Violation and civil penalties.

Owner or operator must receive District approval in writing prior to implementing any of the following changes including but not limited to Operational Changes, Conditions Changes, Additions, Alterations, and Replacement of Equipment, Ownership Changes, Location Changes, Like-Kind Replacement Units, and Contact Updates.

Equipment Owner:
BAE Systems SDSR Lydia Pellecer 2205 E Belt St, San Diego, CA 92113

Equipment Description:
Prime Engine
Mfr: Detroit Diesel,
Model: 16V-149TI,
S/N: 16E0007582,
fuel: diesel

Located in floating dry dock (Pride of San Diego, engine #2)
Every person who owns or operates this equipment is required to comply with the conditions listed below and all applicable requirements and District rules, including but not limited to Rules 10, 20, 40, 50, 51.

Fee Schedules:

1 [34D] Engine for Non-Emergency & Non-Cogeneration

FAILURE TO OPERATE IN COMPLIANCE IS A MISDEMEANOR SUBJECT TO CIVIL AND CRIMINAL PENALTIES

1. Operation of this internal combustion engine shall not exceed 40 hours per calendar year for any purpose including emergency operations. Records substantiating that the engine has not and will not exceed this limit shall be maintained and provided to District personnel upon request.
[17 CCR § 93118.5(e)(14)(B)1.-Table 22]

2. Any requirements of the Commercial Harbor Craft Regulation described in this permit, as denoted by being exclusively based on 17 CCR § 93118.5, shall not apply if an alternative to the specific requirement is approved by CARB under the Alternative Control of Emissions (ACE) provisions of 17 CCR § 93118.5(f) and the engine is operated in compliance with all stipulations of the CARB approved ACE. The owner or operator shall maintain a record of the ACE and records to substantiate compliance with applicable requirements if claiming exemption from requirements of this permit in accordance with this condition.
3. Operation of this internal combustion engine shall not exceed 80 hours per calendar year for any purpose, including emergency operations. The owner or operator shall maintain records on at least a calendar year basis of engine hours of operation.
[Rule 1200]
4. This engine shall only use CARB diesel fuel. (Rule 69.4.1, 17 CCR 93118.5)
5. Visible emissions including crank case smoke shall comply with Air Pollution Control District Rule 50. (Rule 50)
6. The equipment described above shall not cause or contribute to a public nuisance. (Rule 51)
7. A non-resettable engine hour meter shall be installed on this engine, maintained in good working order, and used for recording engine operation hours. If a meter is replaced, the Air Pollution Control District's Compliance Division shall be notified in writing within 10 calendar days. The written notification shall include the following information:
(a) old meter's hour reading
(b) replacement meter's manufacturer name, model and serial number if available and current hour reading on replacement meter
(c) copy of receipt of new meter or of installation work order. A copy of the meter replacement notification shall be maintained onsite and made available to the Air Pollution Control District upon request.
(17 CCR 93118.5)
8. If an existing hour meter is replaced, the owner/operator must comply with any requirements for notification to CARB described in 17 CCR § 93118.5.
[17 CCR § 93118.5(e)(2)]
9. The owner or operator of this engine shall conduct periodic inspections of the engine and add-on control equipment, if any, as recommended by the engine and control equipment manufacturers or as specified by the engine servicing company's maintenance procedures. The periodic inspections shall be conducted at least once every 4000 hours of operation, or every six months, whichever occurs first. (Rule 69.4.1)
10. The owner or operator of this engine shall conduct periodic maintenance of the engine and add-on control equipment, if any, as recommended by the engine and control equipment manufacturers or as specified by the engine servicing company's maintenance procedures. Maintenance shall be conducted at least once each calendar year, and shall include, but is not limited to, the following:
1) Change oil and filter, or test in accordance with the requirements of 40 CFR §63.6625(i) or (j);
2) Inspect and clean air filters, replacing as necessary; and
3) Inspect all hoses and belts, replacing as necessary.
Documentation of oil and filter changes or copies of the oil test analysis shall be kept on site and made available upon request. If testing in accordance with 40 CFR §63.6625(i) or (j), the oil analysis program must analyze the Total Base Number, viscosity and percent water content (for compression ignition engines) and the Total Acid Number, viscosity and percent water content (for spark ignited engines). If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
(Rule 12, Rule 69.4.1, 40 CFR 63 Subpart ZZZZ)
11. The owner or operator of the engine shall maintain records of periodic inspection and maintenance of the engine and control equipment, including dates inspection and maintenance were performed. [Rule 69.4.1]

12. The owner or operator of the engine shall maintain the following records on site for at least the same period of time as the engine to which the records apply is located at the site:
(a) documentation shall be maintained identifying the fuel as CARB diesel, and
(b) manual of recommended maintenance provided by the manufacturer.
(Rule 12, Rule 69.4.1, 17 CCR 93115, 40 CFR 60 Subpart IIII)
13. All records required by this permit shall be maintained on site and readily available for District inspection for a minimum of 36 months from their date of creation unless otherwise indicated by the conditions of this permit. (Rule 12, Rule 69.4.1, 40 CFR 60 Subpart IIII)
14. Access, facilities, utilities and any necessary safety equipment for source testing and inspection shall be provided upon request of the Air Pollution Control District.
15. This Air Pollution Control District Permit does not relieve the holder from obtaining permits or authorizations required by other governmental agencies.
16. The permittee shall, upon determination of applicability and written notification by the District, comply with all applicable requirements of the Air Toxics "Hot Spots" Information and Assessment Act (California Health and Safety Code Section 44300 et seq.)

San Diego County Air Pollution Control District
10124 Old Grove Road, San Diego, CA 92131-1649
Phone (858) 586-2600 www.sdapcd.org

Sectors: 5, P
Site Record: APCD1980-SITE-00204
Application Record: APCD2005-APP-982718

Permit Record: APCD2007-PTO-962075
APCD2007-PTO-962075

BAE Systems San Diego Ship Repair Inc
Environmental Manager
2205 East Belt Street
Foot of Sampson
San Diego, CA 92113

Equipment Address:
BAE Systems SDSR
Environmental Manager Lydia Pellecer
2205 E Belt St
Foot of Sampson
San Diego, CA 92113

PERMIT TO OPERATE

EXPIRES: September 30, 2025

This permit is not valid until required fees have been paid.

The above is hereby granted a Permit To Operate the article, machine, equipment or contrivance described below. This permit is not transferable to a new owner nor is it valid for operation of the equipment at another location except as specified. This Permit To Operate or copy must be posted on or within 25 feet of the equipment, or readily available on the operating premises.

Annual Operating Fees are due on an annual basis and shall be paid by any person who is required to maintain a Permit to Operate or Temporary Authorization pursuant to Rule 10 – Permits Required, Section (b) – Permit to Operate. Annual Operating Fees are due on the date the permit expires. If Annual Operating Fees are not paid by the permit expiration date, the permit will expire on that date and late fees will be incurred. An expired permit may be renewed within six months of the expiration date. If Annual Operating Fees are not paid within six months from the permit expiration date, the permit will be retired on the day following the last day of the six-month period from the permit expiration date. A retired permit may be reinstated within six months of the retirement date. If a permit is not reinstated within six months of the expiration date a new application for a Permit to Operate will be required. Facilities that operate with expired or retired permits may be subject to a Notice of Violation and civil penalties.

Owner or operator must receive District approval in writing prior to implementing any of the following changes including but not limited to Operational Changes, Conditions Changes, Additions, Alterations, and Replacement of Equipment, Ownership Changes, Location Changes, Like-Kind Replacement Units, and Contact Updates.

Equipment Owner:
BAE Systems SDSR Lydia Pellecer 2205 E Belt St, San Diego, CA 92113

Equipment Description:
Crane engine:
mfr: Mitsubishi Fuso,
model: 6D24-TLA2F,
family: 4MFTL11.9D2A, Tier 2,
S/N 6D24359428,
output: 316 BHP,
fuel: diesel,

on the Pride of San Diego dry dock

.
Every person who owns or operates this equipment is required to comply with the conditions listed below and all applicable requirements and District rules, including but not limited to Rules 10, 20, 40, 50, 51.

Fee Schedules:

1 [34E] Dredging or Crane Engines

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APCD2007-PTO-962075

FAILURE TO OPERATE IN COMPLIANCE IS A MISDEMEANOR SUBJECT TO CIVIL AND CRIMINAL PENALTIES

1. This engine shall comply with applicable requirements of Airborne Toxic Control Measure for Commercial Harbor Craft Regulation for Portable Engines Rated at 50 Horsepower and Greater.
[17 CCR § 93118.5]
2. Any requirements of the Commercial Harbor Craft Regulation described in this permit, as denoted by being exclusively based on 17 CCR § 93118.5, shall not apply if an alternative to the specific requirement is approved by CARB under the Alternative Control of Emissions (ACE) provisions of 17 CCR § 93118.5(f) and the engine is operated in compliance with all stipulations of the CARB approved ACE. The owner or operator shall maintain a record of the ACE and records to substantiate compliance with applicable requirements if claiming exemption from requirements of this permit in accordance with this condition.
3. The emissions of oxides of nitrogen (NOx) in parts per million (PPMV), calculated as nitrogen dioxide, shall not exceed 6.9 g/BHP-hr, or 535 PPMV at 15% Oxygen on a dry basis.
4. The emissions of carbon monoxide (CO) calculated at 15% oxygen on a dry basis, shall not exceed 900 PPMV.
5. Measurement of NOx, CO, carbon dioxide (CO2) and oxygen content of exhaust gas shall be determined in accordance with the San Diego County APCD Test Method 100, Air Resources Board (ARB) Test Method 100 or equivalent Environmental Protection Agency (EPA) Test Method.
6. Engine owners or operators shall conduct periodic inspections of the engine and add-on control equipment, if any, as recommended by the engine and control equipment manufacturers or as specified by the engine servicing company's maintenance procedures. The periodic inspections shall be conducted at least once every 4000 hours of operation, or every six months, whichever occurs first. [Rule 69.4.1]
7. The owner or operator of this engine shall conduct periodic maintenance of the engine and add-on control equipment, if any, as recommended by the engine and control equipment manufacturers or as specified by the engine servicing company's maintenance procedures. Maintenance shall be conducted at least once each calendar year, and shall include, but is not limited to, the following:
1) Change oil and filter, or test in accordance with the requirements of 40 CFR §63.6625(i) or (j);
2) Inspect and clean air filters, replacing as necessary; and
3) Inspect all hoses and belts, replacing as necessary.
Documentation of oil and filter changes or copies of the oil test analysis shall be kept on site and made available upon request. If testing in accordance with 40 CFR §63.6625(i) or (j), the oil analysis program must analyze the Total Base Number, viscosity and percent water content (for compression ignition engines) and the Total Acid Number, viscosity and percent water content (for spark ignited engines). If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
(Rule 12, Rule 69.4.1, 40 CFR 63 Subpart ZZZZ)
8. A non-resettable engine hour meter and/or non-resettable totalizing fuel meter shall be installed on this engine, maintained in good working order and used for recording engine operation hours. If a meter is replaced, the Air Pollution Control District's compliance division shall be notified in writing within in 10 calendar days. The written notifications shall include the following information:
a. old meter's reading.
b. replacement meter's manufacturer name, model and serial number if available and current reading on replacement meter; and
c. copy of receipt of new meter or of installation work order.
A copy of the meter replacement notification shall be maintained on site and made available to the Air Pollution Control District upon request. (Rule 69.4.1)

9. If an existing hour meter is replaced, the owner/operator must comply with any requirements for notification to CARB described in 17 CCR § 93118.5.
[17 CCR § 93118.5(e)(2)]
10. This engine shall only use CARB diesel fuel. (Rule 69.4.1, 17 CCR 93118.5)
11. The owner or operator of the engine shall maintain the following records on site for at least the same period of time as the engine to which the records apply is located at the site:
(a) documentation shall be maintained identifying the fuel as CARB diesel, and
(b) manual of recommended maintenance provided by the manufacturer.
(Rule 12, Rule 69.4.1, 17 CCR 93115, 40 CFR 60 Subpart IIII)
12. Visible emissions including crank case smoke shall comply with Rule 50. (Rule 50)
13. Rule 51-public nuisance: equipment shall not cause or contribute to public nuisance.
14. A log showing daily hours of operation of the equipment shall be maintained on the premises and made available to the District upon request.
15. The owner or operator of the engine shall maintain records of periodic inspection and maintenance of the engine and control equipment, including dates inspection and maintenance were performed. [Rule 69.4.1]
16. Unless otherwise specified, all records required by this permit shall be maintained on-site for a minimum of three years from their date of creation and made available to District Personnel upon request.
17. Access, facilities, utilities and any necessary safety equipment for source testing and inspection shall be provided upon request of the Air Pollution Control District.
18. This Air Pollution Control District Permit does not relieve the holder from obtaining permits or authorizations required by other governmental agencies.
19. The permittee shall, upon determination of applicability and written notification by the District, comply with all applicable requirements of the Air Toxics "Hot Spots" Information and Assessment Act (California Health and Safety Code Section 44300 et seq.)