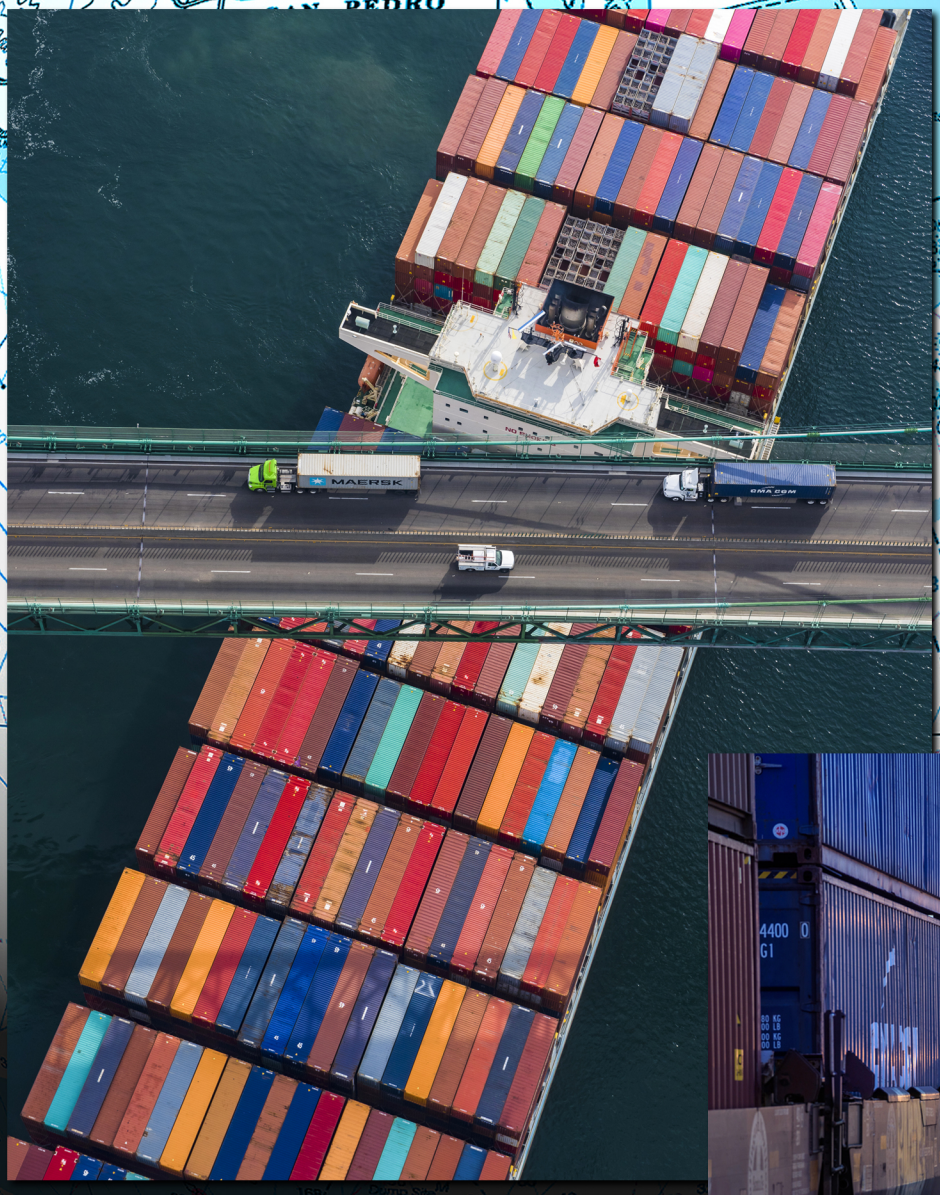
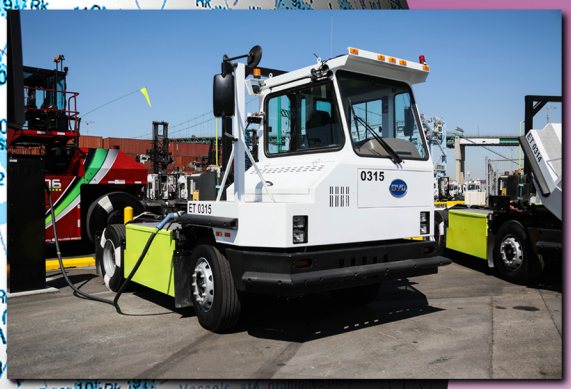
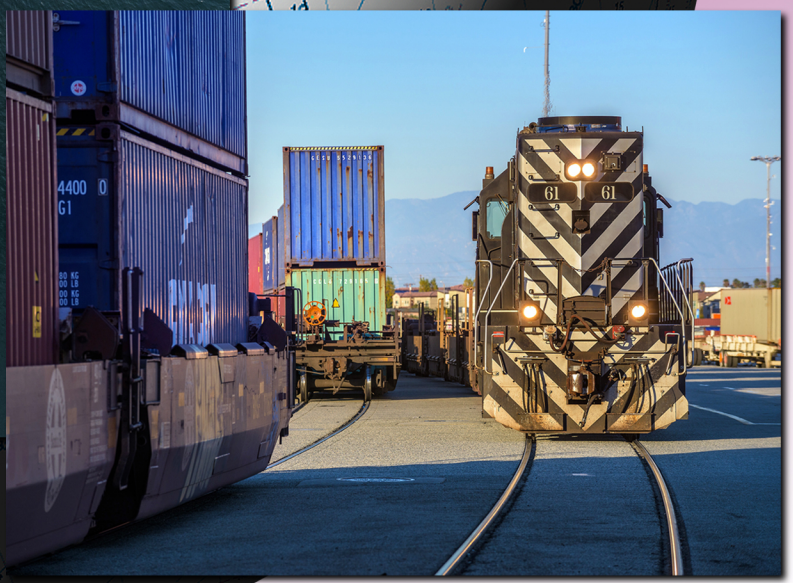
PORT OF LOS ANGELES
INVENTORY OF AIR EMISSIONS - 2020

THE PORT OF LOS ANGELES







Technical Report
APP# 201113-540 A
October 2021

Prepared by:
STARCREST CONSULTING GROUP, LLC

INVENTORY OF AIR EMISSIONS FOR CALENDAR YEAR 2020

Prepared for:

THE PORT OF LOS ANGELES

October 2021

Prepared by:

STARCREST CONSULTING GROUP, LLC
ENVIRONMENTAL MANAGEMENT
AIR QUALITY • CLIMATE • SUSTAINABILITY

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Please note that there may be minor numerical inconsistencies between the various sections, tables, and figures of this report, due to rounding associated with emission estimates, percent contribution, and other calculated numbers. Estimates are calculated using more significant figures than presented in the various tables. A detailed Methodology Report is available on the Port's website.[1] This 2020 Air Emission Inventory correlates with Version 2 of the Methodology Report.

EXECUTIVE SUMMARY

The Port of Los Angeles (Port or POLA) annual activity-based emissions inventories serve as the primary tool to track the Port's efforts to reduce air emissions from maritime industry-related sources through implementation of measures identified in the San Pedro Bay Ports (SPBP) Clean Air Action Plan (CAAP) and regulations promulgated at the state and federal levels. Development of the annual air emissions estimates is coordinated with a technical working group (TWG) comprised of representatives from the Port, the Port of Long Beach (POLB), and the following air regulatory agencies: U.S. Environmental Protection Agency, Region 9 (EPA), California Air Resources Board (CARB), and the South Coast Air Quality Management District (South Coast AQMD). Through collaboration with the TWG, the ports seek the consensus of the air regulatory agencies regarding the methodologies used to develop the emissions estimates.

Summary of 2020 Activity and Emission Estimates

Table ES.1 presents the number of vessel calls and the container cargo throughput for calendar years 2005, 2019, and 2020. The twenty-foot equivalent unit (TEU) throughput decreased by 1% in 2020 as compared to the previous year. Containership arrivals decreased 2%, while the average TEU per call increased 1% as compared to the previous year. The average TEU per call in 2020 was 9,518 TEU per containership call.

Comparing 2020 to 2005, the TEU throughput increased 23%, containership arrivals decreased 35%, and the average TEU per call increased 88%. The decrease in containership calls with the significant increase in TEU per call handled shows the impact that larger containerships have made since 2005.

Table ES.1: Container Throughput and Vessel Arrival Call Comparison

Year	TEUs	All Arrivals	Containership Arrivals	Average TEUs/Call
2020	9,213,396	1,533	968	9,518
2019	9,337,632	1,687	987	9,461
2005	7,484,625	2,516	1,479	5,061
Previous Year (2019-2020)	**-1%**	**-9%**	**-2%**	**1%**
CAAP Progress (2005-2020)	**23%**	**-39%**	**-35%**	**88%**

[1] *www.portoflosangeles.org/environment/air-quality/air-emissions-inventory*

Table ES.2 summarizes the 2020 total maritime industry-related mobile source emissions of air pollutants in the South Coast Air Basin (SoCAB) by the following categories: ocean-going vessels (OGVs), harbor craft, cargo handling equipment (CHE), locomotives, and heavy-duty vehicles (HDV).

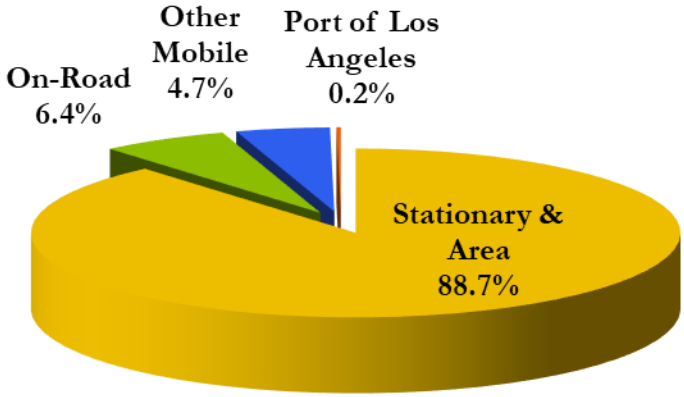
Table ES.2: 2020 Maritime Industry-related Emissions by Category

Category	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
Ocean-going vessels	52	48	34	2,867	96	273	127	212,248
Harbor craft	24	22	24	721	1	539	82	60,374
Cargo handling equipment	6	5	4	366	2	643	66	165,961
Locomotives	29	27	29	786	1	189	45	65,987
Heavy-duty vehicles	6	6	6	1,075	4	284	43	398,679
Total	**117**	**108**	**97**	**5,814**	**104**	**1,928**	**363**	**903,250**

DB ID457

In order to put the maritime industry-related emissions into context, the following figures and tables compare the Port's contributions to the total emissions in the SoCAB by major emission source category. The 2020 SoCAB emissions are based on the 2016 Air Quality Management Plan (AQMP) Appendix III,[2] except for the SoCAB on-road emission estimates, which were updated to take into consideration EMFAC2021.[3] Thus, the SoCAB total emissions do not exactly match 2016 AQMP Appendix III values. It should be noted that neither the SoCAB nor the Port's on-road heavy-duty diesel PM_{10} and $PM_{2.5}$ emissions include brake and tire wear emissions. Due to rounding, the percentages may not total 100%.

Figure ES.1: 2020 PM_{10} Emissions in the South Coast Air Basin



[2]SCAQMD, *Final 2016 AQMP Appendix III, Base & Future Year Emissions Inventories*, March 2017.
[3]*www.arb.ca.gov/emfac/*

Figure ES.2: 2020 $PM_{2.5}$ Emissions in the South Coast Air Basin

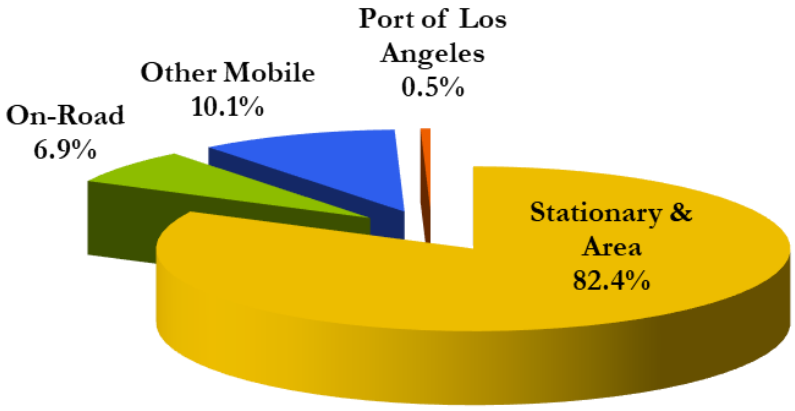


Figure ES.3: 2020 DPM Emissions in the South Coast Air Basin

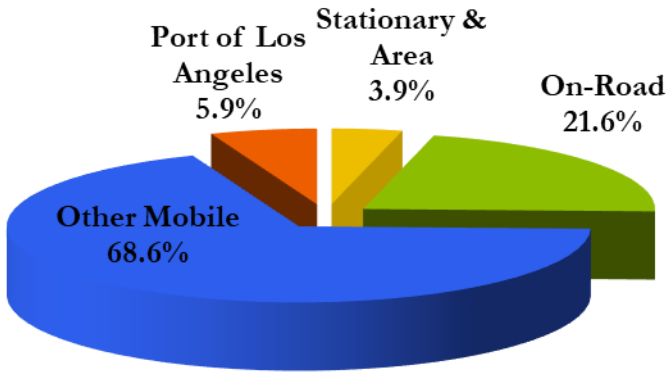


Figure ES.4: 2020 NO_x Emissions in the South Coast Air Basin

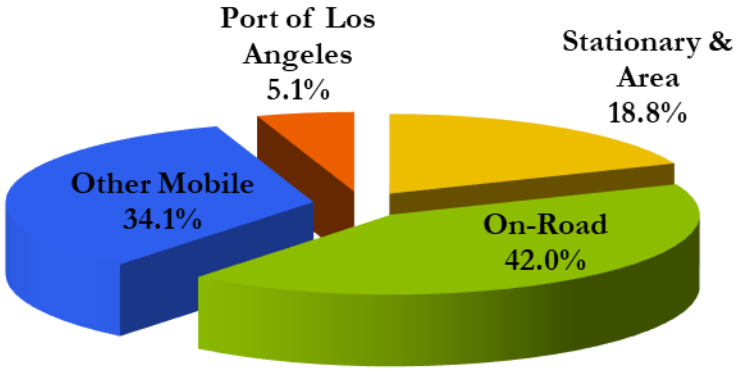
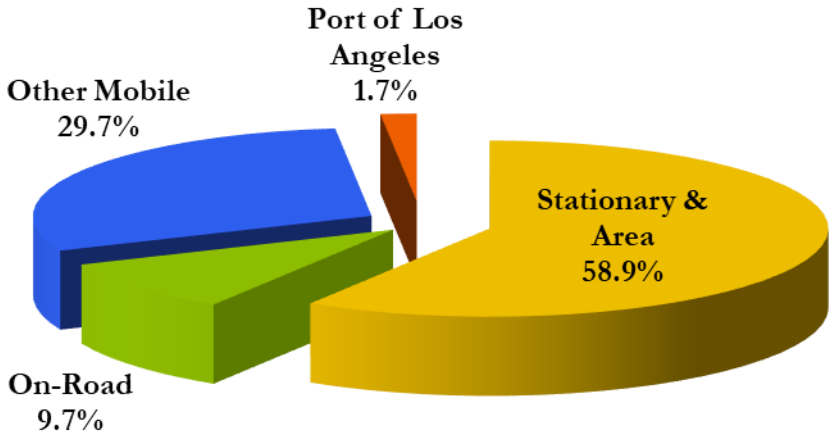


Figure ES.5: 2020 SO_x Emissions in the South Coast Air Basin



Comparison of 2020 Emissions to 2005 and 2019

Table ES.3 presents the total net change in emissions from all source categories in 2020 as compared to the previous year and to 2005, all using 2020 methodology. In order to maintain the consistency between the years compared, the previous years' emissions are recalculated whenever new estimation methodologies are introduced.

Table ES.3: Maritime Industry-related Emissions Comparison

EI Year	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
2020	117	108	97	5,814	104	1,928	363	903,250
2019	119	109	98	5,963	104	2,073	373	904,887
2005	1,025	882	863	16,103	4,826	3,757	852	1,029,863
Previous Year (2019-2020)	**-2%**	**-2%**	**-1%**	**-3%**	**-1%**	**-7%**	**-3%**	**-0.2%**
CAAP Progress (2005-2020)	**-89%**	**-88%**	**-89%**	**-64%**	**-98%**	**-49%**	**-57%**	**-12%**

Table ES.4 presents the 2020 and 2005 emissions comparison by source category. Despite a 23% increase in TEU throughput in 2020 as compared to 2005, emission reductions occurred in all pollutants for each source category, except for CO and CO_2e emissions for harbor craft and CO_2e emissions for CHE.

Table ES.4: Maritime Industry-related 2020-2005 Emissions Comparison by Source Category

	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
2020								
Ocean-going vessels	52	48	34	2,867	96	273	127	212,248
Harbor craft	24	22	24	721	1	539	82	60,374
Cargo handling equipment	6	5	4	366	2	643	66	165,961
Locomotives	29	27	29	786	1	189	45	65,987
Heavy-duty vehicles	6	6	6	1,075	4	284	43	398,679
Total	**117**	**108**	**97**	**5,814**	**104**	**1,928**	**363**	**903,250**
2005								
Ocean-going vessels	611	491	450	5,193	4,668	469	215	281,239
Harbor craft	55	51	55	1,318	6	364	87	56,925
Cargo handling equipment	54	50	53	1,573	9	822	92	134,621
Locomotives	57	53	57	1,712	98	237	89	82,201
Heavy-duty vehicles	248	238	248	6,307	45	1,865	368	474,877
Total	**1,025**	**882**	**863**	**16,103**	**4,826**	**3,757**	**852**	**1,029,863**
Change between 2005 and 2020 (percent)								
Ocean-going vessels	-91%	-90%	-93%	-45%	-98%	-42%	-41%	-25%
Harbor craft	-57%	-57%	-57%	-45%	-89%	48%	-6%	6%
Cargo handling equipment	-89%	-89%	-91%	-77%	-81%	-22%	-28%	23%
Locomotives	-48%	-49%	-48%	-54%	-99%	-20%	-50%	-20%
Heavy-duty vehicles	-98%	-98%	-98%	-83%	-92%	-85%	-88%	-16%
Total	**-89%**	**-88%**	**-89%**	**-64%**	**-98%**	**-49%**	**-57%**	**-12%**

Several factors contributed to lower emissions in 2020 compared to 2005. Major highlights by source category include:

- For OGVs, the primary reasons for emission reductions were fewer vessel calls, fuel switching, shore power, Port's Environmental Ship Index (ESI) Incentive Program, Vessel Speed Reduction (VSR) compliance, and newer vessels. In 2020, all engines for OGVs continued to use fuel with 0.1% sulfur or lower and the CARB At-Berth Regulation (i.e., shore power) was also in effect.
- For harbor craft, the emissions in 2020 were lower than 2005 emissions due to the repowers that occurred in the last few years as required by the CARB In-Use Harbor Craft Regulation or funding incentives, removal of older vessels due to attrition, and more efficient operations. For harbor craft, the increase in CO was related to an increase in Tier 2 and 3 engines that have higher CO emission rates compared to pre-Tier 2 and increase in activity. There are no CO_2 standards for engines or control measures for harbor craft, therefore, the CO_2e emissions increased along with increased activity.
- For CHE, implementation of CAAP measures and CARB's Cargo Handling Equipment Regulation, along with funding incentives, resulted in replacement of older equipment with cleaner units, retrofits, and repowers. The cleaner fleet, combined with efficiency in operations, led to lower emissions. The increased use of hybrid equipment, such as hybrid RTG cranes and straddle carriers, has also helped lower the emissions. The increase in CO_2e reflects the lack of lower emission standards or emission control measures and increased activity.
- For locomotives, the decreases in fleet-wide emissions from line haul locomotives were due to meeting the terms of the memorandum of understanding (MOU) with CARB, and the replacement of older switching locomotives with new low-emission and ultra-low emission switchers.
- For HDV, the 2012 implementation of the final phase of the Port's Clean Truck Program (CTP) resulted in significant turnover of older trucks to newer and cleaner trucks as compared to 2005. Also, as part of a Port Tariff amendment in 2018, all new trucks that register in the Ports' Drayage Truck Registry are required to be 2014 model year or newer.

Comparison of 2020 Emissions by Source Category to 2019

Calendar year 2020 proved to be a challenging year for the maritime industry. Several unique factors affected operations, activity, efficiency, and thus emissions in 2020 including: 1) the COVID-19 pandemic led cruise ships to stop passenger operations in mid-March; 2) CARB provided exemptions to the At-Berth Regulation for (a) excessive heat in August - September timeframe and for (b) COVID-19 emergency reasons in 2020 which resulted in fewer shore power calls for containerships; 3) the largest decline in world liquid fuels consumption[4] in recent history resulted in less tankers calling the Port; and 4) increased anchorage calls for containerships and cruise ships, vessels that normally do not visit anchorage when calling the Port. The increase in anchorage calls for containerships was due to an increased demand in consumer goods in the second half of the year in addition to other factors. As for cruise ships, the increased anchorage calls were due to the lack of normal operations during the COVID-19 pandemic. Table ES.5 presents the 2020 and 2019 emissions comparison by source category.

Table ES.5: Maritime Industry-related 2020-2019 Emissions Comparison by Source Category

	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
2020								
Ocean-going vessels	52	48	34	2,867	96	273	127	212,248
Harbor craft	24	22	24	721	1	539	82	60,374
Cargo handling equipment	6	5	4	366	2	643	66	165,961
Locomotives	29	27	29	786	1	189	45	65,987
Heavy-duty vehicles	6	6	6	1,075	4	284	43	398,679
Total	**117**	**108**	**97**	**5,814**	**104**	**1,928**	**363**	**903,250**
2019								
Ocean-going vessels	48	44	30	2,748	97	244	115	198,254
Harbor craft	26	24	26	755	1	543	83	60,884
Cargo handling equipment	7	6	5	410	2	805	83	177,264
Locomotives	32	29	32	882	1	205	49	71,364
Heavy-duty vehicles	6	6	6	1,168	4	277	43	397,121
Total	**119**	**109**	**98**	**5,963**	**104**	**2,073**	**373**	**904,887**
Change between 2019 and 2020 (percent)								
Ocean-going vessels	8%	8%	13%	4%	-1%	12%	10%	7%
Harbor craft	-8%	-8%	-8%	-4%	-1%	-1%	-2%	-1%
Cargo handling equipment	-14%	-14%	-10%	-11%	-5%	-20%	-20%	-6%
Locomotives	-7%	-7%	-7%	-11%	-8%	-8%	-7%	-8%
Heavy-duty vehicles	-7%	-7%	-7%	-8%	0%	3%	0%	0%
Total	**-2%**	**-2%**	**-1%**	**-3%**	**-1%**	**-7%**	**-3%**	**-0.2%**

[4]U.S. Energy Information Administration, *www.eia.gov/outlooks/steo/report/global_oil.php*

Section 9 provides more information about the energy consumption and newer technology comparison by source category that contributed to the emission changes. Major highlights by source category include:

- For OGVs, the increase in emissions in 2020 compared to 2019 was primarily due to impacts resulting from the COVID-19 pandemic including more vessels visiting anchorages and more time spent at berth for majority of vessel calls. Despite the lower calls, the anchorage emissions were higher in 2020 due to increased number of containerships and cruise ships at anchorage.
- For harbor craft, activity was lower in 2020 for various vessel types, such as excursion vessels and ferries, due to COVID-19 pandemic and this coupled with increased usage of newer and cleaner engines resulted in lower emissions for 2020 as compared to the previous year. For the first time, a harbor craft with Tier 4 propulsion engines was included in the inventory.
- For CHE, the lower emissions are due to lower activity, less equipment, and increased usage of Tier 4 final CHE, hybrid RTG cranes, and hybrid straddle carriers.
- For locomotives, the emissions decreased due to a reduction in on-dock and Intermodal Container Transfer Facility (ICTF) rail transport and a decrease in the fleet composite NO_x emission factor resulting from fleet mix improvement.
- For heavy-duty vehicles, the emissions decreased due to continued fleet turnover and lower container throughput in 2020.

Comparison of Emissions Efficiency

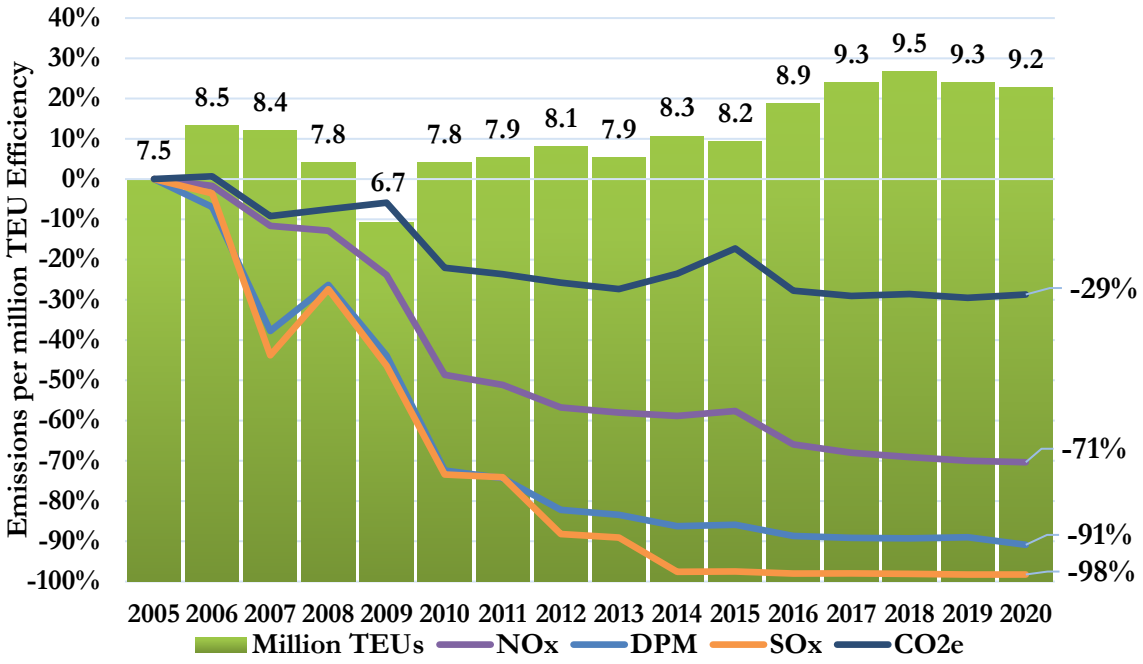
Table ES.6 summarizes the annualized emissions efficiencies for all five source categories. The overall emissions efficiency in 2020 improved for all pollutants as compared to 2005 and the previous year, except for CO_2e for the previous year. In Table ES.6, a positive percentage means an increase in emissions efficiency.

Table ES.6: Emissions Efficiency Metric Comparison, tons/10,000 TEUs

EI Year	PM_{10}	$PM_{2.5}$	DPM	NO_x	SO_x	CO	HC	CO_2e
2020	0.126	0.117	0.105	6.31	0.11	2.09	0.39	980
2019	0.127	0.117	0.105	6.39	0.11	2.22	0.40	969
2005	1.370	1.178	1.153	21.52	6.45	5.02	1.14	1,376
Previous Year (2019-2020)	**1%**	**0%**	**0%**	**1%**	**0%**	**6%**	**3%**	**-1%**
CAAP Progress (2005-2020)	**91%**	**90%**	**91%**	**71%**	**98%**	**58%**	**66%**	**29%**

Figure ES.6 shows the emissions efficiency trend for NO_x, DPM, SO_x and CO_2e with million TEU bars. For the figure, a negative percentage means an increase in emissions efficiency.

Figure ES.6: Emissions Efficiency Trend



CAAP Standards and Emission Reduction Progress

One of the main purposes of the annual inventories is to provide a progress update on achieving the San Pedro Bay CAAP Standards. These standards consist of the following emission reduction goals, using the 2005 published inventories as a baseline.

- Emission Reduction Standard:
  - By 2014, reduce emissions by 72% for DPM, 22% for NO_x, and 93% for SO_x
  - By 2023, reduce emissions by 77% for DPM, 59% for NO_x, and 93% for SO_x
- Health Risk Reduction Standard: 85% reduction by 2020

Due to the many emission reduction measures undertaken by the Port, as well as statewide and federal regulations and standards, the 2014 and 2023 emission reduction standards were not only met, but exceeded in 2020 for DPM, NO_x and SO_x. Table ES.7 summarizes DPM, NO_x and SO_x percent reductions as compared to the 2014 and 2023 emission reduction standards.

Table ES.7: Reductions as Compared to 2014 and 2023 Emission Reduction Standards

Pollutant	2020 Actual Reductions	2014 Emission Reduction Standard	2023 Emission Reduction Standard
DPM	-89%	72%	77%
NO_x	-64%	22%	59%
SO_x	-98%	93%	93%

The emission reduction standards are represented as a percentage reduction of emissions from 2005 levels and are tied to the regional SoCAB attainment dates for the federal $PM_{2.5}$ and ozone ambient air quality standards in the 2007 AQMP. This emissions inventory (EI) is used as a tool to track progress in meeting the emission reduction standards.

Figures ES.7 through ES.9 present the 2005 baseline emissions and the year-to-year percent change in emissions with respect to the 2005 baseline emissions. The 2014 and 2023 standards are also provided as a snapshot of progress to-date towards meeting those standards. The pink line in the figures represents the percentage of TEU throughput as compared to 2005 TEU throughput. These figures provide context to the relative correlation between cargo throughput and emissions.

As summarized for Table ES.4 and Section 2 (Regulatory and CAAP Measures), the major factors contributing to the lower emissions over the years for the various pollutants include:

Fuel Switching for all source categories, but mainly OGV which originally used residual diesel fuel with an average 2.7% sulfur content. OGV switched to marine gas oil (MGO) fuel with 1% sulfur in 2012 and 0.1% sulfur in 2015. For harbor craft, CHE, trucks, and locomotives, ULSD has been used since 2006 and 2007 timeframe.

Various OGV programs and regulations that further reduced emissions are the use of at-berth shore power, VSR and ESI Incentive program that occurred in a phased approach.

CARB Harbor Craft Regulation and funding incentives led to vessel repowers which lowered emissions for harbor craft. There was also vessel attrition over the course of the past 15 years.

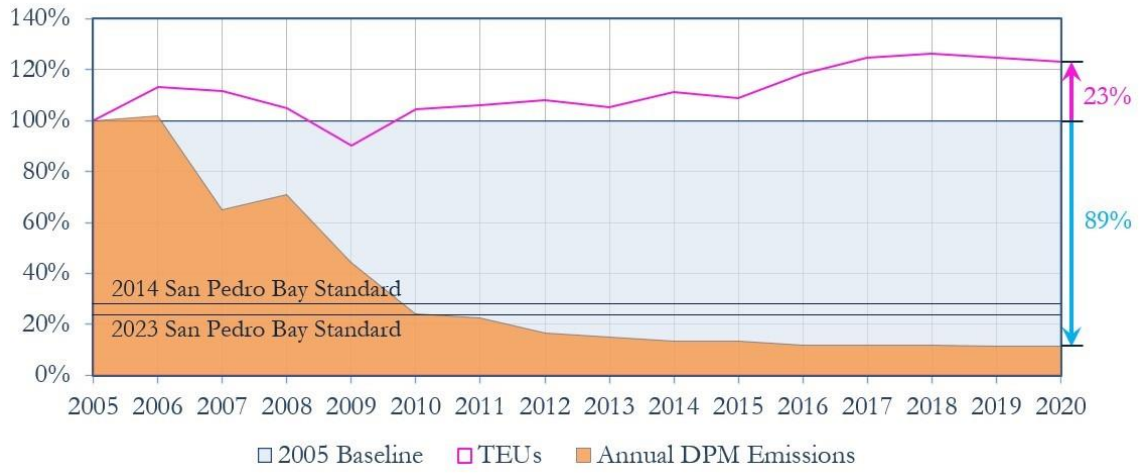
Cleaner CHE fleet over the years due to CAAP measures and CARB's CHE Regulation which occurred mainly between 2007 and 2015. CARB's LSI Regulation impacted the propane forklifts between 2007 and 2010.

For locomotives, EPA regulations that started in 2010 and phased in through 2015, in addition to CARB's statewide MOU and SPBP CAAP PHL Rail Switch Engine Modernization measure in 2010, decreased the locomotive emissions between 2010 to present.

For HDV, emission reductions have occurred in a phased approach starting with EPA/CARB emission standards for new 2007+ trucks in 2007 and 2010 and CARB's Drayage Truck Regulation which started in 2009 in a phased approach. The SPBP CAAP phased measures started in 2008 including the 2012 implementation of the final phase of the Port's Clean Truck Program (CTP) which stipulated trucks operating at SPBP must have 2007 or newer engines. Also, as part of a Port Tariff amendment in 2018, all new trucks that register in the Ports' Drayage Truck Registry are required to be 2014 model year or newer.

Figure ES.7 shows that the Port surpassed the 2023 DPM emission reduction standard (77%) with an 89% emission reduction in 2020. In 2020, the 0.1% sulfur fuel use requirement for OGVs from the IMO North American ECA was in effect. Additionally, reductions in DPM were associated with an increase in the number of ships using shore power, due to the CARB At-Berth Regulation and high vessel compliance with the Port's Vessel Speed Reduction program. The TEU throughput was 23% higher in 2020 as compared to 2005.

Figure ES.7: DPM Reductions to Date



As illustrated in Figure ES.8, the Port surpassed the 2023 NO_x mass emission reduction standard (59%) in 2020 with a 64% reduction. The TEU throughput was 23% higher in 2020 as compared to 2005. Contributions to NO_x emission reductions in 2020, participation in the VSR and ESI programs, IMO NO_x Emission Standard for Marine Engines and the increase in the number of ships using shore power.

Figure ES.8: NO_x Reductions to Date

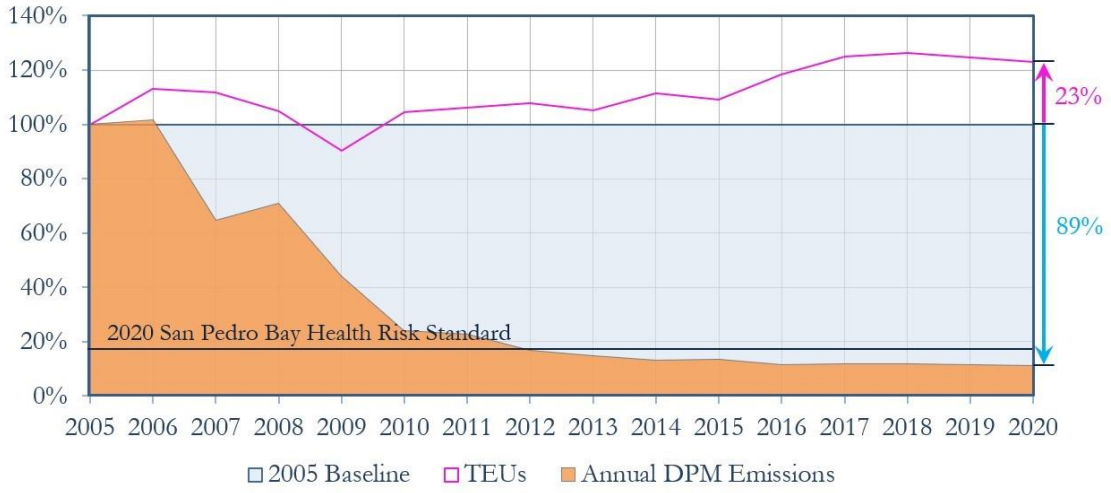
The Port surpassed the 2023 SO_x mass emission reduction standard (93%) with a 98% reduction in 2020. In 2020, the 0.1% sulfur fuel use requirement for OGVs from the IMO North American ECA and the increase in the number of ships using at-berth shore power, due to the CARB At-Berth Regulation, contributed to the reduction in SO_x. The TEU throughput was 23% higher in 2020 as compared to 2005.

Figure ES.9: SO_x Reductions to Date

Health Risk Reduction Progress

Progress to-date on health risk reduction was determined by comparing the change in DPM mass emissions to the 2005 baseline. Figure ES.10 presents the progress of achieving the standard to date. In 2020, with an 89% reduction, the Port exceeded the 2020 Health Risk Reduction Standard (85%). The TEU throughput was 23% higher in 2020 as compared to 2005.

Figure ES.10: Health Risk Reduction Benefits to Date



SECTION 1 INTRODUCTION

The Port of Los Angeles (Port or POLA) 2020 Inventory of Air Emissions study presents maritime industry-related emission estimates based on 2020 activity levels. The report also includes a comparison of the estimated 2020 emissions with the 2005 baseline year and the previous year emission estimates to track the Port's emission reduction progress under the San Pedro Bay Ports (SPBP) Clean Air Action Plan (CAAP). As in previous inventories, the following five source categories were included:

- Ocean-going vessels (OGV)
- Harbor craft
- Cargo handling equipment (CHE)
- Locomotives
- Heavy-duty vehicles (HDV)

Exhaust emissions of the following pollutants that can cause regional and local air quality impacts were estimated:

- Particulate matter (PM) (10-micron, 2.5-micron)
- Diesel particulate matter (DPM)
- Oxides of nitrogen (NO_x)
- Oxides of sulfur (SO_x)
- Hydrocarbons (HC)
- Carbon monoxide (CO)

This study also includes estimates of the greenhouse gases (GHGs) carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) emitted from maritime industry-related tenant operational mobile sources. To normalize the three GHG values into a single number representing CO_2 equivalents (CO_2e) the GHG emission estimates were multiplied by the following values and summed.[5]

- CO_2 – 1
- CH_4 – 25
- N_2O – 298

For presentation purposes in the report, only CO_2e values were reported because they include all three GHGs in an equivalent measure to CO_2, which makes up by far the greatest mass of GHG emissions from the source categories included in this inventory. The greenhouse gas emissions are presented in metric tons (tonnes), while the criteria pollutant emissions are shown in tons.

[5]EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019*, EPA 430-R-21-005, published 2021.

Calendar year 2020 proved to be a challenging year for the maritime industry. Several unique factors, particularly the COVID-19 pandemic, affected operations, activity, efficiency, and thus emissions at the Port of Los Angeles in 2020. This report, primarily Section 9, includes brief discussion on impacts related to the COVID-19 pandemic. For more in-depth analysis of COVID-19 impacts, see the 2020 Port of Los Angeles Emissions Inventory Highlights[6] document.

Geographical Domain

The geographical extent of the inventory includes emissions from the aforementioned maritime industry-related emission sources operating within the harbor district. For commercial marine vessels, the domain lies within the harbor and up to the study area boundary comprised of an over-water area bounded in the north by the southern Ventura County line at the coast and in the south with the southern Orange County line at the coast.

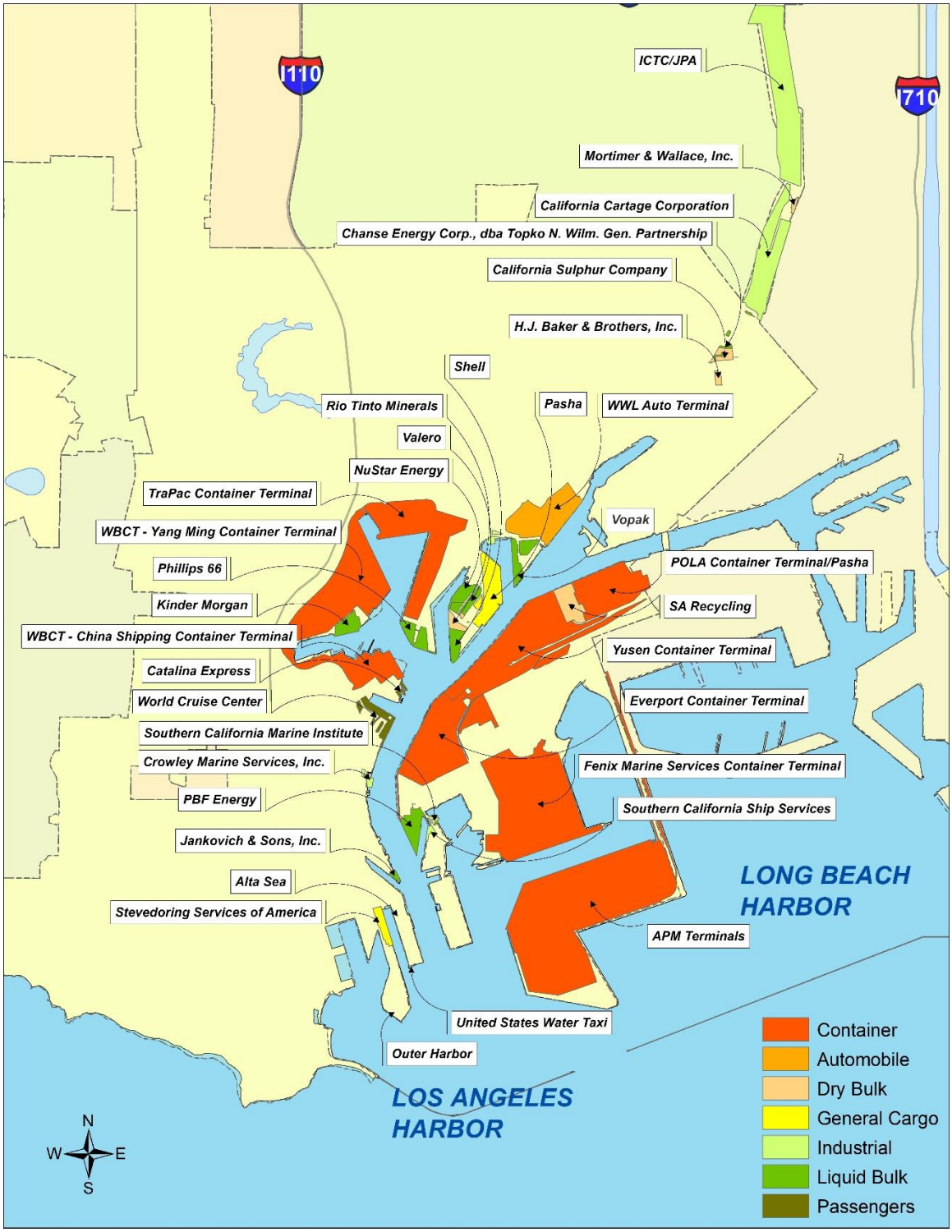
For rail locomotives and on-road trucks, the domain extends from the Port to the cargo's first point of rest within the South Coast Air Basin (SoCAB) or up to the SoCAB boundary, whichever comes first. Figure 1.1 shows the geographical extent of this inventory, and other overlapping regulatory boundaries.

Figure 1.1: Emissions Inventory Geographical Extent

[6] *www.portoflosangeles.org/environment/air-quality/air-emissions-inventory*

Figure 1.2 shows the land area of active Port terminals in 2020. The geographical scope for cargo handling equipment is the terminals and facilities on which they operate.

Figure 1.2: Port Boundary Area of Study



SECTION 2 REGULATORY AND CAAP MEASURES

This section summarizes the regulatory initiatives and Port measures related to port activity. Almost all maritime industry-related emissions come from five emission source categories: OGVs, harbor craft, CHE, locomotives, and HDVs. The responsibility for the control of emissions from the majority of these sources falls under the jurisdiction of local (South Coast AQMD), state (California Air Resources Board [CARB]), or federal (U.S. Environmental Protection Agency [EPA]) agencies.

Clean Air Action Plan (CAAP) Strategies

At the end of 2017, the ports of Los Angeles and Long Beach released the final CAAP 2017 Update.[7] The CAAP 2017 Update contains new strategies for all sources that move cargo through the ports, including the deployment of zero and near-zero emission trucks and cargo handling equipment and the expansion of programs that reduce ship emissions. The focus of the Update is to work in collaboration with industry stakeholders, regulatory agencies, local communities, and environmental groups for the next 20 years to reduce emissions and combat climate change. The CAAP 2017 strategies that will affect future emission reductions for both Ports include:

- Advancing the Clean Trucks Program to phase out older trucks and transition to near-zero emissions in the early years and zero-emissions by 2035. Under this program, on March 2020, the Boards of Harbor Commissioners of the City of Los Angeles and the City of Long Beach approved a resolution to collect a Clean Truck Fund Rate of $10 per loaded TEU moved by trucks in and out of port terminals. Zero-emission trucks will be exempt from the rate throughout the duration of the program. Other exemptions are under consideration. Currently, Port staff are working on strategies to implement the Clean Truck Fund rates and develop priorities and guidance for distributing funds to incentivize the transition to near-zero and zero-emission trucks.
- Requiring terminal operators to purchase zero-emissions equipment, if feasible, or near-zero or cleanest technology available when procuring new equipment.
- Further reducing emissions from ships at-berth, and transitioning the oldest, most polluting ships out of the San Pedro Bay fleet.
- Accelerating the deployment of cleaner engines and operational strategies to reduce harbor craft emissions.
- Expanding the use of on-dock rail to shift more cargo leaving the port to go by rail.

[7] *www.cleanairactionplan.org/documents/final-2017-clean-air-action-plan-update.pdf/*

San Pedro Bay Emissions Reduction Standards

The 2017 CAAP Update did not alter the 2010 CAAP Update goals that set health risk and emission reduction standards but did incorporate two new emission targets to reduce GHGs from port-related sources as described below.

Health Risk Reduction Standard

To complement the CARB's Air Pollution Reduction Programs, including the Diesel Risk Reduction Plan, the Ports developed the following standard for reducing overall maritime industry-related health risk impacts, relative to 2005 emission levels:

- By 2020, reduce the population-weighted cancer risk of maritime industry-related DPM emissions by 85% in highly impacted communities located proximate to Port sources and throughout the residential areas in the Port region.

Emission Reduction Standard

The Ports developed the following standards for reducing air pollutant emissions from maritime industry-related activities, relative to 2005 emission levels:

- By 2014, reduce emissions of NO_x by 22%, SO_x by 93%, and DPM by 72% to support attainment of the National Ambient Air Quality Standards (NAAQS) for fine particulate matter ($PM_{2.5}$) standards.
- By 2023, reduce emissions of NO_x by 59%, SO_x by 93%, and DPM by 77% to support attainment of the federal 8-hour ozone standards and NAAQS fine particulate matter ($PM_{2.5}$) standards.

2017 CAAP Update New Emission Reduction Targets

- Reduce GHGs from port-related sources to 40% below 1990 levels by 2030
- Reduce GHGs from port-related sources to 80% below 1990 levels by 2050

Regulatory Programs by Source Category

The following section presents a list of currently adopted regulatory programs and CAAP measures by each major source category that influenced the progress towards the SPBP emission reduction targets from the maritime industry in and around the Port.

Table 2.1: OGV Emission Regulations, Standards and Policies

Agency	Regulation/Standard/Policy	Targeted Pollutants	Years Effective	Impact
International Maritime Organization (IMO)	NO_x Emission Standard for Marine Engines *www.imo.org/en/OurWork/Environment/Pages/Nitrogen-oxides-(NOx)-%E2%80%93-Regulation-13.aspx*	NO_x	2011 – Tier II 2016 – Tier III for ECA only	Auxiliary and propulsion engines over 130 kW output power on newly built vessels
IMO	Emissions Control Area, Low Sulfur Fuel Requirements for Marine Engines *www.imo.org/en/OurWork/Environment/Pages/Sulphur-oxides-(SOx)-%E2%80%93-Regulation-14.aspx*	DPM, PM, and SO_x	2012 ECA – 1% Sulfur 2015 ECA – 0.1% Sulfur	Significantly reduce emissions due to low sulfur content in fuel by creating Emissions Control Area (ECA)
IMO	Initial IMO Strategy on reduction of GHG emissions from ships – Resolution MEPC.304(72) *www.unfccc.int/sites/default/files/resource/250_IMO%20submission_Talanoa%20Dialogue_April%202018.pdf*	GHG	2050 – 50%	Initial IMO Strategy on reduction of GHG emissions from ships by 50% in 2050 from 2008 level. Goal is to phase out GHG
IMO	Energy Efficiency Design Index (EEDI) for International Shipping *www.imo.org/en/OurWork/Environment/Pages/Technical-and-Operational-Measures.aspx*	CO_2 and other pollutants	2013	Increases the design efficiencies of ships relating to energy and emissions

Table 2.1: OGV Emission Regulations, Standards and Policies (cont'd)

Agency	Regulation/Standard/Policy	Targeted Pollutants	Years Effective	Impact
EPA	Emission Standards for Marine Diesel Engines above 30 Liters per Cylinder (Category 3 Engines); Aligns with IMO Annex VI marine engine NO_x standards and low sulfur requirement *www.epa.gov/otaq/oceanvessels.htm#engine-fuel*	DPM, PM, NO_x, and SO_x	2011 – Tier 2 2016 – Tier 3	Auxiliary and propulsion category 3 engines on US flagged new built vessels and requires use of low sulfur fuel
CARB	Regulation to Reduce Emissions from Diesel Auxiliary Engines on Ocean-Going Vessels While At-Berth at a California Port *www.arb.ca.gov/regact/2007/shorepwr07/shorepwr07.htm* and *www.arb.ca.gov/ports/shorepower/forms/regulatoryadvisory/regulatoryadvisory12232013.pdf*	DPM, PM, NO_x, SO_x, CO_2	2014 – 50% 2017 – 70% 2020 – 80%	Shore power (or equivalent) requirements. Vessel operators based on fleet percentage visiting the ports.
CARB	Ocean-going Ship Onboard Incineration *www.arb.ca.gov/ports/shipincin/shipincin.htm*	DPM, PM, and HC	2007	All vessels cannot incinerate within 3 nm of the California coast
CAAP	CAAP Measure – OGV 1 Vessel Speed Reduction (VSR) Program *www.cleanairactionplan.org/strategies/ships/*	All	2008	Vessel operators within 20 nm and 40 nm of Point Fermin
CAAP	CAAP Measure – OGV 2 Reduction of At-Berth OGV Emissions *www.portoflosangeles.org/environment/ogv.asp*	All	2014	Vessel operators and terminals
CAAP	CAAP Measure – OGV 5 and 6 Cleaner OGV Engines and OGV Engine Emissions Reduction Technology Improvements and Environmental Ship Index (ESI) Program *www.cleanairactionplan.org/strategies/ships/*	DPM, PM, and NO_x	2012	Vessel operators who choose to participate in ESI and/or technology demonstrations.

Table 2.2: Harbor Craft Emission Regulations, Standards and Policies

Agency	Regulation/Standard/Policy	Targeted Pollutants	Years Effective	Impact
EPA	Emission Standards for Harbor Craft Engines *www.epa.gov/regulations-emissions-vehicles-and-engines/domestic-regulations-emissions-marine-compression*	All	2009 – Tier 3 2014 – Tier 4 for 800 hp or greater	Commercial marine diesel engines with displacement less than 30 liters per cylinder
CARB	Low Sulfur Fuel Requirement for Harbor Craft *www.arb.ca.gov/regact/carblohc/carblohc.htm*	DPM, PM, NO_x, and SO_x	2006 – 15 ppm in SCAQMD area	Use of low sulfur diesel fuel in commercial harbor craft operating in SCAQMD
CARB	Regulation to Reduce Emissions from Diesel Engines on Commercial Harbor Craft *www.arb.ca.gov/regact/2010/chc10/chc10.htm*	DPM, PM, and NO_x	2009 to 2020 - schedule varies depending on engine model year	Most harbor craft with home port in SCAQMD must meet more stringent emissions limits according to a compliance schedule
CAAP	CAAP Measure – HC 1 Performance Standards for Harbor Craft *www.portoflosangeles.org/environment/air-quality/san-pedro-bay-ports-clean-air-action-plan*	All	Varies	Modernization of harbor craft operating at POLA upon lease renewal

Table 2.3: Cargo Handling Equipment Emission Regulations, Standards and Policies

Agency	Regulation/Standard/Policy	Targeted Pollutants	Years Effective	Impact
EPA	Emission Standards for Non-Road Diesel Powered Equipment *www.epa.gov/otaq/standards/nonroad/nonroadci.htm*	All	2008 through 2015	All non-road equipment
CARB	Cargo Handling Equipment Regulation *www.arb.ca.gov/regact/2011/cargo11/cargo11.htm*	All	2007 through 2017; Opacity test compliance starting in 2016	All Cargo handling equipment
CARB	New Emission Standards, Test Procedures, for Large Spark Ignition (LSI) Engine Forklifts and Other Industrial Equipment *www.arb.ca.gov/regact/2008/lsi2008/lsi2008.htm*	All	2007 – first phase 2010 – second phase	Emission standards for large spark-ignition engines with 25 hp or greater
CARB	Fleet Requirements for Large Spark Ignition Engines *www.arb.ca.gov/regact/2010/offroadlsi10/lsifinalreg.pdf*	All	2009 through 2013	More stringent emissions requirements for fleets of large spark-ignition engines equipment
CAAP	CAAP Measure – CHE1 Performance Standards for CHE *www.portoflosangeles.org/environment/air-quality/san-pedro-bay-ports-clean-air-action-plan*	All	2007 through 2014	Turnover to Tier 4 cargo handling equipment per lease renewal agreement

Table 2.4: Locomotives Emission Regulations, Standards and Policies

Agency	Regulation/Standard/Policy	Targeted Pollutants	Years Effective	Impact
EPA	Emission Standards for New and Remanufactured Locomotives and Locomotive Engines- Latest Regulation *www.epa.gov/otaq/standards/nonroad/locomotives.htm*	DPM and NO_x	2011 through 2013 – Tier 3 2015 – Tier 4	All new and remanufactured locomotive engines
EPA	Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel *www.epa.gov/otaq/fuels/dieselfuels/regulations.htm*	SO_x and PM	2010	All locomotive engines
CARB	Low Sulfur Fuel Requirement for Intrastate Locomotives *www.arb.ca.gov/msprog/offroad/loco/loco.htm#intrastate*	SO_x, NO_x, and PM	2007	Intrastate locomotives, mainly switchers
CARB	Statewide 1998 and 2005 Memorandum of Understanding (MOUs) *www.arb.ca.gov/msprog/offroad/loco/loco.htm#intrastate*	NO_x	2010	Union Pacific and BNSF locomotives
CAAP	CAAP Measure – RL1 Pacific Harbor Line (PHL) Rail Switch Engine Modernization *www.portoflosangeles.org/environment/air-quality/san-pedro-bay-ports-clean-air-action-plan*	PM	2010	Pacific Harbor Line switcher engines
CAAP	CAAP Measure – RL2 Class 1 Line-haul and Switcher Fleet Modernization *www.portoflosangeles.org/environment/air-quality/san-pedro-bay-ports-clean-air-action-plan*	All	2023 – Tier 3	Class 1 locomotives at ports
CAAP	CAAP Measure – RL3 New and Redeveloped Near-Dock Rail Yards *www.portoflosangeles.org/environment/air-quality/san-pedro-bay-ports-clean-air-action-plan*	All	2020 – Tier 4	New near-dock rail yards

Table 2.5: Heavy-Duty Vehicles Emission Regulations, Standards and Policies

Agency	Regulation/Standard/Policy	Targeted Pollutants	Years Effective	Impact
CARB/ EPA	Emission Standards for New 2007+ On-Road Heavy-Duty Vehicles *www.arb.ca.gov/msprog/onroadhd/regucstd.htm*	NO_x and PM	2007 2010	All new on-road diesel heavy-duty vehicles
CARB	Heavy-Duty Vehicle On-Board Diagnostics (OBD and OBDII) Requirement *ww2.arb.ca.gov/our-work/programs/obd*	NO_x and PM	2010 +	All new on-road heavy-duty vehicles
CARB	ULSD Fuel Requirement *www.arb.ca.gov/regact/ulsd2003/ulsd2003.htm*	All	2006 - ULSD	All on-road heavy-duty vehicles
CARB	Drayage Truck and Bus Regulation (amended in 2011 and 2014) *www.arb.ca.gov/msprog/onroad/porttruck/drayagevtruckbus.pdf*	All	Phase-in started in 2009	All drayage trucks operating at California ports
CARB	Low NO_x Software Upgrade Program 2007 *www.arb.ca.gov/msprog/hdsoftware/hdsoftware.htm*	NO_x	Starting 2005	1993 to 1998 on-road heavy-duty vehicles that operate in California
CARB	Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Regulation *ww2.arb.ca.gov/our-work/programs/ghg-std-md-hd-eng-veh*	CO_2	Phase 1 started in 2012	Heavy-duty tractors that pull 53-foot+ trailers in California
CARB	Assembly Bill 32 requiring GHG reductions targets and Governor's Executive Order B – 30-15 *www.arb.ca.gov/cc/ab32/ab32.htm*	CO_2	GHG emissions reduction goals in 2020	All operations in California
CAAP	CAAP Measure – HDV1 Performance Standards for On-Road Heavy-Duty Vehicles; Clean Truck Program *www.portoflosangeles.org/environment/air-quality/san-pedro-bay-ports-clean-air-action-plan*	All	Phase-in started in 2008	Requires on-road heavy-duty vehicles that operate at POLA to have 2007 or newer Model Year (MY) engines by 2012

SECTION 3 OCEAN-GOING VESSELS

Source Description

Based on activity data obtained from the Marine Exchange of Southern California (MarEx), there was a total of 1,533 ocean-going vessels (OGVs, ships, or vessels) activities (arrivals not including shifts) to the Port in 2020. These vessels were grouped by the type of cargo they are designed to carry and fall into one of the following vessel categories or types:

- Auto carrier
- Bulk carrier
- Containership
- Cruise vessel
- General cargo
- Miscellaneous vessel
- Ocean-going tugboat
- Refrigerated vessel (Reefer)
- RoRo
- Tanker

From an emissions contribution perspective, the three predominant vessel types are: containerships, tankers, and cruise ships, with containerships being the most significant vessel category. Emission sources on all vessel categories include main engines (propulsion), auxiliary engines (generators), and auxiliary boilers (boilers).

Table 3.1 presents the numbers of arrivals, departures, and shifts associated with vessels at the Port in 2020.

Table 3.1: 2020 Total OGV Activities

Vessel Type	Arrival	Departure	Shift	Total
Auto Carrier	74	73	9	156
Bulk	64	65	50	179
Container - 1000	2	3	7	12
Container - 2000	144	145	43	332
Container - 3000	14	13	13	40
Container - 4000	117	113	29	259
Container - 5000	61	59	37	157
Container - 6000	109	105	29	243
Container - 7000	38	38	10	86
Container - 8000	227	217	66	510
Container - 9000	98	91	23	212
Container - 10000	41	34	16	91
Container - 11000	18	17	4	39
Container - 12000	5	5	2	12
Container - 13000	56	57	14	127
Container - 14000	18	16	4	38
Container - 15000	9	9	4	22
Container - 16000	4	3	3	10
Container - 17000	1	1	0	2
Container - 19000	2	2	1	5
Container - 23000	4	2	0	6
Cruise	90	90	32	212
General Cargo	28	24	37	89
Ocean Tugboat (ATB)	102	104	151	357
Miscellaneous	7	7	2	16
Reefer	16	16	24	56
RoRo	5	5	0	10
Tanker - Chemical	135	142	232	509
Tanker - Handysize	22	21	27	70
Tanker - Panamax	22	24	66	112
Total	**1,533**	**1,501**	**935**	**3,969**

DB ID693

Geographical Domain

The geographical domain or overwater boundary for OGVs includes the berths and waterways in the Port proper and all vessel movements within the 40-nautical mile (nm) arc from Point Fermin as shown previously in Figure 1.1. The northern boundary is the Ventura County line, and the southern boundary is the Orange County line. It should be noted that the overwater boundary extends further off the coast to incorporate the South Coast AQMD modeling domain, although most of the vessel movements occur within the 40-nm arc.

Data and Information Acquisition

Similar to previous inventories, various sources of data and operational knowledge about the Port's marine activities were used to compile the data necessary to estimate emissions from OGVs:

- Marine Exchange of Southern California
- Vessel Speed Reduction Program speed data
- Los Angeles Pilot Service
- IHS Markit Maritime data[8]
- Vessel Boarding Program (VBP) data
- Environmental Ship Index (ESI) fuel and engine data[9]
- Port Wharfinger data, including tanker load and discharge activity data
- Port and terminal shore power activity data, including usage of alternative at-berth emission control technologies (AMECS and METS-1)

During the 2019 EI process, uncertainty regarding the vessel maximum speed values provided by IHS Markit Maritime data were identified. For the 2020 EI, to the extent it was available, maximum speed from IHS Markit Maritime data was used and if not available, service speed (most populated speed field) was used.

The alternative technologies used in 2020 include the Maritime Emissions Treatment System (METS) and Advanced Maritime Emission Control System (AMECS). Note that the AMECS was unable to be utilized in the fourth quarter of 2020 due to CARB revoking certification.

Operational Profiles

Auxiliary engines provide the electricity for equipment used in the operation of oceangoing vessels. Actual VBP data, if available, were used to estimate emissions from auxiliary engines. For berth hotelling emissions, the actual shore power records were used if the vessel connected to shore power. If actual VBP data or shore power data is not available, default values were used. Table 3.2 presents the auxiliary engine load defaults by vessel type and by mode, used in the emissions calculations. These default values were produced by calculating the call-weighted average of all VBP data points collected from 2005-2020 for each vessel type for the auxiliary engines. There was no engine load data collected for a new vessel type (23,000 TEU

[8]IHS, *www.ihsmarkit.com/products/maritime-world-ship-register.html*
[9]*www.sustainableworldports.org/environmental-ship-index-esi/*

containership). The at-berth engine load default was based on available shore power kWh usage and the defaults for the other modes were estimated by interpolating from the closest known data point, in this case, the 19,000 TEU containership.

Table 3.2: Average Auxiliary Engine Load Defaults, kW

Vessel Type	Transit	Maneuvering	Berth Hotelling	Anchorage Hotelling
Auto Carrier	527	839	803	494
Bulk	222	235	544	250
Container - 1000	913	1,106	571	1,000
Container - 2000	1,287	1,887	694	528
Container - 3000	920	1,673	758	559
Container - 4000	1,419	2,526	1,073	1,056
Container - 5000	1,594	2,504	1,047	900
Container - 6000	1,558	2,477	1,083	1,266
Container - 7000	1,580	2,530	1,024	826
Container - 8000	1,635	2,519	1,161	1,052
Container - 9000	1,634	3,335	1,071	1,174
Container - 10000	1,634	2,003	1,130	1,181
Container - 11000	1,661	2,431	900	980
Container - 12000	2,048	2,634	1,786	1,724
Container - 13000	1,589	2,136	1,346	1,319
Container - 14000	1,553	2,042	1,152	1,155
Container - 15000	1,850	2,200	850	1,100
Container - 16000	1,793	2,179	1,150	1,271
Container - 17000	1,735	2,157	1,450	1,441
Container - 19000	1,950	2,275	1,350	1,475
Container - 23000	2,048	2,389	1,418	1,549
General Cargo	489	1,273	826	180
Ocean Tugboat (ATB)	79	208	102	79
Miscellaneous	284	379	230	233
Reefer	1,416	1,231	1,067	1,427
RoRo	434	1,301	751	434
Tanker - Chemical	498	598	1,209	415
Tanker - Handysize	659	682	1,055	560
Tanker - Panamax	480	549	882	386

Table 3.3 lists the auxiliary engine defaults for all cruise ships (diesel electric and non-diesel electric) that visited the Port in 2020. These auxiliary engine default values were produced by calculating the call-weighted average of all VBP data by mode collected from 2005-2020 for

each cruise vessel size group. Default loads for cruise ship anchorage hotelling were added for this inventory year to account for shifting of some cruise activities to anchorage as a result of the COVID-19 pandemic. Cruise ship anchorage activities were non-existent in previous years. Only anchorage loads that were collected under the VBP were included in the default table since the anchorage loads are not commonly used.

Table 3.3: Cruise Ship Average Auxiliary Engine Load Defaults, kW

Passenger Range	Transit	Maneuvering	Berth Hotelling	Anchorage Hotelling
<1,500	3,994	5,268	3,069	2,289
1,500 < 2,000	7,000	9,000	5,613	na
2,000 < 2,500	11,000	11,350	6,900	na
2,500 < 3,000	9,781	8,309	6,089	5,916
3,000 < 3,500	8,292	10,369	8,292	7,475
3,500 < 4,000	9,945	11,411	10,445	10,191
4,000 < 4,500	12,500	14,000	12,000	9,900
4,500 < 5,000	13,000	14,500	13,000	na

On March 13, 2020, the cruise industry voluntarily suspended cruise ship operations due to the COVID-19 pandemic. This action came just one day before the U.S. Department of Health and Human Services Centers for Disease Control and Prevention (CDC) officially issued a no-sail order on March 14, 2020. Under the no-sail order, cruise ship operators were required to suspend passenger operations. This resulted in a significantly reduced auxiliary engine load requirement due to the reduction in onboard hotel services. Even without passengers on board, transitory cruise vessels were active in the area during this time and periodically berthed at the cruise terminal to receive food, supplies, and/or services. Additionally, cruise ships were participating in activities required by the CDC to develop plans to prevent, mitigate, and respond to the spread of COVID-19 and later, as part of the CDC's Conditional Sailing Order framework, were preparing for the eventual return to passenger operations.

Many cruise lines provided information on vessel operations and auxiliary loads during this time. Those values were used to calculate emissions from March 13 to December 31, 2020. Where information was not available directly from the cruise lines, the existing methodology was followed to calculate emissions with a reduction applied for reduced operational loads due to no passengers. This reduction was determined by conducting a comparison of the pre-COVID-19 POLA at berth shore power kW values with the values during the COVID-19 period. This comparison showed an average 27% reduction in kW energy use. Typically, hotel activities remain relatively constant across all modes (transit, maneuvering, berth, and anchor), therefore, this reduction was applied directly to all modes for cruise ships operating during this time frame.

Table 3.4 presents the load defaults for the auxiliary boilers by vessel type and by mode. These default values were produced by calculating the call-weighted average of all VBP data points collected from 2005-2020 for each vessel type. Tankers' boilers produce steam for steam-powered liquid cargo pumps when discharging, steam-powered inert gas fans, and to heat fuel for pumping. Less steam is needed when liquid cargo is being loaded. Since loading and discharging data were available for the tankers that visited the Port, a lower boiler load of 875 kW was used for tankers known to be loading cargo while at berth, while the higher boiler load listed in the table was used as a default for the tanker calls that were discharging cargo.

Table 3.4: Auxiliary Boiler Load Defaults by Mode, kW

Vessel Type	Transit	Maneuvering	Berth Hotelling	Anchorage Hotelling
Auto Carrier	82	159	269	259
Bulk	63	154	184	184
Container - 1000	90	181	437	230
Container - 2000	188	359	444	441
Container - 3000	203	408	552	517
Container - 4000	180	351	457	453
Container - 5000	266	496	606	601
Container - 6000	248	471	616	612
Container - 7000	345	549	596	594
Container - 8000	210	446	561	588
Container - 9000	448	559	737	722
Container - 10000	368	473	656	656
Container - 11000	241	425	520	516
Container - 12000	349	602	687	687
Container - 13000	241	306	559	558
Container - 14000	266	481	402	532
Container - 15000	259	395	402	402
Container - 16000	206	290	470	470
Container - 17000	152	184	537	537
Container - 19000	355	581	783	783
Container - 23000	373	610	822	822
General Cargo	77	177	227	227
Ocean Tugboat (ATB)	0	0	0	0
Miscellaneous	54	85	144	144
Reefer	89	171	234	234
RoRo	67	148	259	251
Tanker - Chemical	90	135	316	203
Tanker - Handysize	143	285	3,064	321
Tanker - Panamax	223	346	3,803	517

Table 3.5 presents the load defaults for the auxiliary boilers for diesel electric and non-diesel electric (last row) cruise ships. The default averages presented are an operational average, meaning they factor in if a vessel reported that they do not use their auxiliary boiler in a certain mode. There were two non-diesel electric cruise ships that visited the Port in 2020, while the rest were diesel electric.

Table 3.5: Cruise Ship Auxiliary Boiler Load Defaults by Mode, kW

Passenger Range	Transit	Maneuvering	Berth Hotelling	Anchorage Hotelling
<1,500	992	784	766	867
1,500 < 2,000	1,070	1,145	976	1,951
2,000 < 2,500	1,382	1,773	1,506	3,005
2,500 < 3,000	596	602	431	895
3,000 < 3,500	697	1,199	1,068	1,984
3,500 < 4,000	401	347	868	989
4,000 < 4,500	0	0	503	503
4,500 < 5,000	0	0	503	503
Non- diesel electric	282	361	612	306

Hotelling

Table 3.6 summarizes the hotelling times in hours at berth. Hotelling time is the entire duration of time that a ship spends at berth or anchorage for each visit. In 2020, containerships spent more time at berth than in the previous year. This was mainly due to issues that arose as a result of the COVID-19 pandemic.

Table 3.6: 2020 Hotelling Times at Berth, hours

Vessel Type	Min Hours	Max Hours	Avg Hours
Auto Carrier	7.8	107.0	16.2
Bulk	14.1	202.1	73.5
Container - 1000	16.7	967.4	372.4
Container - 2000	8.6	4,399.2	70.5
Container - 3000	11.3	1,305.0	130.7
Container - 4000	11.5	308.5	45.4
Container - 5000	11.7	192.9	75.0
Container - 6000	9.2	182.9	73.3
Container - 7000	32.3	140.6	67.7
Container - 8000	10.1	290.2	99.7
Container - 9000	8.9	313.5	100.5
Container - 10000	16.4	212.0	105.5
Container - 11000	71.6	200.0	105.4
Container - 12000	100.0	179.1	130.9
Container - 13000	7.9	205.7	109.1
Container - 14000	10.5	246.4	114.6
Container - 15000	36.8	237.7	132.0
Container - 16000	123.3	289.5	208.6
Container - 17000	157.4	157.4	157.4
Container - 19000	18.5	147.0	99.5
Container - 23000	126.4	224.4	156.0
Cruise	5.4	671.8	36.7
General Cargo	6.2	284.1	58.0
Ocean Tugboat (ATB)	11.0	107.0	32.5
Miscellaneous	35.8	480.7	171.5
Reefer	4.9	75.8	28.4
RoRo	24.3	37.3	28.7
Tanker - Chemical	10.4	80.7	33.8
Tanker - Handysize	23.4	63.7	41.9
Tanker - Panamax	14.3	145.7	51.9

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Table 3.7 summarizes the hotelling times in hours at anchorage. In 2020, more containerships and cruise ships were at anchorage than in the previous year mainly due to the COVID-19 pandemic.

Table 3.7: 2020 Hotelling Times at Anchorage, hours

Vessel Type	Min Hours	Max Hours	Avg Hours	Vessel Count
Auto Carrier	10.1	120.0	58.2	6
Bulk	1.2	326.3	41.0	42
Container - 1000	2.4	69.1	32.1	2
Container - 2000	2.8	232.2	67.3	15
Container - 3000	0.4	288.0	32.7	6
Container - 4000	2.6	307.4	82.9	20
Container - 5000	5.2	275.7	27.9	11
Container - 6000	5.7	191.5	76.2	16
Container - 7000	4.3	142.4	54.7	7
Container - 8000	4.5	262.8	77.2	38
Container - 9000	4.1	269.4	99.8	16
Container - 10000	20.3	215.1	90.5	9
Container - 11000	50.3	126.9	91.1	4
Container - 12000	7.6	118.1	62.9	2
Container - 13000	22.6	240.0	86.1	7
Container - 14000	10.5	181.4	87.8	5
Container - 15000	48.3	329.8	141.4	4
Container - 16000	22.7	93.4	59.6	2
Container - 17000	0.0	0.0	0.0	0
Container - 19000	0.0	0.0	0.0	0
Container - 23000	0.0	0.0	0.0	0
Cruise	3.8	407.8	105.3	9
General Cargo	1.9	164.2	46.4	20
Ocean Tugboat (ATB)	1.5	662.7	69.0	12
Miscellaneous	143	143	143	1
Reefer	48.8	48.8	48.8	1
RoRo	0.0	0.0	0.0	0
Tanker - Chemical	1.4	332.6	33.9	105
Tanker - Handysize	1.2	73.3	24.0	8
Tanker - Panamax	2.5	452.1	73.4	25
Total				**393**

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Frequent Callers

Table 3.8 provides the percentage of frequent callers. For this EI, a frequent caller was defined as a vessel that made six or more calls in one calendar year. Table 3.8 shows that 10% of vessels that called the Port in 2020 were frequent callers with six or more calls.

Table 3.8: 2020 Percentage of Frequent Callers

Vessel Type	Frequent Vessels	Total Vessels	Percent Frequent Vessels
Auto Carrier	0	51	0%
Bulk	0	65	0%
Container - 1000	0	3	0%
Container - 2000	11	23	48%
Container - 3000	0	7	0%
Container - 4000	9	36	25%
Container - 5000	5	17	29%
Container - 6000	8	41	20%
Container - 7000	2	10	20%
Container - 8000	12	72	17%
Container - 9000	5	35	14%
Container - 10000	0	22	0%
Container - 11000	0	10	0%
Container - 12000	0	4	0%
Container - 13000	0	31	0%
Container - 14000	1	10	10%
Container - 15000	0	5	0%
Container - 16000	0	2	0%
Container - 17000	0	1	0%
Container - 19000	0	2	0%
Container - 23000	0	3	0%
Cruise	4	29	14%
General Cargo	0	24	0%
Ocean Tugboat (ATB)	6	14	43%
Miscellaneous	0	2	0%
Reefer	0	12	0%
RoRo	0	1	0%
Tanker - Chemical	2	119	2%
Tanker - Handysize	1	9	11%
Tanker - Panamax	0	27	0%
Total	**66**	**687**	
Average			**10%**

Vessel Characteristics

Averages by vessel type characteristics for the fleet calling the Port were based on the IHS Maritime World Register of Ships and are summarized in Table 3.9. Vessel type characteristics include averages of year built, deadweight, maximum rated speed, and main and auxiliary installed engine power ratings for the specific vessels that called the Port in 2020.

Table 3.9: 2020 Vessel Type Characteristics

Vessel Type	Average Year Built	Age (Years)	DWT (tonnes)	Max Speed (knots)	Main Eng (kW)	Aux Eng (kW)
Auto Carrier	2008	12	18,292	20.1	13,958	3,676
Bulk	2013	7	46,410	14.3	7,269	2,030
Container - 1000	2008	12	na	20.0	13,996	4,673
Container - 2000	2003	17	35,078	21.5	21,548	6,790
Container - 3000	2009	11	44,539	21.8	29,746	5,360
Container - 4000	2007	13	60,186	24.1	43,803	7,251
Container - 5000	2005	15	66,835	24.3	50,866	7,021
Container - 6000	2008	12	77,909	25.1	59,091	10,946
Container - 7000	2006	14	81,695	25.0	57,638	11,852
Container - 8000	2010	10	101,905	24.9	63,664	13,214
Container - 9000	2011	9	108,894	23.6	56,543	14,546
Container - 10000	2014	6	121,834	23.7	52,965	12,698
Container - 11000	2011	9	128,372	24.3	66,056	13,260
Container - 12000	2011	9	141,080	23.6	72,239	10,400
Container - 13000	2012	8	148,605	24.2	67,452	14,552
Container - 14000	2015	5	155,694	22.9	56,427	15,046
Container - 15000	2020	0	na	22.0	45,218	14,208
Container - 16000	2014	6	187,625	23.6	67,527	18,000
Container - 17000	2014	6	na	23.2	62,029	17,000
Container - 19000	2015	5	na	19.0	62,499	17,000
Container - 23000	2015	5	226,566	18.5	75,569	19,400
Cruise	2005	15	6,814	21.1	50,587	8,880
General Cargo	2006	14	40,772	15.0	9,001	2,477
Ocean Tugboat (ATB)	2007	13	2,287	15.0	4,996	257
Miscellaneous	1985	35	419	13.2	5,618	600
Reefer	1995	25	13,089	20.6	11,793	3,651
RoRo	2014	6	24,750	20.0	19,040	na
Tanker - Chemical	2013	7	45,281	14.6	8,207	2,833
Tanker - Handysize	2005	15	44,852	15.0	9,050	2,160
Tanker - Panamax	2008	12	71,623	15.0	11,509	3,129

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Table 3.10 presents the percent of engine tier by vessel type for arrivals/shifts at the Port. In 2020, 18 vessels had certified Tier III main engines: seven containerships, one cruise vessel, and ten tankers. NO_x emissions for Tier III vessels are 75% cleaner than Tier II vessels when operating at or above 25% main engine load. The "No Tier" column includes steamships that called the Port in 2020.

Table 3.10: 2020 Percent of OGV Activity by Main Engine Tier and Vessel Type

Vessel Type	IMO Tier 0	IMO Tier I	IMO Tier II	IMO Tier III	No Tier	Calls Count
Auto Carrier	12%	80%	8%	0%	0%	76
Bulk	0%	30%	70%	0%	0%	64
Container - 1000	0%	100%	0%	0%	0%	4
Container - 2000	1%	77%	3%	0%	20%	148
Container - 3000	0%	92%	8%	0%	0%	13
Container - 4000	1%	98%	1%	0%	0%	116
Container - 5000	5%	90%	5%	0%	0%	60
Container - 6000	0%	84%	16%	0%	0%	107
Container - 7000	0%	100%	0%	0%	0%	37
Container - 8000	0%	51%	49%	0%	0%	225
Container - 9000	0%	61%	39%	0%	0%	95
Container - 10000	0%	7%	93%	0%	0%	41
Container - 11000	0%	67%	6%	28%	0%	18
Container - 12000	0%	60%	40%	0%	0%	5
Container - 13000	0%	40%	60%	0%	0%	57
Container - 14000	0%	18%	77%	6%	0%	17
Container - 15000	0%	0%	0%	100%	0%	9
Container - 16000	0%	0%	100%	0%	0%	4
Container - 17000	0%	0%	100%	0%	0%	1
Container - 19000	0%	0%	100%	0%	0%	2
Container - 23000	0%	0%	100%	0%	0%	4
Cruise	32%	29%	35%	3%	1%	91
General Cargo	28%	59%	14%	0%	0%	29
Ocean Tugboat (ATB)	0%	75%	25%	0%	0%	108
Miscellaneous	71%	29%	0%	0%	0%	7
Reefer	100%	0%	0%	0%	0%	16
RoRo	0%	0%	100%	0%	0%	5
Tanker - Chemical	0%	52%	42%	6%	0%	163
Tanker - Handysize	68%	32%	0%	0%	0%	22
Tanker - Panamax	0%	75%	21%	4%	0%	28
Total	**6%**	**61%**	**30%**	**2%**	**2%**	**1,572**

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Emissions Estimation Methodology

The methodology to estimate 2020 emissions from OGVs activity is described in Section 2 of the San Pedro Bay Ports Emissions Inventory Methodology Report[10] Version 2. The following improvements for methodology and activity were made in estimating 2020 OGV emissions:

- Emission factors were updated to be consistent with CARB and EPA's latest methodology.
- Tier II NO_x emission factor was used for Tier III vessels operating at loads below 25%.
- Updated call-weighted averages of VBP data collected by mode from 2005 to 2020 for auxiliary engine and auxiliary boiler default loads.
- Added cruise ship auxiliary engine and boiler loads to take into consideration the 2020 COVID-19 pandemic period which resulted in the cruise ship industry suspending cruise ship passenger operations from March 13 through the end of the year in 2020.

The updated emission factors are per EPA's Ports Emissions Inventory Guidance: Methodologies for Estimating Port-Related and Goods Movement Mobile Source Emissions (September 2020)[11]. Table 3.11 lists the emission factors for propulsion engines using 0.1% sulfur MGO fuel. Auxiliary boilers use the emissions factors listed for steamships in Table 3.11.

Table 3.11: OGV Emission Factors for Diesel Propulsion, Steamship Propulsion and Gas Turbine Engines, g/kWh

Engine Category	Tier	Model Year Range	PM_{10}	$PM_{2.5}$	DPM	NO_x	SO_x	CO	HC	CO_2	N_2O	CH_4
Slow Speed Main	0	1999 and older	0.18	0.17	0.18	17.0	0.36	1.40	0.60	593	0.029	0.012
Slow Speed Main	I	2000 to 2010	0.18	0.17	0.18	16.0	0.36	1.40	0.60	593	0.029	0.012
Slow Speed Main	II	2011 to 2015	0.18	0.17	0.18	14.4	0.36	1.40	0.60	593	0.029	0.012
Slow Speed Main	III	2016 and newer	0.18	0.17	0.18	3.4	0.36	1.40	0.60	593	0.029	0.012
Medium Speed Main	0	1999 and older	0.19	0.17	0.19	13.2	0.40	1.10	0.50	657	0.029	0.012
Medium Speed Main	I	2000 to 2010	0.19	0.17	0.19	12.2	0.40	1.10	0.50	657	0.029	0.012
Medium Speed Main	II	2011 to 2015	0.19	0.17	0.19	10.5	0.40	1.10	0.50	657	0.029	0.012
Medium Speed Main	III	2016 and newer	0.19	0.17	0.19	2.6	0.40	1.10	0.50	657	0.029	0.012
Gas Turbine		All	0.01	0.01	0.00	5.7	0.59	0.20	0.10	962	0.075	0.002
Steamship		All	0.20	0.19	0.00	2.0	0.59	0.20	0.10	962	0.075	0.002

[10] *San Pedro Bay Ports Emissions Inventory Methodology Report, Version 2, www.polb.com/environment/air/#emissions-inventory*

[11] *www.epa.gov/state-and-local-transportation/port-emissions-inventory-guidance*

Evidence from engine manufacturers[12] and classification societies[13] suggest that Tier III propulsion engines will not meet Tier III emission standards when operating below 25% load because the exhaust heat does not reach the necessary temperature for selective catalytic reduction (SCR) or exhaust gas recirculation (EGR) systems to effectively reduce emissions. As such, when Tier III main engines operated below 25% within the emissions inventory domain, the default Tier II NO_x emission factor or, if available, Tier II Engine International Air Pollution Prevention (EIAPP) NO_x factors were used in emission calculations.

Table 3.12 lists the emission factors for auxiliary engines using 0.1% sulfur fuel.

Table 3.12: Emission Factors for Auxiliary Engines using 0.1% S, g/kWh

Engine Category	Tier	Model Year Range	NO_x	PM_{10}	$PM_{2.5}$	HC	CO	SO_x	CO_2	N_2O	CH_4
Medium Auxiliary	0	1999 and older	13.8	0.19	0.17	0.40	1.10	0.42	696	0.029	0.008
Medium Auxiliary	I	2000 to 2010	12.2	0.19	0.17	0.40	1.10	0.42	696	0.029	0.008
Medium Auxiliary	II	2011 to 2015	10.5	0.19	0.17	0.40	1.10	0.42	696	0.029	0.008
Medium Auxiliary	III	2016 and newer	2.6	0.19	0.17	0.40	1.10	0.42	696	0.029	0.008
High Auxiliary	0	1999 and older	10.9	0.19	0.17	0.40	0.90	0.42	696	0.029	0.008
High Auxiliary	I	2000 to 2010	9.8	0.19	0.17	0.40	0.90	0.42	696	0.029	0.008
High Auxiliary	II	2011 to 2015	7.7	0.19	0.17	0.40	0.90	0.42	696	0.029	0.008
High Auxiliary	III	2016 and newer	2.0	0.19	0.17	0.40	0.90	0.42	696	0.029	0.008

Emission Estimates

The following tables present the estimated OGV emissions categorized in different ways, such as by engine type, by operating mode, and by vessel type. The criteria pollutant emissions are in tons per year (tpy), while the greenhouse gas emissions are in tonnes per year. Table 3.13 presents summaries of emission estimates by engine type in tons per year. The emissions for the CARB-certified capture and control systems, which are used to treat emissions from auxiliary engines, were included in the auxiliary engine emissions in this table.

Table 3.13: 2020 Ocean-Going Vessel Emissions by Engine Type

Engine Type	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
Main Engine	11	10	11	1,289	18	103	64	41,583
Auxiliary Engine	23	21	23	1,386	41	151	52	84,261
Auxiliary Boiler	18	17	0	191	37	19	10	86,404
Total	**52**	**48**	**34**	**2,867**	**96**	**273**	**127**	**212,248**

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[12]MAN Diesel & Turbo, "Tier III Two-Stroke Technology"
[13]DNV-GL, "NOx Tier III Update: Choices and challenges for on-time compliance," November 2017.

A summary of the OGV emission estimates by vessel type for all pollutants for the year 2020 is presented in Table 3.14. The emissions for bulk heavy load vessels were included in the bulk vessel type.

Table 3.14: 2020 Ocean-Going Vessel Emissions by Vessel Type

Vessel Type	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
Auto Carrier	0.7	0.6	0.6	50.8	0.9	5.0	2.3	2,623
Bulk	1.2	1.1	0.9	68.9	2.7	6.5	2.2	4,575
Container - 1000	0.5	0.4	0.3	18.6	0.6	2.0	0.7	2,004
Container - 2000	4.3	3.9	2.6	211.7	9.0	19.5	8.3	16,821
Container - 3000	0.4	0.4	0.2	21.9	0.8	2.3	0.7	2,220
Container - 4000	3.0	2.7	2.3	232.5	5.2	17.2	7.9	13,102
Container - 5000	2.6	2.4	1.8	136.0	6.3	22.2	9.4	11,195
Container - 6000	3.5	3.2	2.3	216.8	4.7	21.5	11.8	13,965
Container - 7000	1.2	1.1	0.8	78.0	1.8	7.2	4.2	4,807
Container - 8000	8.0	7.4	4.3	466.8	9.8	39.8	22.8	35,322
Container - 9000	4.3	4.0	2.3	217.8	8.4	20.8	10.8	18,000
Container - 10000	1.6	1.5	0.8	83.8	2.8	6.4	3.0	7,624
Container - 11000	0.8	0.7	0.6	46.7	1.0	4.9	2.3	3,092
Container - 12000	0.2	0.2	0.1	13.8	0.4	0.9	0.4	1,125
Container - 13000	2.3	2.1	1.4	128.2	3.7	12.5	6.9	9,254
Container - 14000	0.7	0.7	0.5	30.6	1.5	4.5	2.5	2,567
Container - 15000	0.5	0.5	0.4	15.2	0.9	2.8	1.2	2,106
Container - 16000	0.3	0.3	0.2	15.4	0.7	1.6	0.7	1,297
Container - 17000	0.1	0.1	0.1	3.9	0.2	0.3	0.1	296
Container - 19000	0.1	0.1	0.0	4.9	0.2	0.2	0.1	400
Container - 23000	0.1	0.1	0.0	9.4	0.2	0.4	0.2	807
Cruise	6.5	5.9	5.7	374.8	14.0	34.7	13.1	22,862
General Cargo	0.7	0.7	0.6	43.6	1.3	4.0	1.6	2,851
Ocean Tugboat (ATB)	0.5	0.5	0.5	34.4	1.2	3.2	1.3	1,812
Miscellaneous	0.1	0.1	0.1	6.0	0.3	0.5	0.2	465
Reefer	0.4	0.4	0.4	27.7	1.0	2.4	1.0	1,457
RoRo	0.1	0.1	0.1	5.7	0.2	0.4	0.1	280
Tanker - Chemical	3.5	3.2	2.7	191.0	7.1	18.8	6.5	13,445
Tanker - Handysize	1.1	1.0	0.4	38.4	2.9	3.4	1.4	4,537
Tanker - Panamax	2.7	2.5	0.8	73.4	6.7	6.9	2.7	11,338
Total	**51.9**	**47.8**	**33.6**	**2,866.7**	**96.5**	**272.7**	**126.5**	**212,248**

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Table 3.15 presents summaries of emission estimates by the various modes in tons per year. For each mode, the engine type emissions are also listed. At-berth hotelling and at-anchorage hotelling are listed separately. Transit and harbor maneuvering emissions include both berth and anchorage calls.

Table 3.15: 2020 Ocean-Going Vessel Emissions by Mode

Mode	Engine Type	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
Transit	Main	9.8	9.0	9.4	1,151.1	16.5	87.1	50.8	37,864
Transit	Auxiliary Engine	4.0	3.6	4.0	241.3	6.4	24.5	8.9	14,257
Transit	Auxiliary Boiler	0.5	0.5	0.0	5.8	1.1	0.6	0.3	2,618
Total Transit		**14.3**	**13.2**	**13.4**	**1,398.3**	**24.0**	**112.2**	**60.0**	**54,739**
Maneuvering	Main	1.5	1.4	1.5	138.3	1.5	15.5	13.6	3,719
Maneuvering	Auxiliary Engine	1.2	1.1	1.2	75.8	2.0	7.6	2.8	4,445
Maneuvering	Auxiliary Boiler	0.2	0.2	0.0	2.4	0.4	0.2	0.1	1,063
Total Maneuvering		**3.0**	**2.7**	**2.7**	**216.5**	**3.9**	**23.4**	**16.5**	**9,227**
Hotelling at-berth	Main	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Hotelling at-berth	Auxiliary Engine	10.5	9.7	10.5	651.4	20.9	76.0	25.2	40,784
Hotelling at-berth	Auxiliary Boiler	14.0	12.9	0.0	149.3	29.0	15.1	7.6	67,544
Total Hotelling at-berth		**24.5**	**22.6**	**10.5**	**800.7**	**49.9**	**91.1**	**32.8**	**108,329**
Hotelling at-anchorage	Main	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Hotelling at-anchorage	Auxiliary Engine	7.0	6.4	7.0	417.7	12.0	42.6	15.5	24,775
Hotelling at-anchorage	Auxiliary Boiler	3.2	2.9	0.0	33.6	6.7	3.4	1.7	15,178
Total Hotelling at-anchorage		**10.1**	**9.3**	**7.0**	**451.3**	**18.7**	**46.0**	**17.2**	**39,953**
Total		**51.9**	**47.8**	**33.6**	**2,866.7**	**96.5**	**272.7**	**126.5**	**212,248**

DB ID694

SECTION 4 HARBOR CRAFT

This section presents emission estimates for the commercial harbor craft source category, including source descriptions, geographical domain, data acquisition, operational profiles, emissions estimation methodology, and emission estimates.

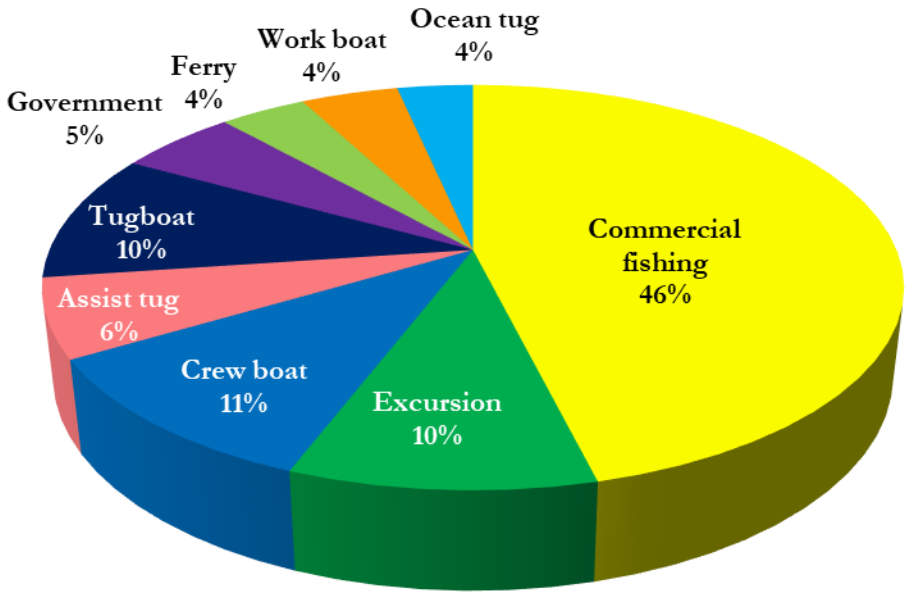
Source Description

Harbor craft are commercial vessels that spend the majority of their time within or near the port and harbor. The harbor craft emissions inventory consists of the following vessel types:

- Assist tugboats
- Commercial fishing vessels
- Crew boats
- Ferry vessels
- Excursion vessels
- Government vessels
- Tugboats
- Ocean tugs
- Work boats

Recreational vessels are not considered to be commercial harbor craft; therefore, their emissions were not included in this inventory. Figure 4.1 presents the distribution of the 206 commercial harbor craft inventoried for the Port in 2020.

Figure 4.1: Distribution of Commercial Harbor Craft Population by Vessel Type



Ocean tugs included in this section are different from the articulated tug barge (ATB) discussed in the ocean-going vessels section of this report. ATBs are seen as specialized single vessels and were included in the MarEx data for ocean-going vessels. The ocean tugs in this section are not rigidly connected to the barge and are typically not home-ported at the Port but may make frequent calls with barges. They are different from tugboats because their average engine loads are higher than tugboats, which tend to idle more between jobs. Tugboats are typically home-ported in San Pedro Bay harbor and primarily operate within the harbor area but can also operate outside the harbor depending on their work assignments. For this inventory, assist tugs were separated from tugboats due to the load factor used for assist tugs, which is different than the load factor for tugboats.

Geographical Domain

The geographical domain for harbor craft is the same as that for ocean-going vessels.

Data and Information Acquisition

Commercial harbor craft companies were contacted to obtain key operational parameters for their vessels. These include:

- Vessel type
- Engine count
- Engine horsepower (or kilowatts) for main and auxiliary engines
- Engine model year
- Operating hours in calendar year 2020
- Vessel repower information

Operational Profiles

Tables 4.1 and 4.2 summarize the main and auxiliary engine data, respectively, for each vessel type. The averages by vessel type were used as defaults for vessels for which the model year, horsepower, or operating hour information was missing. Defaults were used mainly for commercial fishing vessels and resulted in the use of defaults for 10% of engine model year values, 8% of horsepower values, and 10% of operating hours.

There are a number of companies that operate harbor craft in both the ports of Los Angeles and Long Beach harbors. The activity hours for the vessels that are common to both ports reflect work performed during 2020 for the Port of Los Angeles harbor only.

Table 4.1: 2020 Summary of Propulsion Engine Data by Vessel Category

Harbor Craft Type	Vessel Count	Engine Count	Model year			Horsepower			Annual Operating Hours		
			Minimum	Maximum	Average	Minimum	Maximum	Average	Minimum	Maximum	Average
Assist tug	13	26	2007	2019	2012	1,850	3,433	2,419	637	2,133	1,223
Commercial fishing	95	105	1957	2016	2008	150	1,000	378	0	5,000	1,533
Crew boat	22	53	2003	2020	2011	180	1,450	566	0	6,152	937
Excursion	20	40	1981	2019	2010	250	630	389	0	2,000	1,034
Ferry	8	20	2008	2015	2011	2,250	2,680	2,298	223	1,384	734
Government	11	21	1993	2019	2006	240	1,770	610	0	712	320
Ocean tug	7	14	2004	2015	2008	1,800	3,385	2,126	200	2,384	1,129
Tugboat	21	41	2001	2018	2011	235	3,400	1,101	59	1,212	534
Work boat	9	18	2008	2015	2012	210	1,000	564	0	3,545	1,347
Total	**206**	**338**									

DB ID423

Table 4.2: 2020 Summary of Auxiliary Engine Data by Vessel Category

Harbor Craft Type	Vessel Count	Engine Count	Model year			Horsepower			Annual Operating Hours		
			Minimum	Maximum	Average	Minimum	Maximum	Average	Minimum	Maximum	Average
Assist tug	13	27	2006	2019	2014	107	296	195	494	2,382	1,265
Commercial fishing	95	46	1957	2016	2009	12	185	78	0	5,000	2,024
Crew boat	22	24	2002	2020	2011	11	180	62	128	2,476	754
Excursion	20	22	1981	2020	2011	11	54	38	0	3,000	1,612
Ferry	8	16	2008	2017	2012	18	120	69	204	1,530	705
Government	11	16	2002	2019	2005	50	1555	522	0	869	150
Ocean tug	7	15	2004	2019	2009	60	339	131	200	1,388	737
Tugboat	21	36	2004	2019	2011	15	402	124	11	1,450	521
Work boat	9	13	1979	2019	2008	40	133	79	0	3,236	785
Total	**206**	**215**									

DB ID422

Harbor craft engines with known model year and horsepower (hp) were categorized according to their respective EPA marine engine standards (known as "tier level"). In the case where engine information gathered from harbor craft operators failed to identify the specific EPA tier level, the tier level was assigned for that engine based on engine model year and horsepower.[14] These assumptions are consistent with CARB's harbor craft emission factors, which follow the same model year grouping as EPA emissions standards for marine engines.

Table 4.3: Harbor Craft Marine Engine EPA Tier Levels

EPA Tier Level	Marine Engine Model Year Range	Horsepower Range
Tier 0	1999 and older	All
Tier 1	2000 to 2003	< 500 hp
Tier 1	2000 to 2006	> 500 hp
Tier 2	2004 up to Tier 3	< 500 hp
Tier 2	2007 up to Tier 3	> 500 hp
Tier 3	2009 and newer	0 to 120 hp
Tier 3	2013 and newer	> 120 to 175 hp
Tier 3	2014 and newer	> 175 to 500 hp
Tier 3	2013 and newer	> 500 to 750 hp
Tier 3	2012 to 2016	> 750 to 1,900 hp
Tier 3	2013 to 2015	> 1,900 to 3,300 hp
Tier 3	2014 to 2015	> 3,300 hp
Tier 4	2017 and newer	> 750 to 1,900 hp
Tier 4	2016 and newer	> 1,900 to 3,300 hp
Tier 4	2016 and newer	> 3,300 hp

[14]CFR (Code of Federal Regulation), 40 CFR, subpart 94.8 for Tier 1 and 2 and subpart 1042.101 for Tier 3.

Figure 4.2 provides the distribution by tier of all harbor craft propulsion and auxiliary engines operating at the Port in 2020. If model year and/or horsepower information were not available, the engines were classified as "unknown." For the first time since the inception of the inventory, there was one vessel that had Tier 4 twin propulsion engines.

Figure 4.2: 2020 Distribution of Harbor Craft Engines by Engine Standards

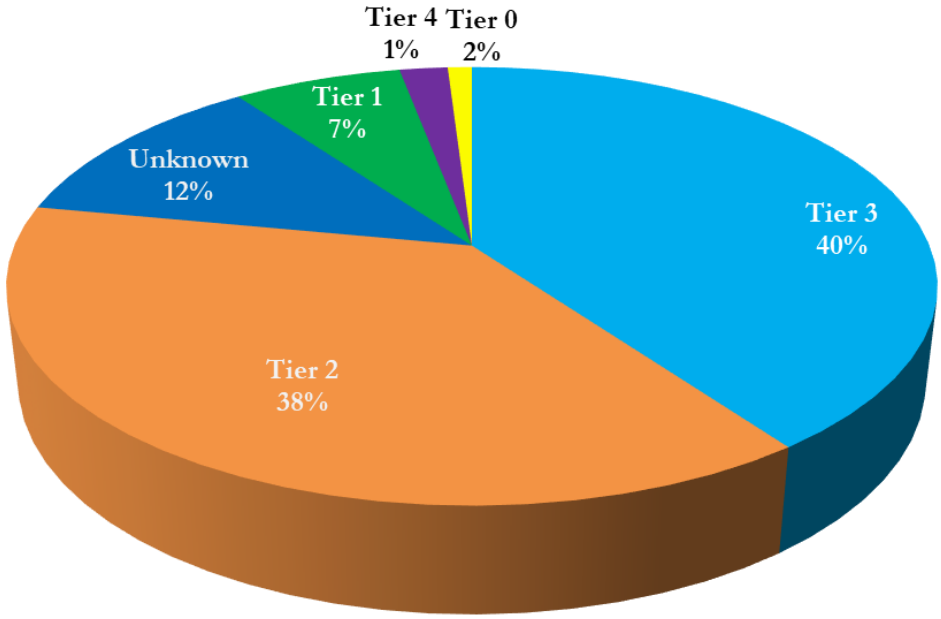


Table 4.4 summarizes the energy consumption (kWh) per engine tier used to estimate 2020 harbor craft emissions. The newer Tier 2 to Tier 4 engines made up 94% of the harbor craft energy consumption, indicating higher use of cleaner engines. Energy consumption of harbor craft engines with unknown tier was distributed among other tiers based on defaults used for missing model year or horsepower for emissions calculations. In 2020, a total of 56 Tier 0 and Tier 1 engines accounted for the 8% of total activity.

Table 4.4: Harbor Craft Energy Consumption by Engine Tier, kWh and %

Engine Tier	2020 kWh	2020 % of Total
Tier 0	527,975	1%
Tier 1	5,956,289	7%
Tier 2	54,509,132	60%
Tier 3	28,851,994	32%
Tier 4	1,476,890	2%
Total	**91,322,278**	**100%**

Emissions Estimation Methodology

The emissions calculation methodology and the emission rates are described in Section 3 of the San Pedro Bay Ports Emissions Inventory Methodology Report[15] Version 2. Harbor craft emissions were estimated for each engine individually, based on the engine's model year, power rating, and annual hours of operation. The Port's harbor craft emission calculation methodology is similar to the methodology used by the CARB emissions inventory for commercial harbor craft operating in California.[16]

Emission Estimates

Table 4.5 summarizes the estimated 2020 harbor craft emissions by vessel type and engine type. In order for the total emissions to be consistently displayed for each pollutant, the individual values in each table column do not, in some cases, add up to the listed total in the table. This is because there are fewer decimal places displayed (for readability) than were included in the calculated total. The criteria pollutants are listed as tons per year while the CO_2e values are listed as tonnes (metric tons) per year.

[15] *San Pedro Bay Ports Emissions Inventory Methodology Report Version 2. www.portoflosangeles.org/environment/air-quality/air-emissions-inventory*

[16] CARB, *Commercial Harbor Craft Regulatory Activities*, Appendix B: Emissions Estimation Methodology for Commercial Harbor Craft Operating in California. *www.arb.ca.gov/msei/chc-appendix-b-emission-estimates-ver02-27-2012.pdf.*

Table 4.5: 2020 Harbor Craft Emissions by Vessel and Engine Type

Harbor Craft Type	Engine Type	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
Assist Tug	Auxiliary	0.4	0.3	0.4	14.2	0.0	13.2	2.2	1,495
	Propulsion	4.4	4.1	4.4	131.0	0.1	108.0	14.4	11,648
Assist Tug Total		**4.7**	**4.4**	**4.7**	**145.2**	**0.1**	**121.2**	**16.6**	**13,143**
Commercial Fishing	Auxiliary	0.8	0.7	0.8	18.0	0.0	14.5	3.5	1,540
	Propulsion	3.3	3.0	3.3	105.0	0.1	79.1	11.7	8,499
Commercial Fishing Total		**4.0**	**3.7**	**4.0**	**122.9**	**0.1**	**93.7**	**15.2**	**10,039**
Crew boat	Auxiliary	0.1	0.1	0.1	2.6	0.0	2.1	0.5	206
	Propulsion	1.9	1.7	1.9	58.5	0.1	41.8	6.3	5,026
Crew boat Total		**2.0**	**1.8**	**2.0**	**61.0**	**0.1**	**43.8**	**6.9**	**5,232**
Excursion	Auxiliary	0.1	0.1	0.1	3.6	0.0	3.0	1.3	313
	Propulsion	1.1	1.0	1.1	37.7	0.0	29.7	4.3	3,270
Excursion Total		**1.3**	**1.1**	**1.3**	**41.3**	**0.0**	**32.7**	**5.6**	**3,583**
Ferry	Auxiliary	0.1	0.1	0.1	2.5	0.0	1.9	0.5	212
	Propulsion	2.9	2.7	2.9	84.6	0.1	65.8	9.3	7,028
Ferry Total		**3.0**	**2.8**	**3.0**	**87.1**	**0.1**	**67.7**	**9.8**	**7,240**
Government	Auxiliary	0.1	0.1	0.1	1.6	0.0	1.0	0.2	121
	Propulsion	0.5	0.5	0.5	11.9	0.0	6.3	1.2	826
Government Total		**0.6**	**0.5**	**0.6**	**13.4**	**0.0**	**7.3**	**1.4**	**947**
Ocean Tug	Auxiliary	0.1	0.1	0.1	3.7	0.0	3.3	0.6	377
	Propulsion	5.4	4.9	5.4	165.2	0.1	103.3	16.1	12,550
Ocean Tug Total		**5.5**	**5.0**	**5.5**	**168.8**	**0.1**	**106.6**	**16.7**	**12,927**
Tugboat	Auxiliary	0.2	0.2	0.2	5.3	0.0	4.3	0.9	479
	Propulsion	1.4	1.3	1.4	42.2	0.0	33.2	4.7	3,597
Tugboat Total		**1.6**	**1.5**	**1.6**	**47.5**	**0.0**	**37.4**	**5.6**	**4,076**
Work boat	Auxiliary	0.1	0.0	0.1	1.5	0.0	1.2	0.3	136
	Propulsion	0.9	0.9	0.9	32.7	0.0	27.3	3.8	3,052
Work boat Total		**1.0**	**0.9**	**1.0**	**34.2**	**0.0**	**28.5**	**4.0**	**3,188**
Harbor Craft Total		**23.7**	**21.8**	**23.7**	**721.5**	**0.7**	**538.8**	**81.7**	**60,374**

DB ID427

SECTION 5 CARGO HANDLING EQUIPMENT

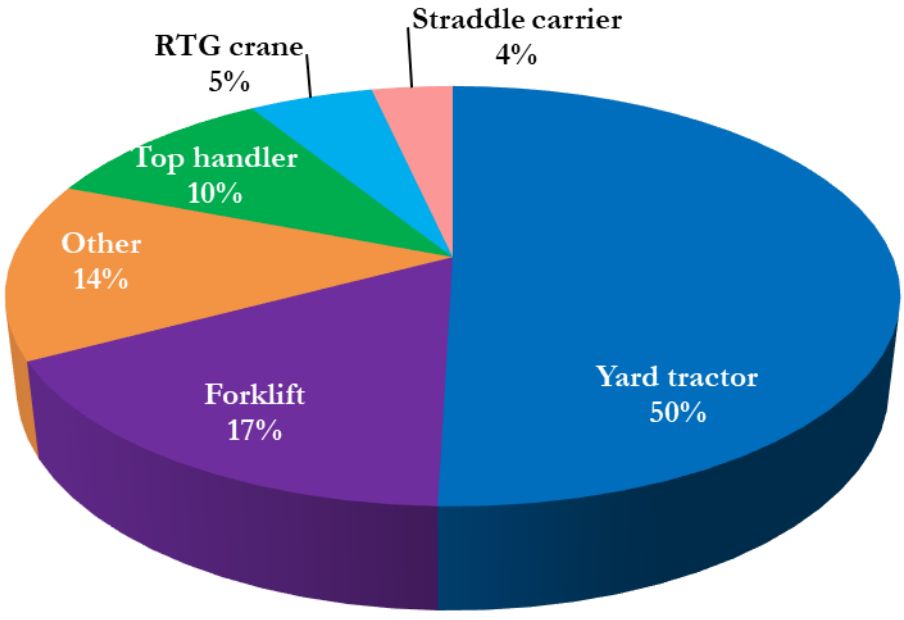
This section presents emissions estimates for the CHE source category, including source descriptions, geographical domain, data acquisition, operational profiles, emissions estimation methodology, and emission estimates.

Source Description

The CHE category includes equipment that moves cargo (including cargo in containers, general cargo, and bulk cargo) to and from marine vessels, railcars, and on-road trucks. The equipment is typically operated at marine terminals or at rail yards and not on public roadways. This inventory includes cargo handling equipment fueled by diesel, gasoline, propane, liquefied natural gas (LNG), and electricity. Due to the diversity of cargo handled by the Port's terminals, there is a wide range of equipment types.

Figure 5.1 presents the population distribution of the 1,915 pieces of equipment inventoried at the Port for calendar year 2020. The 14% for "other" equipment captures a variety of terminal equipment, such as bulldozer, cone vehicle, loader, man lift, material handler, rail pusher, reach stacker, skid steer loader, side pick, sweeper, telehandler, and truck. The hybrid and conventional rubber-tired gantry (RTG) crane counts were included under RTG crane. The hybrid and conventional straddle carrier counts were included under straddle carrier.

Figure 5.1: 2020 CHE Count Distribution by Equipment Type



Geographical Domain

The geographical domain for CHE is the terminals within the Port.

Data and Information Acquisition

The maintenance and/or CHE operating staff of each terminal were contacted in person, by e-mail, or by telephone, to obtain equipment count and activity information on the CHE specific to their terminal's operation for the 2020 calendar year.

Operational Profiles

Table 5.1 summarizes the cargo handling equipment data collected from the terminals and facilities for the calendar year 2020. The table includes the count of all equipment as well as the range and the average of horsepower, model year, and annual operating hours by equipment type for equipment with known operating parameters. For the electric-powered equipment shown in the table, "na" denotes "not applicable" for engine size, model year, and operating hours.

The averages by CHE engine and fuel type were used as defaults for the missing information. Defaults were used for 1% of engine model year values, 4% of horsepower values, and 1% of operating hours.

Table 5.1: 2020 CHE Engine Characteristics for All Terminals

Equipment	Engine Type	Count	Power (hp)			Model Year			Annual Activity Hours		
			Min	Max	Average	Min	Max	Average	Min	Max	Average
Stacking crane	Electric	29	na	na	na	na	na	na	961	2,869	2,151
Bulldozer	Diesel	3	200	310	237	2006	2007	2007	83	259	172
Cone Vehicle	Diesel	21	25	35	32	2010	2015	2013	48	2,056	620
Crane	Diesel	8	130	751	265	1969	2014	1997	0	909	308
Crane	Electric	3	na	na	na	na	na	na	929	1,045	975
Wharf crane	Electric	86	na	na	na	na	na	na	0	4,036	1,500
Forklift	Diesel	105	56	388	180	1993	2020	2012	0	3,514	492
Forklift	Electric	29	na	na	na	na	na	na	na	na	na
Forklift	Gasoline	6	45	45	45	2010	2012	2011	55	494	274
Forklift	Propane	181	42	200	82	1988	2020	2007	0	2,179	405
Loader	Diesel	11	55	460	259	1999	2015	2009	0	2,511	910
Loader	Electric	2	na	na	na	na	na	na	na	na	na
Man lift	Diesel	21	49	152	85	2000	2018	2008	0	431	147
Man lift	Electric	5	na	na	na	na	na	na	na	na	na
Man lift	Gasoline	1	60	60	60	2007	2007	2007	102	102	102
Material handler	Diesel	9	371	475	396	2005	2011	2008	352	3,628	1,843
Miscellaneous	Diesel	1	268	268	268	2007	2007	2007	1,619	1,619	1,619
Miscellaneous	Electric	1	na	na	na	2008	2008	2008	na	na	na
Rail pusher	Diesel	1	194	194	194	2012	2012	2012	740	740	740
Reach stacker	Diesel	2	250	449	350	2013	2018	2016	1,197	1,197	1,197
Hybrid RTG	Diesel	16	137	302	255	2009	2018	2016	953	5,894	3,751
RTG crane	Diesel	87	320	779	627	2002	2020	2009	49	5,615	2,487
Side pick	Diesel	14	152	275	245	2000	2017	2013	35	1,738	457
Skid steer loader	Diesel	4	56	75	68	1994	2012	2005	48	655	474
Hybrid straddle carrier	Diesel	39	102	103	103	2016	2018	2017	907	4,070	1,483
Straddle carrier	Diesel	28	425	425	425	2013	2015	2014	2,122	5,972	4,905
Sweeper	Diesel	7	96	260	187	2000	2019	2013	32	992	410
Sweeper	Gasoline	3	205	205	205	2005	2018	2013	na	na	na
Telehandler	Diesel	6	74	74	74	2013	2019	2016	69	164	129
Top handler	Diesel	194	250	400	337	1999	2018	2012	0	4,680	2,224
Top handler	Electric	2	na	na	na	2019	2019	2019	897	897	897
Truck	Diesel	23	185	540	349	1988	2014	2006	55	2,763	725
Truck	Propane	1	na	na	na	1973	1973	1973	148	148	148
Yard tractor	Diesel	781	158	250	228	1995	2020	2011	0	5,234	1,751
Yard tractor	Electric	5	na	na	na	2019	2019	2019	na	na	na
Yard tractor	LNG	22	250	250	250	2018	2018	2018	150	1,088	755
Yard tractor	Propane	158	174	231	200	2000	2011	2007	0	5,467	1,425
Total count		**1,915**									

DB ID228

Table 5.2 summarizes the emission reduction technologies utilized in cargo handling equipment, including diesel particulate filters (DPF) and BlueCAT retrofit for large-spark ignition (LSI) engines. In 2020, there were no equipment with diesel oxidation catalysts (DOC) because the older equipment equipped with DOCs were phased out of the terminal fleets. Additionally, equipment with DPF and the LSI retrofits are being phased out as they are replaced with newer pieces of equipment with Tier 4 engines. Hybrid equipment count, especially hybrid straddle carriers, has increased since the previous year.

Table 5.2: 2020 Count of CHE Utilizing Emission Reduction Technologies

Equipment	On-Road Engines	DPF Retrofit	Hybrid	BlueCAT LSI Equip
Forklift	0	35	0	26
RTG crane	0	24	16	0
Straddle carrier	0	2	39	0
Top handler	0	61	0	0
Yard tractor	664	4	0	0
Sweeper	0	1	0	0
Other	12	37	0	0
Total	**676**	**164**	**55**	**26**

DB ID234

Table 5.3 shows the distribution of equipment by fuel type. The "other" electric equipment includes automatic stacking carriers (ASCs), cranes, loaders, manlifts, and miscellaneous.

Table 5.3: 2020 Count of CHE Equipment by Fuel Type

Equipment	Electric	LNG	Propane	Gasoline	Diesel	Total
Forklift	29	0	181	6	105	321
Wharf crane	86	0	0	0	0	86
RTG crane	0	0	0	0	103	103
Straddle carrier	0	0	0	0	67	67
Top handler	2	0	0	0	194	196
Yard tractor	5	22	158	0	781	966
Other	40	0	1	4	131	176
Total	**162**	**22**	**340**	**10**	**1,381**	**1,915**

DB ID235

Table 5.4 summarizes the distribution of diesel cargo handling equipment engines including smaller auxiliary RTG engines by off-road diesel engine standards[17] (Tier 0, 1, 2, 3, 4 interim, and 4 final) based on model year and horsepower range. The table also lists the count of each type of equipment using on-road diesel engines. The table does not reflect the fact that some of the engines may be cleaner than the tier level they are certified to because of use of emissions control devices added to existing equipment. The "Unknown Tier" column shown in the table represents equipment with missing horsepower or model year information necessary for tier level classifications. Due to the recent significant number of straddle carriers in the inventory, they were taken out of the "other" category for the count of diesel engines by engine standards.

Table 5.4: 2020 Count of Diesel Engines by Engine Standards

Equipment Type	Tier 0	Tier 1	Tier 2	Tier 3	Tier 4i	Tier 4f	On-road Engine	Unknown Tier	Total Diesel Engines
Forklift	1	1	7	25	34	27	0	10	105
RTG crane	0	0	36	2	39	26	0	0	103
Side pick	0	2	0	0	0	9	0	3	14
Top handler	0	2	21	39	38	94	0	0	194
Yard tractor	4	0	0	0	19	91	664	3	781
Other	5	7	11	28	20	31	12	3	117
Straddle carrier	0	0	0	0	17	50	0	0	67
Total	**10**	**12**	**75**	**94**	**167**	**328**	**676**	**19**	**1,381**
Percent	**1%**	**1%**	**5%**	**7%**	**12%**	**24%**	**49%**	**1%**	

DB ID878

[17]EPA, *Nonroad Compression-Ignition Engines- Exhaust Emission Standards,* June 2004

Table 5.5 summarizes the energy consumption (kWh) for the diesel equipment by engine tier and the other engine types (i.e., gasoline, propane and LNG), but not electric. Energy consumption of cargo handling equipment engines with unknown tier was distributed among other tiers based on defaults used for missing model year or horsepower for emissions calculations.

Table 5.5: 2020 Equipment Energy Consumption by Engine Tier, kWh and %

Engine Type	Engine Tier	Energy Consumption kWh	Percent Total
Diesel	Tier 0	560,280	0.3%
Diesel	Tier 1	591,335	0.3%
Diesel	Tier 2	11,423,788	5.3%
Diesel	Tier 3	14,534,404	6.8%
Diesel	Tier 4i	30,857,746	14.4%
Diesel	Tier 4f	60,551,220	28.3%
Diesel	Onroad engines	79,790,984	37.3%
Gasoline		147,079	0.1%
Propane		14,475,625	6.8%
LNG		1,205,615	0.6%
Total		**214,138,075**	

Emissions Estimation Methodology

The emissions calculation methodology and the emission rates are described in Section 4 of the San Pedro Bay Ports Emissions Inventory Methodology Report[18] Version 2. The Port's emissions calculation methodology used to estimate CHE emissions is consistent with CARB's latest methodology for estimating emissions from CHE.[19]

[18] *San Pedro Bay Ports Emissions Inventory Methodology Report Version 2. www.portoflosangeles.org/environment/air-quality/air-emissions-inventory*

[19] CARB, Appendix B: Emission Estimation Methodology for Cargo Handling Equipment Operating at Ports and Intermodal Rail Yards in California. *www.arb.ca.gov/regact/2011/cargo11/cargoappb.pdf*

Emission Estimates

Table 5.6 summarizes the CHE emissions by terminal type. The "Other" category represents CHE emissions for intermodal yard and other facilities located on Port property.

Table 5.6: 2020 CHE Emissions by Terminal Type

Terminal Type	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
Auto	0.0	0.0	0.0	0.0	0.0	0.2	0.0	5
Break-Bulk	0.5	0.4	0.5	25.2	0.1	14.1	2.4	5,248
Container	5.0	4.7	3.8	326.2	1.7	596.8	61.9	154,613
Cruise	0.0	0.0	0.0	0.1	0.0	0.3	0.0	46
Dry Bulk	0.1	0.1	0.1	7.1	0.0	6.0	0.6	454
Liquid	0.0	0.0	0.0	0.1	0.0	0.2	0.1	49
Other	0.2	0.2	0.1	6.9	0.1	25.8	1.6	5,547
Total	**5.8**	**5.4**	**4.5**	**365.6**	**1.8**	**643.3**	**66.5**	**165,961**

Table 5.7 presents the emissions by cargo handling equipment type and engine type.

Table 5.7: 2020 CHE Emissions by Equipment and Engine Type

Equipment	Engine	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
Bulldozer	Diesel	0.0	0.0	0.0	0.2	0.0	0.1	0.0	42
Cone vehicle	Diesel	0.0	0.0	0.0	1.0	0.0	1.2	0.1	123
Crane	Diesel	0.1	0.1	0.1	2.2	0.0	0.9	0.2	244
Forklift	Diesel	0.1	0.1	0.1	5.2	0.0	7.0	0.5	1,529
Forklift	Gasoline	0.0	0.0	0.0	0.0	0.0	0.7	0.1	18
Forklift	Propane	0.1	0.1	0.0	4.1	0.0	40.6	1.3	1,274
Loader	Diesel	0.0	0.0	0.0	3.5	0.0	1.8	0.3	718
Man lift	Diesel	0.0	0.0	0.0	0.6	0.0	0.5	0.0	72
Man lift	Gasoline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
Material handler	Diesel	0.1	0.1	0.1	12.0	0.0	4.6	1.1	2,123
Miscellaneous	Diesel	0.0	0.0	0.0	0.7	0.0	0.3	0.1	127
Rail pusher	Diesel	0.0	0.0	0.0	0.1	0.0	0.1	0.0	42
Reach stacker	Diesel	0.0	0.0	0.0	0.4	0.0	0.6	0.1	283
Hybrid RTG	Diesel	0.0	0.0	0.0	1.2	0.0	4.1	0.5	1,792
RTG crane	Diesel	1.0	0.9	1.0	83.9	0.2	34.0	7.2	15,595
Side pick	Diesel	0.0	0.0	0.0	0.5	0.0	1.2	0.1	554
Skid steer loader	Diesel	0.0	0.0	0.0	0.4	0.0	0.3	0.0	39
Hybrid Straddle Carrier	Diesel	0.0	0.0	0.0	0.4	0.0	4.3	0.1	681
Straddle carrier	Diesel	0.2	0.1	0.2	12.9	0.1	14.6	2.3	6,691
Sweeper	Diesel	0.0	0.0	0.0	0.6	0.0	0.6	0.1	241
Sweeper	Gasoline	0.0	0.0	0.0	0.3	0.0	2.6	0.0	127
Telehandler	Diesel	0.0	0.0	0.0	0.1	0.0	0.1	0.0	10
Top handler	Diesel	1.4	1.2	1.4	108.0	0.6	109.0	16.9	50,009
Truck	Diesel	0.3	0.3	0.3	7.5	0.0	4.0	0.7	1,862
Truck	Propane	0.0	0.0	0.0	0.3	0.0	0.7	0.0	18
Yard tractor	Diesel	1.3	1.1	1.3	79.3	0.9	167.8	10.7	69,407
Yard tractor	LNG	0.0	0.0	0.0	0.0	0.0	0.4	0.0	529
Yard tractor	Propane	1.2	1.2	0.0	40.3	0.0	241.4	24.1	11,809
Total		**5.8**	**5.4**	**4.5**	**365.6**	**1.8**	**643.3**	**66.5**	**165,961**

DB ID237

SECTION 6 LOCOMOTIVES

This section presents emission estimates for the railroad locomotives source category, including source description, geographical domain, data and information acquisition, operational profiles, emissions estimation methodology, and emission estimates.

Source Description

Railroad operations are typically described in terms of two different types of operations, line haul and switching. Line haul refers to the movement of cargo by train over long distances. Line haul operations occur at or near the Port as the initiation or termination of a line haul trip; cargo is either picked up for transport to destinations across the country or is dropped off for shipment overseas. Switching refers to short movements of rail cars, such as in the assembling and disassembling of trains at various locations in and around the Port, sorting of the cars of inbound cargo trains into contiguous "fragments" for subsequent delivery to terminals, and the short distance hauling of rail cargo within the Port.

The Port is served by three railway companies:

- Burlington Northern Santa Fe Railway Company (BNSF)
- Union Pacific Railroad (UP)
- Pacific Harbor Line (PHL)

BNSF and UP provide line haul service to and from the Port and operate switching services at their off-port locations, while PHL performs most of the switching operations within the Port. Locomotives used for line haul operations are typically equipped with large, powerful engines of over 4,000 hp, while switch engines are smaller, typically having one or more engines totaling 2,000 to 3,000 hp. The locomotives used in switching service at the Port are primarily new, low-emitting locomotives specifically designed for switching duty. Switching locomotives are operated by PHL within the Port and by UP at the near-port railyard.

Geographical Domain

The specific activities included in this emissions inventory are movements of cargo within Port boundaries, directly to or from Port-owned properties such as terminals and on-Port rail yards, and within and to the boundary of the SoCAB. The inventory does not include rail movements of cargo that occur solely outside the Port, such as off-port rail yard switching, and movements that neither begin nor end at a Port property, such as east-bound line hauls that initiate in central Los Angeles intermodal yards. For rail locomotives, the domain extends from the Port to the cargo's first point of rest within the SoCAB or up to the SoCAB boundary, whichever comes first. Figure 1.1 in Section 1 illustrates the boundaries.

Data and Information Acquisition

Information from the following general sources was used to estimate emissions associated with maritime industry-related activities of locomotives operating both within the Port and outside the Port to the boundary of the SoCAB:

- Previous emissions studies
- Port cargo statistics
- Input from railroad operators
- Published information sources
- CARB MOU line-haul fleet compliance data

The Port continues to use the most recent, locally specific data available, including MOU compliance data reflective of actual recent line haul fleet mix characteristics in the SoCAB. In addition, PHL has provided fuel consumption information for each locomotive in service in each calendar year, along with the engine tier levels of the locomotives. Table 6.1 lists the number of locomotives for each tier level that were operated in 2020 and the percentage of fuel used by locomotives in each tier. Discussion of the tiers and a list of tier-specific emission factors are included in Section 5 of the San Pedro Bay Ports Emissions Inventory Methodology Report Version 2 (2021).[20]

Table 6.1: PHL Switching Fleet Mix, 2020

Locomotive Tier Level /Power Type	Count	% of Fuel Consumed
Genset	6	5%
Tier 3	0	0%
Tier 3+	17	93%
Tier 4	1	3%
Totals	**24**	**100%**

[20] *www.portoflosangeles.org/environment/air-quality/air-emissions-inventory*

Operational Profiles

The goods movement rail system in terms of the activities that are carried out by locomotive operators is the same as described in detail in Section 5 of the San Pedro Bay Ports Emissions Inventory Methodology Report Version 2.[21]

Emissions Estimation Methodology

The emission calculation methodology used to estimate locomotive emissions is consistent with the methodology described in detail in Section 5 of the San Pedro Bay Ports Emissions Inventory Methodology Report Version 2 (2021).[22] Tables that contain information specific to this EI are presented below.

Table 6.2 presents the MOU compliance information submitted by both railroads and the composite of both railroads' pre-Tier 0 through Tier 4 locomotive NO_x emissions for calendar year 2019, showing a weighted average NO_x emission factor of 5.78 g/hphr.[23] The 2019 reports were used instead of the 2020 due to the timing of the inventory data collection phase and of the posting of the compliance reports by CARB. The emission factors based on the 2020 compliance report will be used for the future 2021 EI.

[21] *www.portoflosangeles.org/environment/air-quality/air-emissions-inventory*
[22] *www.portoflosangeles.org/environment/air-quality/air-emissions-inventory*
[23] Notes from railroads' MOU compliance submissions:
1. For more information on the U.S. EPA locomotive emission standards please visit. *www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-emission-standards-locomotives-and-locomotive*
2. Number of locomotives is the sum of all individual locomotives that visited or operated within the SoCAB at any time during 2018.

Table 6.2: MOU Compliance Data, MWh and g NO_x/hp-hr

Engine Tier	Number of Locomotives	Megawatt-hours (MWh)	% MWh by Tier Level	Wt'd Avg NOx (g/bhp-hr)	Tier Contribution to Fleet Average (g/bhp-hr)
BNSF					
Pre-Tier 0	30	1,150	0.4%	13.0	0.05
Tier 0	198	11,007	4.0%	8.4	0.34
Tier 1	1,797	98,968	36%	6.1	2.21
Tier 2	1,630	97,310	36%	4.7	1.68
Tier 3	1,210	52,724	19%	3.8	0.74
Tier 4	280	11,418	4.2%	1.1	0.05
ULEL	0	0	0%	-	-
Total BNSF	**5,145**	**272,577**	**100%**		**5.07**
UP					
Pre-Tier 0	19	339	0.2%	9.0	0.01
Tier 0	1,135	31,784	15%	8.5	1.25
Tier 1	2,267	75,251	35%	7.3	2.55
Tier 2	1,545	62,369	29%	5.1	1.47
Tier 3	914	35,882	17%	5	0.83
Tier 4	192	10,096	4.7%	1.1	0.05
ULEL	0	0	0%		0.00
Total UP	**6,072**	**215,721**	**100%**		**6.16**
		ULEL Credit Used			0.70
		UP Fleet Average			**5.46**
Both RRs, excluding ULELs and ULEL credits					
Pre-Tier 0	49	1,489	0%	12.1	0.04
Tier 0	1,333	42,791	9%	8.5	0.74
Tier 1	4,064	174,219	36%	6.6	2.36
Tier 2	3,175	159,679	33%	4.9	1.59
Tier 3	2,124	88,606	18%	4.3	0.78
Tier 4	472	21,514	4.41%	1.1	0.049
Total both	**11,217**	**488,298**	**100%**		**5.56**

Emission factors for particulate matter (PM_{10}), HC, and CO were calculated using the tier-specific emission rates for those pollutants published by EPA.[24] The emission rates were used to develop weighted average emission factors using the megawatt hour (MWh) numbers provided in the railroads' submissions. These results are presented in Table 6.3.

Table 6.3: Fleet MWh and PM, HC, CO Emission Factors, g/bhp-hr

Engine Tier	MWh	% of MWh	EPA Tier-specific			Fleet Composite		
			PM_{10}	HC	CO	PM_{10}	HC	CO
			g/bhp-hr			g/bhp-hr		
Pre-Tier 0	1,489	0%	0.32	0.48	1.28	0.001	0.00	0.00
Tier 0	42,791	9%	0.32	0.48	1.28	0.028	0.04	0.11
Tier 1	174,219	36%	0.32	0.47	1.28	0.114	0.17	0.46
Tier 2	159,679	33%	0.18	0.26	1.28	0.059	0.09	0.42
Tier 3	88,606	18%	0.08	0.13	1.28	0.015	0.02	0.23
Tier 4	21,514	4%	0.015	0.04	1.28	0.000	0.00	0.06
Totals	**488,298**	**100%**				**0.217**	**0.32**	**1.28**

Emission factors for $PM_{2.5}$ and DPM were calculated as fractions of PM_{10}, with $PM_{2.5}$ calculated as 94% of PM_{10} consistent with CARB methodology and DPM equal to PM_{10}, since all PM emissions from diesel engines are defined as DPM. Rounding of emission factors before and after the conversion resulted in the emission factor values shown in Table 6.4. Table 6.4 summarizes the latest emission factors for line haul locomotives, presented in unit of g/hp-hr. The greenhouse gas emission factors are unchanged from the previous EI.

Table 6.4: Emission Factors for Line Haul Locomotives, g/bhp-hr

	PM_{10}	$PM_{2.5}$	DPM	NO_x	SO_x	CO	HC	CO_2	N_2O	CH_4
EF, g/bhp-hr	0.217	0.200	0.217	5.56	0.005	1.28	0.32	489	0.013	0.040

[24]EPA Office of Transportation and Air Quality, "Emission Factors for Locomotives" EPA-420-F-09-025 April 2009.

On-Port Line Haul Emissions

The estimated number of trains per year, locomotives per train, and on-port hours per train were multiplied together to calculate total locomotive hours per year. This activity information is summarized in Table 6.5.

Table 6.5: 2020 Estimated On-Port Line Haul Locomotive Activity

Activity Measure	Inbound	Outbound	Total
Trains per Year	3,613	3,482	7,095
Locomotives per Train	3	3	N/A
Hours on Port per Trip	1	2.5	N/A
Locomotive Hours per Year	10,839	26,115	36,954

Out-of-Port Line Haul Emissions

Table 6.6 lists the estimated totals of travel distance, out-of-port trains per year, out-of-port million gross tons (MMGT), out-of-port MMGT-miles, gallons of fuel used, and horsepower-hours. The gross ton-miles were calculated by multiplying distance in miles by the number of trains and by the average weight of a train, which was estimated to be 7,402 tons. Fuel consumption was calculated by multiplying gross ton-miles by the average fuel consumption factor of 0.965 gallons per thousand gross ton-miles.[25] Overall horsepower hours were calculated by multiplying the fuel used by the fuel consumption conversion factor of 20.8 hp-hr/gal.

Table 6.6: 2020 Gross Ton-Mile, Fuel Use, and Horsepower-hour Estimate

	Distance miles	Trains per year	MMGT per year	MMGT-miles per year
Alameda Corridor	21	5,099	38	798
Central LA to Air Basin Boundary	84	5,099	38	3,192
Million gross ton-miles				**3,990**
Estimated gallons of fuel (millions)				**3.85**
Estimated million horsepower-hours				**83.9**

[25] Union Pacific, *Class I Railroad Annual Report R-1 to the Surface Transportation Board for the Year Ending Dec. 31, 2016* and BNSF, *Class I Railroad Annual Report R-1 to the Surface Transportation Board for the Year Ending Dec. 31, 2016, www. prod.stb.gov/reports-data/economic-data/annual-report-financial-data/*

Emission Estimates

A summary of estimated emissions from locomotive operations related to the Port is presented below in Table 6.7. These emissions include operations within the Port and maritime industry-related emissions outside the Port out to the boundary of the SoCAB. The "maritime industry-related" off-port activity was associated with cargo movements having either their origin or termination at the Port. Emissions resulting from the movement of cargo originating or terminating at one of the off-port rail yards were not included. The criteria pollutants are listed as tons per year, while the CO_2e values are listed as tonnes (metric tons) per year.

In order for the total emissions to be consistently displayed for each pollutant, the individual values in the table entries do not, in some cases, add up to the totals listed in the table. This is because there are fewer decimal places displayed (for readability) than were included in the calculated totals.

Table 6.7: 2020 Locomotive Operations Estimated Emissions

Activity Component	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
Switching	0.4	0.4	0.4	44.2	0.06	18.6	2.3	6,254
Line Haul	28.9	26.7	28.9	741.3	0.67	170.6	42.7	59,733
Total	**29.3**	**27.0**	**29.3**	**785.5**	**0.73**	**189.2**	**44.9**	**65,987**

DB ID696

SECTION 7 HEAVY-DUTY VEHICLES

This section presents emission estimates for the HDV emission source category, including source description, geographical domain, data and information acquisition, operational profiles, emissions estimation methodology, and the emission estimates.

Source Description

Heavy-duty vehicles (specifically heavy-duty trucks) are used extensively to move cargo, particularly containerized cargo, to and from the marine terminals. Trucks deliver cargo to both local and national destinations. The local activity is often referred to as drayage and includes the transfer of containers between terminals and off-port railcar loading facilities. In the course of their daily operations, both local and national destined trucks are driven onto and through the terminals, where they deliver and/or pick up cargo. They are also driven on public roads within the Port boundaries and on public roads outside the Port.

While most of the trucks are diesel-fueled vehicles, alternatively fueled trucks, primarily those fueled by liquefied natural gas (LNG) also service the SPBP. The emission estimates prepared using this methodology reflect the use of both types of fuel.

The most common configuration of HDV is the articulated tractor-trailer (truck and semi-trailer) having five axles, including the trailer axles. The most common type of trailer in the study area is the container chassis, built to accommodate standard-sized cargo containers. Additional trailer types include tankers, boxes, and flatbeds. A tractor traveling without an attached trailer is called a "bobtail" while a tractor pulling an unloaded container trailer chassis is known simply as a "chassis." These vehicles are all classified as heavy HDVs regardless of their actual weight because the classification is based on gross vehicle weight rating (GVWR), which is a rating of the vehicle's total carrying capacity. Therefore, the emission estimates do not distinguish among the different configurations.

Geographical Domain

The two major geographical components of truck activities were evaluated for this inventory:

- On-terminal operations, which include waiting for terminal entry, transiting the terminal to drop off and/or pick up cargo, and departing the terminal.
- On-road operations, which consist of travel on public roads within the SoCAB. This also includes travel on public roads within the Port boundaries and those of the adjacent Port of Long Beach.

Data and Information Acquisition

Information regarding on-terminal truck activity, such as average times and distances while on the terminals, was collected during in-person and/or telephone interviews with terminal personnel. For on-road operations, the volumes (number of trucks), distances, and average speeds on roadway segments between defined intersections were estimated using trip generation and travel demand models that have been developed for these purposes. The trip generation model was used to develop truck trip numbers for container terminals, while the terminal interviews were used to obtain trip counts associated with non-container terminals.

Operational Profiles

Table 7.1 illustrates the range and average of reported operating characteristics of on-terminal truck activities at Port container terminals, while Table 7.2 shows similar summary data for the non-container terminals and facilities. In 2020, the total number of terminal calls associated with the Port's container terminals and non-container facilities was 3,903,349 and 585,120, respectively. The total number of container terminal calls was estimated by the trip generation model on which truck travel estimates are based, while non-container terminal calls were obtained from the terminal operators. The non-container terminal number includes activity at the Port's peel-off yard that operated in 2020, totaling approximately 30,000 calls. The peel-off yard was established to improve terminal efficiency by allowing containers off-loaded from ships to be quickly removed from the container terminal and placed in the yard, to be picked up for further transport at a later time.

Table 7.1: Summary of Reported Container Terminal Operating Characteristics

	Speed (mph)	Distance (miles)	Gate In (hours)	Unload/ Load (hours)	Gate Out (hours)
Maximum	15	1.90	0.19	0.9	0.07
Minimum	10	0.90	0.08	0.43	0.00
Average	12.5	1.48	0.14	0.73	0.02

Table 7.2: Summary of Reported Non-Container Facility Operating Characteristics

	Speed (mph)	Distance (miles)	Gate In (hours)	Unload/ Load (hours)	Gate Out (hours)
Maximum	20	1.30	0.08	0.47	0.05
Minimum	5	0.02	0.00	0.00	0.00
Average	8.6	0.48	0.03	0.14	0.01

Table 7.3 presents further detail on the on-terminal operating parameters provided by terminal operators, listing total estimated miles traveled and hours of idling on-terminal and waiting at entry gates. Terminals are listed by type.

Table 7.3: 2020 Estimated On-Terminal VMT and Idling Hours by Terminal

Terminal Type	Total Miles Traveled	Total Hours Idling (all trips)
Container	1,480,677	1,056,216
Container	990,153	416,906
Container	937,389	362,457
Container	907,106	520,074
Container	882,376	606,634
Container	552,556	595,532
Auto	1,191	810
Break Bulk	28,000	6,300
Break Bulk	10,000	6,400
Dry Bulk	2,600	832
Dry Bulk	1,250	375
Liquid Bulk	3,125	375
Liquid Bulk	18	0
Other	347,755	156,490
Other	67,600	8,320
Other	13,520	1,976
Other	3,000	14,100
Other	520	910
Other	40	320
Total	**6,228,875**	**3,755,027**

Emissions Estimation Methodology

The emission estimating methodology for the Port's on-road truck fleet is described in Section 6 of the San Pedro Bay Ports Emissions Inventory Methodology Report Version 2.[26] HDV emission estimates were based on estimates of vehicle miles traveled (VMT), average speeds, CARB's on-road vehicle emissions model EMFAC2021, and HDV model year information specific to the San Pedro Bay Ports. The most recent version of the model, EMFAC2021, reflects CARB's current understanding of motor vehicle travel activities and their associated emission levels. A new feature of this version of the model is the ability to produce emission factors for natural gas fueled trucks in addition to the more common diesel fueled trucks.

Table 7.4 summarizes the 2020 speed-specific composite emission factors developed from the EMFAC2021 model and the model year distribution discussed below. These composite emission factors were developed using model year specific emission factors for the T7 POLA vehicle category of EMFAC2021 and reflect the use of diesel and natural gas fuel, based on evaluation of the Port's Clean Truck Program (CTP) activity records and the Port Drayage Truck Registry (PDTR).

Table 7.4: Speed-Specific Composite Exhaust Emission Factors

Speed (mph)	PM_{10}	$PM_{2.5}$	DPM	NO_x	SO_x	CO	HC	CO_2	N_2O	CH_4	Units
0 (Idle)	0.0057	0.0055	0.0037	25.3384	0.0516	27.1457	3.1002	6,082	0.8982	0.6750	g/hr
5	0.0355	0.0339	0.0352	12.9219	0.0330	4.3541	1.2013	3,691	0.5912	0.4985	g/mi
10	0.0318	0.0304	0.0315	10.4890	0.0285	3.4697	0.8752	3,176	0.5082	0.3279	g/mi
15	0.0271	0.0260	0.0269	7.9551	0.0235	2.5107	0.5652	2,609	0.4168	0.1929	g/mi
20	0.0241	0.0231	0.0239	6.5259	0.0205	1.9222	0.4007	2,275	0.3633	0.1349	g/mi
25	0.0222	0.0212	0.0220	5.6270	0.0186	1.5186	0.2989	2,051	0.3273	0.1027	g/mi
30	0.0211	0.0202	0.0210	4.9551	0.0170	1.2114	0.2285	1,880	0.3000	0.0821	g/mi
35	0.0208	0.0199	0.0207	4.4357	0.0158	0.9728	0.1775	1,748	0.2788	0.0679	g/mi
40	0.0213	0.0203	0.0212	4.0530	0.0150	0.7908	0.1402	1,649	0.2630	0.0576	g/mi
45	0.0224	0.0214	0.0223	3.7950	0.0144	0.6569	0.1129	1,580	0.2519	0.0498	g/mi
50	0.0241	0.0231	0.0241	3.6581	0.0140	0.5644	0.0930	1,539	0.2453	0.0439	g/mi
55	0.0265	0.0253	0.0264	3.6395	0.0139	0.5087	0.0789	1,525	0.2429	0.0392	g/mi
60	0.0297	0.0284	0.0296	3.7771	0.0141	0.4961	0.0762	1,549	0.2467	0.0390	g/mi
65	0.0337	0.0322	0.0336	4.0575	0.0147	0.5047	0.0787	1,607	0.2558	0.0391	g/mi
70	0.0337	0.0322	0.0336	4.0761	0.0147	0.5049	0.0787	1,607	0.2558	0.0391	g/mi

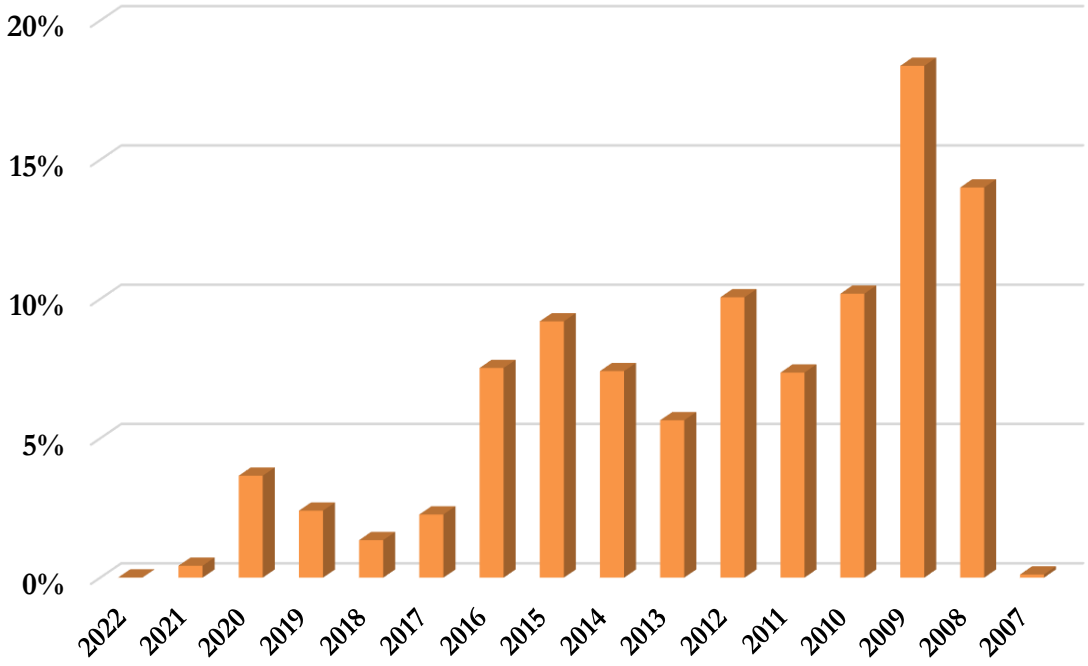
[26] *San Pedro Bay Ports Emissions Inventory Methodology Report Version 2. www.portoflosangeles.org/environment/air-quality/air-emissions-inventory*

Model Year Distribution

Since vehicle emissions vary according to the vehicle's model year and age, the activity level of trucks within each model year is an important part of developing emission estimates. The 2020 model year distribution for the current emissions inventory was based on call data originating from radio frequency identification (RFID) data, which tracked over 7 million truck calls made to the Port of Los Angeles and the Port of Long Beach in 2020, as well as model year data drawn from the PDTR. The PDTR contains model year information on all registered drayage trucks serving the Port and the fuel type used by each truck.

The distribution of the model years of the trucks that called at both the Port and POLB terminals during 2020, which was used to develop the composite emission factors listed above, is presented in Figure 7.1. The call weighted average age of the trucks calling at San Pedro Bay Ports terminals in 2020 was approximately 7 years.

Figure 7.1: 2020 Model Year Distribution of the Heavy-Duty Truck Fleet



Emission Estimates

The estimates of 2020 HDV emissions are presented in this section. As discussed above, on-terminal emissions were based on terminal-specific information, such as the number of trucks passing through the terminal and the distance they travel on-terminal. The Port-wide totals are the sum of the terminal-specific estimates. The on-road emissions were estimated using travel demand model results to estimate how many miles in total the trucks traveled along defined roadways in the SoCAB on the way to their first cargo drop-off point. The on-terminal estimates include the sum of driving and idling emissions calculated separately. The idling emissions are likely to be somewhat over-estimated since the idling estimates were based on the entire time that trucks were on terminal (except for driving time), which does not account for times that trucks were turned off while on terminal. No data source was identified that would provide a reliable estimate of the average percentage of time the trucks' engines were turned off while on terminal. The on-road estimates include idling emissions as a normal part of the driving cycle because the average speeds include estimates of normal traffic idling times, and the emission factors were designed to take this into account.

In order for the total emissions to be consistently displayed for each pollutant, the individual values in each table column do not, in some cases, add up to the listed total in the tables. This is due to fewer decimal places displayed for readability than were included in the calculated total.

Emission estimates for HDV activity associated with Port terminals and other facilities are presented in the following tables. Table 7.5 summarizes emissions from HDVs associated with all Port terminals.

Table 7.5: 2020 HDV Emissions

Activity Location	Vehicle Miles Traveled	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
On-Terminal	6,228,875	0.2	0.2	0.2	166	0.4	132.1	17.5	42,381
On-Road	215,265,343	5.6	5.3	5.6	908	3.4	152.0	25.7	356,299
Total	**221,494,219**	**5.8**	**5.5**	**5.8**	**1,075**	**3.8**	**284.1**	**43.2**	**398,679**

Table 7.6 presents HDV emissions associated with container terminal activity separately from emissions associated with other Port terminals and facilities.

Table 7.6: 2020 HDV Emissions Associated with Container Terminals

Activity Location	Vehicle Miles Traveled	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
On-Terminal	5,750,256	0.2	0.2	0.2	156.3	0.4	124.9	16.5	39,796
On-Road	206,964,004	5.4	5.1	5.3	873.3	3.3	146.1	24.7	342,544
Total	**212,714,260**	**5.6**	**5.3**	**5.5**	**1,030**	**3.6**	**271.0**	**41.3**	**382,340**

Table 7.7 presents emissions associated with other Port terminals and facilities separately.

Table 7.7: 2020 HDV Emissions Associated with Other Port Terminals

Activity Location	Vehicle Miles Traveled	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
On-Terminal	478,619	0.0	0.0	0.0	9.8	0.0	7.3	1.0	2,585
On-Road	8,301,339	0.2	0.2	0.2	35.1	0.1	5.9	1.0	13,754
Total	**8,779,958**	**0.2**	**0.2**	**0.2**	**45**	**0.2**	**13.1**	**2.0**	**16,339**

SECTION 8 SUMMARY OF 2020 EMISSION RESULTS

Table 8.1 summarizes the 2020 total maritime industry-related emissions associated with the Port of Los Angeles by category. Tables 8.2 through 8.4 present DPM, NO_x and SO_x emissions in the context of Port-wide and air basin-wide emissions by source category and subcategory. Table 8.5 presents the CO_2e emissions in the context of Port-wide emissions.

Table 8.1: 2020 Emissions by Source Category

Category	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
Ocean-going vessels	52	48	34	2,867	96	273	127	212,248
Harbor craft	24	22	24	721	1	539	82	60,374
Cargo handling equipment	6	5	4	366	2	643	66	165,961
Locomotives	29	27	29	786	1	189	45	65,987
Heavy-duty vehicles	6	6	6	1,075	4	284	43	398,679
Total	**117**	**108**	**97**	**5,814**	**104**	**1,928**	**363**	**903,250**

DB ID457

Table 8.2: 2020 DPM Emissions by Category and Percent Contribution

Category	Subcategory	DPM	Percent DPM Emissions of Total		
			Category	Port	SoCAB AQMP
OGV	Auto carrier	0.6	2%	1%	0.0%
OGV	Bulk vessel	0.9	3%	1%	0.1%
OGV	Containership	20.8	62%	21%	1.3%
OGV	Cruise	5.7	17%	6%	0.4%
OGV	General cargo	0.6	2%	1%	0.0%
OGV	Other	0.7	2%	1%	0.0%
OGV	Reefer	0.4	1%	0%	0.0%
OGV	Tanker	3.9	12%	4%	0.2%
OGV	**Subtotal**	**34**	**100%**	**35%**	**2.1%**
Harbor Craft	Assist tug	4.7	20%	5%	0.3%
Harbor Craft	Harbor tug	1.6	7%	2%	0.1%
Harbor Craft	Commercial fishing	4.0	17%	4%	0.2%
Harbor Craft	Ferry	3.0	13%	3%	0.2%
Harbor Craft	Ocean tugboat	5.5	23%	6%	0.3%
Harbor Craft	Government	0.6	2%	1%	0.0%
Harbor Craft	Excursion	1.3	5%	1%	0.1%
Harbor Craft	Crewboat	2.0	8%	2%	0.1%
Harbor Craft	Work boat	1.0	4%	1%	0.1%
Harbor Craft	**Subtotal**	**24**	**100%**	**24%**	**1.4%**
CHE	RTG crane	1.0	22%	1%	0.1%
CHE	Forklift	0.1	2%	0%	0.0%
CHE	Top handler, side pick	1.4	30%	1%	0.1%
CHE	Other	0.8	17%	1%	0.0%
CHE	Yard tractor	1.3	28%	1%	0.1%
CHE	**Subtotal**	**4**	**100%**	**5%**	**0.3%**
Locomotives	Switching	0.4	1%	0%	0.0%
Locomotives	Line haul	28.9	99%	30%	1.8%
Locomotives	**Subtotal**	**29**	**100%**	**30%**	**1.8%**
HDV	On-Terminal	0.2	4%	0%	0.0%
HDV	On-Road	5.6	96%	6%	0.3%
HDV	**Subtotal**	**6**	**100%**	**6%**	**0.4%**
Port	**Total**	**97**		**100%**	**5.9%**
SoCAB AQMP	**Total**	**1,636**			

Table 8.3: 2020 NO_x Emissions by Category and Percent Contribution

Category	Subcategory	NO_x	Percent NO_x Emissions of Total		
			Category	Port	SoCAB AQMP
OGV	Auto carrier	51	2%	1%	0.0%
OGV	Bulk vessel	69	2%	1%	0.1%
OGV	Containership	1,952	68%	34%	1.7%
OGV	Cruise	375	13%	6%	0.3%
OGV	General cargo	44	2%	1%	0.0%
OGV	Other	46	2%	1%	0.0%
OGV	Reefer	28	1%	0%	0.0%
OGV	Tanker	303	11%	5%	0.3%
OGV	**Subtotal**	**2,867**	**100%**	**49%**	**2.5%**
Harbor Craft	Assist tug	145	20%	2.5%	0.1%
Harbor Craft	Harbor tug	48	7%	0.8%	0.0%
Harbor Craft	Commercial fishing	123	17%	2.1%	0.1%
Harbor Craft	Ferry	87	12%	1.5%	0.1%
Harbor Craft	Ocean tugboat	169	23%	2.9%	0.1%
Harbor Craft	Government	13	2%	0.2%	0.0%
Harbor Craft	Excursion	41	6%	0.7%	0.0%
Harbor Craft	Crewboat	61	8%	1.0%	0.1%
Harbor Craft	Work boat	34	5%	0.6%	0.0%
Harbor Craft	**Subtotal**	**721**	**100%**	**12%**	**0.6%**
CHE	RTG crane	85	23%	1.5%	0.1%
CHE	Forklift	9	3%	0.2%	0.0%
CHE	Top handler, side pick	108	30%	1.9%	0.1%
CHE	Other	43	12%	0.7%	0.0%
CHE	Yard tractor	120	33%	2.1%	0.1%
CHE	**Subtotal**	**366**	**100%**	**6%**	**0.3%**
Locomotives	Switching	44	6%	0.8%	0.0%
Locomotives	Line haul	741	94%	12.7%	0.6%
Locomotives	**Subtotal**	**786**	**100%**	**14%**	**0.7%**
HDV	On-Terminal	166	15%	3%	0.1%
HDV	On-Road	908	85%	16%	0.8%
HDV	**Subtotal**	**1,075**	**100%**	**18%**	**0.9%**
Port	**Total**	**5,814**		**100%**	**5.1%**
SoCAB AQMP	**Total**	**114,898**			

Table 8.4: 2020 SO_x Emissions by Category and Percent Contribution

Category	Subcategory	SO_x	Percent SO_x Emissions of Total		
			Category	Port	SoCAB AQMP
OGV	Auto carrier	0.9	1%	1%	0%
OGV	Bulk vessel	2.7	3%	3%	0%
OGV	Containership	58.1	60%	56%	1%
OGV	Cruise	14.0	15%	14%	0%
OGV	General cargo	1.3	1%	1%	0%
OGV	Other	1.7	2%	2%	0%
OGV	Reefer	1.0	1%	1%	0%
OGV	Tanker	16.8	17%	16%	0%
OGV	**Subtotal**	**96.5**	**100%**	**93%**	**2%**
Harbor Craft	Assist tug	0.1	22%	0%	0%
Harbor Craft	Harbor tug	0.0	7%	0%	0%
Harbor Craft	Commercial fishing	0.1	17%	0%	0%
Harbor Craft	Ferry	0.1	12%	0%	0%
Harbor Craft	Ocean tugboat	0.1	21%	0%	0%
Harbor Craft	Government	0.0	2%	0%	0%
Harbor Craft	Excursion	0.0	6%	0%	0%
Harbor Craft	Crewboat	0.1	9%	0%	0%
Harbor Craft	Work boat	0.0	5%	0%	0%
Harbor Craft	**Subtotal**	**0.7**	**100%**	**1%**	**0%**
CHE	RTG crane	0.2	11%	0%	0%
CHE	Forklift	0.0	1%	0%	0%
CHE	Top handler, side pick	0.6	31%	1%	0%
CHE	Other	0.2	8%	0%	0%
CHE	Yard tractor	0.9	48%	1%	0%
CHE	**Subtotal**	**1.8**	**100%**	**2%**	**0%**
Locomotives	Switching	0.1	8%	0%	0%
Locomotives	Line haul	0.7	92%	1%	0%
Locomotives	**Subtotal**	**0.7**	**100%**	**1%**	**0%**
HDV	On-Terminal	0.4	10%	0%	0%
HDV	On-Road	3.4	90%	3%	0%
HDV	**Subtotal**	**3.8**	**100%**	**4%**	**0%**
Port	**Total**	**104**		**100%**	**1.7%**
SoCAB AQMP	**Total**	**6,033**			

Table 8.5: 2020 CO_2e Emissions by Category and Percent Contribution

Category	Subcategory	CO_2e	Percent CO_2e Emissions of Total	
			Category	Port
OGV	Auto carrier	2,623	1%	0%
OGV	Bulk vessel	4,575	2%	1%
OGV	Containership	146,004	69%	16%
OGV	Cruise	22,862	11%	3%
OGV	General cargo	2,851	1%	0%
OGV	Other	2,557	1%	0%
OGV	Reefer	1,457	1%	0%
OGV	Tanker	29,320	14%	3%
OGV	**Subtotal**	**212,248**	**100%**	**23%**
Harbor Craft	Assist tug	13,143	22%	1%
Harbor Craft	Harbor tug	4,076	7%	0%
Harbor Craft	Commercial fishing	10,039	17%	1%
Harbor Craft	Ferry	7,240	12%	1%
Harbor Craft	Ocean tugboat	12,927	21%	1%
Harbor Craft	Government	947	2%	0%
Harbor Craft	Excursion	3,583	6%	0%
Harbor Craft	Crewboat	5,232	9%	1%
Harbor Craft	Work boat	3,188	5%	0%
Harbor Craft	**Subtotal**	**60,374**	**100%**	**7%**
CHE	RTG crane	17,387	10%	2%
CHE	Forklift	2,821	2%	0%
CHE	Top handler, side pick	50,563	30%	6%
CHE	Other	13,446	8%	1%
CHE	Yard tractor	81,744	49%	9%
CHE	**Subtotal**	**165,961**	**100%**	**18%**
Locomotives	Switching	6,254	9%	1%
Locomotives	Line haul	59,733	91%	7%
Locomotives	**Subtotal**	**65,987**	**100%**	**7%**
HDV	On-Terminal	42,381	11%	5%
HDV	On-Road	356,299	89%	39%
HDV	**Subtotal**	**398,679**	**100%**	**44%**
Port	**Total**	**903,250**		**100%**

To place the maritime industry-related emissions into context, the following figures compare the Port's contributions to the total emissions in the South Coast Air Basin by major emission source category. The 2020 SoCAB emissions were based on the 2016 AQMP Appendix III,[27] except for the SoCAB on-road emission estimates which were updated to take into consideration EMFAC2021.[28] Thus, the 2020 SoCAB total emissions do not exactly match 2016 AQPM Appendix III values. It should be noted that neither the SoCAB nor the Port's on-road heavy-duty diesel PM_{10} and $PM_{2.5}$ emissions include brake and tire wear emissions. Due to rounding, the percentages may not total 100%.

Figure 8.1: 2020 PM_{10} Emissions in the South Coast Air Basin

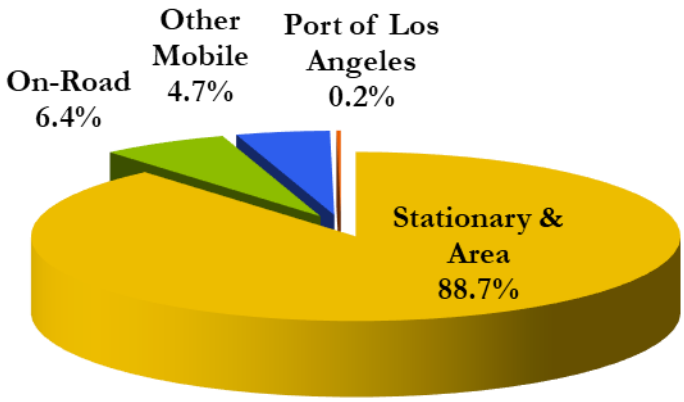
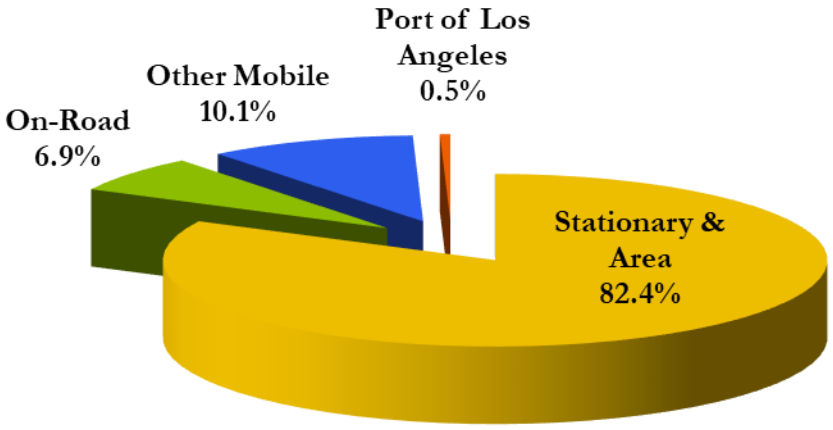


Figure 8.2: 2020 $PM_{2.5}$ Emissions in the South Coast Air Basin



[27]SCAQMD, *Final 2016 AQMP Appendix III, Base & Future Year Emissions Inventories*, March 2017. Except on-road emissions based on EMFAC2014 are replaced with EMFAC2021 estimates.
[28]*www.arb.ca.gov/emfac/*

Figure 8.3: 2020 DPM Emissions in the South Coast Air Basin

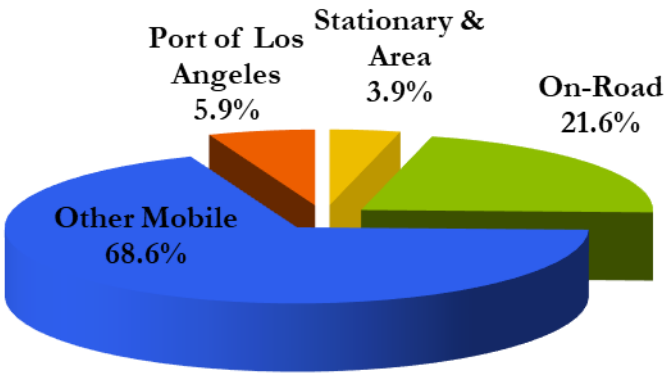


Figure 8.4: 2020 NO_x Emissions in the South Coast Air Basin

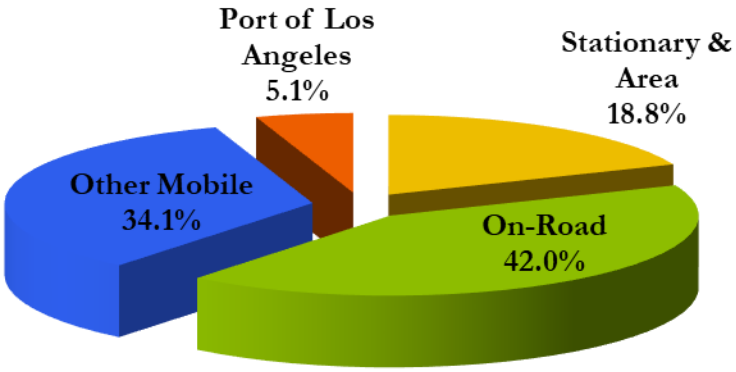
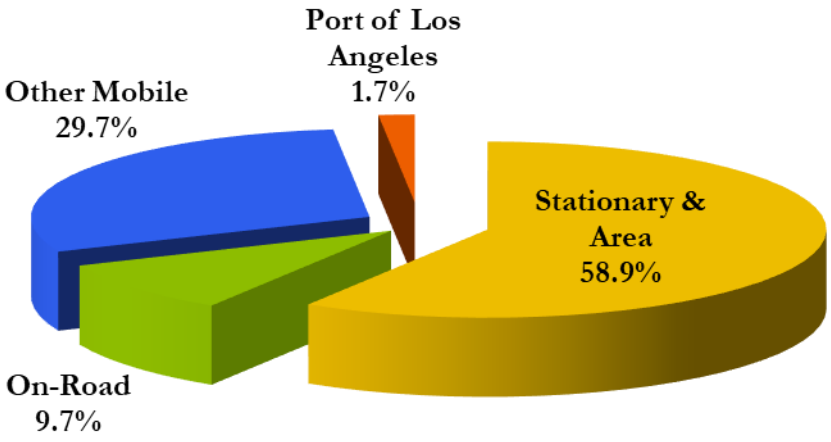


Figure 8.5: 2020 SO_x Emissions in the South Coast Air Basin



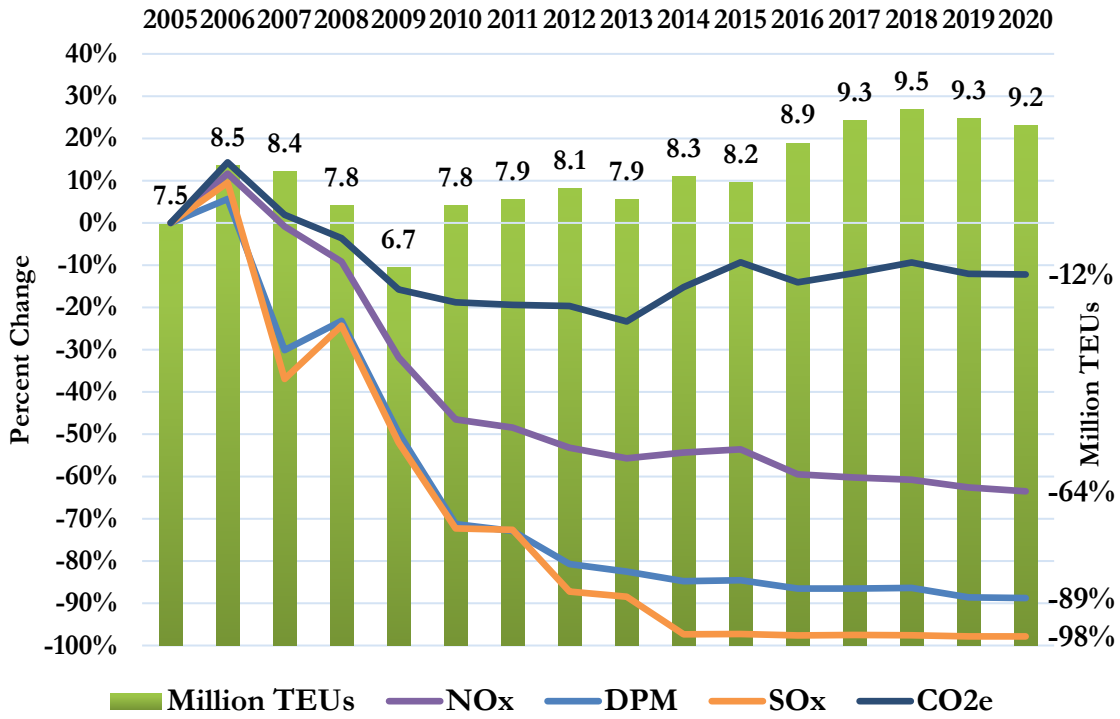
SECTION 9 COMPARISON OF 2020 AND PREVIOUS YEARS' FINDINGS AND EMISSION ESTIMATES

This section compares 2020 emissions to emissions in both the previous year and 2005, in terms of overall emissions and for each source category. Comparisons by emission source categories are addressed in separate subsections in table and chart formats, with the explanation of the findings and differences in emissions between years. The tables and charts in this section summarize the percent change from the previous year (2020 vs 2019) and for the CAAP Progress (2020 vs 2005) using 2020 methodology. Table 9.1 presents the port-wide emissions comparison for 2020, 2019, and 2005. Figure 9.1 illustrates the emissions trend for 2005 to 2020.

Table 9.1: Emissions Comparison

EI Year	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
2020	117	108	97	5,814	104	1,928	363	903,250
2019	119	109	98	5,963	104	2,073	373	904,887
2005	1,025	882	863	16,103	4,826	3,757	852	1,029,863
Previous Year (2019-2020)	**-2%**	**-2%**	**-1%**	**-3%**	**-1%**	**-7%**	**-3%**	**-0.2%**
CAAP Progress (2005-2020)	**-89%**	**-88%**	**-89%**	**-64%**	**-98%**	**-49%**	**-57%**	**-12%**

Figure 9.1: Emissions Trend

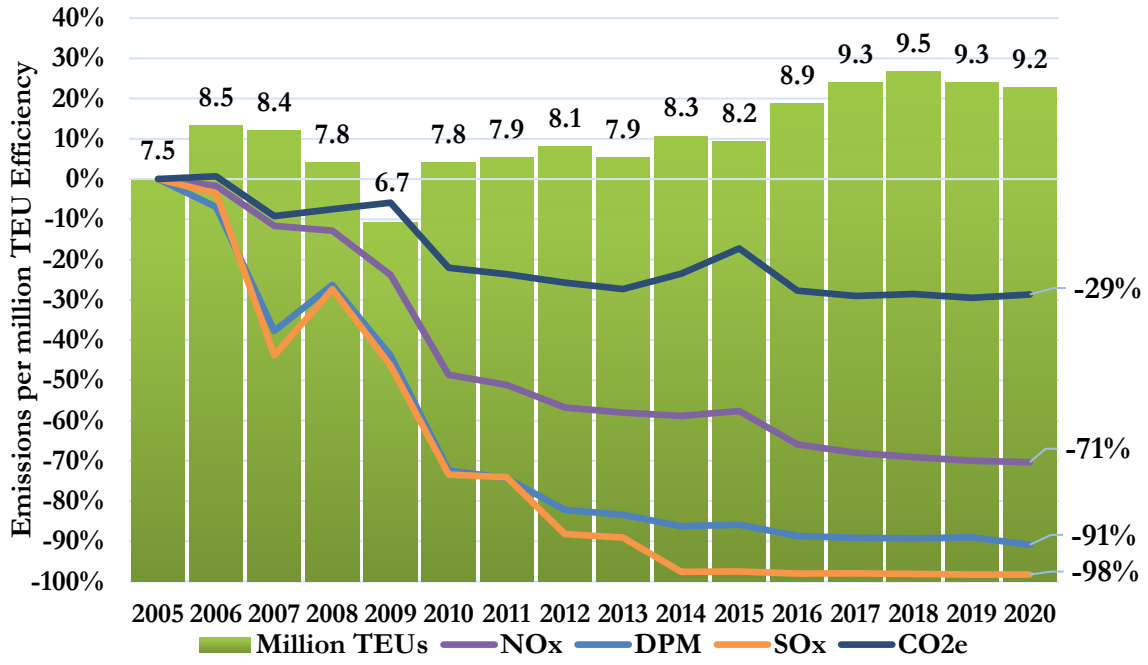


In order to measure progress of the various emission reduction goals, the Port has established metrics to track emissions per unit of work. In this section, the emissions efficiency table will be provided for each source category. Table 9.2 and Figure 9.2 show emissions efficiency as tons of emissions per 10,000 TEUs for total emissions. In Table 9.2, a positive percent change for the emissions efficiency comparison means an improvement in efficiency. In Figure 9.2, for illustrative purposes, a negative percent change shows the improvement from the baseline year.

Table 9.2: Emissions Efficiency Metric, tons/10,000 TEUs

EI Year	PM_{10}	$PM_{2.5}$	DPM	NO_x	SO_x	CO	HC	CO_2e
2020	0.126	0.117	0.105	6.31	0.11	2.09	0.39	980
2019	0.127	0.117	0.105	6.39	0.11	2.22	0.40	969
2005	1.370	1.178	1.153	21.52	6.45	5.02	1.14	1,376
Previous Year (2019-2020)	**1%**	**0%**	**0%**	**1%**	**0%**	**6%**	**3%**	**-1%**
CAAP Progress (2005-2020)	**91%**	**90%**	**91%**	**71%**	**98%**	**58%**	**66%**	**29%**

Figure 9.2: Emissions Efficiency Trends



Ocean-Going Vessels

The methodology used to estimate OGV emissions changed in the 2020 EI. The previous year OGV emissions were re-estimated to reflect the 2020 emission factors and the Tier III vessel rule that requires switching the emission rate of the main engine from Tier III level to Tier II when the main engine load is at 25% or below. The emissions calculation methodology and the emission rates are described in Section 2 of the San Pedro Bay Ports Emissions Inventory Methodology Report Version 2.

The various emission reduction strategies implemented for ocean-going vessels are listed in Table 9.3. The table lists the percentage of all vessel calls that participated in the specific control strategy for 2020, the previous year, and 2005. The following OGV emission reductions strategies are listed:

- Shore Power[29] refers to vessel calls using shore power at berth, instead of running their diesel-powered auxiliary engines.
- VSR[30] refers to the vessels reducing their transit speed to 12 knots or lower within 20 and 40 nm of the Port.
- ESI[31] refers to the number of vessel calls that participated in the Ports' ESI program and used ship-specific low sulfur (S) fuel, which in several cases contained S levels below the regulated S level of 0.1% resulting in additional SO_x, PM, $PM_{2.5}$, and DPM benefit.
- Engine International Air Pollution Prevention (EIAPP) certificates refer to the number of vessel calls using ship-specific NO_x emission factors for main and auxiliary engines, where vessel specific EIAPP certificates with actual NO_x rating were available through the ESI program or the VBP.

Table 9.3: Participation Rates of OGV Emission Reduction Strategies

Year	Shore Power	VSR 20 nm	VSR 40 nm	ESI	EIAPP Main Eng	EIAPP Aux Eng
2020	41%	96%	93%	59%	68%	67%
2019	42%	91%	87%	55%	61%	60%
2005	2%	65%	na	0%	5%	5%

DB ID1790

In 2020, in addition to the shore power calls listed in the table, an additional 6% of all vessel arrivals used alternative technology to comply with the CARB At-Berth Regulation. The alternative at-berth emission control technologies used in 2020 include the Maritime Emissions Treatment System (METS) and Advanced Maritime Emission Control System

[29] *www.portoflosangeles.org/environment/air-quality/alternative-maritime-power-(amp)*
[30] *www.portoflosangeles.org/environment/air-quality/vessel-speed-reduction-program*
[31] *www.portoflosangeles.org/environment/air-quality/environmental-ship-index*

(AMECS). Note that the AMECS was unable to be utilized in the fourth quarter of 2020 due to system losing its CARB certification.

In 2020, vessels were more compliant with VSR and ESI. Additionally, a greater percentage of vessels had EIAPP certificates available that listed the specific NO_x rating. Shore power percent participation was 1% lower when compared to the previous year.

Since 2005, fuel switching from heavy fuel oil (HFO) to low sulfur content fuel, such as marine gas oil (MGO) or marine distillate oil (MDO), has played a major role in reducing emissions from OGVs. In 2005, fuel switching was voluntary and only 7% of main engines and 27% of auxiliary engines switched fuel. In 2020, all vessels have switched fuel (100%) to 0.1% sulfur content MGO to comply with Phase II of CARB's marine fuel regulation and the North American Emissions Control Area (ECA) requirements or less than 0.1% S fuel reported by vessels participating in the ESI program.

Table 9.4 summarizes the percentage of calls utilizing the main engine IMO NO_x standards tiers (Tier) for 2020, the previous year, and 2005. The "No Tier" column characterizes vessels that do not have diesel engines, such as steamships. Tier I refers to calls by vessels meeting or exceeding Tier I NO_x standards (vessels constructed from 2000-2010), Tier II refers to calls by vessels meeting or exceeding Tier II NO_x standards (vessels constructed from 2011-2015), and Tier III NO_x refers to calls by vessels meeting or exceeding the IMO's Tier III standards, which are in effect in the North American ECA for vessels constructed on or after January 1, 2016. In 2020, 18 vessels, including seven containerships, one cruise ship, and ten tankers, with certified Tier III main engines called the Port. Compared to the previous year, the number of Tier 0 engines continued their downward trend.

Table 9.4: OGV Percentage of Calls by Main Engine Tiers

Year	IMO Tier 0	IMO Tier I	IMO Tier II	IMO Tier III	No Tier
2020	6%	61%	30%	2%	2%
2019	7%	59%	29%	0.5%	5%
2005	59%	37%	0%	0.0%	4%

DB ID1789

Table 9.5 presents the OGV activity by engine type in terms of total energy consumption (expressed as kWh). In 2020, the total energy consumption increased 7% compared to the previous year and decreased by 29% compared to 2005. The kWh associated with the METS and AMECS technology generators were included in the total auxiliary engine kWh shown in the table. The main engine activity has decreased through the years mainly due to the VSR program and fewer vessel calls. The auxiliary engine activity increased in 2020 due to 1) longer times at berth and at anchorage associated with COVID-19 impact and 2) less use of shore power due to vessels requesting exemptions to the CARB At-Berth Regulation for (a)

excessive heat in August - September timeframe and for (b) COVID-19 emergency reasons in 2020.

Table 9.5: OGV Energy Consumption Comparison, kWh

Year	All Engines Total kWh	Main Eng Total kWh	Aux Eng Total kWh	Boiler Total kWh
2020	262,495,136	55,762,605	118,167,529	87,799,499
2019	244,767,705	69,230,554	92,278,000	82,493,882
2005	369,750,230	109,201,774	185,924,166	74,624,290
Previous Year (2019-2020)	**7%**	**-19%**	**28%**	**6%**
CAAP Progress (2005-2020)	**-29%**	**-49%**	**-36%**	**18%**

Table 9.6 compares the OGV emissions for calendar years 2020, the previous year, and 2005. Reductions in OGV emissions since 2005 are mainly attributed to increased participation in the Port's VSR program, the CARB At-Berth Regulation, CARB marine fuel regulation, and the Port's ESI-based incentive program.

Table 9.6: OGV Emissions Comparison

EI Year	PM_{10}	$PM_{2.5}$	DPM	NO_x	SO_x	CO	HC	CO_2e
2020	52	48	34	2,867	96	273	127	212,248
2019	48	44	30	2,748	97	244	115	198,254
2005	611	491	450	5,193	4,668	469	215	281,239
Previous Year (2019-2020)	**8%**	**8%**	**13%**	**4%**	**-1%**	**12%**	**10%**	**7%**
CAAP Progress (2005-2020)	**-91%**	**-90%**	**-93%**	**-45%**	**-98%**	**-42%**	**-41%**	**-25%**

DB ID692

Between 2019 and 2020, OGV emissions increased due to more vessels at anchorage, more time at berth, and less shore power use. These factors can be attributed mainly to impacts resulting from the COVID-19 pandemic and are summarized below:

1) the COVID-19 pandemic led cruise ships to stop passenger operations in mid-March which lowered berth calls, but increased anchorage calls for cruise ships.
2) CARB provided exemptions to the At-Berth Regulation for (a) excessive heat in August - September timeframe and for (b) COVID-19 emergency reasons in 2020 which resulted in fewer shore power calls for containerships.
3) the largest decline in world liquid fuels consumption[32] in recent history resulted in less tankers calling the Port.
4) increased anchorage calls for containerships due to demand in consumer goods in second half of the year.

[32] U.S. Energy Information Administration, *www.eia.gov/outlooks/steo/report/global_oil.php*

5) worker safety agreement during 2020 to cap the number of gangs per ship to four. The reduced number of cranes for the larger containerships resulted in extended time at berth.

Table 9.7 shows the emissions efficiency changes between 2020, the previous year, and 2005. A positive percent change for the emissions efficiency comparison means an improvement in efficiency.

Table 9.7: OGV Emissions Efficiency Metric Comparison, tons/10,000 TEUs

EI Year	PM_{10}	$PM_{2.5}$	DPM	NO_x	SO_x	CO	HC
2020	0.06	0.05	0.04	3.11	0.10	0.30	0.14
2019	0.05	0.05	0.03	2.94	0.10	0.26	0.12
2005	0.82	0.66	0.60	6.94	6.24	0.63	0.29
Previous Year (2019-2020)	**-20%**	**0%**	**-33%**	**-6%**	**0%**	**-15%**	**-17%**
CAAP Progress (2005-2020)	**93%**	**92%**	**93%**	**55%**	**98%**	**52%**	**52%**

Harbor Craft

The methodology used to estimate harbor craft emissions for the 2020 inventory did not change from the methodology used in the previous year inventory. The emissions calculation methodology and the emission rates are described in Section 3 of the San Pedro Bay Ports Emissions Inventory Methodology Report Version 2.

Table 9.8 summarizes the percent distribution of engines based on EPA's engine standards. Tier 1 to Tier 4 engine categories for the Port's harbor craft inventory were based on the EPA's emission standards for marine engines.[33] Tier 0 engines are unregulated engines built prior to the promulgation of the EPA emission standards. The percentages in the "unknown" column represent engines missing model year, horsepower, or both. In 2020, a Tier 4 vessel was included in the inventory for the first time.

Table 9.8: Harbor Craft Engine Distribution Comparison by Tier

Year	Tier 0	Tier 1	Tier 2	Tier 3	Tier 4	Unknown
2020	2%	7%	38%	40%	1%	12%
2019	3%	8%	44%	34%	0%	11%
2005	15%	27%	3%	0%	0%	55%

DB ID1631

[33]Code of Federal Regulation, *40 CFR, subpart 94.8 for Tier 1 and 2 and subpart 1042.101 for Tier 3*

Table 9.9 summarizes the number of harbor craft inventoried for 2020, the previous year, and 2005. Overall, the total vessel count increased by 4% between 2020 and the previous year and decreased by 28% between 2005 and 2020. The increase in vessels from the previous year was due to more tugboats in 2020 added to SPBP inventory to keep up with demand and larger containerships and tankers.

Table 9.9: Harbor Craft Count Comparison

Harbor Vessel Type	2020	2019	2005
Assist tug	13	13	16
Commercial fishing	95	95	156
Crew boat	22	21	14
Excursion	20	19	24
Ferry	8	8	7
Government	11	11	26
Ocean tug	7	7	7
Tugboat	21	16	21
Work boat	9	9	14
Total	**206**	**199**	**285**

DB ID196

Table 9.10 summarizes the overall harbor craft activity in million kWh by vessel type, which decreased slightly (1%) in 2020 as compared to the previous year. The COVID-19 pandemic impacted excursion vessels and ferries with decreased operations during pandemic lockdown which is in line with ceasing operations from mid-March to mid-June 2020 per California Governor's Executive Order. In 2020, tugboats and workboats saw an increase activity as compared to 2019. Compared to 2005, the harbor craft activity increased by 6% in 2020.

Table 9.10: Harbor Craft Activity by Vessel Type, million kWh

Vessel Type	2020	2019	2005
Assist Tug	19.9	18.7	25.2
Commercial Fishing	15.2	15.0	14.1
Crew boat	7.9	8.1	2.4
Excursion	5.4	6.9	12.4
Ferry	11.0	15.2	12.4
Government	1.4	1.6	3.0
Ocean Tug	19.5	20.3	3.1
Tugboat	6.2	2.8	11.9
Work boat	4.8	3.5	1.6
Total	**91.3**	**92.1**	**86.1**

Table 9.11 shows the harbor craft energy consumption (kWh) comparison by engine tier for calendar years 2020, the previous year, and 2005.

Table 9.11: Harbor Craft Energy Consumption Comparison by Engine Tier, kWh

Engine Tier	2020 % of Total	2019 % of Total	2005 % of Total
Tier 0	0.6%	0.6%	55.1%
Tier 1	6.5%	6.9%	30.3%
Tier 2	59.7%	71.3%	14.6%
Tier 3	31.6%	21.2%	0.0%
Tier 4	1.6%	0.0%	0.0%
Total	**100%**	**100%**	**100%**

Table 9.12 shows the emissions comparisons for calendar 2020, the previous year, and 2005 for harbor craft. In 2020, emissions for all pollutants decreased as compared to the previous year. The decrease is mainly due to lower energy consumption (see Table 9.10) and cleaner engines doing the majority (93%) of work (see Table 9.11).

Table 9.12: Harbor Craft Emission Comparison

Year	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
2020	24	22	24	721	0.7	539	82	60,374
2019	26	24	26	755	0.7	543	83	60,884
2005	55	51	55	1,318	6.3	364	87	56,925
Previous Year (2019-2020)	**-8%**	**-8%**	**-8%**	**-4%**	**-1%**	**-1%**	**-2%**	**-1%**
CAAP Progress (2005-2020)	**-57%**	**-57%**	**-57%**	**-45%**	**-89%**	**48%**	**-6%**	**6%**

DB ID427

Compared to 2005, emissions decreased for PM, NO_x, and SO_x. The emissions increased for CO and CO_2e. The increase in CO is more directly related to an increase in Tier 2 and Tier 3 engines that have higher CO emission rates compared to pre-Tier 2. Due to the stringency of PM and (NO_x + HC) standards of Tier 2 engines, less stringent Tier 2 CO standards were adopted which resulted in higher CO emission rates.

Since 2005, there has been an increase in Tier 2 and Tier 3 engines due to vessel repowers, CARB's in-use harbor craft regulation, and new vessels bought by companies over the last few years. The focus of Tier 2 and Tier 3 engine standards is on PM and NO_x reduction; there are no CO_2 standards, therefore the CO_2e emissions have increased over time.

Table 9.13 shows the emissions efficiency changes in 2020 as compared to the previous year and 2005. It should be noted that total harbor craft emissions were used for this efficiency comparison although emissions from several harbor craft types (e.g., commercial fishing vessels) are not dependent on container throughput. A positive percent for the emissions efficiency comparison means an improvement in efficiency.

Table 9.13: Harbor Craft Emissions Efficiency Metric Comparison, tons/10,000 TEUs

Year	PM_{10}	$PM_{2.5}$	DPM	NO_x	SO_x	CO	HC	CO_2e
2020	0.03	0.02	0.03	0.78	0.001	0.59	0.09	66
2019	0.03	0.03	0.03	0.81	0.001	0.58	0.09	65
2005	0.07	0.07	0.07	1.76	0.008	0.49	0.12	76
Previous Year (2019-2020)	**7%**	**4%**	**7%**	**3%**	**0%**	**-1%**	**0%**	**0%**
CAAP Progress (2005-2020)	**65%**	**65%**	**65%**	**56%**	**88%**	**-20%**	**24%**	**14%**

Cargo Handling Equipment

The methodology used to estimate CHE emissions for the 2020 inventory did not change from the methodology used in the previous year inventory. The emissions calculation methodology and the emission rates are described in Section 4 of the San Pedro Bay Ports Emissions Inventory Methodology Report Version 2.

Table 9.14 shows that the number of units of cargo handling equipment and the overall energy consumption decreased by 6% in 2020 as compared to the previous year. Energy consumption is measured as total kWh, the product of the rated engine size in kW, annual operating hours and load factors. Less equipment was operating at the terminals and there was lower usage level to handle TEU throughput which was 1% lower than the previous year.

From 2005 to 2020, there was a 7% increase in population and 24% increase in activity level to handle the 23% increase in TEU throughput.

Table 9.14: CHE Count and Activity Comparison

Year	Count	Energy Consumption kWh	TEU	Activity per TEU
2020	1,915	214,138,075	9,213,396	23
2019	2,038	227,587,451	9,337,632	24
2005	1,782	173,108,402	7,484,624	23
Previous Year (2019-2020)	**-6%**	**-6%**	**-1%**	**-5%**
CAAP Progress (2005-2020)	**7%**	**24%**	**23%**	**0%**

Table 9.15 summarizes the numbers of pieces of cargo handling equipment using various engine and power types, including electric, LNG, diesel, propane, and gasoline. Compared to the previous year, there were fewer propane equipment and more diesel equipment in 2020. Hybrid RTG cranes and straddle carriers were included in the diesel count.

Table 9.15: Count of CHE Equipment Type

Equipment	Electric	LNG	Propane	Gasoline	Diesel	Total
2020						
Forklift	29	0	181	6	105	321
Wharf crane	86	0	0	0	0	86
RTG crane	0	0	0	0	103	103
Straddle carrier	0	0	0	0	67	67
Top handler	2	0	0	0	194	196
Yard tractor	5	22	158	0	781	966
Other	40	0	1	4	131	176
Total	**162**	**22**	**340**	**10**	**1,381**	**1,915**
	8.5%	**1.1%**	**17.8%**	**0.5%**	**72.1%**	
2019						
Forklift	11	0	355	7	110	483
Wharf crane	86	0	0	0	0	86
RTG crane	0	0	0	0	98	98
Straddle carrier	0	0	0	0	40	40
Top handler	0	0	0	0	198	198
Yard tractor	0	17	158	0	790	965
Other	41	0	1	3	123	168
Total	**138**	**17**	**514**	**10**	**1,359**	**2,038**
	6.8%	**0.8%**	**25.2%**	**0.5%**	**66.7%**	
2005						
Forklift	0	0	263	8	151	422
Wharf crane	67	0	0	0	0	67
RTG crane	0	0	0	0	98	98
Straddle carrier	0	0	0	0	0	0
Top handler	0	0	0	0	127	127
Yard tractor	0	0	53	0	848	901
Other	12	0	0	3	152	167
Total	**79**	**0**	**316**	**11**	**1,376**	**1,782**
	4.4%	**0.0%**	**17.7%**	**0.6%**	**77.2%**	

DB ID235

Table 9.16 summarizes the number and percentage of diesel-powered CHE with various emission controls by equipment type in 2020, the previous year, and 2005. The emission controls for CHE include:

- Hybrid equipment counts (included for the first time in 2020 EI)
- DPF retrofits counts
- On-road engines (CHE equipped with on-road certified engines instead of off-road engines)
- ULSD with a maximum sulfur content of 15 ppm

Several items to note include:

- Since some emission controls can be used in combination with others, the number of units of equipment with controls cannot be added across to come up with the total equipment count (counts of equipment with controls would be greater than the total equipment counts).
- DOC count was no longer included in the table since there were no DOC retrofits in the 2020 inventory. This is due to fleet turnover and newer equipment with Tier 4f engines that do not require the use of DOCs.
- A column for hybrid equipment count was added and straddle carriers were included instead of side picks as there has been an increase in the use of straddle carriers at the Port since 2018.
- In 2020, there was an increase in equipment counts for hybrid RTG cranes and hybrid straddle carriers. Hybrid equipment reduce overall equipment emissions as opposed to using conventional equipment.
- With implementation of the Port's CAAP measure for CHE and CARB's CHE regulation, the relative percentage of cargo handling equipment equipped with new on-road engines increased significantly when compared to 2005.
- ULSD is used by all diesel equipment since 2006. For 2005, ULSD was used by some diesel equipment, but not all. Compared to the previous year, in 2020 there were more diesel-powered equipment.
- Comparing to the previous year, in 2020 there were more RTG cranes with DPFs.
- Compared to the previous year, in 2020 there were less yard tractors with on-road engines as terminal operators opted to purchase yard tractors with offroad Tier 4f engines instead of yard tractors with on-road engines.
- 26 emission controls for propane forklifts are not included in Table 9.15 since only strategies for diesel equipment are included.

Table 9.16: Count of CHE Diesel Equipment Emissions Control Matrix

Equipment	DOC Retrofit	On-Road Engines	DPF Retrofit	ULSD Fuel	Total Diesel-Powered Equipment	% of Diesel Powered Equipment DOC Retrofit	On-Road Engines	DPF Retrofit	ULSD Fuel
2020									
Forklift	0	0	35	105	105	0.0%	0%	33%	100%
RTG crane	0	0	24	103	103	0.0%	0%	23%	100%
Side pick	0	0	2	14	14	0.0%	0%	14%	100%
Top handler	0	0	61	194	194	0.0%	0%	31%	100%
Yard tractor	0	664	4	781	781	0.0%	85%	1%	100%
Sweeper	0	0	1	7	7	0.0%	0%	14%	100%
Other	0	12	37	177	177	0.0%	7%	21%	100%
Total	**0**	**676**	**164**	**1,381**	**1,381**	**0.0%**	**49%**	**12%**	**100%**
2019									
Forklift	0	0	42	110	110	0.0%	0%	38%	100%
RTG crane	6	0	8	98	98	6.1%	0%	8%	100%
Side pick	0	0	3	15	15	0.0%	0%	20%	100%
Top handler	0	0	62	198	198	0.0%	0%	31%	100%
Yard tractor	0	675	4	790	790	0.0%	85%	1%	100%
Sweeper	0	1	2	8	8	0.0%	13%	25%	100%
Other	0	12	36	140	140	0.0%	9%	26%	100%
Total	**6**	**688**	**157**	**1,359**	**1,359**	**0.4%**	**51%**	**12%**	**100%**
2005									
Forklift	3	0	0	27	151	2%	0%	0%	18%
RTG crane	0	0	0	36	98	0%	0%	0%	37%
Side pick	14	0	0	16	41	34%	0%	0%	39%
Top handler	48	0	0	79	127	38%	0%	0%	62%
Yard tractor	520	164	0	483	848	61%	19%	0%	57%
Sweeper	0	0	0	0	8	0%	0%	0%	0%
Other	0	1	0	65	103	0%	1%	0%	63%
Total	**585**	**165**	**0**	**706**	**1,376**	**43%**	**12%**	**0%**	**51%**

Table 9.17 compares the total number of cargo handling equipment with off-road diesel engines (meeting Tier 0, 1, 2, 3, 4i, and 4 off-road diesel engine standards) and those equipped with on-road diesel engines for 2020, the previous year, and 2005. Since classification of engine standards was based on the engine's model year and horsepower, equipment with missing horsepower or model year information were listed separately under the "Unknown Tier" column in this table.

Implementation of the CAAP's CHE measure and CARB's CHE regulation have resulted in a steady increase in the prevalence of newer and cleaner equipment (i.e., primarily Tier 3 and Tier 4) replacing the older and higher-emitting equipment (Tier 0, Tier 1, and Tier 2). In 2020, the increase in Tier 2 and Tier 4i engines is due to improved data from terminals on their existing fleet. Terminals did not add any older equipment to their existing fleet.

Table 9.17: Count of CHE Diesel Engine Tier and On-road Engine

Year	Tier 0	Tier 1	Tier 2	Tier 3	Tier 4i	Tier 4f	On-road Engine	Unknown Tier	Total Diesel Engines
2020	10	12	75	94	167	328	676	19	1,381
2019	16	13	69	107	158	296	688	12	1,359
2005	256	582	360	0	0	0	165	13	1,376
Previous Year	**-38%**	**-8%**	**9%**	**-12%**	**6%**	**11%**	**-2%**	**58%**	**2%**
CAAP Progress	**-96%**	**-98%**	**-79%**	**NA**	**NA**	**NA**	**310%**	**46%**	**0%**

DB ID878

Table 9.18 shows the distribution of equipment energy consumption (kWh) comparison by engine type. The Tier 4f energy consumption increased from the previous year.

Table 9.18: Distribution of CHE Energy Consumption by Engine Type, %

Engine Type	Engine Tier	2020 % of Total	2019 % of Total	2005 % of Total
Diesel	Tier 0	0.3%	0.3%	11.0%
Diesel	Tier 1	0.3%	0.2%	39.3%
Diesel	Tier 2	5.3%	4.0%	31.2%
Diesel	Tier 3	6.8%	8.4%	0.0%
Diesel	Tier 4i	14.4%	12.8%	0.0%
Diesel	Tier 4	28.3%	25.8%	0.0%
Diesel	Onroad engines	37.3%	39.8%	12.0%
Gasoline		0.1%	0.2%	0.3%
Propane		6.8%	8.2%	6.2%
LNG		0.6%	0.2%	0.0%

Table 9.19 shows the cargo handling equipment emissions comparisons for 2020, the previous year, and 2005. Compared to the previous year, all emissions decreased, due to reduced activity and increased usage of newer equipment. It is difficult to determine whether the reduced equipment activity and emissions are due to COVID-19 impacts.

The reductions in 2020 emissions compared to 2005 emissions are largely due to the implementation of the Port's CHE measures and CARB's CHE regulation. The efforts resulted in the introduction of newer equipment with cleaner engines and the installation of emission controls. The increase in CO_2e is mainly due to the 23% increase in energy consumption in 2020 as compared to 2005.

Table 9.19: CHE Emissions Comparison

Year	PM_{10}	$PM_{2.5}$	DPM	NO_x	SO_x	CO	HC	CO_2e
	tons	tons	tons	tons	tons	tons	tons	tonnes
2020	6	5	4	366	2	643	66	165,961
2019	7	6	5	410	2	805	83	177,264
2005	54	50	53	1,573	9	822	92	134,621
Previous Year (2019-2020)	**-14%**	**-14%**	**-10%**	**-11%**	**-5%**	**-20%**	**-20%**	**-6%**
CAAP Progress (2005-2020)	**-89%**	**-89%**	**-91%**	**-77%**	**-81%**	**-22%**	**-28%**	**23%**

DB ID237

Table 9.20 shows the emissions efficiency changes in 2020 from 2005 and the previous year. A positive percentage change for the emissions efficiency comparison means an improvement in efficiency with respect to a particular pollutant.

Table 9.20: CHE Emissions Efficiency Metric Comparison, tons/10,000 TEUs

Year	PM_{10}	$PM_{2.5}$	DPM	NO_x	SO_x	CO	HC	CO_2e
2020	0.006	0.006	0.005	0.397	0.002	0.698	0.072	180
2019	0.007	0.007	0.005	0.439	0.002	0.862	0.089	190
2005	0.072	0.066	0.071	2.102	0.013	1.099	0.123	180
Previous Year (2019-2020)	**12%**	**13%**	**9%**	**10%**	**0%**	**19%**	**19%**	**5%**
CAAP Progress (2005-2020)	**91%**	**91%**	**93%**	**81%**	**85%**	**36%**	**41%**	**0%**

Locomotives

The methodology used to estimate locomotive emissions in this 2020 inventory is the same as that used in the previous year inventory. The emissions calculation methodology and the emission rates are described in Section 5 of the San Pedro Bay Ports Emissions Inventory Methodology Report Version 2.

Table 9.21 shows the throughput comparisons for locomotives for 2020, the previous year, and 2005.

Table 9.21: Throughput Comparison, million TEUs

Throughput	2005	2019	2020
Total	7.48	9.34	9.21
On-dock lifts	1.02	1.29	1.17
On-dock TEUs	1.84	2.32	2.11
% On-Dock	25%	25%	23%

Table 9.22 shows the locomotive emission estimates for calendar years 2020, the previous year, and 2005.

Table 9.22: Locomotive Emission Comparison

Year	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
2020	29.3	27.0	29	786	0.7	189	45	65,987
2019	31.7	29.2	31.7	881.8	0.8	204.6	48.6	71364.1
2005	57	53	57	1,712	98.0	237	89	82,201
Previous Year (2018-2019)	**-7%**	**-7%**	**-7%**	**-11%**	**-8%**	**-8%**	**-7%**	**-8%**
CAAP Progress (2005-2019)	**-49%**	**-49%**	**-49%**	**-54%**	**-99%**	**-20%**	**-49%**	**-20%**

DB ID428

Compared to 2005, the decrease in emissions were due to PHL's and UP's fleet turnover to ultra-low emissions switching locomotives, the use of ULSD, the Class 1 railroads' compliance with the MOU, and introduction of newer locomotives. CO_2e emissions have been reduced since 2005 despite the increase in rail throughput through the freight movement efficiency improvements implemented by the railroads and terminals.

The decrease in emissions from 2019 to 2020 were due to a decrease in on-dock and ICTF rail transport and a decrease in the fleet composite NO_x emission factor resulting from fleet mix improvement. In 2020, rail activity and emissions were affected by the throughput changes that resulted from the COVID-19 pandemic, resulting in overall lower emissions.

Table 9.23 shows the emissions efficiency changes in 2020 from the previous year and from 2005. A positive percentage for the emissions efficiency comparison indicates an improvement in efficiency. For locomotive emissions efficiency, the on-dock lifts were used as opposed to TEU throughput, since this is a more direct way to measure efficiency for the locomotives. For the CAAP progress (2020 vs. 2005), emissions efficiencies have improved for all pollutants. The locomotive emissions efficiency decreased in 2020 as compared to 2019 despite the emission reductions.

Table 9.23: Locomotive Emissions Efficiency Comparison, tons/10,000 on-dock lifts

Year	PM_{10}	$PM_{2.5}$	DPM	NO_x	SO_x	CO	HC	CO_2e
2020	0.251	0.231	0.251	6.716	0.006	1.618	0.384	564
2019	0.246	0.226	0.246	6.836	0.006	1.586	0.376	553
2005	0.558	0.518	0.558	16.747	0.959	2.318	0.871	804
Previous Year (2018-2019)	**-2%**	**-2%**	**-2%**	**2%**	**0%**	**-2%**	**-2%**	**-2%**
CAAP Progress (2005-2019)	**55%**	**55%**	**55%**	**60%**	**99%**	**30%**	**56%**	**30%**

Heavy-Duty Vehicles

The methodology used to estimate HDV emissions in this 2020 inventory is different from the methodology used in the previous year inventory. The latest version of CARB's emission estimating model, EMFAC2021, was used for the 2020 estimates, and 2019 emissions were re-estimated using this latest model. The emissions calculation methodology and the emission rates are described in Section 6 of the San Pedro Bay Ports Emissions Inventory Methodology Report Version 2.

Table 9.24 shows the total port-wide idling time based on information provided by the terminal operators which, as noted previously, relates to time spent on terminal that may not solely be time spent idling. Total idling increased 7% as compared to the previous year and increased 24% since 2005. The increase in idling since 2005 may be due to the increase in TEU throughput, which resulted in more truck trips. In 2020, the increase in idling from the previous year was due to the COVID-19 pandemic, as terminals saw increased turn times.

Table 9.24: HDV Idling Time Comparison, hours

EI Year	Total Idling Time (hours)
2020	3,753,051
2019	3,520,156
2005	3,017,252
Previous Year (2019-2020)	**7%**
CAAP Progress (2005-2020)	**24%**

Table 9.25 summarizes the average age of the truck fleet in 2020, the previous year, and 2005. The average age of the trucks visiting the Port was 7 years in 2020.

Table 9.25: HDV Fleet Weighted Average Age, years

Year	Call-Weighted Average Age (years)
2020	7
2019	8
2005	11

Table 9.26 summarizes the HDV emissions for 2020, the previous year, and 2005. The HDV emissions of all pollutants have decreased significantly from 2005 largely due to increasingly stringent on-road engine emission standards and the implementation of the CTP. Compared to the previous year, VMT increased by 2% due to decrease in on-dock rail which increased truck activity and lengthened average trip distances, but most emissions were lower or not changed. Despite the increase in VMT, overall emissions were lower in 2020 due to the continued improvement in the fleet, with a higher percentage of trips made by newer trucks.

Table 9.26: HDV Emissions Comparison

Year	VMT	PM_{10} tons	$PM_{2.5}$ tons	DPM tons	NO_x tons	SO_x tons	CO tons	HC tons	CO_2e tonnes
2020	221,494,219	5.8	5.5	5.8	1,075	3.8	284	43	398,679
2019	216,458,602	6.2	5.9	6.2	1,168	3.8	277	43	397,121
2005	266,434,761	248	238	248	6,307	45	1,865	368	474,877
Previous Year (2019-2020)	**2%**	**-7%**	**-7%**	**-7%**	**-8%**	**0%**	**3%**	**0%**	**0%**
CAAP Progress (2005-2020)	**-17%**	**-98%**	**-98%**	**-98%**	**-83%**	**-92%**	**-85%**	**-88%**	**-16%**

As an overall measure of the changes in HDV emissions independent of fluctuations in throughput, Table 9.27 illustrates the changes in emissions in average grams per mile (g/mi) between 2005 and 2020 and between 2019 and 2020. The unit of grams per mile was used because it shows the changes in emissions independent of variations in throughput, which can complicate the comparisons. The values were calculated by dividing overall HDV emissions by overall miles traveled and include idling emissions, as well as emissions from driving at various speeds, on-terminal and on-road. Particulate emissions have been reduced most dramatically from 2005 to 2020, followed by the other pollutants. The CTP and engine emission standards are responsible for most reductions, including the particulate and NO_x decreases, while fuel sulfur standards, specifically the introduction of ultra-low sulfur diesel fuel (ULSD), are responsible for the SO_x reduction.

Table 9.27: HDV Fleet Average Emissions, g/mile

Year	PM_{10}	$PM_{2.5}$	DPM	NO_x	SO_x	CO	HC	CO_2e
2020	0.0237	0.0227	0.0236	4.4012	0.0156	1.1637	0.1771	1,800
2019	0.0260	0.0249	0.0259	4.8963	0.0159	1.1600	0.1817	1,835
2005	0.8457	0.8091	0.8457	21.4756	0.1529	6.3487	1.2536	1,782
Previous Year (2019-2020)	**-9%**	**-9%**	**-9%**	**-10%**	**-2%**	**0%**	**-3%**	**-2%**
CAAP Progress (2005-2020)	**-97%**	**-97%**	**-97%**	**-80%**	**-90%**	**-82%**	**-86%**	**1%**

Figure 9.3 illustrates the HDV model year distribution for calendar years 2018 to 2020. It shows model year 2009 trucks remain dominant but continue to decline in number. It also shows the elevated percentages of newer, 2010+ trucks.

Figure 9.3: HDV Model Year Distribution

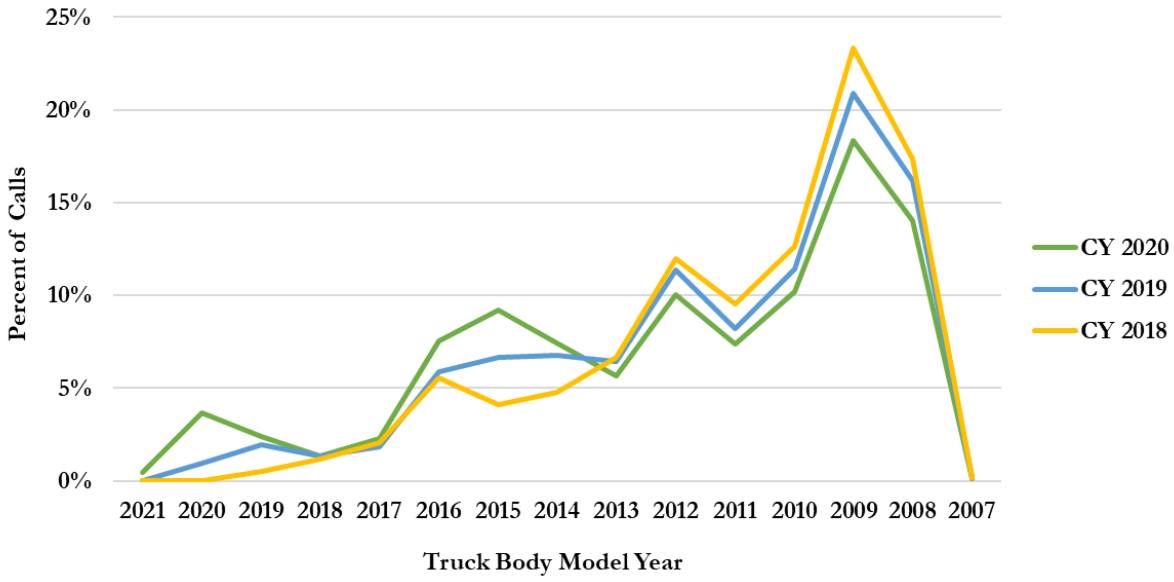


Table 9.28 shows the emissions efficiency changes for HDVs. A positive percentage for the emissions efficiency comparison means an improvement in efficiency. Comparing 2020 to 2005 for CAAP progress, HDV emissions efficiency has improved for all pollutants. Comparing 2020 to the previous year, emissions efficiency improved for PM and NO_x, while it remained the same for SO_x and hydrocarbon. Emissions efficiency for CO and CO_2e did not improve.

Table 9.28: HDV Emissions Efficiency Metrics Comparison, tons/10,000 TEUs

Year	PM_{10}	$PM_{2.5}$	DPM	NO_x	SO_x	CO	HC	CO_2e
2020	0.0063	0.0060	0.0063	1.166	0.004	0.31	0.05	433
2019	0.0067	0.0064	0.0066	1.251	0.004	0.30	0.05	425
2005	0.3318	0.3175	0.3318	8.427	0.060	2.49	0.49	634
Previous Year (2019-2020)	**6%**	**6%**	**5%**	**7%**	**0%**	**-3%**	**0%**	**-2%**
CAAP Progress (2005-2020)	**98%**	**98%**	**98%**	**86%**	**93%**	**88%**	**90%**	**32%**

CAAP Standards and Progress

One of the main purposes of the annual inventories is to provide a progress update on achieving the CAAP's San Pedro Bay Standards. These standards consist of the following emission reduction goals, compared to the 2005 inventories:

- Emission Reduction Standard:
  - By 2014, achieve emission reductions of 72% for DPM, 22% for NO_x, and 93% for SO_x
  - By 2023, achieve emission reductions of 77% for DPM, 59% for NO_x, and 93% for SO_x
- Health Risk Reduction Standard: 85% reduction by 2020

Due to the many emission reduction measures undertaken by the Port, as well as statewide and federal regulations and standards, the 2023 emission reduction standards were met and exceeded in 2020 for DPM, NO_x, and SO_x. Below is a summary of DPM, NO_x, and SO_x percent reductions as compared to the 2014/2023 emission reduction standards.

Table 9.29: Reductions as Compared to 2014 and 2023 Emission Reduction Standard

Pollutant	2020 Actual Reductions	2014 Emission Reduction Standard	2023 Emission Reduction Standard
DPM	-89%	72%	77%
NO_x	-64%	22%	59%
SO_x	-98%	93%	93%

Tables 9.30 through 9.32 show the standardized estimates of DPM, NO_x and SO_x emissions by source category for calendar years 2020, the previous year, and 2005 using current year methodology. The tables also present the percent reduction of emissions from 2005 levels.

Table 9.30: DPM Emissions Comparison by Source Category, tons

Category	2005	2019	2020
Ocean-going vessels	450	30	34
Harbor Craft	55	26	24
Cargo handling equipment	53	5	4
Locomotives	57	32	29
Heavy-duty vehicles	248	6	6
Total	**863**	**98**	**97**
% Cumulative Change		**89%**	**89%**

Table 9.31: NO_x Emissions Comparison by Source Category, tons

Category	2005	2019	2020
Ocean-going vessels	5,193	2,748	2,867
Harbor Craft	1,318	755	721
Cargo handling equipment	1,573	410	366
Locomotives	1,712	882	786
Heavy-duty vehicles	6,307	1,168	1,075
Total	**16,103**	**5,963**	**5,814**
% Cumulative Change		**63%**	**64%**

Table 9.32: SO_x Emissions Comparison by Source Category, tons

Category	2005	2019	2020
Ocean-going vessels	4,668	97	96
Harbor Craft	6	1	1
Cargo handling equipment	9	2	2
Locomotives	98	1	1
Heavy-duty vehicles	45	4	4
Total	**4,826**	**104**	**104**
% Cumulative Change		**98%**	**98%**

APPENDIX A: CHE Inventory

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2418	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2301	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2381	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2221	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2307	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	1961	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2347	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2150	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2027	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	1631	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	1338	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	1998	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2196	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2062	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2216	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	1928	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	961	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2361	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2467	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2491	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2402	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2527	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2366	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2421	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2315	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2869	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 4+	Electric				0	2150	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 5.0	Electric				0	1992	CHE Electric			
Automatic Stacking Crane	Kalmar	ASC 5.0	Electric				0	1586	CHE Electric			
Bulldozer	Caterpillar	D8T	Diesel	Caterpillar	C15	2006	310	259	CHE Diesel			
Bulldozer	Caterpillar	D6R	Diesel	Caterpillar	C9	2007	200	83	CHE Diesel		5/15/2011	
Bulldozer	Caterpillar	D6R	Diesel	Caterpillar	C9	2007	200	174	CHE Diesel		5/7/2015	
Cone Vehicle	Motrec	RR662SD	Diesel			2010	35	2056	CHE Diesel		1/1/2014	
Cone Vehicle	Motrec	RR662SD	Diesel			2010	35	1139	CHE Diesel		1/1/2014	
Cone Vehicle	Motrec	RR662SD	Diesel			2010	35	287	CHE Diesel		1/1/2014	
Cone Vehicle	Motrec	RR662SD	Diesel			2010	35	1753	CHE Diesel		1/1/2014	
Cone Vehicle	Motrec	RR662SD	Diesel			2014	35	883	CHE Diesel			
Cone Vehicle	Motrec	RR662SD	Diesel			2014	35	159	CHE Diesel			
Cone Vehicle	Motrec	RR662SD	Diesel			2014	35	1498	CHE Diesel			
Cone Vehicle	Motrec	RR-662	Diesel	Kubota Corp	V1505-ET04	2015	35	199	CHE Diesel			
Cone Vehicle	Motrec	RR-662	Diesel	Kubota Corp	V1505-ET04	2015	35	263	CHE Diesel			
Cone Vehicle	Motrec	RR-662	Diesel	Kubota Corp	V1505-ET04	2015	35	255	CHE Diesel			
Cone Vehicle	Motrec	RR-662	Diesel	Kubota Corp	V1505-ET04	2015	35	175	CHE Diesel			
Cone Vehicle	Motrec	RR-662	Diesel	Kubota Corp	V1505-ET04	2015	35	353	CHE Diesel			
Cone Vehicle	Motrec	RR-662	Diesel	Kubota Corp	V1505-ET04	2015	35	48	CHE Diesel			
Cone Vehicle	Motrec	RR-662	Diesel	Kubota Corp	V1505-ET04	2015	35	77	CHE Diesel			
Cone Vehicle	Motrec	RR-662	Diesel	Kubota Corp	V1505-ET04	2015	35	79	CHE Diesel			
Cone Vehicle	MEC	IBZ	Diesel	Kubota	D1105E	2013	25		CHE Diesel			
Cone Vehicle	MEC	IBZ	Diesel	Kubota	D1105E	2013	25		CHE Diesel			
Cone Vehicle	MEC	IBZ	Diesel	Kubota	D1105E	2013	25		CHE Diesel			
Cone Vehicle	MEC	IBZ	Diesel	Kubota	D1105E	2013	25		CHE Diesel			
Cone Vehicle	MEC	IBZ	Diesel	Kubota	D1105E	2013	25	690	CHE Diesel			
Cone Vehicle	MEC	IBZ	Diesel	Kubota	D1105E	2013	25		CHE Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Crane	Paceco		Electric				0	951	CHE Electric			
Crane	Paceco		Electric				0	1045	CHE Electric			
Crane	Paceco		Electric				0	929	CHE Electric			
Crane	P&H	Omega 35T	Diesel	Detroit Diesel	6V53	1987	244	42	CHE Diesel			
Crane	P&H 75T	75T	Diesel	Detroit Diesel	75T	1987	244	423	CHE Diesel			
Crane	Manitowoc	400W	Diesel	Detroit Diesel	NS-743-B320	1969	245	0	CHE Diesel			
Crane	Grove	RT855B	Diesel	Caterpillar	3116	1995	205	563	CHE Diesel			
Crane	Liebherr	LHM550	Diesel	Liebherr	D9512A7-04	2014	751	909	CHE Diesel			
Crane	Terex	RT550	Diesel	Cummins	6bta5.9	2003	174	221	CHE Diesel			
Crane	Terex	RT230	Diesel	Cummins	6BT5.9	2004	130	154	CHE Diesel			
Crane	Terex	RT230-2	Diesel	Cummins	6BT5.9	2014	130	154	CHE Diesel			
Electric wharf crane	Noell		Electric				0	1208	CHE Electric			
Electric wharf crane	Noell		Electric				0	1688	CHE Electric			
Electric wharf crane	Noell		Electric				0	2232	CHE Electric			
Electric wharf crane	Noell		Electric				0	2392	CHE Electric			
Electric wharf crane	Noell		Electric				0	2072	CHE Electric			
Electric wharf crane	Noell		Electric				0	1548	CHE Electric			
Electric wharf crane	Noell		Electric				0	600	CHE Electric			
Electric wharf crane	Noell		Electric				0	1196	CHE Electric			
Electric wharf crane	ZPMC	J481A	Electric				0	2960	CHE Electric			
Electric wharf crane	ZPMC	J481A	Electric				0	3572	CHE Electric			
Electric wharf crane	ZPMC	J481A	Electric				0	3928	CHE Electric			
Electric wharf crane	ZPMC	J481A	Electric				0	3784	CHE Electric			
Electric wharf crane	ZPMC	ZP-1002000014	Electric				0	4036	CHE Electric			
Electric wharf crane	ZPMC	ZP-1002000014	Electric				0	3808	CHE Electric			
Electric wharf crane	ZPMC	ZP-1002000015	Electric				0	3595	CHE Electric			
Electric wharf crane	ZPMC	ZP-1002000015	Electric				0	3152	CHE Electric			
Electric wharf crane	Mitsui/Paceco		Electric				0	3401	CHE Electric			
Electric wharf crane	Mitsui/Paceco		Electric				0	2832	CHE Electric			
Electric wharf crane	Mitsubishi	60T	Electric				0	1026	CHE Electric			
Electric wharf crane	Mitsubishi	60T	Electric				0	1251	CHE Electric			
Electric wharf crane	Mitsubishi	50T	Electric				0	1980	CHE Electric			
Electric wharf crane	Mitsubishi	50T	Electric				0	3269	CHE Electric			
Electric wharf crane	Mitsui/Paceco	70T	Electric				0	2423	CHE Electric			
Electric wharf crane	Mitsui/Paceco	70T	Electric				0	2569	CHE Electric			
Electric wharf crane	Mitsui/Paceco	70T	Electric				0	2756	CHE Electric			
Electric wharf crane	Mitsui/Paceco	70T	Electric				0	2308	CHE Electric			
Electric wharf crane	Mitsubishi	60T	Electric				0	238	CHE Electric			
Electric wharf crane	Paceco		Electric				0	341	CHE Electric			
Electric wharf crane	Paceco		Electric				0	558	CHE Electric			
Electric wharf crane	Paceco		Electric				0	2110	CHE Electric			
Electric wharf crane	Paceco		Electric				0	398	CHE Electric			
Electric wharf crane	Paceco		Electric				0	2577	CHE Electric			
Electric wharf crane	Paceco		Electric				0	2718	CHE Electric			
Electric wharf crane	Paceco		Electric				0	1431	CHE Electric			
Electric wharf crane	Paceco		Electric				0	2717	CHE Electric			
Electric wharf crane	Paceco		Electric				0	3479	CHE Electric			
Electric wharf crane	Paceco		Electric				0	1941	CHE Electric			
Electric wharf crane			Electric				0	123	CHE Electric			
Electric wharf crane			Electric				0	521	CHE Electric			
Electric wharf crane			Electric				0	454	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane	ZPMC		Electric				0	61	CHE Electric			
Electric wharf crane	ZPMC		Electric				0	248	CHE Electric			
Electric wharf crane	ZPMC		Electric				0	351	CHE Electric			
Electric wharf crane	ZPMC		Electric				0	386	CHE Electric			
Electric wharf crane	ZPMC		Electric				0	265.5	CHE Electric			
Electric wharf crane	Noell		Electric				0	3850	CHE Electric			
Electric wharf crane	Noell		Electric				0	3715	CHE Electric			
Electric wharf crane	Noell		Electric				0	2162	CHE Electric			
Electric wharf crane	Noell		Electric				0	3786	CHE Electric			
Electric wharf crane	Noell		Electric				0	3606	CHE Electric			
Electric wharf crane	Noell		Electric				0	3478	CHE Electric			
Electric wharf crane	Noell		Electric				0	3091	CHE Electric			
Electric wharf crane	Noell		Electric				0	3499	CHE Electric			
Electric wharf crane	Noell		Electric				0	3359	CHE Electric			
Electric wharf crane	Noell		Electric				0	3323	CHE Electric			
Electric wharf crane	ZPMC		Electric				0	3012	CHE Electric			
Electric wharf crane	ZPMC		Electric				0	2809	CHE Electric			
Electric wharf crane	ZPMC		Electric				0	2021	CHE Electric			
Electric wharf crane	ZPMC		Electric				0	744	CHE Electric			
Electric wharf crane	MITSUBISHI	7820-7	Electric				0	0	CHE Electric			
Electric wharf crane	ZPMC	J111A00-8	Electric				0	0	CHE Electric			
Electric wharf crane	ZPMC	J111A00-9	Electric				0	0	CHE Electric			
Electric wharf crane	ZPMC	ZP-2073-10	Electric				0	0	CHE Electric			
Electric wharf crane	ZPMC	ZP-2073-11	Electric				0	0	CHE Electric			
Electric wharf crane	ZPMC	ZP-2073-12	Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Electric wharf crane			Electric				0	0	CHE Electric			
Forklift	Hyster	N40FR	Electric				0	28	CHE Electric			
Forklift	Kalmar	DCE160-12	Electric					2	CHE Electric			
Forklift	Kalmar	DCE160-12	Electric					23	CHE Electric			
Forklift	Kalmar	DCE160-12	Electric					42	CHE Electric			
Forklift	Nissan	CSP01L15S	Electric				0	0	CHE Electric			
Forklift	Hyster	N40XMR2	Electric				0	0	CHE Electric			
Forklift	Nissan	CK1B1L15S	Electric				0	0	CHE Electric			
Forklift	Nissan	MCJ1B1L15S	Electric				0	432	CHE Electric			
Forklift	Raymond Pacer	R30-C30TT	Electric				0	0	CHE Electric			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16NT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	EP16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	EP16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	EP16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16NT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16KT	Electric					250	CHE Electric			
Forklift	Mitsubishi	FB16NT	Electric					250	CHE Electric			
Forklift	Toyota		Gasoline			2010		494	CHE Gasoline			
Forklift	Toyota		Gasoline			2011		127	CHE Gasoline			
Forklift	Toyota		Gasoline			2011		158	CHE Gasoline			
Forklift	Mitsubishi		Gasoline	Nissan		2012		414	CHE Gasoline			
Forklift	Nissan	CF01A15V	Gasoline				45	396	CHE Gasoline			
Forklift	Nissan	CPH01A15V	Gasoline				45	55	CHE Gasoline			
Forklift	Hyster	H135XL	LPG	Mitsubishi	4G52	1992	49	0	CHE Propane			
Forklift	Daewoo	G355-2	LPG	GM	Vortec	2000	85	180	CHE Propane			
Forklift	Clark	GCS20MB	LPG	Mitsubishi	4G52	1988	49	92	CHE Propane			
Forklift	Clark	GCS 20	LPG	Mitsubishi	4G52	1988	49	52	CHE Propane			
Forklift	Komatsu	FG40ZT-8	LPG	Nissan	TB45L	2007	86	35	CHE Propane			
Forklift	Komatsu	FG40ZT-8	LPG	Nissan	TB45L	2007	86	1086	CHE Propane			
Forklift	Nissan	PF80YLP	LPG	Nissan	TB45	2010	95	100	CHE Propane			
Forklift	Nissan	PF80YLP	LPG	Nissan	TB45	2010	95	1385	CHE Propane			
Forklift	Nissan	PF80YLP	LPG	Nissan	TB45	2010	95	948	CHE Propane			
Forklift	Nissan	PF80YLP	LPG	Nissan	TB45	2010	95	39	CHE Propane			
Forklift	Nissan	PF80YLP	LPG	Nissan	TB45	2010	95	696	CHE Propane			
Forklift	Clark	C40L	LPG	GM	4.3L	2012	120	119	CHE Propane			
Forklift	Clark	C40L	LPG	GM	4.3L	2012	120	369	CHE Propane			
Forklift	Clark	C40L	LPG	GM	4.3L	2012	120	2080	CHE Propane			
Forklift	Clark	C40L	LPG	GM	4.3L	2012	120	2111	CHE Propane			
Forklift	Clark	C40L	LPG	GM	4.3L	2012	120	1975	CHE Propane			
Forklift	Toyota	8FGUS25-147V	LPG	Toyota	:2403050	2012	51	131	CHE Propane			
Forklift	Toyota	8FGUS25-147V	LPG	Toyota	:2403050	2012	51	355	CHE Propane			
Forklift	Mitsubishi	FG45N-LE	LPG	Nissan	TB45	2013	95	923	CHE Propane			
Forklift	Mitsubishi	FG45N-LE	LPG	Nissan	TB45	2013	95	1532	CHE Propane			
Forklift	Mitsubishi	FG45N-LE	LPG	Nissan	TB45	2013	95	527	CHE Propane			
Forklift	Hyster	H90FT	LPG	GM	4.3L	2014	100	446	CHE Propane			
Forklift	Hyster	H90FT	LPG	GM	4.3L	2014	100	647	CHE Propane			
Forklift	Hyster	H90FT	LPG	GM	4.3L	2014	100	60	CHE Propane			
Forklift	Hyster	H90FT	LPG	GM	4.3L	2014	100	824	CHE Propane			
Forklift	Toyota	8FGU25	LPG	Toyota	204Y	2014	51	247	CHE Propane			
Forklift	Toyota	8FGU25	LPG	Toyota	204Y	2014	51	429	CHE Propane			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Forklift	Nissan	60	LPG	Nissan	K25L	2007		324	CHE Propane			
Forklift	Nissan	60	LPG	Nissan	K25L	2007		159	CHE Propane			
Forklift	Nissan		LPG	Nissan		2007		497	CHE Propane			
Forklift	CAT		LPG	Nissan	K25L	2008		265	CHE Propane			
Forklift	CAT		LPG	Nissan	K25L	2008		325	CHE Propane			
Forklift	CAT		LPG	Nissan	K25L	2008		133	CHE Propane			
Forklift	Toyota	8FGU32	LPG	Toyota	4Y	2017	42	141	CHE Propane			
Forklift	Toyota	8FGU32	LPG	Toyota	4Y	2017	42	119	CHE Propane			
Forklift	Toyota	8FGU32	LPG	Toyota	4Y	2017	42	118	CHE Propane			
Forklift	Toyota	8FGU32	LPG	Toyota	4Y	2017	42	157	CHE Propane			
Forklift	Toyota	8FGU32	LPG	Toyota	4Y	2017	42	52	CHE Propane			
Forklift	Toyota	8FGU32	LPG	Toyota	4Y	2017	42		CHE Propane			
Forklift	Toyota	8FGU32	LPG	Toyota	4Y	2017	42	155	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2010	46	7	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2010	46		CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2010	46		CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	317	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	175	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	112	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	410	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	170	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	376	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	236	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	226	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	367	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	425	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	395	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	212	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	351	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	241	CHE Propane			
Forklift	Clark	C55S	LPG	GM	V6 4.3	2013	93	138	CHE Propane			
Forklift	Clark	C75L	LPG	GM	V6 4.3	2013	93	89	CHE Propane			
Forklift	Clark	C75L	LPG	GM	V6 4.3	2013	93	68	CHE Propane			
Forklift	Hyster	H100XM	LPG	GMC	3.6	2002	165	0	CHE Propane			
Forklift	Hyster	H80XL	LPG	GMC	3.6	1995	165	21	CHE Propane			
Forklift	Hyster	H50FT	LPG	PSI	2.2	2014	59	234	CHE Propane			
Forklift	Hyster	H50FT	LPG	PSI	2.2	2015	59	210	CHE Propane			
Forklift	Yale	GLP100MJNB	LPG	GMC	3.6	2005	160	0	CHE Propane			
Forklift	Yale	GLP100MJNB	LPG	GMC	3.6	2005	160	329	CHE Propane			
Forklift	Yale	GLP100MJNB	LPG	GMC	3.6	2005	160	69	CHE Propane			
Forklift	Yale	GLP100	LPG			2008	160	157	CHE Propane			
Forklift	Yale	GLP100	LPG			2008	160	37	CHE Propane			
Forklift	Hyster	H100FT	LPG			2011		609	CHE Propane			
Forklift	Nissan	FO4G40V-LP	LPG			2002	122	69	CHE Propane			
Forklift	Nissan	PL50LP	LPG			2007	122	300	CHE Propane			
Forklift	Nissan	PL50LP	LPG			2007	122	258	CHE Propane			
Forklift	Nissan	JP80BYLP	LPG			2007	122	410	CHE Propane			
Forklift	Nissan	JP80BYLP	LPG			2007	122	438	CHE Propane			
Forklift	Nissan	JP80BYLP	LPG			2007	122	464	CHE Propane			
Forklift	Nissan	JP80BYLP	LPG			2007	122	301	CHE Propane			
Forklift	Nissan	JP80BYLP	LPG			2007	122	118	CHE Propane			
Forklift	Nissan	JP80BYLP	LPG			2007	122	400	CHE Propane			
Forklift	Nissan	JP80BYLP	LPG			2007	122	546	CHE Propane			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Forklift	Nissan	JP80BYLP	LPG			2007	122	280	CHE Propane			
Forklift	Clark	C40L	LPG	PSI	PSI-4.3	2020			CHE Propane			
Forklift	Clark	C40L	LPG	PSI	PSI-4.3	2020			CHE Propane			
Forklift	Clark	C40L	LPG	PSI	PSI-4.3	2020			CHE Propane			
Forklift	Clark	C40L	LPG	PSI	PSI-4.3	2020			CHE Propane			
Forklift	Yale	GLP050MXNEAE	LPG	Yale		2020	103	642	CHE Propane			
Forklift	Yale	GLP050MXNEAE	LPG	Yale		2020	103	952	CHE Propane			
Forklift	Caterpillar	5,000 lb.	LPG	Caterpillar		1994	122	100	CHE Propane			
Forklift	Mitsubishi	5,000 lb	LPG	Mitsubishi		1994	122	0	CHE Propane			
Forklift	Hyster	H50XM	LPG	Hyster				250	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2010	51	116	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2010	51	107	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2010	51	126	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2011	51	129	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2012	51	86	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2011	51	88	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2012	51	149	CHE Propane			
Forklift	Hyster	H50FT	LPG	GM	Vortex 4.3L	2011		214	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2011	51	79	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2012	51	116	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2012	51	64	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2012	51	110	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2012	51	60	CHE Propane			
Forklift	Yale	GLP-100	LPG	GM	VORTEX 4.3L	2007		1089	CHE Propane			
Forklift	Hyster	H50FT	LPG	Mazda	2.2L	2011	51	189	CHE Propane			
Forklift	Caterpillar	V80F	LPG	Perkins		1989	65	179	CHE Propane			
Forklift	Hyster	H80XL	LPG	GM		2007	100	227	CHE Propane			
Forklift	Komatsu	FG15HT-15	LPG	Nissan	H2O	1994	46	250	CHE Propane			2012
Forklift	Komatsu	FG15HT-15	LPG	Nissan	H2O	1994	46	250	CHE Propane			2012
Forklift	Komatsu	FG15HT-15	LPG	Nissan	H2O	1994	46	250	CHE Propane			2012
Forklift	Komatsu	FG15HT-15	LPG	Nissan	H2O	1994	46	250	CHE Propane			2012
Forklift	Komatsu	FG15HT-15	LPG	Nissan	H2O	1994	46	250	CHE Propane			2012
Forklift	Komatsu	FG15HT-15	LPG	Nissan	H2O	1994	46	250	CHE Propane			2012
Forklift	Komatsu	FG15HT-15	LPG	Nissan	H2O	1994	46	250	CHE Propane			2012
Forklift	Komatsu	FG15HT-15	LPG	Nissan	H2O	1994	46	250	CHE Propane			2012
Forklift	Komatsu	FG15HT-15	LPG	Nissan	H2O	1994	46	250	CHE Propane			2012
Forklift	Komatsu	FG15HT-15	LPG	Nissan	H2O	1994	46	250	CHE Propane			2012
Forklift	Komatsu	FG15HT-15	LPG	Nissan	K21L	2008	48	250	CHE Propane			
Forklift	Komatsu	FG15HT-15	LPG	Nissan	K21L	2008	48	250	CHE Propane			
Forklift	Komatsu	FG15HT-15	LPG	Nissan	K21L	2008	48	250	CHE Propane			
Forklift	Komatsu	FG15HT-15	LPG	Nissan	K21L	2008	48	250	CHE Propane			
Forklift	Komatsu	FG30G-11	LPG	Nissan		1991		250	CHE Propane			2013
Forklift	Komatsu	FG30G-11	LPG	Nissan		1991		250	CHE Propane			2013
Forklift	Komatsu	FG30G-11	LPG	Nissan		1994		250	CHE Propane			2013
Forklift	Komatsu	FG40ZT-5	LPG	Nissan		1991		250	CHE Propane			2013
Forklift	Komatsu	FG45T-6	LPG	Nissan	TB42	1991	85	250	CHE Propane			2013
Forklift	Komatsu	FG45T-6	LPG	Nissan	TB42	1991	85	250	CHE Propane			2013
Forklift	Komatsu	FG45T-6	LPG	Nissan	TB42	1991	85	250	CHE Propane			2013
Forklift	Komatsu	FG45T-6	LPG	Nissan	TB42	1991	85	250	CHE Propane			2013
Forklift	Komatsu	FG45T-6	LPG	Nissan	TB42	1991	85	250	CHE Propane			2013
Forklift	Komatsu	FG45T-6	LPG	Nissan	TB42	1991	85	250	CHE Propane			2013
Forklift	Komatsu	FG45T-6	LPG	Nissan	TB42	1991	85	250	CHE Propane			2013
Forklift	Komatsu	FG45T-6	LPG	Nissan	TB42	1991	85	250	CHE Propane			2013

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Forklift	Komatsu	FG45T-6	LPG	Nissan	TB42	1991	85	250	CHE Propane			2013
Forklift	Komatsu	FG45T-6	LPG	Nissan	TB42	1994	85	250	CHE Propane			2013
Forklift	Komatsu	FG45K1	LPG	Nissan	TB45L	2006	117	250	CHE Propane			
Forklift	Komatsu	FG45K1	LPG	Nissan	TB45L	2006	117	250	CHE Propane			
Forklift	Komatsu	FG45T-8	LPG	Nissan	TB45L	2008	84	250	CHE Propane			
Forklift	Komatsu	FG45K1	LPG	Nissan	TB45L	2007	84	250	CHE Propane			
Forklift	Komatsu	FG45T-8	LPG	Nissan	TB45L	2006	117	250	CHE Propane			
Forklift	Komatsu	FG15HT-17	LPG	Nissan	K21L	2006	50	250	CHE Propane			
Forklift	Komatsu	FG15HT-17	LPG	Nissan	K21L	2006	50	250	CHE Propane			
Forklift	Komatsu	FG15HT-17	LPG	Nissan	K21L	2006	50	250	CHE Propane			
Forklift	Komatsu	FG15HT-17	LPG	Nissan	K21L	2006	50	250	CHE Propane			
Forklift	Komatsu	FG45T-6	LPG	Nissan	TB45L	2005	96	250	CHE Propane			
Forklift	Clark	CT-50	LPG	Ford				250	CHE Propane			2013
Forklift	Komatsu	FG15HT-15	LPG	Nissan	H2O			250	CHE Propane			2013
Forklift	Komatsu	5000 lb	LPG			2002	58	1000	CHE Propane			
Forklift	Komatsu	5000 lb	LPG			2002	58	1000	CHE Propane			
Forklift	Komatsu	6000 lb	LPG			2002	60	1000	CHE Propane			
Forklift	Komatsu	6000 lb	LPG			2002	60	1000	CHE Propane			
Forklift	Komatsu	6000 lb	LPG			2002	60	1000	CHE Propane			
Forklift	Komatsu	6000 lb	LPG			2002	60	1000	CHE Propane			
Forklift	Komatsu	6000 lb	LPG			2002	60	1000	CHE Propane			
Forklift	Komatsu	6000 lb	LPG			2002	60	1000	CHE Propane			
Forklift	Komatsu	6000 lb	LPG			2008	60	1000	CHE Propane			
Forklift	Komatsu	6000 lb	LPG			2008	60	1000	CHE Propane			
Forklift	Komatsu	6000 lb	LPG			2008	60	1000	CHE Propane			
Forklift	Komatsu	6000 lb	LPG			2008	60	1000	CHE Propane			
Forklift	YALE		LPG					500	CHE Propane			
Forklift	YALE		LPG					500	CHE Propane			
Forklift	YALE		LPG					500	CHE Propane			
Forklift	YALE		LPG					500	CHE Propane			
Forklift	YALE		LPG					500	CHE Propane			
Forklift	YALE		LPG					500	CHE Propane			
Forklift	YALE		LPG					500	CHE Propane			
Forklift	YALE		LPG					500	CHE Propane			
Forklift	YALE		LPG					500	CHE Propane			
Forklift	HYSTER		LPG					500	CHE Propane			
Forklift	HYSTER		LPG					500	CHE Propane			
Forklift	HYSTER		LPG					500	CHE Propane			
Forklift	HYSTER		LPG					500	CHE Propane			
Forklift	HYSTER		LPG					500	CHE Propane			
Forklift	HYSTER		LPG					500	CHE Propane			
Forklift	HYSTER		LPG					500	CHE Propane			
Forklift			LPG			2015	125	2179	CHE Propane			
Forklift	Mitsubishi	FG40N	LPG	Nissan	TB45L	2011	76	1174	CHE Propane			
Forklift	Toyota	7FU45	LPG	GM	4.3 Vortec	2008	200	1200	CHE Propane			
Forklift	Yale	GLP050VXESV	LPG	Mazda	F2-Z25D	2006	51	721	CHE Propane			
Forklift	Yale	GLP050VXESV	LPG	Mazda	F2-Z25D	2006	51	221	CHE Propane			
Forklift	Heyster	H50FT	LPG	IMPCO		2010	46	580	CHE Propane			
Forklift	Taylor	TE800L	Diesel	Cummins		2018	330	12	CHE Diesel			
Forklift	Hoist	P360	Diesel	Cummins	QSB6.7	2013	173	202	CHE Diesel			
Forklift	Hyster	P360	Diesel	Cummins	QSB6.7	2016	164	579	CHE Diesel		12/30/2013	
Forklift	Hyster	P360	Diesel	Cummins	QSB6.7	2016	164	798	CHE Diesel		12/30/2013	
Forklift	Hyster	P360	Diesel	Cummins	QSB6.7	2018	164	2527	CHE Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Forklift	Hyster	P360	Diesel	Cummins	QSB6.7	2018	164	3514	CHE Diesel			
Forklift	Hyster	P360	Diesel	Cummins	QSB6.7	2018	164	723	CHE Diesel			
Forklift	Hyster	P360	Diesel	Cummins	QSB6.7	2018	164	879	CHE Diesel			
Forklift	Kalmar	15T	Diesel	Cummins	QSB 6.7	2007	220	109	CHE Diesel		5/4/2012	
Forklift	Kalmar	15T	Diesel	Cummins	QSB 6.7	2007	220	65	CHE Diesel			
Forklift	Kalmar	15T	Diesel	Cummins	QSB 6.7	2007	220	54	CHE Diesel			
Forklift	Capacity	TJ7000	Diesel	Cummins	QSC8.3L	2007	230	94	CHE Diesel		1/1/2009	
Forklift	Capacity	TJ7000	Diesel	Cummins	QSB6.7	2008	220	75	CHE Diesel		3/1/2010	
Forklift	Capacity	TJ7000	Diesel	Cummins	QSB6.7	2008	220	95	CHE Diesel		3/1/2010	
Forklift			Diesel			2012		281	CHE Diesel			
Forklift			Diesel	Cummins		2015		953	CHE Diesel			
Forklift			Diesel	Cummins		2015		135	CHE Diesel			
Forklift			Diesel	Cummins		2015		1851	CHE Diesel			
Forklift	Hyundai		Diesel	Cummins		2017		89	CHE Diesel			
Forklift	Taylor		Diesel			2019		391	CHE Diesel			
Forklift	Taylor		Diesel			2019		663	CHE Diesel			
Forklift	Kalmar	DCD160-12	Diesel	Cummins	QSB6.7	2016	173	717	CHE Diesel			
Forklift	Kalmar	DCD160-12	Diesel	Cummins	QSB 6.7	2016	173	627	CHE Diesel			
Forklift	Kalmar	DCD160-12	Diesel	Cummins	QSB 6.7	2016	173	725	CHE Diesel			
Forklift	Kalmar	DCE-150-6	Diesel	Cummins	QSB6.7	2008	173	75	CHE Diesel		3/12/2015	
Forklift	Kalmar	DCE-150-6	Diesel	Cummins	QSB6.7	2008	173	112	CHE Diesel		1/21/2015	
Forklift	Kalmar	DCE-150-6	Diesel	Cummins	QSB6.7	2008	173	0	CHE Diesel		1/23/2015	
Forklift	Kalmar	DCE-150-6	Diesel	Cummins	QSB6.7	2008	173	3	CHE Diesel		3/12/2015	
Forklift	Kalmar	DCE160-12	Diesel	Cummins	QSB 5.9L B	2007	185	20	CHE Diesel		8/31/2015	
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2011	160	79	CHE Diesel		7/17/2015	
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2011	160	195	CHE Diesel		7/21/2015	
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2011	160	248	CHE Diesel		7/23/2015	
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2011	160	147	CHE Diesel		7/24/2015	
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2013	173	377	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2013	173	362	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2013	173	280	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2013	173	256	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2013	173	354	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2013	173	256	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2013	173	0	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2014	173	480	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2014	173	395	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2014	173	447	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2014	173	438	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2014	173	503	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2014	173	502	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2014	173	456	CHE Diesel			
Forklift	Taylor	TXH350L	Diesel	Cummins	QSB6.7	2014	173	480	CHE Diesel			
Forklift	Taylor	XH350L	Diesel	Cummins	QSB6.7	2017	173	100	CHE Diesel			
Forklift	Taylor	XH350L	Diesel	Cummins	QSB6.7	2017	173	129	CHE Diesel			
Forklift	Taylor	TX550RC	Diesel	Cummins	QSB6.7	2012	220	72	CHE Diesel		7/1/2016	
Forklift	Taylor	TX550RC	Diesel	Cummins	QSB6.7	2012	220	217	CHE Diesel		7/1/2016	
Forklift	Taylor	TX550RC	Diesel	Cummins	QSB6.7	2012	220	131	CHE Diesel		7/1/2016	
Forklift	Taylor	TX550RC	Diesel	Cummins	QSB6.7	2012	220	149	CHE Diesel		7/1/2016	
Forklift	Taylor	TX550RC	Diesel	Cummins	QSB6.7	2012	220	192	CHE Diesel		6/27/2017	
Forklift	Taylor	TX550RC	Diesel	Cummins	QSB6.7	2012	220	171	CHE Diesel		6/17/2016	
Forklift	Kalmar	DCD250	Diesel	Cummins	QSB6.7	2008	260	44	CHE Diesel		2/5/2016	
Forklift	Taylor	TX1700L	Diesel	Cummins	QSL-9	2013	230	288	CHE Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Forklift	Taylor	TX1700L	Diesel	Cummins	QSL-9	2013	230	319	CHE Diesel			
Forklift	Taylor	TX1700L	Diesel	Cummins	QSL-9	2013	230	388	CHE Diesel			
Forklift	Kalmar	DCD370-12	Diesel	Volvo	TAD1170VE	2014	319	115	CHE Diesel			
Forklift	Kalmar	DCD370-12	Diesel	Cummins	QSM11	2004	330	0	CHE Diesel			
Forklift	Kalmar	DCF500-12	Diesel	Cummins	QSM11	2008	350	402	CHE Diesel		4/8/2016	
Forklift	Kalmar	DCF500-12	Diesel	Volvo	TAD1360VE	2013	348	361	CHE Diesel			
Forklift	Taylor	X1000RC	Diesel	Volvo	TAD1371VE	2014	388	188	CHE Diesel			
Forklift	Taylor	X1000RC	Diesel	Volvo	TAD1371VE	2014	388	197	CHE Diesel			
Forklift	Kalmar	DCE90-6L	Diesel	Perkins	S6S	2004	114	72	CHE Diesel		7/31/2014	
Forklift	Hyster	H50FT	Diesel	YANMAR	3.3L	2014	165	699	CHE Diesel			
Forklift	Taylor	TX360L	Diesel	Cummins	5.9	2007	137	464	CHE Diesel		5/13/2013	
Forklift	Taylor	TX360L	Diesel	Cummins	5.9	2007	137	40	CHE Diesel		3/12/2014	
Forklift	Yale	GDP360EBECCV	Diesel			2009		153	CHE Diesel		8/13/2013	
Forklift	Taylor	TH350L	Diesel	Cummins	5.9	2004	190	872	CHE Diesel		1/15/2014	
Forklift	Taylor	TH350L	Diesel	Cummins	5.9	2004	152	1731	CHE Diesel		8/18/2014	
Forklift	Taylor	TH350L	Diesel	Cummins	5.9	2005	152	1061	CHE Diesel		2/21/2013	
Forklift	Taylor	TH350L	Diesel	Cummins	5.9	2005	152	1386	CHE Diesel		8/14/2014	
Forklift	Taylor	TE650	Diesel	Volvo	TAD870VE	2015	210	119	CHE Diesel		1/1/2012	
Forklift	Taylor	T-360L	Diesel	Taylor	T360L	2007	260	2261	CHE Diesel		1/1/2012	
Forklift	Hoist	P36	Diesel	Hyster	P360	2007	160	126	CHE Diesel		1/1/2012	
Forklift	Kone	SMV16-600B	Diesel	Kone	SMV 16-1600B	2011	248	951	CHE Diesel			
Forklift	Kone	SMV16-600B	Diesel	Kone	SMV 16-1600B	2011	248	587	CHE Diesel			
Forklift	Hyster	H250HD2	Diesel	Hyster	H250HD2	2015		854	CHE Diesel			
Forklift	Hyster	H250HD2	Diesel	Hyster	H250HD2	2015		955	CHE Diesel			
Forklift	Taylor	TX360L	Diesel	Cummins	QSB 6.7	2012	173	1745	CHE Diesel			
Forklift	Fantuzzi	FDC180/1600	Diesel	Caterpillar	Tier 4i C4.4	2014	174	772	CHE Diesel			
Forklift	Fantuzzi	FDC180/1600	Diesel	Caterpillar	Tier 4i C4.4	2014	174	2501	CHE Diesel			
Forklift	Taylor	TX360L	Diesel	Cummins	QSB 6.7	2015	173	532	CHE Diesel			
Forklift	Clark	C50sD	Diesel	Deutz	TD 3.6 L4	2015	56	261	CHE Diesel			
Forklift	Clark	C50sD	Diesel	Deutz	TD 3.6 L4	2015	56	231	CHE Diesel			
Forklift	Clark	C50sD	Diesel	Deutz	TD 3.6 L4	2015	56	96	CHE Diesel			
Forklift	Clark	C50sD	Diesel	Deutz	TD 3.6 L4	2015	56	124	CHE Diesel			
Forklift	Clark	C50sD	Diesel	Deutz	TD 3.6 L4	2015	56	261	CHE Diesel			
Forklift	Clark	C50sD	Diesel	Deutz	TD 3.6 L4	2015	56	310	CHE Diesel			
Forklift	Clark	C50sD	Diesel	Deutz	TD 3.6 L4	2015	56	277	CHE Diesel			
Forklift	Clark	C50sD	Diesel	Deutz	TD 3.6 L4	2015	56	291	CHE Diesel			
Forklift	Yale	GDP360EF	Diesel			2020	164	71	CHE Diesel			
Forklift	Hyster	H330XL	Diesel	Perkins	YH70393*U660399(	1997	150	147	CHE Diesel			
Forklift	Caterpillar	DP150	Diesel	Deutz	TCD2012L042V	2010	131	280	CHE Diesel			
Forklift	Caterpillar	P33000-D	Diesel	Mitsubishi	6M60	2007	148	901	CHE Diesel			
Forklift	Caterpillar	PD10000	Diesel	Mitsubishi	SS-DP	2011	75	890	CHE Diesel			
Forklift	Caterpillar	PD10000	Diesel	Mitsubishi	SS-DP	2011	75	770	CHE Diesel			
Forklift	Caterpillar	DP50CN1-D	Diesel	Caterpillar	3914/2200	2013	75	932	CHE Diesel			
Forklift	Hyster	H300XL	Diesel	Perkins		1993	175	94	CHE Diesel		4/5/2011	
Forklift	Linde	H35D	Diesel	Volkswagon	BAEU	2007	59	686	CHE Diesel			
Forklift	Hyster	H300HD	Diesel	Cummins	QSB6.7	2013	129	670	CHE Diesel			
Forklift	Sany	SCO160H4	Diesel	Cummins	ISB6.7	2019	225	444	CHE Diesel			
Hybrid RTG	Paceco-Mitsui		Diesel	Caterpillar	C7	2018	249	5831	CHE Diesel			
Hybrid RTG	Paceco-Mitsui		Diesel	Caterpillar	C7	2018	249	5643	CHE Diesel			
Hybrid RTG	Paceco-Mitsui		Diesel	Caterpillar	C7	2018	249	5694	CHE Diesel			
Hybrid RTG	Paceco-Mitsui		Diesel	Caterpillar	C7	2018	249	5894	CHE Diesel			
Hybrid RTG	Paceco-Mitsui		Diesel	Caterpillar	C7	2018	249	5356	CHE Diesel			
Hybrid RTG	Paceco-Mitsui		Diesel	Caterpillar	C7	2018	249	5357	CHE Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Hybrid RTG	Paceco-Mitsui		Diesel	Caterpillar	C7	2018	249	1996	CHE Diesel			
Hybrid RTG	Paceco-Mitsui		Diesel	Caterpillar	C7	2018	249	953	CHE Diesel			
Hybrid RTG	Paceco-Mitsui		Diesel	Caterpillar	C7	2018	249	2043	CHE Diesel			
Hybrid RTG	ZPMC	RTG	Diesel			2011	197	2616	CHE Diesel			
Hybrid RTG	Paceco	RTG	Diesel	Caterpillar	C7.1 ACERT	2015	302	3593	CHE Diesel			
Hybrid RTG	Paceco	RTG	Diesel	Caterpillar	C7.1 ACERT	2015	302	3402	CHE Diesel			
Hybrid RTG	Paceco	RTG	Diesel	Caterpillar	C7.1 ACERT	2015	302	3399	CHE Diesel			
Hybrid RTG	Paceco	RTG	Diesel	Caterpillar	C7.1 ACERT	2015	302	3447	CHE Diesel			
Hybrid RTG	Paceco	RTG	Diesel	Caterpillar	C7.1 ACERT	2015	302	3645	CHE Diesel			
Hybrid RTG	Mi Jack	1200 REH	Diesel	John Deere	4045HF485	2009	137	1140	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	HSC350A	Diesel	AGCO	44AWF	2016	102	2422	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	HSC350A	Diesel	AGCO	44AWF	2016	102	2667	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	HSC350A	Diesel	AGCO	44AWF	2016	102	2932	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	HSC350A	Diesel	AGCO	44AWF	2016	102	2791	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	HSC350A	Diesel	AGCO	44AWF	2016	102	2815	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	HSC350A	Diesel	AGCO	44AWF	2016	102		CHE Diesel			
Hybrid Straddle Carrier	Kalmar	HSC350A	Diesel	AGCO	44AWF	2016	102	3065	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	HSC350A	Diesel	AGCO	44AWF	2016	102	2006	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	HSC350A	Diesel	AGCO	44AWF	2016	102	2735	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	HSC350A	Diesel	AGCO	44AWF	2016	102	3187	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	HSC350A	Diesel	AGCO	44AWF	2016	102	3184	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	HSC350A	Diesel	AGCO	44AWF	2016	102	4070	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Hybrid Straddle Carrier	Kalmar	44AWF.1184	Diesel	Agco Sisu	D49FSR	2018	103	907	CHE Diesel			
Loader	Hustler		Electric				0	0	CHE Electric			
Loader	Hustler		Electric				0	0	CHE Electric			
Loader	Mijack	M115	Diesel	Cummins	QSX11.9	2010	460	8	CHE Diesel			
Loader	Mijack	MJ150	Diesel	Cummins	QSB 6.7	2015	260	487	CHE Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Loader	Caterpillar	966-D	Diesel	Caterpillar	C-7	2010	300	0	CHE Diesel			
Loader	Caterpillar	966-D	Diesel	Caterpillar	C-7	2010	232	604	CHE Diesel		7/22/2010	
Loader	Caterpillar	966G	Diesel	Caterpillar	3176C	2005	259	2044	CHE Diesel		9/8/2010	
Loader	Caterpillar	980H	Diesel	Caterpillar	C15	2007	318	1192	CHE Diesel		5/8/2015	
Loader	Caterpillar	988-F	Diesel	Caterpillar	3408E	1999	430	0	CHE Diesel		1/7/2014	
Loader	Caterpillar	988H	Diesel	Caterpillar		2011	210	2201	CHE Diesel		2/27/2015	
Loader	Caterpillar	988K	Diesel	Caterpillar		2013	210	2511	CHE Diesel			
Loader	Caterpillar	904H	Diesel	Mitsubishi	S4Q2-T	2008	55	0	CHE Diesel			
Loader	Case	480	Diesel			2009	110	964	CHE Diesel			
Man Lift	Skyjack	SJIH 4740	Electric				0	0	CHE Electric			
Man Lift	Skyjack		Electric				0	0	CHE Electric			
Man Lift	JLG Lift	GS2646	Electric				0	0	CHE Electric			
Man Lift	Skyjack	3291	Electric				0	0	CHE Electric			
Man Lift	Skyjack	3226	Electric				0	0	CHE Electric			
Man Lift	JLG	660SJ	Gasoline			2007	60	102	CHE Gasoline			
Man Lift	Genie	S-125	Diesel			2003	75	89	CHE Diesel		1/1/2014	
Man Lift	Genie	S-65	Diesel			2007	75	135	CHE Diesel		1/1/2014	
Man Lift	JLG		Diesel	Deutz	BF4M2011	2004	87	36	CHE Diesel		9/1/2010	
Man Lift	JLG	G6-42A	Diesel	Cummins	QSF3.8	2015	110	121	CHE Diesel			
Man Lift	JLG		Diesel	Deutz	BF4M2011	2006	87	230	CHE Diesel		9/1/2010	
Man Lift	Skyjack		Diesel			2018	107	0	CHE Diesel			
Man Lift	Skyjack		Diesel			2018	107	0	CHE Diesel			
Man Lift	Terex	TB85	Diesel	Cummins	B3.9	2000	152	54	CHE Diesel		9/5/2013	
Man Lift	Skyjack	SJ1256	Diesel	Deutz AG	TCD 3.6 l4	2017	107	39	CHE Diesel			
Man Lift	Terex	TB60	Diesel	Cummins	B3.9-C	2002	73	88	CHE Diesel		8/20/2014	
Man Lift	JLG	1350SJP	Diesel	Deutz	TD2011L04	2012	73	161	CHE Diesel			
Man Lift	JLG	86055	Diesel	Deutz	FRM2011	2002	87	223	CHE Diesel		1/1/2012	
Man Lift	Terex	TB60	Diesel	Cummins	B3.9	2000	80	374	CHE Diesel		1/1/2012	
Man Lift	JLG	86JS	Diesel	Deutz		2007	87	386	CHE Diesel		1/1/2012	
Man Lift			Diesel				87		CHE Diesel		1/1/2012	
Man Lift	Motrec	RR662	Diesel			2008	87		CHE Diesel		1/1/2012	
Man Lift	JLG Lift	600AJ	Diesel			2012	80	0	CHE Diesel			
Man Lift	JLG Lift	800AJ	Diesel	Deutz	D2011L040	2010	49	4	CHE Diesel			
Man Lift	JLG Lift	800 AJ	Diesel	Perkins	GP65-4N	2009	65	431	CHE Diesel			
Man Lift	JLG Lift	800 AJ	Diesel	Perkins	GP65-4N	2009	65	275	CHE Diesel			
Man Lift	Genie lift	S60	Diesel	Deutz	D2011L031	2007	49	146	CHE Diesel			
Material Handler	Caterpillar	345C MH	Diesel	Caterpillar	C13	2008	371	2453	CHE Diesel		2/27/2015	
Material Handler	Caterpillar	345C MH	Diesel	Caterpillar	C13	2007	371	2812	CHE Diesel		3/24/2015	
Material Handler	Caterpillar	345C MH	Diesel	Caterpillar	C13	2007	371	1317	CHE Diesel		9/23/2013	
Material Handler	Caterpillar	345C MH	Diesel	Caterpillar	C13	2008	371	3019	CHE Diesel		2/27/2015	
Material Handler	Caterpillar	345	Diesel	Caterpillar	C13	2005	371	3628	CHE Diesel		5/9/2016	
Material Handler	Caterpillar	375-L	Diesel	Caterpillar	C15	2009	475	352	CHE Diesel		6/1/2012	
Material Handler	Caterpillar	375-L	Diesel	Caterpillar	C15	2009	450	400	CHE Diesel		8/1/2011	
Material Handler	Caterpillar	385C	Diesel	Caterpillar	C18	2008	390	1337	CHE Diesel		3/23/2015	
Material Handler	Caterpillar	385C	Diesel	Caterpillar	C18	2011	390	1268	CHE Diesel		3/20/2015	
Miscellaneous	Al John		Electric			2008	0	0	CHE Electric			
Miscellaneous	Caterpillar	330DL	Diesel	Caterpillar	C9	2007	268	1619	CHE Diesel		4/1/2011	
Rail Pusher	Rail King	RK320	Diesel	Cummins		2012	194	740	CHE Diesel			
Reach Stacker	Kalmar	TD100G	Diesel	Cummins	QSL9 250	2013	250		CHE Diesel			
Reach Stacker	CVS Ferrari	TF500-4	Diesel	Cummins	QSG12	2018	449	1197	CHE Diesel			
Rub-trd Gantry Crane	Sumitomo	RTG62 / 22.555 ,	Diesel	Cummins	QSX15G	2014	750	3428	CHE Diesel			
Rub-trd Gantry Crane	Sumitomo	RTG62 / 22.555 ,	Diesel	Cummins	QSX15G	2014	750	4442	CHE Diesel		1/1/2016	
Rub-trd Gantry Crane	Noell	RTG62 / 22.555 ,	Diesel	Cummins	KTA 19-G2	2013	600	3575	CHE Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model		Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Rub-trd Gantry Crane	Noell	RTG62 / 22.555 ,	Diesel	Cummins	KTA 19-G2		2013	600	4935	CHE Diesel			
Rub-trd Gantry Crane	Noell	RTG62 / 22.555 ,	Diesel	Cummins	KTA 19-G2		2013	600	5615	CHE Diesel			
Rub-trd Gantry Crane	Noell	RTG62 / 22.555 ,	Diesel	Cummins	KTA 19-G2		2013	600	5065	CHE Diesel			
Rub-trd Gantry Crane	Noell	RTG62 / 22.555 ,	Diesel	Cummins	KTA 19-G2		2013	600	3443	CHE Diesel			
Rub-trd Gantry Crane	Noell	RTG62 / 22.555 ,	Diesel	Cummins	KTA 19-G2		2013	600	4649	CHE Diesel			
Rub-trd Gantry Crane	Noell	RTG62 / 22.555 ,	Diesel	Cummins	KTA 19-G2		2013	600	5155	CHE Diesel			
Rub-trd Gantry Crane	Noell	RTG62 / 22.555 ,	Diesel	Cummins	KTA 19-G2		2013	600	2482	CHE Diesel			
Rub-trd Gantry Crane	Paceco-Mitsui		Diesel	Cummins	QSX15G		2014	750	4551	CHE Diesel			
Rub-trd Gantry Crane	Noell		Diesel	Caterpillar	C15		2015	624	3664	CHE Diesel			
Rub-trd Gantry Crane	Noell		Diesel	Caterpillar	C15		2015	624	2615	CHE Diesel			
Rub-trd Gantry Crane	Noell		Diesel	Caterpillar	C15		2015	624	3383	CHE Diesel			
Rub-trd Gantry Crane	Noell		Diesel	Caterpillar	C15		2015	624	1709	CHE Diesel			
Rub-trd Gantry Crane	Paceco-Mitsui		Diesel	Cummins	C15X		2020	750	222	CHE Diesel			
Rub-trd Gantry Crane	Paceco-Mitsui		Diesel	Cummins	C15X		2020	750	350	CHE Diesel			
Rub-trd Gantry Crane	Paceco-Mitsui		Diesel	Cummins	C15X		2020	750	280	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	NTA855		2012	550	2628	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	QSX-G14		2013	627	2307	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	QSX-G14		2013	627	2449	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	QSZ15		2011	410	2202	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	NTA855		2012	550	2148	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	QSZ15		2011	410	2319	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	NTA855		2012	550	2345	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	NTA855		2012	550	2420	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	NTA855		2012	550	2741	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	NTA855		2012	550	2623	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	QSZ15		2011	410	2836	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	NTA855		2012	550	2551	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	NTA855		2012	550	2594	CHE Diesel			
Rub-trd Gantry Crane	Mitsui/Paceco	RT-4020-8-I-5	Diesel	Cummins	NTA855		2012	550	2576	CHE Diesel			
Rub-trd Gantry Crane	ZPMC	RTG	Diesel	Caterpillar		3456	2003	612	2613	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	ZPMC	RTG	Diesel	Caterpillar		3456	2003	612	2772	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	ZPMC	RTG	Diesel	Caterpillar		3456	2003	612	1812	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	ZPMC	RTG	Diesel	Caterpillar		3456	2003	612	2433	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	ZPMC	RTG	Diesel	Caterpillar		3456	2003	612	1599	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	ZPMC	RTG	Diesel	Caterpillar		3456	2003	612	1949	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	ZPMC	RTG	Diesel	Caterpillar		3456	2003	612	2543	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	ZPMC	RTG	Diesel	Caterpillar		3456	2003	612	2225	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	Paceco	RTG	Diesel	Deutz	8M1015C		2004	454	2545	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	Paceco	RTG	Diesel	Deutz	8M1015C		2004	454	1933	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	ZPMC	RTG	Diesel	Cummins	QSX15-G7		2005	685	1139	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	ZPMC	RTG	Diesel	Cummins	QSX15-G7		2005	685	209	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	ZPMC	RTG	Diesel	Cummins	QSX15-G7		2005	685	67	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	ZPMC	RTG	Diesel	Cummins	QSX15-G7		2005	685	2778	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	ZPMC	RTG	Diesel	Cummins	QSX15-G7		2005	685	2574	CHE Diesel	12/1/2012		
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7		2002	680	310	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7		2004	680	2557	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7		2004	680	2488	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7		2004	680	2731	CHE Diesel		1/23/2013	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7		2005	680	2556	CHE Diesel		1/31/2013	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7		2004	680	3189	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7		2004	680	2713	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7		2005	680	2562	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7		2004	680	2845	CHE Diesel		10/1/2014	

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7	2004	680	2865	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7	2004	680	3085	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7	2004	680	2374	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7	2004	680	2125	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7	2006	680	2080	CHE Diesel		2/26/2013	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7	2005	680	2471	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7	2004	680	3078	CHE Diesel		2/13/2013	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX X 15 T4f	2019	680	2001	CHE Diesel		10/1/2014	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7	2004	680	3311	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7	2004	680	3218	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7	2004	680	2818	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7	2004	680	2876	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Kone	D1703	Diesel	Cummins	QSX 15-G7	2004	680	2982	CHE Diesel		1/1/2020	
Rub-trd Gantry Crane	Mitsui-Paceco	RT4023-8-1	Diesel	Caterpillar	C-15	2013	779	2104	CHE Diesel			
Rub-trd Gantry Crane	Mitsui-Paceco	RT4023-8-1	Diesel	Caterpillar	C-15	2013	779	2622	CHE Diesel			
Rub-trd Gantry Crane	Mitsui-Paceco	RT4023-8-1	Diesel	Caterpillar	C-15	2013	779	2770	CHE Diesel			
Rub-trd Gantry Crane	ZMPC	RC40.6/56	Diesel	Caterpillar	3456ATAAC	2005	612	390	CHE Diesel		1/1/2015	
Rub-trd Gantry Crane	Mitsui-Paceco	RT4023-8-1	Diesel	Caterpillar	C-15	2013	779	2724	CHE Diesel			
Rub-trd Gantry Crane	Mitsui-Paceco	RT4023-8-1	Diesel	Caterpillar	C-15	2013	779	2163	CHE Diesel			
Rub-trd Gantry Crane	Mitsui-Paceco	RT4023-8-1	Diesel	Caterpillar	C-15	2013	779	1654	CHE Diesel			
Rub-trd Gantry Crane	Mitsui-Paceco	RT4023-8-1	Diesel	Caterpillar	C-15	2013	779	1781	CHE Diesel			
Rub-trd Gantry Crane	Mitsui-Paceco	RT4023-8-1	Diesel	Caterpillar	C-15	2013	779	1869	CHE Diesel			
Rub-trd Gantry Crane	Mitsui-Paceco	RT4023-8-1	Diesel	Caterpillar	C-15	2013	779	2030	CHE Diesel			
Rub-trd Gantry Crane	Mitsui-Paceco	RT4023-8-1	Diesel	Caterpillar	C-15	2013	779	2226	CHE Diesel			
Rub-trd Gantry Crane	Mitsui-Paceco	RT4023-8-1	Diesel	Caterpillar	C-15	2013	779	2988	CHE Diesel			
Rub-trd Gantry Crane	Mi Jack	1000RC	Diesel	Detroit	DDEC	2011	320	49	CHE Diesel			
Rub-trd Gantry Crane	Mi Jack	1200R	Diesel	Cummins	QSL9	2011	320	2237	CHE Diesel			
Rub-trd Gantry Crane	Mi Jack	1200R	Diesel	Detroit	DDEC	2011	320	2090	CHE Diesel			
Rub-trd Gantry Crane	Mi Jack	1200R	Diesel	Cummins	QSL9	2011	320	1182	CHE Diesel			
Rub-trd Gantry Crane	Mi Jack	1200R	Diesel	Cummins	QSL9	2011	320	1947	CHE Diesel			
Rub-trd Gantry Crane	Mi Jack	1200R	Diesel	Cummins	QSL9 333	2015	320	2826	CHE Diesel			
Side pick	Kalmar		Diesel	Cummins	QSL9 275	2017	275	250	CHE Diesel			
Side pick	Fantuzzi	FDC25K7	Diesel	Cummins	QSL9 275	2017	275	1738	CHE Diesel			
Side pick	Fantuzzi	FDC25K7	Diesel	Cummins	QSL	2016	275	56	CHE Diesel			
Side pick	Terex	FDC25K7	Diesel	Cummins	QSL	2016	275	585	CHE Diesel			
Side pick	Terex	FDC25K7	Diesel	Cummins	QSL	2016	275		CHE Diesel			
Side pick	Terex	FDC25K7	Diesel	Cummins	QSL	2016	275	316	CHE Diesel			
Side pick	Taylor	TEC 155H	Diesel	Cummins	5.9L B series	2000	152	111	CHE Diesel		7/11/2014	
Side pick	Taylor	TEC 155H	Diesel	Cummins	5.9L B series	2000	152	197	CHE Diesel		7/11/2014	
Side pick			Diesel			2015		393	CHE Diesel			
Side pick			Diesel			2015		393	CHE Diesel			
Side pick			Diesel			2015		393	CHE Diesel			
Side pick	Fantuzzi	FDC25K5	Diesel	Caterpillar	C 7.1 Tier 4F	2014	250	35	CHE Diesel			
Side pick	Fantuzzi	FDC25K5	Diesel	Cummins	C 7.1 Tier 4F	2014	240	1072	CHE Diesel			
Side pick	Fantuzzi	FDC25K5	Diesel	Caterpillar	C 7.1 Tier 4F	2014	250	401	CHE Diesel			
Skid Steer Loader	Caterpillar	252B	Diesel	Mitsubishi	3044C	2007	70	624	CHE Diesel			
Skid Steer Loader	Caterpillar	252B	Diesel	Mitsubishi	3044C	2007	70	655	CHE Diesel			
Skid Steer Loader	Caterpillar	252B	Diesel	Caterpillar	S4S-DTDPB	2012	56	567	CHE Diesel			
Skid Steer Loader	Bobcat	853	Diesel	bobcat	KUBTA	1994	75	48	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	5853	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	2946	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	5440	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	5564	CHE Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	5735	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	4265	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	5399	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	3981	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	4926	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	Volvo	TAD1172VE	2015	425	5300	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	Volvo	TAD1172VE	2015	425	3638	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	4357	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	Volvo	TAD1172VE	2015	425	4909	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	Volvo	TAD1172VE	2015	425	4902	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	Volvo	TAD1172VE	2015	425	5329	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	Volvo	TAD1172VE	2015	425	3727	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	Volvo	TAD1172VE	2015	425	5647	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	Volvo	TAD1172VE	2015	425	5972	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	Volvo	TAD1172VE	2015	425	5742	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	Volvo	TAD1172VE	2015	425	5764	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	Volvo	TAD1172VE	2015	425	5423	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	5558	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	5240	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	5425	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	2122	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	5148	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	5270	CHE Diesel			
Straddle Carriers	Kalmar	ESC350WA	Diesel	AGCO	SISU POWER 98ATI	2013	425	3753	CHE Diesel			
Sweeper	Elgin	Crosswind	Gasoline			2005	205		CHE Gasoline			
Sweeper	Elgin	Crosswind	Gasoline			2015	205		CHE Gasoline			
Sweeper	Tymco	DST-6	Gasoline			2018			CHE Gasoline			
Sweeper	Schwarze		Diesel	John Deere		2019	200	887	CHE Diesel			
Sweeper	Elgin	Crosswind	Diesel		ISB 6.7	2013	200	105	CHE Diesel			
Sweeper	Caterpillar	IT14G	Diesel	Caterpillar	3054 DIT	2000	96	32	CHE Diesel		9/19/2013	
Sweeper	Caterpillar	DL200TC-5	Diesel	Doosan	1204F-E44TAN	2016	173	292	CHE Diesel			
Sweeper	Caterpillar	DL200TC-5	Diesel	Doosan	1204F-E44TAN	2016	173	272	CHE Diesel			
Sweeper	Tymco	500X	Diesel	Isuzu	44K1TC	2018	210	292	CHE Diesel			
Sweeper	Tymco	DST-6	Diesel	Isuzu	6HKIX	2008	260	992	CHE Diesel			
Telehandler	JCB	509-42 F	Diesel	JCB	444TA4I8IL1	2013	74	164	CHE Diesel			
Telehandler	JCB	509-42 F	Diesel	JCB	444TA4I8IL1	2014	74	129	CHE Diesel			
Telehandler	JCB	509-42 F	Diesel	JCB	444TA4I8IL1	2014	74	123	CHE Diesel			
Telehandler	JCB	509-42 F	Diesel	JCB	444TA4I8IL1	2018	74	69	CHE Diesel			
Telehandler	JCB	509-42 F	Diesel	JCB	444TA4I8IL1	2019	74	129	CHE Diesel			
Telehandler	JCB	509-42 F	Diesel	JCB	444TA4I8IL1	2019	74	157	CHE Diesel			
Top handler	Taylor	ZLC	Electric					897	CHE Electric			
Top handler	Taylor	ZLC	Electric					897	CHE Electric			
Top handler	Taylor	TXC-976	Diesel			2015	330	1221	CHE Diesel			
Top handler	Taylor	TXC-976	Diesel			2015	330	458	CHE Diesel			
Top handler	Taylor	TXC-976	Diesel	Volvo	TAD1360VE	2014	335	0	CHE Diesel			
Top handler	Taylor	TXC-976	Diesel			2015	330	2709	CHE Diesel			
Top handler	Taylor	TXC-976	Diesel	Volvo	TAD1360VE	2012	335	2263	CHE Diesel			
Top handler	Taylor	TXC-976	Diesel	Volvo	TAD1360VE	2012	335	1244	CHE Diesel			
Top handler	Taylor	TXC-976	Diesel	Volvo	TAD1360VE	2012	335	2376	CHE Diesel			
Top handler	Taylor	TXLC-976	Diesel	Volvo	TAD1360VE	2012	335	2581	CHE Diesel			
Top handler	Taylor	TXLC-976	Diesel	Volvo	TAD1360VE	2012	335	2144	CHE Diesel			
Top handler	Taylor	TXLC-976	Diesel	Volvo	TAD1360VE	2012	335	2129	CHE Diesel			
Top handler	Taylor	TXLC-976	Diesel	Volvo	TAD1360VE	2012	335	2735	CHE Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Top handler	Taylor	TXLC-976	Diesel	Volvo	TAD1360VE	2012	335	2949	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2014	350	1929	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2014	350	2143	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2014	350	2182	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2014	350	2540	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2014	350	2647	CHE Diesel			
Top handler	Taylor	TXLC-976	Diesel	Volvo	L-TAD1360VE	2014	350	3061	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2014	350	2093	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2014	350	2043	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2014	350	2505	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2014	350	2265	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2015	350	1870	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2015	350	2039	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2015	350	2492	CHE Diesel			
Top handler	Taylor	TXLC-976	Diesel	Volvo	TAD1360VE	2015	335	3314	CHE Diesel			
Top handler	Taylor	TXLC-976	Diesel	Volvo	TAD1360VE	2015	335	3296	CHE Diesel			
Top handler	Taylor	TXLC-976	Diesel	Volvo	TAD1360VE	2015	335	3112	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	4596	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	3122	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	3541	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	3725	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	1968	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	3961	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	4058	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	4342	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	4003	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	3788	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	3884	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	4472	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	4680	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	3539	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	3179	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	4205	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	3699	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	3498	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	3173	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	3319	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	2424	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	1248	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	1998	CHE Diesel			
Top handler	Taylor	XLC-976	Diesel	Volvo	TAD1371VE	2018	389	1964	CHE Diesel			
Top handler	Fantuzzi	FDS500	Diesel	Cummins	QSM11	2005	330	266	CHE Diesel		1/1/2012	
Top handler	Fantuzzi	FDS500	Diesel	Cummins	QSM11	2005	330	0	CHE Diesel		1/1/2012	
Top handler	Fantuzzi	FDS500	Diesel	Cummins	QSM11	2005	330	141	CHE Diesel		1/1/2012	
Top handler	Fantuzzi	FDS500	Diesel	Cummins	QSM11	2005	330	33	CHE Diesel		1/1/2012	
Top handler	Fantuzzi	FDS500	Diesel	Cummins	QSM11	2005	330	62	CHE Diesel		1/1/2012	
Top handler	Fantuzzi	FDS500	Diesel	Cummins	QSM11	2005	330	313	CHE Diesel		1/1/2012	
Top handler	Fantuzzi	FDS500	Diesel	Cummins	QSM11	2005	330	321	CHE Diesel		1/1/2012	
Top handler	Fantuzzi	FDS500	Diesel	Cummins	QSM11	2005	330	333	CHE Diesel			
Top handler	Fantuzzi	FDS500	Diesel	Cummins	QSM11	2005	330	283	CHE Diesel			
Top handler	Taylor	TH976	Diesel	Cummins	QSM11	2008	335	1404	CHE Diesel		1/1/2010	
Top handler	Taylor	TH976	Diesel	Cummins	QSM11	2008	335	1652	CHE Diesel		2/1/2010	
Top handler	Taylor	TH976	Diesel	Cummins	QSM11	2008	335	2143	CHE Diesel		1/1/2010	

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Top handler	Taylor	TH976	Diesel	Cummins	QSM11	2008	335	1814	CHE Diesel		3/1/2010	
Top handler	Taylor	TH976	Diesel	Cummins	QSM11	2008	335	2046	CHE Diesel		1/1/2012	
Top handler	Taylor	TH976	Diesel	Cummins	QSM11	2008	335	2378	CHE Diesel		3/1/2010	
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360V	2011	348	2294	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360V	2011	348	2292	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2012	343	2760	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2012	343	1945	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2013	343	2851	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2013	343	2747	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2013	343	2498	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2013	343	2444	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2013	343	2547	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2013	343	2287	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2013	343	2891	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2013	343	2509	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2015	343	2589	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2015	343	2446	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2015	343	2614	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2015	343	2713	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2015	343	3072	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2015	343	2981	CHE Diesel			
Top handler	Taylor	TXCL976	Diesel	Volvo	TAD1360VE	2015	343	2959	CHE Diesel			
Top handler	Taylor	THDC-975	Diesel	Cummins	QSL	2016	350	931	CHE Diesel			
Top handler	Taylor	FDC550G5	Diesel	Cummins	QSG12	2016	400	2164	CHE Diesel			
Top handler	Fantuzzi	FDC500G5	Diesel	Cummins		2016	350	3616	CHE Diesel			
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2002	250	1499	CHE Diesel		12/1/2012	
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2006	260	1628	CHE Diesel		12/1/2012	
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2006	260	1639	CHE Diesel		12/1/2012	
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2006	260	1460	CHE Diesel		12/1/2012	
Top handler	Taylor	THDC-975	Diesel	Cummins	QSM11	2006	260	2066	CHE Diesel		12/1/2012	
Top handler	Taylor	THDC-975	Diesel	Cummins	QSM11	2006	260	1795	CHE Diesel		12/1/2012	
Top handler	Taylor	THDC-975	Diesel	Cummins	QSM11	2007	260	1587	CHE Diesel		1/1/2009	
Top handler	Taylor	THDC-975	Diesel	Cummins	QSM11	2007	260	2038	CHE Diesel		1/1/2009	
Top handler	Taylor	THDC-975	Diesel	Cummins	QSM11	2007	260	1961	CHE Diesel		1/1/2009	
Top handler	Taylor	THDC-975	Diesel	Cummins	QSM11	2007	260	1197	CHE Diesel		1/1/2009	
Top handler	Taylor	THDC-975	Diesel	Cummins	QSM11	2007	260	1291	CHE Diesel		1/1/2009	
Top handler	Taylor	THDC-975	Diesel	Cummins	QSM11	2007	260	988	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	2750	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	2322	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	2725	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	3013	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	3177	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	2201	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	2844	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	2959	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	1849	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	2816	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	2468	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	2412	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	2800	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	2768	CHE Diesel		1/1/2009	
Top handler	Taylor	TXC-976	Diesel	Cummins	QSM11	2008	260	3287	CHE Diesel		1/1/2009	
Top handler	Taylor	TXLC976	Diesel	Cummins	QSM11	2011	335	2553	CHE Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Top handler	Taylor	TXLC976	Diesel	Cummins	QSM11	2011	335	2406	CHE Diesel			
Top handler	Taylor	TXLC976	Diesel	Cummins	QSM11	2011	335	1487	CHE Diesel			
Top handler	Hyster	H-1150-HDCH	Diesel	Cummins	QSL 9L	2014	370	2326	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2017	363	1506	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2017	363	2411	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2017	363	2102	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2017	363	1868	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2017	363	2468	CHE Diesel			
Top handler	Hyster	H1150HD-CH	Diesel	Cummins	QSL 9L	2017	363	1738	CHE Diesel			
Top handler	Taylor	XLC 976E	Diesel	Volvo	12.8 L	2017	388	1605	CHE Diesel			
Top handler	Taylor	XLC 976E	Diesel	Volvo	12.8 L	2017	388	1951	CHE Diesel			
Top handler	Taylor	TEC-950L	Diesel	Cummins	M11	1999	250	2169	CHE Diesel		1/1/2012	
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2005	330	2169	CHE Diesel		1/1/2012	
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2005	330	2169	CHE Diesel		1/1/2012	
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2005	330	2169	CHE Diesel		1/1/2012	
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2005	330	2169	CHE Diesel		1/1/2012	
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2006	335	2169	CHE Diesel		1/1/2012	
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2006	335	2169	CHE Diesel		1/1/2012	
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2006	335	2169	CHE Diesel		1/1/2012	
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2006	335	2169	CHE Diesel		1/1/2012	
Top handler	Taylor	THDC-975	Diesel	Cummins		2012	348	2169	CHE Diesel			
Top handler	Taylor	THDC-975	Diesel	Cummins		2012	348	2169	CHE Diesel			
Top handler	Taylor	THDC-975	Diesel	Cummins		2012	348	2169	CHE Diesel			
Top handler	Taylor	THDC-975	Diesel	Cummins		2012	348	2169	CHE Diesel			
Top handler	Taylor	THDC-975	Diesel	Cummins		2012	348	2169	CHE Diesel			
Top handler	Taylor		Diesel	Volvo		2012	335	2169	CHE Diesel			
Top handler	Taylor		Diesel	Volvo		2012	335	2169	CHE Diesel			
Top handler	Taylor		Diesel	Volvo		2013	335	2169	CHE Diesel			
Top handler	Taylor		Diesel	Volvo		2013	335	2169	CHE Diesel			
Top handler	Taylor		Diesel	Volvo		2013	335	2169	CHE Diesel			
Top handler	Taylor		Diesel	Volvo		2013	335	2169	CHE Diesel			
Top handler	Taylor		Diesel	Volvo		2013	335	2169	CHE Diesel			
Top handler	Taylor		Diesel	Volvo		2014	335	2169	CHE Diesel			
Top handler	Taylor		Diesel	Volvo		2014	335	2169	CHE Diesel			
Top handler	Hyster		Diesel	Cummins	QSL9	2015	350	2169	CHE Diesel			
Top handler	Hyster		Diesel	Cummins	QSL9	2014	350	2169	CHE Diesel			
Top handler	Hyster		Diesel	Cummins	QSL9	2014	350	2169	CHE Diesel			
Top handler	Hyster		Diesel	Cummins	QSL9	2014	350	2169	CHE Diesel			
Top handler	Hyster		Diesel	Cummins	QSL9	2014	350	2169	CHE Diesel			
Top handler	Hyster		Diesel	Cummins	QSL9	2014	350	2169	CHE Diesel			
Top handler	Hyster		Diesel	Cummins	QSL9	2014	350	2169	CHE Diesel			
Top handler	Hyster		Diesel	Cummins	QSL9	2014	350	2169	CHE Diesel			
Top handler	Hyster		Diesel	Cummins	QSL9	2014	350	2169	CHE Diesel			
Top handler	Hyster	H1150HD	Diesel	Cummins	QSL9	2014	350	2169	CHE Diesel			
Top handler	Hyster	H1150HD	Diesel	Cummins	QSL9	2014	350	2169	CHE Diesel			
Top handler			Diesel			2015	325	2169	CHE Diesel			
Top handler			Diesel			2015	325	2169	CHE Diesel			
Top handler			Diesel			2015	325	2169	CHE Diesel			
Top handler			Diesel			2015	325	2169	CHE Diesel			
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2006	335	2169	CHE Diesel		1/1/2012	
Top handler	Taylor	THDC-955	Diesel	Cummins	QSM11	2006	335	2169	CHE Diesel		1/1/2012	
Top handler	TXLC976	2016	Diesel	Volvo	TAD13	2015	325	2169	CHE Diesel			
Top handler	TXLC976	2016	Diesel	Volvo	TAD13	2015	325	2169	CHE Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model		Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Top handler	Taylor	TEC-950L	Diesel	Cummins	QSM-11		2011	330	3	CHE Diesel		1/1/2012	
Top handler	Fantuzzi	FDC500G5	Diesel	Cummins	QSM11		2003	330	1784	CHE Diesel		1/1/2011	
Top handler	Fantuzzi	FDC500G5	Diesel	Cummins	QSM11		2004	330	395	CHE Diesel		1/1/2011	
Top handler	Fantuzzi	FDC500G5	Diesel	Cummins	QSM11		2004	330	374	CHE Diesel		1/1/2011	
Top handler	Fantuzzi	FDC500G5	Diesel	Cummins	QSM11		2003	330	441	CHE Diesel		1/1/2011	
Top handler	Fantuzzi	FDC500G5	Diesel	Cummins	QSM11		2004	330	228	CHE Diesel		1/1/2011	
Top handler	Fantuzzi	FDC500G5	Diesel	Cummins	QSM11		2004	330	623	CHE Diesel		1/1/2013	
Top handler	Fantuzzi	FDC500G5	Diesel	Cummins	QSM11		2004	330	760	CHE Diesel		1/1/2011	
Top handler	Fantuzzi	FDC500G5	Diesel	Cummins	QSM11		2004	330	619	CHE Diesel		1/1/2011	
Top handler	Taylor	TXLC976	Diesel	Volvo T4i	TAD1360WE		2012	256	1595	CHE Diesel			
Top handler	Taylor	TXLC976	Diesel	Volvo T4i	TAD1360WE		2012	256	1462	CHE Diesel			
Top handler	Taylor	XLC976	Diesel	Volvo T4F	TAD1375VE		2016	388	2887	CHE Diesel			
Top handler	Taylor	XLC976	Diesel	Volvo T4F	TAD1375VE		2016	388	3222	CHE Diesel			
Top handler	Taylor	XLC976	Diesel	Volvo T4F	TAD1375VE		2016	388	3256	CHE Diesel			
Top handler	Taylor	XLC976	Diesel	Volvo T4F	TAD1375VE		2016	388	3098	CHE Diesel			
Top handler	Taylor	XLC976	Diesel	Volvo T4F	TAD1375VE		2016	388	3471	CHE Diesel			
Top handler	Taylor	XLC976	Diesel	Volvo T4F	TAD1375VE		2016	388	2609	CHE Diesel			
Top handler	Taylor	XLC976	Diesel	Volvo T4F	TAD1375VE		2016	388	3030	CHE Diesel			
Top handler	Taylor	XLC976	Diesel	Volvo T4F	TAD1375VE		2016	388	2988	CHE Diesel			
Top handler	Taylor	XLC976	Diesel	Volvo T4F	TAD1375VE		2016	388	3102	CHE Diesel			
Top handler	Taylor	XLC976	Diesel	Volvo T4F	TAD1375VE		2016	388	2558	CHE Diesel			
Top handler	Taylor	XLC976	Diesel	Volvo T4F	TAD1375VE		2016	388	1886	CHE Diesel			
Top handler	Taylor	XLC976	Diesel	Volvo T4F	TAD1375VE		2016	388	1873	CHE Diesel			
Top handler	Linde	C400	Diesel	Cummins	QSM11		2006	325	142	CHE Diesel		8/1/2011	
Truck	Ford	FT001	LPG	Ford	330EFV		1973		148	CHE Propane			
Truck	Freightliner		Diesel	Cummins		5.9	2005	185	132	CHE On Road Diesel		1/1/2012	
Truck	Freightliner		Diesel	Cummins		5.9	2005	185	304	CHE On Road Diesel		1/1/2012	
Truck	Freightliner		Diesel	Cummins		5.9	2005	185	131	CHE On Road Diesel		1/1/2012	
Truck	Peterbuilt		Diesel	Cummins	ISC		2006	240	898	CHE On Road Diesel			
Truck	Ford	F750	Diesel	Cummins	ISC		2008	240	990	CHE On Road Diesel			
Truck	Peterbuilt		Diesel	Cummins	ISC		2006	240	821	CHE On Road Diesel			
Truck			Diesel				1988		55	CHE Diesel			
Truck			Diesel				1996		1017	CHE Diesel			
Truck	Sterling		Diesel	Caterpillar	C7		2005	250	463	CHE On Road Diesel		11/13/2013	
Truck	Sterling		Diesel	Caterpillar	C7		2005	250	513	CHE On Road Diesel		11/7/2013	
Truck	Sterling		Diesel	Cummins	ISC		2007	330	672	CHE On Road Diesel			
Truck	Sterling	LT8500	Diesel	Cummins	ISC		2008	250	923	CHE On Road Diesel			
Truck	Peterbilt	335	Diesel	Cummins	ISC		2008	250	623	CHE On Road Diesel			
Truck	Freightliner		Diesel	Cummins	ISL		2013	350	724	CHE On Road Diesel			
Truck	Terex	40T33-07	Diesel	Caterpillar	C15		2007	540	1364	CHE Diesel			
Truck	Terex	40T 33-07	Diesel	Caterpillar	C-15		2009	540	265	CHE Diesel			
Truck	Terex	40T 33-07	Diesel	Cummins	QSK19		2006	525	1258	CHE Diesel			
Truck	Terex	40T 33-07	Diesel	Cummins	QSK19		2007	525	478	CHE Diesel			
Truck	Terex	40T 33-07	Diesel	Cummins	QSK19		2007	525	765	CHE Diesel			
Truck	Terex	T40K-800	Diesel				2012	390	141	CHE Diesel			
Truck	Terex	TR45	Diesel	Cummins	QSK19		2009	525	1119	CHE Diesel			
Truck	Caterpillar	TA30	Diesel	Cummins	QSM11		2006	350	250	CHE Diesel			
Truck	Terex	TA400	Diesel	Scania			2014	444	2763	CHE Diesel			
Yard tractor	BYD	8Y	Electric							CHE Electric			
Yard tractor	BYD	8Y	Electric							CHE Electric			
Yard tractor	BYD	8Y	Electric							CHE Electric			
Yard tractor	BYD	8Y	Electric							CHE Electric			
Yard tractor	BYD	8Y	Electric							CHE Electric			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Capacity		LNG	Cummins	ISLG-LNG 8.9L	2018	250	790	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	577	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	835	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	570	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	567	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	150	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	1088	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	446	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	717	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	324	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	945	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	1063	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	900	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	802	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	784	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	820	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	914	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	746	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	921	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	860	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	717	CHE On Road LNG			
Yard tractor	Capacity	TJ9000	LNG	Cummins	ISLG-LNG 8.9L	2018	250	1084	CHE On Road LNG			
Yard tractor	Magnum	TT120	LPG	Cummins	LPG 195	2000	174	194	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	961	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	508	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1018	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	146	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1277	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1323	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	3	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	153	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1301	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	968	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	0	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1667	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	0	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1147	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1332	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1074	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1335	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	182	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1506	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1051	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	0	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1223	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1030	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1549	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1210	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	644	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1506	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	0	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1162	CHE Propane			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1402	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1187	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	208	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	922	CHE Propane			
Yard tractor	Kalmar	PT122	LPG	Cummins	LPG 195	2004	195	1640	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1423	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1469	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1548	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1848	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1158	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1706	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	834	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1359	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	943	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1174	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1394	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1562	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	371	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1097	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	901	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1300	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1041	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1333	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1564	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	982	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1526	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1708	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG	Ford	6.8L V10	2011	231	1672	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1334	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1949	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	2019	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1315	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1938	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1723	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1335	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1602	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1550	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1811	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1419	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1625	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1580	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1922	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1706	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1634	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1909	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1929	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	2213	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	306	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1420	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1679	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1299	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1904	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1584	CHE Propane			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Capacity	TJ9000	LPG			2007	195	1817	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1610	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1152	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1617	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	2296	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	50	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1400	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1628	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1821	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1685	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1332	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1924	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1442	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	2043	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	2083	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1396	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	0	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1801	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	9	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	981	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1817	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1087	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1831	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	5467	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1517	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1820	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1982	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1982	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1815	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	2392	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1633	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	1705	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	2004	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2007	195	2220	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1765	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1865	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1861	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	2054	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	2221	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	726	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1973	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1241	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	2157	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1838	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1233	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	2235	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	31	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1775	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1078	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1873	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1525	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	882	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1767	CHE Propane			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Capacity	TJ9000	LPG			2008	195	1826	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	2075	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1843	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1846	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	0	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1517	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	2072	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1939	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1812	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1854	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	2107	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1903	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1789	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1802	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	260	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1959	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1738	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1816	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	2191	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	1879	CHE Propane			
Yard tractor	Capacity	TJ9000	LPG			2008	195	2060	CHE Propane			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	3593	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2860	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2097	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	3174	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2399	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	3834	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2188	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2727	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	408	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2727	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	3170	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2782	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2041	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2977	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2198	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2442	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2634	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	3135	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	3274	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	3238	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2617	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	3634	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2084	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2646	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2206	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	1213	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2847	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	1281	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	1815	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	1976	CHE On Road Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	1537	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2171	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	1824	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	1668	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	1974	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2137	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2042	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	921	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2049	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	1828	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	105	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2223	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	167	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	1118	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	649	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	489	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	1013	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2296	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	1834	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2808	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2763	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	586	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2091	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2273	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	1826	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2497	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2314	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB240	2007	240	2012	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	1430	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	2322	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	2476	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	1863	CHE On Road Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	2053	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	2150	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	1925	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	1863	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	2590	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	1528	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	2704	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	1984	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	2343	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	1795	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	2186	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	2346	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	400	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	2328	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	1535	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	1890	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	1810	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	2897	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB	2008	240	2189	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2194	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	1840	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	1229	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2444	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	665	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2355	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	1453	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2597	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2545	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	1613	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	1048	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2233	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	1838	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2294	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2241	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2253	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	1358	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	1656	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2303	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	1824	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	656	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2437	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2247	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	1641	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2686	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2196	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2510	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	1865	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	2223	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2008	240	545	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2012	220	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2012	220	2277	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2012	220	2670	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2012	220	2631	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2012	220	2303	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2012	220	3178	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2012	220	2803	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2012	220	2723	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2012	220	299	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2012	220	2547	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2011	220	1047	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2011	220	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2011	220	2556	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2011	220	1972	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2011	220	804	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2011	220	2457	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2011	220	1705	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	1192	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2442	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2277	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2287	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2298	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	229	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2635	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2845	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2630	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	1879	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2500	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2513	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2409	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	1356	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2715	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	1913	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	1430	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2651	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2868	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2363	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	1942	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	173	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2386	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2501	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	1697	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	4651	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	1852	CHE On Road Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2327	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2469	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	3341	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2687	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2013	220	2671	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2837	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2319	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2502	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2845	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2616	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	3171	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2461	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2702	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2696	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2585	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2327	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2713	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2999	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	3068	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	3102	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	1830	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2807	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2559	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2312	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	3587	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2523	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2790	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	1760	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2526	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2348	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2293	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	1888	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2627	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	3426	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2079	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	3412	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	221	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	1792	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2551	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2058	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2469	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2014	220	2641	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	2234	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB	2015	225	671	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	941	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1057	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1860	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1180	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	682	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	510	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1230	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1190	CHE On Road Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	909	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	339	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	38	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1402	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1507	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1038	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1199	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1960	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1700	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	205	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1279	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	723	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	776	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	0	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	913	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1751	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	475	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1210	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1005	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1435	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240		CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1925	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	962	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	807	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1569	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	932	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	30	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	964	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1633	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	844	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1907	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1291	CHE On Road Diesel			
Yard tractor	Ottawa	C-50	Diesel	Cummins	ISB07 240	2008	240	1765	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1821	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1239	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1564	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1270	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1346	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1884	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1445	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	928	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1371	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1521	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	2015	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1690	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1928	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1743	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1565	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	2062	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1872	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1743	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1755	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	2101	CHE On Road Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1976	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	2436	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1520	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1786	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	2131	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	2172	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1910	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	2057	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1770	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	2149	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	2340	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	2154	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1359	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1794	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB6.7	2012	240	1482	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	1947	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2848	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2114	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2054	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2257	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2134	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2176	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2099	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2469	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2398	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2084	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2323	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2026	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2140	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2028	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2427	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2152	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	1977	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2042	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	1986	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2411	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	1783	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2363	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	1898	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2656	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2487	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	539	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2167	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2525	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	1678	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2442	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	1763	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2349	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	2323	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	1708	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel	Cummins	ISB6.7	2014	240	1755	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel			2015		5234	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel			2015		976	CHE On Road Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Ottawa		Diesel			2015		1562	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel			2015		1472	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel			2015		1443	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel			2015		968	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel			2015		1635	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel			2015		1142	CHE On Road Diesel			
Yard tractor	Ottawa		Diesel			2015		1020	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	2166	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	691	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210		CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1463	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1622	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1463	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1132	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1518	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1365	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1446	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1533	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1468	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1153	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1512	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1597	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1298	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1356	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	633	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1642	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1528	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	2173	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1275	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	2194	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1393	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210		CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1929	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1366	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210		CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210		CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1093	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	2163	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	91	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1218	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	850	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1109	CHE On Road Diesel			
Yard tractor	Capacity		Diesel	Cummins	ISB 07	2008	210	1905	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB-200	2007	200	0	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB-07	2007	200	183	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB-07	2007	200	243	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB-07	2007	200	246	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB-07	2007	200	237	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB-07	2007	200	349	CHE On Road Diesel			
Yard tractor	Ottowa	4x2	Diesel	Cummins	ISB-6.7	2015	200	276	CHE On Road Diesel			
Yard tractor	Ottowa	4x2	Diesel	Cummins	ISB-6.7	2015	200	320	CHE On Road Diesel			
Yard tractor	Ottowa	T2-4x2	Diesel	Cummins	QSB-6.7	2015	173	39	CHE Diesel			
Yard tractor	Ottowa	T2-4x2	Diesel	Cummins	QSB-6.7	2015	173	260	CHE Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1617	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1081	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1203	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1440	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	2125	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1595	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1673	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1469	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1729	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	932	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	135	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1693	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1550	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1432	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1521	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1644	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1751	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	2074	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1968	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1474	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1679	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1493	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1770	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1709	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1389	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1796	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1198	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1583	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	2016	CHE Diesel			
Yard tractor	TICO	Pro-spotter	Diesel	Cummins	QSB Tier 4f	2019	158	1922	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel		QSB 6.7	2011	200	1951	CHE Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2008	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottowa	C-50	Diesel	Cummins	ISB6.7	2007	240	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2012	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2016	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	ISB6.7	2014	250	1951	CHE On Road Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2015	250	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Ottawa	4x2	Diesel	Cummins	QSB 6.7	2016	200	1951	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1608	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1855	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1708	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1427	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	492	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1574	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1069	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	2007	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1780	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1932	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1873	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1922	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1242	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1528	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1954	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	14	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1467	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	822	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	2269	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 6.7	2007	220	2067	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 6.7	2007	220	51	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 6.7	2007	220	14	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 6.7	2007	220	1175	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 6.7	2007	220	15	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 6.7	2007	220	38	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 6.7	2007	220	256	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 220	2008	220	1511	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 220	2008	220	1545	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 220	2008	220	2092	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 220	2008	220	1686	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 220	2008	220	1908	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 220	2008	220	2067	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 220	2008	220	2067	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 220	2008	220	1777	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 220	2008	220	2022	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 220	2008	220	1982	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 220	2008	220	1062	CHE On Road Diesel			
Yard tractor	Capacity	TJ7000	Diesel	Cummins	ISB 220	2008	220	600	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 10	2011	240	2079	CHE On Road Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 10	2011	240	1404	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 10	2011	240	3614	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 10	2011	240	1833	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 10	2011	240	1737	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 10	2011	240	1798	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 10	2011	240	1704	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 10	2011	240	1638	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 10	2011	240	1832	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1434	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1687	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1993	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1947	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1817	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1888	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1613	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1696	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1493	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1495	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1268	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1214	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1682	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1603	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1687	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1547	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1941	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1613	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1779	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1322	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB 240	2012	240	1037	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	136	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	892	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	2333	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1047	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1901	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1393	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1053	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	ISB6.7	2013	240	1173	CHE On Road Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1762	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	2072	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1142	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1224	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1941	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1244	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1346	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1903	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1453	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1981	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1335	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1552	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1690	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1175	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	678	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1472	CHE Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	932	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1550	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1753	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1880	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	957	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1901	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1559	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1078	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1934	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1036	CHE Diesel			
Yard tractor	Capacity	TJ9000	Diesel	Cummins	QSB6.7	2015	225	1510	CHE Diesel			
Yard tractor	OTTAWA		Diesel			2007		500	CHE Diesel			
Yard tractor	OTTAWA		Diesel			2007		100	CHE Diesel			
Yard tractor	OTTAWA		Diesel			2011		500	CHE Diesel			
Yard tractor			Diesel			1995	250	2147	CHE Diesel		1/1/2012	
Yard tractor			Diesel			1995	250	1872	CHE Diesel		1/1/2012	
Yard tractor			Diesel			1995	250	1168	CHE Diesel		1/1/2012	
Yard tractor			Diesel			1995	250	1353	CHE Diesel		1/1/2012	
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	1292	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	417	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	737	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	1200	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	1361	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	2373	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	446	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200		CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	1156	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	562	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	2477	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	2117	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	1881	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	541	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	1392	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200		CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	1648	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	491	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	1844	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	392	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2012	200	3348	CHE On Road Diesel			
Yard tractor	Ottawa	4 x 2	Diesel	Cummins	ISB6.7 200	2015	200	279	CHE On Road Diesel			
Yard tractor	Ottawa	4 x 2	Diesel	Cummins	ISB6.7 200	2015	200	1668	CHE On Road Diesel			
Yard tractor	Ottawa	4 x 2	Diesel	Cummins	ISB6.7 200	2015	200	1436	CHE On Road Diesel			
Yard tractor	Ottawa	4 x 2	Diesel	Cummins	ISB6.7 200	2015	200	1853	CHE On Road Diesel			
Yard tractor	Ottawa	4 x 2	Diesel	Cummins	ISB6.7 200	2015	200	2961	CHE On Road Diesel			
Yard tractor	Ottawa	4 x 2	Diesel	Cummins	ISB6.7 200	2015	200	2051	CHE On Road Diesel			
Yard tractor	Ottawa	4 x 2	Diesel	Cummins	ISB6.7 200	2015	200	3040	CHE On Road Diesel			
Yard tractor	Ottawa	4 x 2	Diesel	Cummins	ISB6.7 200	2015	200	2264	CHE On Road Diesel			
Yard tractor	Ottawa	4 x 2	Diesel	Cummins	ISB6.7 200	2015	200	1550	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2019	200	4713	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2019	200	5161	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2019	200	4721	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2019	200	5026	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2020	200	4636	CHE On Road Diesel			

Port Equip Type	Equip Make	Equip Model	EngineType	Engine Make	Engine Model	Engine Year	HP	Annual Hours	Category	DPF level 2	DPF level 3	Blue Cat
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2020	200	2671	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2020	200	5079	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2020	200	2999	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2020	200	3430	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2020	200	4030	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2020	200	3970	CHE On Road Diesel			
Yard tractor	Autocar	ACTT42	Diesel	Cummins	ISB6.7 200	2020	200	3675	CHE On Road Diesel			