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## **Appendix B**

### Air Quality Calculations

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**Appendix B – Air Quality Calculations**

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**Carpinteria Oil & Gas Processing Facilities Decommissioning  
Chevron Pipeline Area**

**OFF-ROAD SOURCES**

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr <sup>1</sup>								Total English Tons							
					NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Excavator (Caterpillar 330)	Diesel	272	2	576	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.233	0.022	0.008	0.006	0.149	69.680	0.004	0.002
Wheeled loader (Caterpillar 966)	Diesel	278	2	720	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.484	0.044	0.016	0.014	0.208	84.029	0.005	0.002
Dozer (Caterpillar D6)	Diesel	215	1	120	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.054	0.005	0.003	0.003	0.041	6.441	0.000	0.000
Backhoe	Diesel	104	1	720	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.088	0.009	0.005	0.004	0.108	16.101	0.001	0.000
Grader (Caterpillar 120M3)	Diesel	145	1	240	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.074	0.008	0.004	0.004	0.055	8.299	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	80	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.023	0.002	0.001	0.001	0.013	4.334	0.000	0.000
Boomlift	Diesel	75	1	416	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.017	0.001	0.000	0.000	0.034	5.596	0.000	0.000
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Welding machine	Diesel	25	2	0	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge crane	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug generator	Diesel	150	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug mains	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge generators (2)	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug mains	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Survey vessel (2 outboards <sup>2</sup> )	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
													<b>0.975</b>	<b>0.091</b>	<b>0.037</b>	<b>0.032</b>	<b>0.607</b>	<b>194.480</b>	<b>0.0104</b>	<b>0.0050</b>

**ON-ROAD SOURCES**

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile <sup>3</sup>								Total English Tons							
			NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Light-duty truck (workers) <sup>4</sup>	20	2440	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0055	0.0008	0.0001	0.0001	0.0571	17.4877	0.0002	0.0004
Heavy-duty truck (equipment/piping)	25	88	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0031	0.0000	0.0000	0.0000	0.0002	3.4866	0.0000	0.0004
Heavy-duty truck (surface materials)	25	200	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0071	0.0001	0.0001	0.0006	7.9242	0.0000	0.0008	
Heavy-duty truck (surface materials-oil spray)	50	60	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0042	0.0001	0.0001	0.0003	4.7545	0.0000	0.0005	
Heavy-duty truck (soil removal-hazardous)	201	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0006	0.0000	0.0000	0.0000	0.6371	0.0000	0.0001	
Heavy-duty truck (soil removal-non-hazardous)	50	58	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0041	0.0001	0.0001	0.0003	4.5960	0.0000	0.0005	
Heavy-duty truck (backfill)	45	60	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0038	0.0001	0.0000	0.0003	4.2791	0.0000	0.0004	
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
<b>Totals =&gt;</b>											<b>0.0284</b>	<b>0.0011</b>	<b>0.0004</b>	<b>0.0003</b>	<b>0.0589</b>	<b>43.2</b>	<b>0.0003</b>	<b>0.0031</b>
<b>SB County</b>											<b>0.0068</b>	<b>0.0008</b>	<b>0.0001</b>	<b>0.0001</b>	<b>0.0572</b>	<b>18.97</b>	<b>0.0002</b>	<b>0.0005</b>
<b>Ventura Co</b>											<b>0.0211</b>	<b>0.0003</b>	<b>0.0003</b>	<b>0.0003</b>	<b>0.0017</b>	<b>23.72</b>	<b>0.0000</b>	<b>0.0025</b>
<b>LA County</b>											<b>0.0001</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.12</b>	<b>0.0000</b>	<b>0.0000</b>
<b>Kern County</b>											<b>0.0003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.29</b>	<b>0.0000</b>	<b>0.0000</b>
<b>Kings County</b>											<b>0.0001</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.06</b>	<b>0.0000</b>	<b>0.0000</b>
<b>Off-Road &amp; On-Road Source Totals</b>											<b>1.003</b>	<b>0.092</b>	<b>0.038</b>	<b>0.032</b>	<b>0.666</b>	<b>237.6</b>	<b>0.0106</b>	<b>0.0080</b>

Notes:

- <sup>1</sup> Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory
- <sup>2</sup> Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)
- <sup>3</sup> Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions
- <sup>4</sup> Based on an average of 20 one-way trips per day over the duration of work in the subject area

**Greenhouse Gas Emissions Summary**

<b>Metric Tons</b>	212.183	0.009	0.007
<b>CO2E</b>	212.183	0.265	1.895
<b>Total CO2E</b>			<b>214.3</b>



**Carpinteria Oil & Gas Processing Facilities Decommissioning  
Former Marketing Terminal Area**

**OFF-ROAD SOURCES**

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr <sup>1</sup>								Total English Tons							
					NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Excavator (Caterpillar 330)	Diesel	272	2	160	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.065	0.006	0.002	0.002	0.041	19.356	0.001	0.000
Wheeled loader (Caterpillar 966)	Diesel	278	2	700	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.471	0.043	0.016	0.014	0.202	81.695	0.004	0.002
Dozer (Caterpillar D6)	Diesel	215	1	240	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.108	0.011	0.006	0.005	0.081	12.882	0.001	0.000
Backhoe	Diesel	104	1	700	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.086	0.008	0.005	0.004	0.105	15.654	0.001	0.000
Grader (Caterpillar 120M3)	Diesel	145	1	240	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.074	0.008	0.004	0.004	0.055	8.299	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	80	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.023	0.002	0.001	0.001	0.013	4.334	0.000	0.000
Boomlift	Diesel	75	1	120	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.005	0.000	0.000	0.000	0.010	1.614	0.000	0.000
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Welding machine	Diesel	25	2	0	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge crane	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug generator	Diesel	150	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug mains	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge generators (2)	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug mains	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Survey vessel (2 outboards <sup>2</sup> )	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
													<b>0.832</b>	<b>0.078</b>	<b>0.034</b>	<b>0.029</b>	<b>0.507</b>	<b>143.833</b>	<b>0.0076</b>	<b>0.0037</b>

**ON-ROAD SOURCES**

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile <sup>3</sup>								Total English Tons							
			NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Light-duty truck (workers) <sup>4</sup>	20	1840	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0042	0.0006	0.0000	0.0000	0.0431	13.1874	0.0002	0.0003
Heavy-duty truck (equipment/piping)	25	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0001	0.0000	0.0000	0.0000	0.0000	0.0792	0.0000	0.0000
Heavy-duty truck (surface materials)	25	260	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0092	0.0001	0.0001	0.0001	0.0007	10.3014	0.0000	0.0011
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (soil removal-hazardous)	201	20	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0057	0.0001	0.0001	0.0001	0.0005	6.3710	0.0000	0.0007
Heavy-duty truck (soil removal-non-hazardous)	50	1864	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.1316	0.0020	0.0017	0.0016	0.0105	147.7067	0.0001	0.0154
Heavy-duty truck (backfill)	45	1884	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.1197	0.0018	0.0015	0.0014	0.0096	134.3624	0.0001	0.0140
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Totals =&gt;</b>											<b>0.2704</b>	<b>0.0046</b>	<b>0.0034</b>	<b>0.0032</b>	<b>0.0643</b>	<b>312.0</b>	<b>0.0004</b>	<b>0.0314</b>
<b>SB County</b>											<b>0.0155</b>	<b>0.0008</b>	<b>0.0002</b>	<b>0.0002</b>	<b>0.0440</b>	<b>25.90</b>	<b>0.0002</b>	<b>0.0016</b>
<b>Ventura Co</b>											<b>0.2507</b>	<b>0.0037</b>	<b>0.0031</b>	<b>0.0030</b>	<b>0.0200</b>	<b>281.39</b>	<b>0.0002</b>	<b>0.0293</b>
<b>LA County</b>											<b>0.0010</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0001</b>	<b>1.17</b>	<b>0.0000</b>	<b>0.0001</b>
<b>Kern County</b>											<b>0.0026</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0002</b>	<b>2.92</b>	<b>0.0000</b>	<b>0.0003</b>
<b>Kings County</b>											<b>0.0006</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.64</b>	<b>0.0000</b>	<b>0.0001</b>
<b>Off-Road &amp; On-Road Source Totals</b>											<b>1.102</b>	<b>0.082</b>	<b>0.037</b>	<b>0.032</b>	<b>0.571</b>	<b>455.8</b>	<b>0.0080</b>	<b>0.0350</b>

Notes:

- <sup>1</sup> Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory
- <sup>2</sup> Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)
- <sup>3</sup> Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions
- <sup>4</sup> Based on an average of 20 one-way trips per day over the duration of work in the subject area

**Greenhouse Gas Emissions Summary**

<b>Metric Tons</b>	407.001	0.007	0.031
<b>CO2E</b>	407.001	0.200	8.291
<b>Total CO2E</b>			<b>415.5</b>



**Carpinteria Oil & Gas Processing Facilities Decommissioning  
Shop and Maintenance Area**

**OFF-ROAD SOURCES**

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr <sup>1</sup>								Total English Tons							
					NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Excavator (Caterpillar 330)	Diesel	272	2	80	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.032	0.003	0.001	0.001	0.021	9.678	0.001	0.000
Wheeled loader (Caterpillar 966)	Diesel	278	2	240	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.161	0.015	0.005	0.005	0.069	28.010	0.002	0.001
Dozer (Caterpillar D6)	Diesel	215	1	80	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.036	0.004	0.002	0.002	0.027	4.294	0.000	0.000
Backhoe	Diesel	104	1	240	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.029	0.003	0.002	0.001	0.036	5.367	0.000	0.000
Grader (Caterpillar 120M3)	Diesel	145	1	80	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.025	0.003	0.001	0.001	0.018	2.766	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	40	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.012	0.001	0.000	0.000	0.006	2.167	0.000	0.000
Boomlift	Diesel	75	1	40	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.002	0.000	0.000	0.000	0.003	0.538	0.000	0.000
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Welding machine	Diesel	25	2	0	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge crane	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug generator	Diesel	150	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug mains	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge generators (2)	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug mains	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Survey vessel (2 outboards <sup>2</sup> )	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
													<b>0.297</b>	<b>0.028</b>	<b>0.012</b>	<b>0.010</b>	<b>0.181</b>	<b>52.820</b>	<b>0.0028</b>	<b>0.0013</b>

**ON-ROAD SOURCES**

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile <sup>3</sup>								Total English Tons							
			NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Light-duty truck (workers) <sup>4</sup>	20	600	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0014	0.0002	0.0000	0.0000	0.0140	4.3003	0.0001	0.0001
Heavy-duty truck (equipment/piping)	25	8	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0003	0.0000	0.0000	0.0000	0.3170	0.0000	0.0000	
Heavy-duty truck (surface materials)	25	286	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0101	0.0001	0.0001	0.0008	11.3316	0.0000	0.0012	
Heavy-duty truck (surface materials-oil spray)	50	10	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0007	0.0000	0.0000	0.0001	0.7924	0.0000	0.0001	
Heavy-duty truck (soil removal-hazardous)	201	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0006	0.0000	0.0000	0.0000	0.6371	0.0000	0.0001	
Heavy-duty truck (soil removal-non-hazardous)	50	38	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0027	0.0000	0.0000	0.0000	3.0112	0.0000	0.0003	
Heavy-duty truck (backfill)	45	40	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0025	0.0000	0.0000	0.0000	2.8527	0.0000	0.0003	
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
<b>Totals =&gt;</b>											<b>0.0182</b>	<b>0.0004</b>	<b>0.0002</b>	<b>0.0002</b>	<b>0.0154</b>	<b>23.2</b>	<b>0.0001</b>	<b>0.0021</b>
SB County											<b>0.0024</b>	<b>0.0002</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0141</b>	<b>5.52</b>	<b>0.0001</b>	<b>0.0002</b>
Ventura Co											<b>0.0154</b>	<b>0.0002</b>	<b>0.0002</b>	<b>0.0002</b>	<b>0.0012</b>	<b>17.25</b>	<b>0.0000</b>	<b>0.0018</b>
LA County											<b>0.0001</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.12</b>	<b>0.0000</b>	<b>0.0000</b>
Kern County											<b>0.0003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.29</b>	<b>0.0000</b>	<b>0.0000</b>
Kings County											<b>0.0001</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.06</b>	<b>0.0000</b>	<b>0.0000</b>
<b>Off-Road &amp; On-Road Source Totals</b>											<b>0.315</b>	<b>0.028</b>	<b>0.012</b>	<b>0.010</b>	<b>0.196</b>	<b>76.1</b>	<b>0.0029</b>	<b>0.0034</b>

Notes:

- <sup>1</sup> Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory
- <sup>2</sup> Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)
- <sup>3</sup> Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions
- <sup>4</sup> Based on an average of 20 one-way trips per day over the duration of work in the subject area

**Greenhouse Gas Emissions Summary**

<b>Metric Tons</b>	67.912	0.003	0.003
<b>CO2E</b>	67.912	0.072	0.806
<b>Total CO2E</b>			<b>68.8</b>



**Carpinteria Oil & Gas Processing Facilities Decommissioning  
Marketing/Marine Terminal Pipeline Bundle**

**OFF-ROAD SOURCES**

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr <sup>1</sup>								Total English Tons											
					NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O				
Excavator (Caterpillar 330)	Diesel	272	1	120	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.024	0.002	0.001	0.001	0.016	7.258	0.000	0.000				
Wheeled loader (Caterpillar 966)	Diesel	278	1	150	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.050	0.005	0.002	0.001	0.022	8.753	0.000	0.000				
Dozer (Caterpillar D6)	Diesel	215	1	16	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.007	0.001	0.000	0.000	0.005	0.859	0.000	0.000				
Backhoe	Diesel	104	1	160	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.020	0.002	0.001	0.001	0.024	3.578	0.000	0.000				
Grader (Caterpillar 120M3)	Diesel	145	1	40	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.012	0.001	0.001	0.001	0.009	1.383	0.000	0.000				
Soil compactor (Caterpillar 815K)	Diesel	248	1	20	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.006	0.000	0.000	0.000	0.003	1.083	0.000	0.000				
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000				
Flush pump	Diesel	20	1	120	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.009	0.001	0.000	0.000	0.006	1.112	0.000	0.000				
Air compressor	Diesel	20	1	100	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.007	0.001	0.000	0.000	0.005	0.927	0.000	0.000				
Dive compressor	Diesel	50	1	160	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.018	0.003	0.001	0.001	0.022	2.407	0.000	0.000				
Welding machine	Diesel	25	1	40	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.002	0.000	0.000	0.000	0.001	0.282	0.000	0.000				
Derrick barge crane <sup>6</sup>	Diesel	375	1	200	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.101	0.009	0.004	0.004	0.042	12.566	0.001	0.000				
Derrick barge tug generator	Diesel	150	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.131	0.012	0.006	0.005	0.053	8.296	0.000	0.000				
Derrick barge tug mains <sup>5</sup>	Diesel	1500	2	63	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.494	0.039	0.025	0.022	0.143	31.400	0.001	0.001				
Derrick barge winch	Diesel	200	1	120	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.087	0.008	0.004	0.004	0.036	5.531	0.000	0.000				
Derrick barge generators	Diesel	200	2	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.348	0.033	0.015	0.014	0.143	22.124	0.001	0.001				
Materials barge tug mains <sup>5</sup>	Diesel	1500	2	63	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.494	0.039	0.025	0.022	0.143	31.400	0.001	0.001				
Materials barge tug generator	Diesel	200	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.174	0.016	0.008	0.007	0.071	11.062	0.000	0.001				
Crew/support vessel mains	Diesel	640	3	80	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.492	0.038	0.025	0.023	0.143	31.281	0.001	0.001				
Crew/support vessel generator	Diesel	34	1	240	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.021	0.005	0.002	0.002	0.017	1.399	0.000	0.000				
Dive support vessel	Diesel	400	1	80	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.103	0.008	0.005	0.005	0.030	6.517	0.000	0.003				
Survey vessel (2 outboards <sup>2</sup> )	Gasoline	150	2	8	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.002	0.026	0.009	0.008	0.592	1.200	0.000	0.000				
Cement pump	Diesel	175	1	40	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.005	0.000	0.000	0.000	0.007	1.171	0.000	0.000				
Toyo pump (300KW generator)	Diesel	400	1	160	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.021	0.004	0.001	0.001	0.025	11.025	0.001	0.000				
													<b>2.629</b>	<b>0.255</b>	<b>0.135</b>	<b>0.123</b>	<b>1.556</b>	<b>202.615</b>	<b>0.0063</b>	<b>0.0108</b>				

**ON-ROAD SOURCES**

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile <sup>3</sup>								Total English Tons											
			NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O				
Light-duty truck (workers) <sup>4</sup>	20	600	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0014	0.0002	0.0000	0.0000	0.0140	4.3003	0.0001	0.0001				
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
Heavy-duty truck (surface materials)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
Heavy-duty truck (soil removal-non-hazardous)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
Heavy-duty truck (backfill)	45	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0001	0.0000	0.0000	0.0000	0.0000	0.1426	0.0000	0.0000				
Heavy-duty truck (flush water disposal)	25	20	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0007	0.0000	0.0000	0.0000	0.0001	0.7924	0.0000	0.0001				
<b>Totals =&gt;</b>											<b>0.0022</b>	<b>0.0002</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0141</b>	<b>5.2</b>	<b>0.0001</b>	<b>0.0002</b>				
SB County											<b>0.0014</b>	<b>0.0002</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0140</b>	<b>4.37</b>	<b>0.0001</b>	<b>0.0001</b>				
Ventura Co											<b>0.0008</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0001</b>	<b>0.87</b>	<b>0.0000</b>	<b>0.0001</b>				
LA County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>				
Kern County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>				
Kings County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>				
<b>Off-Road &amp; On-Road Source Totals</b>											<b>2.631</b>	<b>0.255</b>	<b>0.135</b>	<b>0.123</b>	<b>1.570</b>	<b>207.9</b>	<b>0.0064</b>	<b>0.0110</b>				

Notes:

- <sup>1</sup> Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory
- <sup>2</sup> Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)
- <sup>3</sup> Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions
- <sup>4</sup> Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area
- <sup>5</sup> Hours based on 23 hour round trip and 2 hours per work day for moving barge
- <sup>6</sup> Includes 40 hours for offloading pipe at Port of LA/LB

**Greenhouse Gas Emissions Summary**

Metric Tons	185.581	0.006	0.010
CO2E	185.581	0.160	2.593
<b>Total CO2E</b>			<b>188.3</b>



**Carpinteria Oil & Gas Processing Facilities Decommissioning  
Marketing/Marine Terminal Pipeline Bundle - Port Hueneme Disposal Option**

**OFF-ROAD SOURCES**

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr <sup>1</sup>								Total English Tons									
					NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O		
Excavator (Caterpillar 330)	Diesel	272	1	120	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.024	0.002	0.001	0.001	0.016	7.258	0.000	0.000		
Wheeled loader (Caterpillar 966)	Diesel	278	1	150	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.050	0.005	0.002	0.001	0.022	8.753	0.000	0.000		
Dozer (Caterpillar D6)	Diesel	215	1	16	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.007	0.001	0.000	0.000	0.005	0.859	0.000	0.000		
Backhoe	Diesel	104	1	160	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.020	0.002	0.001	0.001	0.024	3.578	0.000	0.000		
Grader (Caterpillar 120M3)	Diesel	145	1	40	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.012	0.001	0.001	0.001	0.009	1.383	0.000	0.000		
Soil compactor (Caterpillar 815K)	Diesel	248	1	20	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.006	0.000	0.000	0.000	0.003	1.083	0.000	0.000		
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Flush pump	Diesel	20	1	120	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.009	0.001	0.000	0.000	0.006	1.112	0.000	0.000		
Air compressor	Diesel	20	1	100	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.007	0.001	0.000	0.000	0.005	0.927	0.000	0.000		
Dive compressor	Diesel	50	1	160	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.018	0.003	0.001	0.001	0.022	2.407	0.000	0.000		
Welding machine	Diesel	25	1	40	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.002	0.000	0.000	0.000	0.001	0.282	0.000	0.000		
Derrick barge crane <sup>6</sup>	Diesel	375	1	200	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.101	0.009	0.004	0.004	0.042	12.566	0.001	0.000		
Derrick barge tug generator	Diesel	150	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.131	0.012	0.006	0.005	0.053	8.296	0.000	0.000		
Derrick barge tug mains <sup>5</sup>	Diesel	1500	2	65	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.510	0.040	0.025	0.022	0.147	32.397	0.001	0.001		
Derrick barge winch	Diesel	200	1	120	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.087	0.008	0.004	0.004	0.036	5.531	0.000	0.000		
Derrick barge generators	Diesel	200	2	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.348	0.033	0.015	0.014	0.143	22.124	0.001	0.001		
Materials barge tug mains <sup>5</sup>	Diesel	1500	2	65	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.510	0.040	0.025	0.022	0.147	32.397	0.001	0.001		
Materials barge tug generator	Diesel	200	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.174	0.016	0.008	0.007	0.071	11.062	0.000	0.001		
Crew/support vessel mains	Diesel	640	3	80	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.492	0.038	0.025	0.023	0.143	31.281	0.001	0.001		
Crew/support vessel generator	Diesel	34	1	240	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.021	0.005	0.002	0.002	0.017	1.399	0.000	0.000		
Dive support vessel	Diesel	400	1	80	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.103	0.008	0.005	0.005	0.030	6.517	0.000	0.003		
Survey vessel (2 outboards <sup>2</sup> )	Gasoline	150	2	8	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.002	0.026	0.009	0.008	0.592	1.200	0.000	0.000		
Cement pump	Diesel	175	1	40	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.005	0.000	0.000	0.000	0.007	1.171	0.000	0.000		
Toyo pump (300KW generator)	Diesel	400	1	160	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.021	0.004	0.001	0.001	0.025	11.025	0.001	0.000		
													<b>2.660</b>	<b>0.257</b>	<b>0.136</b>	<b>0.124</b>	<b>1.565</b>	<b>204.609</b>	<b>0.0064</b>	<b>0.0109</b>		

**ON-ROAD SOURCES**

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile <sup>3</sup>								Total English Tons									
			NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O		
Light-duty truck (workers) <sup>4</sup>	20	600	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0014	0.0002	0.0000	0.0000	0.0140	4.3003	0.0001	0.0001		
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (surface materials)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (soil removal-non-hazardous)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (backfill)	45	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0001	0.0000	0.0000	0.0000	0.0000	0.1426	0.0000	0.0000		
Heavy-duty truck (pipe disposal)	14	56	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0011	0.0000	0.0000	0.0000	0.0001	1.2425	0.0000	0.0001		
Heavy-duty truck (flush water disposal)	25	20	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0007	0.0000	0.0000	0.0000	0.0001	0.7924	0.0000	0.0001		
<b>Totals =&gt;</b>											<b>0.0033</b>	<b>0.0002</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0142</b>	<b>6.5</b>	<b>0.0001</b>	<b>0.0003</b>		
SB County											<b>0.0014</b>	<b>0.0002</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0140</b>	<b>4.37</b>	<b>0.0001</b>	<b>0.0001</b>		
Ventura Co											<b>0.0008</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0001</b>	<b>0.87</b>	<b>0.0000</b>	<b>0.0001</b>		
LA County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>		
Kern County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>		
Kings County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>		
<b>Off-Road &amp; On-Road Source Totals</b>											<b>2.664</b>	<b>0.258</b>	<b>0.136</b>	<b>0.124</b>	<b>1.579</b>	<b>211.1</b>	<b>0.0064</b>	<b>0.0112</b>		

Notes:

- <sup>1</sup> Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory
- <sup>2</sup> Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)
- <sup>3</sup> Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions
- <sup>4</sup> Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area
- <sup>5</sup> Hours based on 25 hour round trip (POLB-Carpinteria-Port Hueneme-POLB) and 2 hours per work day for moving barge
- <sup>6</sup> Includes 40 hours for offloading pipe at Port Hueneme

**Greenhouse Gas Emissions Summary**

<b>Metric Tons</b>	188.470	0.006	0.010
<b>CO2E</b>	188.470	0.161	2.645
<b>Total CO2E</b>			<b>191.3</b>



**Carpinteria Oil & Gas Processing Facilities Decommissioning  
Gail and Grace Pipeline Bundle**

**OFF-ROAD SOURCES**

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr <sup>1</sup>								Total English Tons									
					NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O		
Excavator (Caterpillar 330)	Diesel	272	1	120	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.024	0.002	0.001	0.001	0.016	7.258	0.000	0.000		
Wheeled loader (Caterpillar 966)	Diesel	278	1	120	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.040	0.004	0.001	0.001	0.017	7.002	0.000	0.000		
Dozer (Caterpillar D6)	Diesel	215	1	16	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.007	0.001	0.000	0.000	0.005	0.859	0.000	0.000		
Backhoe	Diesel	104	1	150	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.018	0.002	0.001	0.001	0.022	3.354	0.000	0.000		
Grader (Caterpillar 120M3)	Diesel	145	1	40	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.012	0.001	0.001	0.001	0.009	1.383	0.000	0.000		
Soil compactor (Caterpillar 815K)	Diesel	248	1	20	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.006	0.000	0.000	0.000	0.003	1.083	0.000	0.000		
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Flush pump	Diesel	20	1	80	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.006	0.001	0.000	0.000	0.004	0.741	0.000	0.000		
Air compressor	Diesel	20	1	150	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.011	0.001	0.000	0.000	0.007	1.391	0.000	0.000		
Dive compressor	Diesel	50	1	160	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.018	0.003	0.001	0.001	0.022	2.407	0.000	0.000		
Welding machine	Diesel	25	1	40	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.002	0.000	0.000	0.000	0.001	0.282	0.000	0.000		
Derrick barge crane <sup>6</sup>	Diesel	375	1	200	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.101	0.009	0.004	0.004	0.042	12.566	0.001	0.000		
Derrick barge tug generator	Diesel	150	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.131	0.012	0.006	0.005	0.053	8.296	0.000	0.000		
Derrick barge tug mains <sup>5</sup>	Diesel	1500	2	63	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.494	0.039	0.025	0.022	0.143	31.400	0.001	0.001		
Derrick barge winch	Diesel	200	1	120	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.087	0.008	0.004	0.004	0.036	5.531	0.000	0.000		
Derrick barge generators	Diesel	200	2	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.348	0.033	0.015	0.014	0.143	22.124	0.001	0.001		
Materials barge tug mains <sup>5</sup>	Diesel	1500	2	63	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.494	0.039	0.025	0.022	0.143	31.400	0.001	0.001		
Materials barge tug generator	Diesel	200	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.174	0.016	0.008	0.007	0.071	11.062	0.000	0.001		
Crew/support vessel mains	Diesel	640	3	80	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.492	0.038	0.025	0.023	0.143	31.281	0.001	0.001		
Crew/support vessel generator	Diesel	34	1	240	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.021	0.005	0.002	0.002	0.017	1.399	0.000	0.000		
Dive support vessel	Diesel	400	1	120	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.154	0.012	0.008	0.007	0.045	9.775	0.000	0.004		
Survey vessel (2 outboards <sup>2</sup> )	Gasoline	150	2	8	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.002	0.026	0.009	0.008	0.592	1.200	0.000	0.000		
Cement pump	Diesel	175	1	40	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.005	0.000	0.000	0.000	0.007	1.171	0.000	0.000		
Toyo pump (300KW generator)	Diesel	400	1	160	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.021	0.004	0.001	0.001	0.025	11.025	0.001	0.000		
													<b>2.670</b>	<b>0.258</b>	<b>0.137</b>	<b>0.125</b>	<b>1.565</b>	<b>203.993</b>	<b>0.0063</b>	<b>0.0122</b>		

**ON-ROAD SOURCES**

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile <sup>3</sup>								Total English Tons									
			NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O		
Light-duty truck (workers) <sup>4</sup>	20	400	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0009	0.0001	0.0000	0.0000	0.0094	2.8668	0.0000	0.0001		
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (surface materials)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (soil removal-non-hazardous)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (backfill)	45	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0001	0.0000	0.0000	0.0000	0.0000	0.1426	0.0000	0.0000		
Heavy-duty truck (flush water disposal)	25	20	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0007	0.0000	0.0000	0.0000	0.0001	0.7924	0.0000	0.0001		
<b>Totals =&gt;</b>											<b>0.0017</b>	<b>0.0001</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0094</b>	<b>3.8</b>	<b>0.0000</b>	<b>0.0002</b>		
SB County											<b>0.0010</b>	<b>0.0001</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0094</b>	<b>2.94</b>	<b>0.0000</b>	<b>0.0001</b>		
Ventura Co											<b>0.0008</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0001</b>	<b>0.87</b>	<b>0.0000</b>	<b>0.0001</b>		
LA County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>		
Kern County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>		
Kings County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>		
<b>Off-Road &amp; On-Road Source Totals</b>											<b>2.672</b>	<b>0.258</b>	<b>0.137</b>	<b>0.125</b>	<b>1.574</b>	<b>207.8</b>	<b>0.0063</b>	<b>0.0123</b>		

Notes:

- <sup>1</sup> Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory
- <sup>2</sup> Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)
- <sup>3</sup> Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions
- <sup>4</sup> Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area
- <sup>5</sup> Hours based on 23 hour round trip and 2 hours per work day for moving barge
- <sup>6</sup> Includes 40 hours for offloading pipe at Port of LA/LB

**Greenhouse Gas Emissions Summary**

Metric Tons	185.531	0.006	0.011
CO2E	185.531	0.159	2.915
<b>Total CO2E</b>			<b>188.6</b>





**Carpinteria Oil & Gas Processing Facilities Decommissioning  
Gail and Grace Pipeline Bundle - Port Hueneme Disposal Option**

**OFF-ROAD SOURCES**

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr <sup>1</sup>								Total English Tons												
					NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O					
Excavator (Caterpillar 330)	Diesel	272	1	120	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.024	0.002	0.001	0.001	0.016	7.258	0.000	0.000					
Wheeled loader (Caterpillar 966)	Diesel	278	1	120	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.040	0.004	0.001	0.001	0.017	7.002	0.000	0.000					
Dozer (Caterpillar D6)	Diesel	215	1	16	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.007	0.001	0.000	0.000	0.005	0.859	0.000	0.000					
Backhoe	Diesel	104	1	150	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.018	0.002	0.001	0.001	0.022	3.354	0.000	0.000					
Grader (Caterpillar 120M3)	Diesel	145	1	40	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.012	0.001	0.001	0.001	0.009	1.383	0.000	0.000					
Soil compactor (Caterpillar 815K)	Diesel	248	1	20	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.006	0.000	0.000	0.000	0.003	1.083	0.000	0.000					
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
Flush pump	Diesel	20	1	80	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.006	0.001	0.000	0.000	0.004	0.741	0.000	0.000					
Air compressor	Diesel	20	1	150	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.011	0.001	0.000	0.000	0.007	1.391	0.000	0.000					
Dive compressor	Diesel	50	1	160	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.018	0.003	0.001	0.001	0.022	2.407	0.000	0.000					
Welding machine	Diesel	25	1	40	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.002	0.000	0.000	0.000	0.001	0.282	0.000	0.000					
Derrick barge crane <sup>6</sup>	Diesel	375	1	200	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.101	0.009	0.004	0.004	0.042	12.566	0.001	0.000					
Derrick barge tug generator	Diesel	150	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.131	0.012	0.006	0.005	0.053	8.296	0.000	0.000					
Derrick barge tug mains <sup>5</sup>	Diesel	1500	2	65	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.510	0.040	0.025	0.022	0.147	32.397	0.001	0.001					
Derrick barge winch	Diesel	200	1	120	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.087	0.008	0.004	0.004	0.036	5.531	0.000	0.000					
Derrick barge generators	Diesel	200	2	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.348	0.033	0.015	0.014	0.143	22.124	0.001	0.001					
Materials barge tug mains <sup>5</sup>	Diesel	1500	2	65	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.510	0.040	0.025	0.022	0.147	32.397	0.001	0.001					
Materials barge tug generator	Diesel	200	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.174	0.016	0.008	0.007	0.071	11.062	0.000	0.001					
Crew/support vessel mains	Diesel	640	3	80	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.492	0.038	0.025	0.023	0.143	31.281	0.001	0.001					
Crew/support vessel generator	Diesel	34	1	240	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.021	0.005	0.002	0.002	0.017	1.399	0.000	0.000					
Dive support vessel	Diesel	400	1	120	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.154	0.012	0.008	0.007	0.045	9.775	0.000	0.004					
Survey vessel (2 outboards <sup>2</sup> )	Gasoline	150	2	8	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.002	0.026	0.009	0.008	0.592	1.200	0.000	0.000					
Cement pump	Diesel	175	1	40	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.005	0.000	0.000	0.000	0.007	1.171	0.000	0.000					
Toyo pump (300KW generator)	Diesel	400	1	160	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.021	0.004	0.001	0.001	0.025	11.025	0.001	0.000					
													<b>2.701</b>	<b>0.260</b>	<b>0.138</b>	<b>0.126</b>	<b>1.574</b>	<b>205.986</b>	<b>0.0063</b>	<b>0.0122</b>					

**ON-ROAD SOURCES**

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile <sup>3</sup>								Total English Tons												
			NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O					
Light-duty truck (workers) <sup>4</sup>	20	400	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0009	0.0001	0.0000	0.0000	0.0094	2.8668	0.0000	0.0001					
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000					
Heavy-duty truck (surface materials)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000					
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000					
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000					
Heavy-duty truck (soil removal-non-hazardous)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000					
Heavy-duty truck (backfill)	45	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0001	0.0000	0.0000	0.0000	0.0000	0.1426	0.0000	0.0000					
Heavy-duty truck (pipe disposal)	14	228	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0045	0.0001	0.0001	0.0001	0.0004	5.0588	0.0000	0.0005					
Heavy-duty truck (flush water disposal)	25	20	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0007	0.0000	0.0000	0.0000	0.0001	0.7924	0.0000	0.0001					
<b>Totals =&gt;</b>											<b>0.0062</b>	<b>0.0002</b>	<b>0.0001</b>	<b>0.0001</b>	<b>0.0098</b>	<b>8.9</b>	<b>0.0000</b>	<b>0.0007</b>					
SB County											<b>0.0010</b>	<b>0.0001</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0094</b>	<b>2.94</b>	<b>0.0000</b>	<b>0.0001</b>					
Ventura Co											<b>0.0008</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0001</b>	<b>0.87</b>	<b>0.0000</b>	<b>0.0001</b>					
LA County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>					
Kern County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>					
Kings County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>					
<b>Off-Road &amp; On-Road Source Totals</b>											<b>2.707</b>	<b>0.261</b>	<b>0.139</b>	<b>0.126</b>	<b>1.584</b>	<b>214.8</b>	<b>0.0064</b>	<b>0.0129</b>					

Notes:

- <sup>1</sup> Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory
- <sup>2</sup> Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)
- <sup>3</sup> Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions
- <sup>4</sup> Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area
- <sup>5</sup> Hours based on 25 hour round trip (POLB-Carpinteria-Port Hueneme-POLB) and 2 hours per work day for moving barge
- <sup>6</sup> Includes 40 hours for offloading pipe at Port Hueneme

**Greenhouse Gas Emissions Summary**

<b>Metric Tons</b>	191.828	0.006	0.012
<b>CO2E</b>	191.828	0.160	3.060
<b>Total CO2E</b>			<b>195.0</b>



**Carpinteria Oil & Gas Processing Facilities Decommissioning  
Main Plant Area**

**OFF-ROAD SOURCES**

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr <sup>1</sup>								Total English Tons									
					NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O		
Excavator (Caterpillar 330)	Diesel	272	2	1200	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.486	0.046	0.016	0.013	0.310	145.166	0.008	0.004		
Wheeled loader (Caterpillar 966)	Diesel	278	2	1000	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.673	0.061	0.022	0.019	0.289	116.707	0.006	0.003		
Dozer (Caterpillar D6)	Diesel	215	1	80	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.036	0.004	0.002	0.002	0.027	4.294	0.000	0.000		
Backhoe	Diesel	104	2	1000	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.244	0.024	0.015	0.011	0.300	44.725	0.002	0.001		
Grader (Caterpillar 120M3)	Diesel	145	1	80	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.025	0.003	0.001	0.001	0.018	2.766	0.000	0.000		
Soil compactor (Caterpillar 815K)	Diesel	248	1	80	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.023	0.002	0.001	0.001	0.013	4.334	0.000	0.000		
Boomlift	Diesel	75	1	360	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.015	0.001	0.000	0.000	0.029	4.842	0.000	0.000		
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Welding machine	Diesel	25	1	40	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.002	0.000	0.000	0.000	0.001	0.282	0.000	0.000		
Derrick barge crane <sup>6</sup>	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge tug generator	Diesel	150	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge tug mains <sup>5</sup>	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Materials barge tug mains <sup>5</sup>	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Materials barge tug generator	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Survey vessel (2 outboards <sup>2</sup> )	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Cement pump	Diesel	175	1	0	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
													<b>1.505</b>	<b>0.140</b>	<b>0.058</b>	<b>0.048</b>	<b>0.987</b>	<b>323.117</b>	<b>0.0172</b>	<b>0.0082</b>		

**ON-ROAD SOURCES**

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile <sup>3</sup>								Total English Tons									
			NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O		
Light-duty truck (workers) <sup>4</sup>	20	3900	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0088	0.0013	0.0001	0.0001	0.0912	27.9516	0.0004	0.0006		
Heavy-duty truck (equipment/piping)	25	234	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0083	0.0001	0.0001	0.0007	9.2713	0.0000	0.0010			
Heavy-duty truck (surface materials)	25	274	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0097	0.0001	0.0001	0.0008	10.8561	0.0000	0.0011			
Heavy-duty truck (surface materials-oil spray)	50	28	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0020	0.0000	0.0000	0.0002	2.2188	0.0000	0.0002			
Heavy-duty truck (soil removal-hazardous)	201	56	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0159	0.0002	0.0002	0.0013	17.8389	0.0000	0.0019			
Heavy-duty truck (soil removal-non-hazardous)	50	5484	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.3872	0.0057	0.0049	0.0046	0.0309	434.5620	0.0003	0.0452		
Heavy-duty truck (backfill)	45	5540	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.3521	0.0052	0.0044	0.0042	0.0281	395.0996	0.0002	0.0411		
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
<b>Totals =&gt;</b>											<b>0.7839</b>	<b>0.0128</b>	<b>0.0098</b>	<b>0.0094</b>	<b>0.1531</b>	<b>897.8</b>	<b>0.0009</b>	<b>0.0911</b>		
SB County											<b>0.0415</b>	<b>0.0018</b>	<b>0.0005</b>	<b>0.0005</b>	<b>0.0939</b>	<b>64.60</b>	<b>0.0004</b>	<b>0.0044</b>		
Ventura Co											<b>0.7307</b>	<b>0.0108</b>	<b>0.0092</b>	<b>0.0088</b>	<b>0.0583</b>	<b>819.98</b>	<b>0.0005</b>	<b>0.0853</b>		
LA County											<b>0.0029</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0002</b>	<b>3.28</b>	<b>0.0000</b>	<b>0.0003</b>		
Kern County											<b>0.0073</b>	<b>0.0001</b>	<b>0.0001</b>	<b>0.0001</b>	<b>0.0006</b>	<b>8.17</b>	<b>0.0000</b>	<b>0.0009</b>		
Kings County											<b>0.0016</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0001</b>	<b>1.78</b>	<b>0.0000</b>	<b>0.0002</b>		
<b>Off-Road &amp; On-Road Source Totals</b>											<b>2.289</b>	<b>0.153</b>	<b>0.068</b>	<b>0.057</b>	<b>1.140</b>	<b>1220.9</b>	<b>0.0181</b>	<b>0.0993</b>		

Notes:

- <sup>1</sup> Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory
- <sup>2</sup> Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)
- <sup>3</sup> Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions
- <sup>4</sup> Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area
- <sup>5</sup> Hours based on 23 hour round trip and 2 hours per work day for moving barge
- <sup>6</sup> Includes 40 hours for offloading pipe at Port of LA/LB

**Greenhouse Gas Emissions Summary**

Metric Tons	1090.103	0.016	0.089
CO2E	1090.103	0.452	23.506
<b>Total CO2E</b>			<b>1114.1</b>



**Carpinteria Oil & Gas Processing Facilities Decommissioning  
MSRC Lease Area**

**OFF-ROAD SOURCES**

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr <sup>1</sup>								Total English Tons									
					NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O		
Excavator (Caterpillar 330)	Diesel	272	2	360	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.146	0.014	0.005	0.004	0.093	43.550	0.002	0.001		
Wheeled loader (Caterpillar 966)	Diesel	278	2	360	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.242	0.022	0.008	0.007	0.104	42.015	0.002	0.001		
Dozer (Caterpillar D6)	Diesel	215	1	40	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.018	0.002	0.001	0.001	0.014	2.147	0.000	0.000		
Backhoe	Diesel	104	2	480	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.117	0.011	0.007	0.005	0.144	21.468	0.001	0.001		
Grader (Caterpillar 120M3)	Diesel	145	1	40	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.012	0.001	0.001	0.001	0.009	1.383	0.000	0.000		
Soil compactor (Caterpillar 815K)	Diesel	248	1	40	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.012	0.001	0.000	0.000	0.006	2.167	0.000	0.000		
Boomlift	Diesel	75	1	40	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.002	0.000	0.000	0.000	0.003	0.538	0.000	0.000		
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Welding machine	Diesel	25	1	0	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge crane <sup>6</sup>	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge tug generator	Diesel	150	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge tug mains <sup>5</sup>	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Materials barge tug mains <sup>5</sup>	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Materials barge tug generator	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Survey vessel (2 outboards <sup>2</sup> )	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Cement pump	Diesel	175	1	0	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
													<b>0.549</b>	<b>0.051</b>	<b>0.022</b>	<b>0.018</b>	<b>0.373</b>	<b>113.268</b>	<b>0.0060</b>	<b>0.0029</b>		

**ON-ROAD SOURCES**

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile <sup>3</sup>								Total English Tons									
			NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O		
Light-duty truck (workers) <sup>4</sup>	20	1200	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0027	0.0004	0.0000	0.0000	0.0281	8.6005	0.0001	0.0002		
Heavy-duty truck (equipment/piping)	25	6	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0002	0.0000	0.0000	0.0000	0.2377	0.0000	0.0000	0.0000		
Heavy-duty truck (surface materials)	25	334	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0118	0.0002	0.0001	0.0001	0.0009	13.2334	0.0000	0.0014		
Heavy-duty truck (surface materials-oil spray)	50	10	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0007	0.0000	0.0000	0.0001	0.7924	0.0000	0.0001			
Heavy-duty truck (soil removal-hazardous)	201	10	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0028	0.0000	0.0000	0.0002	3.1855	0.0000	0.0003			
Heavy-duty truck (soil removal-non-hazardous)	50	884	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0624	0.0009	0.0008	0.0007	0.0050	70.0497	0.0000	0.0073		
Heavy-duty truck (backfill)	45	894	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0568	0.0008	0.0007	0.0007	0.0045	63.7579	0.0000	0.0066		
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
<b>Totals =&gt;</b>											<b>0.1375</b>	<b>0.0024</b>	<b>0.0017</b>	<b>0.0016</b>	<b>0.0388</b>	<b>159.9</b>	<b>0.0002</b>	<b>0.0159</b>		
SB County											<b>0.0087</b>	<b>0.0005</b>	<b>0.0001</b>	<b>0.0001</b>	<b>0.0286</b>	<b>15.35</b>	<b>0.0001</b>	<b>0.0009</b>		
Ventura Co											<b>0.1267</b>	<b>0.0019</b>	<b>0.0016</b>	<b>0.0015</b>	<b>0.0101</b>	<b>142.15</b>	<b>0.0001</b>	<b>0.0148</b>		
LA County											<b>0.0005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.59</b>	<b>0.0000</b>	<b>0.0001</b>		
Kern County											<b>0.0013</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0001</b>	<b>1.46</b>	<b>0.0000</b>	<b>0.0002</b>		
Kings County											<b>0.0003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.32</b>	<b>0.0000</b>	<b>0.0000</b>		
<b>Off-Road &amp; On-Road Source Totals</b>											<b>0.687</b>	<b>0.054</b>	<b>0.024</b>	<b>0.020</b>	<b>0.412</b>	<b>273.1</b>	<b>0.0062</b>	<b>0.0188</b>		

Notes:

- <sup>1</sup> Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory
- <sup>2</sup> Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)
- <sup>3</sup> Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions
- <sup>4</sup> Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area
- <sup>5</sup> Hours based on 23 hour round trip and 2 hours per work day for moving barge
- <sup>6</sup> Includes 40 hours for offloading pipe at Port of LA/LB

**Greenhouse Gas Emissions Summary**

Metric Tons	243.861	0.006	0.017
CO2E	243.861	0.156	4.450
<b>Total CO2E</b>			<b>248.5</b>



**Carpinteria Oil & Gas Processing Facilities Decommissioning  
Pier Parking Lot Area**

**OFF-ROAD SOURCES**

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr <sup>1</sup>								Total English Tons									
					NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O		
Excavator (Caterpillar 330)	Diesel	272	2	0	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Wheeled loader (Caterpillar 966)	Diesel	278	2	80	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.054	0.005	0.002	0.002	0.023	9.337	0.001	0.000		
Dozer (Caterpillar D6)	Diesel	215	1	80	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.036	0.004	0.002	0.002	0.027	4.294	0.000	0.000		
Backhoe	Diesel	104	2	320	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.078	0.008	0.005	0.004	0.096	14.312	0.001	0.000		
Grader (Caterpillar 120M3)	Diesel	145	1	40	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.012	0.001	0.001	0.001	0.009	1.383	0.000	0.000		
Soil compactor (Caterpillar 815K)	Diesel	248	1	20	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.006	0.000	0.000	0.000	0.003	1.083	0.000	0.000		
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Welding machine	Diesel	25	1	0	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge crane <sup>6</sup>	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge tug generator	Diesel	150	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge tug mains <sup>5</sup>	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Derrick barge generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Materials barge tug mains <sup>5</sup>	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Materials barge tug generator	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Survey vessel (2 outboards <sup>2</sup> )	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Cement pump	Diesel	175	1	0	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
													<b>0.186</b>	<b>0.018</b>	<b>0.009</b>	<b>0.008</b>	<b>0.158</b>	<b>30.409</b>	<b>0.0016</b>	<b>0.0008</b>		

**ON-ROAD SOURCES**

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile <sup>3</sup>								Total English Tons									
			NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O		
Light-duty truck (workers) <sup>4</sup>	20	1400	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0032	0.0005	0.0000	0.0000	0.0328	10.0339	0.0001	0.0002		
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (surface materials)	25	580	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0205	0.0003	0.0003	0.0002	0.0016	22.9801	0.0000	0.0024		
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (soil removal-non-hazardous)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Heavy-duty truck (backfill)	45	100	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0064	0.0001	0.0001	0.0001	0.0005	7.1318	0.0000	0.0007		
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
<b>Totals =&gt;</b>											<b>0.0300</b>	<b>0.0009</b>	<b>0.0004</b>	<b>0.0004</b>	<b>0.0349</b>	<b>40.1</b>	<b>0.0002</b>	<b>0.0034</b>		
SB County											<b>0.0051</b>	<b>0.0005</b>	<b>0.0001</b>	<b>0.0001</b>	<b>0.0329</b>	<b>12.19</b>	<b>0.0001</b>	<b>0.0004</b>		
Ventura Co											<b>0.0249</b>	<b>0.0004</b>	<b>0.0003</b>	<b>0.0003</b>	<b>0.0020</b>	<b>27.96</b>	<b>0.0000</b>	<b>0.0029</b>		
LA County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>		
Kern County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>		
Kings County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.00</b>	<b>0.0000</b>	<b>0.0000</b>		
<b>Off-Road &amp; On-Road Source Totals</b>											<b>0.216</b>	<b>0.019</b>	<b>0.010</b>	<b>0.008</b>	<b>0.193</b>	<b>70.6</b>	<b>0.0018</b>	<b>0.0041</b>		

Notes:

- <sup>1</sup> Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory
- <sup>2</sup> Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)
- <sup>3</sup> Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions
- <sup>4</sup> Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area
- <sup>5</sup> Hours based on 23 hour round trip and 2 hours per work day for moving barge
- <sup>6</sup> Includes 40 hours for offloading pipe at Port of LA/LB

**Greenhouse Gas Emissions Summary**

Metric Tons	62.996	0.002	0.004
CO2E	62.996	0.044	0.975
<b>Total CO2E</b>			<b>64.0</b>



## Carpinteria Oil & Gas Processing Facilities Decommissioning Air Pollutant and Greenhouse Gas Emissions Totals

Task/Area	Air Pollutants: Total English Tons					GHG: Total Metric Tons			
	NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	CO2E
1. Chevron Pipeline Area	1.00	0.09	0.04	0.03	0.67	212.2	0.009	0.007	214.3
2. Former Marketing Terminal Area	1.10	0.08	0.04	0.03	0.57	407.0	0.007	0.031	415.5
3. Shop and Maintenance Area	0.32	0.03	0.01	0.01	0.20	67.9	0.003	0.003	68.8
4. Marketing/Marine Terminal Pipeline Bundle	2.63	0.26	0.13	0.12	1.57	185.6	0.006	0.010	188.3
5. Gail and Grace Pipeline Bundle	2.67	0.26	0.14	0.12	1.57	185.5	0.006	0.011	188.6
6. Main Plant Area	2.29	0.15	0.07	0.06	1.14	1090.1	0.016	0.089	1114.1
7. MSRC Lease Area	0.69	0.05	0.02	0.02	0.41	243.9	0.006	0.017	248.5
8. Pier Parking Lot Area	0.22	0.02	0.01	0.01	0.19	63.0	0.002	0.004	64.0
<b>Total</b>	<b>10.91</b>	<b>0.94</b>	<b>0.46</b>	<b>0.41</b>	<b>6.32</b>	<b>2455.2</b>	<b>0.054</b>	<b>0.171</b>	<b>2502.1</b>

Peak 12-month Period	Air Pollutants: Total English Tons					GHG: Total Metric Tons			
Task/Area 4 through 7	8.28	0.72	0.36	0.32	4.70	1705.1	0.033	0.126	1739.5
SBAPCD Rule 202 Threshold	25	25	25	25	NA	-	-	-	-
SBAPCD Stationary Source Threshold									10000

Peak Day: All Emissions	Pounds/Peak Day				
Gail and Grace Pipeline Bundle	228.2	20.1	10.8	9.9	82.9
SBCAPCD Threshold	240	240	80	NA	NA

Peak Day: Motor Vehicle Emissions	Pounds/Peak Day				
Main Plant Area: soil removal	13.6	0.2	0.2	0.2	2.0
SBCAPCD Threshold	25	25	NA	NA	NA

**Carpinteria Oil & Gas Processing Facilities Decommissioning  
Air Pollutant and Greenhouse Gas Emissions Totals - Port Hueneme Pipe Disposal Option**

Task/Area	Air Pollutants: Total English Tons					GHG: Total Metric Tons			
	NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	CO2E
1. Chevron Pipeline Area	1.00	0.09	0.04	0.03	0.67	212.2	0.009	0.007	214.3
2. Former Marketing Terminal Area	1.10	0.08	0.04	0.03	0.57	407.0	0.007	0.031	415.5
3. Shop and Maintenance Area	0.32	0.03	0.01	0.01	0.20	67.9	0.003	0.003	68.8
4. Marketing/Marine Terminal Pipeline Bundle	2.66	0.26	0.14	0.12	1.58	188.5	0.006	0.010	191.3
5. Gail and Grace Pipeline Bundle	2.71	0.26	0.14	0.13	1.58	191.8	0.006	0.012	195.0
6. Main Plant Area	2.29	0.15	0.07	0.06	1.14	1090.1	0.016	0.089	1114.1
7. MSRC Lease Area	0.69	0.05	0.02	0.02	0.41	243.9	0.006	0.017	248.5
8. Pier Parking Lot Area	0.22	0.02	0.01	0.01	0.19	63.0	0.002	0.004	64.0
<b>Total</b>	<b>10.98</b>	<b>0.95</b>	<b>0.46</b>	<b>0.41</b>	<b>6.34</b>	<b>2464.4</b>	<b>0.054</b>	<b>0.172</b>	<b>2511.5</b>

**Peak 12-month Period**

Task/Area 4 through 7	<b>8.35</b>	<b>0.72</b>	<b>0.37</b>	<b>0.33</b>	<b>4.71</b>	<b>1714.3</b>	<b>0.033</b>	<b>0.127</b>	<b>1748.9</b>
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**Carpinteria Oil & Gas Processing Facilities Decommissioning  
Main Plant Area - Peak Day**

**OFF-ROAD SOURCES**

Source	Fuel	BHP	Number	Peak Day Hours per Source	Emission Factors: pounds/BHP-hr <sup>1</sup>								Pounds									
					NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O		
Excavator (Caterpillar 330)	Diesel	272	2	8	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	6.48	0.61	0.22	0.17	4.13	1935.6	0.100	0.048		
Wheeled loader (Caterpillar 966)	Diesel	278	2	8	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	10.76	0.98	0.36	0.31	4.63	1867.3	0.102	0.049		
Dozer (Caterpillar D6)	Diesel	215	1	8	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	7.17	0.71	0.40	0.34	5.40	858.8	0.040	0.019		
Backhoe	Diesel	104	2	8	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	3.91	0.38	0.23	0.18	4.79	715.6	0.038	0.018		
Grader (Caterpillar 120M3)	Diesel	145	1	8	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	4.96	0.52	0.28	0.24	3.68	553.3	0.027	0.013		
Soil compactor (Caterpillar 815K)	Diesel	248	1	8	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	4.66	0.38	0.16	0.14	2.54	866.7	0.046	0.022		
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Welding machine	Diesel	25	1	0	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Derrick barge crane <sup>6</sup>	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Derrick barge tug generator	Diesel	150	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Derrick barge tug mains <sup>5</sup>	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Derrick barge generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Materials barge tug mains <sup>5</sup>	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Materials barge tug generator	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Survey vessel (2 outboards <sup>2</sup> )	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Cement pump	Diesel	175	1	0	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
													<b>37.96</b>	<b>3.57</b>	<b>1.64</b>	<b>1.39</b>	<b>25.17</b>	<b>6797.3</b>	<b>0.353</b>	<b>0.169</b>		

**ON-ROAD SOURCES**

On Road Sources	Miles/One-way Trip	Peak Day One-Way Trips	Emission Factors, grams/mile <sup>3</sup>								Total Pounds									
			NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O		
Light-duty truck (workers) <sup>4</sup>	20	20	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.09	0.01	0.00	0.00	0.94	286.7	0.004	0.006		
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Heavy-duty truck (surface materials)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Heavy-duty truck (soil removal-non-hazardous) <sup>7</sup>	50	96	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	13.56	0.20	0.17	0.16	1.08	15214.4	0.009	1.583		
Heavy-duty truck (backfill)	45	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
<b>Totals =&gt;</b>											<b>13.65</b>	<b>0.21</b>	<b>0.17</b>	<b>0.16</b>	<b>2.02</b>	<b>15501.1</b>	<b>0.0132</b>	<b>1.5895</b>		
<b>SB County</b>											<b>0.63</b>	<b>0.02</b>	<b>0.01</b>	<b>0.01</b>	<b>0.98</b>	<b>895.3</b>	<b>0.0042</b>	<b>0.0697</b>		
<b>Ventura Co</b>											<b>13.01</b>	<b>0.19</b>	<b>0.16</b>	<b>0.16</b>	<b>1.04</b>	<b>14605.8</b>	<b>0.0090</b>	<b>1.5198</b>		
<b>LA County</b>											<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0</b>	<b>0.0000</b>	<b>0.0000</b>		
<b>Kern County</b>											<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0</b>	<b>0.0000</b>	<b>0.0000</b>		
<b>Kings County</b>											<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0</b>	<b>0.0000</b>	<b>0.0000</b>		
<b>Off-Road &amp; On-Road Source Totals</b>											<b>51.6</b>	<b>3.8</b>	<b>1.8</b>	<b>1.6</b>	<b>27.2</b>	<b>22298.4</b>	<b>0.3658</b>	<b>1.7581</b>		

Notes:

- <sup>1</sup> Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory
- <sup>2</sup> Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)
- <sup>3</sup> Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions
- <sup>4</sup> Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area
- <sup>5</sup> Hours based on 23 hour round trip and 2 hours per work day for moving barge
- <sup>6</sup> Includes 40 hours for offloading pipe at Port of LA/LB
- <sup>7</sup> Peak day truck trips based on 16 truck fleet making 3 round trips (96 one-way trips)



**Carpinteria Oil & Gas Processing Facilities Decommissioning  
Gail and Grace Pipeline Bundle - Peak Day**

**OFF-ROAD SOURCES**

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr <sup>1</sup>								Pounds									
					NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O		
Excavator (Caterpillar 330)	Diesel	272	1	8	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	3.24	0.30	0.11	0.09	2.07	967.8	0.050	0.024		
Wheeled loader (Caterpillar 966)	Diesel	278	1	8	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	5.38	0.49	0.18	0.16	2.31	933.7	0.051	0.024		
Dozer (Caterpillar D6)	Diesel	215	1	0	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Backhoe	Diesel	104	1	0	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Grader (Caterpillar 120M3)	Diesel	145	1	0	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Soil compactor (Caterpillar 815K)	Diesel	248	1	0	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Air compressor	Diesel	20	1	8	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	1.17	0.15	0.05	0.05	0.77	148.4	0.004	0.002		
Dive compressor	Diesel	50	1	6	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	1.36	0.25	0.07	0.07	1.62	180.5	0.007	0.003		
Welding machine	Diesel	25	1	4	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.45	0.06	0.02	0.02	0.29	56.4	0.002	0.001		
Derrick barge crane <sup>6</sup>	Diesel	375	1	8	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	8.04	0.69	0.33	0.30	3.36	1005.2	0.069	0.033		
Derrick barge tug generator	Diesel	150	1	12	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	13.07	1.22	0.58	0.54	5.35	829.6	0.020	0.038		
Derrick barge tug mains <sup>5</sup>	Diesel	1500	2	2	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	31.38	2.46	1.56	1.38	9.06	1993.7	0.042	0.090		
Derrick barge winch	Diesel	200	1	8	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	11.62	1.09	0.51	0.48	4.75	737.5	0.018	0.034		
Derrick barge generators	Diesel	200	2	12	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	34.85	3.26	1.54	1.44	14.26	2212.4	0.053	0.101		
Materials barge tug mains <sup>5</sup>	Diesel	1500	2	2	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	31.38	2.46	1.56	1.38	9.06	1993.7	0.042	0.090		
Materials barge tug generator	Diesel	200	1	12	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	17.42	1.63	0.77	0.72	7.13	1106.2	0.026	0.050		
Crew/support vessel mains	Diesel	640	3	4	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	49.23	3.84	2.46	2.30	14.28	3128.1	0.061	0.138		
Crew/support vessel generator	Diesel	34	1	12	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	2.08	0.54	0.20	0.18	1.66	139.9	0.009	0.006		
Dive support vessel	Diesel	400	1	6	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	15.38	1.20	0.77	0.72	4.46	977.5	0.019	0.432		
Survey vessel (2 outboards <sup>2</sup> )	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Cement pump	Diesel	175	1	0	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000		
Toyo pump (300KW generator)	Diesel	400	1	8	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	2.11	0.42	0.10	0.08	2.46	1102.5	0.074	0.035		
													<b>228.16</b>	<b>20.06</b>	<b>10.79</b>	<b>9.90</b>	<b>82.89</b>	<b>17513.0</b>	<b>0.5469</b>	<b>1.1017</b>		

**ON-ROAD SOURCES**

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile <sup>3</sup>								Pounds																		
			NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO <sub>x</sub>	ROG	PM10	PM2.5	CO	CO2	CH4	N2O											
Light-duty truck (workers) <sup>4</sup>	20	0	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Heavy-duty truck (surface materials)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Heavy-duty truck (soil removal-non-hazardous)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Heavy-duty truck (backfill)	45	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
<b>Totals =&gt;</b>											<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	
SB County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>
Ventura Co											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>
LA County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>
Kern County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>
Kings County											<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>
<b>Off-Road &amp; On-Road Source Totals</b>											<b>228.163</b>	<b>20.065</b>	<b>10.792</b>	<b>9.903</b>	<b>82.888</b>	<b>17513.0</b>	<b>0.5469</b>	<b>1.1017</b>											

**Notes:**

- <sup>1</sup> Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory
- <sup>2</sup> Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)
- <sup>3</sup> Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions
- <sup>4</sup> Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area
- <sup>5</sup> Hours based on 23 hour round trip and 2 hours per work day for moving barge
- <sup>6</sup> Includes 40 hours for offloading pipe at Port of LA/LB

