

**TABLE 3
SAN BERNARDINO 2P TERMINAL NODE
CONSTRUCTION AND OPERATION EMISSIONS SUMMARY**

Construction Engine Emissions

SOURCE	SIZE / GROSS HP	DAILY AMOUNT (hrs or trips) ⁽¹⁾	DAYS OF ACTIVITY	NUMBER OF UNITS	ONE-WAY DISTANCE (miles)	NO _x			ROG			PM ₁₀			SO _x			CO			NOTES	
						EF (g/hr) ⁽²⁾	Daily (lbs/day)	Total (tons)	EF (g/hr) ⁽²⁾	Daily (lbs/day)	Total (tons)	EF (g/hr) ⁽²⁾	Daily (lbs/day)	Total (tons)	EF (g/hr) ⁽²⁾	Daily (lbs/day)	Total (tons)	EF (g/hr) ⁽²⁾	Daily (lbs/day)	Total (tons)		
Site Grading (2,258 cy)																						
Grader	200	4	4	1	-	2370	21	0.042	180	1.6	0.0032	15	0.13	0.0003	135	1.2	0.0024	205	1.8	0.0036	6	
Dozer	153	8	4	1	-	1660	29	0.059	110	1.9	0.0039	15	0.3	0.0005	105	1.9	0.0037	110	1.9	0.0039	6	
Integrated Tool Carrier	117	6	3	1	-	780	10	0.015	72	1.0	0.0014	44	0.6	0.0009	85	1.1	0.0017	105	1.4	0.0021	6	
Dump Truck (end dump)	10 cu yd	8	29	1	10	11	4.0	0.0575	2.2	0.78	0.0113	0.59	0.21	0.0030	0.31	0.11	0.00159	14	5.0	0.0718	7	
Water Truck	175	3	4	1	10	18	2.4	0.0049	4.4	0.58	0.0012	0.84	0.111	0.00022	0.31	0.041	0.00008	35	4.6	0.0091	6	
Equipment Delivery Truck	Low boy	3	2	-	10	11	1.5	0.0015	2.2	0.3	0.0003	0.59	0.08	0.0001	0.31	0.04	0.00004	14	1.9	0.0019	7	
Worker Light Truck	Light	2	40	-	10	1.0	0.09	0.0018	0.35	0.03	0.0006	0	0	0	0.06	0.01	0.00011	7.2	0.6	0.0127	7	
Subtotal (Site Grading)							37	0.18		3.6	0.022		1.0	0.005		2.0	0.010		14.0	0.105		
Pad Construction (270cy)																						
Cement Truck	10 yd3	12	3	-	15	11	8.9	0.013	2.2	1.7	0.0026	0.59	0.5	0.0007	0.31	0.2	0.0004	14	11	0.0167	7	
Gravel Truck	10 yd3	7	2.5	-	15	11	5.2	0.0065	2.2	1.0	0.0013	0.59	0.3	0.0003	0.31	0.14	0.0002	14	6.5	0.0081	7	
Worker Light Truck	Light	4	3	-	15	1.0	0.3	0.0004	0.35	0.1	0.0001	0	0	0	0.06	0.02	0.0000	7.2	1.9	0.0029	7	
Subtotal (Pad Construction)							14	0.020		2.9	0.004		0.7	0.001		0.4	0.0006		20	0.028		
Trenching & Utility Installation (350cy)																						
Excavator	84	8	17	1	-	774	14	0.116	64	1.1	0.010	13	0.2	0.002	58	1.0	0.009	79	1.4	0.012	6	
Equipment Delivery Truck	Low boy	1	2	-	10	11	0.5	0.0005	2.2	0.10	0.0001	0.59	0.03	0.00003	0.31	0.014	0.000	14	0.6	0.001	7	
Worker Light Truck	Light	4	17	-	10	1.0	0.2	0.001	0.35	0.06	0.001	0	0	0	0.06	0.011	0.0001	7.2	1.3	0.011	7	
Subtotal (Utility Installation)							14	0.12		1.3	0.010		0.26	0.002		1.0	0.009		3.3	0.023		
Access Road Construction (75cy)																						
Grader	200	4	3	1	-	2370	21	0.031	180	1.6	0.002	15	0.13	0.0002	135	1.2	0.002	205	1.8	0.003	6	
Dozer	153	4	3	1	-	1660	15	0.022	110	1.0	0.001	15	0.13	0.0002	105	0.9	0.001	110	1.0	0.001	6	
Gravel Truck	10 yd3	4	2	-	15	11	3.0	0.0030	2.2	0.6	0.0006	0.59	0.2	0.0002	0.31	0.08	0.0001	14	3.7	0.0037	7	
Compactor	-	4	2	1	-	940	8.3	0.008	25	0.2	0.0002	15	0.13	0.0001	80	0.7	0.001	50	0.4	0.0004	8	
Equipment Delivery Truck	Low boy	1	2	-	15	11	0.7	0.001	2.2	0.15	0.0001	0.59	0.04	0.00004	0.31	0.02	0.00002	14	0.9	0.001	7	
Worker Light Truck	Light	2	8	-	25	1.0	0.2	0.001	0.35	0.08	0.0003	0	0	0	0.06	0.01	0.0001	7.2	1.6	0.006	7	
Subtotal (Access Road Construction)							25	0.07		2.4	0.005		0.33	0.001		1.3	0.004		6.9	0.016		
Shelter Placement																						
Crane	30 ton	6	8	1	-	1.3	0.02	0.0001	0.1	0.002	0.00001	0.1	0.001	0.00001	0.1	0.002	0.00001	0.4	0.005	0.00002	8	
Equipment Delivery Truck	Low boy	16	4	-	50	11	40	0.079	2.2	7.8	0.016	0.59	2.1	0.004	0.31	1.1	0.002	14	50	0.099	7.15	
Integrated Tool Carrier	84	5	50	1	-	780	8.6	0.2150	72	0.8	0.020	44	0.5	0.0121	85	0.9	0.0234	105	1.2	0.029	6	
Worker Light Truck	Light	15	50	-	15	1.0	1.0	0.025	0.35	0.3	0.009	0	0	0	0.06	0.1	0.001	7.2	7.2	0.18	7	
Subtotal (Shelter Placement)							49	0.3		8.9	0.04		2.6	0.02		2.1	0.03		58	0.3		
General Construction Operations																						
Compactor	<25 hp	6	16	1	-	8.2	0.11	0.0009	227	3.0	0.024	1.4	0.02	0.00014	0	0	0	6350	84	0.67	8	
Equipment Delivery Truck	Low boy	1	2	-	10	11.3	0.5	0.0005	2.2	0.10	0.0001	0.6	0.03	0.00003	0.3	0.014	0.000014	14.0	0.6	0.001	7	
Construction Generator	<50 hp	8	30	1	-	408	7.2	0.11	45	0.8	0.012	23	0.4	0.006	45	0.8	0.012	249	4.4	0.066	8	
Water Truck	4500 gal.	1	6	-	15	11.3	0.7	0.002	2.2	0.15	0.0004	0.59	0.04	0.0001	0.31	0.02	0.00006	14.0	0.9	0.003	6	
Worker Light Truck	Light	5	118	-	15	1.0	0.3	0.020	0.4	0.12	0.007	0.0	0	0	0.1	0.02	0.0012	7.2	2.4	0.14	7	
Subtotal (General Construction)							8.8	0.131		3.4	0.043		0.5	0.0063		0.9	0.0132		88	0.88		
Subtotal, Construction Engine Emissions ⁽³⁾							49	0.72		8.9	0.12		2.6	0.03		2.1	0.05		88	1.3		
Total Construction Emissions (Fugitive plus exhaust)								0.72			0.12			27	1.18			0.05			1.3	
Construction Thresholds							100 lbs/day	2.5 tpq		75 lbs/day	2.5 tons ROG/qtr		150 lbs/day	6.75 tpq		150 lbs/day	6.75 tpq		550 lbs/day	24.75 tpq		
Insignificant Impact ⁽⁹⁾							Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		

Construction Fugitive Dust Emissions

SOURCE	DAILY AMOUNT (hours)	DAYS OF ACTIVITY	AREA OF GRADING / TRENCHING	PM10 EMISSIONS			NOTES
				EF	(daily lbs)	(total tons)	
Site Grading	8	93	0.46 acres	39.4 lb/acre-day	18	0.84	12
Access Road Construction and Use	8	8	0.46 acres	39.4 lb/acre-day	18	0.072	13
Trenching - Cable Installation	8	17	-	0.51 lb/hr	4	0.034	16
Wind Erosion	24	65	0.94 acres	6.6 lb/acre-day	6.2	0.20	11
Subtotal, Construction Fugitive Emissions ⁽³⁾					24	1.15	
Total PM10 Construction Emissions (Engine Exhaust and Fugitive) ⁽³⁾						1.18	

(Continued)

Operation Emissions ⁽⁴⁾

SOURCE	SIZE / GROSS HP	DAILY AMOUNT (hours)	DAYS OF ACTIVITY	NUMBER OF UNITS	ONE-WAY DISTANCE (miles)	NO _x			ROG			PM ₁₀			SO _x			CO			NOTES
						EF	Daily	Annual	EF	Daily	Annual	EF	Daily	Annual	EF	Daily	Annual	EF	Daily	Annual	
						(g/hr) ⁽²⁾	(lbs/day)	(tons/year)	(g/hr) ⁽²⁾	(lbs/day)	(tons/year)	(g/hr) ⁽²⁾	(lbs/day)	(tons/year)	(g/hr) ⁽²⁾	(lbs/day)	(tons/year)	(g/hr) ⁽²⁾	(lbs/day)	(tons/year)	
Emergency Generator	2136 (2000kW)	0.5	60	1		24,308	26.8	0.80	445	0.5	0.015	227	0.3	0.008	392	0.43	0.013	1,175	1	0.04	4
Worker Light Truck	Light	-	260	3	15	1.00	0.20	0.026	0.35	0.07	0.009	0	0	0	0.06	0.01	0.002	7.2	1.4	0.19	7
Total Operation Emissions ⁽⁵⁾							27.0	0.83		0.6	0.024		0.3	0.008		0.44	0.015		3	0.23	
Operation Thresholds						Exempt			Exempt			Exempt			Exempt						
Insignificant Impact ⁽¹⁰⁾						Yes			Yes			Yes			Yes						

'- = Not applicable

Unit abbreviations: g/hr = grams per hour, lb/day = pounds per day, tpy = tons per year, tpq = tons per quarter

(1) Daily amount is measured in hours for off-road construction equipment (e.g., grader), and in number of trips for on-road vehicles (e.g., worker light-truck).

(2) Emission factors are in grams per hour for off-road equipment, and in grams per mile for on-road vehicles.

(3) Construction emission subtotals are for the complete project. Major pieces of construction off-road equipment (e.g., grader, dozer) are used consecutively, not concurrently.

(4) Operation and construction will not occur simultaneously, and hence, the emissions are not additive.

(5) Operational emission totals are for the project. Only one generator will be tested on a single day.

(6) Emission factors are from Caterpillar Corp.

(7) EMFAC7G Emission Factors (1998, 15mph, 75°F)

(8) SCAQMD CEQA Handbook, Table A9-8-B

(9) Construction emissions have insignificant impact when no emission of a major piece of off-road equipment exceeds threshold (i.e., major pieces are used consequently, not concurrently).

(10) Operation emissions have an insignificant impact if emergency generators are exempt from regulatory limits or if no regulations apply.

(11) Number of days subject to wind erosion equal to days for trenching.

(12) Area to be graded is 15,000 square foot building plus 10-foot wide perimeter band.

(13) Access road assumed to be 1000 ft long and 10 ft wide.

(14) The 25-minute test cycle will be conducted mostly at 50 percent load. To be conservative, the emissions are calculated at 75 percent load.

(15) The one-way distance for the equipment deliver truck is the distance from the east border of the SouthCoast Air Basin to the site for shelters that are coming from out-of-state.

(16) Fiber optic cable line installed in two one-foot wide trenches excavated between ROW and building on site.