Appendix C.

Air Quality Data

Table C-1. POLA Channel Deepening Project Construction Activities - Year 2004 - Pipeline Removal

Activity/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Remove 36" Oil Pipeline (No.3)								
Main Hoist - Clamshell Dredge	1,200	0.50	1	600	8	4,800	35.2	168,960
Main Generator - Clamshell Dredge	900	0.50	1	450	8	3,600	35.2	126,720
Deck Generator - Clamshell Dredge	240	0.60	1	144	3	432	35.2	15,206
Tug Boat	800	0.20	1	160	8	1,280	35.2	45,056
Remove 20" Water Pipeline (No.7)								
Main Hoist - Clamshell Dredge	1,200	0.50	1	600	8	4,800	66.0	316,800
Main Generator - Clamshell Dredge	900	0.50	1	450	8	3,600	66.0	237,600
Deck Generator - Clamshell Dredge	240	0.60	1	144	3	432	66.0	28,512
Tug Boat	800	0.20	1	160	8	1,280	66.0	84,480
Remove 20" Sewer Pipelines (No.8)								
Main Hoist - Clamshell Dredge	1,200	0.50	1	600	8	4,800	8.8	42,240
Main Generator - Clamshell Dredge	900	0.50	1	450	8	3,600	8.8	31,680
Deck Generator - Clamshell Dredge	240	0.60	1	144	3	432	8.8	3,802
Tug Boat	800	0.20	1	160	8	1,280	8.8	11,264
Remove 10" &16" Oil Pipelines (No.2)								
Main Hoist - Clamshell Dredge	1,200	0.50	1	600	8	4,800	17.6	84,480
Main Generator - Clamshell Dredge	900	0.50	1	450	8	3,600	17.6	63,360
Deck Generator - Clamshell Dredge	240	0.60	1	144	3	432	17.6	7,603
Tug Boat	800	0.20	1	160	8	1,280	17.6	22,528
Remove 30" Sewer Pipeline (No.9)								
Main Hoist - Clamshell Dredge	1,200	0.50	1	600	8	4,800	11.0	52,800
Main Generator - Clamshell Dredge	900	0.50	1	450	8	3,600	11.0	39,600
Deck Generator - Clamshell Dredge	240	0.60	1	144	3	432	11.0	4,752
Tug Boat	800	0.20	1	160	8	1,280	11.0	14,080
Remove Power Cables (No.11)								
Main Hoist - Clamshell Dredge	1,200	0.50	1	600	8	4,800	4.4	21,120
Main Generator - Clamshell Dredge	900	0.50	1	450	8	3,600	4.4	15,840
Deck Generator - Clamshell Dredge	240	0.60	1	144	3	432	4.4	1,901
Tug Boat	800	0.20	1	160	8	1,280	4.4	5,632
Remove 10" & 24" Oil Pipelines								
Main Hoist - Clamshell Dredge	1,200	0.50	1	600	8	4,800	17.6	84,480
Main Generator - Clamshell Dredge	900	0.50	1	450	8	3,600	17.6	63,360
Deck Generator - Clamshell Dredge	240	0.60	1	144	3	432	17.6	7,603
Tug Boat	800	0.20	1	160	8	1,280	17.6	22,528
Remove 24" Water Pipeline (No.6)								
Main Hoist - Clamshell Dredge	1,200	0.50	1	600	8	4,800	66.0	316,800
Main Generator - Clamshell Dredge	900	0.50	1	450	8	3,600	66.0	237,600
Deck Generator - Clamshell Dredge	240	0.60	1	144	3	432	66.0	28,512
Tug Boat	800	0.20	1	160	8	1,280	66.0	84,480

Table C-2. POLA Channel Deepening Project Construction Activities - Year 2004 - Dredging/Material Disposal

Activity/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Dredge Element D202 to Pier 400 SMSS								
Main Engine - Electric	N/A	N/A	1	N/A	24	N/A	13.9	N/A
Derrick Hoist - Hydraulic Dredge	240	0.70	1	168	4	672	13.9	9,365
Derrick Winch - Hydraulic Dredge	87	0.70	1	61	1	61	13.9	849
Anchor Barge Winch - Hydraulic Dredge	180	0.70	1	126	4	504	13.9	7,024
Generator - Hydraulic Dredge	350	0.60	1	210	4	840	13.9	11,706
Tug Boat - Hydraulic Dredge	850	0.33	1	281	18	5,049	13.9	70,363
Tug Boat - Hydraulic Dredge	700	0.33	1	231	18	4,158	13.9	57,946
Dredge Element 203/203A to Pier 300								
Main Engine - Electric	N/A	N/A	1	N/A	24	N/A	73.5	N/A
Derrick Hoist - Hydraulic Dredge	240	0.70	1	168	18	3,024	73.5	222,135
Derrick Winch - Hydraulic Dredge	87	0.70	1	61	18	1,096	73.5	80,524
Anchor Barge Winch - Hydraulic Dredge	180	0.70	1	126	18	2,268	73.5	166,601
Generator - Hydraulic Dredge	350	0.60	1	210	18	3,780	73.5	277,669
Tug Boat - Hydraulic Dredge	850	0.33	1	281	18	5,049	73.5	370,886
Tug Boat - Hydraulic Dredge	700	0.33	1	231	18	4,158	73.5	305,436
Dozer	335	0.50	2	335	18	6,030	73.5	442,948
Excavator	290	0.57	1	165	18	2,975	73.5	218,565
Water Truck	240	0.25	1	60	18	1,080	73.5	79,334
Pump Dredge Element 204 into D203A Pit								
Main Engine - Electric	N/A	N/A	1	N/A	24	N/A	5.2	N/A
Derrick Hoist - Hydraulic Dredge	240	0.70	1	168	18	3,024	5.2	15,756
Derrick Winch - Hydraulic Dredge	87	0.70	1	61	18	1,096	5.2	5,711
Anchor Barge Winch - Hydraulic Dredge	180	0.70	1	126	18	2,268	5.2	11,817
Generator - Hydraulic Dredge	350	0.60	1	210	18	3,780	5.2	19,694
Tug Boat - Hydraulic Dredge	850	0.33	1	281	18	5,049	5.2	26,306
Tug Boat - Hydraulic Dredge	700	0.33	1	231	18	4,158	5.2	21,664
Clamshell Dredging/Disposal to Pier 400 SMSS								
Main Hoist - Clamshell Dredge	1,200	0.50	1	600	12	7,200	10.0	72,000
Main Generator - Clamshell Dredge	900	0.50	1	450	12	5,400	10.0	54,000
Deck Generator - Clamshell Dredge	240	0.60	1	144	4	576	10.0	5,760
Tug Boat	800	0.20	1	160	12	1,920	10.0	19,200
Tugboat - Transport Sediment	2,200	0.60	3	3,960	2	7,920	10.0	79,200

Note: Hydraulic dredge production rate = 32,000 cubic yards per day. Assumes hydraulic dredge is electrified and produces no emissions.

Table C-3. POLA Channel Deepening Project Construction Activities - Year 2004 - Wick Drain Installation

Activity/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Under Surcharge - 13.5M Feet								
Wick Drain Rig - Excavator Mounted	290	0.30	4	348	8	2,784	132.0	367,488

Table C-4. POLA Channel Deepening Project Construction Activities - Year 2004 - Move Surcharge from Area 2 to Area 1

Activity/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
Move Surcharge								
Dozer	335	0.50	2	335	12	4,020	26.4	106,128
Excavator	290	0.57	2	331	12	3,967	26.4	104,734
Scraper	525	0.50	2	525	12	6,300	26.4	166,320
Water Truck	240	0.25	1	60	12	720	26.4	19,008

Table C-5. POLA Channel Deepening Project Construction Activities - Year 2004 - Install Surcharge Gravel Drainage Blanket

Activity/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
Install Gravel								
Barge Equipment	195	0.50	2	195	12	2,340	23.9	55,982
Derrick Barge Crane	180	0.50	1	90	12	1,080	23.9	25,838
Tugboat - Derrick Barge Crane	800	0.25	1	200	12	2,400	23.9	57,417
Tugboat - Transport Gravel to Site	2,200	0.60	2	2,640	12	31,680	23.9	757,904
Dozer	335	0.50	2	335	12	4,020	88.0	353,760
Excavator	290	0.57	2	331	12	3,967	88.0	349,114
Scraper	525	0.50	2	525	12	6,300	88.0	554,400
Water Truck	240	0.25	1	60	12	720	88.0	63,360

Table C-6. POLA Channel Deepening Project Construction Activities - Year 2004 - Dike Construction Rock Placement

Activity/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
Place Quarry Run								
Barge Equipment	195	0.50	2	195	12	2,340	27.9	65,199
Derrick Barge Crane	180	0.50	1	90	12	1,080	27.9	30,092
Tugboat - Derrick Barge Crane	800	0.25	1	200	12	2,400	27.9	66,871
Tugboat - Transport Quarry Run to Site	2,200	0.60	2	2,640	12	31,680	27.9	882,692
Place A-250								
Barge Equipment	195	0.50	2	195	12	2,340	3.2	7,570
Derrick Barge Crane	180	0.50	1	90	12	1,080	3.2	3,494
Tugboat - Derrick Barge Crane	800	0.25	1	200	12	2,400	3.2	7,765
Tugboat - Transport Rock to Site	2,200	0.60	2	2,640	12	31,680	3.2	102,493
Place A-500								
Barge Equipment	195	0.50	2	195	12	2,340	9.0	21,022
Derrick Barge Crane	180	0.50	1	90	12	1,080	9.0	9,702
Tugboat - Derrick Barge Crane	800	0.25	1	200	12	2,400	9.0	21,561
Tugboat - Transport Rock to Site	2,200	0.60	2	2,640	12	31,680	9.0	284,605

Table C-7. POLA Channel Deepening Project Construction Activities - Year 2004 - Demolition Activities

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
Demo Dry Docks								
Main Hoist - Clamshell Dredge	1,200	0.50	2	1,200	12	14,400	88.0	1,267,200
Main Generator - Clamshell Dredge	900	0.50	2	900	12	10,800	88.0	950,400
Deck Generator - Clamshell Dredge	240	0.60	2	288	4	1,152	88.0	101,376
Tug Boat	800	0.20	1	160	12	1,920	88.0	168,960
Excavator	290	0.57	2	331	12	3,967	88.0	349,114
Demo Berth 240-Y								
Dump Truck - 16 CY	300	0.30	1	90	8	720	22.0	15,840
Excavator	290	0.57	2	331	8	2,645	22.0	58,186
Water Truck	240	0.25	1	60	8	480	22.0	10,560
Remove Vessel Stephanie Ann								
Main Hoist - Clamshell Dredge	1,200	0.50	1	600	12	7,200	11.0	79,200
Main Generator - Clamshell Dredge	900	0.50	1	450	12	5,400	11.0	59,400
Deck Generator - Clamshell Dredge	240	0.60	1	144	4	576	11.0	6,336
Tug Boat	800	0.20	1	160	12	1,920	11.0	21,120

Table C-8. POLA Channel Deepening Project Construction Activities - Year 2004 - Road Work

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
GATX Access Road								
Dozer	335	0.50	1	168	8	1,340	11.0	14,740
Excavator	140	0.57	1	80	8	638	11.0	7,022
Paving Machine	200	0.50	1	100	8	800	11.0	8,800
Roller	165	0.50	1	83	8	660	11.0	7,260
CMB Road								
Dozer	335	0.50	1	168	8	1,340	22.0	29,480
Excavator	140	0.57	1	80	8	638	22.0	14,045
Roller	165	0.50	1	83	8	660	22.0	14,520

Table C-9. POLA Channel Deepening Project Construction Activities - Year 2004 - Cap Area 1

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
Install Cap								
Dozer	335	0.50	5	838	10	8,375	176.0	1,474,000
Dump Truck - 16 CY	300	0.30	4	360	10	3,600	176.0	633,600
Excavator	290	0.57	2	331	10	3,306	176.0	581,856
Loader - 938G	160	0.50	2	160	10	1,600	176.0	281,600
Water Truck	240	0.25	1	60	10	600	176.0	105,600

Table C-10. Air Emission Factors for the Channel Deepening Project Alternatives Construction Activities - Year 2004.

Project Year/Source Type	*Fuel Type*	*Emission Factors (Grams/Horsepower-Hour)*							*References*
		ROG	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*	
Year 2004									
Off-Road Equipment - 25-50 Hp	D	2.06	5.92	5.94	0.18	0.70	0.70	0.64	(1)
Off-Road Equipment - 51-120 Hp	D	1.11	3.77	7.56	0.18	0.77	0.77	0.71	(1)
Off-Road Equipment - 121-175 Hp	D	0.71	3.04	6.94	0.18	0.42	0.42	0.38	(1)
Off-Road Equipment - 176-250 Hp	D	0.46	1.48	6.66	0.18	0.23	0.23	0.21	(1)
Off-Road Equipment - 251-500 Hp	D	0.37	1.73	5.51	0.18	0.20	0.20	0.18	(1)
Off-Road Equipment - 501-750 Hp	D	0.46	1.99	6.66	0.18	0.24	0.24	0.22	(1)
Off-Road Equipment - >750 Hp	D	0.47	2.02	6.48	0.18	0.20	0.20	0.18	(1)
On-road Truck - Idle (Gms/Hr)	D	10.73	46.68	69.84	0.36	1.76	1.76	1.38	(2)
On-road Truck - 5 mph (Gms/Mi)	D	8.48	38.80	30.63	0.19	2.33	2.33	1.90	(2)
On-road Truck - 25 mph (Gms/Mi)	D	1.29	12.03	14.43	0.12	0.71	0.71	0.55	(2)
On-road Truck - 55 mph (Gms/Mi)	D	0.70	7.49	15.79	0.11	0.50	0.50	0.42	(2)
Dredge Materials Haul Truck - Composite (Gms/Mi)	D	2.01	14.71	16.05	0.13	0.87	0.87	0.68	(3)
Other On-Road Trucks - Composite (Gms/Mi)	D	1.21	9.96	16.26	0.12	0.64	0.64	0.52	(4)
All Years									
Tugboat (Gm/Hp-Hr)	D	0.20	1.87	8.94	0.81	0.22	0.22	0.21	(5)
Fugitive Dust (Lbs/acre-day)	---	---	---	---	---	27.50	13.45	2.81	(6)
Building Demolition (Lbs/1000 cf)	---	---	---	---	---	0.84	0.41	0.09	(7)
Small Harbor Craft	D	0.16	1.27	7.46	0.47	0.30	0.30	0.28	(8)

Notes: (1) Composite emission factors developed from ARB OFFROAD emissions model (1999) and based on average Statewide equipment fleet age distributions for year 2005. Factors developed by averaging hourly emissions for different diesel construction equipment types within the same Hp category.

(2) Heavy duty diesel truck running emission factors developed from EMFAC2007 (ARB 2006). Units in grams/mile for project year 2004. Based on annual average conditions at 60 degrees and 50% humidity with the average fleet found in the South Coast Air Basin. PM emission factors include combustive and tire/brake wear contributions.

(3) Composite factors based on a round trip of 90% at 25 mph and 10% at 5 mph. Units in grams/mile. Although not shown in these calculations, emissions from 5 minutes of idling mode included for each truck round trip.

(4) For on-road trucks other then dredge material haul trucks, composite factor based on a round trip of 75% at 55 mph, 20% at 25 mph, and 5% at 5 mph. Units in grams/mile. Although not shown in these calculations, emissions from 5 minutes of idling mode included for each truck round trip.

(5) Composite EFs for category 1/2 diesel engines for year 2004 (Starcrest 2006).

(6) Units in lbs/acre-day from section 11.2.3 of AP-42 (EPA 1995). Emissions reduced by 75% from uncontrolled levels to represent compliance with SCAQMD Rule 403 - Fugitive Dust.

(7) CEQA Air Quality Handbook, Table C-A9-9-H (SCAQMD 1993). Units in lbs/1000 cubic feet (cf) of demolished building.

(8) EPA (2006)

Table C-11. Daily Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Pipeline Removal

	Pounds per Day						
Activity/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Remove 36" Oil Pipeline (No.3)							
Main Hoist - Clamshell Dredge	5.02	21.42	68.56	1.90	2.08	2.08	1.91
Main Generator - Clamshell Dredge	3.76	16.06	51.42	1.43	1.56	1.56	1.43
Deck Generator - Clamshell Dredge	0.43	1.41	6.34	0.17	0.22	0.22	0.20
Tug Boat	0.57	5.26	25.22	2.29	0.63	0.63	0.59
Subtotal	**9.78**	**44.16**	**151.55**	**5.79**	**4.49**	**4.49**	**4.14**
Remove 20" Water Pipeline (No.7)							
Main Hoist - Clamshell Dredge	5.02	21.42	68.56	1.90	2.08	2.08	1.91
Main Generator - Clamshell Dredge	3.76	16.06	51.42	1.43	1.56	1.56	1.43
Deck Generator - Clamshell Dredge	0.43	1.41	6.34	0.17	0.22	0.22	0.20
Tug Boat	0.57	5.26	25.22	2.29	0.63	0.63	0.59
Subtotal	**9.78**	**44.16**	**151.55**	**5.79**	**4.49**	**4.49**	**4.14**
Remove 20" Sewer Pipelines (No.8)							
Main Hoist - Clamshell Dredge	5.02	21.42	68.56	1.90	2.08	2.08	1.91
Main Generator - Clamshell Dredge	3.76	16.06	51.42	1.43	1.56	1.56	1.43
Deck Generator - Clamshell Dredge	0.43	1.41	6.34	0.17	0.22	0.22	0.20
Tug Boat	0.57	5.26	25.22	2.29	0.63	0.63	0.59
Subtotal	**9.78**	**44.16**	**151.55**	**5.79**	**4.49**	**4.49**	**4.14**
Remove 10" &16" Oil Pipelines (No.2)							
Main Hoist - Clamshell Dredge	5.02	21.42	68.56	1.90	2.08	2.08	1.91
Main Generator - Clamshell Dredge	3.76	16.06	51.42	1.43	1.56	1.56	1.43
Deck Generator - Clamshell Dredge	0.43	1.41	6.34	0.17	0.22	0.22	0.20
Tug Boat	0.57	5.26	25.22	2.29	0.63	0.63	0.59
Subtotal	**9.78**	**44.16**	**151.55**	**5.79**	**4.49**	**4.49**	**4.14**
Remove 30" Sewer Pipeline (No.9)							
Main Hoist - Clamshell Dredge	5.02	21.42	68.56	1.90	2.08	2.08	1.91
Main Generator - Clamshell Dredge	3.76	16.06	51.42	1.43	1.56	1.56	1.43
Deck Generator - Clamshell Dredge	0.43	1.41	6.34	0.17	0.22	0.22	0.20
Tug Boat	0.57	5.26	25.22	2.29	0.63	0.63	0.59
Subtotal	**9.78**	**44.16**	**151.55**	**5.79**	**4.49**	**4.49**	**4.14**
Remove Power Cables (No.11)							
Main Hoist - Clamshell Dredge	5.02	21.42	68.56	1.90	2.08	2.08	1.91
Main Generator - Clamshell Dredge	3.76	16.06	51.42	1.43	1.56	1.56	1.43
Deck Generator - Clamshell Dredge	0.43	1.41	6.34	0.17	0.22	0.22	0.20
Tug Boat	0.57	5.26	25.22	2.29	0.63	0.63	0.59
Subtotal	**9.78**	**44.16**	**151.55**	**5.79**	**4.49**	**4.49**	**4.14**
Remove 10" & 24" Oil Pipelines							
Main Hoist - Clamshell Dredge	5.02	21.42	68.56	1.90	2.08	2.08	1.91
Main Generator - Clamshell Dredge	3.76	16.06	51.42	1.43	1.56	1.56	1.43
Deck Generator - Clamshell Dredge	0.43	1.41	6.34	0.17	0.22	0.22	0.20
Tug Boat	0.57	5.26	25.22	2.29	0.63	0.63	0.59
Subtotal	**9.78**	**44.16**	**151.55**	**5.79**	**4.49**	**4.49**	**4.14**
Remove 24" Water Pipeline (No.6)							
Main Hoist - Clamshell Dredge	5.02	21.42	68.56	1.90	2.08	2.08	1.91
Main Generator - Clamshell Dredge	3.76	16.06	51.42	1.43	1.56	1.56	1.43
Deck Generator - Clamshell Dredge	0.43	1.41	6.34	0.17	0.22	0.22	0.20
Tug Boat	0.57	5.26	25.22	2.29	0.63	0.63	0.59
Subtotal	**9.78**	**44.16**	**151.55**	**5.79**	**4.49**	**4.49**	**4.14**

Table C-12. Daily Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Dredging/Material Disposal

	Pounds per Day						
Activity/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Dredge Element D202 to Pier 400 SMSS							
Main Engine - Electric	-	-	-	-	-	-	-
Derrick Hoist - Hydraulic Dredge	0.68	2.20	9.87	0.27	0.35	0.35	0.32
Derrick Winch - Hydraulic Dredge	0.15	0.51	1.01	0.02	0.10	0.10	0.10
Anchor Barge Winch - Hydraulic Dredge	0.51	1.65	7.40	0.20	0.26	0.26	0.24
Generator - Hydraulic Dredge	0.69	3.20	10.21	0.33	0.37	0.37	0.34
Tug Boat - Hydraulic Dredge	2.24	20.77	99.47	9.02	2.49	2.49	2.34
Tug Boat - Hydraulic Dredge	1.85	17.10	81.92	7.43	2.05	2.05	1.92
Subtotal	**6.11**	**45.43**	**209.88**	**17.27**	**5.62**	**5.62**	**5.25**
Dredge Element 203/203A to Pier 300							
Main Engine - Electric	-	-	-	-	-	-	-
Derrick Hoist - Hydraulic Dredge	3.04	9.90	44.41	1.20	1.55	1.55	1.43
Derrick Winch - Hydraulic Dredge	2.69	9.11	18.27	0.44	1.86	1.86	1.71
Anchor Barge Winch - Hydraulic Dredge	2.28	7.42	33.31	0.90	1.16	1.16	1.07
Generator - Hydraulic Dredge	3.10	14.42	45.92	1.50	1.66	1.66	1.52
Tug Boat - Hydraulic Dredge	2.24	20.77	99.47	9.02	2.49	2.49	2.34
Tug Boat - Hydraulic Dredge	1.85	17.10	81.92	7.43	2.05	2.05	1.92
Dozer	4.94	23.00	73.26	2.39	2.64	2.64	2.43
Excavator	2.44	11.35	36.15	1.18	1.30	1.30	1.20
Water Truck	1.09	3.54	15.86	0.43	0.55	0.55	0.51
Subtotal	**23.67**	**116.61**	**448.57**	**24.48**	**15.28**	**15.28**	**14.14**
Pump Dredge Element 204 into D203A Pit							
Main Engine - Electric	-	-	-	-	-	-	-
Derrick Hoist - Hydraulic Dredge	3.04	9.90	44.41	1.20	1.55	1.55	1.43
Derrick Winch - Hydraulic Dredge	2.69	9.11	18.27	0.44	1.86	1.86	1.71
Anchor Barge Winch - Hydraulic Dredge	2.28	7.42	33.31	0.90	1.16	1.16	1.07
Generator - Hydraulic Dredge	3.10	14.42	45.92	1.50	1.66	1.66	1.52
Tug Boat - Hydraulic Dredge	2.24	20.77	99.47	9.02	2.49	2.49	2.34
Tug Boat - Hydraulic Dredge	1.85	17.10	81.92	7.43	2.05	2.05	1.92
Subtotal	**15.20**	**78.72**	**323.30**	**20.48**	**10.78**	**10.78**	**10.00**
Clamshell Dredging/Disposal to Pier 400 SMSS							
Main Hoist - Clamshell Dredge	7.53	32.13	102.84	2.86	3.12	3.12	2.87
Main Generator - Clamshell Dredge	5.64	24.10	77.13	2.14	2.34	2.34	2.15
Deck Generator - Clamshell Dredge	0.58	1.89	8.46	0.23	0.30	0.30	0.27
Tug Boat	0.85	7.90	37.83	3.43	0.95	0.95	0.89
Tugboat - Transport Sediment	3.52	32.58	156.04	14.14	3.91	3.91	3.66
Subtotal	**18.12**	**98.58**	**382.30**	**22.80**	**10.61**	**10.61**	**9.84**

Table C-13. Daily Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Wick Drain Installation

	Pounds per Day						
Activity/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Under Surcharge - 13.5M Feet							
Wick Drain Rig - Excavator Mounted	2.28	10.62	33.82	1.10	1.22	1.22	1.12
Subtotal	**2.28**	**10.62**	**33.82**	**1.10**	**1.22**	**1.22**	**1.12**

Table C-14. Daily Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Move Surcharge from Area 2 to Are

	Pounds per Day						
Activity/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Move Surcharge							
Dozer	3.29	15.33	48.84	1.60	1.76	1.76	1.62
Excavator	3.25	15.13	48.20	1.57	1.74	1.74	1.60
Scraper	6.40	27.58	92.47	2.50	3.37	3.37	3.10
Water Truck	0.72	2.36	10.57	0.29	0.37	0.37	0.34
Subtotal	**13.67**	**60.40**	**200.08**	**5.96**	**7.24**	**7.24**	**6.66**

Table C-15 - Daily Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Install Surcharge Gravel Drainage I

	Pounds per Day						
Activity/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Install Gravel							
Barge Equipment	2.36	7.66	34.37	0.93	1.20	1.20	1.11
Derrick Barge Crane	1.09	3.54	15.86	0.43	0.55	0.55	0.51
Tugboat - Derrick Barge Crane	1.07	9.87	47.28	4.29	1.18	1.18	1.11
Tugboat - Transport Gravel to Site	14.07	130.30	624.14	56.57	15.64	15.64	14.65
Dozer	3.29	15.33	48.84	1.60	1.76	1.76	1.62
Excavator	3.25	15.13	48.20	1.57	1.74	1.74	1.60
Scraper	6.40	27.58	92.47	2.50	3.37	3.37	3.10
Water Truck	0.72	2.36	10.57	0.29	0.37	0.37	0.34
Subtotal	**32.25**	**211.77**	**921.74**	**68.17**	**25.82**	**25.82**	**24.04**

Table C-16. Daily Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Dike Construction Rock Placement

	Pounds per Day						
Activity/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Place Quarry Run							
Barge Equipment	2.36	7.66	34.37	0.93	1.20	1.20	1.11
Derrick Barge Crane	1.09	3.54	15.86	0.43	0.55	0.55	0.51
Tugboat - Derrick Barge Crane	1.07	9.87	47.28	4.29	1.18	1.18	1.11
Tugboat - Transport Gravel to Site	14.07	130.30	624.14	56.57	15.64	15.64	14.65
Subtotal	**18.58**	**151.37**	**721.65**	**62.21**	**18.58**	**18.58**	**17.38**
Place A-250							
Barge Equipment	2.36	7.66	34.37	0.93	1.20	1.20	1.11
Derrick Barge Crane	1.09	3.54	15.86	0.43	0.55	0.55	0.51
Tugboat - Derrick Barge Crane	1.07	9.87	47.28	4.29	1.18	1.18	1.11
Tugboat - Transport Gravel to Site	14.07	130.30	624.14	56.57	15.64	15.64	14.65
Subtotal	**18.58**	**151.37**	**721.65**	**62.21**	**18.58**	**18.58**	**17.38**
Place A-500							
Barge Equipment	2.36	7.66	34.37	0.93	1.20	1.20	1.11
Derrick Barge Crane	1.09	3.54	15.86	0.43	0.55	0.55	0.51
Tugboat - Derrick Barge Crane	1.07	9.87	47.28	4.29	1.18	1.18	1.11
Tugboat - Transport Gravel to Site	14.07	130.30	624.14	56.57	15.64	15.64	14.65
Subtotal	**18.58**	**151.37**	**721.65**	**62.21**	**18.58**	**18.58**	**17.38**

Table C-17. Daily Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Demolition Activities

	Pounds per Day						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Demo Dry Docks							
Main Hoist - Clamshell Dredge	15.05	64.26	205.69	5.71	6.24	6.24	5.74
Main Generator - Clamshell Dredge	11.29	48.19	154.26	4.29	4.68	4.68	4.30
Deck Generator - Clamshell Dredge	1.16	3.77	16.92	0.46	0.59	0.59	0.54
Tug Boat	0.85	7.90	37.83	3.43	0.95	0.95	0.89
Excavator	3.25	15.13	48.20	1.57	1.74	1.74	1.60
Subtotal	**31.60**	**139.25**	**462.89**	**15.46**	**14.19**	**14.19**	**13.07**
Demo Berth 240-Y							
Dump Truck - 16 CY	0.59	2.75	8.75	0.29	0.32	0.32	0.29
Excavator	2.17	10.09	32.13	1.05	1.16	1.16	1.07
Water Truck	0.48	1.57	7.05	0.19	0.25	0.25	0.23
Subtotal	**3.24**	**14.41**	**47.93**	**1.53**	**1.72**	**1.72**	**1.58**
Remove Vessel Stephanie Ann							
Main Hoist - Clamshell Dredge	7.53	32.13	102.84	2.86	3.12	3.12	2.87
Main Generator - Clamshell Dredge	5.64	24.10	77.13	2.14	2.34	2.34	2.15
Deck Generator - Clamshell Dredge	0.58	1.89	8.46	0.23	0.30	0.30	0.27
Tug Boat	0.85	7.90	37.83	3.43	0.95	0.95	0.89
Subtotal	**14.60**	**66.01**	**226.26**	**8.66**	**6.70**	**6.70**	**6.18**

Table C-18. Daily Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Road Work

	Pounds per Day						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
GATX Access Road							
Dozer	1.10	5.11	16.28	0.53	0.59	0.59	0.54
Excavator	1.00	4.28	9.76	0.25	0.58	0.58	0.54
Paving Machine	0.81	2.62	11.75	0.32	0.41	0.41	0.38
Roller	1.03	4.42	10.09	0.26	0.60	0.60	0.56
Subtotal	**3.94**	**16.43**	**47.89**	**1.36**	**2.19**	**2.19**	**2.01**
CMB Road							
Dozer	1.10	5.11	16.28	0.53	0.59	0.59	0.54
Excavator	1.00	4.28	9.76	0.25	0.58	0.58	0.54
Roller	1.03	4.42	10.09	0.26	0.60	0.60	0.56
Subtotal	**3.13**	**13.81**	**36.14**	**1.05**	**1.78**	**1.78**	**1.63**

Table C-19 - Daily Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Cap Area 1

	Pounds per Day						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Install Cap							
Dozer	6.86	31.95	101.75	3.32	3.67	3.67	3.38
Dump Truck - 16 CY	2.95	13.73	43.74	1.43	1.58	1.58	1.45
Excavator	2.71	12.61	40.16	1.31	1.45	1.45	1.33
Loader - 938G	2.51	10.72	24.47	0.63	1.46	1.46	1.35
Water Truck	0.60	1.96	8.81	0.24	0.31	0.31	0.28
Subtotal	**15.63**	**70.98**	**218.93**	**6.94**	**8.47**	**8.47**	**7.79**

Table C-20. Daily Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004

	Pounds per Day						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Pipeline Removal							
Remove 36" Oil Pipeline (No.3)	10	44	152	6	4	4	4
Remove 20" Water Pipeline (No.7)	10	44	152	6	4	4	4
Remove 20" Sewer Pipelines (No.8)	10	44	152	6	4	4	4
Remove 10" &16" Oil Pipelines (No.2)	10	44	152	6	4	4	4
Remove 30" Sewer Pipeline (No.9)	10	44	152	6	4	4	4
Remove Power Cables (No.11)	10	44	152	6	4	4	4
Remove 10" & 24" Oil Pipelines	10	44	152	6	4	4	4
Remove 24" Water Pipeline (No.6)	10	44	152	6	4	4	4
Dredging/Material Disposal							
Dredge Element D202 to Pier 400 SMSS	6	45	210	17	6	6	5
Dredge Element 203/203A to Pier 300	24	117	449	24	15	15	14
Pump Dredge Element 204 into D203A Pit	15	79	323	20	11	11	10
Clamshell Dredging/Disposal to Pier 400 SMSS	18	99	382	23	11	11	10
Wick Drain Installation							
Under Surcharge - 13.5M Feet	2	11	34	1	1	1	1
Move Surcharge from Area 2 to Area 1							
Move Surcharge	14	60	200	6	7	7	7
Install Surcharge Gravel Drainage Blanket							
Install Gravel	32	212	922	68	26	26	24
Dike Construction Rock Placement							
Place Quarry Run	19	151	722	62	19	19	17
Place A-250	19	151	722	62	19	19	17
Place A-500	19	151	722	62	19	19	17
Demolition Activities							
Demo Dry Docks	32	139	463	15	14	14	13
Demo Berth 240-Y	3	14	48	2	2	2	2
Remove Vessel Stephanie Ann	15	66	226	9	7	7	6
Road Work							
GATX Access Road	4	16	48	1	2	2	2
CMB Road	3	14	36	1	2	2	2
Cap Area 1							
Install Cap	16	71	219	7	8	8	8
Total Daily Emissions	**317**	**1,750**	**6,937**	**428**	**203**	**203**	**189**
Peak Daily Emissions (1)	**68**	**383**	**1,556**	**100**	**47**	**47**	**43**

Notes: (1) Peak daily emissions would occur from the follwing simultaneous activities: (a) Remove 20" Water Pipeline (No.7), (b) Dredge Element 203/203A to Pier 300, (c) Wick Drain Installation, and (d) Install Gravel.

Table C-21. Total Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Pipeline Removal

	Tons						
Activity/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Remove 36" Oil Pipeline (No.3)							
Main Hoist - Clamshell Dredge	0.09	0.38	1.21	0.03	0.04	0.04	0.03
Main Generator - Clamshell Dredge	0.07	0.28	0.91	0.03	0.03	0.03	0.03
Deck Generator - Clamshell Dredge	0.01	0.02	0.11	0.00	0.00	0.00	0.00
Tug Boat	0.01	0.09	0.44	0.04	0.01	0.01	0.01
Subtotal	**0.17**	**0.78**	**2.67**	**0.10**	**0.08**	**0.08**	**0.07**
Remove 20" Water Pipeline (No.7)							
Main Hoist - Clamshell Dredge	0.17	0.71	2.26	0.06	0.07	0.07	0.06
Main Generator - Clamshell Dredge	0.12	0.53	1.70	0.05	0.05	0.05	0.05
Deck Generator - Clamshell Dredge	0.01	0.05	0.21	0.01	0.01	0.01	0.01
Tug Boat	0.02	0.17	0.83	0.08	0.02	0.02	0.02
Subtotal	**0.32**	**1.46**	**5.00**	**0.19**	**0.15**	**0.15**	**0.14**
Remove 20" Sewer Pipelines (No.8)							
Main Hoist - Clamshell Dredge	0.02	0.09	0.30	0.01	0.01	0.01	0.01
Main Generator - Clamshell Dredge	0.02	0.07	0.23	0.01	0.01	0.01	0.01
Deck Generator - Clamshell Dredge	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Tug Boat	0.00	0.02	0.11	0.01	0.00	0.00	0.00
Subtotal	**0.04**	**0.19**	**0.67**	**0.03**	**0.02**	**0.02**	**0.02**
Remove 10" &16" Oil Pipelines (No.2)							
Main Hoist - Clamshell Dredge	0.04	0.19	0.60	0.02	0.02	0.02	0.02
Main Generator - Clamshell Dredge	0.03	0.14	0.45	0.01	0.01	0.01	0.01
Deck Generator - Clamshell Dredge	0.00	0.01	0.06	0.00	0.00	0.00	0.00
Tug Boat	0.01	0.05	0.22	0.02	0.01	0.01	0.01
Subtotal	**0.09**	**0.39**	**1.33**	**0.05**	**0.04**	**0.04**	**0.04**
Remove 30" Sewer Pipeline (No.9)							
Main Hoist - Clamshell Dredge	0.03	0.12	0.38	0.01	0.01	0.01	0.01
Main Generator - Clamshell Dredge	0.02	0.09	0.28	0.01	0.01	0.01	0.01
Deck Generator - Clamshell Dredge	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Tug Boat	0.00	0.03	0.14	0.01	0.00	0.00	0.00
Subtotal	**0.05**	**0.24**	**0.83**	**0.03**	**0.02**	**0.02**	**0.02**
Remove Power Cables (No.11)							
Main Hoist - Clamshell Dredge	0.01	0.05	0.15	0.00	0.00	0.00	0.00
Main Generator - Clamshell Dredge	0.01	0.04	0.11	0.00	0.00	0.00	0.00
Deck Generator - Clamshell Dredge	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Tug Boat	0.00	0.01	0.06	0.01	0.00	0.00	0.00
Subtotal	**0.02**	**0.10**	**0.33**	**0.01**	**0.01**	**0.01**	**0.01**
Remove 10" & 24" Oil Pipelines							
Main Hoist - Clamshell Dredge	0.04	0.19	0.60	0.02	0.02	0.02	0.02
Main Generator - Clamshell Dredge	0.03	0.14	0.45	0.01	0.01	0.01	0.01
Deck Generator - Clamshell Dredge	0.00	0.01	0.06	0.00	0.00	0.00	0.00
Tug Boat	0.01	0.05	0.22	0.02	0.01	0.01	0.01
Subtotal	**0.09**	**0.39**	**1.33**	**0.05**	**0.04**	**0.04**	**0.04**
Remove 24" Water Pipeline (No.6)							
Main Hoist - Clamshell Dredge	0.17	0.71	2.26	0.06	0.07	0.07	0.06
Main Generator - Clamshell Dredge	0.12	0.53	1.70	0.05	0.05	0.05	0.05
Deck Generator - Clamshell Dredge	0.01	0.05	0.21	0.01	0.01	0.01	0.01
Tug Boat	0.02	0.17	0.83	0.08	0.02	0.02	0.02
Subtotal	**0.32**	**1.46**	**5.00**	**0.19**	**0.15**	**0.15**	**0.14**

Table C-22. Total Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Dredging/Material Disposal

	Tons						
Activity/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Dredge Element D202 to Pier 400 SMSS							
Main Engine - Electric	-	-	-	-	-	-	-
Derrick Hoist - Hydraulic Dredge	0.00	0.02	0.07	0.00	0.00	0.00	0.00
Derrick Winch - Hydraulic Dredge	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Anchor Barge Winch - Hydraulic Dredge	0.00	0.01	0.05	0.00	0.00	0.00	0.00
Generator - Hydraulic Dredge	0.00	0.02	0.07	0.00	0.00	0.00	0.00
Tug Boat - Hydraulic Dredge	0.02	0.14	0.69	0.06	0.02	0.02	0.02
Tug Boat - Hydraulic Dredge	0.01	0.12	0.57	0.05	0.01	0.01	0.01
Subtotal	**0.04**	**0.32**	**1.46**	**0.12**	**0.04**	**0.04**	**0.04**
Dredge Element 203/203A to Pier 300							
Main Engine - Electric	-	-	-	-	-	-	-
Derrick Hoist - Hydraulic Dredge	0.11	0.36	1.63	0.04	0.06	0.06	0.05
Derrick Winch - Hydraulic Dredge	0.10	0.33	0.67	0.02	0.07	0.07	0.06
Anchor Barge Winch - Hydraulic Dredge	0.08	0.27	1.22	0.03	0.04	0.04	0.04
Generator - Hydraulic Dredge	0.11	0.53	1.69	0.06	0.06	0.06	0.06
Tug Boat - Hydraulic Dredge	0.08	0.76	3.65	0.33	0.09	0.09	0.09
Tug Boat - Hydraulic Dredge	0.07	0.63	3.01	0.27	0.08	0.08	0.07
Dozer	0.18	0.84	2.69	0.09	0.10	0.10	0.09
Excavator	0.09	0.42	1.33	0.04	0.05	0.05	0.04
Water Truck	0.04	0.13	0.58	0.02	0.02	0.02	0.02
Subtotal	**0.87**	**4.28**	**16.48**	**0.90**	**0.56**	**0.56**	**0.52**
Pump Dredge Element 204 into D203A Pit							
Main Engine - Electric	-	-	-	-	-	-	-
Derrick Hoist - Hydraulic Dredge	0.01	0.03	0.12	0.00	0.00	0.00	0.00
Derrick Winch - Hydraulic Dredge	0.01	0.02	0.05	0.00	0.00	0.00	0.00
Anchor Barge Winch - Hydraulic Dredge	0.01	0.02	0.09	0.00	0.00	0.00	0.00
Generator - Hydraulic Dredge	0.01	0.04	0.12	0.00	0.00	0.00	0.00
Tug Boat - Hydraulic Dredge	0.01	0.05	0.26	0.02	0.01	0.01	0.01
Tug Boat - Hydraulic Dredge	0.00	0.04	0.21	0.02	0.01	0.01	0.01
Subtotal	**0.04**	**0.21**	**0.84**	**0.05**	**0.03**	**0.03**	**0.03**
Clamshell Dredging/Disposal to Pier 400 SMSS							
Main Hoist - Clamshell Dredge	0.04	0.16	0.51	0.01	0.02	0.02	0.01
Main Generator - Clamshell Dredge	0.03	0.12	0.39	0.01	0.01	0.01	0.01
Deck Generator - Clamshell Dredge	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Tug Boat	0.00	0.04	0.19	0.02	0.00	0.00	0.00
Tugboat - Transport Sediment	0.02	0.16	0.78	0.07	0.02	0.02	0.02
Subtotal	**0.09**	**0.49**	**1.91**	**0.11**	**0.05**	**0.05**	**0.05**

Table C-23. Total Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Wick Drain Installation

	Tons						
Activity/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Under Surcharge - 13.5M Feet							
Wick Drain Rig - Excavator Mounted	0.15	0.70	2.23	0.07	0.08	0.08	0.07
Subtotal	**0.15**	**0.70**	**2.23**	**0.07**	**0.08**	**0.08**	**0.07**

Table C-24. Total Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Move Surcharge from Area 2 to Area

	Tons						
Activity/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Move Surcharge							
Dozer	0.04	0.20	0.64	0.02	0.02	0.02	0.02
Excavator	0.04	0.20	0.64	0.02	0.02	0.02	0.02
Scraper	0.08	0.36	1.22	0.03	0.04	0.04	0.04
Water Truck	0.01	0.03	0.14	0.00	0.00	0.00	0.00
Subtotal	**0.18**	**0.80**	**2.64**	**0.08**	**0.10**	**0.10**	**0.09**

Table C-25 - Total Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Install Surcharge Gravel Drainage B

	Tons						
Activity/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Install Gravel							
Barge Equipment	0.03	0.09	0.41	0.01	0.01	0.01	0.01
Derrick Barge Crane	0.01	0.04	0.19	0.01	0.01	0.01	0.01
Tugboat - Derrick Barge Crane	0.01	0.12	0.57	0.05	0.01	0.01	0.01
Tugboat - Transport Gravel to Site	0.17	1.56	7.47	0.68	0.19	0.19	0.18
Dozer	0.14	0.67	2.15	0.07	0.08	0.08	0.07
Excavator	0.14	0.67	2.12	0.07	0.08	0.08	0.07
Scraper	0.28	1.21	4.07	0.11	0.15	0.15	0.14
Water Truck	0.03	0.10	0.47	0.01	0.02	0.02	0.01
Subtotal	**0.82**	**4.47**	**17.44**	**1.01**	**0.54**	**0.54**	**0.50**

Table C-26. Total Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Dike Construction Rock Placement

	Tons						
Activity/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Place Quarry Run							
Barge Equipment	0.03	0.11	0.48	0.01	0.02	0.02	0.02
Derrick Barge Crane	0.02	0.05	0.22	0.01	0.01	0.01	0.01
Tugboat - Derrick Barge Crane	0.01	0.14	0.66	0.06	0.02	0.02	0.02
Tugboat - Transport Gravel to Site	0.20	1.82	8.70	0.79	0.22	0.22	0.20
Subtotal	**0.26**	**2.11**	**10.05**	**0.87**	**0.26**	**0.26**	**0.24**
Place A-250							
Barge Equipment	0.00	0.01	0.06	0.00	0.00	0.00	0.00
Derrick Barge Crane	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Tugboat - Derrick Barge Crane	0.00	0.02	0.08	0.01	0.00	0.00	0.00
Tugboat - Transport Gravel to Site	0.02	0.21	1.01	0.09	0.03	0.03	0.02
Subtotal	**0.03**	**0.24**	**1.17**	**0.10**	**0.03**	**0.03**	**0.03**
Place A-500							
Barge Equipment	0.01	0.03	0.15	0.00	0.01	0.01	0.00
Derrick Barge Crane	0.00	0.02	0.07	0.00	0.00	0.00	0.00
Tugboat - Derrick Barge Crane	0.00	0.04	0.21	0.02	0.01	0.01	0.00
Tugboat - Transport Gravel to Site	0.06	0.59	2.80	0.25	0.07	0.07	0.07
Subtotal	**0.08**	**0.68**	**3.24**	**0.28**	**0.08**	**0.08**	**0.08**

Table C-27. Total Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Demolition Activities

	Tons						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Demo Dry Docks							
Main Hoist - Clamshell Dredge	0.66	2.83	9.05	0.25	0.27	0.27	0.25
Main Generator - Clamshell Dredge	0.50	2.12	6.79	0.19	0.21	0.21	0.19
Deck Generator - Clamshell Dredge	0.05	0.17	0.74	0.02	0.03	0.03	0.02
Tug Boat	0.04	0.35	1.66	0.15	0.04	0.04	0.04
Excavator	0.14	0.67	2.12	0.07	0.08	0.08	0.07
Subtotal	**1.39**	**6.13**	**20.37**	**0.68**	**0.62**	**0.62**	**0.58**
Demo Berth 240-Y							
Dump Truck - 16 CY	0.01	0.03	0.10	0.00	0.00	0.00	0.00
Excavator	0.02	0.11	0.35	0.01	0.01	0.01	0.01
Water Truck	0.01	0.02	0.08	0.00	0.00	0.00	0.00
Subtotal	**0.04**	**0.16**	**0.53**	**0.02**	**0.02**	**0.02**	**0.02**
Remove Vessel Stephanie Ann							
Main Hoist - Clamshell Dredge	0.04	0.18	0.57	0.02	0.02	0.02	0.02
Main Generator - Clamshell Dredge	0.03	0.13	0.42	0.01	0.01	0.01	0.01
Deck Generator - Clamshell Dredge	0.00	0.01	0.05	0.00	0.00	0.00	0.00
Tug Boat	0.00	0.04	0.21	0.02	0.01	0.01	0.00
Subtotal	**0.08**	**0.36**	**1.24**	**0.05**	**0.04**	**0.04**	**0.03**

Table C-28. Total Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Road Work

	Tons						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
GATX Access Road							
Dozer	0.01	0.03	0.09	0.00	0.00	0.00	0.00
Excavator	0.01	0.02	0.05	0.00	0.00	0.00	0.00
Paving Machine	0.00	0.01	0.06	0.00	0.00	0.00	0.00
Roller	0.01	0.02	0.06	0.00	0.00	0.00	0.00
Subtotal	**0.02**	**0.09**	**0.26**	**0.01**	**0.01**	**0.01**	**0.01**
CMB Road							
Dozer	0.01	0.06	0.18	0.01	0.01	0.01	0.01
Excavator	0.01	0.05	0.11	0.00	0.01	0.01	0.01
Roller	0.01	0.05	0.11	0.00	0.01	0.01	0.01
Subtotal	**0.03**	**0.15**	**0.40**	**0.01**	**0.02**	**0.02**	**0.02**

Table C-29 - Total Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004 - Cap Area 1

	Tons						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Install Cap							
Dozer	0.60	2.81	8.95	0.29	0.32	0.32	0.30
Dump Truck - 16 CY	0.26	1.21	3.85	0.13	0.14	0.14	0.13
Excavator	0.24	1.11	3.53	0.12	0.13	0.13	0.12
Loader - 938G	0.22	0.94	2.15	0.06	0.13	0.13	0.12
Water Truck	0.05	0.17	0.78	0.02	0.03	0.03	0.02
Subtotal	**1.38**	**6.25**	**19.27**	**0.61**	**0.75**	**0.75**	**0.69**

Table C-30. Total Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004

	Tons						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Pipeline Removal							
Remove 36" Oil Pipeline (No.3)	0.17	0.78	2.67	0.10	0.08	0.08	0.07
Remove 20" Water Pipeline (No.7)	0.32	1.46	5.00	0.19	0.15	0.15	0.14
Remove 20" Sewer Pipelines (No.8)	0.04	0.19	0.67	0.03	0.02	0.02	0.02
Remove 10" &16" Oil Pipelines (No.2)	0.09	0.39	1.33	0.05	0.04	0.04	0.04
Remove 30" Sewer Pipeline (No.9)	0.05	0.24	0.83	0.03	0.02	0.02	0.02
Remove Power Cables (No.11)	0.02	0.10	0.33	0.01	0.01	0.01	0.01
Remove 10" & 24" Oil Pipelines	0.09	0.39	1.33	0.05	0.04	0.04	0.04
Remove 24" Water Pipeline (No.6)	0.32	1.46	5.00	0.19	0.15	0.15	0.14
Dredging/Material Disposal							
Dredge Element D202 to Pier 400 SMSS	0.04	0.32	1.46	0.12	0.04	0.04	0.04
Dredge Element 203/203A to Pier 300	0.87	4.28	16.48	0.90	0.56	0.56	0.52
Pump Dredge Element 204 into D203A Pit	0.04	0.21	0.84	0.05	0.03	0.03	0.03
Clamshell Dredging/Disposal to Pier 400 SMSS	0.09	0.49	1.91	0.11	0.05	0.05	0.05
Wick Drain Installation							
Under Surcharge - 13.5M Feet	0.15	0.70	2.23	0.07	0.08	0.08	0.07
Move Surcharge from Area 2 to Area 1							
Move Surcharge	0.18	0.80	2.64	0.08	0.10	0.10	0.09
Install Surcharge Gravel Drainage Blanket							
Install Gravel	0.82	4.47	17.44	1.01	0.54	0.54	0.50
Dike Construction Rock Placement							
Place Quarry Run	0.26	2.11	10.05	0.87	0.26	0.26	0.24
Place A-250	0.03	0.24	1.17	0.10	0.03	0.03	0.03
Place A-500	0.08	0.68	3.24	0.28	0.08	0.08	0.08
Demolition Activities							
Demo Dry Docks	1.39	6.13	20.37	0.68	0.62	0.62	0.58
Demo Berth 240-Y	0.04	0.16	0.53	0.02	0.02	0.02	0.02
Remove Vessel Stephanie Ann	0.08	0.36	1.24	0.05	0.04	0.04	0.03
Road Work							
GATX Access Road	0.02	0.09	0.26	0.01	0.01	0.01	0.01
CMB Road	0.03	0.15	0.40	0.01	0.02	0.02	0.02
Cap Area 1							
Install Cap	1.38	6.25	19.27	0.61	0.75	0.75	0.69
Total Emissions	**6.62**	**32.44**	**116.70**	**5.62**	**3.74**	**3.74**	**3.45**
Annual Average Daily Pounds per Day	**36.25**	**177.74**	**639.45**	**30.80**	**20.48**	**20.48**	**18.92**

Table C-31. Total Emissions for the POLA Channel Deepening Project Construction Activities - Year 2004

	Tons						
Project Year/Activity	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
2004							
Pipeline Removal	1.11	5.00	17.17	0.66	0.51	0.51	0.47
Dredging/Material Disposal	1.04	5.30	20.69	1.19	0.68	0.68	0.63
Wick Drain Installation	0.15	0.70	2.23	0.07	0.08	0.08	0.07
Move Surcharge from Area 2 to Area 1	0.18	0.80	2.64	0.08	0.10	0.10	0.09
Install Surcharge Gravel Drainage Blanket	0.82	4.47	17.44	1.01	0.54	0.54	0.50
Dike Construction Rock Placement	0.37	3.03	14.46	1.25	0.37	0.37	0.35
Demolition Activities	1.51	6.65	22.14	0.74	0.68	0.68	0.63
Road Work	0.06	0.24	0.66	0.02	0.03	0.03	0.03
Cap Area 1	1.38	6.25	19.27	0.61	0.75	0.75	0.69
Total Emissions	6.62	32.44	116.70	5.62	3.74	3.74	3.45

Table C-32. GHG Emission Factors for the Channel Deepening Project - Year 2004

Project Year/Source Type	*Fuel Type*	*Emission Factors (Gm/Hp-Hr)*			*References*
		CO2	*CH4*	*N2O*	
Year 2004					
Off-Road Equipment - 25-50 Hp	D	568	0.11	0.01	(1)
Off-Road Equipment - 51-120 Hp	D	568	0.10	0.01	(1)
Off-Road Equipment - 121-175 Hp	D	568	0.09	0.01	(1)
Off-Road Equipment - 176-250 Hp	D	568	0.09	0.01	(1)
Off-Road Equipment - 251-500 Hp	D	568	0.08	0.01	(1)
Off-Road Equipment - 501-750 Hp	D	568	0.08	0.01	(1)
Off-Road Equipment - >750 Hp	D	568	0.08	0.01	(1)
On-road Truck - Idle (Gms/Hr)	D	4,808	0.50	0.25	(2)
On-road Truck - 5 mph (Gms/Mi)	D	2,704	0.10	0.05	(2)
On-road Truck - 25 mph (Gms/Mi)	D	1,574	0.10	0.05	(2)
On-road Truck - 55 mph (Gms/Mi)	D	1,376	0.10	0.05	(2)
Dredge Materials Haul Truck - Composite (Gms/Mi)	D	1,687	0.10	0.05	(3)
Other On-Road Trucks - Composite (Gms/Mi)	D	1,482	0.10	0.05	(4)
All Years					
Tugboat (Gm/Hp-Hr)	D	481.34	0.07	0.005	(5)
Small Harbor Craft	D	481.34	0.07	0.00	(5)

Notes: (1) OFFROAD 2007 Emissions Model for CO2 factors (ARB 2006). CH4 and N2O factors calculated from the California Climate Action Registry (CCAR) General Reporting Protocol, Tables C.4 and C.5 (CCAR 2008).

(2) EMFAC2007 for CO2 factor for project year 2004 (ARB 2006). CH4 and N2O factors obtained from the CCAR General Reporting Protocol, Table C.5 (CCAR 2008). The highest emission factor from all model year categories was conservatively selected.

(3) Composite factors based on a round trip of 90% at 25 mph and 10% at 5 mph. Units in grams/mile. Although not shown in these calculations, emissions from 5 minutes of idling mode included for each truck round trip.

(4) For on-road trucks other then dredge material haul trucks, composite factor based on a round trip of 75% at 55 mph, 20% at 25 mph, and 5% at 5 mph. Units in grams/mile. Although not shown in these calculations, emissions from 5 minutes of idling mode included for each truck round trip.

(5) CO2 factor from Quantification of Ship Emissions, Table 2.8 (Entec 2002). CH4 and N2O factors calculated from the General Reporting Protocol, Table C.5 (CCAR 2008).

Table C-33. Total GHG Emissions for the POLA Channel Deepening Project - Year 2004 - Pipeline Removal

	Tons			
Activity/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Remove 36" Oil Pipeline (No.3)				
Main Hoist - Clamshell Dredge	105.84	0.02	0.00	106.51
Main Generator - Clamshell Dredge	79.38	0.01	0.00	79.89
Deck Generator - Clamshell Dredge	9.53	0.00	0.00	9.59
Tug Boat	23.91	0.00	0.00	24.05
Subtotal	**218.66**	**0.03**	**0.00**	**220.04**
Remove 20" Water Pipeline (No.7)				
Main Hoist - Clamshell Dredge	198.45	0.03	0.00	199.71
Main Generator - Clamshell Dredge	148.84	0.02	0.00	149.78
Deck Generator - Clamshell Dredge	17.86	0.00	0.00	17.99
Tug Boat	44.82	0.01	0.00	45.09
Subtotal	**409.98**	**0.06**	**0.00**	**412.58**
Remove 20" Sewer Pipelines (No.8)				
Main Hoist - Clamshell Dredge	26.46	0.00	0.00	26.63
Main Generator - Clamshell Dredge	19.85	0.00	0.00	19.97
Deck Generator - Clamshell Dredge	2.38	0.00	0.00	2.40
Tug Boat	5.98	0.00	0.00	6.01
Subtotal	**54.66**	**0.01**	**0.00**	**55.01**
Remove 10" &16" Oil Pipelines (No.2)				
Main Hoist - Clamshell Dredge	52.92	0.01	0.00	53.26
Main Generator - Clamshell Dredge	39.69	0.01	0.00	39.94
Deck Generator - Clamshell Dredge	4.76	0.00	0.00	4.80
Tug Boat	11.95	0.00	0.00	12.02
Subtotal	**109.33**	**0.02**	**0.00**	**110.02**
Remove 30" Sewer Pipeline (No.9)				
Main Hoist - Clamshell Dredge	33.08	0.00	0.00	33.29
Main Generator - Clamshell Dredge	24.81	0.00	0.00	24.96
Deck Generator - Clamshell Dredge	2.98	0.00	0.00	3.00
Tug Boat	7.47	0.00	0.00	7.52
Subtotal	**68.33**	**0.01**	**0.00**	**68.76**
Remove Power Cables (No.11)				
Main Hoist - Clamshell Dredge	13.23	0.00	0.00	13.31
Main Generator - Clamshell Dredge	9.92	0.00	0.00	9.99
Deck Generator - Clamshell Dredge	1.19	0.00	0.00	1.20
Tug Boat	2.99	0.00	0.00	3.01
Subtotal	**27.33**	**0.00**	**0.00**	**27.51**
Remove 10" & 24" Oil Pipelines				
Main Hoist - Clamshell Dredge	52.92	0.01	0.00	53.26
Main Generator - Clamshell Dredge	39.69	0.01	0.00	39.94
Deck Generator - Clamshell Dredge	4.76	0.00	0.00	4.80
Tug Boat	11.95	0.00	0.00	12.02
Subtotal	**109.33**	**0.02**	**0.00**	**110.02**
Remove 24" Water Pipeline (No.6)				
Main Hoist - Clamshell Dredge	198.45	0.03	0.00	199.71
Main Generator - Clamshell Dredge	148.84	0.02	0.00	149.78
Deck Generator - Clamshell Dredge	17.86	0.00	0.00	17.99
Tug Boat	44.82	0.01	0.00	45.09
Subtotal	**409.98**	**0.06**	**0.00**	**412.58**

Table C-34. Total GHG Emissions for the POLA Channel Deepening Project - Year 2004 - Dredging/Material Disposal

	Tons			
Activity/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Dredge Element D202 to Pier 400 SMSS				
Main Engine - Electric	-	-	-	-
Derrick Hoist - Hydraulic Dredge	0.00	0.00	0.00	0.00
Derrick Winch - Hydraulic Dredge	0.00	0.00	0.00	0.00
Anchor Barge Winch - Hydraulic Dredge	0.00	0.00	0.00	0.00
Generator - Hydraulic Dredge	0.00	0.00	0.00	0.00
Tug Boat - Hydraulic Dredge	37.33	0.01	0.00	37.56
Tug Boat - Hydraulic Dredge	30.75	0.00	0.00	30.93
Subtotal	**68.08**	**0.01**	**0.00**	**68.48**
Dredge Element 203/203A to Pier 300				
Main Engine - Electric	-	-	-	-
Derrick Hoist - Hydraulic Dredge	0.00	0.00	0.00	0.00
Derrick Winch - Hydraulic Dredge	0.00	0.00	0.00	0.00
Anchor Barge Winch - Hydraulic Dredge	0.00	0.00	0.00	0.00
Generator - Hydraulic Dredge	0.00	0.00	0.00	0.00
Tug Boat - Hydraulic Dredge	196.79	0.03	0.00	197.96
Tug Boat - Hydraulic Dredge	162.06	0.02	0.00	163.02
Dozer	277.48	0.04	0.00	279.20
Excavator	136.92	0.02	0.00	137.76
Water Truck	49.70	0.01	0.00	50.05
Subtotal	**822.93**	**0.12**	**0.01**	**827.99**
Pump Dredge Element 204 into D203A Pit				
Main Engine - Electric	-	-	-	-
Derrick Hoist - Hydraulic Dredge	0.00	0.00	0.00	0.00
Derrick Winch - Hydraulic Dredge	0.00	0.00	0.00	0.00
Anchor Barge Winch - Hydraulic Dredge	0.00	0.00	0.00	0.00
Generator - Hydraulic Dredge	0.00	0.00	0.00	0.00
Tug Boat - Hydraulic Dredge	13.96	0.00	0.00	14.04
Tug Boat - Hydraulic Dredge	11.49	0.00	0.00	11.56
Subtotal	**25.45**	**0.00**	**0.00**	**25.60**
Clamshell Dredging/Disposal to Pier 400 SMSS				
Main Hoist - Clamshell Dredge	45.10	0.01	0.00	45.39
Main Generator - Clamshell Dredge	33.83	0.00	0.00	34.04
Deck Generator - Clamshell Dredge	3.61	0.00	0.00	3.63
Tug Boat	10.19	0.00	0.00	10.25
Tugboat - Transport Sediment	42.02	0.01	0.00	42.27
Subtotal	**134.75**	**0.02**	**0.00**	**135.59**

Table C-35. Total GHG Emissions for the POLA Channel Deepening Project - Year 2004 - Wick Drain Installation

	Tons			
Activity/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Under Surcharge - 13.5M Feet				
Wick Drain Rig - Excavator Mounted	230.21	0.03	0.00	231.63
Subtotal	**230.21**	**0.03**	**0.00**	**231.63**

Table C-36. Total GHG Emissions for the POLA Channel Deepening Project - Year 2004 - Move Surcharge from Area 2 to Area 1

	Tons			
Activity/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Move Surcharge				
Dozer	66.48	0.01	0.00	0.00
Excavator	65.61	0.01	0.00	66.89
Scraper	104.19	0.02	0.00	66.02
Water Truck	11.91	0.00	0.00	104.85
Subtotal	**248.19**	**0.04**	**0.00**	**237.76**

Table C-37. Total GHG Emissions for the POLA Channel Deepening Project - Year 2004 - Install Surcharge Gravel Drainage Blanket

	Tons			
Activity/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Install Gravel				
Barge Equipment	35.07	0.01	0.00	35.32
Derrick Barge Crane	16.19	0.00	0.00	16.30
Tugboat - Derrick Barge Crane	30.46	0.00	0.00	30.65
Tugboat - Transport Gravel to Site	402.13	0.06	0.00	404.52
Dozer	221.61	0.03	0.00	222.98
Excavator	218.70	0.03	0.00	220.05
Scraper	347.29	0.05	0.00	349.50
Water Truck	39.69	0.01	0.00	39.97
Subtotal	**1,311.14**	**0.19**	**0.01**	**1,319.29**

Table C-38. Total GHG Emissions for the POLA Channel Deepening Project - Year 2004 - Dike Construction Rock Placement

	Tons			
Activity/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Place Quarry Run				
Barge Equipment	40.84	0.01	0.00	41.13
Derrick Barge Crane	18.85	0.00	0.00	18.98
Tugboat - Derrick Barge Crane	35.48	0.00	0.00	35.69
Tugboat - Transport Gravel to Site	468.34	0.06	0.00	471.13
Subtotal	**563.51**	**0.08**	**0.01**	**566.94**
Place A-250				
Barge Equipment	4.74	0.00	0.00	4.78
Derrick Barge Crane	2.19	0.00	0.00	2.20
Tugboat - Derrick Barge Crane	4.12	0.00	0.00	4.14
Tugboat - Transport Gravel to Site	54.38	0.01	0.00	54.70
Subtotal	**65.43**	**0.01**	**0.00**	**65.83**
Place A-500				
Barge Equipment	13.17	0.00	0.00	13.26
Derrick Barge Crane	6.08	0.00	0.00	6.12
Tugboat - Derrick Barge Crane	11.44	0.00	0.00	11.51
Tugboat - Transport Gravel to Site	151.01	0.02	0.00	151.91
Subtotal	**181.69**	**0.03**	**0.00**	**182.80**

Table C-39. Total GHG Emissions for the POLA Channel Deepening Project - Year 2004 - Demolition Activities

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Demo Dry Docks				
Main Hoist - Clamshell Dredge	793.82	0.12	0.01	798.85
Main Generator - Clamshell Dredge	595.36	0.09	0.01	599.14
Deck Generator - Clamshell Dredge	63.51	0.01	0.00	63.96
Tug Boat	89.65	0.01	0.00	90.18
Excavator	218.70	0.03	0.00	220.05
Subtotal	**1,761.03**	**0.26**	**0.02**	**1,772.18**
Demo Berth 240-Y				
Dump Truck - 16 CY	9.92	0.00	0.00	9.98
Excavator	36.45	0.01	0.00	36.68
Water Truck	6.62	0.00	0.00	6.66
Subtotal	**52.99**	**0.01**	**0.00**	**53.32**
Remove Vessel Stephanie Ann				
Main Hoist - Clamshell Dredge	49.61	0.01	0.00	49.93
Main Generator - Clamshell Dredge	37.21	0.01	0.00	37.45
Deck Generator - Clamshell Dredge	3.97	0.00	0.00	4.00
Tug Boat	11.21	0.00	0.00	11.27
Subtotal	**102.00**	**0.01**	**0.00**	**102.64**

Table C-40. Total GHG Emissions for the POLA Channel Deepening Project - Year 2004 - Road Work

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
GATX Access Road				
Dozer	9.23	0.00	0.00	9.29
Excavator	4.40	0.00	0.00	4.43
Paving Machine	5.51	0.00	0.00	5.55
Roller	4.55	0.00	0.00	4.58
Subtotal	**23.69**	**0.00**	**0.00**	**23.85**
CMB Road				
Dozer	18.47	0.00	0.00	18.58
Excavator	8.80	0.00	0.00	8.86
Roller	9.10	0.00	0.00	9.16
Subtotal	**36.36**	**0.01**	**0.00**	**36.60**

Table C-41. Total GHG Emissions for the POLA Channel Deepening Project - Year 2004 - Cap Area 1

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Install Cap				
Dozer	923.36	0.13	0.01	929.08
Dump Truck - 16 CY	396.91	0.06	0.00	399.37
Excavator	364.49	0.05	0.00	366.75
Loader - 938G	176.40	0.03	0.00	177.66
Water Truck	66.15	0.01	0.00	66.62
Subtotal	**1,927.32**	**0.28**	**0.02**	**1,939.47**

Table C-42. Total GHG Emissions for the POLA Channel Deepening Project - Year 2004

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Pipeline Removal				
Remove 36" Oil Pipeline (No.3)	219	0.03	0.00	220
Remove 20" Water Pipeline (No.7)	410	0.06	0.00	413
Remove 20" Sewer Pipelines (No.8)	55	0.01	0.00	55
Remove 10" &16" Oil Pipelines (No.2)	109	0.02	0.00	110
Remove 30" Sewer Pipeline (No.9)	68	0.01	0.00	69
Remove Power Cables (No.11)	27	0.00	0.00	28
Remove 10" & 24" Oil Pipelines	109	0.02	0.00	110
Remove 24" Water Pipeline (No.6)	410	0.06	0.00	413
Dredging/Material Disposal				
Dredge Element D202 to Pier 400 SMSS	68	0.01	0.00	68
Dredge Element 203/203A to Pier 300	823	0.12	0.01	828
Pump Dredge Element 204 into D203A Pit	25	0.00	0.00	26
Clamshell Dredging/Disposal to Pier 400 SMSS	135	0.02	0.00	136
Wick Drain Installation				
Under Surcharge - 13.5M Feet	230	0.03	0.00	232
Move Surcharge from Area 2 to Area 1				
Move Surcharge	248	0.04	0.00	238
Install Surcharge Gravel Drainage Blanket				
Install Gravel	1,311	0.19	0.01	1,319
Dike Construction Rock Placement				
Place Quarry Run	564	0.08	0.01	567
Place A-250	65	0.01	0.00	66
Place A-500	182	0.03	0.00	183
Demolition Activities				
Demo Dry Docks	1,761	0.26	0.02	1,772
Demo Berth 240-Y	53	0.01	0.00	53
Remove Vessel Stephanie Ann	102	0.01	0.00	103
Road Work				
GATX Access Road	24	0.00	0.00	24
CMB Road	36	0.01	0.00	37
Cap Area 1				
Install Cap	1,927	0.28	0.02	1,939
Total GHG Emissions	**8,962**	**1.30**	**0.09**	**9,006**

Table C-43. Total GHG Emissions for the POLA Channel Deepening Project - Year 2004

	Metric Tons			
Project Year/Activity	*CO2*	*CH4*	*N2O*	*CO2e*
2004				
Pipeline Removal	1,280	0.19	0.01	1,288
Dredging/Material Disposal	956	0.14	0.01	962
Wick Drain Installation	209	0.03	0.00	211
Move Surcharge from Area 2 to Area 1	226	0.03	0.00	216
Install Surcharge Gravel Drainage Blanket	1,192	0.17	0.01	1,199
Dike Construction Rock Placement	737	0.10	0.01	741
Demolition Activities	1,742	0.26	0.02	1,753
Road Work	55	0.01	0.00	55
Cap Area 1	1,752	0.26	0.02	1,763
Hydraulic Dredging - Electrical Generation	5,631	0.04	0.02	5,639
Total GHG Emissions	13,778	1.23	0.11	13,827

Table 43a - POLA Channel Deepening Project Construction Activities - Year 2004 -
Electrical Demand

Activity/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Dredge Element D202 to Pier 400 SMSS								
Electric - Hydraulic Dredge Main Engine	17,000	0.50	1	8,500	24	204,000	13.9	2,842,970
Derrick Hoist - Hydraulic Dredge	240	0.70	1	168	18	3,024		-
Derrick Winch - Hydraulic Dredge	87	0.70	1	61	18	1,096		-
Anchor Barge Winch - Hydraulic Dredge	180	0.70	1	126	18	2,268		-
Generator - Hydraulic Dredge	350	0.60	1	210	18	3,780		-
Tug Boat - Hydraulic Dredge	850	0.33	1	281	18	5,049		-
Tug Boat - Hydraulic Dredge	700	0.33	1	231	18	4,158		-
Dredge Element 203/203A to Pier 300								
Electric - Hydraulic Dredge Main Engine	17,000	0.50	1	8,500	24	204,000	73.5	14,985,298
Derrick Hoist - Hydraulic Dredge	240	0.70	1	168	18	3,024		-
Derrick Winch - Hydraulic Dredge	87	0.70	1	61	18	1,096		-
Anchor Barge Winch - Hydraulic Dredge	180	0.70	1	126	18	2,268		-
Generator - Hydraulic Dredge	350	0.60	1	210	18	3,780		-
Tug Boat - Hydraulic Dredge	850	0.33	1	281	18	5,049		-
Tug Boat - Hydraulic Dredge	700	0.33	1	231	18	4,158		-
Dozer	335	0.50	2	335	18	6,030		-
Excavator	290	0.57	1	165	18	2,975		-
Water Truck	240	0.25	1	60	18	1,080		-
Pump Dredge Element 204 into D203A Pit								
Electric - Hydraulic Dredge Main Engine	17,000	0.50	1	8,500	24	204,000	5.2	1,062,872
Derrick Hoist - Hydraulic Dredge	240	0.70	1	168	18	3,024		-
Derrick Winch - Hydraulic Dredge	87	0.70	1	61	18	1,096		-
Anchor Barge Winch - Hydraulic Dredge	180	0.70	1	126	18	2,268		-
Generator - Hydraulic Dredge	350	0.60	1	210	18	3,780		-
Tug Boat - Hydraulic Dredge	850	0.33	1	281	18	5,049		-
Tug Boat - Hydraulic Dredge	700	0.33	1	231	18	4,158		-

Table C-43b. GHG Emission Factors for the Channel Deepening Project - Year 2004

Project Year/Source Type	*Fuel Type*	*Emission Factors (Gm/Hp-Hr)*			*References*
		CO2	*CH4*	*N2O*	
Electrical Consumption - Electric Dredges	---	878.7	0.0067	0.0037	(9)

Notes: (9) CCAR General Reporting Protoco, Tables C.2 and C.3 (CCAR 2008).

Table C-43c. Total GHG Emissions for the POLA Channel Deepening Project -
Year 2004 - Dredging/Material Disposal - Electrical Generation

	Tons			
Activity/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Dredge Element D202 to Pier 400 SMSS				
Electric - Hydraulic Dredge Main Engine	932	0.01	0.00	933
Derrick Hoist - Hydraulic Dredge				
Derrick Winch - Hydraulic Dredge				
Anchor Barge Winch - Hydraulic Dredge				
Generator - Hydraulic Dredge				
Tug Boat - Hydraulic Dredge				
Tug Boat - Hydraulic Dredge				
Subtotal	**932.13**	**0.01**	**0.00**	**933**
Dredge Element 203/203A to Pier 300				
Electric - Hydraulic Dredge Main Engine	4,913	0.04	0.02	4,920
Derrick Hoist - Hydraulic Dredge				
Derrick Winch - Hydraulic Dredge				
Anchor Barge Winch - Hydraulic Dredge				
Generator - Hydraulic Dredge				
Tug Boat - Hydraulic Dredge				
Tug Boat - Hydraulic Dredge				
Dozer				
Excavator				
Water Truck				
Subtotal	**4,913**	**0.04**	**0.02**	**4,920**
Pump Dredge Element 204 into D203A Pit				
Electric - Hydraulic Dredge Main Engine	348	0.00	0.00	349
Derrick Hoist - Hydraulic Dredge				
Derrick Winch - Hydraulic Dredge				
Anchor Barge Winch - Hydraulic Dredge				
Generator - Hydraulic Dredge				
Tug Boat - Hydraulic Dredge				
Tug Boat - Hydraulic Dredge				
Subtotal	**348**	**0.00**	**0.00**	**349**

Table C-43d. Total GHG Emissions for the POLA Channel Deepening Project
Year 2004 - Electrical Generation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Pipeline Removal				
Remove 36" Oil Pipeline (No.3)				
Remove 20" Water Pipeline (No.7)				
Remove 20" Sewer Pipelines (No.8)				
Remove 10" &16" Oil Pipelines (No.2)				
Remove 30" Sewer Pipeline (No.9)				
Remove Power Cables (No.11)				
Remove 10" & 24" Oil Pipelines				
Remove 24" Water Pipeline (No.6)				
Dredging/Material Disposal				
Dredge Element D202 to Pier 400 SMSS	932	0.01	0.00	933
Dredge Element 203/203A to Pier 300	4,913	0.04	0.02	4,920
Pump Dredge Element 204 into D203A Pit	348	0.00	0.00	349
Clamshell Dredging/Disposal to Pier 400 SMSS				
Wick Drain Installation				
Under Surcharge - 13.5M Feet				
Move Surcharge from Area 2 to Area 1				
Move Surcharge				
Install Surcharge Gravel Drainage Blanket				
Install Gravel				
Dike Construction Rock Placement				
Place Quarry Run				
Place A-250				
Place A-500				
Demolition Activities				
Demo Dry Docks				
Demo Berth 240-Y				
Remove Vessel Stephanie Ann				
Road Work				
GATX Access Road				
CMB Road				
Cap Area 1				
Install Cap				
Total GHG Emissions	**6,194**	**0.05**	**0.03**	**6,203**

	A	B	C	D	E	F	G	H	I
1	Table C-44. Construction Activities for the POLA Channel Deepening Proposed Project - Demolition								
2		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
3	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
4	NW Slip Sliver - Wharf								
5	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	12	7,200	35.0	252,000
6	Main Generator - Clamshell Dredge	900	0.50	1	450	12	5,400	35.0	189,000
7	Deck Generator - Clamshell Dredge	240	0.60	1	144	4	576	35.0	20,160
8	Backhoe	80	0.50	3	120	12	1,440	35.0	50,400
9	Front End Loader	80	0.50	2	80	16	1,280	35.0	44,800
10	Haul Truck (1)	NA	NA	12	NA	10	120	35.0	4,200
11	Tug Boat	800	0.20	1	160	12	1,920	35.0	67,200
12	Berths 243-245								
13	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	12	7,200	77.0	554,400
14	Main Generator - Clamshell Dredge	900	0.50	1	450	12	5,400	77.0	415,800
15	Deck Generator - Clamshell Dredge	240	0.60	1	144	4	576	77.0	44,352
16	Backhoe	80	0.50	3	120	12	1,440	77.0	110,880
17	Front End Loader	80	0.50	2	80	16	1,280	77.0	98,560
18	Haul Truck (1)	NA	NA	12	NA	5	60	77.0	4,620
19	Tug Boat	800	0.20	1	160	12	1,920	77.0	147,840
20	Notes: (1) Number Active = miles/roundtrip, Hours/Day = daily truck trips, Daily Hp-Hrs = daily miles, and Total Hp-Hrs = total miles.								
21									
22									
23									
24	Table C-45. Construction Activities for the POLA Channel Deepening Proposed Project - Dike								
25	Construction Quarry Run Placement								
26		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
27	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
28	NW Slip Sliver								
29	Barge Equipment	195	0.50	2	195	12	2,340	118.1	276,419
30	Derrick Barge Crane	180	0.50	1	90	12	1,080	118.1	127,578
31	Tugboat - Derrick Barge Crane	800	0.25	1	200	12	2,400	118.1	283,507
32	Tugboat - Transport Quarry Run to Site	2,200	0.50	2	2,200	12	26,400	118.1	3,118,572
33	Berths 243-245								
34	Barge Equipment	195	0.50	2	195	12	2,340	90.0	210,525
35	Derrick Barge Crane	180	0.50	1	90	12	1,080	90.0	97,165
36	Tugboat - Derrick Barge Crane	800	0.25	1	200	12	2,400	90.0	215,923
37	Tugboat - Transport Quarry Run to Site	2,200	0.50	2	2,200	11	24,200	90.0	2,177,226
38	Cabrillo SWH								
39	Barge Equipment	195	0.50	4	390	12	4,680	101.0	472,680
40	Derrick Barge Crane	180	0.50	2	180	12	2,160	101.0	218,160
41	Tugboat - Derrick Barge Crane	800	0.25	2	400	12	4,800	101.0	484,800
42	Tugboat - Transport Quarry Run to Site	2,200	0.50	4	4,400	10.5	46,200	101.0	4,666,200
43	Eelgrass Restoration								
44	Barge Equipment	195	0.50	4	390	12	4,680	204.0	954,720
45	Derrick Barge Crane	180	0.50	2	180	12	2,160	204.0	440,640
46	Tugboat - Derrick Barge Crane	800	0.25	2	400	12	4,800	204.0	979,200
47	Tugboat - Transport Quarry Run to Site	2,200	0.50	4	4,400	10.5	46,200	204.0	9,424,800

	A	B	C	D	E	F	G	H	I
51	Table C-46. Construction Activities for the POLA Channel Deepening Proposed Project - Dike								
52	Construction Armor Stone Placement								
53		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
54	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
55	NW Slip Sliver								
56	Barge Equipment	195	0.50	2	195	12	2,340	11.0	25,784
57	Derrick Barge Crane	180	0.50	1	90	12	1,080	11.0	11,900
58	Tugboat - Derrick Barge Crane	800	0.25	1	200	12	2,400	11.0	26,445
59	Tugboat - Transport Armor Stone to Site	2,200	0.50	2	2,200	12	26,400	11.0	290,900
60	Berths 243-245								
61	Barge Equipment	195	0.50	2	195	12	2,340	4.0	9,360
62	Derrick Barge Crane	180	0.50	1	90	12	1,080	4.0	4,320
63	Tugboat - Derrick Barge Crane	800	0.25	1	200	12	2,400	4.0	9,600
64	Tugboat - Transport Armor Stone to Site	2,200	0.50	2	2,200	10.5	23,100	4.0	92,400
65	Eelgrass								
66	Barge Equipment	195	0.50	4	390	12	4,680	37.5	175,618
67	Derrick Barge Crane	180	0.50	2	180	12	2,160	37.5	81,054
68	Tugboat - Derrick Barge Crane	800	0.25	2	400	12	4,800	37.5	180,121
69	Tugboat - Transport Armor Stone to Site	2,200	0.50	4	4,400	10.5	46,200	37.5	1,733,662
70									
71									
72									
73	Table C-47. Construction Activities for the POLA Channel Deepening Proposed Project -								
74	Trench Excavation								
75		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
76	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
77	NW Slip Sliver								
78	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	24	14,400	6.4	92,160
79	Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800	6.4	69,120
80	Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720	6.4	4,608
81	Tug Boat	800	0.20	1	160	4	640	6.4	4,096
82	Berths 243-245								
83	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	24	14,400	14.4	207,360
84	Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800	14.4	155,520
85	Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720	14.4	10,368
86	Tug Boat	800	0.20	1	160	4	640	14.4	9,216
87	Cabrillo SWH								
88	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	24	14,400	6.0	86,400
89	Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800	6.0	64,800
90	Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720	6.0	4,320
91	Tug Boat	800	0.20	1	160	4	640	6.0	3,840

	A	B	C	D	E	F	G	H	I
95	Table C-48. Construction Activities for the POLA Channel Deepening Proposed Project -								
96	Surcharge Removal								
97		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
98	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
99	SW Slip A#1 Surcharge Removal - Loading								
100	Scraper	225	0.40	5	450	12	5,400	116.5	629,100
101	Backhoe	80	0.50	2	80	12	960	116.5	111,840
102	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	12	7,200	116.5	838,800
103	Main Generator - Clamshell Dredge	900	0.50	1	450	12	5,400	116.5	629,100
104	Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720	116.5	83,880
105	Dozer	335	0.50	2	335	12	4,020	116.5	468,330
106	Off-Road Truck	350	0.25	4	350	12	4,200	116.5	489,300
107	Water Truck	325	0.50	1	163	12	1,950	116.5	227,175
108	Grader	180	0.50	1	90	8	720	116.5	83,880
109	SW Slip A#1 Surcharge Removal - Transport								
110	Scows	N/A	N/A	2	N/A	12	N/A	116.5	N/A
111	Tug Boat	800	0.20	1	160	4	640	116.5	74,560
112	SW Slip A#1 Surcharge Removal - Unload NW Slip								
113	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	16	9,600	2.9	27,840
114	Main Generator - Clamshell Dredge	900	0.50	1	450	16	7,200	2.9	20,880
115	Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720	2.9	2,088
116	Electric Conveyor	N/A	N/A	1	N/A	16	N/A	2.9	N/A
117	Dozer	335	0.50	1	168	16	2,680	2.9	7,772
118	SW Slip A#1 Surcharge Removal - Unload CSWH								
119	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	16	9,600	38.6	370,560
120	Main Generator - Clamshell Dredge	900	0.50	1	450	16	7,200	38.6	277,920
121	Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720	38.6	27,792
122	Scows	N/A	N/A	2	N/A	12	N/A	38.6	N/A
123	SW Slip A#1 Surcharge Removal - Unload Eelgrass								
124	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	16	9,600	75.0	720,000
125	Main Generator - Clamshell Dredge	900	0.50	1	450	16	7,200	75.0	540,000
126	Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720	75.0	54,000
127	Electric Conveyor	N/A	N/A	1	N/A	16	N/A	75.0	N/A
128	Dozer	335	0.5	1	168	16	2,680	75.0	201,000
129									
130									
131									
132	Table C-49. Construction Activities for the POLA Channel Deepening Proposed Project -								
133	Dredging of Contaminated Material.								
134		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
135	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
136	Contaminated Dredge								
137	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	24	14,400	11.1	159,840
138	Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800	11.1	119,880
139	Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720	11.1	7,992
140	Scows	N/A	N/A	1	N/A	24	N/A	11.1	N/A
141	Tug Boat	800	0.20	1	160	8	1,280	11.1	14,208
142	Electric Pump	N/A	N/A	1	N/A	24	N/A	11.1	N/A
143	Skiff	125	0.20	1	25	4	100	11.1	1,110

	A	B	C	D	E	F	G	H	I
147	Table C-50. Construction Activities for the POLA Channel Deepening Proposed Project -								
148	Dredging of Fine Grain Material								
149		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
150	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
151	Clamshell Dredging - Fine Grain Material CSWH								
152	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	24	14,400	45.3	651,941
153	Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800	45.3	488,956
154	Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720	45.3	32,597
155	Reel Barge	N/A	N/A	N/A	N/A	N/A	N/A	45.3	N/A
156	Survey Boat	250	0.2	1	50	5	250	45.3	11,318
157	Crew Boat	125	0.2	1	25	5	125	45.3	5,659
158	Scows	N/A	N/A	2	N/A	24	N/A	45.3	N/A
159	Tug Boat	800	0.2	1	160	8	1,280	45.3	57,950
160	Electric Pump	N/A	N/A	1	N/A	24	N/A	45.3	N/A
161	Hydraulic Dredging - Fine Grain Material CSWH								
162	Main Engine - Electric	N/A	N/A	1	N/A	24	N/A	48.7	N/A
163	Derrick Hoist	240	0.7	1	168	4	672	48.7	32,709
164	Derrick Winch	87	0.7	1	61	1	61	48.7	2,964
165	Anchor Barge Winch	180	0.7	1	126	4	504	48.7	24,532
166	Generator	350	0.6	1	210	4	840	48.7	40,886
167	Survey Boat	250	0.2	1	50	5	250	48.7	12,168
168	Crew Boat	125	0.2	1	25	5	125	48.7	6,084
169	Tug Boat	850	0.5	1	425	18	7,650	48.7	372,354
170	Electric Pump	N/A	N/A	1	N/A	24	N/A	48.7	N/A
171	Hydraulic Dredging - Fine Grain Material Eelgrass								
172	Main Engine - Electric	N/A	N/A	1	N/A	24	N/A	4.4	N/A
173	Derrick Hoist	240	0.7	1	168	4	672	4.4	2,957
174	Derrick Winch	87	0.7	1	61	1	61	4.4	268
175	Anchor Barge Winch	180	0.7	1	126	4	504	4.4	2,218
176	Generator	350	0.6	1	210	4	840	4.4	3,696
177	Survey Boat	250	0.2	1	50	5	250	4.4	1,100
178	Crew Boat	125	0.2	1	25	5	125	4.4	550
179	Tug Boat	850	0.5	1	425	18	7,650	4.4	33,660
180	Electric Pump	N/A	N/A	1	N/A	24	N/A	4.4	N/A
181	Clamshell Dredging - Fine Grain Material to LA 2								
182	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	24	14,400	0.5	7,203
183	Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800	0.5	5,403
184	Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720	0.5	360
185	Tug Boat (1)	2,200	0.6	3	3,960	10	39,600	1.0	39,600
186	Notes: (1) Dredge slurry assumed to be 40% water, resulting in a daily water bulked disposal volume to LA-2 of 6,700 cy. At a barge capacity of								
187	2,000 cy, this requires aproximately 3 total barge trips. At a distance of 25 nm and a speed of 5 knots, each round trip would take 10 hours.								

	A	B	C	D	E	F	G	H	I
191	Table C-51. Construction Activities for the POLA Channel Deepening Proposed Project -								
192	Dredging of Coarse Grain Material.								
193		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
194	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
195	Clamshell Dredging - Coarse Grain Material Berth 243/245								
196	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	24	14,400	40.5	582,912
197	Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800	40.5	437,184
198	Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720	40.5	29,146
199	Reel Barge	N/A	N/A	N/A	N/A	N/A	N/A	40.5	N/A
200	Survey Boat	250	0.2	1	50	5	250	40.5	10,120
201	Crew Boat	125	0.2	1	25	5	125	40.5	5,060
202	Scows	N/A	N/A	2	N/A	24	N/A	40.5	N/A
203	Tug Boat	800	0.2	1	160	8	1,280	40.5	51,814
204	Electric Pump	N/A	N/A	1	N/A	24	N/A	40.5	N/A
205	Clamshell Dredging - Coarse Grain Material NW Slip								
206	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	24	14,400	15.5	222,602
207	Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800	15.5	166,951
208	Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720	15.5	11,130
209	Reel Barge	N/A	N/A	N/A	N/A	N/A	N/A	15.5	N/A
210	Survey Boat	250	0.2	1	50	5	250	15.5	3,865
211	Crew Boat	125	0.2	1	25	5	125	15.5	1,932
212	Scows	N/A	N/A	2	N/A	24	N/A	15.5	N/A
213	Tug Boat	800	0.2	1	160	8	1,280	15.5	19,787
214	Electric Pump	N/A	N/A	1	N/A	24	N/A	15.5	N/A

	K	L	M	N	O	P	Q	R	S	T
1	Table C-52. Unmitigated Air Emission Factors for the Channel Deepening Project Alternatives Construction Activities.									
2		*Fuel*	*Emission Factors (Grams/Horsepower-Hour)*							
3	*Project Year/Source Type*	*Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*	*References*
4	Year 2007									
5	Off-Road Equipment - 25-50 Hp	D	2.99	7.23	6.31	0.008	0.71	0.71	0.66	(1)
6	Off-Road Equipment - 51-120 Hp	D	1.26	3.85	7.39	0.006	0.66	0.66	0.61	(1)
7	Off-Road Equipment - 121-175 Hp	D	0.92	3.36	7.17	0.006	0.40	0.40	0.37	(1)
8	Off-Road Equipment - 176-250 Hp	D	0.70	1.93	7.07	0.006	0.27	0.27	0.25	(1)
9	Off-Road Equipment - 251-500 Hp	D	0.57	2.25	5.70	0.005	0.22	0.22	0.20	(1)
10	Off-Road Equipment - 501-750 Hp	D	0.66	2.69	6.63	0.006	0.25	0.25	0.23	(1)
11	Off-Road Equipment - >750 Hp	D	0.56	2.09	6.27	0.005	0.19	0.19	0.18	(1)
12	On-road Truck - Idle (Gms/Hr)	D	10.06	45.12	76.69	0.048	1.50	1.50	1.38	(2)
13	On-road Truck - 5 mph (Gms/Mi)	D	8.30	29.67	29.82	0.027	2.10	2.10	1.90	(2)
14	On-road Truck - 25 mph (Gms/Mi)	D	1.15	9.25	13.52	0.016	0.63	0.63	0.55	(2)
15	On-road Truck - 55 mph (Gms/Mi)	D	0.65	5.59	14.21	0.014	0.48	0.48	0.42	(2)
16	Dredge Materials Haul Truck - Composite (Gms/Mi)	D	1.87	11.29	15.15	0.017	0.77	0.77	0.68	(3)
17	Other On-Road Trucks - Composite (Gms/Mi)	D	1.13	7.53	14.85	0.015	0.59	0.59	0.52	(4)
18	All Years									
19	Tugboat (Gm/Hp-Hr)	D	0.20	1.87	8.11	0.004	0.21	0.21	0.20	(5)
20	Fugitive Dust (Lbs/acre-day)	---	---	---	---	---	27.50	13.45	2.81	(6)
21	Building Demolition (Lbs/1000 cf)	---	---	---	---	---	0.84	0.41	0.09	(7)
22	Small Harbor Craft	D	0.16	1.27	7.46	0.47	0.30	0.30	0.28	(8)
23	Notes: (1) Composite emission factors developed from ARBs OFFROAD2007 emissions model (2006) and based on average South Coast Air									
24	Basin equipment fleet age distributions for project year 2007. Factors developed by averaging hourly emissions for different diesel									
25	construction equipment types within the same Hp category.									
26	(2) Heavy duty diesel truck running emission factors developed from EMFAC2007 (ARB 2006). Units in grams/mile for project									
27	year 2007. Based on annual average conditions at 60 degrees and 50% humidity with the average fleet found in the South Coast Air Basin.									
28	PM emission factors include combustive and tire/brake wear contributions.									
29	(3) Composite factors based on a round trip of 90% at 25 mph and 10% at 5 mph. Units in grams/mile. Although not shown									
30	in these calculations, emissions from 5 minutes of idling mode included for each truck round trip.									
31	(4) For on-road trucks other then dredge material haul trucks, composite factor based on a round trip of 75% at 55 mph,									
32	20% at 25 mph, and 5% at 5 mph. Units in grams/mile. Although not shown in these calculations, emissions from 5 minutes									
33	of idling mode included for each truck round trip.									
34	(5) Interpolated category 1 diesel engine factors for POLA fleet year 2009 (Starcrest 2006). Average sulfur (S) content = 15 ppm in year 2007+.									
35	(6) Units in lbs/acre-day from section 11.2.3 of AP-42 (EPA 1995). Emissions reduced by 75% from uncontrolled levels to									
36	represent compliance with SCAQMD Rule 403 - Fugitive Dust.									
37	(7) CEQA Air Quality Handbook, Table A9-9-H (SCAQMD 1993). Units in lbs/1000 cubic feet (cf) of demolished building.									
38	(8) EPA (2006)									

	V	W	X	Y	Z	AA	AB	AC
1	Table C-53. Daily Unmitigated Emissions for the POLA Channel Deepening Proposed Project - Demolition							
2		*Pounds per Day*						
3	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
4	NW Slip Sliver - Wharf							
5	Main Hoist - Clamshell Dredge	8.87	33.12	99.48	0.08	3.06	3.06	2.82
6	Main Generator - Clamshell Dredge	6.65	24.84	74.61	0.06	2.30	2.30	2.11
7	Deck Generator - Clamshell Dredge	0.89	2.46	8.97	0.01	0.34	0.34	0.31
8	Backhoe	3.99	12.21	23.45	0.02	2.10	2.10	1.93
9	Front End Loader	3.55	10.86	20.85	0.02	1.87	1.87	1.72
10	Haul Truck (1)	0.32	2.07	4.07	0.00	0.16	0.16	0.14
11	Tug Boat	0.85	7.90	34.34	0.02	0.90	0.90	0.85
12	Subtotal	25.12	93.45	265.78	0.20	10.73	10.73	9.88
13	Berths 243-245							
14	Main Hoist - Clamshell Dredge	8.87	33.12	99.48	0.08	3.06	3.06	2.82
15	Main Generator - Clamshell Dredge	6.65	24.84	74.61	0.06	2.30	2.30	2.11
16	Deck Generator - Clamshell Dredge	0.89	2.46	8.97	0.01	0.34	0.34	0.31
17	Backhoe	3.99	12.21	23.45	0.02	2.10	2.10	1.93
18	Front End Loader	3.55	10.86	20.85	0.02	1.87	1.87	1.72
19	Haul Truck (1)	0.16	1.04	2.03	0.00	0.08	0.08	0.07
20	Tug Boat	0.85	7.90	34.34	0.02	0.90	0.90	0.85
21	Subtotal	24.96	92.42	263.74	0.20	10.65	10.65	9.81
22	Notes: (1) Includes 5 minutes of idling time per round trip.							
23								
24								
25								
26	Table C-54. Daily Unmitigated Emissions for the POLA Channel Deepening Proposed Project - Dike							
27	Construction Quarry Run Placement							
28		*Pounds per Day*						
29	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
30	NW Slip Sliver							
31	Barge Equipment	3.60	9.98	36.45	0.03	1.38	1.38	1.27
32	Derrick Barge Crane	1.66	4.60	16.82	0.01	0.64	0.64	0.59
33	Tugboat - Derrick Barge Crane	1.07	9.87	42.93	0.02	1.13	1.13	1.06
34	Tugboat - Transport Quarry Run to Site (1)	11.73	108.58	472.21	0.26	12.42	12.42	11.64
35	Subtotal	18.05	133.03	568.42	0.33	15.57	15.57	14.55
36	Berths 243-245							
37	Barge Equipment	3.60	9.98	36.45	0.03	1.38	1.38	1.27
38	Derrick Barge Crane	1.66	4.60	16.82	0.01	0.64	0.64	0.59
39	Tugboat - Derrick Barge Crane	1.07	9.87	42.93	0.02	1.13	1.13	1.06
40	Tugboat - Transport Quarry Run to Site (1)	10.75	99.54	432.86	0.23	11.39	11.39	10.67
41	Subtotal	17.08	123.99	529.07	0.31	14.53	14.53	13.58
42	Cabrillo SWH							
43	Barge Equipment	7.20	19.95	72.91	0.06	2.76	2.76	2.54
44	Derrick Barge Crane	3.32	9.21	33.65	0.03	1.27	1.27	1.17
45	Tugboat - Derrick Barge Crane	2.13	19.74	85.86	0.05	2.26	2.26	2.12
46	Tugboat - Transport Quarry Run to Site (1)	20.52	190.02	826.37	0.45	21.74	21.74	20.37
47	Subtotal	33.18	238.92	1,018.78	0.59	28.03	28.03	26.20
48	Eelgrass Restoration							
49	Barge Equipment	7.20	19.95	72.91	0.06	2.76	2.76	2.54
50	Derrick Barge Crane	3.32	9.21	33.65	0.03	1.27	1.27	1.17
51	Tugboat - Derrick Barge Crane	2.13	19.74	85.86	0.05	2.26	2.26	2.12
52	Tugboat - Transport Quarry Run to Site (1)	20.52	190.02	826.37	0.45	21.74	21.74	20.37
53	Subtotal	33.18	238.92	1,018.78	0.59	28.03	28.03	26.20

	V	W	X	Y	Z	AA	AB	AC
57	Table C-55. Daily Unmitigated Emissions for the POLA Channel Deepening Proposed Project - Dike							
58	Construction Armor Stone Placement							
59		Pounds per Day						
60	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
61	NW Slip Sliver							
62	Barge Equipment	3.60	9.98	36.45	0.03	1.38	1.38	1.27
63	Derrick Barge Crane	1.66	4.60	16.82	0.01	0.64	0.64	0.59
64	Tugboat - Derrick Barge Crane	1.07	9.87	42.93	0.02	1.13	1.13	1.06
65	Tugboat - Transport Armor Stone to Site (1)	11.73	108.58	472.21	0.26	12.42	12.42	11.64
66	Subtotal	18.05	133.03	568.42	0.33	15.57	15.57	14.55
67	Berths 243-245							
68	Barge Equipment	3.60	9.98	36.45	0.03	1.38	1.38	1.27
69	Derrick Barge Crane	1.66	4.60	16.82	0.01	0.64	0.64	0.59
70	Tugboat - Derrick Barge Crane	1.07	9.87	42.93	0.02	1.13	1.13	1.06
71	Tugboat - Transport Armor Stone to Site	10.26	95.01	413.18	0.22	10.87	10.87	10.18
72	Subtotal	16.59	119.46	509.39	0.29	14.02	14.02	13.10
73	Eelgrass							
74	Barge Equipment	7.20	19.95	72.91	0.06	2.76	2.76	2.54
75	Derrick Barge Crane	3.32	9.21	33.65	0.03	1.27	1.27	1.17
76	Tugboat - Derrick Barge Crane	2.13	19.74	85.86	0.05	2.26	2.26	2.12
77	Tugboat - Transport Armor Stone to Site (1)	20.52	190.02	826.37	0.45	21.74	21.74	20.37
78	Subtotal	33.18	238.92	1,018.78	0.59	28.03	28.03	26.20
79								
80								
81								
82	Table C-56. Daily Unmitigated Emissions for the POLA Channel Deepening Proposed Project -							
83	Trench Excavation							
84		Pounds per Day						
85	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
86	NW Slip Sliver							
87	Main Hoist - Clamshell Dredge	17.74	66.24	198.96	0.15	6.13	6.13	5.64
88	Main Generator - Clamshell Dredge	13.30	49.68	149.22	0.11	4.60	4.60	4.23
89	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
90	Tug Boat	0.28	2.63	11.45	0.01	0.30	0.30	0.28
91	Subtotal	32.44	121.62	370.84	0.28	11.45	11.45	10.54
92	Berths 243-245							
93	Main Hoist - Clamshell Dredge	17.74	66.24	198.96	0.15	6.13	6.13	5.64
94	Main Generator - Clamshell Dredge	13.30	49.68	149.22	0.11	4.60	4.60	4.23
95	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
96	Tug Boat	0.28	2.63	11.45	0.01	0.30	0.30	0.28
97	Subtotal	32.44	121.62	370.84	0.28	11.45	11.45	10.54
98	Cabrillo SWH							
99	Main Hoist - Clamshell Dredge	17.74	66.24	198.96	0.15	6.13	6.13	5.64
100	Main Generator - Clamshell Dredge	13.30	49.68	149.22	0.11	4.60	4.60	4.23
101	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
102	Tug Boat	0.28	2.63	11.45	0.01	0.30	0.30	0.28
103	Subtotal	32.44	121.62	370.84	0.28	11.45	11.45	10.54

	V	W	X	Y	Z	AA	AB	AC
107	Table C-57. Daily Unmitigated Emissions for the POLA Channel Deepening Proposed Project -							
108	Surcharge Removal							
109		*Pounds per Day*						
110	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
111	SW Slip A#1 Surcharge Removal - Loading							
112	Scraper	8.31	23.02	84.12	0.07	3.18	3.18	2.93
113	Backhoe	2.66	8.14	15.64	0.01	1.40	1.40	1.29
114	Main Hoist - Clamshell Dredge	8.87	33.12	99.48	0.08	3.06	3.06	2.82
115	Main Generator - Clamshell Dredge	6.65	24.84	74.61	0.06	2.30	2.30	2.11
116	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
117	Dozer	5.01	19.98	50.48	0.05	1.91	1.91	1.76
118	Off-Road Truck	5.23	20.87	52.74	0.05	2.00	2.00	1.84
119	Water Truck	2.43	9.69	24.49	0.02	0.93	0.93	0.85
120	Grader	1.11	3.07	11.22	0.01	0.42	0.42	0.39
121	Subtotal	41.38	145.80	423.98	0.36	15.64	15.64	14.39
122	SW Slip A#1 Surcharge Removal - Transport							
123	Scows	---	---	---	---	---	---	---
124	Tug Boat	0.28	2.63	11.45	0.01	0.30	0.30	0.28
125	Subtotal	0.28	2.63	11.45	0.01	0.30	0.30	0.28
126	SW Slip A#1 Surcharge Removal - Unload NW Slip							
127	Main Hoist - Clamshell Dredge	11.83	44.16	132.64	0.10	4.09	4.09	3.76
128	Main Generator - Clamshell Dredge	8.87	33.12	99.48	0.08	3.06	3.06	2.82
129	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
130	Electric Conveyor	---	---	---	---	---	---	---
131	Dozer	3.34	13.32	33.65	0.03	1.28	1.28	1.17
132	Subtotal	25.14	93.66	276.99	0.22	8.85	8.85	8.14
133	SW Slip A#1 Surcharge Removal - Unload CSWH							
134	Main Hoist - Clamshell Dredge	11.83	44.16	132.64	0.10	4.09	4.09	3.76
135	Main Generator - Clamshell Dredge	8.87	33.12	99.48	0.08	3.06	3.06	2.82
136	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
137	Scows	---	---	---	---	---	---	---
138	Subtotal	21.80	80.35	243.34	0.19	7.58	7.58	6.97
139	SW Slip A#1 Surcharge Removal - Unload Eelgrass							
140	Main Hoist - Clamshell Dredge	11.83	44.16	132.64	0.10	4.09	4.09	3.76
141	Main Generator - Clamshell Dredge	8.87	33.12	99.48	0.08	3.06	3.06	2.82
142	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
143	Electric Conveyor	---	---	---	---	---	---	---
144	Dozer	3.34	13.32	33.65	0.03	1.28	1.28	1.17
145	Subtotal	25.14	93.66	276.99	0.22	8.85	8.85	8.14
146								
147								
148								
149	Table C-58. Construction Activities for the POLA Channel Deepening Proposed Project -							
150	Dredging of Contaminated Material.							
151		*Pounds per Day*						
152	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
153	Contaminated Dredge							
154	Main Hoist - Clamshell Dredge	17.74	66.24	198.96	0.15	6.13	6.13	5.64
155	Main Generator - Clamshell Dredge	13.30	49.68	149.22	0.11	4.60	4.60	4.23
156	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
157	Scows	---	---	---	---	---	---	---
158	Tug Boat	0.57	5.26	22.90	0.01	0.60	0.60	0.56
159	Electric Pump	---	---	---	---	---	---	---
160	Skiff	0.04	0.28	1.64	0.10	0.07	0.07	0.06
161	Subtotal	32.76	124.53	383.94	0.39	11.82	11.82	10.89

	V	W	X	Y	Z	AA	AB	AC
165	Table C-59. Construction Activities for the POLA Channel Deepening Proposed Project -							
166	Dredging of Fine Grain Material							
167		*Pounds per Day*						
168	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
169	Clamshell Dredging - Fine Grain Material CSWH							
170	Main Hoist - Clamshell Dredge	17.74	66.24	198.96	0.15	6.13	6.13	5.64
171	Main Generator - Clamshell Dredge	13.30	49.68	149.22	0.11	4.60	4.60	4.23
172	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
173	Reel Barge	---	---	---	---	---	---	---
174	Survey Boat	0.09	0.70	4.11	0.26	0.17	0.17	0.15
175	Crew Boat	0.04	0.35	2.06	0.13	0.08	0.08	0.08
176	Scows	---	---	---	---	---	---	---
177	Tug Boat	0.57	5.26	22.90	0.01	0.60	0.60	0.56
178	Electric Pump	---	---	---	---	---	---	---
179	Subtotal	32.85	125.30	388.46	0.68	12.00	12.00	11.06
180	Hydraulic Dredging - Fine Grain Material CSWH							
181	Electric - Hydraulic Dredge	---	---	---	---	---	---	---
182	Derrick Hoist	1.03	2.86	10.47	0.01	0.40	0.40	0.36
183	Derrick Winch	0.17	0.52	0.99	0.00	0.09	0.09	0.08
184	Anchor Barge Winch	0.78	2.15	7.85	0.01	0.30	0.30	0.27
185	Generator	1.05	4.17	10.55	0.01	0.40	0.40	0.37
186	Survey Boat	0.09	0.70	4.11	0.26	0.17	0.17	0.15
187	Crew Boat	0.04	0.35	2.06	0.13	0.08	0.08	0.08
188	Tug Boat	3.40	31.46	136.83	0.07	3.60	3.60	3.37
189	Electric Pump	---	---	---	---	---	---	---
190	Subtotal	6.56	42.22	172.86	0.49	5.03	5.03	4.69
191	Hydraulic Dredging - Fine Grain Material Eelgrass							
192	Electric - Hydraulic Dredge	---	---	---	---	---	---	---
193	Derrick Hoist	1.03	2.86	10.47	0.01	0.40	0.40	0.36
194	Derrick Winch	0.17	0.52	0.99	0.00	0.09	0.09	0.08
195	Anchor Barge Winch	0.78	2.15	7.85	0.01	0.30	0.30	0.27
196	Generator	1.05	4.17	10.55	0.01	0.40	0.40	0.37
197	Survey Boat	0.09	0.70	4.11	0.26	0.17	0.17	0.15
198	Crew Boat	0.04	0.35	2.06	0.13	0.08	0.08	0.08
199	Tug Boat	3.40	31.46	136.83	0.07	3.60	3.60	3.37
200	Electric Pump	---	---	---	---	---	---	---
201	Subtotal	6.56	42.22	172.86	0.49	5.03	5.03	4.69
202	Clamshell Dredging - Fine Grain Material to LA 2							
203	Main Hoist - Clamshell Dredge	17.74	66.24	198.96	0.15	6.13	6.13	5.64
204	Main Generator - Clamshell Dredge	13.30	49.68	149.22	0.11	4.60	4.60	4.23
205	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
206	Tug Boat (1)	17.59	162.88	708.32	0.38	18.63	18.63	17.46
207	Subtotal	49.74	281.86	1,067.71	0.66	29.78	29.78	27.72

	V	W	X	Y	Z	AA	AB	AC
211	Table C-60. Construction Activities for the POLA Channel Deepening Proposed Project -							
212	Dredging of Coarse Grain Material.							
213		*Pounds per Day*						
214	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
215	Clamshell Dredging - Coarse Grain Material Berth 243/245							
216	Main Hoist - Clamshell Dredge	17.74	66.24	198.96	0.15	6.13	6.13	5.64
217	Main Generator - Clamshell Dredge	13.30	49.68	149.22	0.11	4.60	4.60	4.23
218	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
219	Reel Barge	---	---	---	---	---	---	---
220	Survey Boat	0.09	0.70	4.11	0.26	0.17	0.17	0.15
221	Crew Boat	0.04	0.35	2.06	0.13	0.08	0.08	0.08
222	Scows	---	---	---	---	---	---	---
223	Tug Boat	0.57	5.26	22.90	0.01	0.60	0.60	0.56
224	Electric Pump	---	---	---	---	---	---	---
225	Subtotal	32.85	125.30	388.46	0.68	12.00	12.00	11.06
226	Clamshell Dredging - Coarse Grain Material NW Slip							
227	Main Hoist - Clamshell Dredge	17.74	66.24	198.96	0.15	6.13	6.13	5.64
228	Main Generator - Clamshell Dredge	13.30	49.68	149.22	0.11	4.60	4.60	4.23
229	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
230	Reel Barge	---	---	---	---	---	---	---
231	Survey Boat	0.09	0.70	4.11	0.26	0.17	0.17	0.15
232	Crew Boat	0.04	0.35	2.06	0.13	0.08	0.08	0.08
233	Scows	---	---	---	---	---	---	---
234	Tug Boat	0.57	5.26	22.90	0.01	0.60	0.60	0.56
235	Electric Pump	---	---	---	---	---	---	---
236	Subtotal	32.85	125.30	388.46	0.68	12.00	12.00	11.06

	V	W	X	Y	Z	AA	AB	AC
239	Table C-61. Peak Daily Unmitigated Emissions for the POLA Channel Deepening Proposed Project							
240		*Pounds per Day*						
241	*Location/Activity*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
242	Demolition							
243	NW Slip Sliver	25	93	266	0	11	11	10
244	Berths 243-245	25	92	264	0	11	11	10
245	Dike Const. Quarry Run Placement							
246	NW Slip Sliver	18	133	568	0	16	16	15
247	Berths 243-245	17	124	529	0	15	15	14
248	Cabrillo SWH	33	239	1,019	1	28	28	26
249	Eelgrass Restoration	33	239	1,019	1	28	28	26
250	Dike Construction Armor Stone Placement							
251	NW Slip Sliver	18	133	568	0	16	16	15
252	Berths 243-245	17	119	509	0	14	14	13
253	Eelgrass Restoration	33	239	1,019	1	28	28	26
254	Trench Excavation							
255	NW Slip Sliver	32	122	371	0	11	11	11
256	Berths 243-245	32	122	371	0	11	11	11
257	Cabrillo SWH	32	122	371	0	11	11	11
258	Surcharge Removal							
259	Loading	41	146	424	0	16	16	14
260	Transport	0	3	11	0	0	0	0
261	Unload NW Slip	25	94	277	0	9	9	8
262	Unload Cabrillo SWH	22	80	243	0	8	8	7
263	Unload Eelgrass	25	94	277	0	9	9	8
264	Dredging of Contaminated Material							
265	Contaminated Dredge	33	125	384	0	12	12	11
266	Dredging of Fine Material							
267	Clamshell - Cabrillo SWH	33	125	388	1	12	12	11
268	Hydraulic - Cabrillo SWH	7	42	173	0	5	5	5
269	Hydraulic - Eelgrass	7	42	173	0	5	5	5
270	Clamshell - Fine Grain Material to LA 2	50	282	1,068	1	30	30	28
271	Dredging of Coarse Material							
272	Clamshell - Berths 243-245	33	125	388	1	12	12	11
273	Clamshell - NW Slip Sliver	33	125	388	1	12	12	11
274	Peak Daily Unmitigated Emissions	132	725	2,795	2	82	82	76
275	2004 CEQA Baseline - Peak Daily Emissions	(68)	(383)	(1,556)	(100)	(47)	(47)	(43)
276	Net Peak Daily Unmitigated Emissions	64	342	1,239	(98)	35	35	33
277	SCAQMD Daily Significance Thresholds	75	550	100	150	NA	150	55
278	Notes: (1) Peak daily unmitigated emissions would occur from the follwing simultaneous activities: (1) dike construction quarry run placement at							
279	NW Slip Sliver, (2) dike construction quarry run placement at the Berths 243-245 landfill, (3) dike construction quarry run placement at							
280	the Eelgrass Restoration Area, and (4) load, transport, and unload surcharge material at CSWH.							

	AE	AF	AG	AH	AI	AJ	AK	AL
1	Table C-62. Total Unmitigated Emissions for the POLA Channel Deepening Proposed Project - Demolition							
2		*Tons*						
3	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
4	NW Slip Sliver - Wharf							
5	Main Hoist - Clamshell Dredge	0.16	0.58	1.74	0.00	0.05	0.05	0.05
6	Main Generator - Clamshell Dredge	0.12	0.43	1.31	0.00	0.04	0.04	0.04
7	Deck Generator - Clamshell Dredge	0.02	0.04	0.16	0.00	0.01	0.01	0.01
8	Backhoe	0.07	0.21	0.41	0.00	0.04	0.04	0.03
9	Front End Loader	0.06	0.19	0.36	0.00	0.03	0.03	0.03
10	Haul Truck (1)	0.01	0.04	0.07	0.00	0.00	0.00	0.00
11	Tug Boat	0.01	0.14	0.60	0.00	0.02	0.02	0.01
12	Subtotal	0.44	1.64	4.65	0.00	0.19	0.19	0.17
13	Berths 243-245							
14	Main Hoist - Clamshell Dredge	0.34	1.28	3.83	0.00	0.12	0.12	0.11
15	Main Generator - Clamshell Dredge	0.26	0.96	2.87	0.00	0.09	0.09	0.08
16	Deck Generator - Clamshell Dredge	0.03	0.09	0.35	0.00	0.01	0.01	0.01
17	Backhoe	0.15	0.47	0.90	0.00	0.08	0.08	0.07
18	Front End Loader	0.14	0.42	0.80	0.00	0.07	0.07	0.07
19	Haul Truck (1)	0.01	0.04	0.08	0.00	0.00	0.00	0.00
20	Tug Boat	0.03	0.30	1.32	0.00	0.03	0.03	0.03
21	Subtotal	0.96	3.56	10.15	0.01	0.41	0.41	0.38
22								
23								
24								
25								
26	Table C-63. Total Unmitigated Emissions for the POLA Channel Deepening Proposed Project - Dike							
27	Construction Quarry Run Placement							
28		*Tons*						
29	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
30	NW Slip Sliver							
31	Barge Equipment	0.21	0.59	2.15	0.00	0.08	0.08	0.07
32	Derrick Barge Crane	0.10	0.27	0.99	0.00	0.04	0.04	0.03
33	Tugboat - Derrick Barge Crane	0.06	0.58	2.54	0.00	0.07	0.07	0.06
34	Tugboat - Transport Quarry Run to Site (1)	0.69	6.41	27.89	0.02	0.73	0.73	0.69
35	Subtotal	1.07	7.86	33.57	0.02	0.92	0.92	0.86
36	Berths 243-245							
37	Barge Equipment	0.16	0.45	1.64	0.00	0.06	0.06	0.06
38	Derrick Barge Crane	0.07	0.21	0.76	0.00	0.03	0.03	0.03
39	Tugboat - Derrick Barge Crane	0.05	0.44	1.93	0.00	0.05	0.05	0.05
40	Tugboat - Transport Quarry Run to Site (1)	0.48	4.48	19.47	0.01	0.51	0.51	0.48
41	Subtotal	0.77	5.58	23.80	0.01	0.65	0.65	0.61
42	Cabrillo SWH							
43	Barge Equipment	0.36	1.01	3.68	0.00	0.14	0.14	0.13
44	Derrick Barge Crane	0.17	0.47	1.70	0.00	0.06	0.06	0.06
45	Tugboat - Derrick Barge Crane	0.11	1.00	4.34	0.00	0.11	0.11	0.11
46	Tugboat - Transport Quarry Run to Site (1)	1.04	9.60	41.73	0.02	1.10	1.10	1.03
47	Subtotal	1.68	12.07	51.45	0.03	1.42	1.42	1.32
48	Eelgrass Restoration							
49	Barge Equipment	0.73	2.03	7.44	0.01	0.28	0.28	0.26
50	Derrick Barge Crane	0.34	0.94	3.43	0.00	0.13	0.13	0.12
51	Tugboat - Derrick Barge Crane	0.22	2.01	8.76	0.00	0.23	0.23	0.22
52	Tugboat - Transport Quarry Run to Site (1)	2.09	19.38	84.29	0.05	2.22	2.22	2.08
53	Subtotal	3.38	24.37	103.92	0.06	2.86	2.86	2.67

	AE	AF	AG	AH	AI	AJ	AK	AL
57	Table C-64. Total Unmitigated Emissions for the POLA Channel Deepening Proposed Project - Dike							
58	Construction Armor Stone Placement							
59		*Tons*						
60	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
61	NW Slip Sliver							
62	Barge Equipment	0.02	0.05	0.20	0.00	0.01	0.01	0.01
63	Derrick Barge Crane	0.01	0.03	0.09	0.00	0.00	0.00	0.00
64	Tugboat - Derrick Barge Crane	0.01	0.05	0.24	0.00	0.01	0.01	0.01
65	Tugboat - Transport Armor Stone to Site (1)	0.06	0.60	2.60	0.00	0.07	0.07	0.06
66	Subtotal	0.10	0.73	3.13	0.00	0.09	0.09	0.08
67	Berths 243-245							
68	Barge Equipment	0.01	0.02	0.07	0.00	0.00	0.00	0.00
69	Derrick Barge Crane	0.00	0.01	0.03	0.00	0.00	0.00	0.00
70	Tugboat - Derrick Barge Crane	0.00	0.02	0.09	0.00	0.00	0.00	0.00
71	Tugboat - Transport Armor Stone to Site	0.02	0.19	0.83	0.00	0.02	0.02	0.02
72	Subtotal	0.03	0.24	1.02	0.00	0.03	0.03	0.03
73	Eelgrass							
74	Barge Equipment	0.14	0.37	1.37	0.00	0.05	0.05	0.05
75	Derrick Barge Crane	0.06	0.17	0.63	0.00	0.02	0.02	0.02
76	Tugboat - Derrick Barge Crane	0.04	0.37	1.61	0.00	0.04	0.04	0.04
77	Tugboat - Transport Armor Stone to Site (1)	0.39	3.57	15.50	0.01	0.41	0.41	0.38
78	Subtotal	0.62	4.48	19.11	0.01	0.53	0.53	0.49
79								
80								
81								
82	Table C-65. Total Unmitigated Emissions for the POLA Channel Deepening Proposed Project -							
83	Trench Excavation							
84		*Tons*						
85	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
86	NW Slip Sliver							
87	Main Hoist - Clamshell Dredge	0.06	0.21	0.64	0.00	0.02	0.02	0.02
88	Main Generator - Clamshell Dredge	0.04	0.16	0.48	0.00	0.01	0.01	0.01
89	Deck Generator - Clamshell Dredge	0.00	0.01	0.04	0.00	0.00	0.00	0.00
90	Tug Boat	0.00	0.01	0.04	0.00	0.00	0.00	0.00
91	Subtotal	0.10	0.39	1.19	0.00	0.04	0.04	0.03
92	Berths 243-245							
93	Main Hoist - Clamshell Dredge	0.13	0.48	1.43	0.00	0.04	0.04	0.04
94	Main Generator - Clamshell Dredge	0.10	0.36	1.07	0.00	0.03	0.03	0.03
95	Deck Generator - Clamshell Dredge	0.01	0.02	0.08	0.00	0.00	0.00	0.00
96	Tug Boat	0.00	0.02	0.08	0.00	0.00	0.00	0.00
97	Subtotal	0.23	0.88	2.67	0.00	0.08	0.08	0.08
98	Cabrillo SWH							
99	Main Hoist - Clamshell Dredge	0.05	0.20	0.60	0.00	0.02	0.02	0.02
100	Main Generator - Clamshell Dredge	0.04	0.15	0.45	0.00	0.01	0.01	0.01
101	Deck Generator - Clamshell Dredge	0.00	0.01	0.03	0.00	0.00	0.00	0.00
102	Tug Boat	0.00	0.01	0.03	0.00	0.00	0.00	0.00
103	Subtotal	0.10	0.36	1.11	0.00	0.03	0.03	0.03

	AE	AF	AG	AH	AI	AJ	AK	AL
107	Table C-66. Total Unmitigated Emissions for the POLA Channel Deepening Proposed Project -							
108	Surcharge Removal							
109		*Tons*						
110	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
111	SW Slip A#1 Surcharge Removal - Loading							
112	Scraper	0.48	1.34	4.90	0.00	0.19	0.19	0.17
113	Backhoe	0.16	0.47	0.91	0.00	0.08	0.08	0.08
114	Main Hoist - Clamshell Dredge	0.52	1.93	5.79	0.00	0.18	0.18	0.16
115	Main Generator - Clamshell Dredge	0.39	1.45	4.35	0.00	0.13	0.13	0.12
116	Deck Generator - Clamshell Dredge	0.06	0.18	0.65	0.00	0.02	0.02	0.02
117	Dozer	0.29	1.16	2.94	0.00	0.11	0.11	0.10
118	Off-Road Truck	0.30	1.22	3.07	0.00	0.12	0.12	0.11
119	Water Truck	0.14	0.56	1.43	0.00	0.05	0.05	0.05
120	Grader	0.06	0.18	0.65	0.00	0.02	0.02	0.02
121	Subtotal	2.41	8.49	24.70	0.02	0.91	0.91	0.84
122	SW Slip A#1 Surcharge Removal - Transport							
123	Scows	---	---	---	---	---	---	---
124	Tug Boat	0.02	0.15	0.67	0.00	0.02	0.02	0.02
125	Subtotal	0.02	0.15	0.67	0.00	0.02	0.02	0.02
126	SW Slip A#1 Surcharge Removal - Unload NW Slip							
127	Main Hoist - Clamshell Dredge	0.02	0.06	0.19	0.00	0.01	0.01	0.01
128	Main Generator - Clamshell Dredge	0.01	0.05	0.14	0.00	0.00	0.00	0.00
129	Deck Generator - Clamshell Dredge	0.00	0.00	0.02	0.00	0.00	0.00	0.00
130	Electric Conveyor	---	---	---	---	---	---	---
131	Dozer	0.00	0.02	0.05	0.00	0.00	0.00	0.00
132	Subtotal	0.04	0.14	0.40	0.00	0.01	0.01	0.01
133	SW Slip A#1 Surcharge Removal - Unload CSWH							
134	Main Hoist - Clamshell Dredge	0.23	0.85	2.56	0.00	0.08	0.08	0.07
135	Main Generator - Clamshell Dredge	0.17	0.64	1.92	0.00	0.06	0.06	0.05
136	Deck Generator - Clamshell Dredge	0.02	0.06	0.22	0.00	0.01	0.01	0.01
137	Scows	---	---	---	---	---	---	---
138	Subtotal	0.42	1.55	4.70	0.00	0.15	0.15	0.13
139	SW Slip A#1 Surcharge Removal - Unload Eelgrass							
140	Main Hoist - Clamshell Dredge	0.44	1.66	4.97	0.00	0.15	0.15	0.14
141	Main Generator - Clamshell Dredge	0.33	1.24	3.73	0.00	0.11	0.11	0.11
142	Deck Generator - Clamshell Dredge	0.04	0.12	0.42	0.00	0.02	0.02	0.01
143	Electric Conveyor	---	---	---	---	---	---	---
144	Dozer	0.13	0.50	1.26	0.00	0.05	0.05	0.04
145	Subtotal	0.94	3.51	10.39	0.01	0.33	0.33	0.31
146								
147								
148								
149	Table C-67. Construction Activities for the POLA Channel Deepening Proposed Project -							
150	Dredging of Contaminated Material.							
151		*Tons*						
152	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
153	Contaminated Dredge							
154	Main Hoist - Clamshell Dredge	0.10	0.37	1.10	0.00	0.03	0.03	0.03
155	Main Generator - Clamshell Dredge	0.07	0.28	0.83	0.00	0.03	0.03	0.02
156	Deck Generator - Clamshell Dredge	0.01	0.02	0.06	0.00	0.00	0.00	0.00
157	Scows	---	---	---	---	---	---	---
158	Tug Boat	0.00	0.03	0.13	0.00	0.00	0.00	0.00
159	Electric Pump	---	---	---	---	---	---	---
160	Skiff	0.00	0.00	0.01	0.00	0.00	0.00	0.00
161	Subtotal	0.18	0.69	2.13	0.00	0.07	0.07	0.06

	AE	AF	AG	AH	AI	AJ	AK	AL
165	Table C-68. Construction Activities for the POLA Channel Deepening Proposed Project -							
166	Dredging of Fine Grain Material							
167		*Tons*						
168	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
169	Clamshell Dredging - Fine Grain Material CSWH							
170	Main Hoist - Clamshell Dredge	0.40	1.50	4.50	0.00	0.14	0.14	0.13
171	Main Generator - Clamshell Dredge	0.30	1.12	3.38	0.00	0.10	0.10	0.10
172	Deck Generator - Clamshell Dredge	0.03	0.07	0.25	0.00	0.01	0.01	0.01
173	Reel Barge	---	---	---	---	---	---	---
174	Survey Boat	0.00	0.02	0.09	0.01	0.00	0.00	0.00
175	Crew Boat	0.00	0.01	0.05	0.00	0.00	0.00	0.00
176	Scows	---	---	---	---	---	---	---
177	Tug Boat	0.01	0.12	0.52	0.00	0.01	0.01	0.01
178	Electric Pump	---	---	---	---	---	---	---
179	Subtotal	0.74	2.84	8.79	0.02	0.27	0.27	0.25
180	Hydraulic Dredging - Fine Grain Material CSWH							
181	Electric - Hydraulic Dredge	---	---	---	---	---	---	---
182	Derrick Hoist	0.03	0.07	0.25	0.00	0.01	0.01	0.01
183	Derrick Winch	0.00	0.01	0.02	0.00	0.00	0.00	0.00
184	Anchor Barge Winch	0.02	0.05	0.19	0.00	0.01	0.01	0.01
185	Generator	0.03	0.10	0.26	0.00	0.01	0.01	0.01
186	Survey Boat	0.00	0.02	0.10	0.01	0.00	0.00	0.00
187	Crew Boat	0.00	0.01	0.05	0.00	0.00	0.00	0.00
188	Tug Boat	0.08	0.77	3.33	0.00	0.09	0.09	0.08
189	Electric Pump	---	---	---	---	---	---	---
190	Subtotal	0.16	1.03	4.21	0.01	0.12	0.12	0.11
191	Hydraulic Dredging - Fine Grain Material Eelgrass							
192	Electric - Hydraulic Dredge	---	---	---	---	---	---	---
193	Derrick Hoist	0.00	0.01	0.02	0.00	0.00	0.00	0.00
194	Derrick Winch	0.00	0.00	0.00	0.00	0.00	0.00	0.00
195	Anchor Barge Winch	0.00	0.00	0.02	0.00	0.00	0.00	0.00
196	Generator	0.00	0.01	0.02	0.00	0.00	0.00	0.00
197	Survey Boat	0.00	0.00	0.01	0.00	0.00	0.00	0.00
198	Crew Boat	0.00	0.00	0.00	0.00	0.00	0.00	0.00
199	Tug Boat	0.01	0.07	0.30	0.00	0.01	0.01	0.01
200	Electric Pump	---	---	---	---	---	---	---
201	Subtotal	0.01	0.09	0.38	0.00	0.01	0.01	0.01
202	Clamshell Dredging - Fine Grain Material to LA 2							
203	Main Hoist - Clamshell Dredge	0.00	0.02	0.05	0.00	0.00	0.00	0.00
204	Main Generator - Clamshell Dredge	0.00	0.01	0.04	0.00	0.00	0.00	0.00
205	Deck Generator - Clamshell Dredge	0.00	0.00	0.00	0.00	0.00	0.00	0.00
206	Tug Boat (1)	0.01	0.08	0.35	0.00	0.01	0.01	0.01
207	Subtotal	0.02	0.11	0.44	0.00	0.01	0.01	0.01

	AE	AF	AG	AH	AI	AJ	AK	AL
211	Table C-69. Construction Activities for the POLA Channel Deepening Proposed Project -							
212	Dredging of Coarse Grain Material.							
213		*Tons*						
214	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
215	Clamshell Dredging - Coarse Grain Material Berth 243/245							
216	Main Hoist - Clamshell Dredge	0.36	1.34	4.03	0.00	0.12	0.12	0.11
217	Main Generator - Clamshell Dredge	0.27	1.01	3.02	0.00	0.09	0.09	0.09
218	Deck Generator - Clamshell Dredge	0.02	0.06	0.23	0.00	0.01	0.01	0.01
219	Reel Barge	---	---	---	---	---	---	---
220	Survey Boat	0.00	0.01	0.08	0.01	0.00	0.00	0.00
221	Crew Boat	0.00	0.01	0.04	0.00	0.00	0.00	0.00
222	Scows	---	---	---	---	---	---	---
223	Tug Boat	0.01	0.11	0.46	0.00	0.01	0.01	0.01
224	Electric Pump	---	---	---	---	---	---	---
225	Subtotal	0.66	2.54	7.86	0.01	0.24	0.24	0.22
226	Clamshell Dredging - Coarse Grain Material NW Slip							
227	Main Hoist - Clamshell Dredge	0.14	0.51	1.54	0.00	0.05	0.05	0.04
228	Main Generator - Clamshell Dredge	0.10	0.38	1.15	0.00	0.04	0.04	0.03
229	Deck Generator - Clamshell Dredge	0.01	0.02	0.09	0.00	0.00	0.00	0.00
230	Reel Barge	---	---	---	---	---	---	---
231	Survey Boat	0.00	0.01	0.03	0.00	0.00	0.00	0.00
232	Crew Boat	0.00	0.00	0.02	0.00	0.00	0.00	0.00
233	Scows	---	---	---	---	---	---	---
234	Tug Boat	0.00	0.04	0.18	0.00	0.00	0.00	0.00
235	Electric Pump	---	---	---	---	---	---	---
236	Subtotal	0.25	0.97	3.00	0.01	0.09	0.09	0.09

	AE	AF	AG	AH	AI	AJ	AK	AL
239	Table C-70. Total Unmitigated Emissions for the POLA Channel Deepening Proposed Project							
240		*Tons*						
241	*Location/Activity*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
242	Demolition							
243	NW Slip Sliver	0.44	1.64	4.65	0.00	0.19	0.19	0.17
244	Berths 243-245	0.96	3.56	10.15	0.01	0.41	0.41	0.38
245	Dike Const. Quarry Run Placement							
246	NW Slip Sliver	1.07	7.86	33.57	0.02	0.92	0.92	0.86
247	Berths 243-245	0.77	5.58	23.80	0.01	0.65	0.65	0.61
248	Cabrillo SWH	1.68	12.07	51.45	0.03	1.42	1.42	1.32
249	Eelgrass Restoration	3.38	24.37	103.92	0.06	2.86	2.86	2.67
250	Dike Construction Armor Stone Placement							
251	NW Slip Sliver	0.10	0.73	3.13	0.00	0.09	0.09	0.08
252	Berths 243-245	0.03	0.24	1.02	0.00	0.03	0.03	0.03
253	Eelgrass Restoration	0.62	4.48	19.11	0.01	0.53	0.53	0.49
254	Trench Excavation							
255	NW Slip Sliver	0.10	0.39	1.19	0.00	0.04	0.04	0.03
256	Berths 243-245	0.23	0.88	2.67	0.00	0.08	0.08	0.08
257	Cabrillo SWH	0.10	0.36	1.11	0.00	0.03	0.03	0.03
258	Surcharge Removal							
259	Loading	2.41	8.49	24.70	0.02	0.91	0.91	0.84
260	Transport	0.02	0.15	0.67	0.00	0.02	0.02	0.02
261	Unload NW Slip	0.04	0.14	0.40	0.00	0.01	0.01	0.01
262	Unload Cabrillo SWH	0.42	1.55	4.70	0.00	0.15	0.15	0.13
263	Unload Eelgrass	0.94	3.51	10.39	0.01	0.33	0.33	0.31
264	Dredging of Contaminated Material							
265	Contaminated Dredge	0.18	0.69	2.13	0.00	0.07	0.07	0.06
266	Dredging of Fine Material							
267	Clamshell - Cabrillo SWH	0.74	2.84	8.79	0.02	0.27	0.27	0.25
268	Hydraulic - Cabrillo SWH	0.16	1.03	4.21	0.01	0.12	0.12	0.11
269	Hydraulic - Eelgrass	0.01	0.09	0.38	0.00	0.01	0.01	0.01
270	Clamshell - Fine Grain Material to LA 2	0.02	0.11	0.44	0.00	0.01	0.01	0.01
271	Dredging of Coarse Material							
272	Clamshell - Berths 243-245	0.66	2.54	7.86	0.01	0.24	0.24	0.22
273	Clamshell - NW Slip Sliver	0.25	0.97	3.00	0.01	0.09	0.09	0.09
274	Total Unmitigated Emissions	15.35	84.26	323.45	0.23	9.48	9.48	8.82
275								
276								
277								
278	Table C-71. Yearly Unmitigated Emissions for the POLA Channel Deepening Proposed Project							
279		*Tons*						
280	*Project Scenario*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
281	Alternative 1 - 2009	14.1	78.5	302.8	0.2	8.9	8.9	8.3
282	2004 CEQA Baseline	(6.6)	(32.4)	(116.7)	(5.6)	(3.7)	(3.7)	(3.5)
283	Alternative 1 Net Annual Unmitigated Emissions - 2009	7.5	46.0	186.1	(5.4)	5.1	5.1	4.8
284	Alternative 1 - 2010	1.2	5.8	20.7	0.0	0.6	0.6	0.6
285	2004 CEQA Baseline	(6.6)	(32.4)	(116.7)	(5.6)	(3.7)	(3.7)	(3.5)
286	Alternative 1 Net Annual Unmitigated Emissions - 2010	(5.4)	(26.7)	(96.0)	(5.6)	(3.1)	(3.1)	(2.9)
287	Conformity de minimis Thresholds	25	100	25	NA	NA	70	100

Table C-72. Total GHG Emissions for the POLA Channel Deepening Proposed Project - Demolition

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
NW Slip Sliver - Wharf				
Main Hoist - Clamshell Dredge	158	0.02	0.00	159
Main Generator - Clamshell Dredge	118	0.02	0.00	119
Deck Generator - Clamshell Dredge	13	0.00	0.00	13
Backhoe	32	0.01	0.00	32
Front End Loader	28	0.00	0.00	28
Haul Truck (1)	9	0.00	0.00	9
Tug Boat	36	0.00	0.00	36
Subtotal	393	0.06	0.00	396
Berths 243-245				
Main Hoist - Clamshell Dredge	347	0.05	0.00	349
Main Generator - Clamshell Dredge	260	0.04	0.00	262
Deck Generator - Clamshell Dredge	28	0.00	0.00	28
Backhoe	69	0.01	0.00	70
Front End Loader	62	0.01	0.00	62
Haul Truck (1)	10	0.00	0.00	10
Tug Boat	78	0.01	0.00	79
Subtotal	855	0.13	0.01	860

Table C-73. Total GHG Emissions for the POLA Channel Deepening Proposed Project - Dike Construction Quarry Run Placement

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
NW Slip Sliver				
Barge Equipment	173	0.03	0.00	174
Derrick Barge Crane	80	0.01	0.00	80
Tugboat - Derrick Barge Crane	150	0.02	0.00	151
Tugboat - Transport Quarry Run to Site (1)	1,655	0.23	0.02	1,665
Subtotal	2,058	0.29	0.02	2,071
Berths 243-245				
Barge Equipment	132	0.02	0.00	133
Derrick Barge Crane	61	0.01	0.00	61
Tugboat - Derrick Barge Crane	115	0.02	0.00	115
Tugboat - Transport Quarry Run to Site (1)	1,155	0.16	0.01	1,162
Subtotal	1,463	0.21	0.01	1,471
Cabrillo SWH				
Barge Equipment	296	0.05	0.00	298
Derrick Barge Crane	137	0.02	0.00	138
Tugboat - Derrick Barge Crane	257	0.04	0.00	259
Tugboat - Transport Quarry Run to Site (1)	2,476	0.34	0.02	2,491
Subtotal	3,166	0.45	0.03	3,185
Eelgrass Restoration				
Barge Equipment	598	0.10	0.01	602
Derrick Barge Crane	276	0.05	0.00	278
Tugboat - Derrick Barge Crane	520	0.07	0.01	523
Tugboat - Transport Quarry Run to Site (1)	5,001	0.69	0.05	5,030
Subtotal	6,394	0.91	0.06	6,433

Table C-74. Total GHG Emissions for the POLA Channel Deepening Proposed Project - Dike Construction Armor Stone Placement

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
NW Slip Sliver				
Barge Equipment	16	0.00	0.00	16
Derrick Barge Crane	7	0.00	0.00	8
Tugboat - Derrick Barge Crane	14	0.00	0.00	14
Tugboat - Transport Armor Stone to Site (1)	154	0.02	0.00	155
Subtotal	192	0.03	0.00	193
Berths 243-245				
Barge Equipment	6	0.00	0.00	6
Derrick Barge Crane	3	0.00	0.00	3
Tugboat - Derrick Barge Crane	5	0.00	0.00	5
Tugboat - Transport Armor Stone to Site (1)	49	0.01	0.00	49
Subtotal	63	0.01	0.00	63
Eelgrass				
Barge Equipment	110	0.02	0.00	111
Derrick Barge Crane	51	0.01	0.00	51
Tugboat - Derrick Barge Crane	96	0.01	0.00	96
Tugboat - Transport Armor Stone to Site (1)	920	0.13	0.01	925
Subtotal	1,176	0.17	0.01	1,183

Table C-75. Total GHG Emissions for the POLA Channel Deepening Proposed Project - Trench Excavation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
NW Slip Sliver				
Main Hoist - Clamshell Dredge	58	0.01	0.00	58
Main Generator - Clamshell Dredge	43	0.01	0.00	44
Deck Generator - Clamshell Dredge	3	0.00	0.00	3
Tug Boat	2	0.00	0.00	2
Subtotal	106	0.02	0.00	107
Berths 243-245				
Main Hoist - Clamshell Dredge	130	0.02	0.00	131
Main Generator - Clamshell Dredge	97	0.02	0.00	98
Deck Generator - Clamshell Dredge	6	0.00	0.00	7
Tug Boat	5	0.00	0.00	5
Subtotal	239	0.04	0.00	240.39
CSWH				
Main Hoist - Clamshell Dredge	54	0.01	0.00	55
Main Generator - Clamshell Dredge	41	0.01	0.00	41
Deck Generator - Clamshell Dredge	3	0.00	0.00	3
Tug Boat	2	0.00	0.00	2
Subtotal	99	0.02	0.00	100.16

Table C-76. Total GHG Emissions for the POLA Channel Deepening Proposed Project - Surcharge Removal

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
SW Slip A#1 Surcharge Removal - Loading				
Scraper	394	0.06	0.00	397
Backhoe	70	0.01	0.00	71
Main Hoist - Clamshell Dredge	525	0.09	0.01	529
Main Generator - Clamshell Dredge	394	0.07	0.00	397
Deck Generator - Clamshell Dredge	53	0.01	0.00	53
Dozer	293	0.04	0.00	295
Off-Road Truck	307	0.04	0.00	308
Water Truck	142	0.02	0.00	143
Grader	53	0.01	0.00	53
Subtotal	2,231	0.36	0.03	2,246
SW Slip A#1 Surcharge Removal - Transport				
Scows				
Tug Boat	40	0.01	0.00	40
Subtotal	40	0.01	0.00	40
SW Slip A#1 Surcharge Removal - Unload NW Slip				
Main Hoist - Clamshell Dredge	17	0.00	0.00	18
Main Generator - Clamshell Dredge	13	0.00	0.00	13
Deck Generator - Clamshell Dredge	1	0.00	0.00	1
Electric Conveyor				
Dozer	5	0.00	0.00	5
Subtotal	37	0.01	0.00	37
SW Slip A#1 Surcharge Removal - Unload CSWH				
Main Hoist - Clamshell Dredge	232	0.03	0.00	234
Main Generator - Clamshell Dredge	174	0.03	0.00	175
Deck Generator - Clamshell Dredge	17	0.00	0.00	18
Scows				
Subtotal	424	0.06	0.00	426
SW Slip A#1 Surcharge Removal - Unload Eelgrass				
Main Hoist - Clamshell Dredge	451	0.07	0.00	454
Main Generator - Clamshell Dredge	338	0.05	0.00	340
Deck Generator - Clamshell Dredge	34	0.01	0.00	34
Electric Conveyor				
Dozer	126	0.02	0.00	127
Subtotal	949	0.14	0.01	955

Table C-77. Construction Activities for the POLA Channel Deepening Proposed Project - Dredging of Contaminated Material.

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Contaminated Dredge				
Main Hoist - Clamshell Dredge	100	0.02	0.00	101
Main Generator - Clamshell Dredge	75	0.01	0.00	76
Deck Generator - Clamshell Dredge	5	0.00	0.00	5
Scows				
Tug Boat	8	0.00	0.00	8
Electric Pump				
Skiff	1	0.00	0.00	1
Subtotal	188	0.03	0.00	190

Table C-78. Construction Activities for the POLA Channel Deepening Proposed Project - Dredging of Fine Grain Material

Location/Equipment Type	*Tons*			
	CO2	*CH4*	*N2O*	*CO2e*
Clamshell Dredging - Fine Grain Material CSWH				
Main Hoist - Clamshell Dredge	408	0.07	0.00	411
Main Generator - Clamshell Dredge	306	0.05	0.00	308
Deck Generator - Clamshell Dredge	20	0.00	0.00	21
Reel Barge				
Survey Boat	6	0.00	0.00	6
Crew Boat	3	0.00	0.00	3
Scows				
Tug Boat	31	0.00	0.00	31
Electric Pump				
Subtotal	775	0.13	0.01	780
Hydraulic Dredging - Fine Grain Material CSWH				
Electric - Hydraulic Dredge				
Derrick Hoist	20	0.00	0.00	21
Derrick Winch	2	0.00	0.00	2
Anchor Barge Winch	15	0.00	0.00	15
Generator	26	0.00	0.00	26
Survey Boat	6	0.00	0.00	6
Crew Boat	3	0.00	0.00	3
Tug Boat	198	0.03	0.00	199
Electric Pump				
Subtotal	271	0.04	0.00	272
Hydraulic Dredging - Fine Grain Material Eelgrass				
Electric - Hydraulic Dredge				
Derrick Hoist	2	0.00	0.00	2
Derrick Winch	0	0.00	0.00	0
Anchor Barge Winch	1	0.00	0.00	1
Generator	2	0.00	0.00	2
Survey Boat	1	0.00	0.00	1
Crew Boat	0	0.00	0.00	0
Tug Boat	18	0.00	0.00	18
Electric Pump				
Subtotal	24	0.00	0.00	25
Clamshell Dredging - Fine Grain Material to LA 2				
Main Hoist - Clamshell Dredge	5	0.00	0.00	5
Main Generator - Clamshell Dredge	3	0.00	0.00	3
Deck Generator - Clamshell Dredge	0	0.00	0.00	0
Tug Boat (1)	21	0.00	0.00	21
Subtotal	29	0.00	0.00	29

Table C-79. Construction Activities for the POLA Channel Deepening Proposed Project - Dredging of Coarse Grain Material.

Location/Equipment Type	*Tons*			
	CO2	*CH4*	*N2O*	*CO2e*
Clamshell Dredging - Coarse Grain Material Berth 243/245				
Main Hoist - Clamshell Dredge	365	0.06	0.00	368
Main Generator - Clamshell Dredge	274	0.05	0.00	276
Deck Generator - Clamshell Dredge	18	0.00	0.00	18
Reel Barge				
Survey Boat	5	0.00	0.00	5
Crew Boat	3	0.00	0.00	3
Scows				
Tug Boat	27	0.00	0.00	28
Electric Pump				
Subtotal	693	0.11	0.01	698
Clamshell Dredging - Coarse Grain Material Berth 243/245				
Main Hoist - Clamshell Dredge	139	0.02	0.00	140
Main Generator - Clamshell Dredge	105	0.02	0.00	105
Deck Generator - Clamshell Dredge	7	0.00	0.00	7
Reel Barge				
Survey Boat	2	0.00	0.00	2
Crew Boat	1	0.00	0.00	1
Scows				
Tug Boat	10	0.00	0.00	11
Electric Pump				
Subtotal	265	0.04	0.00	266

Table C-80. Total Direct GHG Emissions for the POLA Channel Deepening Proposed Project

Location/Activity	*Tons*			
	CO2	*CH4*	*N2O*	*CO2e*
Demolition				
NW Slip Sliver	393	0.06	0.00	396
Berths 243-245	855	0.13	0.01	860
Dike Const. Quarry Run Placement				
NW Slip Sliver	2,058	0.29	0.02	2,071
Berths 243-245	1,463	0.21	0.01	1,471
Cabrillo SWH	3,166	0.45	0.03	3,185
Eelgrass Restoration	6,394	0.91	0.06	6,433
Dike Construction Armor Stone Placement				
NW Slip Sliver	192	0.03	0.00	193
Berths 243-245	63	0.01	0.00	63
Eelgrass Restoration	1,176	0.17	0.01	1,183
Trench Excavation				
NW Slip Sliver	106	0.02	0.00	107
Berths 243-245	239	0.04	0.00	240
Cabrillo SWH	99	0.02	0.00	100
Surcharge Removal				
Loading	2,231	0.36	0.03	2,246
Transport	40	0.01	0.00	40
Unload NW Slip	37	0.01	0.00	37
Unload Cabrillo SWH	424	0.06	0.00	426
Unload Eelgrass	949	0.14	0.01	955
Dredging of Contaminated Material				
Contaminated Dredge	188	0.03	0.00	190
Dredging of Fine Material				
Clamshell - Cabrillo SWH	775	0.13	0.01	780
Hydraulic - Cabrillo SWH	271	0.04	0.00	272
Hydraulic - Eelgrass	24	0.00	0.00	25
Clamshell - Fine Grain Material to LA 2	29	0.00	0.00	29
Dredging of Coarse Material				
Clamshell - Berths 243-245	693	0.11	0.01	698
Clamshell - NW Slip Sliver	265	0.04	0.00	266
Total GHG Emissions	22,128	3.24	0.23	22,269

Table C-81. Yearly GHG Emissions for the POLA Channel Deepening Proposed Project - Alternative 1.

Year/Source Category	*Metric Tons*			
	CO2	*CH4*	*N2O*	*CO2e*
Year 1 - Direct Sources	18,837	2.75	0.20	18,956
Year 1 - Electrical Generation	3,227	0.02	0.01	3,232
Year 1 - Total	22,064	2.78	0.21	22,188
Year 2 - Direct Sources	1,408	0.22	0.02	1,417
Year 2 - Electrical Generation	-	-	-	-
Year 2 - Total	1,408	0.22	0.02	1,417

Table 81a - Construction Activities for the POLA Channel Deepening Proposed Project -
Dredging of Fine Grain Material - Electrical Demand

Location/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Clamshell Dredging - Fine Grain Material CSWH								
Main Hoist - Clamshell Dredge	1,200	0.50	1	600	24	14,400		-
Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800		-
Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720		
Reel Barge	N/A	N/A	N/A	N/A	N/A	N/A		
Survey Boat	250	0.2	1	50	5	250		
Crew Boat	125	0.2	1	25	5	125		
Scows	N/A	N/A	2	N/A	24	N/A		
Tug Boat	800	0.2	1	160	8	1,280		
Electric Pump	N/A	N/A	1	N/A	24	N/A		
Hydraulic Dredging - Fine Grain Material CSWH								
Electric - Hydraulic Dredge	17,000	1	1	8,500	24	204,000	48.7	9,929,432
Derrick Hoist	240	0.7	1	168	4	672		
Derrick Winch	87	0.7	1	61	1	61		
Anchor Barge Winch	180	0.7	1	126	4	504		
Generator	350	0.6	1	210	4	840		
Survey Boat	250	0.2	1	50	5	250		
Crew Boat	125	0.2	1	25	5	125		
Tug Boat	850	0.5	1	425	18	7,650		
Electric Pump	N/A	N/A	1	N/A	24	N/A		
Hydraulic Dredging - Fine Grain Material Eelgrass								
Electric - Hydraulic Dredge	17,000	1	1	8,500	24	204,000	4.4	897,600
Derrick Hoist	240	0.7	1	168	4	672		
Derrick Winch	87	0.7	1	61	1	61		
Anchor Barge Winch	180	0.7	1	126	4	504		
Generator	350	0.6	1	210	4	840		
Survey Boat	250	0.2	1	50	5	250		
Crew Boat	125	0.2	1	25	5	125		
Tug Boat	850	0.5	1	425	18	7,650		
Electric Pump	N/A	N/A	1	N/A	24	N/A		
Clamshell Dredging - Fine Grain Material to LA 2								
Main Hoist - Clamshell Dredge	1,200	0.50	1	600	24	14,400		-
Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800		-
Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720		
Tug Boat (1)	2,200	0.6	3	3,960	10	39,600		

Notes: (1) Dredge slurry assumed to be 40% water, resulting in a daily water bulked disposal volume to LA-2 of 6,700 cy. At a barge capacity of 2,000 cy, this requires aproximately 3 total barge trips. At a distance of 25 nm and a speed of 5 knots, each round trip would take 10 hours.

Table 81b - Construction Activities for the POLA Channel Deepening Proposed Project -
Dredging of Fine Grain Material - GHG Emissions from Electrical Generation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Clamshell Dredging - Fine Grain Material CSWH				
Main Hoist - Clamshell Dredge	-	-	-	0
Main Generator - Clamshell Dredge	-	-	-	0
Deck Generator - Clamshell Dredge				
Reel Barge				
Survey Boat				
Crew Boat				
Scows				
Tug Boat				
Electric Pump				
Subtotal	0	0.00	0.00	0
Hydraulic Dredging - Fine Grain Material CSWH				
Electric - Hydraulic Dredge	3,255.59	0.02	0.01	3,260
Derrick Hoist				
Derrick Winch				
Anchor Barge Winch				
Generator				
Survey Boat				
Crew Boat				
Tug Boat				
Electric Pump				
Subtotal	3,256	0.02	0.01	3,260
Hydraulic Dredging - Fine Grain Material Eelgrass				
Electric - Hydraulic Dredge	294.30	0.00	0.00	295
Derrick Hoist				
Derrick Winch				
Anchor Barge Winch				
Generator				
Survey Boat				
Crew Boat				
Tug Boat				
Electric Pump				
Subtotal	294	0.00	0.00	295
Clamshell Dredging - Fine Grain Material to LA 2				
Main Hoist - Clamshell Dredge	-	-	-	0
Main Generator - Clamshell Dredge	-	-	-	0
Deck Generator - Clamshell Dredge				
Tug Boat (1)				
Subtotal	0	0.00	0.00	0

Table 81c - Total GHG Emissions for the POLA Channel Deepening Proposed Project
Due to Electrical Generation

Location/Activity	*Tons*			
	CO2	*CH4*	*N2O*	*CO2e*
Demolition				
NW Slip Sliver				
Berths 243-245				
Dike Const. Quarry Run Placement				
NW Slip Sliver				
Berths 243-245				
Cabrillo SWH				
Eelgrass Restoration				
Dike Construction Armor Stone Placement				
NW Slip Sliver				
Eelgrass Restoration				
Trench Excavation				
NW Slip Sliver	0	-	-	0
Berths 243-245	0	-	-	0
Surcharge Removal				
Loading	0	-	-	0
Transport				
Unload NW Slip	0	-	-	0
Unload Cabrillo SWH				
Unload Eelgrass				
Dredging of Contaminated Material				
Contaminated Dredge	0	-	-	0
Dredging of Fine Material				
Clamshell - Cabrillo SWH	0	-	-	0
Hydraulic - Cabrillo SWH	3,256	0.02	0.01	3,260
Hydraulic - Eelgrass	294	0.00	0.00	295
Clamshell - Fine Grain Material to LA 2	0	0.00	0.00	0
Dredging of Coarse Material				
Clamshell - Berths 243-245	0	-	-	0
Clamshell - NW Slip Sliver	0	-	-	0
Total Emissions	3,550	0.03	0.01	3,555

Table 81d - POLA Channel Deepening Proposed Project Annual GHG Emissions
due to Electrical Generation

Year	*Metric Tons*			
	CO2	*CH4*	*N2O*	*CO2e*
Year 1	3,227	0.02	0.01	3,232
Year 2	0	-	-	0

Table C-82. Mitigated Air Emission Factors for the Channel Deepening Project Alternatives Construction Activities.

Project Year/Source Type	*Fuel Type*	*Emission Factors (Grams/Horsepower-Hour)*							*References*
		ROG	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*	
Year 2009/2010									
Off-Road Equipment - 25-50 Hp	D	0.56	2.34	4.57	0.004	0.06	0.06	0.05	(1)
Off-Road Equipment - 51-120 Hp	D	0.58	3.23	5.64	0.006	0.06	0.06	0.05	(1)
Off-Road Equipment - 121-175 Hp	D	0.42	2.70	5.26	0.006	0.04	0.04	0.03	(1)
Off-Road Equipment - 176-250 Hp	D	0.24	0.92	5.00	0.006	0.02	0.02	0.02	(1)
Off-Road Equipment - 251-500 Hp	D	0.24	0.92	4.95	0.005	0.02	0.02	0.02	(1)
Off-Road Equipment - 501-750 Hp	D	0.24	0.92	4.95	0.006	0.02	0.02	0.02	(1)
Off-Road Equipment - >750 Hp	D	0.24	0.92	4.95	0.005	0.02	0.02	0.02	(1)
On-road Truck - Idle (Gms/Hr)	D	6.88	41.18	92.19	0.051	0.13	0.13	0.12	(2)
On-road Truck - 5 mph (Gms/Mi)	D	4.22	16.28	23.77	0.028	0.14	0.14	0.13	(2)
On-road Truck - 25 mph (Gms/Mi)	D	0.66	4.17	10.84	0.016	0.11	0.11	0.10	(2)
On-road Truck - 55 mph (Gms/Mi)	D	0.32	3.55	9.24	0.014	0.13	0.13	0.12	(2)
Dredge Materials Haul Truck - Composite (Gms/Mi)	D	1.02	5.38	12.13	0.017	0.11	0.11	0.10	(3)
Other On-Road Trucks - Composite (Gms/Mi)	D	0.58	4.31	10.29	0.015	0.13	0.13	0.12	(4)
All Years									
Tugboat (Gm/Hp-Hr)	D	0.20	1.87	5.07	0.004	0.15	0.15	0.14	(5)
Fugitive Dust (Lbs/acre-day)	---	---	---	---	---	27.50	13.45	2.81	(6)
Building Demolition (Lbs/1000 cf)	---	---	---	---	---	0.84	0.41	0.09	(7)
Small Harbor Craft	D	0.16	1.27	7.46	0.47	0.30	0.30	0.28	(8)

Notes: (1) From ARB OFFROAD2007 emissions model (2006) for each Hp category Tier 2 implementation year. Assuming ROG = THC*1.27. PM emissions also reduced by 85% to simulate use of an ARB Level 3 PM control device.

(2) Heavy duty diesel truck running emission factors developed from EMFAC2007 (ARB 2006). Units in grams/mile for project year 2007. Assume entire fleet complies with 2004 EPA standards and based on annual average conditions at 60 degrees and 50% humidity. PM running emission factors include combustive and tire/brake wear contributions. PM combustive emissions also reduced by 85% to simulate use of an ARB level 3 PM control device.

(3) Composite factors based on a round trip of 90% at 25 mph and 10% at 5 mph. Units in grams/mile. Although not shown in these calculations, emissions from 5 minutes of idling mode included for each truck round trip.

(4) For on-road trucks other then dredge material haul trucks, composite factor based on a round trip of 75% at 55 mph, 20% at 25 mph, and 5% at 5 mph. Units in grams/mile. Although not shown in these calculations, emissions from 5 minutes of idling mode included for each truck round trip.

(5) = Tier 2 Marine diesel engine standards (Starcrest 2006). Average sulfur (S) content = 15 ppm in year 2007+.

(6) Units in lbs/acre-day from section 11.2.3 of AP-42 (EPA 1995). Emissions reduced by 75% from uncontrolled levels to represent compliance with SCAQMD Rule 403 - Fugitive Dust.

(7) CEQA Air Quality Handbook, Table A9-9-H (SCAQMD 1993). Units in lbs/1000 cubic feet (cf) of demolished building.

(8) EPA (2006)

Table C-102. Total Mitigated GHG Emissions for the POLA Channel Deepening Proposed Project - Demo

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
NW Slip Sliver - Wharf				
Main Hoist - Clamshell Dredge	158	0.02	0.00	159
Main Generator - Clamshell Dredge	118	0.02	0.00	119
Deck Generator - Clamshell Dredge	13	0.00	0.00	13
Backhoe	32	0.01	0.00	32
Front End Loader	28	0.00	0.00	28
Haul Truck (1)	9	0.00	0.00	9
Tug Boat	36	0.00	0.00	36
Subtotal	393	0.06	0.00	396
Berths 243-245				
Main Hoist - Clamshell Dredge	347	0.05	0.00	349
Main Generator - Clamshell Dredge	260	0.04	0.00	262
Deck Generator - Clamshell Dredge	28	0.00	0.00	28
Backhoe	69	0.01	0.00	70
Front End Loader	62	0.01	0.00	62
Haul Truck (1)	10	0.00	0.00	10
Tug Boat	78	0.01	0.00	79
Subtotal	855	0.13	0.01	860

Table C-103. Total Mitigated GHG Emissions for the POLA Channel Deepening Proposed Project - Dike Construction Quarry Run Placement

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
NW Slip Sliver				
Barge Equipment	173	0.03	0.00	174
Derrick Barge Crane	80	0.01	0.00	80
Tugboat - Derrick Barge Crane	150	0.02	0.00	151
Tugboat - Transport Quarry Run to Site (1)	1,655	0.23	0.02	1,665
Subtotal	2,058	0.29	0.02	2,071
Berths 243-245				
Barge Equipment	132	0.02	0.00	133
Derrick Barge Crane	61	0.01	0.00	61
Tugboat - Derrick Barge Crane	115	0.02	0.00	115
Tugboat - Transport Quarry Run to Site (1)	1,155	0.16	0.01	1,162
Subtotal	1,463	0.21	0.01	1,471
Cabrillo SWH				
Barge Equipment	296	0.05	0.00	298
Derrick Barge Crane	137	0.02	0.00	138
Tugboat - Derrick Barge Crane	257	0.04	0.00	259
Tugboat - Transport Quarry Run to Site (1)	2,476	0.34	0.02	2,491
Subtotal	3,166	0.45	0.03	3,185
Eelgrass Restoration				
Barge Equipment	598	0.10	0.01	602
Derrick Barge Crane	276	0.05	0.00	278
Tugboat - Derrick Barge Crane	520	0.07	0.01	523
Tugboat - Transport Quarry Run to Site (1)	5,001	0.69	0.05	5,030
Subtotal	6,394	0.91	0.06	6,433

Table C-104. Total Mitigated GHG Emissions for the POLA Channel Deepening Proposed Project - Dike Construction Armor Stone Placement

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
NW Slip Sliver				
Barge Equipment	16	0.00	0.00	16
Derrick Barge Crane	7	0.00	0.00	8
Tugboat - Derrick Barge Crane	14	0.00	0.00	14
Tugboat - Transport Armor Stone to Site (1)	154	0.02	0.00	155
Subtotal	192	0.03	0.00	193
Berths 243-245				
Barge Equipment	6	0.00	0.00	6
Derrick Barge Crane	3	0.00	0.00	3
Tugboat - Derrick Barge Crane	5	0.00	0.00	5
Tugboat - Transport Armor Stone to Site (1)	49	0.01	0.00	49
Subtotal	63	0.01	0.00	63
Eelgrass				
Barge Equipment	6	0.00	0.00	6
Derrick Barge Crane	3	0.00	0.00	3
Tugboat - Derrick Barge Crane	5	0.00	0.00	5
Tugboat - Transport Armor Stone to Site (1)	49	0.01	0.00	49
Subtotal	63	0.01	0.00	63

Table C-105. Total Mitigated GHG Emissions for the POLA Channel Deepening Proposed Project - Trench Excavation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
NW Slip Sliver				
Main Hoist - Clamshell Dredge (Electric)				
Main Generator - Clamshell Dredge (Electric)				
Deck Generator - Clamshell Dredge	3	0.00	0.00	3
Tug Boat	2	0.00	0.00	2
Subtotal	5	0.00	0.00	5
Berths 243-245				
Main Hoist - Clamshell Dredge (Electric)				
Main Generator - Clamshell Dredge (Electric)				
Deck Generator - Clamshell Dredge	6	0.00	0.00	7
Tug Boat	5	0.00	0.00	5
Subtotal	11	0.00	0.00	11.46
CSWH				
Main Hoist - Clamshell Dredge (Electric)				
Main Generator - Clamshell Dredge (Electric)				
Deck Generator - Clamshell Dredge	3	0.00	0.00	3
Tug Boat	2	0.00	0.00	2
Subtotal	5	0.00	0.00	4.77

Table C-106. Total Mitigated GHG Emissions for the POLA Channel Deepening Proposed Project - Surcharge Removal

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
SW Slip A#1 Surcharge Removal - Loading				
Scraper	394	0.06	0.00	397
Backhoe	70	0.01	0.00	71
Main Hoist - Clamshell Dredge (Electric)				
Main Generator - Clamshell Dredge (Electric)				
Deck Generator - Clamshell Dredge	53	0.01	0.00	53
Dozer	293	0.04	0.00	295
Off-Road Truck	307	0.04	0.00	308
Water Truck	142	0.02	0.00	143
Grader	53	0.01	0.00	53
Subtotal	1,311	0.20	0.01	1,320
SW Slip A#1 Surcharge Removal - Transport				
Scows				
Tug Boat	40	0.01	0.00	40
Subtotal	40	0.01	0.00	40
SW Slip A#1 Surcharge Removal - Unload NW Slip				
Main Hoist - Clamshell Dredge (Electric)				
Main Generator - Clamshell Dredge (Electric)				
Deck Generator - Clamshell Dredge	1	0.00	0.00	1
Electric Conveyor				
Dozer	5	0.00	0.00	5
Subtotal	6	0.00	0.00	6
SW Slip A#1 Surcharge Removal - Unload CSWH				
Main Hoist - Clamshell Dredge	232	0.03	0.00	234
Main Generator - Clamshell Dredge	174	0.03	0.00	175
Deck Generator - Clamshell Dredge	17	0.00	0.00	18
Scows				
Subtotal	424	0.06	0.00	426
SW Slip A#1 Surcharge Removal - Unload Eelgrass				
Main Hoist - Clamshell Dredge	451	0.07	0.00	454
Main Generator - Clamshell Dredge	338	0.05	0.00	340
Deck Generator - Clamshell Dredge	34	0.01	0.00	34
Electric Conveyor				
Dozer	126	0.02	0.00	127
Subtotal	949	0.14	0.01	955

Table C-107. Construction Activities for the POLA Channel Deepening Proposed Project - Dredging of Contaminated Material.

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Contaminated Dredge				
Main Hoist - Clamshell Dredge (Electric)				
Main Generator - Clamshell Dredge (Electric)				
Deck Generator - Clamshell Dredge	5	0.00	0.00	5
Scows				
Tug Boat	8	0.00	0.00	8
Electric Pump				
Skiff	1	0.00	0.00	1
Subtotal	13	0.00	0.00	13

Table C-108. Construction Activities for the POLA Channel Deepening Proposed Project - Dredging of Fine Grain Material

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Clamshell Dredging - Fine Grain Material CSWH				
Main Hoist - Clamshell Dredge (Electric)				
Main Generator - Clamshell Dredge (Electric)				
Deck Generator - Clamshell Dredge	20	0.00	0.00	21
Reel Barge				
Survey Boat	6	0.00	0.00	6
Crew Boat	3	0.00	0.00	3
Scows				
Tug Boat	31	0.00	0.00	31
Electric Pump				
Subtotal	60	0.01	0.00	61
Hydraulic Dredging - Fine Grain Material CSWH				
Main Engine - Electric				
Derrick Hoist	20	0.00	0.00	21
Derrick Winch	2	0.00	0.00	2
Anchor Barge Winch	15	0.00	0.00	15
Generator	26	0.00	0.00	26
Survey Boat	6	0.00	0.00	6
Crew Boat	3	0.00	0.00	3
Tug Boat	198	0.03	0.00	199
Electric Pump				
Subtotal	271	0.04	0.00	272
Hydraulic Dredging - Fine Grain Material Eelgrass				
Main Engine - Electric				
Derrick Hoist	2	0.00	0.00	2
Derrick Winch	0	0.00	0.00	0
Anchor Barge Winch	1	0.00	0.00	1
Generator	2	0.00	0.00	2
Survey Boat	1	0.00	0.00	1
Crew Boat	0	0.00	0.00	0
Tug Boat	18	0.00	0.00	18
Electric Pump				
Subtotal	24	0.00	0.00	25
Clamshell Dredging - Fine Grain Material to LA 2				
Main Hoist - Clamshell Dredge (Electric)				
Main Generator - Clamshell Dredge (Electric)				
Deck Generator - Clamshell Dredge	0	0.00	0.00	0
Tug Boat (1)	21	0.00	0.00	21
Subtotal	21	0.00	0.00	21

Table C-109. Construction Activities for the POLA Channel Deepening Proposed Project - Dredging of Coarse Grain Material.

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Clamshell Dredging - Coarse Grain Material Berth 243/245				
Main Hoist - Clamshell Dredge (Electric)				
Main Generator - Clamshell Dredge (Electric)				
Deck Generator - Clamshell Dredge	18	0.00	0.00	18
Reel Barge				
Survey Boat	5	0.00	0.00	5
Crew Boat	3	0.00	0.00	3
Scows				
Tug Boat	27	0.00	0.00	28
Electric Pump				
Subtotal	54	0.01	0.00	54
Clamshell Dredging - Coarse Grain Material Berth 243/245				
Main Hoist - Clamshell Dredge (Electric)				
Main Generator - Clamshell Dredge (Electric)				
Deck Generator - Clamshell Dredge	7	0.00	0.00	7
Reel Barge				
Survey Boat	2	0.00	0.00	2
Crew Boat	1	0.00	0.00	1
Scows				
Tug Boat	10	0.00	0.00	11
Electric Pump				
Subtotal	21	0.00	0.00	21

Table C-110. Total Direct Mitigated GHG Emissions for the POLA Channel Deepening Proposed

Location/Activity	*Tons*			
	CO2	*CH4*	*N2O*	*CO2e*
Demolition				
NW Slip Sliver	393	0.06	0.00	396
Berths 243-245	855	0.13	0.01	860
Dike Const. Quarry Run Placement				
NW Slip Sliver	2,058	0.29	0.02	2,071
Berths 243-245	1,463	0.21	0.01	1,471
Cabrillo SWH	3,166	0.45	0.03	3,185
Eelgrass Restoration	6,394	0.91	0.06	6,433
Dike Construction Armor Stone Placement				
NW Slip Sliver	192	0.03	0.00	193
Berths 243-245	63	0.01	0.00	63
Eelgrass Restoration	63	0.01	0.00	63
Trench Excavation				
NW Slip Sliver	5	0.00	0.00	5
Berths 243-245	11	0.00	0.00	11
Cabrillo SWH	5	0.00	0.00	5
Surcharge Removal				
Loading	1,311	0.20	0.01	1,320
Transport	40	0.01	0.00	40
Unload NW Slip	6	0.00	0.00	6
Unload Cabrillo SWH	424	0.06	0.00	426
Unload Eelgrass	949	0.14	0.01	955
Dredging of Contaminated Material				
Contaminated Dredge	13	0.00	0.00	13
Dredging of Fine Material				
Clamshell - Cabrillo SWH	60	0.01	0.00	61
Hydraulic - Cabrillo SWH	271	0.04	0.00	272
Hydraulic - Eelgrass	24	0.00	0.00	25
Clamshell - Fine Grain Material to LA 2	21	0.00	0.00	21
Dredging of Coarse Material				
Clamshell - Berths 243-245	54	0.01	0.00	54
Clamshell - NW Slip Sliver	21	0.00	0.00	21
Total Emissions	17,861	2.56	0.18	17,972

Table C-111. Yearly Mitigated GHG Emissions for the POLA Channel Deepening Proposed Project

Year/Source Category	*Metric Tons*			
	CO2	*CH4*	*N2O*	*CO2e*
Year 1 - Direct Sources	15,655	2.25	0.16	15,752
Year 1 - Electrical Generation	4,801	0.04	0.02	4,808
Year 1 - Total	20,456	2.28	0.18	20,560
Year 2 - Direct Sources	640	0.09	0.01	644
Year 2 - Electrical Generation	409	0.00	0.00	410
Year 2 - Total	1,049	0.09	0.01	1,054

Table 111a - Construction Activities for the POLA Channel Deepening Proposed Project -
Trench Excavation - Electrical Demand

Location/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
NW Slip Sliver								
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	6.4	92,160
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	6.4	69,120
Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720		
Tug Boat	800	0.20	1	160	4	640		
Berths 243-245								
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	14.4	207,360
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	14.4	155,520
Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720		
Tug Boat	800	0.20	1	160	4	640		
CSWH								
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	6.0	86,400
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	6.0	64,800
Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720		
Tug Boat	800	0.20	1	160	4	640		

Table 111b - Construction Activities for the POLA Channel Deepening Proposed Project -
Surcharge Removal - Electrical Demand

Location/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
SW Slip A#1 Surcharge Removal - Loading								
Scraper	225	0.40	5	450	12	5,400		
Backhoe	80	0.50	2	80	12	960		
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	116.5	1,677,600
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	116.5	1,258,200
Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720		
Dozer	335	0.50	2	335	12	4,020		
Off-Road Truck			4					
Water Truck	325	0.50	1	163	12	1,950		
Grader	180	0.50	1	90	8	720		
SW Slip A#1 Surcharge Removal - Transport								
Scows	N/A	N/A	2	N/A	12	N/A		
Tug Boat	800	0.20	1	160	4	640		
SW Slip A#1 Surcharge Removal - Unload NW Slip								
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	2.9	41,760
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	2.9	31,320
Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720		
Electric Conveyor	N/A	N/A	1	N/A	16	N/A		
Dozer	335	0.50	1	168	16	2,680		

Table 111c - Construction Activities for the POLA Channel Deepening Proposed Project -
Dredging of Contaminated Material - Electrical Demand

Location/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Contaminated Dredge								
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	11.1	159,840
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	11.1	119,880
Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720		
Scows	N/A	N/A	1	N/A	24	N/A		
Tug Boat	800	0.20	1	160	8	1,280		
Electric Pump	N/A	N/A	1	N/A	24	N/A		
Skiff	125	0.20	1	25	4	100		

Table 111d - Construction Activities for the POLA Channel Deepening Proposed Project -
Dredging of Fine Grain Material - Electrical Demand

Location/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Clamshell Dredging - Fine Grain Material CSWH								
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	45.3	651,941
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	45.3	488,956
Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720		
Reel Barge	N/A	N/A	N/A	N/A	N/A	N/A		
Survey Boat	250	0.2	1	50	5	250		
Crew Boat	125	0.2	1	25	5	125		
Scows	N/A	N/A	2	N/A	24	N/A		
Tug Boat	800	0.2	1	160	8	1,280		
Electric Pump	N/A	N/A	1	N/A	24	N/A		
Hydraulic Dredging - Fine Grain Material CSWH								
Main Engine - Electric	17,000	1	1	8,500	24	204,000	48.7	9,929,432
Derrick Hoist	240	0.7	1	168	4	672		
Derrick Winch	87	0.7	1	61	1	61		
Anchor Barge Winch	180	0.7	1	126	4	504		
Generator	350	0.6	1	210	4	840		
Survey Boat	250	0.2	1	50	5	250		
Crew Boat	125	0.2	1	25	5	125		
Tug Boat	850	0.5	1	425	18	7,650		
Electric Pump	N/A	N/A	1	N/A	24	N/A		
Hydraulic Dredging - Fine Grain Material Eelgrass								
Main Engine - Electric	17,000	1	1	8,500	24	204,000	4.4	897,600
Derrick Hoist	240	0.7	1	168	4	672		
Derrick Winch	87	0.7	1	61	1	61		
Anchor Barge Winch	180	0.7	1	126	4	504		
Generator	350	0.6	1	210	4	840		
Survey Boat	250	0.2	1	50	5	250		
Crew Boat	125	0.2	1	25	5	125		
Tug Boat	850	0.5	1	425	18	7,650		
Electric Pump	N/A	N/A	1	N/A	24	N/A		
Clamshell Dredging - Fine Grain Material to LA 2								
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	0.5	7,203
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	0.5	5,403
Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720		
Tug Boat (1)	2,200	0.6	3	3,960	10	39,600		

Notes: (1) Dredge slurry assumed to be 40% water, resulting in a daily water bulked disposal volume to LA-2 of 6,700 cy. At a barge capacity of 2,000 cy, this requires aproximately 3 total barge trips. At a distance of 25 nm and a speed of 5 knots, each round trip would take 10 hours.

Table 111e - Construction Activities for the POLA Channel Deepening Proposed Project - Dredging of Coarse Grain Material.

Location/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Clamshell Dredging - Coarse Grain Material Berth 243/245								
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	40.5	582,912
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	40.5	437,184
Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720		
Reel Barge	N/A	N/A	N/A	N/A	N/A	N/A		
Survey Boat	250	0.2	1	50	5	250		
Crew Boat	125	0.2	1	25	5	125		
Scows	N/A	N/A	2	N/A	24	N/A		
Tug Boat	800	0.2	1	160	8	1,280		
Electric Pump	N/A	N/A	1	N/A	24	N/A		
Clamshell Dredging - Coarse Grain Material NW Slip								
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	15.5	222,602
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	15.5	166,951
Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720		
Reel Barge	N/A	N/A	N/A	N/A	N/A	N/A		
Survey Boat	250	0.2	1	50	5	250		
Crew Boat	125	0.2	1	25	5	125		
Scows	N/A	N/A	2	N/A	24	N/A		
Tug Boat	800	0.2	1	160	8	1,280		
Electric Pump	N/A	N/A	1	N/A	24	N/A		

Table 111f - Total Emissions for the POLA Channel Deepening Proposed Project -
Trench Excavation - Mitigated GHG Emissions from Electrical Generation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
NW Slip Sliver				
Main Hoist - Clamshell Dredge (Electric)	30.22	0.00	0.00	30
Main Generator - Clamshell Dredge (Electric)	22.66	0.00	0.00	23
Deck Generator - Clamshell Dredge				
Tug Boat				
Subtotal	53	0.00	0.00	53
Berths 243-245				
Main Hoist - Clamshell Dredge (Electric)	67.99	0.00	0.00	68
Main Generator - Clamshell Dredge (Electric)	50.99	0.00	0.00	51
Deck Generator - Clamshell Dredge				
Tug Boat				
Subtotal	119	0.00	0.00	119
CSWH				
Main Hoist - Clamshell Dredge (Electric)	28.33	0.00	0.00	28
Main Generator - Clamshell Dredge (Electric)	21.25	0.00	0.00	21
Deck Generator - Clamshell Dredge				
Tug Boat				
Subtotal	50	0.00	0.00	50

Table 111g - Total Emissions for the POLA Channel Deepening Proposed Project -
Surcharge Removal - Mitigated GHG Emissions from Electrical Generation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
SW Slip A#1 Surcharge Removal - Loading				
Scraper				
Backhoe				
Main Hoist - Clamshell Dredge (Electric)	550.04	0.00	0.00	551
Main Generator - Clamshell Dredge (Electric)	412.53	0.00	0.00	413
Deck Generator - Clamshell Dredge				
Dozer				
Off-Road Truck				
Water Truck				
Grader				
Subtotal	963	0.01	0.00	964
SW Slip A#1 Surcharge Removal - Transport				
Scows				
Tug Boat				
Subtotal				
SW Slip A#1 Surcharge Removal - Unload NW Slip				
Main Hoist - Clamshell Dredge (Electric)	13.69	0.00	0.00	14
Main Generator - Clamshell Dredge (Electric)	10.27	0.00	0.00	10
Deck Generator - Clamshell Dredge				
Electric Conveyor				
Dozer				
Subtotal	24	0.00	0.00	24

Table 111h - Construction Activities for the POLA Channel Deepening Proposed Project -
Dredging of Contaminated Material - Mitigated GHG Emissions from Electrical Generation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Contaminated Dredge				
Main Hoist - Clamshell Dredge (Electric)	52.41	0.00	0.00	52
Main Generator - Clamshell Dredge (Electric)	39.31	0.00	0.00	39
Deck Generator - Clamshell Dredge				
Scows				
Tug Boat				
Electric Pump				
Skiff				
Subtotal	92	0.00	0.00	92

Table 111i - Construction Activities for the POLA Channel Deepening Proposed Project -
Dredging of Fine Grain Material - Mitigated GHG Emissions from Electrical Generation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Clamshell Dredging - Fine Grain Material CSWH				
Main Hoist - Clamshell Dredge (Electric)	213.75	0.00	0.00	214
Main Generator - Clamshell Dredge (Electric)	160.32	0.00	0.00	161
Deck Generator - Clamshell Dredge				
Reel Barge				
Survey Boat				
Crew Boat				
Scows				
Tug Boat				
Electric Pump				
Subtotal	374	0.00	0.00	375
Hydraulic Dredging - Fine Grain Material CSWH				
Main Engine - Electric	3,255.59	0.02	0.01	3,260
Derrick Hoist				
Derrick Winch				
Anchor Barge Winch				
Generator				
Survey Boat				
Crew Boat				
Tug Boat				
Electric Pump				
Subtotal	3,256	0.02	0.01	3,260
Hydraulic Dredging - Fine Grain Material Eelgrass				
Main Engine - Electric	294.30	0.00	0.00	295
Derrick Hoist				
Derrick Winch				
Anchor Barge Winch				
Generator				
Survey Boat				
Crew Boat				
Tug Boat				
Electric Pump				
Subtotal	294	0.00	0.00	295
Clamshell Dredging - Fine Grain Material to LA 2				
Main Hoist - Clamshell Dredge (Electric)	2.36	0.00	0.00	2
Main Generator - Clamshell Dredge (Electric)	1.77	0.00	0.00	2
Deck Generator - Clamshell Dredge				
Tug Boat (1)				
Subtotal	4	0.00	0.00	4

Table 111j - Construction Activities for the POLA Channel Deepening Proposed Project -
Dredging of Coarse Grain Material - Mitigated GHG Emissions from Electrical Generation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Clamshell Dredging - Coarse Grain Material Berth 243/245				
Main Hoist - Clamshell Dredge (Electric)	191.12	0.00	0.00	191
Main Generator - Clamshell Dredge (Electric)	143.34	0.00	0.00	144
Deck Generator - Clamshell Dredge				
Reel Barge				
Survey Boat				
Crew Boat				
Scows				
Tug Boat				
Electric Pump				
Subtotal	334	0.00	0.00	335
Clamshell Dredging - Coarse Grain Material Berth 243/245				
Main Hoist - Clamshell Dredge (Electric)	72.99	0.00	0.00	73
Main Generator - Clamshell Dredge (Electric)	54.74	0.00	0.00	55
Deck Generator - Clamshell Dredge				
Reel Barge				
Survey Boat				
Crew Boat				
Scows				
Tug Boat				
Electric Pump				
Subtotal	128	0.00	0.00	128

Table 111k - Total Mitigated GHG Emissions for the POLA Channel Deepening Proposed Project
Due to Electrical Generation

Location/Activity	*Tons*			
	CO2	*CH4*	*N2O*	*CO2e*
Demolition				
NW Slip Sliver				
Berths 243-245				
Dike Const. Quarry Run Placement				
NW Slip Sliver				
Berths 243-245				
Cabrillo SWH				
Eelgrass Restoration				
Dike Construction Armor Stone Placement				
NW Slip Sliver				
Berths 243-245				
Eelgrass Restoration				
Trench Excavation				
NW Slip Sliver	53	0.00	0.00	53
Berths 243-245	119	0.00	0.00	119
Cabrillo SWH	50	0.00	0.00	50
Surcharge Removal				
Loading	963	0.01	0.00	964
Transport				
Unload NW Slip	24	0.00	0.00	24
Unload Cabrillo SWH				
Unload Eelgrass				
Dredging of Contaminated Material				
Contaminated Dredge	92	0.00	0.00	92
Dredging of Fine Material				
Clamshell - Cabrillo SWH	374	0.00	0.00	375
Hydraulic - Cabrillo SWH	3,256	0.02	0.01	3,260
Hydraulic - Eelgrass	294	0.00	0.00	295
Clamshell - Fine Grain Material to LA 2	4	0.00	0.00	4
Dredging of Coarse Material				
Clamshell - Berths 243-245	334	0.00	0.00	335
Clamshell - NW Slip Sliver	128	0.00	0.00	128
Total Emissions	5,690	0.04	0.02	5,698

Table 111l - POLA Channel Deepening Proposed Project Annual Mitigated GHG Emissions
due to Electrical Generation

Year	*Metric Tons*			
	CO2	*CH4*	*N2O*	*CO2e*
Year 1	4,801	0.04	0.02	4,808
Year 2	409	0.00	0.00	410

Table C-139. Daily Mitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dike Construction Quarry Run Placement

	Pounds per Day						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Cabrillo SWH							
Barge Equipment	2.48	9.49	51.59	0.06	0.19	0.19	0.17
Derrick Barge Crane	1.14	4.38	23.81	0.03	0.09	0.09	0.08
Tugboat - Derrick Barge Crane	2.13	19.74	53.70	0.05	1.58	1.58	1.48
Tugboat - Transport Quarry Run to Site (1)	20.52	190.02	516.86	0.45	15.20	15.20	14.24
Subtotal	26.27	223.64	645.96	0.59	17.05	17.05	15.97
Eelgrass Restoration							
Barge Equipment	2.48	9.49	51.59	0.06	0.19	0.19	0.17
Derrick Barge Crane	1.14	4.38	23.81	0.03	0.09	0.09	0.08
Tugboat - Derrick Barge Crane	2.13	19.74	53.70	0.05	1.58	1.58	1.48
Tugboat - Transport Quarry Run to Site (1)	20.52	190.02	516.86	0.45	15.20	15.20	14.24
Subtotal	26.27	223.64	645.96	0.59	17.05	17.05	15.97

Table C-140. Daily Mitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dike Construction Armor Stone Placement

	Pounds per Day						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Eelgrass							
Barge Equipment	2.48	9.49	51.59	0.06	0.19	0.19	0.17
Derrick Barge Crane	1.14	4.38	23.81	0.03	0.09	0.09	0.08
Tugboat - Derrick Barge Crane	2.13	19.74	53.70	0.05	1.58	1.58	1.48
Tugboat - Transport Armor Stone to Site (1)	20.52	190.02	516.86	0.45	15.20	15.20	14.24
Subtotal	26.27	223.64	645.96	0.59	17.05	17.05	15.97

Table C-141. Daily Mitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Surcharge Removal

	Pounds per Day						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
SW Slip A#1 Surcharge Removal - Loading							
Scraper	2.86	10.95	59.52	0.07	0.21	0.21	0.20
Backhoe	1.23	6.84	11.94	0.01	0.12	0.12	0.11
Main Hoist - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Main Generator - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Deck Generator - Clamshell Dredge	0.38	1.46	7.94	0.01	0.03	0.03	0.03
Dozer	2.13	8.15	43.87	0.05	0.16	0.16	0.15
Off-Road Truck	2.22	8.52	45.83	0.05	0.17	0.17	0.15
Water Truck	1.03	3.96	21.28	0.02	0.08	0.08	0.07
Grader	0.38	1.46	7.94	0.01	0.03	0.03	0.03
Subtotal	10.23	41.34	198.32	0.22	0.80	0.80	0.73
SW Slip A#1 Surcharge Removal - Transport							
Scows	---	---	---	---	---	---	---
Tug Boat	0.28	2.63	7.16	0.01	0.21	0.21	0.20
Subtotal	0.28	2.63	7.16	0.01	0.21	0.21	0.20
SW Slip A#1 Surcharge Removal - Unload CSWH							
Main Hoist - Clamshell Dredge	5.08	19.47	104.76	0.10	0.38	0.38	0.35
Main Generator - Clamshell Dredge	3.81	14.60	78.57	0.08	0.29	0.29	0.26
Deck Generator - Clamshell Dredge	0.38	1.46	7.94	0.01	0.03	0.03	0.03
Scows	---	---	---	---	---	---	---
Subtotal	9.27	35.53	191.27	0.19	0.70	0.70	0.64
SW Slip A#1 Surcharge Removal - Unload Eelgrass							
Main Hoist - Clamshell Dredge	5.08	19.47	104.76	0.10	0.38	0.38	0.35
Main Generator - Clamshell Dredge	3.81	14.60	78.57	0.08	0.29	0.29	0.26
Deck Generator - Clamshell Dredge	0.38	1.46	7.94	0.01	0.03	0.03	0.03
Electric Conveyor	---	---	---	---	---	---	---
Dozer	1.42	5.44	29.25	0.03	0.11	0.11	0.10
Subtotal	10.69	40.97	220.52	0.22	0.80	0.80	0.74

Table C-142. Daily Mitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Contaminated Material.

	Pounds per Day						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Clamshell Dredging - Contaminated Material							
Main Hoist - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Main Generator - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Deck Generator - Clamshell Dredge	0.38	1.46	7.94	0.01	0.03	0.03	0.03
Scows	---	---	---	---	---	---	---
Tug Boat	0.57	5.26	14.32	0.01	0.42	0.42	0.39
Electric Pump	---	---	---	---	---	---	---
Skiff	0.04	0.28	1.64	0.10	0.07	0.07	0.06
Dozer	1.42	5.44	29.25	0.03	0.11	0.11	0.10
Grader	0.76	2.92	15.87	0.02	0.06	0.06	0.05
Compactor	0.70	2.68	14.55	0.02	0.05	0.05	0.05
Water Truck	0.51	1.95	10.58	0.01	0.04	0.04	0.04
Subtotal	4.37	19.99	94.15	0.21	0.77	0.77	0.72

Table C-143. Daily Mitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Fine Grain Material

	Pounds per Day						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Hydraulic Dredging - Fine Grain Material CSWH							
Main Engine - Electric	---	---	---	---	---	---	---
Derrick Hoist	0.36	1.36	7.41	0.01	0.03	0.03	0.02
Derrick Winch	0.08	0.43	0.76	0.00	0.01	0.01	0.01
Anchor Barge Winch	0.27	1.02	5.56	0.01	0.02	0.02	0.02
Generator	0.44	1.70	9.17	0.01	0.03	0.03	0.03
Survey Boat	0.09	0.70	4.11	0.26	0.17	0.17	0.15
Crew Boat	0.04	0.35	2.06	0.13	0.08	0.08	0.08
Tug Boat	3.40	31.46	85.58	0.07	2.52	2.52	2.36
Electric Pump	---	---	---	---	---	---	---
Subtotal	4.67	37.04	114.64	0.49	2.85	2.85	2.67
Clamshell Dredging - Fine Grain Material to LA 2							
Main Hoist - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Main Generator - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Deck Generator - Clamshell Dredge	0.38	1.46	7.94	0.01	0.03	0.03	0.03
Tug Boat	23.45	217.17	590.70	0.51	17.37	17.37	16.28
Subtotal	23.84	218.63	598.63	0.52	17.40	17.40	16.31

Table C-144. Daily Mitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Coarse Grain Material.

	Pounds per Day						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Clamshell Dredging - Coarse Grain Material CSWH							
Main Hoist - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Main Generator - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Deck Generator - Clamshell Dredge	0.38	1.46	7.94	0.01	0.03	0.03	0.03
Reel Barge	---	---	---	---	---	---	---
Survey Boat	0.09	0.70	4.11	0.26	0.17	0.17	0.15
Crew Boat	0.04	0.35	2.06	0.13	0.08	0.08	0.08
Scows	---	---	---	---	---	---	---
Tug Boat	0.57	5.26	14.32	0.01	0.42	0.42	0.39
Electric Pump	---	---	---	---	---	---	---
Subtotal	1.08	7.77	28.42	0.41	0.70	0.70	0.65
Clamshell Dredging - Coarse Grain Material Eelgrass							
Main Hoist - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Main Generator - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Deck Generator - Clamshell Dredge	0.38	1.46	7.94	0.01	0.03	0.03	0.03
Reel Barge	---	---	---	---	---	---	---
Survey Boat	0.09	0.70	4.11	0.26	0.17	0.17	0.15
Crew Boat	0.04	0.35	2.06	0.13	0.08	0.08	0.08
Scows	---	---	---	---	---	---	---
Tug Boat	0.57	5.26	14.32	0.01	0.42	0.42	0.39
Electric Pump	---	---	---	---	---	---	---
Subtotal	1.08	7.77	28.42	0.41	0.70	0.70	0.65

Table C-145. Peak Daily Mitigated Emissions for the POLA Channel Deepening Project Alternative 2

Location/Activity	*Pounds per Day*						
	ROG	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Dike Const. Quarry Run Placement							
Cabrillo SWH	26	224	646	1	17	17	16
Eelgrass Restoration	26	224	646	1	17	17	16
Dike Construction Armor Stone Placement							
Eelgrass Restoration	26	224	646	1	17	17	16
Surcharge Removal							
Loading	10	41	198	0	1	1	1
Transport	0	3	7	0	0	0	0
Unload Cabrillo SWH	9	36	191	0	1	1	1
Unload Eelgrass	11	41	221	0	1	1	1
Dredging of Contaminated Material							
Clamshell - Contaminated Material	4	20	94	0	1	1	1
Dredging of Fine Material							
Hydraulic - Cabrillo SWH	5	37	115	0	3	3	3
Clamshell - LA-2	24	219	599	1	17	17	16
Dredging of Coarse Material							
Clamshell - CSWH	1	8	28	0	1	1	1
Clamshell - Eelgrass	1	8	28	0	1	1	1
Peak Daily Mitigated Emissions (1)	50	442	1,245	1	34	34	32
2004 CEQA Baseline - Peak Daily Emissions	(68)	(383)	(1,556)	(100)	(47)	(47)	(43)
Net Daily Mitigated Emissions	(18)	59	(311)	(98)	(12)	(12)	(11)
SCAQMD Daily Significance Thresholds	75	550	100	150	NA	150	55

Notes: (1) Peak daily mitigated Emissions would occur from two concurrent activities: [1] Quarry run placement during construction of the dike for the Cabrillo Shallow Water Habitat, and [2] Clamshell dredging of fine grained material and transport to the LA-2 offshore deposition site.

Table C-146. Total Mitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dike Construction Quarry Run Placement

	Tons						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Cabrillo SWH							
Barge Equipment	0.13	0.48	2.61	0.00	0.01	0.01	0.01
Derrick Barge Crane	0.06	0.22	1.20	0.00	0.00	0.00	0.00
Tugboat - Derrick Barge Crane	0.11	1.00	2.71	0.00	0.08	0.08	0.07
Tugboat - Transport Quarry Run to Site (1)	1.04	9.60	26.10	0.02	0.77	0.77	0.72
Subtotal	1.33	11.29	32.62	0.03	0.86	0.86	0.81
Eelgrass Restoration							
Barge Equipment	0.25	0.97	5.26	0.01	0.02	0.02	0.02
Derrick Barge Crane	0.12	0.45	2.43	0.00	0.01	0.01	0.01
Tugboat - Derrick Barge Crane	0.22	2.01	5.48	0.00	0.16	0.16	0.15
Tugboat - Transport Quarry Run to Site (1)	2.09	19.38	52.72	0.05	1.55	1.55	1.45
Subtotal	2.68	22.81	65.89	0.06	1.74	1.74	1.63

Table C-147. Total Mitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dike Construction Armor Stone Placement

	Tons						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Eelgrass							
Barge Equipment	0.05	0.18	0.97	0.00	0.00	0.00	0.00
Derrick Barge Crane	0.02	0.08	0.45	0.00	0.00	0.00	0.00
Tugboat - Derrick Barge Crane	0.04	0.37	1.01	0.00	0.03	0.03	0.03
Tugboat - Transport Armor Stone to Site (1)	0.39	3.57	9.70	0.01	0.29	0.29	0.27
Subtotal	0.49	4.20	12.12	0.01	0.32	0.32	0.30

Table C-148. Total Mitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Surcharge Removal

	Tons						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
SW Slip A#1 Surcharge Removal - Loading							
Scraper	0.17	0.64	3.47	0.00	0.01	0.01	0.01
Backhoe	0.07	0.40	0.70	0.00	0.01	0.01	0.01
Main Hoist - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Main Generator - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Deck Generator - Clamshell Dredge	0.02	0.09	0.46	0.00	0.00	0.00	0.00
Dozer	0.12	0.48	2.56	0.00	0.01	0.01	0.01
Off-Road Truck	0.13	0.50	2.67	0.00	0.01	0.01	0.01
Water Truck	0.06	0.23	1.24	0.00	0.00	0.00	0.00
Grader	0.02	0.09	0.46	0.00	0.00	0.00	0.00
Subtotal	0.60	2.41	11.56	0.01	0.05	0.05	0.04
SW Slip A#1 Surcharge Removal - Transport							
Scows	---	---	---	---	---	---	---
Tug Boat	0.02	0.15	0.42	0.00	0.01	0.01	0.01
Subtotal	0.02	0.15	0.42	0.00	0.01	0.01	0.01
SW Slip A#1 Surcharge Removal - Unload CSWH							
Main Hoist - Clamshell Dredge	0.10	0.38	2.02	0.00	0.01	0.01	0.01
Main Generator - Clamshell Dredge	0.07	0.28	1.52	0.00	0.01	0.01	0.01
Deck Generator - Clamshell Dredge	0.01	0.03	0.15	0.00	0.00	0.00	0.00
Scows	---	---	---	---	---	---	---
Subtotal	0.18	0.69	3.69	0.00	0.01	0.01	0.01
SW Slip A#1 Surcharge Removal - Unload Eelgrass							
Main Hoist - Clamshell Dredge	0.20	0.76	4.09	0.00	0.01	0.01	0.01
Main Generator - Clamshell Dredge	0.15	0.57	3.06	0.00	0.01	0.01	0.01
Deck Generator - Clamshell Dredge	0.01	0.06	0.31	0.00	0.00	0.00	0.00
Electric Conveyor	---	---	---	---	---	---	---
Dozer	0.06	0.21	1.14	0.00	0.00	0.00	0.00
Subtotal	0.42	1.60	8.60	0.01	0.03	0.03	0.03

Table C-149. Total Mitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Contaminated Material.

	Tons						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Clamshell Dredging - Contaminated Material							
Main Hoist - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Main Generator - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Deck Generator - Clamshell Dredge	0.00	0.02	0.10	0.00	0.00	0.00	0.00
Scows	---	---	---	---	---	---	---
Tug Boat	0.01	0.07	0.18	0.00	0.01	0.01	0.01
Electric Pump	---	---	---	---	---	---	---
Skiff	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Dozer	0.02	0.07	0.37	0.00	0.00	0.00	0.00
Grader	0.01	0.04	0.20	0.00	0.00	0.00	0.00
Compactor	0.01	0.03	0.19	0.00	0.00	0.00	0.00
Water Truck	0.01	0.02	0.13	0.00	0.00	0.00	0.00
Subtotal	0.06	0.25	1.20	0.00	0.01	0.01	0.01

Table C-150. Total Mitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Fine Grain Material

	Tons						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Hydraulic Dredging - Fine Grain Material CSWH							
Main Engine - Electric	---	---	---	---	---	---	---
Derrick Hoist	0.01	0.04	0.21	0.00	0.00	0.00	0.00
Derrick Winch	0.00	0.01	0.02	0.00	0.00	0.00	0.00
Anchor Barge Winch	0.01	0.03	0.16	0.00	0.00	0.00	0.00
Generator	0.01	0.05	0.26	0.00	0.00	0.00	0.00
Survey Boat	0.00	0.02	0.12	0.01	0.00	0.00	0.00
Crew Boat	0.00	0.01	0.06	0.00	0.00	0.00	0.00
Tug Boat	0.10	0.90	2.45	0.00	0.07	0.07	0.07
Electric Pump	---	---	---	---	---	---	---
Subtotal	0.13	1.06	3.28	0.01	0.08	0.08	0.08
Clamshell Dredging - Fine Grain Material to LA 2							
Main Hoist - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Main Generator - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Deck Generator - Clamshell Dredge	0.01	0.04	0.19	0.00	0.00	0.00	0.00
Tug Boat	0.57	5.28	14.35	0.01	0.42	0.42	0.40
Subtotal	0.58	5.31	14.55	0.01	0.42	0.42	0.40

Table C-151. Total Mitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Coarse Grain Material.

	Tons						
Location/Equipment Type	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Clamshell Dredging - Coarse Grain Material CSWH							
Main Hoist - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Main Generator - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Deck Generator - Clamshell Dredge	0.01	0.04	0.19	0.00	0.00	0.00	0.00
Reel Barge	---	---	---	---	---	---	---
Survey Boat	0.00	0.02	0.10	0.01	0.00	0.00	0.00
Crew Boat	0.00	0.01	0.05	0.00	0.00	0.00	0.00
Scows	---	---	---	---	---	---	---
Tug Boat	0.01	0.13	0.35	0.00	0.01	0.01	0.01
Electric Pump	---	---	---	---	---	---	---
Subtotal	0.03	0.19	0.69	0.01	0.02	0.02	0.02
Clamshell Dredging - Coarse Grain Material Eelgrass							
Main Hoist - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Main Generator - Clamshell Dredge (Electric)	---	---	---	---	---	---	---
Deck Generator - Clamshell Dredge	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Reel Barge	---	---	---	---	---	---	---
Survey Boat	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Crew Boat	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Scows	---	---	---	---	---	---	---
Tug Boat	0.00	0.02	0.06	0.00	0.00	0.00	0.00
Electric Pump	---	---	---	---	---	---	---
Subtotal	0.00	0.03	0.11	0.00	0.00	0.00	0.00

Table C-152. Total Mitigated Emissions for the POLA Channel Deepening Project Alternative 2

Location/Activity	*Tons*						
	ROG	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
Dike Const. Quarry Run Placement							
Cabrillo SWH	1.33	11.29	32.62	0.03	0.86	0.86	0.81
Eelgrass Restoration	2.68	22.81	65.89	0.06	1.74	1.74	1.63
Dike Construction Armor Stone Placement							
Eelgrass Restoration	0.49	4.20	12.12	0.01	0.32	0.32	0.30
Surcharge Removal							
Loading	0.60	2.41	11.56	0.01	0.05	0.05	0.04
Transport	0.02	0.15	0.42	0.00	0.01	0.01	0.01
Unload Cabrillo SWH	0.18	0.69	3.69	0.00	0.01	0.01	0.01
Unload Eelgrass	0.42	1.60	8.60	0.01	0.03	0.03	0.03
Dredging of Contaminated Material							
Clamshell Dredge of Contaminated	0.06	0.25	1.20	0.00	0.01	0.01	0.01
Dredging of Fine Material							
Hydraulic - Cabrillo SWH	0.13	1.06	3.28	0.01	0.08	0.08	0.08
Clamshell - LA-2	0.58	5.31	14.55	0.01	0.42	0.42	0.40
Dredging of Coarse Material							
Clamshell - CSWH	0.03	0.19	0.69	0.01	0.02	0.02	0.02
Clamshell - Eelgrass	0.00	0.03	0.11	0.00	0.00	0.00	0.00
Total Mitigated Emissions (1)	6.51	50.00	154.73	0.17	3.56	3.56	3.33

Notes: (1) All activites would occur in one year, so total project emisisons would be used for conformity determination.

Table C-153. Total Mitigated GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Dik Construction Quarry Run Placement

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Cabrillo SWH				
Barge Equipment	296.10	0.05	0.00	298
Derrick Barge Crane	136.66	0.02	0.00	138
Tugboat - Derrick Barge Crane	257.23	0.04	0.00	259
Tugboat - Transport Quarry Run to Site (1)	2,475.80	0.34	0.02	2,491
Subtotal	3,165.79	0.45	0.03	3,185.13
Eelgrass Restoration				
Barge Equipment	598.07	0.10	0.01	602
Derrick Barge Crane	276.03	0.05	0.00	278
Tugboat - Derrick Barge Crane	519.55	0.07	0.01	523
Tugboat - Transport Quarry Run to Site (1)	5,000.62	0.69	0.05	5,030
Subtotal	6,394.27	0.91	0.06	6,433.34

Table C-154. Total Mitigated GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Dik Construction Armor Stone Placement

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Eelgrass				
Barge Equipment	110.01	0.02	0.00	111
Derrick Barge Crane	50.78	0.01	0.00	51
Tugboat - Derrick Barge Crane	95.57	0.01	0.00	96
Tugboat - Transport Armor Stone to Site (1)	919.85	0.13	0.01	925
Subtotal	1,176.20	0.17	0.01	1,183.39

Table C-155. Total Mitigated GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Surcharge Removal

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
SW Slip A#1 Surcharge Removal - Loading				
Scraper	394.43	0.06	0.00	397
Backhoe	70.12	0.01	0.00	71
Main Hoist - Clamshell Dredge (Electric)	---	---	---	
Main Generator - Clamshell Dredge (Electric)	---	---	---	
Deck Generator - Clamshell Dredge	52.59	0.01	0.00	53
Dozer	293.63	0.04	0.00	295
Off-Road Truck	306.78	0.04	0.00	309
Water Truck	142.43	0.02	0.00	143
Grader	52.59	0.01	0.00	53
Subtotal	1,312.57	0.20	0.01	1,321.23
SW Slip A#1 Surcharge Removal - Transport				
Scows	---	---	---	
Tug Boat	39.59	0.01	0.00	40
Subtotal	39.59	0.01	0.00	39.83
SW Slip A#1 Surcharge Removal - Unload CSWH				
Main Hoist - Clamshell Dredge	232.13	0.03	0.00	234
Main Generator - Clamshell Dredge	174.10	0.03	0.00	175
Deck Generator - Clamshell Dredge	17.41	0.00	0.00	18
Scows	---	---	---	
Subtotal	423.64	0.06	0.00	426.34
SW Slip A#1 Surcharge Removal - Unload Eelgrass				
Main Hoist - Clamshell Dredge	469.07	0.07	0.00	472
Main Generator - Clamshell Dredge	351.80	0.05	0.00	354
Deck Generator - Clamshell Dredge	35.18	0.01	0.00	35
Electric Conveyor	---	---	---	
Dozer	130.95	0.02	0.00	132
Subtotal	987.01	0.15	0.01	993.28

Table C-156. Total Mitigated GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Contaminated Material.

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Clamshell Dredging - Contaminated Material				
Main Hoist - Clamshell Dredge (Electric)	---	---	---	
Main Generator - Clamshell Dredge (Electric)	---	---	---	
Deck Generator - Clamshell Dredge	11.50	0.00	0.00	12
Scows	---	---	---	
Tug Boat	17.32	0.00	0.00	17
Electric Pump	---	---	---	
Skiff	1.35	0.00	0.00	1
Dozer	42.81	0.01	0.00	43
Grader	23.00	0.00	0.00	23
Compactor	21.09	0.00	0.00	21
Water Truck	15.34	0.00	0.00	15
Subtotal	132.41	0.02	0.00	133.29

Table C-157. Total Mitigated GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Fine Grain Material

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Hydraulic Dredging - Fine Grain Material CSWH				
Main Engine - Electric	---	---	---	
Derrick Hoist	24.12	0.00	0.00	24
Derrick Winch	2.19	0.00	0.00	2
Anchor Barge Winch	18.09	0.00	0.00	18
Generator	30.15	0.00	0.00	30
Survey Boat	7.60	0.00	0.00	8
Crew Boat	3.80	0.00	0.00	4
Tug Boat	232.58	0.03	0.00	234
Electric Pump	---	---	---	
Subtotal	318.53	0.05	0.00	320.48
Clamshell Dredging - Fine Grain Material to LA 2				
Main Hoist - Clamshell Dredge (Electric)	---	---	---	
Main Generator - Clamshell Dredge (Electric)	---	---	---	
Deck Generator - Clamshell Dredge	21.92	0.00	0.00	22
Tug Boat	1,361.51	0.19	0.01	1,370
Subtotal	1,383.43	0.19	0.01	1,391.70

Table C-158. Total Mitigated GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Coarse Grain Material.

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Clamshell Dredging - Coarse Grain Material CSWH				
Main Hoist - Clamshell Dredge (Electric)	---	---	---	
Main Generator - Clamshell Dredge (Electric)	---	---	---	
Deck Generator - Clamshell Dredge	21.92	0.00	0.00	22
Reel Barge	---	---	---	
Survey Boat	6.45	0.00	0.00	6
Crew Boat	3.22	0.00	0.00	3
Scows	---	---	---	
Tug Boat	33.01	0.00	0.00	33
Electric Pump	---	---	---	
Subtotal	64.60	0.01	0.00	65.01
Clamshell Dredging - Coarse Grain Material Eelgrass				
Main Hoist - Clamshell Dredge (Electric)	---	---	---	
Main Generator - Clamshell Dredge (Electric)	---	---	---	
Deck Generator - Clamshell Dredge	3.56	0.00	0.00	4
Reel Barge	---	---	---	
Survey Boat	1.05	0.00	0.00	1
Crew Boat	0.52	0.00	0.00	1
Scows	---	---	---	
Tug Boat	5.37	0.00	0.00	5
Electric Pump	---	---	---	
Subtotal	10.50	0.00	0.00	10.57

Table C-159. Total Mitigated GHG Emissions for the POLA Channel Deepening Project Alternative 2

Location/Activity	Tons			
	CO2	*CH4*	*N2O*	*CO2e*
Dike Const. Quarry Run Placement				
Cabrillo SWH	3,166	0.45	0.03	3,185
Eelgrass Restoration	6,394	0.91	0.06	6,433
Dike Construction Armor Stone Placement				
Eelgrass Restoration	1,176	0.17	0.01	1,183
Trench Excavation				
Cabrillo SWH	5	0.00	0.00	5
Surcharge Removal				
Loading	1,313	0.20	0.01	1,321
Transport	40	0.01	0.00	40
Unload Cabrillo SWH	424	0.06	0.00	426
Unload Eelgrass	987	0.15	0.01	993
Dredging of Contaminated Material				
Clamshell Dredge of Contaminated	132	0.02	0.00	133
Dredging of Fine Material				
Hydraulic - Cabrillo SWH	319	0.05	0.00	320
Clamshell - LA-2	1,383	0.19	0.01	1,392
Dredging of Coarse Material				
Clamshell - CSWH	65	0.01	0.00	65
Clamshell - Eelgrass	11	0.00	0.00	11
Total GHG Emissions (1)	15,413	2.20	0.16	15,508

Notes: (1) All activites would occur in one year, so total project emisisons would be used for conformity determination.

Table C-160. Yearly Mitigated GHG Emissions for the POLA Channel Deepening Project Alternati

Year/Source Category	Metric Tons			
	CO2	*CH4*	*N2O*	*CO2e*
Year 1 - Direct Sources	12,745	2	0	12,824
Year 1 - Electrical Generation	4,146	0.03	0.02	4,152
Year 1 - Total	16,891	1.86	0.15	16,976
Year 2 - Direct Sources	1,267	0	0	1,275
Year 2 - Electrical Generation	389	0.00	0.00	389
Year 2 - Total	1,656	0.18	0.01	1,664

Table 161 - Construction Activities for the POLA Channel Deepening Project Alternative 2 - Surcharge Removal - Electrical Demand

Location/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
SW Slip A#1 Surcharge Removal - Loading								
Scraper	225	0.40	5	450	12	5,400		
Backhoe	80	0.50	2	80	12	960		
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	12	7,200	116.6	839,520
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	12	5,400	116.6	629,640
Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720		
Dozer	335	0.50	2	335	12	4,020		
Off-Road Truck			4					
Water Truck	325	0.50	1	163	12	1,950		
Grader	180	0.50	1	90	8	720		

Table 162 - Construction Activities for the POLA Channel Deepening Project Alternative 2 - Dredging of Contaminated Material - Electrical Demand

Location/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Clamshell Dredging - Contaminated Material								
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	25.5	367,200
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	25.5	275,400
Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720		
Scows	N/A	N/A	2	N/A	24	N/A		
Tug Boat	800	0.20	1	160	8	1,280		
Electric Pump	N/A	N/A	1	N/A	24	N/A		
Skiff	125	0.20	1	25	4	100		
Dozer	335	0.50	2	335	8	2,680		
Grader	180	0.50	2	180	8	1,440		
Compactor	250	0.33	2	165	8	1,320		
Water Truck	240	0.50	1	120	8	960		

Table 163 - Construction Activities for the POLA Channel Deepening Project Alternative 2 - Dredging of Fine Grain Material - Electrical Demand - Electrical Demand

Location/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Hydraulic Dredging - Fine Grain Material CSWH								
Main Engine - Electric	17,000	1	1	8,500	24	204,000	57.3	11,689,200
Derrick Hoist	240	0.7	1	168	4	672		
Derrick Winch	87	0.7	1	61	1	61		
Anchor Barge Winch	180	0.7	1	126	4	504		
Generator	350	0.6	1	210	4	840		
Survey Boat	250	0.2	1	50	5	250		
Crew Boat	125	0.2	1	25	5	125		
Tug Boat	850	0.5	1	425	18	7,650		
Electric Pump	N/A	N/A	1	N/A	24	N/A		
Clamshell Dredging - Fine Grain Material to LA 2								
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	48.6	699,840
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	48.6	524,880
Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720		
Tug Boat (1)	2,200	0.6	4	5,280	10	52,800		

Notes: (1) Dredge slurry assumed to be 40% water, resulting in a daily water bulked disposal volume to LA-2 of 8,000 cy. At a barge capacity of 2,000 cy, this requires 4 daily barge trips. At a distance of 25 nm and a speed of 5 knots, each round trip would take 10 hours.

Table 164 - Construction Activities for the POLA Channel Deepening Project Alternative 2 - Dredging of Coarse Grain Material - Electrical Demand

Location/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Clamshell Dredging - Coarse Grain Material CSWH								
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	48.6	699,840
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	48.6	524,880
Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720		
Reel Barge	N/A	N/A	N/A	N/A	N/A	N/A		
Survey Boat	250	0.2	1	50	5	250		
Crew Boat	125	0.2	1	25	5	125		
Scows	N/A	N/A	2	N/A	24	N/A		
Tug Boat	800	0.2	1	160	8	1,280		
Electric Pump	N/A	N/A	1	N/A	24	N/A		
Clamshell Dredging - Coarse Grain Material Eelgrass								
Main Hoist - Clamshell Dredge (Electric)	1,200	0.50	1	600	24	14,400	7.9	113,760
Main Generator - Clamshell Dredge (Electric)	900	0.50	1	450	24	10,800	7.9	85,320
Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720		
Reel Barge	N/A	N/A	N/A	N/A	N/A	N/A		
Survey Boat	250	0.2	1	50	5	250		
Crew Boat	125	0.2	1	25	5	125		
Scows	N/A	N/A	2	N/A	24	N/A		
Tug Boat	800	0.2	1	160	8	1,280		
Electric Pump	N/A	N/A	1	N/A	24	N/A		

Table 165 - Total Mitigated GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Surcharge Removal Due to Electrical Generation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
SW Slip A#1 Surcharge Removal - Loading				
Scraper	0	0.00	0.00	0
Backhoe	0	0.00	0.00	0
Main Hoist - Clamshell Dredge (Electric)	252	0	0	252
Main Generator - Clamshell Dredge (Electric)	189	0	0	189
Deck Generator - Clamshell Dredge	0	0.00	0.00	0
Dozer	0	0.00	0.00	0
Off-Road Truck	0	0.00	0.00	0
Water Truck	0	0.00	0.00	0
Grader	0	0.00	0.00	0
Subtotal	441	0.00	0.00	442
SW Slip A#1 Surcharge Removal - Transport				
Scows	---	---	---	
Tug Boat	0	0.00	0.00	0
Subtotal	0	0.00	0.00	0
SW Slip A#1 Surcharge Removal - Unload CSWH				
Main Hoist - Clamshell Dredge	0	0.00	0.00	0
Main Generator - Clamshell Dredge	0	0.00	0.00	0
Deck Generator - Clamshell Dredge	0	0.00	0.00	0
Scows	---	---	---	
Subtotal	0	0.00	0.00	0
SW Slip A#1 Surcharge Removal - Unload Eelgrass				
Main Hoist - Clamshell Dredge	0	0.00	0.00	0
Main Generator - Clamshell Dredge	0	0.00	0.00	0
Deck Generator - Clamshell Dredge	0	0.00	0.00	0
Electric Conveyor	---	---	---	
Dozer	0	0.00	0.00	0
Subtotal	0	0.00	0.00	0

Table 166 - Total Mitigated GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Contaminated Material - Electrical Generation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Clamshell Dredging - Contaminated Material				
Main Hoist - Clamshell Dredge (Electric)	110	0	0	110
Main Generator - Clamshell Dredge (Electric)	83	0	0	83
Deck Generator - Clamshell Dredge	0	0.00	0.00	0
Scows	---	---	---	
Tug Boat	0	0.00	0.00	0
Electric Pump	---	---	---	
Skiff	0	0.00	0.00	0
Dozer	0	0.00	0.00	0
Grader	0	0.00	0.00	0
Compactor	0	0.00	0.00	0
Water Truck	0	0.00	0.00	0
Subtotal	193	0.00	0.00	193

Table 167 - Total Mitigated GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Fine Grain Material - Electrical Generation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Hydraulic Dredging - Fine Grain Material CSWH				
Main Engine - Electric	3,509	0.03	0.02	3,515
Derrick Hoist	0	0.00	0.00	0
Derrick Winch	0	0.00	0.00	0
Anchor Barge Winch	0	0.00	0.00	0
Generator	0	0.00	0.00	0
Survey Boat	0	0.00	0.00	0
Crew Boat	0	0.00	0.00	0
Tug Boat	0	0.00	0.00	0
Electric Pump	---	---	---	
Subtotal	3,509	0.03	0.02	3,515
Clamshell Dredging - Fine Grain Material to LA 2				
Main Hoist - Clamshell Dredge (Electric)	210	0	0	210
Main Generator - Clamshell Dredge (Electric)	158	0	0	158
Deck Generator - Clamshell Dredge	0	0.00	0.00	0
Tug Boat	0	0.00	0.00	0
Subtotal	368	0.00	0.00	368

Table 168 - Total Mitigated GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Coarse Grain Material - Electrical Generation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Clamshell Dredging - Coarse Grain Material CSWH				
Main Hoist - Clamshell Dredge (Electric)	210	0	0	210
Main Generator - Clamshell Dredge (Electric)	158	0	0	158
Deck Generator - Clamshell Dredge	0	0.00	0.00	0
Reel Barge	---	---	---	
Survey Boat	0	0.00	0.00	0
Crew Boat	0	0.00	0.00	0
Scows	---	---	---	
Tug Boat	0	0.00	0.00	0
Electric Pump	---	---	---	
Subtotal	368	0.00	0.00	368
Clamshell Dredging - Coarse Grain Material Eelgrass				
Main Hoist - Clamshell Dredge (Electric)	34	0	0	34
Main Generator - Clamshell Dredge (Electric)	26	0	0	26
Deck Generator - Clamshell Dredge	0	0.00	0.00	0
Reel Barge	---	---	---	
Survey Boat	0	0.00	0.00	0
Crew Boat	0	0.00	0.00	0
Scows	---	---	---	
Tug Boat	0	0.00	0.00	0
Electric Pump	---	---	---	
Subtotal	60	0.00	0.00	60

Table 169 - Total Mitigated GHG Emissions for the POLA Channel Deepening Project Alternative 2 Due to Electrical Generation

Location/Activity	*Tons*			
	CO2	*CH4*	*N2O*	*CO2e*
Dike Const. Quarry Run Placement				
Cabrillo SWH	0	0.00	0.00	0
Eelgrass Restoration	0	0.00	0.00	0
Dike Construction Armor Stone Placement				
Eelgrass Restoration	0	0.00	0.00	0
Trench Excavation				
Cabrillo SWH	50	0.00	0.00	50
Surcharge Removal				
Loading	441	0.00	0.00	442
Transport	0	0.00	0.00	0
Unload Cabrillo SWH	0	0.00	0.00	0
Unload Eelgrass	0	0.00	0.00	0
Dredging of Contaminated Material				
Clamshell Dredge of Contaminated	193	0.00	0.00	193
Dredging of Fine Material				
Hydraulic - Cabrillo SWH	3,509	0.03	0.02	3,515
Clamshell - LA-2	368	0.00	0.00	368
Dredging of Coarse Material				
Clamshell - CSWH	368	0.00	0.00	368
Clamshell - Eelgrass	60	0.00	0.00	60
Total Emissions (1)	4,988	0.04	0.02	4,996

Notes: (1) All activites would occur in one year

Table 170 - POLA Channel Deepening Project Alternative 2 Annual Mitigated GHG Emissions due to Electrical Generation

Year	*Metric Tons*			
	CO2	*CH4*	*N2O*	*CO2e*
Year 1	4,146	0	0	4,152
Year 2	389	0	0	389

	A	B	C	D	E	F	G	H	I
1	Table C-112. Construction Activities for the POLA Channel Deepening Project Alternative 2 - Dike								
2	Construction Quarry Run Placement								
3		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
4	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
5	Cabrillo SWH								
6	Barge Equipment	195	0.50	4	390	12	4,680	101.0	472,680
7	Derrick Barge Crane	180	0.50	2	180	12	2,160	101.0	218,160
8	Tugboat - Derrick Barge Crane	800	0.25	2	400	12	4,800	101.0	484,800
9	Tugboat - Transport Quarry Run to Site	2,200	0.50	4	4,400	10.5	46,200	101.0	4,666,200
10	Eelgrass Restoration								
11	Barge Equipment	195	0.50	4	390	12	4,680	204.0	954,720
12	Derrick Barge Crane	180	0.50	2	180	12	2,160	204.0	440,640
13	Tugboat - Derrick Barge Crane	800	0.25	2	400	12	4,800	204.0	979,200
14	Tugboat - Transport Quarry Run to Site	2,200	0.50	4	4,400	10.5	46,200	204.0	9,424,800
15									
16									
17									
18	Table C-113. Construction Activities for the POLA Channel Deepening Project Alternative 2 - Dike								
19	Construction Armor Stone Placement								
20		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
21	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
22	Eelgrass								
23	Barge Equipment	195	0.50	4	390	12	4,680	37.5	175,618
24	Derrick Barge Crane	180	0.50	2	180	12	2,160	37.5	81,054
25	Tugboat - Derrick Barge Crane	800	0.25	2	400	12	4,800	37.5	180,121
26	Tugboat - Transport Armor Stone to Site	2,200	0.50	4	4,400	10.5	46,200	37.5	1,733,662

	A	B	C	D	E	F	G	H	I
30	Table C-114. Construction Activities for the POLA Channel Deepening Project Alternative 2 -								
31	Surcharge Removal								
32		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
33	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
34	SW Slip A#1 Surcharge Removal - Loading								
35	Scraper	225	0.40	5	450	12	5,400	116.6	629,640
36	Backhoe	80	0.50	2	80	12	960	116.6	111,936
37	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	12	7,200	116.6	839,520
38	Main Generator - Clamshell Dredge	900	0.50	1	450	12	5,400	116.6	629,640
39	Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720	116.6	83,952
40	Dozer	335	0.50	2	335	12	4,020	116.6	468,732
41	Off-Road Truck	350	0.25	4	350	12	4,200	116.6	489,720
42	Water Truck	325	0.50	1	163	12	1,950	116.6	227,370
43	Grader	180	0.50	1	90	8	720	116.6	83,952
44	SW Slip A#1 Surcharge Removal - Transport								
45	Scows	N/A	N/A	2	N/A	12	N/A	116.6	N/A
46	Tug Boat	800	0.20	1	160	4	640	116.6	74,624
47	SW Slip A#1 Surcharge Removal - Unload CSWH								
48	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	16	9,600	38.6	370,560
49	Main Generator - Clamshell Dredge	900	0.50	1	450	16	7,200	38.6	277,920
50	Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720	38.6	27,792
51	Scows	N/A	N/A	2	N/A	12	N/A	38.6	N/A
52	SW Slip A#1 Surcharge Removal - Unload Eelgrass								
53	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	16	9,600	78.0	748,800
54	Main Generator - Clamshell Dredge	900	0.50	1	450	16	7,200	78.0	561,600
55	Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720	78.0	56,160
56	Electric Conveyor	N/A	N/A	1	N/A	16	N/A	78.0	N/A
57	Dozer	335	0.50	1	168	16	2,680	78.0	209,040
58									
59									
60									
61	Table C-115. Construction Activities for the POLA Channel Deepening Project Alternative 2 -								
62	Dredging of Contaminated Material.								
63		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
64	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
65	Clamshell Dredging - Contaminated Material								
66	Main Hoist - Clamshell Dredge w/Environmental Bucket	1,200	0.50	1	600	24	14,400	25.5	367,200
67	Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800	25.5	275,400
68	Deck Generator - Clamshell Dredge	240	0.60	1	144	5	720	25.5	18,360
69	Scows	N/A	N/A	2	N/A	24	N/A	25.5	N/A
70	Tug Boat	800	0.20	1	160	8	1,280	25.5	32,640
71	Electric Pump	N/A	N/A	1	N/A	24	N/A	25.5	N/A
72	Skiff	125	0.20	1	25	4	100	25.5	2,550
73	Dozer	335	0.50	2	335	8	2,680	25.5	68,340
74	Grader	180	0.50	2	180	8	1,440	25.5	36,720
75	Compactor	250	0.33	2	165	8	1,320	25.5	33,660
76	Water Truck	240	0.50	1	120	8	960	25.5	24,480

	A	B	C	D	E	F	G	H	I
80	Table C-116. Construction Activities for the POLA Channel Deepening Project Alternative 2 -								
81	Dredging of Fine Grain Material								
82		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
83	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
84	Hydraulic Dredging - Fine Grain Material CSWH								
85	Main Engine - Electric	N/A	N/A	1	N/A	24	N/A	57.3	N/A
86	Derrick Hoist	240	0.7	1	168	4	672	57.3	38,506
87	Derrick Winch	87	0.7	1	61	1	61	57.3	3,490
88	Anchor Barge Winch	180	0.7	1	126	4	504	57.3	28,879
89	Generator	350	0.6	1	210	4	840	57.3	48,132
90	Survey Boat	250	0.2	1	50	5	250	57.3	14,325
91	Crew Boat	125	0.2	1	25	5	125	57.3	7,163
92	Tug Boat	850	0.5	1	425	18	7,650	57.3	438,345
93	Electric Pump	N/A	N/A	1	N/A	24	N/A	57.3	N/A
94	Clamshell Dredging - Fine Grain Material to LA 2								
95	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	24	14,400	48.6	699,840
96	Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800	48.6	524,880
97	Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720	48.6	34,992
98	Tug Boat (1)	2,200	0.6	4	5,280	10	52,800	48.6	2,566,080
99	Notes: (1) Dredge slurry assumed to be 40% water, resulting in a daily water bulked disposal volume to LA-2 of 8,000 cy. At a barge capacity of								
100	2,000 cy, this requires 4 daily barge trips. At a distance of 25 nm and a speed of 5 knots, each round trip would take 10 hours.								
101									
102	Table C-117. Construction Activities for the POLA Channel Deepening Project Alternative 2 -								
103	Dredging of Coarse Grain Material.								
104		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
105	*Location/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
106	Clamshell Dredging - Coarse Grain Material CSWH								
107	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	24	14,400	48.6	699,840
108	Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800	48.6	524,880
109	Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720	48.6	34,992
110	Reel Barge	N/A	N/A	N/A	N/A	N/A	N/A	48.6	N/A
111	Survey Boat	250	0.2	1	50	5	250	48.6	12,150
112	Crew Boat	125	0.2	1	25	5	125	48.6	6,075
113	Scows	N/A	N/A	2	N/A	24	N/A	48.6	N/A
114	Tug Boat	800	0.2	1	160	8	1,280	48.6	62,208
115	Electric Pump	N/A	N/A	1	N/A	24	N/A	48.6	N/A
116	Clamshell Dredging - Coarse Grain Material Eeelgrass								
117	Main Hoist - Clamshell Dredge	1,200	0.50	1	600	24	14,400	7.9	113,760
118	Main Generator - Clamshell Dredge	900	0.50	1	450	24	10,800	7.9	85,320
119	Deck Generator - Clamshell Dredge	240	0.6	1	144	5	720	7.9	5,688
120	Reel Barge	N/A	N/A	N/A	N/A	N/A	N/A	7.9	N/A
121	Survey Boat	250	0.2	1	50	5	250	7.9	1,975
122	Crew Boat	125	0.2	1	25	5	125	7.9	988
123	Scows	N/A	N/A	2	N/A	24	N/A	7.9	N/A
124	Tug Boat	800	0.2	1	160	8	1,280	7.9	10,112
125	Electric Pump	N/A	N/A	1	N/A	24	N/A	7.9	N/A

	V	W	X	Y	Z	AA	AB	AC
1	Table C-118. Daily Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dike							
2	Construction Quarry Run Placement							
3		*Pounds per Day*						
4	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
5	Cabrillo SWH							
6	Barge Equipment	7.20	19.95	72.91	0.06	2.76	2.76	2.54
7	Derrick Barge Crane	3.32	9.21	33.65	0.03	1.27	1.27	1.17
8	Tugboat - Derrick Barge Crane	2.13	19.74	85.86	0.05	2.26	2.26	2.12
9	Tugboat - Transport Quarry Run to Site (1)	20.52	190.02	826.37	0.45	21.74	21.74	20.37
10	Subtotal	33.18	238.92	1,018.78	0.59	28.03	28.03	26.20
11	Eelgrass Restoration							
12	Barge Equipment	7.20	19.95	72.91	0.06	2.76	2.76	2.54
13	Derrick Barge Crane	3.32	9.21	33.65	0.03	1.27	1.27	1.17
14	Tugboat - Derrick Barge Crane	2.13	19.74	85.86	0.05	2.26	2.26	2.12
15	Tugboat - Transport Quarry Run to Site (1)	20.52	190.02	826.37	0.45	21.74	21.74	20.37
16	Subtotal	33.18	238.92	1,018.78	0.59	28.03	28.03	26.20
17								
18								
19								
20	Table C-119. Daily Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dike							
21	Construction Armor Stone Placement							
22		*Pounds per Day*						
23	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
24	Eelgrass							
25	Barge Equipment	7.20	19.95	72.91	0.06	2.76	2.76	2.54
26	Derrick Barge Crane	3.32	9.21	33.65	0.03	1.27	1.27	1.17
27	Tugboat - Derrick Barge Crane	2.13	19.74	85.86	0.05	2.26	2.26	2.12
28	Tugboat - Transport Armor Stone to Site (1)	20.52	190.02	826.37	0.45	21.74	21.74	20.37
29	Subtotal	33.18	238.92	1,018.78	0.59	28.03	28.03	26.20

	V	W	X	Y	Z	AA	AB	AC
33	Table C-120. Daily Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2 -							
34	Surcharge Removal							
35		*Pounds per Day*						
36	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
37	SW Slip A#1 Surcharge Removal - Loading							
38	Scraper	8.31	23.02	84.12	0.07	3.18	3.18	2.93
39	Backhoe	2.66	8.14	15.64	0.01	1.40	1.40	1.29
40	Main Hoist - Clamshell Dredge	8.87	33.12	99.48	0.08	3.06	3.06	2.82
41	Main Generator - Clamshell Dredge	6.65	24.84	74.61	0.06	2.30	2.30	2.11
42	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
43	Dozer	5.01	19.98	50.48	0.05	1.91	1.91	1.76
44	Off-Road Truck	5.23	20.87	52.74	0.05	2.00	2.00	1.84
45	Water Truck	2.43	9.69	24.49	0.02	0.93	0.93	0.85
46	Grader	1.11	3.07	11.22	0.01	0.42	0.42	0.39
47	Subtotal	41.38	145.80	423.98	0.36	15.64	15.64	14.39
48	SW Slip A#1 Surcharge Removal - Transport							
49	Scows	---	---	---	---	---	---	---
50	Tug Boat	0.28	2.63	11.45	0.01	0.30	0.30	0.28
51	Subtotal	0.28	2.63	11.45	0.01	0.30	0.30	0.28
52	SW Slip A#1 Surcharge Removal - Unload CSWH							
53	Main Hoist - Clamshell Dredge	11.83	44.16	132.64	0.10	4.09	4.09	3.76
54	Main Generator - Clamshell Dredge	8.87	33.12	99.48	0.08	3.06	3.06	2.82
55	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
56	Scows	---	---	---	---	---	---	---
57	Subtotal	21.80	80.35	243.34	0.19	7.58	7.58	6.97
58	SW Slip A#1 Surcharge Removal - Unload Eelgrass							
59	Main Hoist - Clamshell Dredge	11.83	44.16	132.64	0.10	4.09	4.09	3.76
60	Main Generator - Clamshell Dredge	8.87	33.12	99.48	0.08	3.06	3.06	2.82
61	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
62	Electric Conveyor	---	---	---	---	---	---	---
63	Dozer	3.34	13.32	33.65	0.03	1.28	1.28	1.17
64	Subtotal	25.14	93.66	276.99	0.22	8.85	8.85	8.14
65								
66								
67								
68	Table C-121. Daily Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2 -							
69	Dredging of Contaminated Material.							
70		*Pounds per Day*						
71	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
72	Clamshell Dredging - Contaminated Material							
73	Main Hoist - Clamshell Dredge	17.74	66.24	198.96	0.15	6.13	6.13	5.64
74	Main Generator - Clamshell Dredge	13.30	49.68	149.22	0.11	4.60	4.60	4.23
75	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
76	Scows	---	---	---	---	---	---	---
77	Tug Boat	0.57	5.26	22.90	0.01	0.60	0.60	0.56
78	Electric Pump	---	---	---	---	---	---	---
79	Skiff	0.04	0.28	1.64	0.10	0.07	0.07	0.06
80	Dozer	3.34	13.32	33.65	0.03	1.28	1.28	1.17
81	Grader	2.22	6.14	22.43	0.02	0.85	0.85	0.78
82	Compactor	2.03	5.63	20.56	0.02	0.78	0.78	0.72
83	Water Truck	1.48	4.09	14.96	0.01	0.57	0.57	0.52
84	Subtotal	41.82	153.70	475.54	0.47	15.29	15.29	14.08

	V	W	X	Y	Z	AA	AB	AC
88	Table C-122. Daily Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2 -							
89	Dredging of Fine Grain Material							
90		*Pounds per Day*						
91	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
92	Hydraulic Dredging - Fine Grain Material CSWH							
93	Main Engine - Electric	---	---	---	---	---	---	---
94	Derrick Hoist	1.03	2.86	10.47	0.01	0.40	0.40	0.36
95	Derrick Winch	0.17	0.52	0.99	0.00	0.09	0.09	0.08
96	Anchor Barge Winch	0.78	2.15	7.85	0.01	0.30	0.30	0.27
97	Generator	1.05	4.17	10.55	0.01	0.40	0.40	0.37
98	Survey Boat	0.09	0.70	4.11	0.26	0.17	0.17	0.15
99	Crew Boat	0.04	0.35	2.06	0.13	0.08	0.08	0.08
100	Tug Boat	3.40	31.46	136.83	0.07	3.60	3.60	3.37
101	Electric Pump	---	---	---	---	---	---	---
102	Subtotal	6.56	42.22	172.86	0.49	5.03	5.03	4.69
103	Clamshell Dredging - Fine Grain Material to LA 2							
104	Main Hoist - Clamshell Dredge	17.74	66.24	198.96	0.15	6.13	6.13	5.64
105	Main Generator - Clamshell Dredge	13.30	49.68	149.22	0.11	4.60	4.60	4.23
106	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
107	Tug Boat	23.45	217.17	944.42	0.51	24.84	24.84	23.28
108	Subtotal	55.61	336.15	1,303.82	0.79	36.00	36.00	33.54
109								
110								
111								
112	Table C-123. Daily Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2 -							
113	Dredging of Coarse Grain Material.							
114		*Pounds per Day*						
115	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
116	Clamshell Dredging - Coarse Grain Material CSWH							
117	Main Hoist - Clamshell Dredge	17.74	66.24	198.96	0.15	6.13	6.13	5.64
118	Main Generator - Clamshell Dredge	13.30	49.68	149.22	0.11	4.60	4.60	4.23
119	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
120	Reel Barge	---	---	---	---	---	---	---
121	Survey Boat	0.09	0.70	4.11	0.26	0.17	0.17	0.15
122	Crew Boat	0.04	0.35	2.06	0.13	0.08	0.08	0.08
123	Scows	---	---	---	---	---	---	---
124	Tug Boat	0.57	5.26	22.90	0.01	0.60	0.60	0.56
125	Electric Pump	---	---	---	---	---	---	---
126	Subtotal	32.85	125.30	388.46	0.68	12.00	12.00	11.06
127	Clamshell Dredging - Coarse Grain Material Eelgrass							
128	Main Hoist - Clamshell Dredge	17.74	66.24	198.96	0.15	6.13	6.13	5.64
129	Main Generator - Clamshell Dredge	13.30	49.68	149.22	0.11	4.60	4.60	4.23
130	Deck Generator - Clamshell Dredge	1.11	3.07	11.22	0.01	0.42	0.42	0.39
131	Reel Barge	---	---	---	---	---	---	---
132	Survey Boat	0.09	0.70	4.11	0.26	0.17	0.17	0.15
133	Crew Boat	0.04	0.35	2.06	0.13	0.08	0.08	0.08
134	Scows	---	---	---	---	---	---	---
135	Tug Boat	0.57	5.26	22.90	0.01	0.60	0.60	0.56
136	Electric Pump	---	---	---	---	---	---	---
137	Subtotal	32.85	125.30	388.46	0.68	12.00	12.00	11.06

	V	W	X	Y	Z	AA	AB	AC
140	Table C-124. Peak Daily Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2							
141		*Pounds per Day*						
142	*Location/Activity*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
143	Dike Const. Quarry Run Placement							
144	Cabrillo SWH	33	239	1,019	1	28	28	26
145	Eelgrass Restoration	33	239	1,019	1	28	28	26
146	Dike Construction Armor Stone Placement							
147	Eelgrass Restoration	33	239	1,019	1	28	28	26
148	Trench Excavation							
149	Cabrillo SWH	32	122	371	0	11	11	11
150	Surcharge Removal							
151	Loading	41	146	424	0	16	16	14
152	Transport	0	3	11	0	0	0	0
153	Unload Cabrillo SWH	22	80	243	0	8	8	7
154	Unload Eelgrass	25	94	277	0	9	9	8
155	Dredging of Contaminated Material							
156	Clamshell - Contaminated Material	42	154	476	0	15	15	14
157	Dredging of Fine Material							
158	Hydraulic - Cabrillo SWH	7	42	173	0	5	5	5
159	Clamshell - LA-2	56	336	1,304	1	36	36	34
160	Dredging of Coarse Material							
161	Clamshell - CSWH	33	125	388	1	12	12	11
162	Clamshell - Eelgrass	33	125	388	1	12	12	11
163	Peak Daily Unmitigated Emissions (1)	97	468	1,698	1	52	52	48
164	2004 CEQA Baseline - Peak Daily Emissions	(68)	(383)	(1,556)	(100)	(47)	(47)	(43)
165	Net Daily Unmitigated Emissions	29	85	142	(98)	5	5	4
166	SCAQMD Daily Significance Thresholds	75	550	100	150	NA	150	55
167	Notes: (1) Peak daily unmitigated emissions would occur from the follwing simultaneous activities: (1) dike construction quarry run placement at							
168	at the eel grass site and (2) load, transport, and unload surcharge material at CSWH.							

	AE	AF	AG	AH	AI	AJ	AK	AL
1	Table C-125. Total Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dike							
2	Construction Quarry Run Placement							
3		*Tons*						
4	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
5	Cabrillo SWH							
6	Barge Equipment	0.36	1.01	3.68	0.00	0.14	0.14	0.13
7	Derrick Barge Crane	0.17	0.47	1.70	0.00	0.06	0.06	0.06
8	Tugboat - Derrick Barge Crane	0.11	1.00	4.34	0.00	0.11	0.11	0.11
9	Tugboat - Transport Quarry Run to Site (1)	1.04	9.60	41.73	0.02	1.10	1.10	1.03
10	Subtotal	1.68	12.07	51.45	0.03	1.42	1.42	1.32
11	Eelgrass Restoration							
12	Barge Equipment	0.73	2.03	7.44	0.01	0.28	0.28	0.26
13	Derrick Barge Crane	0.34	0.94	3.43	0.00	0.13	0.13	0.12
14	Tugboat - Derrick Barge Crane	0.22	2.01	8.76	0.00	0.23	0.23	0.22
15	Tugboat - Transport Quarry Run to Site (1)	2.09	19.38	84.29	0.05	2.22	2.22	2.08
16	Subtotal	3.38	24.37	103.92	0.06	2.86	2.86	2.67
17								
18								
19								
20	Table C-126. Total Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2 - Dike							
21	Construction Armor Stone Placement							
22		*Tons*						
23	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
24	Eelgrass							
25	Barge Equipment	0.14	0.37	1.37	0.00	0.05	0.05	0.05
26	Derrick Barge Crane	0.06	0.17	0.63	0.00	0.02	0.02	0.02
27	Tugboat - Derrick Barge Crane	0.04	0.37	1.61	0.00	0.04	0.04	0.04
28	Tugboat - Transport Armor Stone to Site (1)	0.39	3.57	15.50	0.01	0.41	0.41	0.38
29	Subtotal	0.62	4.48	19.11	0.01	0.53	0.53	0.49

	AE	AF	AG	AH	AI	AJ	AK	AL
33	Table C-127. Total Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2 -							
34	Surcharge Removal							
35		*Tons*						
36	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
37	SW Slip A#1 Surcharge Removal - Loading							
38	Scraper	0.48	1.34	4.90	0.00	0.19	0.19	0.17
39	Backhoe	0.16	0.47	0.91	0.00	0.08	0.08	0.08
40	Main Hoist - Clamshell Dredge	0.52	1.93	5.80	0.00	0.18	0.18	0.16
41	Main Generator - Clamshell Dredge	0.39	1.45	4.35	0.00	0.13	0.13	0.12
42	Deck Generator - Clamshell Dredge	0.06	0.18	0.65	0.00	0.02	0.02	0.02
43	Dozer	0.29	1.16	2.94	0.00	0.11	0.11	0.10
44	Off-Road Truck	0.31	1.22	3.07	0.00	0.12	0.12	0.11
45	Water Truck	0.14	0.56	1.43	0.00	0.05	0.05	0.05
46	Grader	0.06	0.18	0.65	0.00	0.02	0.02	0.02
47	Subtotal	2.41	8.50	24.72	0.02	0.91	0.91	0.84
48	SW Slip A#1 Surcharge Removal - Transport							
49	Scows	---	---	---	---	---	---	---
50	Tug Boat	0.02	0.15	0.67	0.00	0.02	0.02	0.02
51	Subtotal	0.02	0.15	0.67	0.00	0.02	0.02	0.02
52	SW Slip A#1 Surcharge Removal - Unload CSWH							
53	Main Hoist - Clamshell Dredge	0.23	0.85	2.56	0.00	0.08	0.08	0.07
54	Main Generator - Clamshell Dredge	0.17	0.64	1.92	0.00	0.06	0.06	0.05
55	Deck Generator - Clamshell Dredge	0.02	0.06	0.22	0.00	0.01	0.01	0.01
56	Scows	---	---	---	---	---	---	---
57	Subtotal	0.42	1.55	4.70	0.00	0.15	0.15	0.13
58	SW Slip A#1 Surcharge Removal - Unload Eelgrass							
59	Main Hoist - Clamshell Dredge	0.46	1.72	5.17	0.00	0.16	0.16	0.15
60	Main Generator - Clamshell Dredge	0.35	1.29	3.88	0.00	0.12	0.12	0.11
61	Deck Generator - Clamshell Dredge	0.04	0.12	0.44	0.00	0.02	0.02	0.02
62	Electric Conveyor	---	---	---	---	---	---	---
63	Dozer	0.13	0.52	1.31	0.00	0.05	0.05	0.05
64	Subtotal	0.98	3.65	10.80	0.01	0.35	0.35	0.32
65								
66								
67								
68	Table C-128. Total Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2 -							
69	Dredging of Contaminated Material.							
70		*Tons*						
71	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
72	Clamshell Dredging - Contaminated Material							
73	Main Hoist - Clamshell Dredge	0.23	0.84	2.54	0.00	0.08	0.08	0.07
74	Main Generator - Clamshell Dredge	0.17	0.63	1.90	0.00	0.06	0.06	0.05
75	Deck Generator - Clamshell Dredge	0.01	0.04	0.14	0.00	0.01	0.01	0.00
76	Scows	---	---	---	---	---	---	---
77	Tug Boat	0.01	0.07	0.29	0.00	0.01	0.01	0.01
78	Electric Pump	---	---	---	---	---	---	---
79	Skiff	0.00	0.00	0.02	0.00	0.00	0.00	0.00
80	Dozer	0.04	0.17	0.43	0.00	0.02	0.02	0.01
81	Grader	0.03	0.08	0.29	0.00	0.01	0.01	0.01
82	Compactor	0.03	0.07	0.26	0.00	0.01	0.01	0.01
83	Water Truck	0.02	0.05	0.19	0.00	0.01	0.01	0.01
84	Subtotal	0.53	1.96	6.06	0.01	0.19	0.19	0.18

	AE	AF	AG	AH	AI	AJ	AK	AL
88	Table C-129. Total Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2 -							
89	Dredging of Fine Grain Material							
90		*Tons*						
91	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
92	Hydraulic Dredging - Fine Grain Material CSWH							
93	Main Engine - Electric	---	---	---	---	---	---	---
94	Derrick Hoist	0.03	0.08	0.30	0.00	0.01	0.01	0.01
95	Derrick Winch	0.00	0.01	0.03	0.00	0.00	0.00	0.00
96	Anchor Barge Winch	0.02	0.06	0.22	0.00	0.01	0.01	0.01
97	Generator	0.03	0.12	0.30	0.00	0.01	0.01	0.01
98	Survey Boat	0.00	0.02	0.12	0.01	0.00	0.00	0.00
99	Crew Boat	0.00	0.01	0.06	0.00	0.00	0.00	0.00
100	Tug Boat	0.10	0.90	3.92	0.00	0.10	0.10	0.10
101	Electric Pump	---	---	---	---	---	---	---
102	Subtotal	0.19	1.21	4.95	0.01	0.14	0.14	0.13
103	Clamshell Dredging - Fine Grain Material to LA 2							
104	Main Hoist - Clamshell Dredge	0.43	1.61	4.83	0.00	0.15	0.15	0.14
105	Main Generator - Clamshell Dredge	0.32	1.21	3.63	0.00	0.11	0.11	0.10
106	Deck Generator - Clamshell Dredge	0.03	0.07	0.27	0.00	0.01	0.01	0.01
107	Tug Boat	0.57	5.28	22.95	0.01	0.60	0.60	0.57
108	Subtotal	1.35	8.17	31.68	0.02	0.87	0.87	0.81
109								
110								
111								
112	Table C-130. Total Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2 -							
113	Dredging of Coarse Grain Material.							
114		*Tons*						
115	*Location/Equipment Type*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
116	Clamshell Dredging - Coarse Grain Material CSWH							
117	Main Hoist - Clamshell Dredge	0.43	1.61	4.83	0.00	0.15	0.15	0.14
118	Main Generator - Clamshell Dredge	0.32	1.21	3.63	0.00	0.11	0.11	0.10
119	Deck Generator - Clamshell Dredge	0.03	0.07	0.27	0.00	0.01	0.01	0.01
120	Reel Barge	---	---	---	---	---	---	---
121	Survey Boat	0.00	0.02	0.10	0.01	0.00	0.00	0.00
122	Crew Boat	0.00	0.01	0.05	0.00	0.00	0.00	0.00
123	Scows	---	---	---	---	---	---	---
124	Tug Boat	0.01	0.13	0.56	0.00	0.01	0.01	0.01
125	Electric Pump	---	---	---	---	---	---	---
126	Subtotal	0.80	3.04	9.44	0.02	0.29	0.29	0.27
127	Clamshell Dredging - Coarse Grain Material Eelgrass							
128	Main Hoist - Clamshell Dredge	0.07	0.26	0.79	0.00	0.02	0.02	0.02
129	Main Generator - Clamshell Dredge	0.05	0.20	0.59	0.00	0.02	0.02	0.02
130	Deck Generator - Clamshell Dredge	0.00	0.01	0.04	0.00	0.00	0.00	0.00
131	Reel Barge	---	---	---	---	---	---	---
132	Survey Boat	0.00	0.00	0.02	0.00	0.00	0.00	0.00
133	Crew Boat	0.00	0.00	0.01	0.00	0.00	0.00	0.00
134	Scows	---	---	---	---	---	---	---
135	Tug Boat	0.00	0.02	0.09	0.00	0.00	0.00	0.00
136	Electric Pump	---	---	---	---	---	---	---
137	Subtotal	0.13	0.49	1.53	0.00	0.05	0.05	0.04

	AE	AF	AG	AH	AI	AJ	AK	AL
140	Table C-131. Total Unmitigated Emissions for the POLA Channel Deepening Project Alternative 2							
141		*Tons*						
142	*Location/Activity*	*ROG*	*CO*	*NOx*	*SOx*	*PM*	*PM10*	*PM2.5*
143	Dike Const. Quarry Run Placement							
144	Cabrillo SWH	1.68	12.07	51.45	0.03	1.42	1.42	1.32
145	Eelgrass Restoration	3.38	24.37	103.92	0.06	2.86	2.86	2.67
146	Dike Construction Armor Stone Placement							
147	Eelgrass Restoration	0.62	4.48	19.11	0.01	0.53	0.53	0.49
148	Trench Excavation							
149	Cabrillo SWH	0.10	0.36	1.11	0.00	0.03	0.03	0.03
150	Surcharge Removal							
151	Loading	2.41	8.50	24.72	0.02	0.91	0.91	0.84
152	Transport	0.02	0.15	0.67	0.00	0.02	0.02	0.02
153	Unload Cabrillo SWH	0.42	1.55	4.70	0.00	0.15	0.15	0.13
154	Unload Eelgrass	0.98	3.65	10.80	0.01	0.35	0.35	0.32
155	Dredging of Contaminated Material							
156	Clamshell Dredge of Contaminated	0.53	1.96	6.06	0.01	0.19	0.19	0.18
157	Dredging of Fine Material							
158	Hydraulic - Cabrillo SWH	0.19	1.21	4.95	0.01	0.14	0.14	0.13
159	Clamshell - LA-2	1.35	8.17	31.68	0.02	0.87	0.87	0.81
160	Dredging of Coarse Material							
161	Clamshell - CSWH	0.80	3.04	9.44	0.02	0.29	0.29	0.27
162	Clamshell - Eelgrass	0.13	0.49	1.53	0.00	0.05	0.05	0.04
163	Total Unmitigated Emissions (1)	12.61	70.02	270.15	0.19	7.81	7.81	7.27
164	Notes: (1) All activites would occur in one year							

Table C-132. Total GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Dike Construction Quarry Run Placement

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Cabrillo SWH				
Barge Equipment	296.10	0.05	0.00	298
Derrick Barge Crane	136.66	0.02	0.00	138
Tugboat - Derrick Barge Crane	257.23	0.04	0.00	259
Tugboat - Transport Quarry Run to Site (1)	2,475.80	0.34	0.02	2,491
Subtotal	3,165.79	0.45	0.03	3,185.13
Eelgrass Restoration				
Barge Equipment	598.07	0.10	0.01	602
Derrick Barge Crane	276.03	0.05	0.00	278
Tugboat - Derrick Barge Crane	519.55	0.07	0.01	523
Tugboat - Transport Quarry Run to Site (1)	5,000.62	0.69	0.05	5,030
Subtotal	6,394.27	0.91	0.06	6,433.34

Table C-133. Total GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Dike Construction Armor Stone Placement

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Eelgrass				
Barge Equipment	110.01	0.02	0.00	111
Derrick Barge Crane	50.78	0.01	0.00	51
Tugboat - Derrick Barge Crane	95.57	0.01	0.00	96
Tugboat - Transport Armor Stone to Site (1)	919.85	0.13	0.01	925
Subtotal	1,176.20	0.17	0.01	1,183.39

Table C-134. Total GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Surcharge Removal

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
SW Slip A#1 Surcharge Removal - Loading				
Scraper	394.43	0.06	0.00	397
Backhoe	70.12	0.01	0.00	71
Main Hoist - Clamshell Dredge (Electric)	525.90	0.09	0.01	530
Main Generator - Clamshell Dredge (Electric)	394.43	0.07	0.00	397
Deck Generator - Clamshell Dredge	52.59	0.01	0.00	53
Dozer	293.63	0.04	0.00	295
Off-Road Truck	306.78	0.04	0.00	309
Water Truck	142.43	0.02	0.00	143
Grader	52.59	0.01	0.00	53
Subtotal	2,232.90	0.36	0.03	2,248.37
SW Slip A#1 Surcharge Removal - Transport				
Scows	---	---	---	
Tug Boat	39.59	0.01	0.00	40
Subtotal	39.59	0.01	0.00	39.83
SW Slip A#1 Surcharge Removal - Unload CSWH				
Main Hoist - Clamshell Dredge	232.13	0.03	0.00	234
Main Generator - Clamshell Dredge	174.10	0.03	0.00	175
Deck Generator - Clamshell Dredge	17.41	0.00	0.00	18
Scows	---	---	---	
Subtotal	423.64	0.06	0.00	426.34
SW Slip A#1 Surcharge Removal - Unload Eelgrass				
Main Hoist - Clamshell Dredge	469.07	0.07	0.00	472
Main Generator - Clamshell Dredge	351.80	0.05	0.00	354
Deck Generator - Clamshell Dredge	35.18	0.01	0.00	35
Electric Conveyor	---	---	---	
Dozer	130.95	0.02	0.00	132
Subtotal	987.01	0.15	0.01	993.28

Table C-135. Total GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Contaminated Material.

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Clamshell Dredging - Contaminated Material				
Main Hoist - Clamshell Dredge (Electric)	230.03	0.04	0.00	232
Main Generator - Clamshell Dredge (Electric)	172.52	0.03	0.00	174
Deck Generator - Clamshell Dredge	11.50	0.00	0.00	12
Scows	---	---	---	
Tug Boat	17.32	0.00	0.00	17
Electric Pump	---	---	---	
Skiff	1.35	0.00	0.00	1
Dozer	42.81	0.01	0.00	43
Grader	23.00	0.00	0.00	23
Compactor	21.09	0.00	0.00	21
Water Truck	15.34	0.00	0.00	15
Subtotal	534.95	0.09	0.01	538.69

Table C-136. Total GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Fine Grain Material

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Hydraulic Dredging - Fine Grain Material CSWH				
Main Engine - Electric	---	---	---	
Derrick Hoist	24.12	0.00	0.00	24
Derrick Winch	2.19	0.00	0.00	2
Anchor Barge Winch	18.09	0.00	0.00	18
Generator	30.15	0.00	0.00	30
Survey Boat	7.60	0.00	0.00	8
Crew Boat	3.80	0.00	0.00	4
Tug Boat	232.58	0.03	0.00	234
Electric Pump	---	---	---	
Subtotal	318.53	0.05	0.00	320.48
Clamshell Dredging - Fine Grain Material to LA 2				
Electric - Clamshell Dredge	438.40	0.07	0.01	442
Main Generator - Clamshell Dredge	328.80	0.05	0.00	331
Deck Generator - Clamshell Dredge	21.92	0.00	0.00	22
Tug Boat	1,361.51	0.19	0.01	1,370
Subtotal	2,150.64	0.32	0.02	2,164.35

Table C-137. Total GHG Emissions for the POLA Channel Deepening Project Alternative 2 - Dredging of Coarse Grain Material.

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Clamshell Dredging - Coarse Grain Material CSWH				
Electric - Clamshell Dredge	438.40	0.07	0.01	442
Main Generator - Clamshell Dredge	328.80	0.05	0.00	331
Deck Generator - Clamshell Dredge	21.92	0.00	0.00	22
Reel Barge	---	---	---	
Survey Boat	6.45	0.00	0.00	6
Crew Boat	3.22	0.00	0.00	3
Scows	---	---	---	
Tug Boat	33.01	0.00	0.00	33
Electric Pump	---	---	---	
Subtotal	831.80	0.14	0.01	837.66
Clamshell Dredging - Coarse Grain Material Eelgrass				
Electric - Clamshell Dredge	71.26	0.01	0.00	72
Main Generator - Clamshell Dredge	53.45	0.01	0.00	54
Deck Generator - Clamshell Dredge	3.56	0.00	0.00	4
Reel Barge	---	---	---	
Survey Boat	1.05	0.00	0.00	1
Crew Boat	0.52	0.00	0.00	1
Scows	---	---	---	
Tug Boat	5.37	0.00	0.00	5
Electric Pump	---	---	---	
Subtotal	135.21	0.02	0.00	136.16

Table C-138. Total GHG Emissions for the POLA Channel Deepening Project Alternative 2

Location/Activity	Tons			
	CO2	CH4	N2O	CO2e
Dike Const. Quarry Run Placement				
Cabrillo SWH	3,166	0.45	0.03	3,185
Eelgrass Restoration	6,394	0.91	0.06	6,433
Dike Construction Armor Stone Placement				
Eelgrass Restoration	1,176	0.17	0.01	1,183
Trench Excavation				
Cabrillo SWH	99	0.02	0.00	100
Surcharge Removal				
Loading	2,233	0.36	0.03	2,248
Transport	40	0.01	0.00	40
Unload Cabrillo SWH	424	0.06	0.00	426
Unload Eelgrass	987	0.15	0.01	993
Dredging of Contaminated Material				
Clamshell Dredge of Contaminated	535	0.09	0.01	539
Dredging of Fine Material				
Hydraulic - Cabrillo SWH	319	0.05	0.00	320
Clamshell - LA-2	2,151	0.32	0.02	2,164
Dredging of Coarse Material				
Clamshell - CSWH	832	0.14	0.01	838
Clamshell - Eelgrass	135	0.02	0.00	136
Total GHG Emissions (1)	18,490	2.72	0.19	18,607

Notes: (1) All activites would occur in one year, so total project emisisons would be used for conformity determination.

Table C-138a. Yearly Unmitigated GHG Emissions for the POLA Channel Deepening Proposed Project - Alte

Year/Source Category	Metric Tons			
	CO2	CH4	N2O	CO2e
Year 1 - Direct Sources	14,731	2	0	14,824
Year 1 - Electrical Generation	3,190	0.03	0.01	3,195
Year 1 - Total	17,921	2.19	0.17	18,019
Year 2 - Direct Sources	2,078	0	0	2,091
Year 2 - Electrical Generation				
Year 2 - Total	2,078	0.31	0.02	2,091

Table 138b - Construction Activities for the POLA Channel Deepening Project Alternative 2 -
Dredging of Fine Grain Material - Electrical Demand

Location/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Hydraulic Dredging - Fine Grain Material CSWH								
Main Engine - Electric	17,000	1	1	8,500	24	204,000	57.3	11,689,200
Derrick Hoist	240	0.7	1	168	4	672		
Derrick Winch	87	0.7	1	61	1	61		
Anchor Barge Winch	180	0.7	1	126	4	504		
Generator	350	0.6	1	210	4	840		
Survey Boat	250	0.2	1	50	5	250		
Crew Boat	125	0.2	1	25	5	125		
Tug Boat	850	0.5	1	425	18	7,650		
Electric Pump	N/A	N/A	1	N/A	24	N/A		

Table 138c - Total Emissions for the POLA Channel Deepening Project Alternative 2 -
Dredging of Fine Grain Material - GHG Emissions from Electrical Generation

	Tons			
Location/Equipment Type	*CO2*	*CH4*	*N2O*	*CO2e*
Hydraulic Dredging - Fine Grain Material CSWH				
Main Engine - Electric	3,509	0.03	0.02	3,515
Derrick Hoist	0	0.00	0.00	0
Derrick Winch	0	0.00	0.00	0
Anchor Barge Winch	0	0.00	0.00	0
Generator	0	0.00	0.00	0
Survey Boat	0	0.00	0.00	0
Crew Boat	0	0.00	0.00	0
Tug Boat	0	0.00	0.00	0
Electric Pump	---	---	---	
Subtotal	3,509	0.03	0.02	3,515

Table 1381d - Total GHG Emissions for the POLA Channel Deepening Project Alternative 2

Due to Electrical Generation

Location/Activity	*Tons*			
	CO2	*CH4*	*N2O*	*CO2e*
Dike Const. Quarry Run Placement				
Cabrillo SWH	0	0.00	0.00	0
Eelgrass Restoration	0	0.00	0.00	0
Dike Construction Armor Stone Placement				
Eelgrass Restoration	0	0.00	0.00	0
Surcharge Removal				
Loading	0	0.00	0.00	0
Transport	0	0.00	0.00	0
Unload Cabrillo SWH	0	0.00	0.00	0
Unload Eelgrass	0	0.00	0.00	0
Dredging of Contaminated Material				
Clamshell Dredge of Contaminated	0	0.00	0.00	0
Dredging of Fine Material				
Hydraulic - Cabrillo SWH	3,509	0.03	0.02	3,515
Clamshell - LA-2	0	0.00	0.00	0
Dredging of Coarse Material				
Clamshell - CSWH	0	0.00	0.00	0
Clamshell - Eelgrass	0	0.00	0.00	0
Total Emissions (1)	3,509	0.03	0.02	3,515

Notes: (1) All activites would occur in one year