Appendix E

Air Quality and Greenhouse Gas Technical Analyses

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CONSTRUCTION AIR QUALITY ANALYSIS

Illingworth & Rodkin, Inc.

December 2014

Figure 2-30
Preliminary Draft Proposed Project Construction Schedule
Monterey Peninsula Groundwater Replenishment Project

Project Component	General Construction Activities	2016							2017												2018		
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Salinas Pump Station Site																							
including pipes, wet wells/diversion structures, valves, SCADA	Site preparation and Demolition																						
	Excavate/form/cast Junction and Diversion structures																						
	Pipeline Trenching and Installation																						
	Install valves/Gates in Diversion structures																						
	Install electrical and controls																						
	Site Paving																						
Salinas Industrial Wastewater Treatment Facility																							
Return Facilities - Sliplining of new Force Main inside existing 33-inch IWW pipeline, on-site piping from Aeration Basin at IWTP to new Reture PS at IWTP and Return PS with Valve and Meter Vaults.	Site preparation and Demolition																						
	Dewatering																						
	Excavate/form/cast wet well and intake structures for Return PS at IWTP																						
	Install valves/Gates in wet well and intake structures for Return PS at IWTP																						
	Install FM in to Existing 33-inch IWW pipeline to Salinas PS																						
	Install Gravity pipe line from Aeration Basin to Return PS																						
	Install electrical and controls																						
	Site Paving																						
Storage and Recovery Additions: New Pump station at Pond 3, Pipeline at IWTP to Return PS, and SCADA.	Site preparation and Demolition																						
	Dewatering																						
	Excavate/form/cast wet well and intake structures at at Pond 3 IWTP																						
	Pipeline Trenching and Installation at IWTP -Pond 3 to Return PS																						
	Install electrical and controls																						
	Start-up and testing																						
	Site Paving																						
Reclamation Ditch at Davis Road																							
including pipes, pumps, wet wells/diversion structures, valves, and SCADA	Site preparation and Demolition																						
	Bypass Flow Diversion																						
	Excavate/form/cast wet well and intake structure																						
	Pipeline Trenching and Installation																						
	Install valves/Gates in wet well and intake structures																						
	Install electrical and controls																						
	Start-up and testing																						
	Site Paving																						
Tembladero Slough at Castroville Site																							
including pipes, pumps, wet wells/diversion structures, valves, and SCADA	Site preparation and Demolition																						
	Bypass Flow Diversion																						
	Excavate/form/cast wet well and intake structure																						
	Pipeline Trenching and Installation																						
	Install valves/Gates in wet well and intake structures																						
	Install electrical and controls																						
	Start-up and testing																						
	Site Paving																						
Blanco Drain Pump Station & Pipeline Site																							
including pipes, wet wells/diversion structures, valves, SCADA	Site preparation and Demolition																						
	Bypass Flow Diversion																						
	Excavate/form/cast wet well and intake structure																						
	Gravity Pipeline Trenching and Installation																						
	Salinas River Crossing																						
	Install gravity pipeline to RTP																						
	Install valves/Gates in wet well and intake structures																						
	Install pumps, electrical and controls																						
	Start-up and testing																						
	Site Paving																						
Lake El Estero Diversion Site																							
including new pumps in existing dry well structure, pipeline, valves, SCADA	Site preparation and Demolition																						
	Bypass Flow Diversion																						
	Excavate/form/cast wet well and intake structure																						
	Pipeline Trenching and Installation																						
	Install valves/Gates in wet well and intake structures																						
	Install electrical and controls																						
	Start-up and testing																						
	Site Paving																						
RTP site (all new / modified facilities)																							
AWT Facility (incl. pipelines, diversion structures pretreatment, MF/RO/UV AOP, Brine Mixing Station, Product Water Pump Station)	Site Preparation																						
	Grading/Sheeting-Shoring/ Excavation																						
	Trenching																						
	Cutting, laying and welding pipelines																						
	Pouring concrete																						
	Building (exterior)																						
	Building (interior)																						
	Equipment Delivery and Set-Up																						
	Coating																						
	Paving, Electrical, site Clean-up																						
	Final Facility Testing																						
SVRP Modifications (incl. new pipelines, sluice gates, contact basin mods and controls)	Dewater 80 AF pond																						
	Trenching/Installing Pipelines																						
	Inlet and outlet modifications																						
	Sluice Gates																						
	Gate motors and controls																						
	Chlorination Basin upgrades																						
Product Water Conveyance (southern border of RTP to Injection Well Facilities Site)																							
Product Water Conveyance Pipeline	Pipeline Installation (250 feet/day for roadways and 400 feet/day open areas)																						
Booster Pump Station (Coastal or RUWAP)	Site Preparation																						
	Grading/ Excavation																						
	Trenching																						
	Pouring concrete																						
	Building (exterior)																						
	Building (interior)																						
	Equipment Delivery and Site Clean-up																						
	Paving/Landscaping																						
	Final Facility Testing																						
Injection Well Facilities																							
Access Road and Preliminary Grading	Soil stabilization for rig access																						
Monitoring well (GWR-MW-1)	Drill, install, develop, sample																						
Monitoring well (GWR-MW-2)	Drill, install, develop, sample																						
Monitoring well (GWR-MW-3)	Drill, install, develop, sample																						
Monitoring well (GWR-MW-4)	Drill, install, develop, sample																						
Deep injection well (GWR-DIW-1)	Drill, install, develop,aquifer/injection testing																						
Deep injection well (GWR-DIW-2)	Drill, install, develop,aquifer/injection testing																						
Deep injection well (GWR-DIW-3)	Drill, install, develop,aquifer/injection testing																						
Deep injection well (GWR-DIW-4)	Drill, install, develop,aquifer/injection testing																						
Vadose zone well (GWR-VZ-1)	Drill, install, pilot injection testing																						
Vadose zone well (GWR-VZ-2)	Drill, install, test																						
Vadose zone well (GWR-VZ-4)	Drill, install, test																						
Vadose zone well (GWR-VZ-4)	Drill, install, test																						
Motor/Electrical Control Buildings (4 bldgs, 1 per site)	Site preparation																						
	Building foundations and UG Conduits																						
	Building construction																						
	Paving/Electrical																						
	Eqipment installation																						
	Landscaping																						
	Final Testing and Clean-Up																						
Pipelines / Conduits / Access Roads (including product water and backflush pipes)	Pipeline/Conduits (200 LF/day)																						
	Final grading/drainage																						
	Roadway surfacing																						
Backflush Pumps/Motors Pipe, Backflush Basin	Site preparation																						
	Install pumps/motors/pipes at wells																						
	Grade Backflush Basin																						
	Install Pipes/Conduits at Basin																						
	Test Backflush Pumps, Pipelines and Basin																						
	Site Paving and Landscaping																						
	Final Facility Testing																						
CalAm Transfer and Monterey Pipelines																							
Transfer Pipeline	Pipeline Installation (150 - 250 feet/day)																						
Monterey Pipeline	Pipeline Installation (150 - 250 feet/day)																						

Revised by Todd Groundwater February 13, 2014, 5pm

Version updated by DD&A to include all expanded GWR project facilities, October 1, 2014, 5:00 p.m.

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Updated by S&W 22 OCT 2014
Updated by E2 25OCT14

Pure Water Monterey Groundwater Repleneshment Project

Construction Emissions

Description	Emissions in Tons: ROG	NOx	PM10	PM2.5	CO2e	Construction Days	Emissions in Avg. Pounds Per Day: ROG	NOx	PM10	PM2.5	Emission CO2e in Metric Tons: CO2e
Salinas Pump Station	0.168020715	1.274148354	0.086199767	0.083529719	157	126	3	20	1	1	142
SIWTF Storage and Recovery	0.096464773	0.728291228	0.047704308	0.045169456	99	126	2	12	1	1	90
Slip-Lining 33" pipeline	0.391526103	3.055024254	0.209600107	0.204454817	379	147	5	42	3	3	344
Reclamation Ditch Diversion at Davis Rd	0.088790275	0.668715117	0.046883341	0.046158345	98	105	2	13	1	1	89
Tembladero Slough Diversion at Castroville	0.096320396	0.727025396	0.049574588	0.048600393	103	105	2	14	1	1	94
Blanco Drain Diversion and Pipeline	0.180974523	1.418882793	0.090884002	0.087580102	205	189	2	15	1	1	186
El Estero lake Storage Construction	0.008904861	0.065878296	0.004755501	0.004389178	9	63	0	2	0	0	9
Advanced Water Treatment Facility	0.760532947	6.31295134	0.376780834	0.353363399	733	378	4	33	2	2	665
Product Water	0.810184905	7.191388183	0.417319224	0.385684792	1093	315	5	46	3	2	991
RUWAP	0.810184905	7.191388183	0.417319224	0.385684792	1093	315	5	46	3	2	991
Coastal	0.716037383	6.276498832	0.374455225	0.349361553	904	315	5	40	2	2	820
Well Site Improvements (incl. backflush, pumps, monitoring wells)	1.184290721	11.56886554	0.562018343	0.53054773	1910.956	357	7	65	3	3	1,734
Total Emissions	3.79	33.01	1.89	1.79	tons						4,343 MT
Average Daily Emissions based on 378 working days	20	175	10	9	lbs/day					Amortized (30 yr)	145 MT/year

Maximum Daily Emissions in Pounds Per Day

	ROG	NOx	PM10	PM2.5	
Max. Day (RUWAP) - Equip exhaust and vehicle traffic	62	496	26	22	lbs/day
Max. Day (Coastal) - Equip exhaust and vehicle traffic	59	452	24	21	lbs/day
Max. Day for Well Sites (i.e., non typical equipment)	**10**	**104**	**5**	**5**	lbs/day
On-Site PM10 and PM2.5 (Fugitive + Construction exhaust)			121	36	lbs/day
Mitigated Max. On-Site PM10 and PM2.5 (Fugitive + Construction exhaust)			55	24	lbs/day

Additional Projects (MGD Overlapping Construction Activities)

Monterey Pipeline Construction (from ESA)						3.83	50.88	2.06	1.86	1,136	lbs/day	252 construction days
Transfer Pipeline Construction (from ESA)						3.78	50.14	2.04	1.84	561	lbs/day	126 construction days
Total Additional Average Daily Emissions (from ESA)	4	51	2	2	lbs/day					6,039		
Total GWR + Transfer Pipelines (ESA)	24	225	12	11	lbs/day				Amortized (30 yr)	201		
Max. Day (RUWAP) - Equip exhaust and vehicle traffic	66	547	28	24	lbs/day							
Max. Day (Coastal) - Equip exhaust and vehicle traffic	63	502	26	23	lbs/day							
Max. Day for Well Sites												
On-Site PM10 and PM2.5 (Fugitive + Construction exhaust)			145	41	lbs/day							
Mitigated Max. On-Site PM10 and PM2.5 (Fugitive + Construction exhaust)			64	27	lbs/day							

Pure Water Monterey Groundwater Repleneshment Project

Daily Air Pollutant Emissions

Project Component	Daily Dimensions (feet) Length	Width	Worst Day Analysis Size	Units	Emission Type (Area, Pipe. Road)	Unmitigated Emissions Emission Factor (lbs/unit) PM10	PM2.5	Mitigated Emissions Emission Factor (lbs/unit) PM10	PM2.5
Salinas Pump Station Site									
Facility construction	--	--	0.75	acres	Area				
Truck travel	vehicles =	12	0.10	miles	Road				
Worker travel	vehicles =	34	0.10	miles	Road				
SIWTF Storage and Recovery									
Facility construction	--	--	0.25	acres	Area	5.0	1.0		
Pipeline from Pond 3	150	20	0.07	acres	Area	1.4	0.3		
Pipeline from Pond 3	150	6	400.00	cy	Pipeline/trench	0.7	0.2		
Truck travel	vehicles =	13	0.10	miles	Road	2.5	0.3		
Worker travel	vehicles =	10.5	0.10	miles	Road	0.8	0.1		
						10.4	1.9	3.6	0.7
Slip-Lining 33" pipeline									
Force main gravity pipeline			0.00	acres	Area				
Force main gravity pipeline			0.00	cy	Pipeline/trench				
Truck travel	vehicles =		0.10	miles	Road				
Worker travel	vehicles =		0.10	miles	Road				
Reclamation Ditch Diversion at Davis Rd									
Facility construction	120	50	0.14	acres	Area	2.8	0.6		
Truck travel	vehicles =	6	0.10	miles	Road	1.2	0.1		
Worker travel	vehicles =	13	0.10	miles	Road	1.0	0.1		
						4.9	0.8	1.7	0.3
Tembladero Slough Diversion at Castroville									
Construction area	200	50	0.23	acres	Area	4.6	1.0		
Truck travel	vehicles =	6	0.10	miles	Road	1.2	0.1		
Worker travel	vehicles =	13	0.10	miles	Road	1.0	0.1		
						6.8	1.2	2.4	0.4
Blanco Drain Diversion and Pipeline									
Facility construction	50	50	0.06	acres	Area	1.1	0.2		
Pipeline trenching	250	6	666.67	cy	Pipeline/trench	1.1	0.3		
Truck travel	vehicles =	40	0.10	miles	Road	7.8	0.8		
Worker travel	vehicles =	18	0.10	miles	Road	1.4	0.1		
						11.4	1.5	4.0	0.5
Lake El Estero Stroage Management Site									
Facility construction	30	30	0.02	acres	Area				
Truck travel	vehicles =	10	0.10	miles	Road				
Worker travel	vehicles =	16	0.10	miles	Road				
						0.0	0.0	0.0	0.0
Advanced Water Treatment Facility									
Facility construction	--	--	0.86	acres	Area	17.2	3.6		
Salinas Valley Reclamation Plant pipeline	100	6	266.67	cy	Pipeline/trench	0.4	0.1		
Truck travel	vehicles =	10	0.10	miles	Road	2.0	0.2		
Worker travel	vehicles =	22	0.10	miles	Road	1.7	0.2		
						21.3	4.1	7.4	1.4
SVRP Modification									
Facility construction	700	400	6.43	acres	Area			0.0	0.0
Product Water Conveyance - Pipelines/Pumps									
RUWAP AWT to Booster Pump Station	250	12	0.07	acres	Area	1.4	0.3		
RUWAP Booster Pump Station to Injection Wells	250	6	0.03	acres	Area	0.7	0.1		
RUWAP AWT to Booster Pump Station	250	12	1333.33	cy	Pipeline/trench	2.2	0.7		
RUWAP Booster Pump Station to Injection Wells	250	6	666.67	cy	Pipeline/trench	1.1	0.3		
Truck travel	vehicles =	10	0.10	miles	Road	2.0	0.2		
Worker travel	vehicles =	26	0.10	miles	Road	2.0	0.2		
Booster Pump Station (one of two optional sites)	100	60	0.14	acres	Area	2.8	0.6		
Truck travel	vehicles =	6	0.10	miles	Road	1.2	0.1		
Worker travel	vehicles =	11	0.10	miles	Road	0.8	0.1		
						14.0	2.6	4.9	0.9
OR									
Coastal AWT Facility to Booster Pump Station	250	12	0.07	acres	Area	1.4	0.3		
Coastal Booster Pump Station to Injection Wells	250	6	0.03	acres	Area	0.7	0.1		
Coastal AWT Facility to Booster Pump Station	250	12	1333.33	cy	Pipeline/trench	2.2	0.7		
Coastal Booster Pump Station to Injection Wells	250	6	666.67	cy	Pipeline/trench	1.1	0.2		
Truck travel	vehicles =	12	0.10	miles	Road	2.3	0.2		
Worker travel	vehicles =	26	0.10	miles	Road	2.0	0.2		
Booster Pump Station (one of two optional sites)	100	60	0.14	acres	Area	2.8	0.6		
Truck travel	vehicles =	6	0.10	miles	Road	1.2	0.1		
Worker travel	vehicles =	13	0.10	miles	Road	1.0	0.1		
						14.6	2.5	5.1	0.9
Injection Well Facilities									
Facility Well cluster construction (x4)	100	100	0.23	acres	Area	4.6	1.0		
Back-flush basin	280	150	0.96	acres	Area				
Monitoring Well construction (x6)	100	100	0.23	acres	Area				
Access Roads to Injection wells (conduit trenching)	250	5	555.56	cy	Pipeline/trench	0.9	0.3		
Access roads to monitoring wells	100	20	0.05	acres	Area	0.9	0.2		
Access Roads to Injection wells	250	40	0.23	acres	Area	4.6	1.0		
						11.0	2.4	3.9	0.8
- Injection Wells									
Truck travel	vehicles =	16	0.10	miles	Road	3.1	0.3		
Worker travel	vehicles =	18	0.10	miles	Road	1.4	0.1		
						4.5	0.4	1.6	0.2
- Back-flush Pipes and Basin									
Truck travel	vehicles =	26	0.10	miles	Road				
Worker travel	vehicles =	22	0.10	miles	Road				
						0.0	0.0	0.0	0.0
- Electrical Control									
Truck travel	vehicles =	20	0.10	miles	Road				
Worker travel	vehicles =	24	0.10	miles	Road				
						0.0	0.0	0.0	0.0
- Product Water Pipelines and Pumps									
Truck travel	vehicles =	4	0.25	miles	Road	2.0	0.2		
Worker travel	vehicles =	20	0.10	miles	Road	1.5	0.2		
						3.5	0.3	1.2	0.1
					Total	102.3	17.6	35.8	6.2
Additional Projects (MGD Overlapping Construction Activities)									
Monterey Pipeline Construction	325	8	1155.56	cy	Pipeline/trench	1.9	0.6		
Truck travel	vehicles =	24	0.10	miles	Road	4.7	0.5		
Worker travel	vehicles =	56	0.10	miles	Road	4.3	0.4		
Transfer Pipeline Construction	325	8	1155.56	cy	Pipeline/trench	1.9	0.6		
Truck travel	vehicles =	24	0.10	miles	Road	4.7	0.5		
Worker travel	vehicles =	56	0.10	miles	Road	4.3	0.4		
						21.7	2.9	7.6	1.0

Pure Water Monterey Groundwater Repleneshment Project

Component	Demo (tons)	Soil Export (CY)	Soil Import (CY)	Deliveries Tractor-trailer	Deliveries Smaller Trucks	Concrete Trucks	Duration Months	Days	Total Trips Computed Truck Trips (one way) Haul Trucks	Deliveries Smaller Trucks	Workers	Worker Trips (one way) Avg.	Peak	updated by ai 12/8/14 at 430 pm	
SOURCE WATER DIVERSION															
Salinas Pump Station	10	100	30	2	36	40	6	126	102	72	1260	10	34	*	
Salinas Treatment Facilit	0	1200	50	45	100	65	6	126	376	200	1890	15	24		
Slip Lining of 33-inch	20	0	250	25	50	10	7	147	109	100	2205	15	24		
Reclamation Ditch	1	100	20	5	5	6	5	105	37	10	1260	12	18		
Tembladero Slough	2	100	20	15	10	5	5	105	56	20	1260	12	18		
Blanco Drain	21	2300	60	15	25	20	9	189	373	50	3024	16	26		
Lake El Estero	14	13	13	1	5	2	3	63	15	10	378	6	16	*	
TREATMENT FACILITIES AT REGIONAL TREATMENT PLANT															
AWTF	25	510	2100	230	800	720	18	378	2236	1600	6048	16	56		
SVRP	8	150	0	5	25	25		0	82	50	0	4	10		
PRODUCT WATER CONVEYANCE															
Pipeline - RUWAP	21055	8670	0	118	469	40	15	315	9822	938	7560	24	26		The RUWAP pipeline is the longer, more urban route
Pipeline - Coastal	11815	8280	0	111	442	30	15	315	6043	884	7560	24	26	<---	don't add this line item, that would be double-counting
Booster Pump Stn	0	180	0	2	30	5	9	189	37	60	2268	12	36	*	
AWT Pump Station	The AWT Pum station is included in the AWTF quantities							0		0	0			<---	This is included in construction assumptions at the RTP
Total RUWAP									9858	998	9828				
Total Coastal									6080	944	9828				
INJECTION WELL FACILIT	0	8800	700	99	510	35	17	357	1456	1020	21420	60	132		This row is a sumation of the following rows
Pipelines/Basin/Road	0	7500	500	15	30	10		0	1050	60					
4 Deep Wells	0	600	0	32	100	4		0	147	200					
4 Vadose Wells	0	320	0	8	80	0		0	56	160					
6 Monitoring Wells	0	320	0	24	180	6		0	100	360					
4 Buildings	0	60	200	20	120	15		0	103	240					
									36682	6956					
									84%						

Off Road Equipment Emission Factors from CalEEMod

	Typical Equipment Type & Load Factors		
	OFFROAD Equipment Type	**Horsepower**	**Load Factor**
7	Aerial Lifts	62	0.31
8	Air Compressors	78	0.48
9	Bore/Drill Rigs	205	0.5
10	Cement and Mortar Mixers	9	0.56
11	Concrete/Industrial Saws	81	0.73
12	Cranes	226	0.29
13	Crawler Tractors	208	0.43
14	Crushing/Proc. Equipment	85	0.78
15	Dumpers/Tenders	16	0.38
16	Excavators	162	0.38
17	Forklifts	89	0.2
18	Generator Sets	84	0.74
19	Graders	174	0.41
20	Off-Highway Tractors	122	0.44
21	Off-Highway Trucks	400	0.38
22	Other Construction Equipment	171	0.42
23	Other General Industrial Equipment	150	0.34
24	Other Material Handling Equipment	167	0.4
25	Pavers	125	0.42
26	Paving Equipment	130	0.36
27	Plate Compactors	8	0.43
28	Pressure Washers	13	0.2
29	Pumps	84	0.74
30	Rollers	80	0.38
31	Rough Terrain Forklifts	100	0.4
32	Rubber Tired Dozers	255	0.4
33	Rubber Tired Loaders	199	0.36
34	Scrapers	361	0.48
35	Signal Boards	6	0.82
36	Skid Steer Loaders	64	0.37
37	Surfacing Equipment	253	0.3
38	Sweepers/Scrubbers	64	0.46
39	Tractors/Loaders/Backhoes	97	0.37
40	Trenchers	80	0.5
41	Welders	46	0.45

2016								
TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
0.19699	0.16550	3.20103	2.72218	0.00490	0.11190	0.10300	506.21130	0.15270
12.61800	0.74400	3.80400	4.79000	0.00600	0.39700	0.39700	568.29900	0.06700
0.22914	0.19250	1.13299	2.90210	0.00480	0.08520	0.07840	502.12800	0.15150
1.07600	0.66200	3.46900	4.15300	0.00800	0.16700	0.16700	568.30000	0.05900
6.23700	0.62000	3.62000	4.43200	0.00600	0.33300	0.33300	568.30000	0.05500
0.74130	0.62290	2.58220	7.38068	0.00490	0.33490	0.30810	507.15520	0.15300
0.53404	0.44870	1.80295	6.04745	0.00490	0.23320	0.21450	507.35500	0.15300
3.57600	0.72000	3.82300	4.63100	0.00600	0.37900	0.37900	568.29900	0.06500
0.82500	0.69000	2.34200	4.37800	0.00700	0.17500	0.17500	568.29900	0.06200
0.42549	0.35750	3.15771	4.08095	0.00490	0.20080	0.18470	506.49500	0.15280
0.86028	0.72290	4.02311	6.22192	0.00490	0.52030	0.47860	505.58330	0.15250
11.84000	0.58300	3.46900	4.41000	0.00600	0.30900	0.30900	568.29900	0.05200
0.96357	0.80970	3.91624	8.24966	0.00500	0.46350	0.42640	516.13050	0.15570
0.46528	0.39100	3.27806	4.51093	0.00490	0.22900	0.21060	507.62940	0.15310
0.41815	0.35140	1.88523	4.04798	0.00490	0.15270	0.14050	509.86040	0.15380
0.62413	0.52440	3.35672	5.81763	0.00480	0.30590	0.28150	503.96410	0.15200
0.55946	0.47010	3.43665	5.05466	0.00490	0.27580	0.25370	505.92820	0.15260
0.58169	0.48880	3.41823	5.21152	0.00490	0.27950	0.25710	506.32400	0.15270
0.51559	0.43320	3.08023	4.87397	0.00490	0.24220	0.22280	506.54010	0.15280
0.44250	0.37180	3.08114	4.32170	0.00490	0.21450	0.19730	504.82010	0.15230
0.79000	0.66100	3.46900	4.14200	0.00800	0.16100	0.16100	568.29900	0.05900
1.98600	0.72000	3.62200	4.97800	0.00800	0.26400	0.26400	568.29900	0.06500
13.96400	0.61000	3.52300	4.47800	0.00600	0.32500	0.32500	568.29900	0.05500
0.74763	0.62820	3.75537	5.80563	0.00490	0.42750	0.39330	508.19870	0.15330
0.35893	0.30160	3.34169	3.84005	0.00490	0.21310	0.19610	507.06590	0.15290
0.81915	0.68830	5.82829	7.71034	0.00490	0.35880	0.33010	513.31090	0.15480
0.46801	0.39330	1.45212	5.11510	0.00480	0.17450	0.16050	503.65420	0.15190
0.53834	0.45240	3.60633	5.75749	0.00490	0.23210	0.21350	506.35030	0.15270
1.04000	0.66100	3.46900	4.14200	0.00800	0.16100	0.16100	568.29900	0.05900
0.32506	0.27310	3.32767	3.53439	0.00490	0.19740	0.18160	506.29710	0.15270
0.25842	0.21710	1.42484	3.46816	0.00480	0.11110	0.10220	502.47090	0.15160
0.93140	0.78260	4.05916	6.45405	0.00490	0.57070	0.52500	508.35740	0.15330
0.64032	0.53800	3.81146	5.14235	0.00490	0.39590	0.36430	511.34560	0.15420
0.93774	0.78800	3.98822	6.90219	0.00490	0.54130	0.49800	509.90270	0.15380
16.15500	1.54000	5.39500	4.93600	0.00700	0.38900	0.38900	568.29900	0.13800

2017								
TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
0.16980	0.14270	3.18429	2.36368	0.00490	0.08340	0.07680	498.34280	0.15270
11.38500	0.67100	3.77200	4.41200	0.00600	0.35000	0.35000	568.29900	0.06000
0.20647	0.17350	1.10210	2.52150	0.00480	0.07250	0.06670	494.13810	0.15140
1.07500	0.66100	3.46900	4.14500	0.00800	0.16500	0.16500	568.29900	0.05900
5.61000	0.55700	3.59500	4.08600	0.00600	0.29400	0.29400	568.29900	0.05000
0.66714	0.56060	2.38452	6.65526	0.00490	0.29670	0.27300	499.37210	0.15300
0.51114	0.42950	1.74180	5.75969	0.00490	0.21990	0.20230	499.83200	0.15310
3.21600	0.64700	3.79100	4.24400	0.00600	0.33000	0.33000	568.29900	0.05800
0.82100	0.68700	2.34000	4.36200	0.00700	0.17100	0.17100	568.29900	0.06200
0.39703	0.33360	3.15091	3.69967	0.00490	0.18200	0.16750	498.52220	0.15270
0.79964	0.67190	3.97881	5.81772	0.00490	0.48000	0.44160	497.72450	0.15250
10.55700	0.52000	3.44200	4.07200	0.00600	0.27400	0.27400	568.29900	0.04600
0.90100	0.75710	3.84518	7.66265	0.00490	0.43040	0.39600	506.74780	0.15530
0.42350	0.35590	3.25890	4.02594	0.00490	0.20490	0.18850	499.24460	0.15300
0.38710	0.32530	1.74773	3.66841	0.00490	0.13620	0.12530	501.43680	0.15360
0.59556	0.50040	3.33767	5.49424	0.00480	0.29030	0.26710	495.93110	0.15200
0.52016	0.43710	3.39928	4.53359	0.00490	0.24950	0.22960	498.06410	0.15260
0.50801	0.42690	3.35117	4.48809	0.00490	0.23790	0.21890	498.45370	0.15270
0.46282	0.38890	3.06282	4.35312	0.00490	0.21420	0.19710	498.96700	0.15290
0.40757	0.34250	3.07321	3.89633	0.00490	0.19460	0.17910	497.14800	0.15230
0.79000	0.66100	3.46900	4.14200	0.00800	0.16100	0.16100	568.29900	0.05900
1.92700	0.69900	3.59900	4.84700	0.00800	0.25000	0.25000	568.29900	0.06300
12.49000	0.54600	3.49500	4.13400	0.00600	0.28700	0.28700	568.29900	0.04900
0.69011	0.57990	3.71315	5.41140	0.00490	0.39210	0.36070	500.15250	0.15320
0.32251	0.27100	3.31778	3.41759	0.00490	0.18160	0.16710	499.16820	0.15290
0.78746	0.66170	5.52569	7.33345	0.00490	0.34070	0.31340	505.84930	0.15500
0.44353	0.37270	1.41720	4.75473	0.00480	0.16200	0.14900	495.94990	0.15200
0.50588	0.42510	3.33699	5.33951	0.00490	0.21430	0.19710	498.45710	0.15270
1.04000	0.66100	3.46900	4.14200	0.00800	0.16100	0.16100	568.29900	0.05900
0.30377	0.25530	3.31863	3.28618	0.00490	0.17660	0.16250	498.32560	0.15270
0.24244	0.20370	1.39620	3.10636	0.00490	0.10260	0.09440	496.88500	0.15220
0.85744	0.72050	4.01005	6.02020	0.00490	0.52020	0.47860	500.45550	0.15330
0.59560	0.50050	3.78180	4.80870	0.00490	0.36160	0.33270	502.79520	0.15410
0.90630	0.76150	3.96827	6.67876	0.00490	0.52320	0.48130	501.99160	0.15380
14.39200	1.37200	5.23900	4.76800	0.00700	0.35000	0.35000	568.29900	0.12300

2018								
TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
0.14509	0.12190	3.16685	2.06360	0.00490	0.05710	0.05250	490.47420	0.15270
10.21800	0.60300	3.74400	4.05000	0.00600	0.30400	0.30400	568.30000	0.05400
0.18393	0.15450	1.07328	2.15308	0.00480	0.06080	0.05600	484.56050	0.15090
1.07500	0.66100	3.46900	4.14200	0.00800	0.16300	0.16300	568.29900	0.05900
5.01400	0.49800	3.57100	3.75400	0.00600	0.25600	0.25600	568.29900	0.04400
0.57488	0.48310	2.13445	5.77298	0.00490	0.24990	0.22990	491.40690	0.15300
0.47399	0.39830	1.65354	5.28959	0.00490	0.20010	0.18410	491.60600	0.15300
2.88100	0.58000	3.76300	3.88100	0.00600	0.28400	0.28400	568.29900	0.05200
0.82000	0.68600	2.33900	4.35000	0.00700	0.16900	0.16900	568.29900	0.06100
0.32496	0.27310	3.09338	2.92361	0.00490	0.14180	0.13040	490.67250	0.15280
0.67530	0.56740	3.85819	5.01530	0.00490	0.40020	0.36820	489.86570	0.15250
9.35600	0.46100	3.41800	3.75200	0.00600	0.23900	0.23900	568.29900	0.04100
0.78708	0.66140	3.70957	6.60465	0.00490	0.37130	0.34160	497.37670	0.15480
0.37475	0.31490	3.21910	3.49764	0.00490	0.17560	0.16160	491.31280	0.15300
0.34159	0.28700	1.55950	3.08995	0.00490	0.11280	0.10380	493.50590	0.15360
0.51940	0.43640	3.26346	4.75499	0.00480	0.25020	0.23020	487.98590	0.15190
0.37793	0.31760	3.23662	3.23673	0.00490	0.17200	0.15820	490.19990	0.15260
0.38852	0.32650	3.21803	3.33231	0.00490	0.17250	0.15870	490.58340	0.15270
0.40310	0.33870	3.03913	3.74720	0.00490	0.18310	0.16840	491.32200	0.15300
0.33762	0.28370	3.02602	3.17208	0.00490	0.15530	0.14290	489.20240	0.15230
0.79000	0.66100	3.47000	4.14200	0.00800	0.16100	0.16100	568.30000	0.05900
1.87400	0.67900	3.58000	4.72800	0.00800	0.23700	0.23700	568.29900	0.06100
11.10700	0.48500	3.47100	3.80800	0.00600	0.25200	0.25200	568.29900	0.04300
0.57247	0.48100	3.60981	4.65049	0.00490	0.32000	0.29440	492.21180	0.15320
0.26442	0.22220	3.26976	2.84496	0.00490	0.13600	0.12510	491.21070	0.15290
0.71175	0.59810	4.98205	6.50184	0.00490	0.30020	0.27620	498.18620	0.15510
0.39686	0.33350	1.34644	4.13133	0.00480	0.14010	0.12890	487.90230	0.15190
0.43932	0.36910	2.82811	4.56771	0.00490	0.18000	0.16560	490.77340	0.15280
1.04000	0.66100	3.46900	4.14200	0.00800	0.16100	0.16100	568.29900	0.05900
0.25685	0.21580	3.28204	2.86000	0.00490	0.13980	0.12860	490.09350	0.15260
0.18733	0.15740	1.22557	2.20389	0.00490	0.07610	0.07000	487.87220	0.15190
0.71341	0.59950	3.88173	5.13595	0.00490	0.42830	0.39410	492.55360	0.15330
0.50030	0.42040	3.69155	4.15444	0.00490	0.29430	0.27080	494.12370	0.15380
0.78315	0.65810	3.85487	5.91527	0.00490	0.45000	0.41400	493.71500	0.15370
12.69800	1.21000	5.09200	4.60700	0.00700	0.31100	0.31100	568.29900	0.10900

On Road Vehicle Emission Factors from EMFAC2011

	2016 Emission Factors				2017 Emission Factors			
	LDT1	MDV	LHD1	HHD	LDT1	MDV	LHD1	HHD
FleetMix	0.039998	0.176598	0.051139	0.020374	0.039911	0.176253	0.050904	0.021019
CH4_IDLEX	0	0	0.00117	0.024901	0	0	0.001165	0.025321
CH4_RUNEX	0.034903	0.036981	0.025089	0.010901	0.031758	0.034693	0.0237	0.010117
CH4_STREX	0.031877	0.036751	0.028011	0	0.028165	0.034049	0.026752	0
CO_IDLEX	0	0	0.171833	2.934395	0	0	0.171022	3.007509
CO_RUNEX	4.150869	2.976565	2.280075	2.394283	3.639246	2.777281	2.112057	2.251351
CO_STREX	7.451065	8.198435	5.223146	97.27606	6.817407	7.686446	4.970443	89.76627
CO2_NBIO_IDLEX	0	0	8.620212	566.1406	0	0	8.486219	557.3913
CO2_NBIO_RUNEX	360.4793	560.7561	779.6591	1,639.81	347.5084	544.2701	767.3567	1,612.01
CO2_NBIO_STREX	74.42188	114.6394	37.68721	56.74499	71.63331	111.6627	37.22622	52.08609
NOX_IDLEX	0	0	0.068508	4.829136	0	0	0.068495	4.479516
NOX_RUNEX	0.463164	0.511921	1.790893	5.587469	0.417751	0.473531	1.675832	4.850926
NOX_STREX	0.409089	0.837267	1.438103	6.701623	0.376654	0.784324	1.413091	6.459717
PM10_IDLEX	0	0	0.000784	0.017673	0	0	0.000775	0.014696
PM10_PMBW	0.03675	0.03675	0.051148	0.059705	0.03675	0.03675	0.051146	0.059725
PM10_PMTW	0.008	0.008	0.009451	0.034339	0.008	0.008	0.009451	0.034361
PM10_RUNEX	0.005177	0.002783	0.022215	0.091139	0.004747	0.002715	0.021224	0.077891
PM10_STREX	0.00521	0.003772	0.001156	0.003081	0.004937	0.003774	0.001074	0.001761
PM25_IDLEX	0	0	0.000722	0.016259	0	0	0.000713	0.01352
PM25_PMBW	0.01575	0.01575	0.021921	0.025588	0.01575	0.01575	0.02192	0.025596
PM25_PMTW	0.002	0.002	0.002363	0.008585	0.002	0.002	0.002363	0.00859
PM25_RUNEX	0.004702	0.00257	0.020447	0.083848	0.004343	0.00251	0.019535	0.07166
PM25_STREX	0.004743	0.003487	0.001064	0.00265	0.004526	0.003491	0.00099	0.001633
ROG_DIURN	0.098107	0.06204	0.001654	0.002141	0.091668	0.062316	0.001627	0.001775
ROG_HTSK	0.254037	0.199519	0.059575	0.141301	0.237265	0.202135	0.059772	0.096896
ROG_IDLEX	0	0	0.027071	0.536116	0	0	0.026937	0.545148
ROG_RESTL	0.073086	0.056116	0.000917	0.001246	0.070053	0.05769	0.000924	0.001075
ROG_RUNEX	0.176069	0.10081	0.235446	0.279221	0.142061	0.092044	0.21856	0.256477
ROG_RUNLS	0.8951	0.680851	0.351661	0.912557	0.839888	0.678201	0.350363	0.687534
ROG_STREX	0.553689	0.64963	0.495248	4.568699	0.49273	0.602111	0.473212	3.861962

Fugitive Dust Emission Factors

Type = Area

General Grading and Earth Moving Fugitive Dust

	Uncontrolled			Mitigated	
PM10 =	20.0	lbs/acre		7.0	lbs/acre
PM2.5=	4.16	lbs/acre		1.5	lbs/acre

The Midwest Research Instituteidentifed a PM10 fugitive dust emission rate of 0.11 tons/acre/month, which converts to 10 pounds per day. Since the factor includes some watering at sites, it was adjusted assuming 50% control. Sites with best management practices could attain 65% control (with mitigation).

Type = Pipeline/Trench

Fugitive Dust from Excavation and Soil Handling

	pounds PM per ton material	tons material per cubic yard	PM pounds per cubic yard
PM10 =	0.001292763	1.2641662	0.001634267
PM2.5=	0.000195761	1.2641662	0.000247475

Based on AP-42 Emission Factor: EF (lbs/ton) = k (0.0032)(U/5)^1.3 / (M/2)^1.4

Where:

EF = emission rate in pounds PM10 or PM2.5 per ton material handled.

k = particle size multiplier (assumed 0.35 for PM10 and 0.0.053 for PM2.5)

U = mean wind speed (assummed to be 7.1 mph per CalEEMod)

M = material moisture content (assummed 7.9% per CalEEMod for bulldozing).

Type = Road (unpaved)

Unpaved Fugitive Dust From Truck Travel

	Trucks	Workers
PM10 =	2.0	0.8
PM2.5=	0.2	0.1

Based on AP-42 Emission Factor: E (lbs/VMT) = k (s/12)^a (W/3)^b

Where:

E = emission rate in pounds per vehicle mile traveled

k = particle size multiplier (assumed 1.5 lb/VMT for PM10 and 0.15 lb/VMT for PM2.5 per AP-42, Table 13.2.2-2)

a = 0.9

b = 0.45

s = silt content (assumed 6.9% per CalEEMod)

W, truck weight = 80% wiegh 20 tons and 20% weigh 2 tons = 16.4 tons

W, worker vehicle weight = 2 tons

Project Name: Pure Water Monterey Groundwater Replenishment

Site Name: Salinas Pump Station Site

See Equipment Type TAB/sheet for type, horsepower and load factor

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	Comments	2016 Computed Emissions (pounds) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
	Demolition	**Start Date:**	**7/15/2016**													
		End Date:	7/31/2016													
1	Concrete/Industrial Saws	81	0.73	8	5	40	**Demolition Volume = 10 tons**	32.5	3.2	18.9	23.1	0.0	1.7	1.7	2960.7	0.3
1	Excavators	162	0.38	8	5	40		2.3	1.9	17.1	22.1	0.0	1.1	1.0	2747.1	0.8
1	Tractors/Loaders/Backhoes	97	0.37	8	5	40		2.0	1.7	12.1	16.3	0.0	1.3	1.2	1616.9	0.5
2	Dumpers/Tenders	16	0.38	8	5	80	Assumed in truck traffic calculations	**Sum=**	6.9		61.5		4.1	3.9	7324.7	1.6
								Per Day =	1.4		12.3		0.8	0.8		
	Site Preparation	**Start Date:**	**7/7/2016**													
		End Date:	7/15/2016													
1	Tractors/Loaders/Backhoes	97	0.37	8	3	24		1.2	1.0	7.2	9.8	0.0	0.8	0.7	970.2	0.3
1	Pumps	84	0.74	24	7	168		321.2	14.0	81.0	103.0	0.1	7.5	7.5	13072.0	1.3
	Other Equipment?	0	0			0		**Sum=**	15.1		112.8		8.2	8.2	14042.1	1.6
								Per Day =	2.2		16.1		1.2	1.2		
	Grading / Excavation	**Start Date:**	**8/1/2016**													
		End Date:	10/15/2016				**Soil Hauling Volume**									
1	Tractors/Loaders/Backhoes	97	0.37	8	20	160	Export volume = **_100_** cubic yards?	8.1	6.8	48.2	65.0	0.1	5.0	4.6	6467.7	2.0
1	Excavators	162	0.38	8	20	160	Import volume = **_30_** cubic yards?	9.2	7.8	68.5	88.5	0.1	4.4	4.0	10988.5	3.3
2	Pumps	84	0.74	24	10	480		917.7	40.1	231.5	294.3	0.4	21.4	21.4	37348.5	3.6
	Other Equipment?	0	0			0		**Sum=**	54.6		447.9		30.7	30.0	54804.7	8.9
	Other Equipment?	0	0			0		Per Day =	2.7		22.4		1.5	1.5		
	Trenching/Pipelines	**Start Date:**	**9/1/2016**													
		End Date:	10/15/2016				**Material Deliveries (all phases)**									
1	Excavators	162	0.38	8	10	80	Deliveries by Tractor-Trailer: _2_	4.6	3.9	34.3	44.3	0.1	2.2	2.0	5494.2	1.7
1	Tractors/Loaders/Backhoes	97	0.37	8	10	80	Deliveries by smaller trucks: _36_	4.0	3.4	24.1	32.5	0.0	2.5	2.3	3233.9	1.0
1	Plate Compactors	8	0.43	8	10	80		0.5	0.4	2.1	2.5	0.0	0.1	0.1	344.5	0.0
1	Cement and Mortar Mixers	9	0.56	8	10	80		1.0	0.6	3.1	3.7	0.0	0.1	0.1	504.7	0.1
1	Welders	46	0.45	8	10	80		58.9	5.6	19.7	18.0	0.0	1.4	1.4	2072.9	0.5
								Sum=	13.9		101.0		6.3	6.0	11650.2	3.2
	Building/Facilities	**Start Date:**	**8/15/2016**				Cement Trucks? **_40_** Total Round-Trips(8 CY / truck)	Per Day =	1.4		10.1		0.6	0.6		
		End Date:	11/15/2016													
1	Concrete/Industrial Saws	81	0.73	8	40	320	Electric? (Y/N) __Y_ Otherwise assumed diesel	259.9	25.8	150.9	184.7	0.3	13.9	13.9	23685.3	2.3
1	Cement and Mortar Mixers	9	0.56	8	20	160	Liquid Propane (LPG)? (Y/N) _N__ Otherwise Assumed diesel	1.9	1.2	6.2	7.4	0.0	0.3	0.3	1009.4	0.1
1	Cranes	226	0.29	8	20	160	Or temporary line power? (Y/N) _Y__	17.1	14.4	59.6	170.5	0.1	7.7	7.1	11714.2	3.5
1	Excavators	162	0.38	8	40	320		18.5	15.5	137.0	177.1	0.2	8.7	8.0	21977.0	6.6
1	Plate Compactors	8	0.43	8	20	160		1.0	0.8	4.2	5.0	0.0	0.2	0.2	689.0	0.1
2	Pumps	84	0.74	24	30	1440		2753.1	120.3	694.6	882.9	1.2	64.1	64.1	112045.5	10.8
1	Tractors/Loaders/Backhoes	97	0.37	8	50	400		20.2	17.0	120.5	162.6	0.2	12.5	11.5	16169.3	4.9
1	Welders	46	0.45	8	50	400		294.6	28.1	98.4	90.0	0.1	7.1	7.1	10364.6	2.5
1	Dumpers/Tenders	16	0.38	8	40	320	Assumed in truck traffic calculations	**Sum=**	223.1		1680.2		114.5	112.2	197654.3	30.9
	Other Equipment?	0	0			0		Per Day =	4.5		33.6		2.3	2.2		
	Other Equipment?	0	0			0										
	Paving	**Start Date:**	**11/1/2016**													
		Start Date:	**11/15/2016**													
1	Cement and Mortar Mixers	9	0.56	8	4	32		0.4	0.2	1.2	1.5	0.0	0.1	0.1	201.9	0.0
1	Graders	174	0.41	8	4	32		4.8	4.1	19.7	41.5	0.0	2.3	2.1	2595.3	0.8
1	Rollers	80	0.38	8	4	32		1.6	1.3	8.0	12.4	0.0	0.9	0.8	1088.9	0.3
1	Pavers	125	0.42	8	4	32		1.9	1.6	11.4	18.0	0.0	0.9	0.8	1874.4	0.6
1	Paving Equipment	130	0.36	8	4	32		1.5	1.2	10.2	14.3	0.0	0.7	0.7	1665.2	0.5
1	Sweepers/Scrubbers	64	0.46	8	4	32		1.9	1.6	8.4	13.4	0.0	1.2	1.1	1054.9	0.3
								Sum=	10.1		101.1		6.1	5.6	8480.6	2.5
								Per Day =	2.5		25.3		1.5	1.4		
								Total =	**323.6**		**2504.4**		**170.0**	**165.8**	**293956.8**	**48.7**

Traffic					Total	Peak Day								
	Type	**Total**	**Peak Day**	**Travel Distance**	**VMT**	**VMT**								
	Worker	1260	34	10.8	13608	367		9.5		15.0		1.5	0.7	10804.9	1.0
	Delivery (includes cement trucks)	72	12	7.3	526	88		0.4		2.3		0.1	0.1	902.6	0.0
	Large Trucks	102	12	20	2040	240		2.5		26.6		0.8	0.5	7368.3	0.0
					16174	695		12.4		43.9		2.4	1.3	19075.8	1.1
						0.0429589	Estimated Peak Day	0.5		1.8		0.1	0.1		

Project Name: Pure Water Monterey Groundwater Replenishment
Site Name: SIWTF Storage and Recovery

Includes recovery pump station, pond 3 pump station and on-site gravity lines. Force main is separate sheet.

See Equipment Type TAB/sheet for type, horsepower and load factor

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	Comments	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
								2016 Computed Emissions (pounds)								
	Demolition	**Start Date:**	NA													
		End Date:														
	Concrete/Industrial Saws	81	0.73			0	**Demolition Volume**									
	Other Equipment?	0	0			0	Square footage of buildings to be demolished									
	Other Equipment?	0	0			0	(*or* total tons to be hauled)									
	Other Equipment?	0	0			0	_?_ square feet *or*									
							_0_ Hauling volume (tons)									
	Site Preparation	**Start Date:**	**6/1/2016**				Any pavement demolished and hauled? **_0_ tons**									
		End Date:	6/15/2016													
1	Tractors/Loaders/Backhoes	97	0.37	6	5	30		1.5	1.3	9.0	12.2	0.0	0.9	0.9	1212.7	0.4
1	Graders	174	0.41	6	3	18		2.7	2.3	11.1	23.3	0.0	1.3	1.2	1459.9	0.4
2	Dumpers/Tenders	16	0.38	6	5	60	Assumed in truck traffic calculations									
1	Concrete/Industrial Saws	81	0.73	8	2	16		13.0	1.3	7.5	9.2	0.0	0.7	0.7	1184.3	0.1
								Sum=	4.9		44.8		2.9	2.8	3856.8	0.9
	Grading / Excavation	**Start Date:**	**6/15/2016**					Per Day =	1.0		9.0		0.6	0.6		
	Pump Wet Wells	**End Date:**	8/31/2016				**Soil Hauling Volume**									
1	Excavators	162	0.38	8	5	40	Export volume = **_1200_** cubic yards?	2.3	1.9	17.1	22.1	0.0	1.1	1.0	2747.1	0.8
2	Dumpers/Tenders	16	0.38	8	5	80	nport volume = **_50_** cubic yards?, Assumed in truck traffic calculations									
1	Tractors/Loaders/Backhoes	97	0.37	8	5	40		2.0	1.7	12.1	16.3	0.0	1.3	1.2	1616.9	0.5
	Other Equipment?	0	0			0		**Sum=**	3.6		38.4		2.3	2.2	4364.1	1.3
	Other Equipment?	0	0			0		Per Day =	0.7		7.7		0.5	0.4		
	Trenching/Pipelines	**Start Date:**	**7/15/2016**													
	includes manholes	**End Date:**	8/31/2016				**Material Deliveries (all phases)**									
1	Excavators	162	0.38	8	25	200	Deliveries by Tractor-Trailer: _45_	11.5	9.7	85.6	110.7	0.1	5.4	5.0	13735.6	4.1
1	Tractors/Loaders/Backhoes	97	0.37	8	25	200	Deliveries by smaller trucks: _100_	10.1	8.5	60.3	81.3	0.1	6.3	5.8	8084.7	2.4
1	Plate Compactors	8	0.43	4	25	100		0.6	0.5	2.6	3.1	0.0	0.1	0.1	430.6	0.0
1	Rollers	80	0.38	4	25	100		5.0	4.2	25.1	38.9	0.0	2.9	2.6	3402.9	1.0
1	Concrete/Industrial Saws	81	0.73	4	25	100		81.2	8.1	47.1	57.7	0.1	4.3	4.3	7401.7	0.7
1	Welders	46	0.45	4	25	100		73.7	7.0	24.6	22.5	0.0	1.8	1.8	2591.1	0.6
1	Pumps	84	0.74	24	30	720		1376.6	60.1	347.3	441.4	0.6	32.0	32.0	56022.8	5.4
1	Cement and Mortar Mixers	9	0.56	8	12	96		1.1	0.7	3.7	4.4	0.0	0.2	0.2	605.7	0.1
								Sum=	98.8		760.1		53.0	51.9	92275.0	14.5
	Building/Facilities	**Start Date:**	**7/1/2016**				Cement Trucks? **_65_** Total Round-Trips	Per Day =	3.3		25.3		1.8	1.7		
	Pump Stations	**End Date:**	9/30/2016													
1	Cranes	226	0.29	8	10	80	Electric? (Y/N) _Y__ Otherwise assumed diesel	8.6	7.2	29.8	85.2	0.1	3.9	3.6	5857.1	1.8
1	Cement and Mortar Mixers	9	0.56	8	10	80	Liquid Propane (LPG)? (Y/N) __N_ Otherwise Assumed diesel	1.0	0.6	3.1	3.7	0.0	0.1	0.1	504.7	0.1
1	Concrete/Industrial Saws	81	0.73	4	30	120	Or temporary line power? (Y/N) _Y__	97.5	9.7	56.6	69.3	0.1	5.2	5.2	8882.0	0.9
2	Dumpers/Tenders	16	0.38	6	30	360	Assumed in truck traffic calculations									
1	Other Material Handling Equipment	167	0.4	8	10	80		6.8	5.8	40.2	61.3	0.1	3.3	3.0	5959.9	1.8
1	Pumps	84	0.74	24	10	240		458.9	20.0	115.8	147.1	0.2	10.7	10.7	18674.3	1.8
1	Tractors/Loaders/Backhoes	97	0.37	4	30	120		6.1	5.1	36.2	48.8	0.0	3.8	3.5	4850.8	1.5
1	Welders	46	0.45	4	30	120		88.4	8.4	29.5	27.0	0.0	2.1	2.1	3109.4	0.8
	Other Equipment?	0	0			0		**Sum=**	56.8		442.5		29.1	28.2	47838.1	8.5
	Other Equipment?	0	0			0		Per Day =	1.9		14.7		1.0	0.9		
	Paving	**Start Date:**	**9/15/2016**													
		Start Date:	**10/15/2016**													
1	Cement and Mortar Mixers	9	0.56	8	2	16		0.2	0.1	0.6	0.7	0.0	0.0	0.0	100.9	0.0
1	Graders	174	0.41	8	2	16		2.4	2.0	9.8	20.7	0.0	1.2	1.1	1297.6	0.4
1	Rollers	80	0.38	8	2	16		0.8	0.7	4.0	6.2	0.0	0.5	0.4	544.5	0.2
1	Pavers	125	0.42	8	2	16		1.0	0.8	5.7	9.0	0.0	0.4	0.4	937.2	0.3
1	Paving Equipment	130	0.36	8	2	16		0.7	0.6	5.1	7.1	0.0	0.4	0.3	832.6	0.3
	Sweepers/Scrubbers	64	0.46			0		**Sum=**	4.2		43.8		2.5	2.3	3712.9	1.1
								Per Day =	2.1		21.9		1.2	1.1		
								Total =	**168.4**		**1329.6**		**89.8**	**87.2**	**152046.9**	**26.3**

Traffic

Type	Total	Peak Day	Travel Distance	Total VMT	Peak Day VMT	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Worker	1890	24	10.8	20412	259		14.3		22.5		2.2	1.0	16207.3	1.6
Delivery (includes cement trucks)	200	37	7.3	1460	270		1.1		6.4		0.3	0.1	2507.3	0.1
Large Trucks	376	70	20	7520	1400		9.2		98.1		3.1	2.0	27161.6	0.2
				29392	1929		24.5		127.0		5.6	3.1	45876.1	1.8
					0.0656403	Estimated Peak Day	1.0		5.1		0.2	0.1		

Project Name: Pure Water Monterey Groundwater Replenishment
Site Name: Slip-Lining 33" pipeline

See Equipment Type TAB/sheet for type, horsepower and load factor

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	Comments	2016 Computed Emissions (pounds) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
	Demolition	**Start Date:**	**7/15/2016**													
		End Date:	12/15/2016													
1	Concrete/Industrial Saws	81	0.73	8	4	32	**Demolition Volume**	26.0	2.6	15.1	18.5	0.0	1.4	1.4	2368.5	0.2
1	Excavators	162	0.38	8	4	32	Square footage of buildings to be demolished	1.8	1.6	13.7	17.7	0.0	0.9	0.8	2197.7	0.7
1	Dumpers/Tenders	16	0.38	8	4	32	(*or* total tons to be hauled), Assumed in truck traffic calculations									
1	Tractors/Loaders/Backhoes	97	0.37	8	4	32	_?_ square feet *or*	1.6	1.4	9.6	13.0	0.0	1.0	0.9	1293.5	0.4
							_?_ Hauling volume (tons)	**Sum=**	5.5		49.2		3.3	3.1	5859.8	1.3
	Site Preparation	**Start Date:**	**7/7/2016**				Any pavement demolished and hauled? _20_ tons	Per Day =	1.4		12.3		0.8	0.8		
		End Date:	7/15/2016													
1	Tractors/Loaders/Backhoes	97	0.37	8	5	40		2.0	1.7	12.1	16.3	0.0	1.3	1.2	1616.9	0.5
	Other Equipment?	0	0			0		**Sum=**	1.7		16.3		1.3	1.2	1616.9	0.5
	Other Equipment?	0	0			0		Per Day =	0.3		3.3		0.3	0.2		
	Grading / Excavation	**Start Date:**	**7/15/2016**													
		End Date:	12/15/2016				**Soil Hauling Volume**									
2	Tractors/Loaders/Backhoes	97	0.37	8	40	640	Export volume = _0_ cubic yards?	32.4	27.2	192.8	260.2	0.2	20.0	18.4	25870.9	7.8
1	Excavators	162	0.38	8	40	320	Import volume = _250_ cubic yards?	18.5	15.5	137.0	177.1	0.2	8.7	8.0	21977.0	6.6
2	Dumpers/Tenders	16	0.38	8	40	640	Assumed in truck traffic calculations									
1	Rubber Tired Loaders	199	0.36	8	20	160		11.8	9.9	36.7	129.1	0.1	4.4	4.1	12716.0	3.8
1	Plate Compactors	8	0.43	8	20	160		1.0	0.8	4.2	5.0	0.0	0.2	0.2	689.0	0.1
1	Rollers	80	0.38	8	20	160		8.0	6.7	40.2	62.2	0.1	4.6	4.2	5444.7	1.6
2	Pumps	84	0.74	24	40	1920		3670.8	160.4	926.1	1177.2	1.6	85.4	85.4	149394.0	14.5
	Other Equipment?	0	0			0		**Sum=**	220.5		1810.8		123.4	120.3	216091.6	34.4
								Per Day =	5.5		45.3		3.1	3.0		
	Trenching/Pipelines	**Start Date:**	**7/15/2016**													
		End Date:	12/15/2016				**Material Deliveries (all phases)**									
1	Excavators	162	0.38	8	72	576	Deliveries by Tractor-Trailer: _25_	33.2	27.9	246.6	318.7	0.4	15.7	14.4	39558.6	11.9
1	Tractors/Loaders/Backhoes	97	0.37	8	72	576	Deliveries by smaller trucks: _50_	29.2	24.5	173.6	234.2	0.2	18.0	16.6	23283.8	7.0
1	Plate Compactors	8	0.43	4	72	288		1.7	1.4	7.6	9.0	0.0	0.4	0.4	1240.1	0.1
2	Pumps	84	0.74	24	72	3456		6607.5	288.6	1667.0	2118.9	2.8	153.8	153.8	268909.3	26.0
2	Concrete/Industrial Saws	81	0.73	4	72	576		467.9	46.5	271.6	332.5	0.5	25.0	25.0	42633.6	4.1
1	Welders	46	0.45	4	72	288		212.1	20.2	70.8	64.8	0.1	5.1	5.1	7462.5	1.8
1	Truck-Mounted Pump Rig	84	0.74	12	72	864		1651.9	72.2	416.8	529.7	0.7	38.4	38.4	67227.3	6.5
1	Other Material Handling Equipment	167	0.4	8	72	576		49.3	41.4	289.7	441.7	0.4	23.7	21.8	42911.3	12.9
	Other Equipment?	0	0			0		**Sum=**	522.8		4049.5		280.1	275.5	493226.5	70.5
	Other Equipment?	0	0			0		Per Day =	7.3		56.2		3.9	3.8		
	Other Equipment?	0	0			0										
	Paving	**Start Date:**	**7/15/2016**													
		Start Date:	12/15/2016													
1	Cement and Mortar Mixers	9	0.56	8	5	40		0.5	0.3	1.5	1.8	0.0	0.1	0.1	252.4	0.0
1	Graders	174	0.41	8	5	40		6.1	5.1	24.6	51.9	0.0	2.9	2.7	3244.1	1.0
1	Rollers	80	0.38	8	5	40		2.0	1.7	10.1	15.5	0.0	1.1	1.1	1361.2	0.4
1	Pavers	125	0.42	8	5	40		2.4	2.0	14.2	22.5	0.0	1.1	1.0	2343.0	0.7
1	Paving Equipment	130	0.36	8	5	40		1.8	1.5	12.7	17.8	0.0	0.9	0.8	2081.5	0.6
1	Sweepers/Scrubbers	64	0.46	8	5	40		2.4	2.0	10.5	16.7	0.0	1.5	1.4	1318.6	0.4
								Sum=	12.6		126.4		7.6	7.0	10600.8	3.1
								Per Day =	2.5		25.3		1.5	1.4		
								Total =	**763.2**		**6052.1**		**415.6**	**407.1**	**727395.7**	**109.9**

Equipment types listed in "Equipment Types" worksheet tab.
Equipment listed in this sheet is to provide an example of inputs
It is assumed that water trucks would be used during grading
Add or subtract phases and equipment, as appropriate
Modify horepower or load factor, as appropriate

Traffic

Type	Total	Peak Day	Travel Distance	Total VMT	Peak Day VMT								
Worker	2205	24	10.8	23814	259		16.6		26.3		2.6	1.2	18908.5	1.8
Delivery (includes cement trucks)	100	10	7.3	730	73		0.6		3.2		0.1	0.1	1253.6	0.0
Large Trucks	109	10	20	2180	200		2.7		28.4		0.9	0.6	7874.0	0.1
				26724	532		19.8		57.9		3.6	1.8	28036.1	1.9
						Estimated Peak Day	0.8		2.3		0.1	0.1		

lame:	Pure Water Monterey Groundwater Replenishment														
e:	Reclamation Ditch Diversion at Davis Rd														
See Equipment Type TAB/sheet for type, horsepower and load factor								2017 Computed Emissions (pounds)							
Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	Comments		TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Demolition	**Start Date:**	**NA**														
	End Date:															
Concrete/Industrial Saws	81	0.73			0	**Demolition Volume**										
Other Equipment?	0	0			0	Square footage of buildings to be demolished										
Other Equipment?	0	0			0	(*or* total tons to be hauled)										
Other Equipment?	0	0			0	**_0_** square feet *or*										
						_1_ Hauling volume (tons)										
Site Preparation	**Start Date:**	**5/15/2017**				Any pavement demolished and hauled? **_0_ tons**										
	End Date:	5/31/2017														
Tractors/Loaders/Backhoes	97	0.37	10	2	20			0.9	0.8	6.0	7.6	0.0	0.6	0.5	794.9	0.2
Excavators	162	0.38	8	1	8			0.4	0.4	3.4	4.0	0.0	0.2	0.2	540.8	0.2
Pumps	84	0.74	24	90	2160	By-pass pump operates until in-channel work completed		3693.8	161.5	1033.6	1222.6	1.8	84.9	84.9	168068.3	14.5
								Sum=	162.6		1234.2		85.6	85.6	169404.0	14.9
Grading / Excavation	**Start Date:**	**6/21/2017**						Per Day =	1.8		13.7		1.0	1.0		
	End Date:	8/15/2017				**Soil Hauling Volume**										
Tractors/Loaders/Backhoes	97	0.37	10	2	20	Export volume = **_100_** cubic yards?		0.9	0.8	6.0	7.6	0.0	0.6	0.5	794.9	0.2
Excavators	162	0.38	10	5	50	Import volume = **_20_** cubic yards?		2.7	2.3	21.4	25.1	0.0	1.2	1.1	3379.8	1.0
Other Equipment?	0	0			0			**Sum=**	3.1		32.7		1.8	1.7	4174.8	1.3
Other Equipment?	0	0			0			Per Day =	0.6		6.5		0.4	0.3		
Other Equipment?	0	0			0											
Trenching/Pipelines	**Start Date:**	**6/21/2017**														
	End Date:	7/31/2017				**Material Deliveries (all phases)**										
Concrete/Industrial Saws	81	0.73	8	2	16	Deliveries by Tractor-Trailer: _5_		11.7	1.2	7.5	8.5	0.0	0.6	0.6	1184.3	0.1
Tractors/Loaders/Backhoes	97	0.37	10	2	20	Deliveries by smaller trucks: _5_		0.9	0.8	6.0	7.6	0.0	0.6	0.5	794.9	0.2
Plate Compactors	8	0.43	6	4	24			0.1	0.1	0.6	0.8	0.0	0.0	0.0	103.3	0.0
Other Equipment?	0	0			0			**Sum=**	2.1		16.9		1.2	1.2	2082.6	0.4
Other Equipment?	0	0			0			Per Day =	0.5		4.2		0.3	0.3		
Building/Facilities	**Start Date:**	**7/1/2017**				Cement Trucks? **_6_** Total Round-Trips										
	End Date:	8/31/2017														
Tractors/Loaders/Backhoes	97	0.37	6	10	60	Electric? (Y/N) _Y__ Otherwise assumed diesel		2.8	2.4	17.9	22.8	0.0	1.7	1.6	2384.8	0.7
Excavators	162	0.38	6	5	30	Liquid Propane (LPG)? (Y/N) _N__ Otherwise Assumed diesel		1.6	1.4	12.8	15.0	0.0	0.7	0.7	2027.9	0.6
Cement and Mortar Mixers	9	0.56	10	2	20	Or temporary line power? (Y/N) _Y__		0.2	0.1	0.8	0.9	0.0	0.0	0.0	126.2	0.0
Other Equipment?	0	0			0			**Sum=**	3.9		38.8		2.5	2.3	4538.9	1.4
Other Equipment?	0	0			0			Per Day =	0.4		3.9		0.2	0.2		
Other Equipment?	0	0			0											
Paving	**Start Date:**	**8/15/2017**														
	Start Date:	**8/30/2017**														
Cement and Mortar Mixers	9	0.56			0											
Pavers	125	0.42	8	1	8			0.4	0.4	2.8	4.0	0.0	0.2	0.2	461.6	0.1
Paving Equipment	130	0.36	8	1	8			0.3	0.3	2.5	3.2	0.0	0.2	0.1	410.0	0.1
Rollers	80	0.38	8	1	8			0.4	0.3	2.0	2.9	0.0	0.2	0.2	267.9	0.1
Tractors/Loaders/Backhoes	97	0.37	8	1	8			0.4	0.3	2.4	3.0	0.0	0.2	0.2	318.0	0.1
Sweepers/Scrubbers	64	0.46			0			**Sum=**	1.3		13.2		0.8	0.7	1457.5	0.4
								Per Day =	1.3		13.2		0.8	0.7		
								Total =	**172.9**		**1335.7**		**92.0**	**91.4**	**181657.8**	**18.3**
				Total	Peak Day											
Type	**Total**	**Peak Day**	**Travel Distance**	**VMT**	**VMT**											
Worker	1260	18	10.8	13608	194				4.2		1.1		1.5	0.7	10804.9	1.0
Delivery (includes cement trucks)	10	3	7.3	73	22				0.0		0.0		0.0	0.0	125.4	0.0
Large Trucks	37	10	20	740	200				0.4		0.5		0.3	0.2	2672.8	0.0
				14421	416				4.7		1.7		1.8	0.9	13603.0	1.1
					0.0288676	Estimated Peak Day			0.2		0.1		0.1	0.0		

Project Name: **Pure Water Monterey Groundwater Replenishment**

Site Name: **Tembladero Slough Diversion at Castroville**

See Equipment Type TAB/sheet for type, horsepower and load factor

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	Comments	2017 Computed Emissions (pounds) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
	Demolition	**Start Date:**	**NA**													
		End Date:														
	Concrete/Industrial Saws	81	0.73			0	**Demolition Volume**									
	Other Equipment?	0	0			0	Square footage of buildings to be demolished									
	Other Equipment?	0	0			0	(*or* total tons to be hauled)									
	Other Equipment?	0	0			0	**_0_** square feet *or*									
							_2_ Hauling volume (tons)									
	Site Preparation	**Start Date:**	**5/15/2017**				Any pavement demolished and hauled? **_0_ tons**									
		End Date:	5/31/2017													
1	Tractors/Loaders/Backhoes	97	0.37	10	2	20		0.9	0.8	6.0	7.6	0.0	0.6	0.5	794.9	0.2
1	Excavators	162	0.38	8	2	16		0.9	0.7	6.8	8.0	0.0	0.4	0.4	1081.6	0.3
1	Cranes	226	0.29	10	4	40		3.9	3.2	13.8	38.4	0.0	1.7	1.6	2883.6	0.9
1	Other Construction Equipment	171	0.42	10	4	40	sheet driver	3.8	3.2	21.1	34.8	0.0	1.8	1.7	3138.1	1.0
1	Pumps	84	0.74	24	90	2160	Dewatering pump operates until in-channel work completed	3693.8	161.5	1033.6	1222.6	1.8	84.9	84.9	168068.3	14.5
								Sum=	169.4		1311.4		89.4	89.0	175966.5	16.9
	Grading / Excavation	**Start Date:**	**6/1/2017**					Per Day =	1.9		14.6		1.0	1.0		
		End Date:	8/15/2017				**Soil Hauling Volume**									
1	Tractors/Loaders/Backhoes	97	0.37	10	2	20	Export volume = **_100_** cubic yards?	0.9	0.8	6.0	7.6	0.0	0.6	0.5	794.9	0.2
1	Excavators	162	0.38	10	5	50	Import volume = **_20_** cubic yards?	2.7	2.3	21.4	25.1	0.0	1.2	1.1	3379.8	1.0
	Other Equipment?	0	0			0		**Sum=**	3.1		32.7		1.8	1.7	4174.8	1.3
	Other Equipment?	0	0			0		Per Day =	0.6		6.5		0.4	0.3		
	Other Equipment?	0	0			0										
	Trenching/Pipelines	**Start Date:**	**6/21/2017**													
		End Date:	7/31/2017				**Material Deliveries (all phases)**									
1	Concrete/Industrial Saws	81	0.73	8	1	8	Deliveries by Tractor-Trailer: _15_	5.8	0.6	3.7	4.3	0.0	0.3	0.3	592.1	0.1
1	Tractors/Loaders/Backhoes	97	0.37	10	5	50	Deliveries by smaller trucks: _10_	2.4	2.0	14.9	19.0	0.0	1.4	1.3	1987.4	0.6
1	Plate Compactors	8	0.43	6	5	30		0.2	0.2	0.8	0.9	0.0	0.0	0.0	129.2	0.0
	Other Equipment?	0	0			0		**Sum=**	2.7		24.2		1.8	1.7	2708.7	0.7
	Other Equipment?	0	0			0		Per Day =	0.5		4.8		0.4	0.3		
	Building/Facilities	**Start Date:**	**7/1/2017**				Cement Trucks? **_5_** Total Round-Trips									
		End Date:	8/31/2017													
1	Tractors/Loaders/Backhoes	97	0.37	6	10	60	Electric? (Y/N) _Y__ Otherwise assumed diesel	2.8	2.4	17.9	22.8	0.0	1.7	1.6	2384.8	0.7
1	Excavators	162	0.38	6	5	30	Liquid Propane (LPG)? (Y/N) _N__ Otherwise Assumed diesel	1.6	1.4	12.8	15.0	0.0	0.7	0.7	2027.9	0.6
1	Cement and Mortar Mixers	9	0.56	10	5	50	Or temporary line power? (Y/N) _Y__	0.6	0.4	1.9	2.3	0.0	0.1	0.1	315.4	0.0
	Other Equipment?	0	0			0		**Sum=**	4.1		40.2		2.5	2.4	4728.2	1.4
	Other Equipment?	0	0			0		Per Day =	0.4		4.0		0.3	0.2		
	Other Equipment?	0	0			0										
	Paving	**Start Date:**	**8/15/2017**													
		Start Date:	**8/30/2017**													
	Cement and Mortar Mixers	9	0.56			0										
1	Pavers	125	0.42	10	2	20		1.1	0.9	7.1	10.1	0.0	0.5	0.5	1154.0	0.4
1	Paving Equipment	130	0.36	10	2	20		0.8	0.7	6.3	8.0	0.0	0.4	0.4	1025.0	0.3
1	Rollers	80	0.38	10	2	20		0.9	0.8	5.0	7.2	0.0	0.5	0.5	669.8	0.2
1	Tractors/Loaders/Backhoes	97	0.37	8	1	8		0.4	0.3	2.4	3.0	0.0	0.2	0.2	318.0	0.1
	Sweepers/Scrubbers	64	0.46			0		**Sum=**	2.7		28.4		1.7	1.5	3166.7	1.0
								Per Day =	1.3		14.2		0.8	0.8		
								Total =	**182.0**		**1436.9**		**97.2**	**96.2**	**190744.9**	**21.2**

Traffic

Type	Total	Peak Day	Travel Distance	Total VMT	Peak Day VMT								
Worker	1260	18	10.8	13608	194		10.0		16.3		1.5	0.7	10804.9	1.0
Delivery (includes cement trucks)	20	4	7.3	146	29		0.0		0.1		0.0	0.0	250.7	0.0
Large Trucks	56	10	20	1120	200		0.7		0.8		0.5	0.3	4045.3	0.0
				14874	424		10.7		17.2		2.0	1.0	15100.9	1.1
					0.0284792	Estimated Peak Day	0.4		0.7		0.1	0.0		

Project Name:	Pure Water Monterey Groundwater Replenishment																
Site Name:	Blanco Drain Diversion and Pipeline																
	See Equipment Type TAB/sheet for type, horsepower and load factor							2017 Computed Emissions (pounds)									
Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	Comments	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
	Demolition	**Start Date:**	NA													
		End Date:														
	Concrete/Industrial Saws	81	0.73			0	**Demolition Volume**									
	Other Equipment?	0	0			0	Square footage of buildings to be demolished									
	Other Equipment?	0	0			0	(*or* total tons to be hauled)									
	Other Equipment?	0	0			0	**_0_** square feet *or*									
							_1_ Hauling volume (tons)									
	Site Preparation	**Start Date:**	**4/1/2017**				Any pavement demolished and hauled? **_20_ tons**									
		End Date:	4/15/2017													
1	Tractors/Loaders/Backhoes	97	0.37	8	3	24		1.1	0.9	7.2	9.1	0.0	0.7	0.6	953.9	0.3
1	Excavators	162	0.38	8	1	8		0.4	0.4	3.4	4.0	0.0	0.2	0.2	540.8	0.2
1	Pumps	84	0.74	24	90	2160	By-pass pump operates until in-channel work completed	3693.8	161.5	1033.6	1222.6	1.8	84.9	84.9	168068.3	14.5
								Sum=	162.8		1235.7		85.8	85.7	169563.0	14.9
	Grading / Excavation	**Start Date:**	**9/1/2017**					Per Day =	1.8		13.7		1.0	1.0		
		End Date:	11/15/2017				**Soil Hauling Volume**									
1	Tractors/Loaders/Backhoes	97	0.37	8	3	24	Export volume = **_2,300** cubic yards?	1.1	0.9	7.2	9.1	0.0	0.7	0.6	953.9	0.3
1	Excavators	162	0.38	8	5	40	Import volume = **_60** cubic yards?	2.2	1.8	17.1	20.1	0.0	1.0	0.9	2703.9	0.8
	Other Equipment?	0	0			0		**Sum=**	2.8		29.2		1.7	1.5	3657.8	1.1
	Other Equipment?	0	0			0		Per Day =	0.6		5.8		0.3	0.3		
	Other Equipment?	0	0			0										
	Trenching/Pipelines	**Start Date:**	**4/15/2017**													
		End Date:	10/15/2017				**Material Deliveries (all phases)**									
1	Excavators	162	0.38	8	50	400	Deliveries by Tractor-Trailer: _15_	21.5	18.1	170.9	200.7	0.3	9.9	9.1	27038.8	8.3
2	Plate Compactors	8	0.43	8	41	656	Deliveries by smaller trucks: _25_	3.9	3.3	17.2	20.6	0.0	0.8	0.8	2824.8	0.3
2	Off-Highway Trucks	400	0.38	8	50	800	Assumed in truck traffic calculations									
1	Graders	174	0.41	8	10	80		11.3	9.5	48.3	96.3	0.1	5.4	5.0	6370.3	2.0
1	Rollers	80	0.38	8	10	80		3.7	3.1	19.9	29.0	0.0	2.1	1.9	2679.2	0.8
1	Concrete/Industrial Saws	81	0.73	8	50	400		292.3	29.0	187.3	212.9	0.3	15.3	15.3	29606.6	2.6
1	Cranes	226	0.29	8	15	120		11.6	9.7	41.3	115.3	0.1	5.1	4.7	8650.8	2.7
1	Bore/Drill Rigs	205	0.5	12	15	180		8.4	7.1	44.8	102.5	0.2	2.9	2.7	20081.2	6.2
2	Pumps	84	0.74	24	15	720		1231.3	53.8	344.5	407.5	0.6	28.3	28.3	56022.8	4.8
1	Tractors/Loaders/Backhoes	97	0.37	8	50	400		18.8	15.8	119.6	152.1	0.2	11.4	10.5	15899.0	4.9
1	Welders	46	0.45	8	15	120		78.7	7.5	28.7	26.1	0.0	1.9	1.9	3109.4	0.7
								Sum=	156.9		1362.9		83.2	80.3	172282.8	33.1
	Building/Facilities	**Start Date:**	**9/15/2017**				Cement Trucks? **_20_** Total Round-Trips	Per Day =	3.1		27.3		1.7	1.6		
		End Date:	11/15/2017													
1	Tractors/Loaders/Backhoes	97	0.37	6	10	60	Electric? (Y/N) __Y_ Otherwise assumed diesel	2.8	2.4	17.9	22.8	0.0	1.7	1.6	2384.8	0.7
1	Excavators	162	0.38	6	10	60	Liquid Propane (LPG)? (Y/N) _N__ Otherwise Assumed diesel	3.2	2.7	25.6	30.1	0.0	1.5	1.4	4055.8	1.2
1	Cement and Mortar Mixers	9	0.56	8	5	40	Or temporary line power? (Y/N) _Y__	0.5	0.3	1.5	1.8	0.0	0.1	0.1	252.4	0.0
	Off-Highway Trucks	400	0.38			0		**Sum=**	5.4		54.7		3.3	3.0	6693.0	2.0
	Other Equipment?	0	0			0		Per Day =	0.5		5.5		0.3	0.3		
	Other Equipment?	0	0			0										
	Paving	**Start Date:**	**11/7/2017**													
		Start Date:	**11/21/2017**													
	Cement and Mortar Mixers	9	0.56			0										
1	Pavers	125	0.42	8	2	16		0.9	0.7	5.7	8.1	0.0	0.4	0.4	923.2	0.3
1	Paving Equipment	130	0.36	8	2	16		0.7	0.6	5.1	6.4	0.0	0.3	0.3	820.0	0.3
1	Rollers	80	0.38	8	2	16		0.7	0.6	4.0	5.8	0.0	0.4	0.4	535.8	0.2
	Tractors/Loaders/Backhoes	97	0.37			0		**Sum=**	1.9		20.3		1.1	1.0	2279.0	0.7
	Sweepers/Scrubbers	64	0.46			0		Per Day =	1.0		10.1		0.6	0.5		
								Total =	**329.8**		**2702.8**		**175.1**	**171.6**	**354475.6**	**51.9**
Traffic					Total	Peak Day										
	Type	**Total**	**Peak Day**	**Travel Distance**	**VMT**	**VMT**										
	Worker	3024	26	10.8	32659	281			22.8		36.0		3.6	1.6	25931.6	2.5
	Delivery (includes cement trucks)	50	10	7.3	365	73			0.3		1.6		0.1	0.0	626.8	0.0
	Large Trucks	373	40	20	7460	800			9.1		97.3		3.0	1.9	26944.9	0.2
					40484	1154			32.2		135.0		6.7	3.6	53503.3	2.7
						0.0285	Estimated Peak Day		1.3		5.4		0.3	0.1		

Project Name: Pure Water Monterey Groundwater Replenishment
Site Name: Lake El Estero Stroage Management Site

See Equipment Type TAB/sheet for type, horsepower and load factor

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	Comments	2017 Computed Emissions (pounds) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
	Demolition	**Start Date:**	**8/1/2017**													
		End Date:	8/7/2017													
1	Concrete/Industrial Saws	81	0.73	6	2	12	**Demolition Volume**	8.8	0.9	5.6	6.4	0.0	0.5	0.5	888.2	0.1
	Other Equipment?	0	0			0	Square footage of buildings to be demolished	**Sum=**	0.9		6.4		0.5	0.5	888.2	0.1
	Other Equipment?	0	0			0	(*or* total tons to be hauled)	Per Day =	0.4		3.2		0.2	0.2		
	Other Equipment?	0	0			0	**_0_** square feet *or*									
							_0_ Hauling volume (tons)									
	Site Preparation	**Start Date:**	**8/8/2017**				Any pavement demolished and hauled? **_14_ tons**									
		End Date:	8/14/2017													
1	Tractors/Loaders/Backhoes	97	0.37	10	2	20		0.9	0.8	6.0	7.6	0.0	0.6	0.5	794.9	0.2
	Other Equipment?	0	0			0		**Sum=**	0.8		7.6		0.6	0.5	794.9	0.2
	Other Equipment?	0	0			0		Per Day =	0.4		3.8		0.3	0.3		
	Grading / Excavation	**Start Date:**	**8/15/2017**													
		End Date:	9/7/2017				**Soil Hauling Volume**									
1	Tractors/Loaders/Backhoes	97	0.37	10	2	20	Export volume = **_13_** cubic yards?	0.9	0.8	6.0	7.6	0.0	0.6	0.5	794.9	0.2
	Other Equipment?	0	0			0	Import volume = **_13_** cubic yards?	**Sum=**	0.8		7.6		0.6	0.5	794.9	0.2
	Other Equipment?	0	0			0		Per Day =	0.4		3.8		0.3	0.3		
	Other Equipment?	0	0			0										
	Other Equipment?	0	0			0										
	Trenching/Pipelines	**Start Date:**	**9/1/2017**													
		End Date:	9/7/2017				**Material Deliveries (all phases)**									
1	Concrete/Industrial Saws	81	0.73	10	4	40	Deliveries by Tractor-Trailer: _1_	29.2	2.9	18.7	21.3	0.0	1.5	1.5	2960.7	0.3
1	Tractors/Loaders/Backhoes	97	0.37	10	4	40	Deliveries by smaller trucks: _5_	1.9	1.6	12.0	15.2	0.0	1.1	1.1	1589.9	0.5
1	Plate Compactors	8	0.43	10	4	40		0.2	0.2	1.1	1.3	0.0	0.0	0.0	172.2	0.0
	Other Equipment?	0	0			0		**Sum=**	4.7		37.7		2.7	2.6	4722.8	0.8
	Other Equipment?	0	0			0		Per Day =	1.2		9.4		0.7	0.7		
	Building/Facilities	**Start Date:**	**9/1/2017**				Cement Trucks? **_2_** Total Round-Trips									
		End Date:	9/15/2017													
1	Tractors/Loaders/Backhoes	97	0.37	5	10	50	Electric? (Y/N) _Y__ Otherwise assumed diesel	2.4	2.0	14.9	19.0	0.0	1.4	1.3	1987.4	0.6
1	Air Compressors	78	0.48	5	10	50	Liquid Propane (LPG)? (Y/N) _N__ Otherwise Assumed diesel	46.9	2.8	15.6	18.2	0.0	1.4	1.4	2343.3	0.2
	Other Equipment?	0	0			0	Or temporary line power? (Y/N) __NO_	**Sum=**	4.7		37.2		2.9	2.8	4330.7	0.9
	Other Equipment?	0	0			0		Per Day =	0.5		3.7		0.3	0.3		
	Other Equipment?	0	0			0										
	Other Equipment?	0	0			0										
	Paving	**Start Date:**	**9/15/2017**													
		Start Date:	**9/21/2017**													
	Cement and Mortar Mixers	9	0.56			0										
1	Pavers	125	0.42	10	2	20		1.1	0.9	7.1	10.1	0.0	0.5	0.5	1154.0	0.4
1	Sweepers/Scrubbers	64	0.46	2	2	4		0.2	0.2	1.0	1.6	0.0	0.1	0.1	129.8	0.0
1	Rollers	80	0.38	10	2	20		0.9	0.8	5.0	7.2	0.0	0.5	0.5	669.8	0.2
1	Tractors/Loaders/Backhoes	97	0.37	10	2	20		0.9	0.8	6.0	7.6	0.0	0.6	0.5	794.9	0.2
	Other Equipment?	0	0			0		**Sum=**	2.7		26.5		1.7	1.6	2748.6	0.8
								Per Day =	1.3		13.2		0.9	0.8		
								Total =	**14.5**		**123.0**		**8.9**	**8.5**	**14280.1**	**3.0**

Traffic

Type	Total	Peak Day	Travel Distance	Total VMT	Peak Day VMT									
Worker	378	16	10.8	4082	173		2.9		4.5		0.4	0.2	3241.5	0.3
Delivery (includes cement trucks)	10	5	7.3	73	37		0.1		0.3		0.0	0.0	125.4	0.0
Large Trucks	15	5	20	300	100		0.4		3.9		0.1	0.1	1083.6	0.0
				4455	309		3.3		8.7		0.6	0.3	4450.4	0.3
					0.0694214	Estimated Peak Day	0.1		0.3		0.0	0.0		

Project Name: Pure Water Monterey Groundwater Replenishment
Site Name: Advanced Water Treatment Facility

Includes AWTF, Diversion Structure and pipeline, and the brine mixing faciltiy. Pump station is on the conveyance tab.

See Equipment Type TAB/sheet for type, horsepower and load factor

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	Comments	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
								2016 Computed Emissions (pounds)								
	Demolition	**Start Date:**	**8/15/2016**													
		End Date:	10/15/2016													
1	Concrete/Industrial Saws	81	0.73	4	3	12	**Demolition Volume**	9.7	1.0	5.7	6.9	0.0	0.5	0.5	888.2	0.1
1	Tractors/Loaders/Backhoes	97	0.37	8	6	48	Square footage of buildings to be demolished	2.4	2.0	14.5	19.5	0.0	1.5	1.4	1940.3	0.6
2	Dumpers/Tenders	16	0.38	8	6	96	(*or* total tons to be hauled), Assumed in truck traffic calculations									
	Other Equipment?	0	0			0	**_?_** square feet *or*	**Sum=**	3.0		26.4		2.0	1.9	2828.5	0.7
							_10_ Hauling volume (tons)	Per Day =	0.5		4.4		0.3	0.3		
	Site Preparation	**Start Date:**	**7/1/2016**				Any pavement demolished and hauled? **_15_ tons**									
		End Date:	8/31/2016													
1	Tractors/Loaders/Backhoes	97	0.37	8	20	160		8.1	6.8	48.2	65.0	0.1	5.0	4.6	6467.7	2.0
2	Dumpers/Tenders	16	0.38	8	5	80	Assumed in truck traffic calculations									
1	Rubber Tired Dozers	255	0.4	8	5	40		7.4	6.2	52.4	69.3	0.0	3.2	3.0	4613.0	1.4
								Sum=	13.0		134.3		8.2	7.6	11080.7	3.3
	Grading / Excavation	**Start Date:**	**8/15/2016**					Per Day =	0.6		6.7		0.4	0.4		
		End Date:	11/15/2017				**Soil Hauling Volume**									
2	Tractors/Loaders/Backhoes	97	0.37	8	50	800	Export volume = **_510_** cubic yards?	40.5	34.0	241.0	325.2	0.3	25.0	23.0	32338.7	9.8
1	Crawler Tractors	208	0.43	8	30	240	Import volume = **_2,100_** cubic yards?	25.2	21.2	85.2	285.9	0.2	11.0	10.1	23988.3	7.2
2	Excavators	162	0.38	8	50	800		46.2	38.8	342.5	442.7	0.5	21.8	20.0	54942.4	16.6
1	Graders	174	0.41	8	15	120		18.2	15.3	73.8	155.6	0.1	8.7	8.0	9732.4	2.9
1	Rollers	80	0.38	8	20	160		8.0	6.7	40.2	62.2	0.1	4.6	4.2	5444.7	1.6
1	Rubber Tired Loaders	199	0.36	8	50	400		29.5	24.8	91.7	322.9	0.3	11.0	10.1	31790.1	9.6
1	Rough Terrain Forklifts	100	0.4	8	50	400		12.6	10.6	117.8	135.3	0.2	7.5	6.9	17870.2	5.4
2	Dumpers/Tenders	16	0.38	8	50	800	Assumed in truck traffic calculations									
	Other Equipment?	0	0			0		**Sum=**	151.5		1729.8		89.7	82.5	176106.7	53.1
								Per Day =	3.0		34.6		1.8	1.7		
	Trenching/Pipelines	**Start Date:**	**9/15/2016**													
		End Date:	8/15/2017				**Material Deliveries (all phases)**									
1	Excavators	162	0.38	8	40	320	Deliveries by Tractor-Trailer: _230_	18.5	15.5	137.0	177.1	0.2	8.7	8.0	21977.0	6.6
1	Tractors/Loaders/Backhoes	97	0.37	10	40	400	Deliveries by smaller trucks: _800_	20.2	17.0	120.5	162.6	0.2	12.5	11.5	16169.3	4.9
1	Plate Compactors	8	0.43	8	40	320		1.9	1.6	8.4	10.0	0.0	0.4	0.4	1377.9	0.1
1	Concrete/Industrial Saws	81	0.73	8	40	320		259.9	25.8	150.9	184.7	0.3	13.9	13.9	23685.3	2.3
1	Cement and Mortar Mixers	9	0.56	8	4	32		0.4	0.2	1.2	1.5	0.0	0.1	0.1	201.9	0.0
1	Welders	46	0.45	8	40	320		235.7	22.5	78.7	72.0	0.1	5.7	5.7	8291.7	2.0
1	Pumps	84	0.74	24	14	336		642.4	28.1	162.1	206.0	0.3	15.0	15.0	26144.0	2.5
	Other Equipment?	0	0			0		**Sum=**	110.7		813.9		56.2	54.5	97847.1	18.5
								Per Day =	2.8		20.3		1.4	1.4		
	Building/Facilities	**Start Date:**	**9/15/2016**				Cement Trucks? **_720_** Total Round-Trips									
		End Date:	12/15/2017													
1	Aerial Lifts	62	0.31	8	40	320	Electric? (Y/N) _Y__ Otherwise assumed diesel	2.7	2.2	43.4	36.9	0.1	1.5	1.4	6857.7	2.1
2	Air Compressors	78	0.48	8	130	2080	Liquid Propane (LPG)? (Y/N) _N__ Otherwise Assumed diesel	2164.4	127.6	652.5	821.6	1.0	68.1	68.1	97481.1	11.5
2	Cement and Mortar Mixers	9	0.56	8	130	2080	Or temporary line power? (Y/N) _Y__	24.8	15.3	80.1	95.9	0.2	3.9	3.9	13122.5	1.4
2	Concrete/Industrial Saws	81	0.73	8	52	832		675.9	67.2	392.3	480.3	0.7	36.1	36.1	61581.9	6.0
1	Cranes	226	0.29	8	104	832		89.0	74.8	310.1	886.5	0.6	40.2	37.0	60913.7	18.4
1	Forklifts	89	0.2	8	130	1040		35.1	29.5	164.0	253.7	0.2	21.2	19.5	20615.3	6.2
1	Generator Sets	84	0.74	8	208	1664		2697.5	132.8	790.3	1004.7	1.4	70.4	70.4	129474.8	11.8
1	Graders	174	0.41	8	32	256		38.8	32.6	157.5	331.9	0.2	18.6	17.2	20762.4	6.3
1	Other Construction Equipment	171	0.42	8	260	2080		205.4	172.6	1104.5	1914.3	1.6	100.7	92.6	165825.9	50.0
1	Rollers	80	0.38	8	32	256		12.8	10.8	64.4	99.5	0.1	7.3	6.7	8711.5	2.6
1	Rubber Tired Loaders	199	0.36	8	104	832		61.4	51.6	190.6	671.5	0.6	22.9	21.1	66123.5	19.9
1	Skid Steer Loaders	64	0.37	8	208	1664		28.2	23.7	288.8	306.8	0.4	17.1	15.8	43942.5	13.3
1	Surfacing Equipment	253	0.3	8	32	256		11.1	9.3	61.0	148.4	0.2	4.8	4.4	21504.9	6.5
1	Truck-Mounted Pump Rig	84	0.74	8	32	256		489.4	21.4	123.5	157.0	0.2	11.4	11.4	19919.2	1.9
2	Welders	46	0.45	8	208	3328		2451.3	233.7	818.6	749.0	1.1	59.0	59.0	86233.2	20.9
1	Tractors/Loaders/Backhoes	97	0.37	8	200	1600		81.0	68.0	482.1	650.4	0.6	50.1	46.1	64677.3	19.5
2	Dumpers/Tenders	16	0.38	8	104	1664	Assumed in truck traffic calculations	**Sum=**	1073.1		8608.3		533.3	510.6	887747.3	198.3
	Other Equipment?	0	0			0		Per Day =	4.1		33.1		2.1	2.0		
	Paving	**Start Date:**	**6/15/2017**													
		Start Date:	**12/15/2017**													
1	Cement and Mortar Mixers	9	0.56	8	24	192		2.3	1.4	7.4	8.9	0.0	0.4	0.4	1211.3	0.1
1	Graders	174	0.41	8	24	192		29.1	24.4	118.2	248.9	0.2	14.0	12.9	15571.8	4.7
1	Rollers	80	0.38	8	24	192		9.6	8.1	48.3	74.6	0.1	5.5	5.1	6533.6	2.0
1	Pavers	125	0.42	8	24	192		11.4	9.6	68.4	108.2	0.1	5.4	4.9	11246.5	3.4
1	Paving Equipment	130	0.36	8	24	192		8.8	7.4	61.0	85.5	0.1	4.2	3.9	9991.4	3.0
1	Sweepers/Scrubbers	64	0.46	8	24	192		11.6	9.7	50.5	80.4	0.1	7.1	6.5	6329.3	1.9
								Sum=	60.6		606.5		36.6	33.7	50883.9	15.1
								Per Day =	2.5		25.3		1.5	1.4		
								Total =	**1411.9**		**11919.3**		**726.0**	**690.7**	**1226494.3**	**289.0**

Traffic

Type	Total	Peak Day	Travel Distance	Total VMT	Peak Day VMT								
Worker	6048	56	10.8	65318	605		45.6		72.1		7.2	3.2	51863.3	5.0
Delivery (includes cement trucks)	1600	20	7.3	11680	146		9.0		51.1		2.1	1.2	20058.2	0.6
Large Trucks	2236	20	20	44720	400		54.5		583.4		18.2	11.6	161524.8	1.1
				121718	1151		109.1		706.6		27.6	16.0	233446.2	6.7
					0.0094546	Estimated Peak Day	4.4		28.3		1.1	0.6		

Project Name: Pure Water Monterey Groundwater Replenishment
Site Name: SVRP Modification

See Equipment Type TAB/sheet for type, horsepower and load factor

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	Comments	2016 Computed Emissions (pounds) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
	Demolition	**Start Date:**	**11/15/2016**													
		End Date:	12/15/2016													
2	Concrete/Industrial Saws	81	0.73	8	15	240	**Demolition Volume**	195.0	19.4	113.2	138.5	0.2	10.4	10.4	17764.0	1.7
1	Excavators	162	0.38	8	15	120	Square footage of buildings to be demolished	6.9	5.8	51.4	66.4	0.1	3.3	3.0	8241.4	2.5
1	Tractors/Loaders/Backhoes	97	0.37	8	15	120	(*or* total tons to be hauled)	6.1	5.1	36.2	48.8	0.0	3.8	3.5	4850.8	1.5
	Other Equipment?	0	0			0	**_?_** square feet *or*	**Sum=**	30.3		253.7		17.4	16.9	30856.2	5.7
							_8_ Hauling volume (tons)	Per Day =	2.0		16.9		1.2	1.1		
	Site Preparation	**Start Date:**	**10/1/2016**				Any pavement demolished and hauled? **_0_ tons**									
		End Date:	10/15/2016													
1	Tractors/Loaders/Backhoes	97	0.37	8	10	80		4.0	3.4	24.1	32.5	0.0	2.5	2.3	3233.9	1.0
1	Pumps	84	0.74	24	21	504		963.6	42.1	243.1	309.0	0.4	22.4	22.4	39215.9	3.8
	Other Equipment?	0	0			0		**Sum=**	45.5		341.5		24.9	24.7	42449.8	4.8
								Per Day =	2.2		16.3		1.2	1.2		
	Grading / Excavation	**Start Date:**	**10/15/2016**													
		End Date:	1/15/2017				**Soil Hauling Volume**									
1	Tractors/Loaders/Backhoes	97	0.37	8	15	120	Export volume = **_150_** cubic yards?	6.1	5.1	36.2	48.8	0.0	3.8	3.5	4850.8	1.5
1	Excavators	162	0.38	8	15	120	Import volume = **_0_** cubic yards?	6.9	5.8	51.4	66.4	0.1	3.3	3.0	8241.4	2.5
	Other Equipment?	0	0			0		**Sum=**	10.9		115.2		7.0	6.5	13092.2	3.9
	Other Equipment?	0	0			0		Per Day =	0.7		7.7		0.5	0.4		
	Other Equipment?	0	0			0										
	Trenching/Pipelines	**Start Date:**	**12/1/2016**													
		End Date:	1/15/2017				**Material Deliveries (all phases)**									
1	Excavators	162	0.38	8	15	120	Deliveries by Tractor-Trailer: _5_	6.9	5.8	51.4	66.4	0.1	3.3	3.0	8241.4	2.5
1	Tractors/Loaders/Backhoes	97	0.37	8	15	120	Deliveries by smaller trucks: _25_	6.1	5.1	36.2	48.8	0.0	3.8	3.5	4850.8	1.5
1	Plate Compactors	8	0.43	8	15	120		0.7	0.6	3.2	3.8	0.0	0.1	0.1	516.7	0.1
1	Welders	46	0.45	8	15	120		88.4	8.4	29.5	27.0	0.0	2.1	2.1	3109.4	0.8
1	Rollers	80	0.38	8	15	120		6.0	5.0	30.2	46.6	0.0	3.4	3.2	4083.5	1.2
								Sum=	25.0		192.6		12.7	11.9	20801.8	6.0
	Building/Facilities	**Start Date:**	**12/1/2016**				Cement Trucks? **_25_** Total Round-Trips	Per Day =	1.7		12.8		0.8	0.8		
		End Date:	7/15/2017													
1	Cement and Mortar Mixers	9	0.56	8	15	120	Electric? (Y/N) _Y__ Otherwise assumed diesel	1.4	0.9	4.6	5.5	0.0	0.2	0.2	757.1	0.1
1	Concrete/Industrial Saws	81	0.73	8	20	160	Liquid Propane (LPG)? (Y/N) _Y__ Otherwise Assumed diesel	130.0	12.9	75.4	92.4	0.1	6.9	6.9	11842.7	1.1
1	Cranes	226	0.29	8	30	240	Or temporary line power? (Y/N) _Y__	25.7	21.6	89.5	255.7	0.2	11.6	10.7	17571.3	5.3
1	Generator Sets	84	0.74	8	20	160		259.4	12.8	76.0	96.6	0.1	6.8	6.8	12449.5	1.1
1	Other Material Handling Equipment	167	0.4	8	78	624		53.4	44.9	313.8	478.5	0.4	25.7	23.6	46487.2	14.0
1	Tractors/Loaders/Backhoes	97	0.37	8	25	200		10.1	8.5	60.3	81.3	0.1	6.3	5.8	8084.7	2.4
1	Pumps	84	0.74	24	30	720		1376.6	60.1	347.3	441.4	0.6	32.0	32.0	56022.8	5.4
1	Welders	46	0.45	8	45	360	Pond liner seaming and pipe welding	265.2	25.3	88.6	81.0	0.1	6.4	6.4	9328.1	2.3
1	Excavators	162	0.38	8	15	120		6.9	5.8	51.4	66.4	0.1	3.3	3.0	8241.4	2.5
	Other Equipment?	0	0			0		**Sum=**	192.8		1598.9		99.1	95.4	170784.6	34.3
								Per Day =	2.5		20.5		1.3	1.2		
	Paving	**Start Date:**	**NA**					**Total =**	**304.5**		**2501.9**		**161.3**	**155.4**	**277984.5**	**54.7**
		Start Date:														
	Cement and Mortar Mixers	9	0.56			0										
	Graders	174	0.41			0										
	Rollers	80	0.38			0										
	Pavers	125	0.42			0										
	Paving Equipment	130	0.36			0										
	Sweepers/Scrubbers	64	0.46			0										

Traffic

Type	Total	Peak Day	Travel Distance	Total VMT	Peak Day VMT								
Worker		10	10.8	0	108		0.0		0.0		0.0	0.0	0.0	0.0
Delivery (includes cement trucks)	50		7.3	365	0		0.3		1.6		0.1	0.0	626.8	0.0
Large Trucks	82		20	1640	0		2.0		21.4		0.7	0.4	5923.5	0.0
				2005	108		2.3		23.0		0.7	0.5	6550.4	0.1
					0.0538653	Estimated Peak Day	0.1		0.9		0.0	0.0		

Product Water Conveyance - Pipelines/Pumps

Product Water Pipeline - RUWAP AWT to BPS

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	2016 Computed Emissions (pounds) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4	2017 Computed Emissions (pounds) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
1	Pavers	160	0.42	6	16	96	7.3	6.2	43.8	69.3	0.1	3.4	3.2	7197.8	2.2									
1	Rollers	90	0.38	6	110	660	37.2	31.2	186.7	288.6	0.2	21.3	19.6	25266.7	7.6									
1	Backhoe	150	0.37	8	94	752	58.9	49.5	350.4	472.7	0.5	36.4	33.5	47007.8	14.2									
1	Excavators	200	0.38	8	94	752	53.6	45.0	397.5	513.7	0.6	25.3	23.3	63760.4	19.2									
1	Cranes	200	0.29	6	94	564	53.4	44.9	186.1	531.8	0.4	24.1	22.2	36542.0	11.0									
1	Jack-and-Bore Rig	350	0.50	8	20	160	14.1	11.9	69.9	179.0	0.3	5.3	4.8	30968.2	9.3									
1	Loader	90	0.37	8	130	1040	48.8	41.0	290.7	392.3	0.4	30.2	27.8	39006.4	11.8									
1	Generator	200	0.74	8	130	1040	4014.1	197.7	1176.1	1495.1	2.0	104.8	104.8	192670.9	17.6									
							Sum=	427.3		3942.5		250.7	239.0	442420.1	93.0									
							Per Day =	2.0		18.8		1.2	1.1											

Notes: Construction would last 10 months. Jack and bore would occur at two locations for two weeks each: Reservation Rd and Imjin Pkwy. There would be approximately 21 workdays per month.

Product Water Pipeline - RUWAP: BPS - Injection

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
1	Pavers	160	0.42	6	16	96	7.3	6.2	43.8	69.3	0.1	3.4	3.2	7197.8	2.2
1	Rollers	90	0.38	6	102	612	34.5	29.0	173.1	267.7	0.2	19.7	18.1	23429.1	7.1
1	Backhoe	150	0.37	8	86	688	53.9	45.2	320.6	432.5	0.4	33.3	30.6	43007.1	13.0
1	Excavators	200	0.38	8	85	680	48.4	40.7	359.5	464.5	0.6	22.9	21.0	57655.6	17.4
1	Cranes	200	0.29	6	86	516	48.9	41.1	170.2	486.5	0.3	22.1	20.3	33432.0	10.1
1	Jack-and-Bore Rig	350	0.50	8	50	400	35.3	29.7	174.7	447.5	0.7	13.1	12.1	77420.6	23.4
1	Loader	90	0.37	8	152	1216	57.1	48.0	339.9	458.7	0.4	35.3	32.5	45607.5	13.8
1	Generator	200	0.74	8	150	1200	4631.7	228.1	1357.0	1725.1	2.3	120.9	120.9	222312.6	20.3
							Sum=	467.9		4351.8		270.7	258.7	510062.3	107.1
							Per Day =	2.2		20.7		1.3	1.2		

Notes: Construction would last 10 months. Jack and bore would occur at five locations for two weeks each: Divarty St, Gigling Rd, Lightfighter Dr, Normandy Rd, and Eucalyptus Rd. There would be approximately 21 workdays per month.

AWT Pump Station

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
1	Pavers	160	0.42	8	3	24	1.8	1.5	10.9	17.3	0.0	0.9	0.8	1799.4	0.5
1	Rollers	90	0.38	8	5	40	2.3	1.9	11.3	17.5	0.0	1.3	1.2	1531.3	0.5
1	Loader	90	0.37	8	20	160	7.5	6.3	44.7	60.3	0.1	4.6	4.3	6001.0	1.8
1	Backhoe	150	0.37	8	15	120	9.4	7.9	55.9	75.4	0.1	5.8	5.3	7501.2	2.3
1	Cranes	200	0.29	8	30	240	22.7	19.1	79.2	226.3	0.2	10.3	9.4	15549.8	4.7
1	Graders	200	0.41	8	3	24	4.2	3.5	17.0	35.8	0.0	2.0	1.8	2237.3	0.7
1	Generator	200	0.74	8	60	480	1852.7	91.2	542.8	690.1	0.9	48.4	48.4	88925.0	8.1
							Sum=	131.5		1122.7		73.2	71.2	123545.1	18.6
							Per Day =	0.5		4.5		0.3	0.3		

Notes: Construction would last 12-14 months. Structural work requiring heavy equipment will be completed in 2-3 months.

Booster Pump Station (RUWAP or Coastal)

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	2017 TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
1	Pavers	160	0.42	8	3	24	1.6	1.4	10.9	15.5	0.0	0.8	0.7	1772.5	0.5
1	Rollers	90	0.38	8	5	40	2.1	1.7	11.2	16.3	0.0	1.2	1.1	1507.1	0.5
1	Loader	90	0.37	8	10	80	3.5	2.9	22.2	28.2	0.0	2.1	2.0	2950.3	0.9
1	Backhoe	150	0.37	8	10	80	5.8	4.9	37.0	47.0	0.0	3.5	3.3	4917.2	1.5
1	Cranes	200	0.29	8	30	240	20.5	17.2	73.1	204.1	0.2	9.1	8.4	15311.1	4.7
1	Graders	200	0.41	8	2	16	2.6	2.2	11.1	22.1	0.0	1.2	1.1	1464.4	0.4
1	Generator	200	0.74	8	180	1440	4955.7	244.1	1615.8	1911.5	2.8	128.6	128.6	266775.1	21.6
							Sum=	274.4		2244.7		146.6	145.1	294697.8	30.1
							Per Day =	1.3		10.7		0.7	0.7		

Notes: Construction would last 10-12 months. Structural work requiring heavy equipment will be completed in 2-3 months.

Total =	**1301.1**	**11661.7**	**741.2**	**714.1**	**1,370,725**	**248.8**	

Traffic

Type	Total	Peak Day	Travel Distan	Total VMT	Peak Day VMT
Worker	9828	36	10.8	106142	389
Delivery (includes cer	998	12	7.3	7285	88
Large Trucks	9858	12	20	197160	240
				310588	716
					0.002307

	ROG	NOx	PM10	PM2.5	CO2	CH4
	74.1	117.1	11.7	5.2	84277.8	8.2
	4.9	31.9	1.3	0.7	12511.3	0.4
	240.3	2572.0	80.4	51.3	712124.8	4.7
	319.3	2721.0	93.4	57.2	808,914	13.3
Estimated Peak Day	12.8	108.8	3.7	2.3		

Product Water Conveyance - Pipelines/Pumps

Product Water Pipeline - Coastal AWT - BPS

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	2016 Computed Emissions (pounds) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4	2017 Computed Emissions (pounds) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
1	Pavers	160	0.42	6	3	18	1.4	1.2	8.2	13.0	0.0	0.6	0.6	1349.6	0.4									
1	Rollers	90	0.38	6	112	672	37.8	31.8	190.1	293.9	0.2	21.6	19.9	25726.0	7.8									
1	Backhoe	150	0.37	8	109	872	68.3	57.4	406.3	548.2	0.5	42.2	38.8	54509.0	16.4									
1	Excavators	200	0.38	8	109	872	62.1	52.2	460.9	595.7	0.7	29.3	27.0	73934.9	22.3									
1	Cranes	200	0.29	6	109	654	61.9	52.0	215.7	616.7	0.4	28.0	25.7	42373.2	12.8									
1	Jack-and-Bore Rig	350	0.50	8	20	160	14.1	11.9	69.9	179.0	0.3	5.3	4.8	30968.2	9.3									
1	Loader	90	0.37	8	132	1056	49.6	41.7	295.2	398.3	0.4	30.7	28.2	39606.5	11.9									
1	Generator	200	0.74	8	132	1056	4075.9	200.7	1194.2	1518.1	2.1	106.4	106.4	195635.1	17.9									
							Sum=	448.8		4162.8		264.1	251.5	464102.5	98.9									
							Per Day =	2.1		19.8		1.3	1.2											

Notes: Construction would last 10 months. Jack and bore would occur at two locations for two weeks each: Reservation Rd. and Divarty St. There would be approximately 21 workdays per month.

Product Water Pipeline - Coastal: BPS - Injection

1	Pavers	160	0.42	6	16	96	7.3	6.2	43.8	69.3	0.1	3.4	3.2	7197.8	2.2									
1	Rollers	90	0.38	6	69	414	23.3	19.6	117.1	181.1	0.2	13.3	12.3	15849.1	4.8									
1	Backhoe	150	0.37	8	68	544	42.6	35.8	253.5	342.0	0.3	26.3	24.2	34005.6	10.3									
1	Excavators	200	0.38	8	68	544	38.7	32.6	287.6	371.6	0.4	18.3	16.8	46124.5	13.9									
1	Cranes	200	0.29	6	68	408	38.6	32.5	134.6	384.7	0.3	17.5	16.1	26434.6	8.0									
1	Jack-and-Bore Rig	350	0.50	8	40	320	28.3	23.7	139.8	358.0	0.6	10.5	9.7	61936.5	18.7									
1	Loader	90	0.37	8	109	872	41.0	34.4	243.8	328.9	0.3	25.3	23.3	32705.4	9.9									
1	Generator	200	0.74	8	109	872	3365.7	165.7	986.1	1253.6	1.7	87.8	87.8	161547.1	14.8									
							Sum=	350.4		3289.1		202.5	193.3	385800.6	82.4									
							Per Day =	1.7		15.7		1.0	0.9											

Notes: Construction would last 10 months. Jack and bore would occur at four locations for two weeks each: Lightfighter Dr, Gigling Rd, Normandy Rd, and Eucalyptus Rd. There would be approximately 21 workdays per month.

AWT Pump Station

1	Pavers	160	0.42	8	3	24	1.8	1.5	10.9	17.3	0.0	0.9	0.8	1799.4	0.5									
1	Rollers	90	0.38	8	5	40	2.3	1.9	11.3	17.5	0.0	1.3	1.2	1531.3	0.5									
1	Loader	90	0.37	8	20	160	7.5	6.3	44.7	60.3	0.1	4.6	4.3	6001.0	1.8									
1	Backhoe	150	0.37	8	15	120	9.4	7.9	55.9	75.4	0.1	5.8	5.3	7501.2	2.3									
1	Cranes	200	0.29	8	30	240	22.7	19.1	79.2	226.3	0.2	10.3	9.4	15549.8	4.7									
1	Graders	200	0.41	8	3	24	4.2	3.5	17.0	35.8	0.0	2.0	1.8	2237.3	0.7									
1	Generator	200	0.74	8	60	480	1852.7	91.2	542.8	690.1	0.9	48.4	48.4	88925.0	8.1									
							Sum=	131.5		1122.7		73.2	71.2	123545.1	18.6									
							Per Day =	0.5		4.5		0.3	0.3											

Notes: Construction would last 12-14 months. Structural work requiring heavy equipment will be completed in 2-3 months.

Booster Pump Station (RUWAP or Coastal)

2017

1	Pavers	160	0.42	8	3	24										1.6	1.4	10.9	15.5	0.0	0.8	0.7	1772.5	0.5
1	Rollers	90	0.38	8	5	40										2.1	1.7	11.2	16.3	0.0	1.2	1.1	1507.1	0.5
1	Loader	90	0.37	8	10	80										3.5	2.9	22.2	28.2	0.0	2.1	2.0	2950.3	0.9
1	Backhoe	150	0.37	8	10	80										5.8	4.9	37.0	47.0	0.0	3.5	3.3	4917.2	1.5
1	Cranes	200	0.29	8	30	240										20.5	17.2	73.1	204.1	0.2	9.1	8.4	15311.1	4.7
1	Graders	200	0.41	8	2	16										2.6	2.2	11.1	22.1	0.0	1.2	1.1	1464.4	0.4
1	Generator	200	0.74	8	180	1440										4955.7	244.1	1615.8	1911.5	2.8	128.6	128.6	266775.1	21.6
																Sum=	274.4		2244.7		146.6	145.1	294697.8	30.1
																Per Day =	1.3		10.7		0.7	0.7		

Notes: Construction would last 10-12 months. Structural work requiring heavy equipment will be completed in 2-3 months.

							Total =	**1205.1**		**10819.4**		**686.4**	**661.2**	**1268146.0**	**230.0**									

Traffic

Type	Total	Peak Day	avel Distan	Total VMT	Peak Day VMT
Worker	9828	36	10.8	106142	389
Delivery (includes cen	944	12	7.3	6891	88
Large Trucks	6080	12	20	121600	240
				234634	716
					0.003053

	ROG	NOx	PM10	PM2.5	CO2	CH4
	74.1	117.1	11.7	5.2	84278	8.2
	4.7	30.2	1.3	0.7	11834	0.4
	148.2	1586.3	49.6	31.6	439209	2.9
	227.0	1733.6	62.5	37.5	535321	11.5
Estimated Peak Day	9.1	69.3	2.5	1.5		

Product Water Conveyance - Pipelines/Pumps

All comments below in these columns were made by T. Gerald Cole, dated 6 Mar 2014

Product Water Pipeline - RUWAP AWT to BPS

Off-Road Equipment	Approx. HP	Number	Hour/day	Days		
Pavers	160	1	6	16		16,000 lf of paving
Rollers	90	1	6	110		16 +94
Backhoe	150	1	8	94		assume 1,000 lf/day
Excavators	200	1	8	94		
Cranes	200	1	6	94		
Jack-and-Bore Rig	350	1	8	20		2 sites at 2 weeks each
Loader	90	1	8	130	94+20+16	pipe excavation & backfill +bore & jack + paving
Generator	200	1	8	130		I assume the generator is for hand tools

Notes: Construction would last 10 months. Jack and bore would occur at two locations for two weeks each: Reservation Rd and Imjin Pkwy. There would be approximately 21 workdays per month. ??? RUWAP Alignment does not cross Hwy One

Product Water Pipeline - RUWAP: BPS - Injection

Off-Road Equipment	Approx. HP	Number	Hour/day	Days		
Pavers	160	1	6	16		15,900 lf of paving
Rollers	90	1	6	102		16 + 86
Backhoe	150	1	8	86		
Excavators	200	1	8	85		assume 1,000 lf/day
Cranes	200	1	6	86		
Jack-and-Bore Rig	350	1	8	50		5 sites at 2 weeks each
Loader	90	1	8	152	86+50+16	pipe excavation & backfill +bore & jack + paving
Generator	200	1	8	150		I assume the generator is for hand tools

Notes: Construction would last 10 months. Jack and bore would occur at five locations for two weeks each: Divarty St, Gigling Rd, Lightfighter Dr, Normandy Rd, and Eucalyptus Rd. There would be approximately 21 workdays per month.

Product Water Pipeline - Coastal AWT - BPS

Off-Road Equipment	Approx. HP	Number	Hour/day	Days			
Pavers	160	1	6	3		2,000 lf of paving	assume 1,000 lf/day
Rollers	90	1	6	112		109 + 3	
Backhoe	150	1	8	109			
Excavators	200	1	8	109			
Cranes	200	1	6	109			
Jack-and-Bore Rig	350	1	8	20		2 sites at 2 weeks each	
Loader	90	1	8	132	109+20+3	pipe excavation & backfill +bore & jack + paving	
Generator	200	1	8	132		I assume the generator is for hand tools	

Notes: Construction would last 10 months. Jack and bore would occur at two locations for two weeks each: Reservation Rd. and Divarty St. There would be approximately 21 workdays per month.

Product Water Pipeline - Coastal: BPS - Injection

Off-Road Equipment	Approx. HP	Number	Hour/day	Days		
Pavers	160	1	6	16		15,900 lf of paving
Rollers	90	1	6	69		68 + 3
Backhoe	150	1	8	68		
Excavators	200	1	8	68		assume 1,000 lf/day
Cranes	200	1	6	68		
Jack-and-Bore Rig	350	1	8	40		4 sites at 2 weeks each
Loader	90	1	8	109	68+40+16	pipe excavation & backfill +bore & jack + paving
Generator	200	1	8	109		I assume the generator is for hand tools

Notes: Construction would last 10 months. Jack and bore would occur at four locations for two weeks each: Lightfighter Dr, Gigling Rd, Normandy Rd, and Eucalyptus Rd. There would be approximately 21 workdays per month.

AWT Pump Station

Off Road Equipment	Approx. HP	Number	Hour/Day	Days	
Pavers	160	1	8	3	Comment: Grading and paving will get taken up by all the rest of the treatment plant site work
Rollers	90	1	8	5	
Loader	90	1	8	20	The actual days specifically associated w/ the AWTPS are guesses
Backhoe	150	1	8	15	
Cranes	200	1	8	30	Hiatus between structural work and mechanical installation
Graders	200	1	8	3	
Generator	200	1	8	60	Power for small tools might be availablel from existing electrical outlets of PCA' RTP

Notes: Construction would last 12-14 months. Structural work requiring heavy equipment will be completed in 2-3 months.

Booster Pump Station (RUWAP or Coastal)

Off Road Equipment	Approx. HP	Number	Hour/Day	Days	
Pavers	160	1	8	3	
Rollers	90	1	8	5	
Loader	90	1	8	10	
Backhoe	150	1	8	10	
Cranes	200	1	8	30	Hiatus between structural work and mechanical installation
Graders	200	1	8	2	
Generator	200	1	8	180	Need for a generator is dependant on whether PG&E will make a temporary electrical "drop" for the contractor's use, before the permanent permanent power supply is available.

Notes: Construction would last 10-12 months. Structural work requiring heavy equipment will be completed in 2-3 months.

Project Name:	Pure Water Monterey Groundwater Replenishment						Includes injection wells, monitoring wells, backflush basin, connecting pipelines and conduits, road surfacing									
Site Name:	Injection Well Facilities															
	See Equipment Type TAB/sheet for type, horsepower and load factor							2016 Computed Emissions (pounds)								
Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Annual Hours	Comments	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
	Demolition	**Start Date:**	**NA**													
		End Date:														
	Concrete/Industrial Saws	81	0.73			0	**Demolition Volume**									
	Other Equipment?	0	0			0	Square footage of buildings to be demolished									
	Other Equipment?	0	0			0	(*or* total tons to be hauled)									
	Other Equipment?	0	0			0	**_?_** square feet *or*									
							_0_ Hauling volume (tons)									
	Site Preparation	**Start Date:**	**8/1/2016**				Any pavement demolished and hauled? **_0_ tons**									
	Access Road Grading	**End Date:**	8/31/2016													
1	Graders	174	0.41	6	20	120		18.2	15.3	73.8	155.6	0.1	8.7	8.0	9,732	2.9
1	Rubber Tired Dozers	255	0.4	6	20	120		22.1	18.6	157.1	207.9	0.1	9.7	8.9	13,839	4.2
1	Tractors/Loaders/Backhoes	97	0.37	6	20	120		6.1	5.1	36.2	48.8	0.0	3.8	3.5	4,851	1.5
2	Dumpers/Tenders	16	0.38	6	22	264	Assumed in truck traffic calculations	**Sum=**	38.9		412.2		22.2	20.4	28,422	8.6
	Other Equipment?	0	0			0		Per Day =	1.8		18.7		1.0	0.9		
	Grading / Excavation	**Start Date:**	**1/15/2017**													
	Backflush Basin	**End Date:**	4/15/2017				**Soil Hauling Volume**									
1	Tractors/Loaders/Backhoes	97	0.37	5	22	110	Export volume = **_8800_** cubic yards?	5.6	4.7	33.1	44.7	0.0	3.4	3.2	4,447	1.3
1	Excavators	162	0.38	6	25	150	Import volume = **_700_** cubic yards?	8.7	7.3	64.2	83.0	0.1	4.1	3.8	10,302	3.1
1	Graders	174	0.41	3	20	60		9.1	7.6	36.9	77.8	0.0	4.4	4.0	4,866	1.5
1	Crawler Tractors	208	0.43	6	10	60		6.3	5.3	21.3	71.5	0.1	2.8	2.5	5,997	1.8
2	Dumpers/Tenders	16	0.38	7	22	308	Assumed in truck traffic calculations									
1	Rubber Tired Dozers	255	0.4	6	15	90		16.6	13.9	117.8	155.9	0.1	7.3	6.7	10,379	3.1
	Other Equipment?	0	0			0		**Sum=**	38.8		432.9		21.9	20.2	35,991	10.9
								Per Day =	1.6		17.3		0.9	0.8		
	Trenching/Pipelines	**Start Date:**	**5/1/2017**													
		End Date:	9/30/2017				**Material Deliveries (pipeline/conduit)**									
1	Excavators	162	0.38	8	30	240	Deliveries by Tractor-Trailer: _15_	13.8	11.6	102.8	132.8	0.2	6.5	6.0	16,483	5.0
1	Tractors/Loaders/Backhoes	97	0.37	8	40	320	Deliveries by smaller trucks: _30_	16.2	13.6	96.4	130.1	0.1	10.0	9.2	12,935	3.9
1	Plate Compactors	8	0.43	6	30	180		1.1	0.9	4.7	5.6	0.0	0.2	0.2	775	0.1
2	Concrete/Industrial Saws	81	0.73	4	30	240		195.0	19.4	113.2	138.5	0.2	10.4	10.4	17,764	1.7
1	Welders	46	0.45	6	30	180		132.6	12.6	44.3	40.5	0.1	3.2	3.2	4,664	1.1
1	Dumpers/Tenders	16	0.38	8	30	240	Assumed in truck traffic calculations									
1	Rollers	80	0.38	6	30	180		9.0	7.6	45.3	70.0	0.1	5.2	4.7	6,125	1.8
	Other Equipment?	0	0			0		**Sum=**	65.7		517.6		35.5	33.8	58,747	13.7
								Per Day =	1.6		12.9		0.9	0.8		
	Building/Facilities	**Start Date:**	**10/1/2016**													
	Deep Injection Wells (typ of 4)	**End Date:**	2/28/2017				**Material Deliveries (deep wells, typ of 4)**									
1	Tractors/Loaders/Backhoes	97	0.37	4	20	80	Deliveries by Tractor-Trailer: _8_	4.0	3.4	24.1	32.5	0.0	2.5	2.3	3,234	1.0
1	Bucket Auger Drill Rig	600	0.5	12	4	48	Deliveries by smaller trucks: _25_	7.3	6.1	35.9	92.0	0.2	2.7	2.5	15,927	4.8
1	Reverse Rotary Drill Rig	600	0.5	24	14	336		50.9	42.7	251.6	644.3	1.1	18.9	17.4	111,486	13.1
1	Forklifts	89	0.2	6	14	84		2.8	2.4	13.2	20.5	0.0	1.7	1.6	1,665	0.5
1	Truck-Mounted Pump Rig	84	0.74	24	16	384		734.2	32.1	185.2	235.4	0.3	17.1	17.1	29,879	2.9
1	Pumps	84	0.74	24	2	48		91.8	4.0	23.2	29.4	0.0	2.1	2.1	3,735	0.4
1	Generator Sets	84	0.74	8	20	160		259.4	12.8	76.0	96.6	0.1	6.8	6.8	12,450	1.1
1	Welders	46	0.45	8	10	80		58.9	5.6	19.7	18.0	0.0	1.4	1.4	2,073	0.5
1	Cranes	226	0.29	10	5	50		5.4	4.5	18.6	53.3	0.0	2.4	2.2	3,661	1.1
								Sum=	113.6		1222.2		55.7	53.4	184,108	25.4
								Per Day =	5.7		61.1		2.8	2.7		
	Building/Facilities	**Start Date:**	**1/1/2017**					**All Well Sum**	454.4		4888.6		222.7	213.6	736,432	101.5
	Vadose Wells (typ of 4)	**End Date:**	5/31/2017				**Material Deliveries (vadose wells, typ of 4)**									
1	Tractors/Loaders/Backhoes	97	0.37	4	20	80	Deliveries by Tractor-Trailer: _2_	4.0	3.4	24.1	32.5	0.0	2.5	2.3	3,234	1.0
1	Bucket Auger Drill Rig	600	0.5	12	14	168	Deliveries by smaller trucks: _20_	25.4	21.4	125.8	322.2	0.5	9.5	8.7	55,743	16.8
1	Forklifts	89	0.2	6	14	84		2.8	2.4	13.2	20.5	0.0	1.7	1.6	1,665	0.5
1	Truck-Mounted Pump Rig	84	0.74	24	12	288		550.6	24.1	138.9	176.6	0.2	12.8	12.8	22,409	2.2
1	Pumps	84	0.74	24	2	48		91.8	4.0	23.2	29.4	0.0	2.1	2.1	3,735	0.4
1	Generator Sets	84	0.74	8	20	160		259.4	12.8	76.0	96.6	0.1	6.8	6.8	12,450	1.1
1	Welders	46	0.45	8	8	64		47.1	4.5	15.7	14.4	0.0	1.1	1.1	1,658	0.4
	Other Equipment?	0	0			0		**Sum=**	72.5		692.2		36.5	35.4	100,894	22.4
								Per Day =	3.6		34.6		1.8	1.8		
								All Well Sum	289.9		2768.8		146.1	141.8	403,574	89.5
	Building/Facilities	**Start Date:**	**9/1/2016**													
	Monitoring Wells (typ of 6)	**End Date:**	5/31/2017				**Material Deliveries (mon well, typ of 6)**									
1	Tractors/Loaders/Backhoes	97	0.37	4	20	80	Deliveries by Tractor-Trailer: _4_	4.0	3.4	24.1	32.5	0.0	2.5	2.3	3,234	1.0
1	Reverse Rotary Drill Rig	600	0.5	24	28	672	Deliveries by smaller trucks: _30_	101.8	85.5	503.1	1288.7	2.1	37.8	34.8	222,971	67.3
1	Forklifts	89	0.2	6	28	168		5.7	4.8	26.5	41.0	0.0	3.4	3.2	3,330	1.0
1	Truck-Mounted Pump Rig	84	0.74	24	28	672		1284.8	56.1	324.1	412.0	0.6	29.9	29.9	52,288	5.1
1	Generator Sets	84	0.74	8	28	224		363.1	17.9	106.4	135.3	0.2	9.5	9.5	17,429	1.6
1	Welders	46	0.45	8	15	120		88.4	8.4	29.5	27.0	0.0	2.1	2.1	3,109	0.8
	Other Equipment?	0	0			0		**Sum=**	176.1		1936.5		85.3	81.8	302,362	76.7
								Per Day =	6.3		69.2		3.0	2.9		
								All Well Sum	1056.5		11618.8		511.6	490.7	1,814,172	460.0
	Building/Facilities	**Start Date:**	**9/1/2016**				Cement Trucks? **_35_** Total Round-Trips									
	Elec. Buildings (typ of 4)	**End Date:**	5/31/2017													
1	Tractors/Loaders/Backhoes	97	0.37	4	40	160	Electric? (Y/N) _Y__ Otherwise assumed diesel	8.1	6.8	48.2	65.0	0.1	5.0	4.6	6,468	2.0
1	Welders	46	0.45	4	10	40	Liquid Propane (LPG)? (Y/N) _N__ Otherwise Assumed diesel	29.5	2.8	9.8	9.0	0.0	0.7	0.7	1,036	0.3
1	Aerial Lifts	62	0.31	8	15	120	Or temporary line power? (Y/N) _N__	1.0	0.8	16.3	13.8	0.0	0.6	0.5	2,572	0.8
1	Air Compressors	78	0.48	8	5	40		41.6	2.5	12.5	15.8	0.0	1.3	1.3	1,875	0.2
1	Generator Sets	84	0.74	8	30	240	**Material Deliveries (building, typ of 4)**	389.1	19.2	114.0	144.9	0.2	10.2	10.2	18,674	1.7
1	Cement and Mortar Mixers	9	0.56	8	15	120	Deliveries by Tractor-Trailer: _5_	1.4	0.9	4.6	5.5	0.0	0.2	0.2	757	0.1
1	Forklifts	89	0.2	4	15	60	Deliveries by smaller trucks: _30_	2.0	1.7	9.5	14.6	0.0	1.2	1.1	1,189	0.4
1	Concrete/Industrial Saws	81	0.73	4	30	120		97.5	9.7	56.6	69.3	0.1	5.2	5.2	8,882	0.9
1	Skid Steer Loaders	64	0.37	4	15	60		1.0	0.9	10.4	11.1	0.0	0.6	0.6	1,584	0.5
	Other Equipment?	0	0			0		**Sum=**	45.2		349.1		25.0	24.4	43,038	6.7
	Other Equipment?	0	0			0		Per Day =	1.1		8.7		0.6	0.6		
								All Well Sum	180.8		1396.3		100.1	97.7	172,150	26.7
	Paving	**Start Date:**	**10/1/2017**													
		Start Date:	**12/31/2017**													
1	Cement and Mortar Mixers	9	0.56	8	3	24		0.3	0.2	0.9	1.1	0.0	0.0	0.0	151	0.0
1	Graders	174	0.41	8	14	112		17.0	14.3	68.9	145.2	0.1	8.2	7.5	9,084	2.7
1	Rollers	80	0.38	8	25	200		10.0	8.4	50.3	77.7	0.1	5.7	5.3	6,806	2.1
1	Tractors/Loaders/Backhoes	97	0.37	8	10	80		4.0	3.4	24.1	32.5	0.0	2.5	2.3	3,234	1.0
2	Paving Equipment	130	0.36	8	25	400		18.2	15.3	127.0	178.2	0.2	8.8	8.1	20,815	6.3
3	Dumpers/Tenders	16	0.38	8	25	600	Assumed in truck traffic calculations	**Sum=**	41.6		434.8		25.3	23.3	40,090	12.1
								Per Day =	1.7		17.4		1.0	0.9		
								Total =	**2166.6**		**22469.9**		**1085.4**	**1041.4**	**3,289,578**	**722.9**
Traffic					Total	Peak Day										
	Type	**Total**	**Peak Day**	**Travel Distance**	**VMT**	**VMT**			ROG		NOx		PM10	PM2.5	CO2	CH4
	Worker	21420	132	10.8	231336	1426			161.5		255.3		25.4	11.4	183,682	17.8
	Delivery (includes cement trucks)	1020	12	7.3	7446	88			5.0		32.6		1.4	0.7	12,787	0.4
	Large Trucks	1456	12	20	29120	240			35.5		379.9		11.9	7.6	105,179	0.7
					267902	1753			202.0		667.8		38.7	19.7	301,648	18.9
						0.0065442	Estimated Peak Day		8.1		26.7		1.5	0.8		

AWTF Plant site - concrete take-off

	Length		Height or Width		Thick/Depth	Rect. Opening		Circ Open		Volume	Volume
	L1	L2	H1 or W1	H2 or W2	T1 or D1	L	W	Diam			
Element	ft	ft	ft	ft	in	ft	ft	in		CF	CY
1. Diversion Structure A											
Top	10	10	14	14	12	4	4			124.0	4.6
Bottom	10	10	14	14	24					280.0	10.4
Side 1	10	10	28.6	28.6	12			60		266.4	9.9
Side 2	10	10	28.6	28.6	12			60		266.4	9.9
Side 3	14	14	28.6	28.6	12			54		384.5	14.2
Side 4	14	14	28.6	28.6	12					400.4	14.8
1. Diversion Structure B											
Top	10	10	14	14	12	4	4			124.0	4.6
Bottom	10	10	14	14	24					280.0	10.4
Side 1	10	10	28.6	28.6	12			60		266.4	9.9
Side 2	10	10	28.6	28.6	12			60		266.4	9.9
Side 3	14	14	28.6	28.6	12			54		384.5	14.2
Side 4	14	14	28.6	28.6	12					400.4	14.8
1. Diversion Structure C											
Top	10	10	14	14	12	4	4			124.0	4.6
Bottom	10	10	14	14	24					280.0	10.4
Side 1	10	10	28.5	28.5	12			60		265.4	9.8
Side 2	10	10	28.5	28.5	12			60		265.4	9.8
Side 3	14	14	28.5	28.5	12			54		383.1	14.2
Side 4	14	14	28.5	28.5	12					399.0	14.8
2. Influent Pump Station											
Top	25	25	40	40	12					1000.0	37.0
Bottom	25	25	40	40	24					2000.0	74.1
Side 1	25	25	28	28	12					700.0	25.9
Side 2	25	25	28	28	12					700.0	25.9
Side 3	40	40	28	28	12			54		1104.1	40.9
Side 4	40	40	28	28	12			36		1112.9	41.2
Sidewalk	4	4	130	130	4					173.3	6.4
3. Ozone Generator Bldg											
Slab	43	43	39	39	12					1677.0	62.1
Sidewalk	4	4	164	164	4					218.7	8.1
4. Injection Pumps											
Slab	20	20	20	20	12					400.0	14.8
5. Ozone Contactor		from BODR estimate									351.0
6. BioFilter Pumps											
Slab	35	35	15	15	18					787.5	29.2
7. BioFilters		from BODR estimate									1068.0
8. Brine Mix Structures Meter Vault											
Top	12	12	19	19	12	16	5			148.0	5.5
Bottom	12	12	19	19	24					456.0	16.9
Side 1	12	12	29.5	29.5	18					531.0	19.7
Side 2	12	12	29.5	29.5	18					531.0	19.7
Side 3	17	17	29.5	29.5	18			54		728.4	27.0
Side 4	17	17	29.5	29.5	18			54		728.4	27.0
8. Brine Mix Structures - Mixing Vault											
Top	20	20	40	40	12	34	6			596.0	22.1
Bottom	20	20	40	40	24					1600.0	59.3
Side 1	40	40	28	28	18			54		1656.1	61.3
Side 2	40	40	28	28	18					1680.0	62.2
Side 3	16	16	28	28	18			18		669.3	24.8
Side 4	16	16	28	28	18			60		642.5	23.8
Side 5	16	16	28	28	18			60		642.5	23.8
8. Brine Mix Structures Meter Vault 2											
Top	12	12	19	19	12	16	5			148.0	5.5
Bottom	12	12	19	19	24					456.0	16.9
Side 1	12	12	29.5	29.5	18					531.0	19.7
Side 2	12	12	29.5	29.5	18					531.0	19.7
Side 3	17	17	29.5	29.5	18			54		728.4	27.0
Side 4	17	17	29.5	29.5	18			54		728.4	27.0
9. Lab and Control Bldg											
Slab	16	16	25	25	18					600.0	22.2
Sidewalk	4	4	82	82						0.0	0.0
10. Backwash Tank											
Slab	55	55	55	55	24			18		6046.5	223.9
Wall	188.5	188.5	16	16	18					4524.0	167.6
Sidewalk	5	5	190	190	4					316.7	11.7
11. RO Bldg - Main Room											
Slab	130	130	111	111	12					14430.0	534.4
Sidewalk	4	4	371	371	4					494.7	18.3
11. RO Bldg - Electrical Room											
Slab	30	30	55	55	12					1650.0	61.1
Sidewalk	5	5	85	85	4					141.7	5.2
11. RO Bldg - Pump Room											
Slab	25	25	25	25	12					625.0	23.1
Sidewalk	5	5	50	50	4					83.3	3.1
12. Chemicals Bldg											
Slab	82	82	216	216	18					26568.0	984.0
		0		0						0.0	0.0
Curbs	2960	2960	1.87	1.87	12					5535.2	205.0

Curb & Gutter
A = 1.87 SF/LF

Converted R=30 to equivalent square

SVRP Modifications

80AF Pond - Inlet											
Top	10	10	14	14	12	4	4			124.0	4.6
Bottom	10	10	14	14	24					280.0	10.4
Side 1	10	10	30	30	12			60		280.4	10.4
Side 2	10	10	30	30	12			60		280.4	10.4
Side 3	14	14	30	30	12					420.0	15.6
Side 4	14	14	30	30	12					420.0	15.6

80AF Pond - Outlet											
Top	10	10	14	14	12	4	4			124.0	4.6
Bottom	10	10	14	14	24					280.0	10.4
Side 1	10	10	30	30	12			60		280.4	10.4
Side 2	10	10	30	30	12			60		280.4	10.4
Side 3	14	14	30	30	12					420.0	15.6
Side 4	14	14	30	30	12					420.0	15.6
		0		0						0.0	0.0

Blanco Drain F.M. - Receiving Manhole (Cast Around)

Top		0		0						0.0	0.0
Bottom	10	10	10	10	24					200.0	7.4
Side 1	10	10	15	15	12					150.0	5.6
Side 2	10	10	15	15	12			30		145.1	5.4
Side 3	10	10	15	15	12			72		121.7	4.5
Side 4	10	10	15	15	12			72		121.7	4.5
		0		0						0.0	0.0
		0		0						0.0	0.0
		0		0						0.0	0.0
		0		0						0.0	0.0
		0		0						0.0	0.0
		0		0						0.0	0.0
		0		0						0.0	0.0
		0		0						0.0	0.0
		0		0						0.0	0.0

END OF FORMULA RANGE

			AWTF Only	SVRP Only
SUM	94,129	4,905	4,744	133.7
Add 5% for misc. sites		5,150.51	4,981	140
Add 15% for losses/partial trucks		5,923.09	5,729	161
Estimated truckloads		741	717	21

SAPS Diversion Structure - Assumed typical of 4											
Top	10	10	14	14	12	4	4			124.0	4.6
Bottom	10	10	14	14	24					280.0	10.4
Side 1	10	10	20	20	12			72		171.7	6.4
Side 2	10	10	20	20	12			72		171.7	6.4
Side 3	14	14	20	20	12			60		260.4	9.6
Side 4	14	14	20	20	12					280.0	10.4
		0		0						0.0	0.0

47.7 4 190.8

Parshall Flume - 42" pipe											
Top	8	8	14	14	12	4	4			96.0	3.6
Bottom	8	8	14	14	24					224.0	8.3
Side 1	8	8	8	8	12			42		54.4	2.0
Side 2	8	8	8	8	12			42		54.4	2.0
Side 3	14	14	8	8	12					112.0	4.1
Side 4	14	14	8	8	12					112.0	4.1

24.2 1 24.2

Parshall Flume - 30" pipe											
Top	8	8	14	14	12	4	4			96.0	3.6
Bottom	8	8	14	14	24					224.0	8.3
Side 1	8	8	8	8	12			30		59.1	2.2
Side 2	8	8	8	8	12			30		59.1	2.2
Side 3	14	14	8	8	12					112.0	4.1
Side 4	14	14	8	8	12					112.0	4.1

24.5 1 24.5

sums for SAPS	239.5
Add 5% for misc. sites	251
Add 15% for losses/partial trucks	289
Estimated truckloads	37

Injection well site - Assumed typical of 4											
Slab	16	16	24	24	18					576.0	21.3
Sidewalk	4	4	56	56	4					74.7	2.8
Wellhead	8	8	8	8	36			24		182.6	6.8
Wellhead	8	8	8	8	36			18		186.7	6.9
Pedestal	2	2	2	2	24					8.0	0.3
Pedestal	2	2	2	2	24					8.0	0.3
Pedestal	2	2	2	2	24					8.0	0.3
Pedestal	2	2	2	2	24					8.0	0.3
Pedestal	2	2	2	2	24					8.0	0.3
Pedestal	2	2	2	2	24					8.0	0.3
Pedestal	2	2	2	2	24					8.0	0.3

39.8 4 159.4

Add 5% for misc. sites	167
Add 15% for losses/partial trucks	192
Estimated truckloads	25

Perimeter of backwash basin											
Liner ancho	460	460	2.5	2.5	12					1150.0	42.6
		0		0						0.0	0.0
		0		0						0.0	0.0

OPERATIONAL AIR QUALITY ANALYSIS

Illingworth & Rodkin, Inc.

December 2014

Table 2-11

Overview of Electricity Demand (all in megawatt-hours per year)

	Proposed Project Electricity Demand	Applicant-proposed electricity use reductions: Use of VFD motors on AWT and Product Water Pumps	
Source Water Diversion Sites (Source: Vinod Badani, E2 Consulting, October 2014, except as noted)			
Existing MRWPCA Wastewater Collection System Pump Stations (increased pumping for source water collection) (Source: Bob Holden, MRWPCA, October 2014)	1,100		
Proposed Salinas Pump Station Diversions (lighting, SCADA, misc. electricity)	10		
Proposed Salinas Industrial Wastewater Treatment Plant Storage and Recovery Component (pumping, lighting, SCADA, misc. electricity)	224		
Existing Salinas Treatment Facility and Stormwater Operations (reduction of pumping) (Source: Ron Cole, February 2014 modified by MRWPCA staff October 2014)	(1,875)		
Proposed Reclamation Ditch Diversion (pumping, lighting, SCADA, misc. electricity)	250		
Proposed Tembladero Slough Diversion (pumping, lighting, SCADA, misc. electricity)	461		
Proposed Blanco Drain Diversion (pumping, lighting, SCADA, misc. electricity)	731		
Proposed Lake El Estero Diversion (lighting, SCADA, misc. electricity)	10		910
Treatment Facilities at Regional Treatment Plant (Sources: Bob Holden, MRWCPA, and Alex Wesner, SPI, personal communication, October 2014)			
Existing Primary and Secondary Processes (existing on-site cogeneration facility would provide a reduction in this value) (9,900 AFY more wastewater flows through treatment processes)	3,673		
Salinas Valley Reclamation Plant (4,260 AFY more crop irrigation produced)	1,300		11,980
AWT Facility New treatment facilities, not including product water pumping (assumes 3,700 AFY of water production to build drought reserve; demand will be less when Drought Reserve is at full capacity and when Drought Reserve is being used by CSIP)	7,007	793	
Castroville Seawater Intrusion Project Supplemental Wells (Source: Bob Holden, MRWPCA, October 2014)			
Reduction of use of CSIP Supplemental Wells by 4,260 AFY	(1,900)		
Product Water Conveyance (Source: TG Cole, October 2014)			
Pumping of product water to Injection Well Facilities under either option (RUWAP or Coastal)	1,912	18	
Injection Well Facilities (Source: Vinod Badani, E2 Consulting Engineers, October 2014)			
Back-flush of four (4) deep injection wells, lighting, HVAC, meters, instruments, SCADA	147		
CalAm Distribution System Changes (Source: CalAm, 2014)			
Increase by moving 3,500 afy extractions from Carmel River to Seaside Basin wells	630		
TOTAL PROPOSED NEW ELECTRICITY DEMAND	**13,678**	**811**	
Proposed New Electricvity Generation without Cogeneration or VSD	**14,489**		
Proposed New Electricity Generation at Existing Cogen Facility	**2,726**		
Net Proposed New Electricity Demand (in megawatt-hours per year)	**10,952**		

Net Change in CalAm System Operations

less carmel river well extractions	462	kWh/af	
more seaside GW basin well extractions	642	kWh/af	
net increase in electricity by switching the source	**180**	**kWh/af**	
Increase by moving 3,500 afy extractions from Carmel River to Seaside Basin	630,000	kwh/yr	630 mWh/yr

Source: California American Water Company (CalAm), 2014. Proposed Water Portfolio Data plus energy spreadsheet provided to CPUC by John T. Kilpatrick on March 12, 2014.

GHG OPERATIONAL EMISSIONS

Indirect Emissions from Net New Electricity Consumption (including new cogeneration capabilities enabled by source water carbon content)			
GHGs from Electricity Consumption			
GHG	Emission Factor (lb/kWh)	Electricity Consumption kWhr	CO2e* (metric tons)
CO2	0.32800	10,952,043	1,629.44
CH4	0.00003	10,952,043	3.01
N20	0.00001	10,952,043	9.50
		Total =	**1,642**

Indirect Emissions from Project Electricity Consumption (assuming no energy efficiency measures)			
GHGs from Electricity Consumption			
GHG	Emission Factor (lb/kWh)	Electricity Consumption kWhr	CO2e* (metric tons)
CO2	0.32800	14,488,600	2,155.61
CH4	0.00003	14,488,600	3.99
N20	0.00001	14,488,600	12.57
		Total =	**2,172**

Notes: The emission factor for CO2 was obtained from PG&E, 2013. Emission factors for CH4 and N2O are from USEPA, 2012b.
Project baseline and proposed electricity consumption estimates provided by MRWPCA, October 2014.
*Global Warming Potential for CH4 = 21; GWP for N2O = 310 (CCAR, 2009).

California Climate Action Registry (CCAR), 2009. General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009. Tables C.3 and C.6.
Pacific Gas and Electric Company (PG&E), 2013. Greenhouse Gas Emission Factors Info Sheet **for the year 2017**, last revised April, 2013.
USEPA, 2012b. eGRID2012 Version 1.0 Year 2009 GHG Annual Output Emission Rates, 2012.

Project Mobile Sources

On-road Sources	Miles/trip	One way Trips per year	Running Exhaust Emission Factor (pound/mile)			Total Emissions (Metric tons)				Fuel efficiency mpg	Fuel use gal/year
			CO_2	CH_4	N2O	CO_2	CH_4	N2O	CO_2e		
Light duty truck (gas)	10	8,030	0.79	9.96E-05	1.92E-04	28.88	0.00	0.006994084	31.13	15	5,353
Heavy duty truck	25	624	3.61	1.12E-05	1.06E-05	25.54	0.00	7.48795E-05	25.57	5	3,120
					Totals =	**54.43**	**0.00**	**0.007068964**	**56.70**		**8,473**

Notes: Emission factors for mobile sources were derived from EMFAC2011 for the year 2018 (see CalEEMod Emfac 2011 Onroad Emission Factors). It is assumed that 11 employees would each generate two light duty truck trips each per day (22 total one way); 7 days per week (365 days per year), and that there would be six (6) weekly heavy duty truck deliveries or 12 one way trips per week (52 weeks per year).

Total GHG Emissions (metric tons per year of CO2e) =	1,699
Total GHG Emission (based on 2003) =	2,229
% GHG reduction =	**24%**

NOTES:

Treatment of the Agricultural Washwater at the Regional Treatment Plant (where methane is captured) rather than at the Salinas Industrial Wastewater Treatment Facility (where decomposition of organic matter in the wastewater occurs but it is not captured) would also reduce GHG emissions of the project. The project proposes storage and recovery of the water at the SIWTF, and thus some decomposition of organic matter in the ag wash water would still occur at the SIWTF in those waters stored. For this reason, this analysis conservatively does not account for this benefit.

ON-ROAD OPERATIONAL CRITERIA POLLUTANT EMISSIONS

Emission Factors

Vehicle Type	Running Exhaust Emission Factors (pounds/mile)				
	ROG	NOx	PM10	PM2.5	CO
Light duty truck	0.0004	0.0010	1.1E-04	4.9E-05	0.0096
Heavy duty truck	0.0006	0.0207	5.0E-04	3.4E-04	0.0024

Note: derived from EMFAC 2011.
PM10 and PM2.5 emission factors include break and tire wear factors.

Daily Operational Emissions (pounds/day)

Proposed Project*

Vehicle Type	Avg Trips/day	miles/trip	ROG	NOx	PM10	PM2.5	CO
Light duty truck	22	10	0.10	0.22	0.02	0.01	2.11
Heavy duty truck	2	25	0.02	0.88	0.02	0.01	0.10
Total	*24*		*0.12*	*1.11*	*0.05*	*0.03*	*2.21*

Notes: Trips are one-way; assumes 11 employees and 10 truck trips would require 2 trips per day.
Average truck trip length represents from the Santa Clara/San Benito County line (south of Gilroy) down to Seaside.
Daily trip amounts obtained from Bob Holden, MRWPCA, November 2014.