TABLE 3
HANFORD ILA
CONSTRUCTION AND OPERATION EMISSIONS SUMMARY

Construction Engine Emissions

SOURCE	SIZE / GROSS HP	DAILY AMOUNT (1) (hrs or trips)	NUMBER OF DAYS	NUMBER OF UNITS	ONE-WAY DISTANCE (miles)	NO_x EF (2)	NO_x Daily (lbs/day)	NO_x Total (tons)	VOC EF (2)	VOC Daily (lbs/day)	VOC Total (tons)	PM_{10} EF (2)	PM_{10} Daily (lbs/day)	PM_{10} Total (tons)	SO_x EF (2)	SO_x Daily (lbs/day)	SO_x Total (tons)	CO EF (2)	CO Daily (lbs/day)	CO Total (tons)	NOTES
Demolition (190cy)																					
Excavator	84	8	3	1	-	774	14	0.020	64	1.1	0.002	13	0.2	0.0004	58	1.0	0.002	79	1.4	0.002	6
Equipment Delivery Truck	Low boy	1	2	-	30	11.3	1.5	0.001	2.2	0.3	0.0003	0.59	0.08	0.0001	0.31	0.0	0.000	14.0	1.9	0.002	7
Semi-end Dump Trucks	20 ton	3	3	-	100	11.3	15	0.022	2.2	2.9	0.004	0.59	0.8	0.001	0.31	0.4	0.001	14.0	19	0.028	7
Worker Light Truck	Light	2	3	-	30	1.00	0.3	0.0004	0.35	0.1	0.0001	0	0	0	0.06	0.02	0.00002	7.22	1.9	0.0029	7
Maxima and Subtotals (Demolition)							30	0.04		4.4	0.006		1.1	0.002		1.5	0.002		24	0.03	
Pad Construction (270cy)																					
Cement Truck	10 yd3	4	2	-	30	11.3	6.0	0.0060	2.2	1.2	0.0012	0.59	0.3	0.0003	0.31	0.2	0.0002	14.0	7.4	0.0074	7
Gravel Truck	10 yd3	4	1.5	-	30	11.3	6.0	0.0045	2.2	1.2	0.0009	0.59	0.3	0.0002	0.31	0.2	0.0001	14.0	7.4	0.0056	7
Worker Light Truck	Light	2	2	-	30	1.00	0.3	0.0003	0.35	0.1	0.0001	0	0	0	0.06	0.02	0.00002	7.22	1.9	0.0019	7
Maxima and Subtotals (Pad Construction)							12.2	0.01		2.4	0.002		0.62	0.001		0.3	0.0003		16.8	0.01	
Trenching & Utility Installation (350cy)																					
Excavator	84	8	12	1	-	774	14	0.082	64	1.1	0.007	13	0.2	0.001	58	1.0	0.006	79	1.4	0.008	6
Equipment Delivery Truck	Low boy	1	2	-	30	11.3	1.5	0.001	2.2	0.3	0.000	0.59	0.1	0.0001	0.31	0.04	0.00004	14.0	1.9	0.002	7
Worker Light Truck	Light	2	12	-	30	1.00	0.3	0.002	0.35	0.1	0.001	0	0	0	0.06	0.02	0.00010	7.2	1.9	0.011	7
Maxima and Subtotals (Trenching and Utility Installation)							15	0.08		1.5	0.008		0.31	0.0015		1.1	0.006		5.2	0.02	
Shelter Placement																					
Crane	150 ton	8	1	1	-	576	10	0.005	82	1.4	0.001	64	1.1	0.0006	41	0.7	0.0004	1624	29	0.014	8
Equipment Delivery Truck	Low boy	1	1	-	150	11.3	7.4	0.004	2.2	1.5	0.001	0.59	0.4	0.0002	0.31	0.2	0.0001	14.0	9.3	0.005	7
Worker Light Truck	Light	2	1	-	30	1.00	0.3	0.000	0.35	0.1	0.000	0	0	0	0.06	0.02	0.00001	7.2	1.9	0.0010	7
Maxima and Subtotals (Shelter Placement)							18	0.01		3.0	0.001		1.5	0.001		0.9	0.0005		40	0.02	
General Construction Activities																					
Compactor	<25 hp	6	12	1	-	8	0.11	0.0006	227	3.0	0.018	1.4	0.02	0.0001	0	0	0	6350	84	0.504	8
Equipment Delivery Truck	Low boy	1	2	-	30	11.3	1.5	0.0015	2.2	0.3	0.0003	0.59	0.1	0.0001	0.31	0.04	0.00004	14.0	1.9	0.002	7
Construction Generator	<50 hp	8	12	1	-	0.02	0.0003	0.000002	0.002	0.00004	0.0000002	0.001	0.00002	0.0000001	0.002	0.00004	0.0000002	0.01	0.0002	0.000001	8
Water Truck	4500 gal.	1	2	-	30	11.3	1.5	0.001	2.2	0.29	0.0003	0.59	0.08	0.0001	0.31	0.04	0.00004	14.0	1.9	0.002	6
Worker Light Truck	Light	1	18	-	30	1.0	0.13	0.001	0.35	0.05	0.0004	0	0	0	0.06	0.008	0.00007	7.2	1.0	0.009	7
Maxima and Subtotals (General Construction)							3.2	0.005		3.6	0.019		0.2	0.0003		0.090	0.0002		89	0.52	
Maxima and Subtotals, Construction Engine Emissions [3]								0.15			0.04		1.5	0.005		1.5	0.009		89	0.61	
Total Construction Emissions (Fugitive plus exhaust)								0.15			0.04		25	0.16			0.009			0.61	
Construction Thresholds								10 tpy			10 tons VOC/year		80 lb/day			150 lb/day			550 lb/day		
Insignifigant Impact [9]								Yes			Yes		Yes			Yes			Yes		

Construction Fugitive Dust Emissions

SOURCE	DAILY AMOUNT (hours)	DAYS OF ACTIVITY	AREA OF GRADING / TRENCHING	PM_{10} EMISSIONS EF	PM_{10} EMISSIONS (daily lbs)	PM_{10} EMISSIONS (total tons)	NOTES
Demolition	8	3	0.51 acres	39.4 lb/acre-day	20	0.030	12
Access Road Use	8	18	0.23 acres	39.4 lb/acre-day	9.1	0.081	13
Trenching - Cable Installation	8	12	-	0.51 lb/hr	4.1	0.024	
Wind Erosion	24	12	0.53 acres	6.6 lb/acre-day	3.5	0.021	11
Subtotal, Construction Fugitive Emissions [3]					23	0.16	15
Total PM10 Construction Emissions (Engine Exhaust and Fugitive) [3]						0.16	

(Continued)

Operation Emissions [4]

SOURCE	SIZE / GROSS HP	DAILY AMOUNT (hours)	DAYS OF ACTIVITY	NUMBER OF UNITS	ONE-WAY DISTANCE (miles)	NO_x EF (g/hr) [2]	NO_x Daily (lbs/day)	NO_x Annual (tons/year)	VOC EF (g/hr) [2]	VOC Daily (lbs/day)	VOC Annual (tons/year)	PM_{10} EF (g/hr) [2]	PM_{10} Daily (lbs/day)	PM_{10} Annual (tons/year)	SO_x EF (g/hr) [2]	SO_x Daily (lbs/day)	SO_x Annual (tons/year)	CO EF (g/hr) [2]	CO Daily (lbs/day)	CO Annual (tons/year)	NOTES
Emergency Generator	337	0.5	60	1		2,325	2.56	0.08	337	0.37	0.011	135	0.15	0.004	313	0.35	0.010	2,865	3.2	0.09	6,14
	(300 KW)																				
Worker Light Truck	Light	-	60	1	30	1.0	0.13	0.004	0.35	0.05	0.001	0	0	0	0.06	0.01	0.0002	7.2	0.96	0.03	7
Total Operation Emissions [5]							2.70	0.08		0.42	0.013		0.15	0.004		0.35	0.011		4.1	0.12	
Operation Thresholds							Exempt			Exempt			Exempt			Exempt			Exempt		
Insignifigant Impact [10]							Yes			Yes			Yes			Yes			Yes		

'- = Not applicable

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

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

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

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

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

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

(6) Emission factors are from Caterpillar Corp.

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

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

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

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

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

(12) Area to be graded is sum of 115-foot by 66-foot fenced compound and 10-foot wide perimeter band.

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

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

(15) Daily construction fugitive emissions includes the specific activity plus wind erosion.