APPENDIX G:

DATA IN SUPPORT OF AIR QUALITY ANALYSIS

TABLE G-1 Sempra and LRPC Power Plant Emission and Air Modeling Input Data

Parameter	Intergen LRPC Plant			Sempra TDM Plant	
	Value		Source/Basis	Value	Source/Basis
	EBC (1 gas turbine to 1 steam turbine)	EAX (3 gas turbines to 1 steam turbine)			
NO_2 concentration	3.5 ppm	25 ppm no SCR; 2.5 ppm when SCR added	Vendor guarantee; Intergen 2/5/04	2.5 ppm	Vendor guarantee and permit limit; Sempra 1/12/04
NO_2 mass rate	31.08 lb/h (136 tons/yr)	218 lb/h (955 tons/yr) no SCR; 21.8 lb/h when SCR added	Intergen 2/5/04	9.7 kg/h as NO_2 for each unit, 19.4 kg/h (187 tons/yr) for both units	Sempra 2/6/04
	Total: 3000 tons/yr (all 4 units)				
CO concentration	30 ppm	30 ppm	Vendor guarantee	4 ppm	Vendor guarantee and permit limit; Sempra 1/12/04
CO mass rate	166 lb/h (727 tons/yr)	498 lb/h (assume 3 × EBC)	EBC mass rate Sempra; EAX = 3 × EBC	9.4 kg/h for each unit, 18.8 kg/h (181 tons/yr) for both units	Sempra 2/6/04
	Total: 664 lb/h (2908 tons/yr) all 4 units				
PM_{10} mass rate (stacks only)	52.3 lb/h (229 tons/yr)	156.9 lb/h (3 × EBC)	Intergen 2/5/04 EBC); EAX = 3 × EBC	12.3 kg/h for each unit, 24.6 kg/h (237 tons/yr) for both units	Sempra 2/6/04
	Total: 209.2 lb/h (916 tons/yr) all 4 units				
PM_{10} cooling towers	9.4 tons/yr	28.2 tons/yr	Estimate based on Blythe II	18.8 tons/yr	Assume same as Blythe II
	Total: 37.6 tons/yr				
$PM_{2.5}$	Assume same as PM_{10}	Assume same as PM_{10}	Intergen 2/05/04	Assume same as PM_{10}	Sempra 1/30/04
SO_2	0.20 grains/100 SCF, and 0.008% H_2S (by volume)		Intergen 2/5/04	0.20 grains/100 SCF, and 0.008% H_2S (by volume)	Assume same factor as Intergen
VOC	0.02 lb/MMBtu	0.02 lb/MMBtu	Intergen 2/5/04	384 tons/yr (based on 0.02 lb/MMBtu)	Assume same factor as Intergen
NH_3 concentration	10 ppm	5 ppm (when SCR added)	Vendor guarantee	10 ppmv per day	Vendor guarantee; Sempra 1/12/04

TABLE G-1 (Cont.)

Parameter	Intergen LRPC Plant			Sempra TDM Plant	
	Value		Source/Basis		
	EBC (1 gas turbine to 1 steam turbine)	EAX (3 gas turbines to 1 steam turbine)		Value	Source/Basis
NH_3 mass rate	33.8 lb/h (148 tons/yr)	50.7 lb/h (222 tons/yr)	Intergen 2/5/04 EBC; EAX = 3/2 × EBC	276 tons/yr (28.6 kg/h for 8,760 h/yr operation, total for both units)	Sempra 1/12/04
	Total: 85.5 lb/h (370 tons/yr when all 4 units equipped)				
CO_2	296,000 lb/h (1.3 million tons/yr)	888,000 lb/h (3.9 million tons/yr)	Intergen 2/5/04	849 lb/MWh (679.7 MW), or 2.5 million tons/yr (both units)	Sempra 1/12/04
	Total: 5.2 million tons/yr				
Gas consumption	Total for LRPC: 68.5 million MMBtu/yr		Intergen 1/29/04	38.4 million MMBtu/yr	Sempra 1/12/04
Stack height	56 m	56 m	EA	60 m	Sempra 1/12/04
Stack diameter	5.49 m	5.49 m	Intergen 2/5/04	5.79 m	Sempra 1/12/04
Stack flow rate	21.0 m/s	21.0 m/s	Intergen 2/5/04	1,711,200 m^3/h	Sempra 2/6/04
Stack temperature	77°C	77°C	Intergen 2/5/04	85°C	Sempra 1/12/04
Meteorological data	Imperial County		Database	Imperial County	Database

TABLE G-2 Estimated Annual Average Emissions for 2002 in Imperial County

Air Resources Board

2003 Almanac Emission Projection Data

2002 Estimated Annual Average Emissions
IMPERIAL COUNTY

All emissions are represented in Tons per Day and reflect the most current data provided to ARB

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5
FUEL COMBUSTION								
ELECTRIC UTILITIES	0.44	0.05	0.27	1.30	0.04	0.12	0.12	0.12
MANUFACTURING AND INDUSTRIAL	0.10	0.05	0.47	4.38	0.05	0.24	0.24	0.24
FOOD AND AGRICULTURAL PROCESSING	0.00	0.00	0.06	0.51	0.01	0.06	0.02	0.01
SERVICE AND COMMERCIAL	0.05	0.02	0.13	0.67	0.00	0.07	0.07	0.07
OTHER (FUEL COMBUSTION)	0.02	0.01	0.12	0.16	0.00	0.01	0.01	0.01
*** TOTAL FUEL COMBUSTION**	**0.61**	**0.14**	**1.05**	**7.01**	**0.11**	**0.50**	**0.46**	**0.45**
WASTE DISPOSAL								
OTHER (WASTE DISPOSAL)	0.02	0.02	-	-	-	-	-	-
*** TOTAL WASTE DISPOSAL**	**0.02**	**0.02**	-	-	-	-	-	-
CLEANING AND SURFACE COATINGS								
LAUNDERING	0.04	0.01	-	-	-	-	-	-
DEGREASING	0.23	0.20	-	-	-	-	-	-
COATINGS AND RELATED PROCESS SOLVENTS	0.88	0.84	-	-	-	-	-	-
ADHESIVES AND SEALANTS	0.07	0.06	-	-	-	-	-	-
*** TOTAL CLEANING AND SURFACE COATINGS**	**1.22**	**1.11**	-	-	-	-	-	-
PETROLEUM PRODUCTION AND MARKETING								
PETROLEUM REFINING	0.00	0.00	-	-	-	-	-	-
PETROLEUM MARKETING	0.55	0.54	-	0.00	-	-	-	-
OTHER (PETROLEUM PRODUCTION AND MARKETING)	0.01	0.01	-	-	-	-	-	-
*** TOTAL PETROLEUM PRODUCTION AND MARKETING**	**0.56**	**0.55**	-	**0.00**	-	-	-	-
INDUSTRIAL PROCESSES								

TABLE G-2 (Cont.)

FOOD AND AGRICULTURE	-	-	-	0.00	-	0.48	0.17	0.02
MINERAL PROCESSES	0.01	0.01	0.05	0.05	0.07	4.91	2.02	1.02
METAL PROCESSES	-	-	-	-	-	0.00	0.00	-
OTHER (INDUSTRIAL PROCESSES)	0.07	0.06	0.02	0.02	0.02	0.00	0.00	0.00
*** TOTAL INDUSTRIAL PROCESSES**	**0.08**	**0.08**	**0.07**	**0.07**	**0.09**	**5.39**	**2.19**	**1.04**
**** TOTAL STATIONARY SOURCES**	**2.49**	**1.90**	**1.12**	**7.09**	**0.19**	**5.89**	**2.65**	**1.49**
AREA-WIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**
SOLVENT EVAPORATION								
CONSUMER PRODUCTS	1.50	1.25	-	-	-	-	-	-
ARCHITECTURAL COATINGS AND RELATED PROCESS SOLVENTS	0.60	0.58	-	-	-	-	-	-
PESTICIDES/FERTILIZERS	2.01	2.01	-	-	-	-	-	-
ASPHALT PAVING / ROOFING	1.69	1.69	-	-	-	-	-	-
*** TOTAL SOLVENT EVAPORATION**	**5.80**	**5.53**	-	-	-	-	-	-
MISCELLANEOUS PROCESSES								
RESIDENTIAL FUEL COMBUSTION	0.09	0.04	0.63	0.10	0.00	0.09	0.09	0.08
FARMING OPERATIONS	-	-	-	-	-	26.88	12.54	2.15
CONSTRUCTION AND DEMOLITION	-	-	-	-	-	3.79	1.86	0.39
PAVED ROAD DUST	-	-	-	-	-	8.49	3.88	0.66
UNPAVED ROAD DUST	-	-	-	-	-	65.20	38.75	8.22
FUGITIVE WINDBLOWN DUST	-	-	-	-	-	325.06	166.38	36.11
FIRES	0.00	0.00	0.03	0.00	-	0.00	0.00	0.00
WASTE BURNING AND DISPOSAL	2.13	1.08	11.99	0.28	0.03	2.21	2.18	2.07
COOKING	0.03	0.02	-	-	-	0.08	0.06	0.03
*** TOTAL MISCELLANEOUS PROCESSES**	**2.24**	**1.14**	**12.65**	**0.38**	**0.03**	**431.81**	**225.73**	**49.71**
**** TOTAL AREA-WIDE SOURCES**	**8.05**	**6.66**	**12.65**	**0.38**	**0.03**	**431.81**	**225.73**	**49.71**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**
ON-ROAD MOTOR VEHICLES								
LIGHT DUTY PASSENGER (LDA)	3.75	3.44	31.12	2.92	0.01	0.08	0.08	0.05
LIGHT DUTY TRUCKS - 1 (LDT1)	1.63	1.51	16.16	1.41	0.01	0.03	0.03	0.02
LIGHT DUTY TRUCKS - 2 (LDT2)	1.16	1.06	11.32	1.21	0.00	0.03	0.03	0.02
MEDIUM DUTY TRUCKS (MDV)	0.49	0.45	4.69	0.53	0.00	0.01	0.01	0.01
LIGHT HEAVY DUTY GAS TRUCKS - 1 (LHDV1)	0.23	0.21	1.39	0.12	0.00	0.00	0.00	0.00
LIGHT HEAVY DUTY GAS TRUCKS - 2 (LHDV2)	0.03	0.03	0.24	0.04	-	-	-	-
MEDIUM HEAVY DUTY GAS TRUCKS (MHDV)	0.38	0.35	2.73	0.20	-	-	-	-
HEAVY HEAVY DUTY GAS TRUCKS (HHDV)	0.21	0.19	2.83	0.35	-	-	-	-
LIGHT HEAVY DUTY DIESEL TRUCKS - 1 (LHDV1)	0.01	0.01	0.02	0.14	0.00	0.00	0.00	0.00

TABLE G-2 (Cont.)

LIGHT HEAVY DUTY DIESEL TRUCKS - 2 (LHDV2)	0.01	0.00	0.01	0.07	-	0.00	0.00	0.00
MEDIUM HEAVY DUTY DIESEL TRUCKS (MHDV)	0.02	0.02	0.14	0.65	0.01	0.02	0.02	0.02
HEAVY HEAVY DUTY DIESEL TRUCKS (HHDV)	0.41	0.36	1.66	6.36	0.06	0.19	0.19	0.17
MOTORCYCLES (MCY)	0.08	0.07	0.44	0.01	-	-	-	-
HEAVY DUTY DIESEL URBAN BUSES (UB)	0.01	0.01	0.04	0.20	0.00	0.00	0.00	0.00
HEAVY DUTY GAS URBAN BUSES (UB)	0.20	0.17	1.83	0.13	-	-	-	-
SCHOOL BUSES (SB)	0.03	0.03	0.41	0.08	0.00	0.00	0.00	0.00
MOTOR HOMES (MH)	0.08	0.07	1.76	0.11	-	-	-	-
*** TOTAL ON-ROAD MOTOR VEHICLES**	**8.71**	**7.97**	**76.79**	**14.53**	**0.10**	**0.38**	**0.38**	**0.29**
OTHER MOBILE SOURCES								
AIRCRAFT	2.55	2.28	8.39	1.75	0.26	0.16	0.16	0.16
TRAINS	0.29	0.26	0.92	5.47	0.34	0.16	0.16	0.15
RECREATIONAL BOATS	0.43	0.40	4.56	0.20	0.00	0.02	0.02	0.01
OFF-ROAD RECREATIONAL VEHICLES	0.10	0.10	1.21	0.03	0.00	0.00	0.00	0.00
OFF-ROAD EQUIPMENT	0.49	0.44	4.62	1.65	0.00	0.11	0.11	0.10
FARM EQUIPMENT	0.37	0.33	2.26	2.39	0.00	0.16	0.16	0.14
FUEL STORAGE AND HANDLING	0.29	0.29	-	-	-	-	-	-
*** TOTAL OTHER MOBILE SOURCES**	**4.53**	**4.09**	**21.96**	**11.50**	**0.61**	**0.62**	**0.61**	**0.57**
**** TOTAL MOBILE SOURCES**	**13.24**	**12.05**	**98.75**	**26.03**	**0.71**	**1.00**	**0.98**	**0.85**
GRAND TOTAL FOR IMPERIAL	**23.78**	**20.62**	**112.52**	**33.49**	**0.94**	**438.69**	**229.37**	**52.06**

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http://www.arb.ca.gov/app/emsinv/emssumcat_query.php?F_DIV=0&F_DD=Y&F_YR=2002&F_SEASON=A&SP=2003f&F_AREA=CO&F_CO=13

TABLE G-3 Summary of Regional Emissions Inventories in Mexico[1]

Inventory Area	Base Year	Source Types	Emissions Estimates (Mg/Year)				
			NO_x	SO_x	HC[a]	CO	PM_{10}
ZMVM (GDF, 2001)	1998	Point	26,988	12,442	23,980	9,213	3,093
		Area	9,866	5,354	247,599	25,960	1,678
		Motor Vehicles	165,838	4,670	187,773	1,733,663	7,133
		Natural	3,193		15,669		7,985
		Total	**205,885**	**22,466**	**475,021**	**1,768,836**	**19,889**
Guadalajara (GJ, 1997)	1995	Point	3,148	5,506	4,269	1,322	1,595
		Area	218	118	57,248	729	40
		Motor Vehicles	33,820	2,461	82,318	895,991	5,845
		Natural					294,304
		Total	**37,186**	**8,085**	**143,835**	**898,042**	**301,784[b]**
Monterrey (GNL, 1997)	1995	Point	18,549	27,997	5,578	3,281	45,946
		Area	458		36,660	8	16
		Motor Vehicles	34,268	2,469	83,137	904,473	5,941
		Natural					763,725
		Total	**53,275**	**30,466**	**125,375**	**907,762**	**815,628[b]**
Ciudad Juarez (GCh, 1998)	1996	Point	1,393	716	2,395	861	210
		Area	802	1,834	19,244	2,055	281
		Motor Vehicles	23,920	1,596	54,493	449,844	1,020
		Natural					45,096
		Total	**26,115**	**4,146**	**76,132**	**452,760**	**46,607[b]**
Toluca (GM, 1997)	1996	Point	2,188	8,667	3,406	203	1,253
		Area	62	206	16,108	159	15
		Motor Vehicles	19,139	1,649	26,967	268,380	2,396
		Natural					119,711
		Total	**21,389**	**10,522**	**46,481**	**268,742**	**123,375**
Mexicali (GBC, 1999)	1996	Point	1,537	2,849	1,407	4,721	1,994
		Area	735	11	15,379	18,944	61,932
		Motor Vehicles	14,927	937	31,184	243,073	515
		Natural	1,348		3,441		20,548
		Total	**18,547**	**3,797**	**51,411**	**266,738**	**84,989**
Tijuana (GBC, 2000)	1998	Point	3,501	21,633	8,329	617	3,299
		Area	1,649	7,626	31,304	17,157	23,563
		Motor Vehicles	23,501	949	36,908	281,917	1,214
		Natural	145		1,195		1,273
		Total	**28,796**	**30,208**	**77,736**	**299,691**	**29,349**

[a] Emissions are reported as hydrocarbon (HC) except for Tijuana which are reported as total organic gases (TOG).

[b] Emissions are reported as total suspended particulate (TSP).

ZMVM = Zona Metropolitana del Valle de México

[1] Source: Table 8-2, Mexico National Emissions Inventory, Draft 1999.