
APPENDIX D

URBEMIS RESULTS

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name:

Project Name: Rogge 1500 student run June 22

Project Location: Monterey Bay Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2007 TOTALS (tons/year unmitigated)	0.06	0.47	0.26	0.00	2.15	0.03	2.17	0.45	0.02	0.47	36.55
2008 TOTALS (tons/year unmitigated)	1.92	1.93	2.48	0.00	0.88	0.13	1.01	0.18	0.12	0.30	241.63

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.18	0.24	0.34	0.00	0.00	0.00	292.40

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	4.30	4.80	35.67	0.02	4.53	0.91	2,496.54

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	4.48	5.04	36.01	0.02	4.53	0.91	2,788.94

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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2008	1.92	1.93	2.48	0.00	0.88	0.13	1.01	0.18	0.12	0.30	241.63
Asphalt 12/28/2007-01/11/2008	0.03	0.10	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	9.05
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.07	0.04	0.00	0.00	0.01	0.01	0.00	0.01	0.01	5.09
Paving On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.95
Fine Grading 11/30/2007-01/11/2008	0.02	0.17	0.10	0.00	0.88	0.01	0.89	0.18	0.01	0.19	14.13
Fine Grading Dust	0.00	0.00	0.00	0.00	0.88	0.00	0.88	0.18	0.00	0.18	0.00
Fine Grading Off Road Diesel	0.02	0.17	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.53
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59
Building 01/11/2008-08/22/2008	0.39	1.65	2.29	0.00	0.00	0.11	0.12	0.00	0.10	0.11	216.64
Building Off Road Diesel	0.33	1.47	0.95	0.00	0.00	0.11	0.11	0.00	0.10	0.10	130.51
Building Vendor Trips	0.01	0.08	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.97
Building Worker Trips	0.06	0.11	1.27	0.00	0.00	0.00	0.01	0.00	0.00	0.00	75.16
Coating 08/08/2008-09/05/2008	1.48	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.82
Architectural Coating	1.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.82

Phase Assumptions

Phase: Fine Grading 11/30/2007 - 1/11/2008 - Default Fine Site Grading Description

Total Acres Disturbed: 39

Maximum Daily Acreage Disturbed: 9.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

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On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
- 2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2007 - 1/11/2008 - Default Paving Description

Acres to be Paved: 9.75

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 1/11/2008 - 8/22/2008 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 8/8/2008 - 9/5/2008 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 100

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.02	0.24	0.20	0.00	0.00	0.00	292.15
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.01	0.00	0.14	0.00	0.00	0.00	0.25
Consumer Products	0.00						
Architectural Coatings	0.15						
TOTALS (tons/year, unmitigated)	0.18	0.24	0.34	0.00	0.00	0.00	292.40

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
High school	4.30	4.80	35.67	0.02	4.53	0.91	2,496.54
TOTALS (tons/year, unmitigated)	4.30	4.80	35.67	0.02	4.53	0.91	2,496.54

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

<u>Summary of Land Uses</u>						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
High school		1.85	students	1,500.00	2,775.00	14,263.50
					2,775.00	14,263.50

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	44.2	0.9	98.6	0.5
Light Truck < 3750 lbs	17.2	1.7	93.6	4.7
Light Truck 3751-5750 lbs	20.1	0.5	99.0	0.5
Med Truck 5751-8500 lbs	8.4	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.4	0.0	71.4	28.6
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.2	0.0	16.7	83.3
Heavy-Heavy Truck 33,001-60,000 lbs	0.7	0.0	0.0	100.0
Other Bus	0.1	0.0	100.0	0.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	4.5	60.0	40.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.1	0.0	90.9	9.1

<u>Travel Conditions</u>						
	Residential			Commute	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	11.8	8.3	7.1	11.8	4.4	4.4

	<u>Travel Conditions</u>					
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	11.8	8.3	7.1	11.8	4.4	4.4
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
High school				10.0	5.0	85.0

“No Project” Alternative URBEMIS Run

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name:

Project Name: Rogge Road No Project Alternative Residential

Project Location: Monterey Bay Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2007 TOTALS (tons/year unmitigated)	0.06	0.47	0.26	0.00	2.15	0.03	2.17	0.45	0.02	0.47	36.55
2008 TOTALS (tons/year unmitigated)	4.09	2.49	6.43	0.00	0.89	0.15	1.04	0.19	0.14	0.33	498.93

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	4.61	0.71	9.28	0.02	1.28	1.23	913.10

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	3.94	5.94	44.25	0.03	5.96	1.19	3,277.10

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	8.55	6.65	53.53	0.05	7.24	2.42	4,190.20

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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2008	4.09	2.49	6.43	0.00	0.89	0.15	1.04	0.19	0.14	0.33	498.93
Asphalt 12/28/2007-01/11/2008	0.03	0.10	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	9.05
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.07	0.04	0.00	0.00	0.01	0.01	0.00	0.01	0.01	5.09
Paving On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.95
Fine Grading 11/30/2007-01/11/2008	0.02	0.17	0.10	0.00	0.88	0.01	0.89	0.18	0.01	0.19	14.13
Fine Grading Dust	0.00	0.00	0.00	0.00	0.88	0.00	0.88	0.18	0.00	0.18	0.00
Fine Grading Off Road Diesel	0.02	0.17	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.53
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59
Building 01/11/2008-08/22/2008	0.57	2.21	6.14	0.00	0.02	0.13	0.15	0.01	0.12	0.13	468.16
Building Off Road Diesel	0.33	1.47	0.95	0.00	0.00	0.11	0.11	0.00	0.10	0.10	130.51
Building Vendor Trips	0.03	0.33	0.29	0.00	0.00	0.01	0.01	0.00	0.01	0.01	46.60
Building Worker Trips	0.21	0.41	4.91	0.00	0.02	0.01	0.03	0.01	0.01	0.02	291.06
Coating 08/08/2008-09/05/2008	3.47	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.60
Architectural Coating	3.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.60

Phase Assumptions

Phase: Fine Grading 11/30/2007 - 1/11/2008 - Default Fine Site Grading Description

Total Acres Disturbed: 39

Maximum Daily Acreage Disturbed: 9.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

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On Road Truck Travel (VMT): 0

Off-Road Equipment:

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- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2007 - 1/11/2008 - Default Paving Description

Acres to be Paved: 9.75

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 1/11/2008 - 8/22/2008 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
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- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 8/8/2008 - 9/5/2008 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 100

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.04	0.55	0.23	0.00	0.00	0.00	703.74
Hearth	1.77	0.15	8.03	0.02	1.28	1.23	207.69
Landscape	0.17	0.01	1.02	0.00	0.00	0.00	1.67
Consumer Products	2.28						
Architectural Coatings	0.35						
TOTALS (tons/year, unmitigated)	4.61	0.71	9.28	0.02	1.28	1.23	913.10

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Single family housing	3.34	5.04	37.53	0.03	5.05	1.01	2,779.15
Apartments low rise	0.60	0.90	6.72	0.00	0.91	0.18	497.95
TOTALS (tons/year, unmitigated)	3.94	5.94	44.25	0.03	5.96	1.19	3,277.10

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

<u>Summary of Land Uses</u>						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	30.00	8.16	dwelling units	220.00	1,795.20	15,909.60
Apartments low rise	9.00	9.19	dwelling units	35.00	321.65	2,850.56
					2,116.85	18,760.16

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	44.2	0.9	98.6	0.5
Light Truck < 3750 lbs	17.2	1.7	93.6	4.7
Light Truck 3751-5750 lbs	20.1	0.5	99.0	0.5
Med Truck 5751-8500 lbs	8.4	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.4	0.0	71.4	28.6
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.2	0.0	16.7	83.3
Heavy-Heavy Truck 33,001-60,000 lbs	0.7	0.0	0.0	100.0
Other Bus	0.1	0.0	100.0	0.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	4.5	60.0	40.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.1	0.0	90.9	9.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	8.3	7.1	11.8	4.4	4.4
Rural Trip Length (miles)	11.8	8.3	7.1	11.8	4.4	4.4
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)