

APPENDIX D

Air Quality Emissions Calculations

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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)	0.13	0.01	0.32	0.00	0.02	0.02	21.51
TOTALS (tons/year, mitigated)	0.13	0.01	0.32	0.00	0.02	0.02	21.51
Percent Reduction	0.00	0.00	0.00	NaN	0.00	0.00	0.00

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)	0.39	0.56	4.49	0.00	0.65	0.13	328.93

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)	0.52	0.57	4.81	0.00	0.67	0.15	350.44

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

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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2011	0.94	6.61	4.30	0.00	15.35	0.40	15.74	3.21	0.36	3.57	682.11
Fine Grading 03/30/2011-03/30/2012	0.39	3.15	1.88	0.00	15.35	0.17	15.51	3.20	0.15	3.36	313.46
Fine Grading Dust	0.00	0.00	0.00	0.00	15.35	0.00	15.35	3.20	0.00	3.20	0.00
Fine Grading Off Road Diesel	0.39	3.13	1.67	0.00	0.00	0.17	0.17	0.00	0.15	0.15	297.74
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	0.01	0.02	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.72
Trenching 03/30/2011-03/30/2012	0.20	1.64	0.97	0.00	0.00	0.08	0.08	0.00	0.08	0.08	182.33
Trenching Off Road Diesel	0.19	1.63	0.80	0.00	0.00	0.08	0.08	0.00	0.07	0.07	169.75
Trenching Worker Trips	0.01	0.01	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.58
Asphalt 06/02/2011-06/28/2013	0.19	1.11	0.89	0.00	0.00	0.09	0.10	0.00	0.09	0.09	107.10
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.18	1.08	0.62	0.00	0.00	0.09	0.09	0.00	0.09	0.09	86.03
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76
Paving Worker Trips	0.01	0.02	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.31
Building 08/28/2011-10/28/2013	0.16	0.72	0.56	0.00	0.00	0.05	0.05	0.00	0.05	0.05	79.21
Building Off Road Diesel	0.15	0.71	0.49	0.00	0.00	0.05	0.05	0.00	0.05	0.05	72.95
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32
Building Worker Trips	0.00	0.01	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.94
2012	0.97	5.24	3.95	0.00	5.04	0.36	5.41	1.05	0.34	1.39	576.47

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2013	0.56	2.37	1.96	0.00	0.00	0.17	0.17	0.00	0.16	0.16	280.27
Asphalt 06/02/2011-06/28/2013	0.15	0.85	0.71	0.00	0.00	0.07	0.07	0.00	0.07	0.07	90.89
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.14	0.83	0.52	0.00	0.00	0.07	0.07	0.00	0.06	0.06	73.01
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50
Paving Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.39
Building 08/28/2011-10/28/2013	0.32	1.52	1.24	0.00	0.00	0.10	0.10	0.00	0.09	0.09	189.23
Building Off Road Diesel	0.31	1.49	1.10	0.00	0.00	0.10	0.10	0.00	0.09	0.09	174.28
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.15
Building Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.80
Coating 06/01/2012-12/01/2013	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
Architectural Coating	0.10	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14

Phase Assumptions

- Phase: Fine Grading 3/30/2011 - 3/30/2012 - Grading
- Total Acres Disturbed: 31
- Maximum Daily Acreage Disturbed: 7.75
- Fugitive Dust Level of Detail: Default
- 20 lbs per acre-day
- 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

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Phase: Trenching 3/30/2011 - 3/30/2012 - Trenching

Off-Road Equipment:

- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 6/2/2011 - 6/28/2013 - Paving

Acres to be Paved: 7.75

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 8/28/2011 - 10/28/2013 - Building Construction

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 6/1/2012 - 12/1/2013 - Architectural Coating

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

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

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2013	0.52	2.37	1.96	0.00	0.00	0.17	0.17	0.00	0.16	0.16	280.27
Asphalt 06/02/2011-06/28/2013	0.15	0.85	0.71	0.00	0.00	0.07	0.07	0.00	0.07	0.07	90.89
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.14	0.83	0.52	0.00	0.00	0.07	0.07	0.00	0.06	0.06	73.01
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50
Paving Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.39
Building 08/28/2011-10/28/2013	0.32	1.52	1.24	0.00	0.00	0.10	0.10	0.00	0.09	0.09	189.23
Building Off Road Diesel	0.31	1.49	1.10	0.00	0.00	0.10	0.10	0.00	0.09	0.09	174.28
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.15
Building Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.80
Coating 06/01/2012-12/01/2013	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
Architectural Coating	0.06	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 3/30/2011 - 3/30/2012 - Grading

For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

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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	0.00	0.01	0.01	0.00	0.00	0.00	17.52
Hearth	0.04	0.00	0.15	0.00	0.02	0.02	3.70
Landscape	0.02	0.00	0.16	0.00	0.00	0.00	0.29
Consumer Products	0.05						
Architectural Coatings	0.02						
TOTALS (tons/year, unmitigated)	0.13	0.01	0.32	0.00	0.02	0.02	21.51

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

<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	0.00	0.01	0.01	0.00	0.00	0.00	17.52
Hearth	0.04	0.00	0.15	0.00	0.02	0.02	3.70
Landscape	0.02	0.00	0.16	0.00	0.00	0.00	0.29
Consumer Products	0.05						
Architectural Coatings	0.02						
TOTALS (tons/year, mitigated)	0.13	0.01	0.32	0.00	0.02	0.02	21.51

Area Source Mitigation Measures Selected

Mitigation Description

Percent Reduction

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.19	0.29	2.35	0.00	0.34	0.07	172.90
Public Access Parking Lot	0.20	0.27	2.14	0.00	0.31	0.06	156.03
TOTALS (tons/year, unmitigated)	0.39	0.56	4.49	0.00	0.65	0.13	328.93

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	30.00	12.00	dwelling units	6.00	72.00	1,080.00
Public Access Parking Lot		3.26	unknown	30.00	97.80	978.00
					169.80	2,058.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	46.3	1.3	98.3	0.4
Light Truck < 3750 lbs	16.6	1.8	94.6	3.6
Light Truck 3751-5750 lbs	20.4	1.0	98.5	0.5
Med Truck 5751-8500 lbs	7.5	0.0	100.0	0.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Lite-Heavy Truck 8501-10,000 lbs	1.5	0.0	73.3	26.7
Lite-Heavy Truck 10,001-14,000 lbs	1.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	1.1	0.0	27.3	72.7
Heavy-Heavy Truck 33,001-60,000 lbs	0.3	0.0	33.3	66.7
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.7	62.2	37.8	0.0
School Bus	0.2	0.0	0.0	100.0
Motor Home	1.2	8.3	83.4	8.3

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	9.9	5.6	6.1	5.7	4.1	5.7
Rural Trip Length (miles)	15.0	15.0	15.0	15.0	10.0	10.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Public Access Parking Lot	0.0	0.0	100.0
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Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\GROUP\Permitting\Case Files\TPM\05 cases\05TPM-00000-00002 Las Varas (14,664)\CEQA\ADEIR\urbemis assessment 2010.urb924

Project Name: Las Varas Ranch

Project Location: Santa Barbara County APCD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
2011 TOTALS (lbs/day unmitigated)	11.97	78.85	52.90	0.01	155.04	4.91	159.95	32.38	4.51	36.90	8,177.60
2011 TOTALS (lbs/day mitigated)	11.97	78.85	52.90	0.01	35.18	4.91	40.09	7.35	4.51	11.87	8,177.60
2012 TOTALS (lbs/day unmitigated)	11.23	74.05	51.18	0.01	155.04	4.50	159.54	32.38	4.14	36.53	8,177.49
2012 TOTALS (lbs/day mitigated)	11.23	74.05	51.18	0.01	35.18	4.50	39.69	7.35	4.14	11.50	8,177.49
2013 TOTALS (lbs/day unmitigated)	5.98	27.31	22.62	0.00	0.02	2.04	2.06	0.01	1.88	1.88	3,170.67
2013 TOTALS (lbs/day mitigated)	5.67	27.31	22.62	0.00	0.02	2.04	2.06	0.01	1.88	1.88	3,170.67

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 (lbs/day, unmitigated)	0.56	0.10	1.84	0.00	0.01	0.01	99.22

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TOTALS (lbs/day, mitigated)	0.56	0.10	1.84	0.00	0.01	0.01	99.22
Percent Reduction	0.00	0.00	0.00	NaN	0.00	0.00	0.00

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 (lbs/day, unmitigated)	2.08	2.86	24.43	0.02	3.54	0.68	1,835.21

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 (lbs/day, unmitigated)	2.64	2.96	26.27	0.02	3.55	0.69	1,934.43

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, 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>
Time Slice 3/30/2011-6/1/2011 Active Days: 46	6.00	48.33	28.78	0.00	155.02	2.51	157.53	32.38	2.31	34.69	5,008.01
Fine Grading 03/30/2011-03/30/2012	3.99	31.77	18.98	0.00	155.01	1.69	156.70	32.37	1.55	33.93	3,166.31
Fine Grading Dust	0.00	0.00	0.00	0.00	155.00	0.00	155.00	32.37	0.00	32.37	0.00
Fine Grading Off Road Diesel	3.91	31.61	16.82	0.00	0.00	1.68	1.68	0.00	1.55	1.55	3,007.48
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	0.08	0.17	2.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	158.83
Trenching 03/30/2011-03/30/2012	2.01	16.56	9.80	0.00	0.01	0.83	0.83	0.00	0.76	0.76	1,841.70
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.06	0.13	1.72	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.06

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Time Slice 6/2/2011-8/26/2011 Active Days: 62	8.52	62.92	40.45	0.01	155.03	3.76	158.79	32.38	3.46	35.84	6,417.28
Asphalt 06/02/2011-06/28/2013	2.52	14.59	11.67	0.00	0.01	1.25	1.26	0.01	1.15	1.15	1,409.26
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.17	8.17	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,131.92
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.01	23.22
Paving Worker Trips	0.13	0.27	3.45	0.00	0.01	0.01	0.02	0.01	0.01	0.01	254.13
Fine Grading 03/30/2011- 03/30/2012	3.99	31.77	18.98	0.00	155.01	1.69	156.70	32.37	1.55	33.93	3,166.31
Fine Grading Dust	0.00	0.00	0.00	0.00	155.00	0.00	155.00	32.37	0.00	32.37	0.00
Fine Grading Off Road Diesel	3.91	31.61	16.82	0.00	0.00	1.68	1.68	0.00	1.55	1.55	3,007.48
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	0.08	0.17	2.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	158.83
Trenching 03/30/2011-03/30/2012	2.01	16.56	9.80	0.00	0.01	0.83	0.83	0.00	0.76	0.76	1,841.70
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.06	0.13	1.72	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.06

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Time Slice 8/29/2011-12/30/2011	<u>11.97</u>	<u>78.85</u>	<u>52.90</u>	<u>0.01</u>	<u>155.04</u>	<u>4.91</u>	<u>159.95</u>	<u>32.38</u>	<u>4.51</u>	<u>36.90</u>	<u>8,177.60</u>
Active Days: 90											
Asphalt 06/02/2011-06/28/2013	2.52	14.59	11.67	0.00	0.01	1.25	1.26	0.01	1.15	1.15	1,409.26
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.17	8.17	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,131.92
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.01	23.22
Paving Worker Trips	0.13	0.27	3.45	0.00	0.01	0.01	0.02	0.01	0.01	0.01	254.13
Building 08/28/2011-10/28/2013	3.45	15.94	12.45	0.00	0.01	1.15	1.15	0.00	1.05	1.06	1,760.32
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.01	0.15	0.12	0.00	0.00	0.01	0.01	0.00	0.00	0.01	29.34
Building Worker Trips	0.06	0.12	1.49	0.00	0.01	0.00	0.01	0.00	0.00	0.01	109.78
Fine Grading 03/30/2011-03/30/2012	3.99	31.77	18.98	0.00	155.01	1.69	156.70	32.37	1.55	33.93	3,166.31
Fine Grading Dust	0.00	0.00	0.00	0.00	155.00	0.00	155.00	32.37	0.00	32.37	0.00
Fine Grading Off Road Diesel	3.91	31.61	16.82	0.00	0.00	1.68	1.68	0.00	1.55	1.55	3,007.48
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	0.08	0.17	2.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	158.83
Trenching 03/30/2011-03/30/2012	2.01	16.56	9.80	0.00	0.01	0.83	0.83	0.00	0.76	0.76	1,841.70
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.06	0.13	1.72	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.06

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Time Slice 1/2/2012-3/30/2012	<u>11.23</u>	<u>74.05</u>	<u>51.18</u>	<u>0.01</u>	<u>155.04</u>	<u>4.50</u>	<u>159.54</u>	<u>32.38</u>	<u>4.14</u>	<u>36.53</u>	<u>8,177.49</u>
Active Days: 65											
Asphalt 06/02/2011-06/28/2013	2.39	13.87	11.33	0.00	0.01	1.18	1.19	0.01	1.09	1.09	1,409.22
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	13.48	8.10	0.00	0.00	1.17	1.17	0.00	1.07	1.07	1,131.92
Paving On Road Diesel	0.01	0.14	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	23.22
Paving Worker Trips	0.12	0.25	3.20	0.00	0.01	0.01	0.02	0.01	0.01	0.01	254.09
Building 08/28/2011-10/28/2013	3.20	15.05	12.01	0.00	0.01	1.04	1.05	0.00	0.96	0.96	1,760.30
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.01	0.13	0.11	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.34
Building Worker Trips	0.05	0.11	1.38	0.00	0.01	0.00	0.01	0.00	0.00	0.01	109.76
Fine Grading 03/30/2011-03/30/2012	3.78	29.77	18.23	0.00	155.01	1.54	156.55	32.37	1.42	33.79	3,166.28
Fine Grading Dust	0.00	0.00	0.00	0.00	155.00	0.00	155.00	32.37	0.00	32.37	0.00
Fine Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42	3,007.48
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	0.07	0.15	2.00	0.00	0.01	0.01	0.01	0.00	0.00	0.01	158.80
Trenching 03/30/2011-03/30/2012	1.86	15.37	9.61	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,841.68
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.06	0.12	1.60	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.04

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Time Slice 10/29/2013-11/29/2013	0.80	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Active Days: 24												
Coating 06/01/2012-12/01/2013	0.80	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Architectural Coating	0.80	0.00	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18

Phase Assumptions

Phase: Fine Grading 3/30/2011 - 3/30/2012 - Grading

Total Acres Disturbed: 31

Maximum Daily Acreage Disturbed: 7.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

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: Trenching 3/30/2011 - 3/30/2012 - Trenching

Off-Road Equipment:

- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 6/2/2011 - 6/28/2013 - Paving

Acres to be Paved: 7.75

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

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- 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 8/28/2011 - 10/28/2013 - Building Construction

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 6/1/2012 - 12/1/2013 - Architectural Coating

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

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

<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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Time Slice 3/30/2011-6/1/2011	6.00	48.33	28.78	0.00	35.16	2.51	37.68	7.35	2.31	9.66	5,008.01
Active Days: 46											
Fine Grading 03/30/2011-03/30/2012	3.99	31.77	18.98	0.00	35.16	1.69	36.84	7.34	1.55	8.90	3,166.31
Fine Grading Dust	0.00	0.00	0.00	0.00	35.15	0.00	35.15	7.34	0.00	7.34	0.00
Fine Grading Off Road Diesel	3.91	31.61	16.82	0.00	0.00	1.68	1.68	0.00	1.55	1.55	3,007.48
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	0.08	0.17	2.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	158.83
Trenching 03/30/2011-03/30/2012	2.01	16.56	9.80	0.00	0.01	0.83	0.83	0.00	0.76	0.76	1,841.70
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.06	0.13	1.72	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.06
Time Slice 6/2/2011-8/26/2011	8.52	62.92	40.45	0.01	35.18	3.76	38.94	7.35	3.46	10.81	6,417.28
Active Days: 62											
Asphalt 06/02/2011-06/28/2013	2.52	14.59	11.67	0.00	0.01	1.25	1.26	0.01	1.15	1.15	1,409.26
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.17	8.17	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,131.92
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.01	23.22
Paving Worker Trips	0.13	0.27	3.45	0.00	0.01	0.01	0.02	0.01	0.01	0.01	254.13
Fine Grading 03/30/2011-03/30/2012	3.99	31.77	18.98	0.00	35.16	1.69	36.84	7.34	1.55	8.90	3,166.31
Fine Grading Dust	0.00	0.00	0.00	0.00	35.15	0.00	35.15	7.34	0.00	7.34	0.00
Fine Grading Off Road Diesel	3.91	31.61	16.82	0.00	0.00	1.68	1.68	0.00	1.55	1.55	3,007.48
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	0.08	0.17	2.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	158.83
Trenching 03/30/2011-03/30/2012	2.01	16.56	9.80	0.00	0.01	0.83	0.83	0.00	0.76	0.76	1,841.70
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.06	0.13	1.72	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.06

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Time Slice 8/29/2011-12/30/2011	<u>11.97</u>	<u>78.85</u>	<u>52.90</u>	<u>0.01</u>	<u>35.18</u>	<u>4.91</u>	<u>40.09</u>	<u>7.35</u>	<u>4.51</u>	<u>11.87</u>	<u>8,177.60</u>
Active Days: 90											
Asphalt 06/02/2011-06/28/2013	2.52	14.59	11.67	0.00	0.01	1.25	1.26	0.01	1.15	1.15	1,409.26
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.17	8.17	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,131.92
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.01	23.22
Paving Worker Trips	0.13	0.27	3.45	0.00	0.01	0.01	0.02	0.01	0.01	0.01	254.13
Building 08/28/2011-10/28/2013	3.45	15.94	12.45	0.00	0.01	1.15	1.15	0.00	1.05	1.06	1,760.32
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.01	0.15	0.12	0.00	0.00	0.01	0.01	0.00	0.00	0.01	29.34
Building Worker Trips	0.06	0.12	1.49	0.00	0.01	0.00	0.01	0.00	0.00	0.01	109.78
Fine Grading 03/30/2011-03/30/2012	3.99	31.77	18.98	0.00	35.16	1.69	36.84	7.34	1.55	8.90	3,166.31
Fine Grading Dust	0.00	0.00	0.00	0.00	35.15	0.00	35.15	7.34	0.00	7.34	0.00
Fine Grading Off Road Diesel	3.91	31.61	16.82	0.00	0.00	1.68	1.68	0.00	1.55	1.55	3,007.48
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	0.08	0.17	2.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	158.83
Trenching 03/30/2011-03/30/2012	2.01	16.56	9.80	0.00	0.01	0.83	0.83	0.00	0.76	0.76	1,841.70
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.06	0.13	1.72	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.06

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Time Slice	<u>11.23</u>	<u>74.05</u>	<u>51.18</u>	<u>0.01</u>	<u>35.18</u>	<u>4.50</u>	<u>39.69</u>	<u>7.35</u>	<u>4.14</u>	<u>11.50</u>	<u>8,177.49</u>
1/2/2012-3/30/2012 Active Days: 65											
Asphalt 06/02/2011-06/28/2013	2.39	13.87	11.33	0.00	0.01	1.18	1.19	0.01	1.09	1.09	1,409.22
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	13.48	8.10	0.00	0.00	1.17	1.17	0.00	1.07	1.07	1,131.92
Paving On Road Diesel	0.01	0.14	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	23.22
Paving Worker Trips	0.12	0.25	3.20	0.00	0.01	0.01	0.02	0.01	0.01	0.01	254.09
Building 08/28/2011-10/28/2013	3.20	15.05	12.01	0.00	0.01	1.04	1.05	0.00	0.96	0.96	1,760.30
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.01	0.13	0.11	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.34
Building Worker Trips	0.05	0.11	1.38	0.00	0.01	0.00	0.01	0.00	0.00	0.01	109.76
Fine Grading 03/30/2011-03/30/2012	3.78	29.77	18.23	0.00	35.16	1.54	36.70	7.34	1.42	8.76	3,166.28
Fine Grading Dust	0.00	0.00	0.00	0.00	35.15	0.00	35.15	7.34	0.00	7.34	0.00
Fine Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42	3,007.48
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	0.07	0.15	2.00	0.00	0.01	0.01	0.01	0.00	0.00	0.01	158.80
Trenching 03/30/2011-03/30/2012	1.86	15.37	9.61	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,841.68
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.06	0.12	1.60	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.04

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Time Slice 10/29/2013-11/29/2013 Active Days: 24	0.49	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Coating 06/01/2012-12/01/2013	0.49	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Architectural Coating	0.49	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 3/30/2011 - 3/30/2012 - Grading

For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, 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	0.01	0.08	0.03	0.00	0.00	0.00	95.98
Hearth - No Summer Emissions							
Landscape	0.17	0.02	1.81	0.00	0.01	0.01	3.24
Consumer Products	0.29						
Architectural Coatings	0.09						
TOTALS (lbs/day, unmitigated)	0.56	0.10	1.84	0.00	0.01	0.01	99.22

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Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

<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	0.01	0.08	0.03	0.00	0.00	0.00	95.98
Hearth - No Summer Emissions							
Landscape	0.17	0.02	1.81	0.00	0.01	0.01	3.24
Consumer Products	0.29						
Architectural Coatings	0.09						
TOTALS (lbs/day, mitigated)	0.56	0.10	1.84	0.00	0.01	0.01	99.22

Area Source Mitigation Measures Selected

Mitigation Description

Percent Reduction

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, 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	0.98	1.48	12.84	0.01	1.86	0.36	964.63
Public Access Parking Lot	1.10	1.38	11.59	0.01	1.68	0.32	870.58
TOTALS (lbs/day, unmitigated)	2.08	2.86	24.43	0.02	3.54	0.68	1,835.21

Operational Settings:

Does not include correction for passby trips

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Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 75 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	30.00	12.00	dwelling units	6.00	72.00	1,080.00
Public Access Parking Lot		3.26	unknown	30.00	97.80	978.00
					169.80	2,058.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	46.3	1.3	98.3	0.4
Light Truck < 3750 lbs	16.6	1.8	94.6	3.6
Light Truck 3751-5750 lbs	20.4	1.0	98.5	0.5
Med Truck 5751-8500 lbs	7.5	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.5	0.0	73.3	26.7
Lite-Heavy Truck 10,001-14,000 lbs	1.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	1.1	0.0	27.3	72.7
Heavy-Heavy Truck 33,001-60,000 lbs	0.3	0.0	33.3	66.7
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.7	62.2	37.8	0.0
School Bus	0.2	0.0	0.0	100.0
Motor Home	1.2	8.3	83.4	8.3

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	9.9	5.6	6.1	5.7	4.1	5.7
Rural Trip Length (miles)	15.0	15.0	15.0	15.0	10.0	10.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Public Access Parking Lot				0.0	0.0	100.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: G:\GROUP\Permitting\Case Files\TPM\05 cases\05TPM-00000-00002 Las Varas (14,664)\CEQA\ADEIR\urbemis assessment 2010.urb924

Project Name: Las Varas Ranch

Project Location: Santa Barbara County APCD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
2011 TOTALS (lbs/day unmitigated)	11.97	78.85	52.90	0.01	155.04	4.91	159.95	32.38	4.51	36.90	8,177.60
2011 TOTALS (lbs/day mitigated)	11.97	78.85	52.90	0.01	35.18	4.91	40.09	7.35	4.51	11.87	8,177.60
2012 TOTALS (lbs/day unmitigated)	11.23	74.05	51.18	0.01	155.04	4.50	159.54	32.38	4.14	36.53	8,177.49
2012 TOTALS (lbs/day mitigated)	11.23	74.05	51.18	0.01	35.18	4.50	39.69	7.35	4.14	11.50	8,177.49
2013 TOTALS (lbs/day unmitigated)	5.98	27.31	22.62	0.00	0.02	2.04	2.06	0.01	1.88	1.88	3,170.67
2013 TOTALS (lbs/day mitigated)	5.67	27.31	22.62	0.00	0.02	2.04	2.06	0.01	1.88	1.88	3,170.67

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 (lbs/day, unmitigated)	1.29	0.17	3.61	0.01	0.57	0.55	220.81

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TOTALS (lbs/day, mitigated)	1.29	0.17	3.61	0.01	0.57	0.55	220.81
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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 (lbs/day, unmitigated)	2.29	3.37	24.98	0.02	3.54	0.68	1,736.62

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 (lbs/day, unmitigated)	3.58	3.54	28.59	0.03	4.11	1.23	1,957.43

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, 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>
Time Slice 3/30/2011-6/1/2011 Active Days: 46	6.00	48.33	28.78	0.00	155.02	2.51	157.53	32.38	2.31	34.69	5,008.01
Fine Grading 03/30/2011-03/30/2012	3.99	31.77	18.98	0.00	155.01	1.69	156.70	32.37	1.55	33.93	3,166.31
Fine Grading Dust	0.00	0.00	0.00	0.00	155.00	0.00	155.00	32.37	0.00	32.37	0.00
Fine Grading Off Road Diesel	3.91	31.61	16.82	0.00	0.00	1.68	1.68	0.00	1.55	1.55	3,007.48
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	0.08	0.17	2.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	158.83
Trenching 03/30/2011-03/30/2012	2.01	16.56	9.80	0.00	0.01	0.83	0.83	0.00	0.76	0.76	1,841.70
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.06	0.13	1.72	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.06

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Time Slice 6/2/2011-8/26/2011 Active Days: 62	8.52	62.92	40.45	0.01	155.03	3.76	158.79	32.38	3.46	35.84	6,417.28
Asphalt 06/02/2011-06/28/2013	2.52	14.59	11.67	0.00	0.01	1.25	1.26	0.01	1.15	1.15	1,409.26
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.17	8.17	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,131.92
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.01	23.22
Paving Worker Trips	0.13	0.27	3.45	0.00	0.01	0.01	0.02	0.01	0.01	0.01	254.13
Fine Grading 03/30/2011- 03/30/2012	3.99	31.77	18.98	0.00	155.01	1.69	156.70	32.37	1.55	33.93	3,166.31
Fine Grading Dust	0.00	0.00	0.00	0.00	155.00	0.00	155.00	32.37	0.00	32.37	0.00
Fine Grading Off Road Diesel	3.91	31.61	16.82	0.00	0.00	1.68	1.68	0.00	1.55	1.55	3,007.48
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	0.08	0.17	2.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	158.83
Trenching 03/30/2011-03/30/2012	2.01	16.56	9.80	0.00	0.01	0.83	0.83	0.00	0.76	0.76	1,841.70
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.06	0.13	1.72	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.06

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Time Slice 8/29/2011-12/30/2011	<u>11.97</u>	<u>78.85</u>	<u>52.90</u>	<u>0.01</u>	<u>155.04</u>	<u>4.91</u>	<u>159.95</u>	<u>32.38</u>	<u>4.51</u>	<u>36.90</u>	<u>8,177.60</u>
Active Days: 90											
Asphalt 06/02/2011-06/28/2013	2.52	14.59	11.67	0.00	0.01	1.25	1.26	0.01	1.15	1.15	1,409.26
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.17	8.17	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,131.92
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.01	23.22
Paving Worker Trips	0.13	0.27	3.45	0.00	0.01	0.01	0.02	0.01	0.01	0.01	254.13
Building 08/28/2011-10/28/2013	3.45	15.94	12.45	0.00	0.01	1.15	1.15	0.00	1.05	1.06	1,760.32
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.01	0.15	0.12	0.00	0.00	0.01	0.01	0.00	0.00	0.01	29.34
Building Worker Trips	0.06	0.12	1.49	0.00	0.01	0.00	0.01	0.00	0.00	0.01	109.78
Fine Grading 03/30/2011-03/30/2012	3.99	31.77	18.98	0.00	155.01	1.69	156.70	32.37	1.55	33.93	3,166.31
Fine Grading Dust	0.00	0.00	0.00	0.00	155.00	0.00	155.00	32.37	0.00	32.37	0.00
Fine Grading Off Road Diesel	3.91	31.61	16.82	0.00	0.00	1.68	1.68	0.00	1.55	1.55	3,007.48
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	0.08	0.17	2.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	158.83
Trenching 03/30/2011-03/30/2012	2.01	16.56	9.80	0.00	0.01	0.83	0.83	0.00	0.76	0.76	1,841.70
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.06	0.13	1.72	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.06

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Time Slice 1/2/2012-3/30/2012	<u>11.23</u>	<u>74.05</u>	<u>51.18</u>	<u>0.01</u>	<u>155.04</u>	<u>4.50</u>	<u>159.54</u>	<u>32.38</u>	<u>4.14</u>	<u>36.53</u>	<u>8,177.49</u>
Active Days: 65											
Asphalt 06/02/2011-06/28/2013	2.39	13.87	11.33	0.00	0.01	1.18	1.19	0.01	1.09	1.09	1,409.22
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	13.48	8.10	0.00	0.00	1.17	1.17	0.00	1.07	1.07	1,131.92
Paving On Road Diesel	0.01	0.14	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	23.22
Paving Worker Trips	0.12	0.25	3.20	0.00	0.01	0.01	0.02	0.01	0.01	0.01	254.09
Building 08/28/2011-10/28/2013	3.20	15.05	12.01	0.00	0.01	1.04	1.05	0.00	0.96	0.96	1,760.30
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.01	0.13	0.11	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.34
Building Worker Trips	0.05	0.11	1.38	0.00	0.01	0.00	0.01	0.00	0.00	0.01	109.76
Fine Grading 03/30/2011-03/30/2012	3.78	29.77	18.23	0.00	155.01	1.54	156.55	32.37	1.42	33.79	3,166.28
Fine Grading Dust	0.00	0.00	0.00	0.00	155.00	0.00	155.00	32.37	0.00	32.37	0.00
Fine Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42	3,007.48
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	0.07	0.15	2.00	0.00	0.01	0.01	0.01	0.00	0.00	0.01	158.80
Trenching 03/30/2011-03/30/2012	1.86	15.37	9.61	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,841.68
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.06	0.12	1.60	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.04

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Time Slice 10/29/2013-11/29/2013	0.80	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Active Days: 24												
Coating 06/01/2012-12/01/2013	0.80	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Architectural Coating	0.80	0.00	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18

Phase Assumptions

Phase: Fine Grading 3/30/2011 - 3/30/2012 - Grading

Total Acres Disturbed: 31

Maximum Daily Acreage Disturbed: 7.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

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: Trenching 3/30/2011 - 3/30/2012 - Trenching

Off-Road Equipment:

- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 6/2/2011 - 6/28/2013 - Paving

Acres to be Paved: 7.75

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

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- 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 8/28/2011 - 10/28/2013 - Building Construction

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 6/1/2012 - 12/1/2013 - Architectural Coating

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

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

<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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Time Slice 3/30/2011-6/1/2011	6.00	48.33	28.78	0.00	35.16	2.51	37.68	7.35	2.31	9.66	5,008.01
Active Days: 46											
Fine Grading 03/30/2011-03/30/2012	3.99	31.77	18.98	0.00	35.16	1.69	36.84	7.34	1.55	8.90	3,166.31
Fine Grading Dust	0.00	0.00	0.00	0.00	35.15	0.00	35.15	7.34	0.00	7.34	0.00
Fine Grading Off Road Diesel	3.91	31.61	16.82	0.00	0.00	1.68	1.68	0.00	1.55	1.55	3,007.48
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	0.08	0.17	2.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	158.83
Trenching 03/30/2011-03/30/2012	2.01	16.56	9.80	0.00	0.01	0.83	0.83	0.00	0.76	0.76	1,841.70
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.06	0.13	1.72	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.06
Time Slice 6/2/2011-8/26/2011	8.52	62.92	40.45	0.01	35.18	3.76	38.94	7.35	3.46	10.81	6,417.28
Active Days: 62											
Asphalt 06/02/2011-06/28/2013	2.52	14.59	11.67	0.00	0.01	1.25	1.26	0.01	1.15	1.15	1,409.26
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.17	8.17	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,131.92
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.01	23.22
Paving Worker Trips	0.13	0.27	3.45	0.00	0.01	0.01	0.02	0.01	0.01	0.01	254.13
Fine Grading 03/30/2011-03/30/2012	3.99	31.77	18.98	0.00	35.16	1.69	36.84	7.34	1.55	8.90	3,166.31
Fine Grading Dust	0.00	0.00	0.00	0.00	35.15	0.00	35.15	7.34	0.00	7.34	0.00
Fine Grading Off Road Diesel	3.91	31.61	16.82	0.00	0.00	1.68	1.68	0.00	1.55	1.55	3,007.48
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	0.08	0.17	2.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	158.83
Trenching 03/30/2011-03/30/2012	2.01	16.56	9.80	0.00	0.01	0.83	0.83	0.00	0.76	0.76	1,841.70
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.06	0.13	1.72	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.06

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Time Slice 8/29/2011-12/30/2011	<u>11.97</u>	<u>78.85</u>	<u>52.90</u>	<u>0.01</u>	<u>35.18</u>	<u>4.91</u>	<u>40.09</u>	<u>7.35</u>	<u>4.51</u>	<u>11.87</u>	<u>8,177.60</u>
Active Days: 90											
Asphalt 06/02/2011-06/28/2013	2.52	14.59	11.67	0.00	0.01	1.25	1.26	0.01	1.15	1.15	1,409.26
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.17	8.17	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,131.92
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.01	23.22
Paving Worker Trips	0.13	0.27	3.45	0.00	0.01	0.01	0.02	0.01	0.01	0.01	254.13
Building 08/28/2011-10/28/2013	3.45	15.94	12.45	0.00	0.01	1.15	1.15	0.00	1.05	1.06	1,760.32
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.01	0.15	0.12	0.00	0.00	0.01	0.01	0.00	0.00	0.01	29.34
Building Worker Trips	0.06	0.12	1.49	0.00	0.01	0.00	0.01	0.00	0.00	0.01	109.78
Fine Grading 03/30/2011-03/30/2012	3.99	31.77	18.98	0.00	35.16	1.69	36.84	7.34	1.55	8.90	3,166.31
Fine Grading Dust	0.00	0.00	0.00	0.00	35.15	0.00	35.15	7.34	0.00	7.34	0.00
Fine Grading Off Road Diesel	3.91	31.61	16.82	0.00	0.00	1.68	1.68	0.00	1.55	1.55	3,007.48
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	0.08	0.17	2.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	158.83
Trenching 03/30/2011-03/30/2012	2.01	16.56	9.80	0.00	0.01	0.83	0.83	0.00	0.76	0.76	1,841.70
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.06	0.13	1.72	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.06

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Time Slice 1/2/2012-3/30/2012	<u>11.23</u>	<u>74.05</u>	<u>51.18</u>	<u>0.01</u>	<u>35.18</u>	<u>4.50</u>	<u>39.69</u>	<u>7.35</u>	<u>4.14</u>	<u>11.50</u>	<u>8,177.49</u>
Active Days: 65											
Asphalt 06/02/2011-06/28/2013	2.39	13.87	11.33	0.00	0.01	1.18	1.19	0.01	1.09	1.09	1,409.22
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	13.48	8.10	0.00	0.00	1.17	1.17	0.00	1.07	1.07	1,131.92
Paving On Road Diesel	0.01	0.14	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	23.22
Paving Worker Trips	0.12	0.25	3.20	0.00	0.01	0.01	0.02	0.01	0.01	0.01	254.09
Building 08/28/2011-10/28/2013	3.20	15.05	12.01	0.00	0.01	1.04	1.05	0.00	0.96	0.96	1,760.30
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.01	0.13	0.11	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.34
Building Worker Trips	0.05	0.11	1.38	0.00	0.01	0.00	0.01	0.00	0.00	0.01	109.76
Fine Grading 03/30/2011-03/30/2012	3.78	29.77	18.23	0.00	35.16	1.54	36.70	7.34	1.42	8.76	3,166.28
Fine Grading Dust	0.00	0.00	0.00	0.00	35.15	0.00	35.15	7.34	0.00	7.34	0.00
Fine Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42	3,007.48
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	0.07	0.15	2.00	0.00	0.01	0.01	0.01	0.00	0.00	0.01	158.80
Trenching 03/30/2011-03/30/2012	1.86	15.37	9.61	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,841.68
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.06	0.12	1.60	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.04

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Time Slice 10/29/2013-11/29/2013 Active Days: 24	0.49	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Coating 06/01/2012-12/01/2013	0.49	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Architectural Coating	0.49	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 3/30/2011 - 3/30/2012 - Grading

For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, 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	0.01	0.08	0.03	0.00	0.00	0.00	95.98
Hearth	0.90	0.09	3.58	0.01	0.57	0.55	124.83
Landscaping - No Winter Emissions							
Consumer Products	0.29						
Architectural Coatings	0.09						
TOTALS (lbs/day, unmitigated)	1.29	0.17	3.61	0.01	0.57	0.55	220.81

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Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

<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	0.01	0.08	0.03	0.00	0.00	0.00	95.98
Hearth	0.90	0.09	3.58	0.01	0.57	0.55	124.83
Landscaping - No Winter Emissions							
Consumer Products	0.29						
Architectural Coatings	0.09						
TOTALS (lbs/day, mitigated)	1.29	0.17	3.61	0.01	0.57	0.55	220.81

Area Source Mitigation Measures Selected

Mitigation Description

Percent Reduction

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, 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	1.14	1.75	13.03	0.01	1.86	0.36	912.89
Public Access Parking Lot	1.15	1.62	11.95	0.01	1.68	0.32	823.73
TOTALS (lbs/day, unmitigated)	2.29	3.37	24.98	0.02	3.54	0.68	1,736.62

Operational Settings:

Does not include correction for passby trips

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Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	30.00	12.00	dwelling units	6.00	72.00	1,080.00
Public Access Parking Lot		3.26	unknown	30.00	97.80	978.00
					169.80	2,058.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	46.3	1.3	98.3	0.4
Light Truck < 3750 lbs	16.6	1.8	94.6	3.6
Light Truck 3751-5750 lbs	20.4	1.0	98.5	0.5
Med Truck 5751-8500 lbs	7.5	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.5	0.0	73.3	26.7
Lite-Heavy Truck 10,001-14,000 lbs	1.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	1.1	0.0	27.3	72.7
Heavy-Heavy Truck 33,001-60,000 lbs	0.3	0.0	33.3	66.7
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.7	62.2	37.8	0.0
School Bus	0.2	0.0	0.0	100.0
Motor Home	1.2	8.3	83.4	8.3

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	9.9	5.6	6.1	5.7	4.1	5.7
Rural Trip Length (miles)	15.0	15.0	15.0	15.0	10.0	10.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Public Access Parking Lot				0.0	0.0	100.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Support for Use of Bay Area Air Quality Management District Greenhouse Gas Emissions Standards

This memorandum discusses factual background and justification for the County's interim reliance on thresholds of significance for GHG emissions developed and proposed by the Bay Area Air Quality Management District (BAAQMD). The County is presently working to develop an inventory of current GHG emissions and a Climate Action Strategy and Climate Action Plan based on this data. Until County-specific data becomes available and significance thresholds applicable to GHG emissions are developed and formally adopted, the County has developed interim procedures that rely on the proposed BAAQMD standards. While Santa Barbara County land use patterns differ from those in the Bay Area as a whole, Santa Barbara County is similar to certain Bay Area counties (in particular, Sonoma, Solano, and Marin) in terms of population growth, land use patterns, General Plan policies, and average commute patterns and times. Because of these similarities, the methodology used by BAAQMD to develop its GHG emission significance thresholds, as well as the thresholds themselves, have applicability to Santa Barbara County and represent the best available interim standards for Santa Barbara County.

A. Summary of BAAQMD Methodology

The BAAQMD has developed a methodology and significance thresholds for GHG emissions using the emission reduction goals of AB 32 while taking into account the emission reduction strategies outlined in the Scoping Plan. BAAQMD proposes thresholds for both land use projects (stationary and non-stationary sources) and plans. Using the emission reductions levels required to meet the goals of AB 32, BAAQMD identified two methods and thresholds for land use projects. The first threshold is based on a gap analysis and the second threshold is based on what would be considered a GHG-efficient project. The BAAQMD also established thresholds for land use plans based on the GHG-efficient method. Thresholds for stationary sources were established using a separate method specific to stationary source polluters.

1. Project-Level Thresholds

The Gap Analysis Approach

This approach focuses on a limited set of State mandates that appear to have the greatest potential to reduce land use development related GHG emissions. The BAAQMD's eight steps in determining the threshold are outlined below.

- 1) Determine growth in emissions attributable to land use driven sectors.
- 2) Estimate the anticipated GHG reductions affecting the same land use-driven emissions sectors associated with the AB 32 Scoping Plan.

- 3) Determine the gap between statewide inventory estimates and the estimated reductions from the adopted AB 32 Scoping Plan. The gap identified represents the additional GHG emissions reductions needed statewide from land use-driven emissions sectors, which represents new land use developments' share of the emissions reductions needed to meet the statewide reduction goals.
- 4) Determine the percent reduction that the gap represents in the land-use driven sectors from the BAAQMD's inventory. Identify the amount of reductions needed to meet this gap.
- 5) Assess historical CEQA documents to determine the frequency distribution trend of project sizes and types that have been subject to CEQA for the past several years.
- 6) Forecast new land use development for the Bay Area through the year 2020.
- 7) Estimate GHG emissions from each land use development project type and size using URBEMIS. Determine the amount of GHG emissions that can reasonable be reduced through current mitigation measures for future development projects subject to CEQA.
- 8) Conduct a sensitivity analysis of the GHG mass emissions threshold needed to achieve the desired reduction identified in Step 4. The mass emissions threshold is what would be needed to achieve the emissions reductions necessary by 2020 to meet the Bay Area's fare share of the statewide gap from land use-driven emissions.

Using these steps, BAAQMD identified a significance threshold of 1,100 MT of CO₂e/year for other than stationary sources.

Efficiency-Based Approach

The threshold was determined by dividing the emissions inventory goal for 2020 (for land use-related sectors only) by the estimated 2020 population and employment. The number given by this calculation provides what would be considered a GHG efficient project if its emissions were to remain below that level.

This approach resulted in a significance threshold of 4.6 MT CO₂e/California Service Population/yr (residents + employees) for other than stationary sources.

Stationary Sources

BAAQMD determined a threshold of 10,000 MT CO₂/year for greenhouse gas emissions from stationary sources. This threshold was developed based on estimating CO₂ emissions from projects in the Air District from 2005 – 2007. Only CO₂ emissions were included as they represent the majority of GHG

emissions from stationary combustion. Emissions were estimated for the maximum permitted amount. Using this data, BAAQMD determined that a threshold of 10,000 MT CO₂/year would encompass 95% of all GHG emissions from stationary sources. While this threshold would capture 95% of emissions, only 10% of new permits would actually hit this threshold. Thus the threshold captures the large significant polluters.

2. Plan-Level Thresholds

Plans would be considered to have less than significant GHG emissions if they are:

- 1) Consistent with a locally adopted GHG Reduction Plan or Climate Action Plan
- 2) Less than the efficiency threshold identified for plan level GHG impacts, 6.6 MT CO₂e/California Service Population/yr (residents + employees). This efficiency threshold was calculated using all emissions sectors, rather than just the land use based sectors as was done for project level thresholds. This difference is due to the fact that plans are comprised of more than just land use related emissions (e.g. industrial).

B. Reasoning for Santa Barbara County Reliance on BAAQMD Standards

Until the County of Santa Barbara has formally adopted thresholds of significance for GHG emissions, the County must look to other jurisdictions with similar characteristics for guidance in the interim. A lead agency may consider thresholds of significance adopted or recommended by other public agencies, provided they are supported by substantial evidence. CEQA Guidelines Section 15064.7(c). Currently the BAAQMD is the first air quality management district to have formally adopted GHG thresholds. As described above, BAAQMD's thresholds are based on a sound, factually supported methodology. While land use patterns in Santa Barbara County are different from the Bay Area as a whole region, the BAAQMD does contain county jurisdictions very similar to Santa Barbara County. Santa Barbara County and several Bay Area counties have similar demographics, land use patterns, and behaviors, while other Bay Area counties are quite different in these characteristics. Given that the BAAQMD's adopted thresholds provide the best and most defensible significance criteria available at this time, the County proposes to refer to the BAAQMD thresholds for determinations of impact significance with respect to GHG emissions as an interim measure. Once data is available on GHG emissions for Santa Barbara County, a locally based analysis will be conducted to update the significance criteria.

To the extent that Santa Barbara County is similar to certain counties in the Bay Area with similar land use patterns and past population growth rates, Santa Barbara County can be expected to continue to grow in a similar fashion to these Bay Area in the future as well. Examining land use policies in General Plans in the two regions, which guide growth in the future, provides support for this conclusion. Given

that the two regions would be expected to have similar future growth, the forecast for future land use development in BAAQMD's gap analysis threshold methodology should also generally apply to Santa Barbara County, such that the BAAQMD thresholds would also be relevant to Santa Barbara County. It should be noted that this methodology also applies in blanket fashion to areas that are very different from Santa Barbara County.

The BAAQMD encompasses all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties as well as the southwestern portion of Solano County and southern Sonoma County. While not all of these Counties are analogous to Santa Barbara County in land use characteristics, population growth, etc., three of these counties, Sonoma, Solano, and Marin, are considered to be Benchmark Counties to Santa Barbara County.¹ Benchmark Counties are considered to have common characteristics including, but not limited to, the following: total population of more than 250,000 but less than 500,000; suburban to rural environments; do not contain a large metropolitan city and are known for their scenic beauty and environmental focus. Table 1 below summarizes the population characteristics and commuter behavior for all Bay Area counties and Santa Barbara County. Sonoma and Solano Counties present a very similar picture to that of Santa Barbara County. The other seven counties show very different characteristics, especially with respect to population size and vehicle miles travelled (VMT). Marin and Napa Counties are smaller counties with slower growth, while the remaining counties contain a much larger populations and corresponding VMT.

¹ Santa Barbara County Operating Plan for 2010-1011

Table 1. Bay Area and Santa Barbara County Characteristics^{234 5}

County	Population (2010)	% Change in Population (2009-2010)	Average Annual Growth Rate (2000 – 2009)	Average Household Size ⁶	Average Commute Time (minutes)	Daily VMT (millions)
Santa Barbara	434,481	1	0.86	2.73	20	9.7
Napa	138,917	0.9	1.13	2.63	24	4.5
Marin	260,651	0.8	0.5	2.36	29	6.2
Solano	427,837	0.5	0.79	2.9	30	7.2
Sonoma	493,285	1.2	0.67	2.53	25	10.6
San Mateo	754,285	1.2	0.61	2.74	25	19.4
San Francisco	856,095	1.1	0.96	2.42	29	12.4
Contra Costa	1,073,005	1.1	1.24	2.76	32	25.7
Alameda	1,574,857	1.1	0.86	2.75	28	38
Santa Clara	1,880,876	1.3	1.12	2.91	24	40.1

² 2006 -2008 American Communities Survey

³ Source: Inventory of Bay Area Greenhouse Gas Emissions, BAAQMD, 2010

⁴ Vision 2030: SBCAG 2008 Regional Transportation Plan

⁵ California Department of Finance

⁶ 2006 -2008 American Communities Survey

The efficiency-based approach applies to the entire State of California since the threshold which was calculated is based upon the State’s greenhouse gas emissions inventory and population growth and employment data. None of the data used to calculate this threshold was region or county-specific data. Therefore, it applies equally to Santa Barbara County as to other parts of the state.

The method used to calculate the threshold which applies to stationary sources is an industry-based threshold rather than land use-based. Some of the stationary sources represented in both regions include oil and gas industry, landfills, electric utilities, cogeneration, and food and agriculture (such as wine fermentation). Oil refineries were found to be the largest source of GHG emissions in the industrial sector in the Bay Area.⁷ Data is not yet available for GHG emissions from stationary sources in Santa Barbara County, but the oil and gas industry is the most prominent industrial use in the County.

CAPCOA conducted an analysis of permitting activity to estimate the number of stationary source projects with potentially significant GHG emissions for a given threshold that could be seen in a given year for the four largest air districts. The results of that analysis for a 10,000 MT/yr threshold is presented in Table 2 below.

Table 2. Potential Stationary Source Projects Affected a Given Threshold⁸

	BAAQMD	Sacramento Metropolitan AQMD	San Joaquin Valley Unified APCD	South Coast AQMD
Applications per year affected at threshold of:	1,499	778	1,535	1,179
10,000 MT/yr	7	5	26	8

CARB has predicted that a threshold of 25,000 MT/year would capture greater than 90% of emissions from stationary sources. If this prediction holds true, then a lower threshold of 10,000 metric tons is likely to capture an even greater percentage of emissions. BAAQMD found that a 10,000 MT/yr

⁷ Source Inventory of Bay Area Greenhouse Gas Emissions, BAAQMD, 2010

⁸ CEQA & Climate Change, CAPCOA, 2008

threshold would capture 95% of GHG emissions, while SCAQMD found that this same threshold would capture at least 90% of GHG emissions.⁹ Table 2 illustrates that the 10,000 MT/yr threshold will capture greater than 90% of GHG emissions from stationary sources while only affecting a small portion of polluters for the four largest air districts. Without a GHG emissions inventory, the percentage of GHG emissions that would be captured from stationary sources in Santa Barbara County by this threshold cannot be determined with specificity.

However, insofar as Santa Barbara County is similar to the four air districts listed in Table 3, this high capture rate should hold true for Santa Barbara County as well. Santa Barbara County is located adjacent to the SCAQMD district, with that district including neighboring Ventura County. Additionally, Santa Barbara County, SCAQMD and BAAQMD are all coastal regions. As discussed above, BAAQMD contains many of the same types of stationary source polluters as Santa Barbara County. Given these factual similarities, the BAAQMD's rationale for a 10,000-metric ton significance criterion for stationary sources also applies to Santa Barbara County.

C. Conclusion

Given the similar population growth, land use patterns, General Plan policies, and behaviors such as average commute time that exist between these two regions, Santa Barbara County's future land use development can be shown to be similar to the Bay Area counties within the BAAQMD's jurisdiction discussed above. Relying as an interim measure on BAAQMD's gap analysis threshold methodology and significance thresholds for GHG emissions can therefore be justified. Because they are not based on region-specific data, the efficiency-based standards are applicable statewide.

⁹ South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA GHG Significance Threshold