

**Air
Quality**

APPENDIX B

Page: 1

4/10/2009 3:29:20 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Users\hgroux\AppData\Roaming\Urbemis\Version9a\Projects\SBBG Construction.urb924

Project Name: SBBG Construction

Project Location: South Coast AQMD

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> |
|-----------------------------------|------------|------------|-----------|------------|------------------|---------------------|-------------|-------------------|----------------------|--------------|------------|
| 2009 TOTALS (lbs/day unmitigated) | 1.53 | 13.43 | 5.70 | 0.00 | 1.69 | 0.68 | 2.37 | 0.35 | 0.62 | 0.98 | 1,312.91 |
| 2010 TOTALS (lbs/day unmitigated) | 3.16 | 26.87 | 13.38 | 0.00 | 5.51 | 1.33 | 6.83 | 1.15 | 1.22 | 2.37 | 2,505.97 |
| 2011 TOTALS (lbs/day unmitigated) | 2.14 | 14.61 | 9.50 | 0.00 | 0.00 | 1.09 | 1.09 | 0.00 | 1.00 | 1.00 | 1,419.38 |
| 2012 TOTALS (lbs/day unmitigated) | 1.68 | 10.12 | 6.59 | 0.00 | 0.00 | 0.88 | 0.88 | 0.00 | 0.81 | 0.81 | 912.83 |
| 2013 TOTALS (lbs/day unmitigated) | 13.82 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.83 |

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) | 0.48 | 0.24 | 1.85 | 0.00 | 0.01 | 0.01 | 272.44 |

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) | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 |

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) | 0.69 | 0.24 | 1.85 | 0.00 | 0.01 | 0.01 | 272.49 |

4/10/2009 3:29:20 PM

| | | | | | | | | | | | |
|-------------------------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|
| Time Slice 1/2/2012-2/29/2012 | <u>1.68</u> | <u>10.12</u> | <u>6.59</u> | <u>0.00</u> | <u>0.00</u> | <u>0.88</u> | <u>0.88</u> | <u>0.00</u> | <u>0.81</u> | <u>0.81</u> | <u>912.83</u> |
| Active Days: 43 | | | | | | | | | | | |
| Asphalt 01/02/2012-02/29/2012 | 1.68 | 10.12 | 6.59 | 0.00 | 0.00 | 0.88 | 0.88 | 0.00 | 0.81 | 0.81 | 912.83 |
| Paving Off-Gas | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 1.63 | 10.11 | 6.41 | 0.00 | 0.00 | 0.88 | 0.88 | 0.00 | 0.81 | 0.81 | 908.50 |
| Paving 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 |
| Paving Worker Trips | 0.01 | 0.01 | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.33 |
| Time Slice 1/1/2013-2/28/2013 | <u>13.82</u> | <u>0.00</u> | <u>0.03</u> | <u>0.00</u> | <u>0.00</u> | <u>0.00</u> | <u>0.00</u> | <u>0.00</u> | <u>0.00</u> | <u>0.00</u> | <u>0.83</u> |
| Active Days: 43 | | | | | | | | | | | |
| Coating 01/01/2013-02/28/2013 | 13.82 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.83 |
| Architectural Coating | 13.82 | 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 | 0.83 |

Phase Assumptions

Phase: Demolition 11/2/2009 - 12/31/2009 - Default Demolition Description

Building Volume Total (cubic feet): 100000

Building Volume Daily (cubic feet): 4000

On Road Truck Travel (VMT): 74.07

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

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

Phase: Fine Grading 1/4/2010 - 12/31/2010 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 2.19

Maximum Daily Acreage Disturbed: 0.55

Fugitive Dust Level of Detail: Default

10 lbs per acre-day

Page: 5

4/10/2009 3:29:20 PM

On Road Truck Travel (VMT): 60

Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 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 1/2/2012 - 2/29/2012 - Default Paving Description

Acres to be Paved: 0.55

Off-Road Equipment:

- 1 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
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/3/2011 - 12/30/2011 - Default Building Construction Description

Off-Road Equipment:

- 1 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
- 1 Rough Terrain Forklifts (93 hp) operating at a 0.6 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

Phase: Architectural Coating 1/1/2013 - 2/28/2013 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

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

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

| <u>Source</u> | ROG | NOX | CO | SO2 | PM10 | PM25 | CO2 |
|-------------------------------|------|------|------|------|------|------|------|
| Single family housing | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| Botanic Garden | 0.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 |
| TOTALS (lbs/day, unmitigated) | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 |

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2010 Temperature (F): 80 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 | 1.00 | 0.01 | dwelling units | 3.00 | 0.03 | 0.00 |
| Botanic Garden | | 0.01 | 1000 sq ft | 25.88 | 0.26 | 0.00 |
| | | | | | 0.29 | 0.00 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|--------------|--------------|--------------|----------|--------|
| Light Auto | 51.7 | 1.2 | 98.6 | 0.2 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|-------------------------------------|--------------|--------------|----------|--------|
| Light Truck < 3750 lbs | 7.3 | 2.7 | 94.6 | 2.7 |
| Light Truck 3751-5750 lbs | 22.9 | 0.4 | 99.6 | 0.0 |
| Med Truck 5751-8500 lbs | 10.6 | 0.9 | 99.1 | 0.0 |
| Lite-Heavy Truck 8501-10,000 lbs | 1.6 | 0.0 | 81.2 | 18.8 |
| Lite-Heavy Truck 10,001-14,000 lbs | 0.5 | 0.0 | 60.0 | 40.0 |
| Med-Heavy Truck 14,001-33,000 lbs | 0.9 | 0.0 | 22.2 | 77.8 |
| Heavy-Heavy Truck 33,001-60,000 lbs | 0.5 | 0.0 | 0.0 | 100.0 |
| Other Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Urban Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motorcycle | 2.8 | 67.9 | 32.1 | 0.0 |
| School Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motor Home | 0.9 | 0.0 | 88.9 | 11.1 |

Travel Conditions

| | Residential | | | Commuter | Commercial | |
|---------------------------|-------------|-----------|------------|----------|------------|----------|
| | Home-Work | Home-Shop | Home-Other | | Non-Work | Customer |
| Urban Trip Length (miles) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rural Trip Length (miles) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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)

Travel Conditions

| | Residential | | | Commercial | | |
|----------------|-------------|-----------|------------|------------|----------|----------|
| | Home-Work | Home-Shop | Home-Other | Commute | Non-Work | Customer |
| Botanic Garden | | | | 2.0 | 1.0 | 97.0 |

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Users\hgroux\AppData\Roaming\Urbemis\Version9a\Projects\SBBG Op.urb924

Project Name: SBBG

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

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 | 0.02 | 0.21 | 0.16 | 0.00 | 0.00 | 0.00 | 255.03 |
| Hearth | | | | | | | |
| Landscape | 0.15 | 0.02 | 1.68 | 0.00 | 0.01 | 0.01 | 3.02 |
| Consumer Products | 0.15 | | | | | | |
| Architectural Coatings | 0.19 | | | | | | |
| TOTALS (lbs/day, unmitigated) | 0.51 | 0.23 | 1.84 | 0.00 | 0.01 | 0.01 | 258.05 |

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

| <u>Source</u> | ROG | NOX | CO | SO2 | PM10 | PM25 | CO2 |
|-------------------------------|------|------|-------|------|------|------|----------|
| Single family housing | 0.12 | 0.14 | 1.23 | 0.00 | 0.18 | 0.03 | 92.61 |
| Botanic Garden | 1.33 | 1.69 | 14.21 | 0.01 | 2.10 | 0.40 | 1,099.61 |
| TOTALS (lbs/day, unmitigated) | 1.45 | 1.83 | 15.44 | 0.01 | 2.28 | 0.43 | 1,192.22 |

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 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 | 1.00 | 4.67 | dwelling units | 3.00 | 14.01 | 101.72 |
| Botanic Garden | | 8.30 | 1000 sq ft | 25.88 | 214.80 | 1,220.95 |
| | | | | | 228.81 | 1,322.67 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|---------------------------|--------------|--------------|----------|--------|
| Light Auto | 46.3 | 0.9 | 98.7 | 0.4 |
| Light Truck < 3750 lbs | 16.6 | 1.8 | 95.2 | 3.0 |
| Light Truck 3751-5750 lbs | 20.4 | 0.5 | 99.5 | 0.0 |
| 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 | 56.8 | 43.2 | 0.0 |
| School Bus | 0.2 | 0.0 | 0.0 | 100.0 |
| Motor Home | 1.2 | 0.0 | 91.7 | 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) | | | | | | |
| Botanic Garden | | | | 2.0 | 1.0 | 97.0 |