

Appendix C

Air Quality Data

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\cloverdale alt A.urb924

Project Name: cloverdale alt a

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
2010 TOTALS (lbs/day unmitigated)	43.08	58.57	109.69	0.12	98.81	3.84	100.08	20.64	3.53	21.80	15,461.50
2011 TOTALS (lbs/day unmitigated)	38.83	33.30	86.23	0.11	0.49	1.96	2.45	0.18	1.79	1.97	12,865.33

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)	3.56	4.29	12.77	0.00	0.04	0.04	5,016.47

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)	293.98	413.57	4,871.44	2.98	492.05	93.52	298,327.80

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)	297.54	417.86	4,884.21	2.98	492.09	93.56	303,344.27

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\cloverdale alt A.urb924

Project Name: cloverdale alt a

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
2010 TOTALS (tons/year unmitigated)	0.84	3.38	2.91	0.00	9.69	0.19	9.88	2.02	0.17	2.20	455.66
2011 TOTALS (tons/year unmitigated)	5.05	4.33	11.21	0.01	0.06	0.25	0.32	0.02	0.23	0.26	1,672.49

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)	0.59	0.77	1.47	0.00	0.00	0.00	913.95

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)	58.47	88.13	941.56	0.52	89.80	17.06	51,898.21

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 (tons/year, unmitigated)	59.06	88.90	943.03	0.52	89.80	17.06	52,812.16

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\cloverdale alt A.urb924

Project Name: cloverdale alt a

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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 Total</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5 Total</u>	<u>CO2</u>
Time Slice 1/1/2010-7/30/2010 Active Days: 151	3.09	25.37	15.11	0.00	98.81	1.26	100.08	20.64	1.16	21.80	2,575.25
Mass Grading 01/01/2010-08/01/2010	3.09	25.37	15.11	0.00	98.81	1.26	100.08	20.64	1.16	21.80	2,575.25
Mass Grading Dust	0.00	0.00	0.00	0.00	98.80	0.00	98.80	20.63	0.00	20.63	0.00
Mass Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Mass Grading On Road Diesel	0.01	0.19	0.04	0.00	0.00	0.01	0.01	0.00	0.01	0.01	24.45
Mass Grading Worker Trips	0.08	0.20	2.60	0.00	0.01	0.01	0.02	0.01	0.01	0.01	303.49
Time Slice 8/2/2010-10/1/2010 Active Days: 45	3.08	25.19	15.06	0.00	98.81	1.26	100.07	20.64	1.15	21.79	2,550.80
Fine Grading 08/02/2010-10/01/2010	3.08	25.19	15.06	0.00	98.81	1.26	100.07	20.64	1.15	21.79	2,550.80
Fine Grading Dust	0.00	0.00	0.00	0.00	98.80	0.00	98.80	20.63	0.00	20.63	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
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	0.20	2.60	0.00	0.01	0.01	0.02	0.01	0.01	0.01	303.49

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Time Slice 10/4/2010-11/30/2010	3.70	22.29	17.01	0.01	0.05	1.77	1.82	0.02	1.63	1.64	2,602.81
Active Days: 42											
Asphalt 10/02/2010-12/01/2010	3.70	22.29	17.01	0.01	0.05	1.77	1.82	0.02	1.63	1.64	2,602.81
Paving Off-Gas	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.98	18.01	10.28	0.00	0.00	1.57	1.57	0.00	1.44	1.44	1,418.44
Paving On Road Diesel	0.25	3.84	0.88	0.00	0.02	0.19	0.21	0.01	0.17	0.18	501.52
Paving Worker Trips	0.17	0.45	5.85	0.01	0.03	0.01	0.05	0.01	0.01	0.02	682.84
Time Slice 12/1/2010-12/1/2010	<u>43.08</u>	<u>58.57</u>	<u>109.69</u>	<u>0.12</u>	0.54	<u>3.84</u>	4.38	0.19	<u>3.53</u>	3.72	<u>15,461.50</u>
Active Days: 1											
Asphalt 10/02/2010-12/01/2010	3.70	22.29	17.01	0.01	0.05	1.77	1.82	0.02	1.63	1.64	2,602.81
Paving Off-Gas	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.98	18.01	10.28	0.00	0.00	1.57	1.57	0.00	1.44	1.44	1,418.44
Paving On Road Diesel	0.25	3.84	0.88	0.00	0.02	0.19	0.21	0.01	0.17	0.18	501.52
Paving Worker Trips	0.17	0.45	5.85	0.01	0.03	0.01	0.05	0.01	0.01	0.02	682.84
Building 12/01/2010-01/01/2012	6.76	36.20	91.69	0.11	0.49	2.07	2.56	0.17	1.90	2.07	12,743.26
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	1.03	14.20	8.79	0.03	0.11	0.70	0.80	0.04	0.64	0.67	2,759.43
Building Worker Trips	2.08	5.46	71.70	0.08	0.38	0.18	0.56	0.14	0.16	0.30	8,362.63
Coating 12/01/2010-01/01/2012	32.62	0.08	0.99	0.00	0.01	0.00	0.01	0.00	0.00	0.00	115.43
Architectural Coating	32.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.08	0.99	0.00	0.01	0.00	0.01	0.00	0.00	0.00	115.43
Time Slice 12/2/2010-12/31/2010	39.38	36.28	92.68	0.11	0.49	2.07	2.56	0.18	1.90	2.07	12,858.69
Active Days: 22											
Building 12/01/2010-01/01/2012	6.76	36.20	91.69	0.11	0.49	2.07	2.56	0.17	1.90	2.07	12,743.26
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	1.03	14.20	8.79	0.03	0.11	0.70	0.80	0.04	0.64	0.67	2,759.43
Building Worker Trips	2.08	5.46	71.70	0.08	0.38	0.18	0.56	0.14	0.16	0.30	8,362.63
Coating 12/01/2010-01/01/2012	32.62	0.08	0.99	0.00	0.01	0.00	0.01	0.00	0.00	0.00	115.43
Architectural Coating	32.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.08	0.99	0.00	0.01	0.00	0.01	0.00	0.00	0.00	115.43

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Time Slice 1/3/2011-12/30/2011	<u>38.83</u>	<u>33.30</u>	<u>86.23</u>	<u>0.11</u>	<u>0.49</u>	<u>1.96</u>	<u>2.45</u>	<u>0.18</u>	<u>1.79</u>	<u>1.97</u>	<u>12,865.33</u>
Active Days: 260											
Building 12/01/2010-01/01/2012	6.21	33.23	85.32	0.11	0.49	1.95	2.44	0.17	1.79	1.96	12,749.82
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	0.93	12.60	8.28	0.03	0.11	0.63	0.74	0.04	0.58	0.62	2,759.86
Building Worker Trips	1.90	4.96	66.19	0.08	0.38	0.18	0.56	0.14	0.16	0.30	8,368.76
Coating 12/01/2010-01/01/2012	32.62	0.07	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	115.51
Architectural Coating	32.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.07	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	115.51

Phase Assumptions

Phase: Fine Grading 8/2/2010 - 10/1/2010 - Fine Site Grading

Total Acres Disturbed: 19.77

Maximum Daily Acreage Disturbed: 4.94

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 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: Mass Grading 1/1/2010 - 8/1/2010 - Mass Site Grading

Total Acres Disturbed: 32

Maximum Daily Acreage Disturbed: 4.94

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 6.62

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

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

Phase: Paving 10/2/2010 - 12/1/2010 - Paving

Acres to be Paved: 4.94

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

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

Phase: Building Construction 12/1/2010 - 1/1/2012 - 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 12/1/2010 - 1/1/2012 - 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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Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\cloverdale alt A.urb924

Project Name: cloverdale alt a

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

<u>Source</u>	ROG	NOX	CO	SO2	PM10	PM25	CO2
High turnover (sit-down) rest.	66.81	95.31	1,123.13	0.69	113.39	21.55	68,754.76
Hotel	24.71	31.07	366.09	0.22	36.96	7.03	22,410.88
casino	95.75	136.59	1,608.62	0.99	162.52	30.89	98,528.39
specialty retail	45.00	63.03	742.34	0.45	75.00	14.25	45,468.65
entertainment center	22.56	32.01	376.96	0.23	38.08	7.24	23,089.08
convention center	39.15	55.56	654.30	0.40	66.10	12.56	40,076.04
TOTALS (lbs/day, unmitigated)	293.98	413.57	4,871.44	2.98	492.05	93.52	298,327.80

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2010 Temperature (F): 85 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
High turnover (sit-down) rest.		41.96	1000 sq ft	52.45	2,200.80	66,024.06

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		2.94	rooms	244.00	717.36	21,520.80
casino		39.43	1000 sq ft	80.00	3,154.40	94,632.00
specialty retail		14.63	1000 sq ft	99.50	1,455.69	43,670.55
entertainment center		26.40	1000 sq ft	28.00	739.20	22,176.00
convention center		26.40	1000 sq ft	48.60	1,283.04	38,491.20
					9,550.49	286,514.61

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	44.8	2.0	97.3	0.7
Light Truck < 3750 lbs	18.3	2.7	90.7	6.6
Light Truck 3751-5750 lbs	19.8	1.5	98.0	0.5
Med Truck 5751-8500 lbs	7.2	1.4	97.2	1.4
Lite-Heavy Truck 8501-10,000 lbs	1.8	0.0	66.7	33.3
Lite-Heavy Truck 10,001-14,000 lbs	1.0	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.2	8.3	16.7	75.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	100.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.5	66.7	33.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	30.0	30.0	30.0	30.0	30.0	30.0
Trip speeds (mph)	60.0	60.0	60.0	60.0	60.0	60.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
High turnover (sit-down) rest.				5.0	2.5	92.5
Hotel				5.0	2.5	92.5
casino				2.0	1.0	97.0
specialty retail				2.0	1.0	97.0
entertainment center				2.0	1.0	97.0
convention center				2.0	1.0	97.0

Operational Changes to Defaults

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

Home-based work average speed changed from 35 mph to 60 mph

Home-based work rural trip length changed from 16.8 miles to 30 miles

Home-based shop average speed changed from 35 mph to 60 mph

Home-based shop rural trip length changed from 7.1 miles to 30 miles

Home-based other average speed changed from 35 mph to 60 mph

Home-based other rural trip length changed from 7.9 miles to 30 miles

Operational Changes to Defaults

Commercial-based commute average speed changed from 35 mph to 60 mph

Commercial-based commute rural trip length changed from 14.7 miles to 30 miles

Commercial-based non-work average speed changed from 35 mph to 60 mph

Commercial-based non-work rural trip length changed from 6.6 miles to 30 miles

Commercial-based customer average speed changed from 35 mph to 60 mph

Commercial-based customer rural trip length changed from 6.6 miles to 30 miles

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt B.urb924

Project Name: Cloverdale alt B

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
2010 TOTALS (lbs/day unmitigated)	27.95	30.24	66.43	0.08	67.04	1.79	68.54	14.01	1.64	15.39	9,238.33
2011 TOTALS (lbs/day unmitigated)	27.49	27.62	61.95	0.08	0.33	1.69	2.03	0.12	1.55	1.67	9,242.83

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)	2.52	2.82	10.01	0.00	0.03	0.03	3,274.36

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)	205.64	289.74	3,412.96	2.09	344.75	65.51	209,010.76

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)	208.16	292.56	3,422.97	2.09	344.78	65.54	212,285.12

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt B.urb924

Project Name: Cloverdale alt B

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
2010 TOTALS (tons/year unmitigated)	0.71	3.63	2.65	0.00	6.57	0.20	6.77	1.37	0.18	1.56	453.93
2011 TOTALS (tons/year unmitigated)	3.57	3.59	8.05	0.01	0.04	0.22	0.26	0.02	0.20	0.22	1,201.57

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)	0.41	0.51	1.12	0.00	0.00	0.00	596.27

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)	40.93	61.76	659.66	0.36	62.92	11.96	36,360.29

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)	41.34	62.27	660.78	0.36	62.92	11.96	36,956.56

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt B.urb924

Project Name: Cloverdale alt B

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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 Total</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5 Total</u>	<u>CO2</u>
Time Slice 1/1/2010-7/30/2010 Active Days: 151	3.41	30.24	16.22	0.01	67.04	1.50	68.54	14.01	1.38	15.39	3,210.92
Mass Grading 01/01/2010-08/01/2010	3.41	30.24	16.22	0.01	67.04	1.50	68.54	14.01	1.38	15.39	3,210.92
Mass Grading Dust	0.00	0.00	0.00	0.00	67.00	0.00	67.00	13.99	0.00	13.99	0.00
Mass Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Mass Grading On Road Diesel	0.33	5.05	1.16	0.01	0.03	0.25	0.27	0.01	0.23	0.24	660.11
Mass Grading Worker Trips	0.08	0.20	2.60	0.00	0.01	0.01	0.02	0.01	0.01	0.01	303.49
Time Slice 8/2/2010-10/1/2010 Active Days: 45	3.08	25.19	15.06	0.00	67.01	1.26	68.27	14.00	1.15	15.15	2,550.80
Fine Grading 08/02/2010-10/01/2010	3.08	25.19	15.06	0.00	67.01	1.26	68.27	14.00	1.15	15.15	2,550.80
Fine Grading Dust	0.00	0.00	0.00	0.00	67.00	0.00	67.00	13.99	0.00	13.99	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
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	0.20	2.60	0.00	0.01	0.01	0.02	0.01	0.01	0.01	303.49

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Time Slice 10/4/2010-12/1/2010	3.52	21.06	16.73	0.01	0.04	1.71	1.75	0.02	1.57	1.59	2,441.39
Active Days: 43											
Asphalt 10/02/2010-12/01/2010	3.52	21.06	16.73	0.01	0.04	1.71	1.75	0.02	1.57	1.59	2,441.39
Paving Off-Gas	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.98	18.01	10.28	0.00	0.00	1.57	1.57	0.00	1.44	1.44	1,418.44
Paving On Road Diesel	0.17	2.60	0.60	0.00	0.01	0.13	0.14	0.00	0.12	0.12	340.10
Paving Worker Trips	0.17	0.45	5.85	0.01	0.03	0.01	0.05	0.01	0.01	0.02	682.84
Time Slice 12/2/2010-12/31/2010	27.95	29.92	66.43	0.08	0.33	1.79	2.12	0.12	1.64	1.76	9,238.33
Active Days: 22											
Building 12/02/2010-01/01/2012	5.76	29.87	65.76	0.07	0.33	1.79	2.12	0.12	1.64	1.76	9,159.81
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	0.70	9.63	5.96	0.02	0.07	0.47	0.54	0.02	0.43	0.46	1,870.36
Building Worker Trips	1.41	3.70	48.60	0.06	0.26	0.12	0.38	0.09	0.11	0.20	5,668.25
Coating 12/02/2010-01/01/2012	22.19	0.05	0.67	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.52
Architectural Coating	22.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.05	0.67	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.52
Time Slice 1/3/2011-12/30/2011	27.49	27.62	61.95	0.08	0.33	1.69	2.03	0.12	1.55	1.67	9,242.83
Active Days: 260											
Building 12/02/2010-01/01/2012	5.30	27.57	61.33	0.07	0.33	1.69	2.02	0.12	1.55	1.67	9,164.26
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	0.63	8.54	5.61	0.02	0.07	0.43	0.50	0.02	0.40	0.42	1,870.65
Building Worker Trips	1.29	3.36	44.87	0.06	0.26	0.12	0.38	0.09	0.11	0.20	5,672.41
Coating 12/02/2010-01/01/2012	22.19	0.05	0.62	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.57
Architectural Coating	22.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.05	0.62	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.57

Phase Assumptions

Phase: Fine Grading 8/2/2010 - 10/1/2010 - Fine Site Grading

Total Acres Disturbed: 13.41

Maximum Daily Acreage Disturbed: 3.35

Fugitive Dust Level of Detail: Default

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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 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: Mass Grading 1/1/2010 - 8/1/2010 - mass site grading

Total Acres Disturbed: 13.41

Maximum Daily Acreage Disturbed: 3.35

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 178.81

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 10/2/2010 - 12/1/2010 - Paving

Acres to be Paved: 3.35

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

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

Phase: Building Construction 12/2/2010 - 1/1/2012 - 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

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3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 12/2/2010 - 1/1/2012 - 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

Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt B.urb924

Project Name: Cloverdale alt B

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

<u>Source</u>	ROG	NOX	CO	SO2	PM10	PM25	CO2
High turnover (sit-down) rest.	48.15	68.69	809.42	0.50	81.72	15.53	49,550.61
Hotel	14.28	17.95	211.55	0.13	21.36	4.06	12,950.55
casino	80.82	115.30	1,357.88	0.83	137.19	26.07	83,170.28
specialty retail	39.75	55.68	655.80	0.40	66.26	12.59	40,167.78
entertainment center	22.64	32.12	378.31	0.23	38.22	7.26	23,171.54
TOTALS (lbs/day, unmitigated)	205.64	289.74	3,412.96	2.09	344.75	65.51	209,010.76

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2010 Temperature (F): 85 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
High turnover (sit-down) rest.		41.96	1000 sq ft	37.80	1,586.09	47,582.64
Hotel		2.94	rooms	141.00	414.54	12,436.20

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
casino		39.43	1000 sq ft	67.53	2,662.71	79,881.24
specialty retail		14.63	1000 sq ft	87.90	1,285.98	38,579.31
entertainment center		26.40	1000 sq ft	28.10	741.84	22,255.20
					6,691.16	200,734.59

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	44.8	2.0	97.3	0.7
Light Truck < 3750 lbs	18.3	2.7	90.7	6.6
Light Truck 3751-5750 lbs	19.8	1.5	98.0	0.5
Med Truck 5751-8500 lbs	7.2	1.4	97.2	1.4
Lite-Heavy Truck 8501-10,000 lbs	1.8	0.0	66.7	33.3
Lite-Heavy Truck 10,001-14,000 lbs	1.0	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.2	8.3	16.7	75.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	100.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.5	66.7	33.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	30.0	30.0	30.0	30.0	30.0	30.0
Trip speeds (mph)	60.0	60.0	60.0	60.0	60.0	60.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
High turnover (sit-down) rest.				5.0	2.5	92.5
Hotel				5.0	2.5	92.5
casino				2.0	1.0	97.0
specialty retail				2.0	1.0	97.0
entertainment center				2.0	1.0	97.0

Operational Changes to Defaults

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

Home-based work average speed changed from 35 mph to 60 mph

Home-based work rural trip length changed from 16.8 miles to 30 miles

Home-based shop average speed changed from 35 mph to 60 mph

Home-based shop rural trip length changed from 7.1 miles to 30 miles

Home-based other average speed changed from 35 mph to 60 mph

Home-based other rural trip length changed from 7.9 miles to 30 miles

Commercial-based commute average speed changed from 35 mph to 60 mph

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Operational Changes to Defaults

Commercial-based commute rural trip length changed from 14.7 miles to 30 miles

Commercial-based non-work average speed changed from 35 mph to 60 mph

Commercial-based non-work rural trip length changed from 6.6 miles to 30 miles

Commercial-based customer average speed changed from 35 mph to 60 mph

Commercial-based customer rural trip length changed from 6.6 miles to 30 miles

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt C.urb924

Project Name: Cloverdale alt C

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
2010 TOTALS (lbs/day unmitigated)	26.32	30.24	62.72	0.07	62.64	1.75	64.14	13.09	1.60	14.47	8,726.22
2011 TOTALS (lbs/day unmitigated)	25.87	26.81	58.51	0.07	0.31	1.65	1.97	0.11	1.52	1.63	8,730.42

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)	2.39	2.69	9.90	0.00	0.03	0.03	3,117.40

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 (lbs/day, unmitigated)	189.46	266.77	3,142.38	1.93	317.41	60.32	192,438.08

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)	191.85	269.46	3,152.28	1.93	317.44	60.35	195,555.48

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt C.urb924

Project Name: Cloverdale alt C

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
2010 TOTALS (tons/year unmitigated)	0.69	3.62	2.61	0.00	6.14	0.20	6.34	1.28	0.18	1.47	447.82
2011 TOTALS (tons/year unmitigated)	3.36	3.49	7.61	0.01	0.04	0.22	0.26	0.01	0.20	0.21	1,134.96

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)	0.38	0.48	1.10	0.00	0.00	0.00	567.62

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)	37.70	56.86	607.36	0.33	57.93	11.01	33,477.26

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)	38.08	57.34	608.46	0.33	57.93	11.01	34,044.88

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt C.urb924

Project Name: Cloverdale alt C

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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 Total</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5 Total</u>	<u>CO2</u>
Time Slice 1/1/2010-7/30/2010 Active Days: 151	3.41	30.24	16.22	0.01	62.64	1.50	64.14	13.09	1.38	14.47	3,210.92
Mass Grading 01/01/2010-08/01/2010	3.41	30.24	16.22	0.01	62.64	1.50	64.14	13.09	1.38	14.47	3,210.92
Mass Grading Dust	0.00	0.00	0.00	0.00	62.60	0.00	62.60	13.07	0.00	13.07	0.00
Mass Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Mass Grading On Road Diesel	0.33	5.05	1.16	0.01	0.03	0.25	0.27	0.01	0.23	0.24	660.11
Mass Grading Worker Trips	0.08	0.20	2.60	0.00	0.01	0.01	0.02	0.01	0.01	0.01	303.49
Time Slice 8/2/2010-10/1/2010 Active Days: 45	3.08	25.19	15.06	0.00	62.61	1.26	63.87	13.08	1.15	14.23	2,550.80
Fine Grading 08/02/2010-10/01/2010	3.08	25.19	15.06	0.00	62.61	1.26	63.87	13.08	1.15	14.23	2,550.80
Fine Grading Dust	0.00	0.00	0.00	0.00	62.60	0.00	62.60	13.07	0.00	13.07	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
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	0.20	2.60	0.00	0.01	0.01	0.02	0.01	0.01	0.01	303.49

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Time Slice 10/4/2010-12/1/2010	3.50	20.89	16.69	0.01	0.04	1.70	1.74	0.02	1.56	1.58	2,419.05
Active Days: 43											
Asphalt 10/02/2010-12/01/2010	3.50	20.89	16.69	0.01	0.04	1.70	1.74	0.02	1.56	1.58	2,419.05
Paving Off-Gas	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.98	18.01	10.28	0.00	0.00	1.57	1.57	0.00	1.44	1.44	1,418.44
Paving On Road Diesel	0.16	2.43	0.56	0.00	0.01	0.12	0.13	0.00	0.11	0.11	317.77
Paving Worker Trips	0.17	0.45	5.85	0.01	0.03	0.01	0.05	0.01	0.01	0.02	682.84
Time Slice 12/2/2010-12/31/2010	<u>26.32</u>	29.02	<u>62.72</u>	<u>0.07</u>	0.31	<u>1.75</u>	2.06	0.11	<u>1.60</u>	1.72	<u>8,726.22</u>
Active Days: 22											
Building 12/02/2010-01/01/2012	5.62	28.97	62.09	0.07	0.31	1.75	2.06	0.11	1.60	1.71	8,652.98
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	0.65	8.98	5.56	0.02	0.07	0.44	0.51	0.02	0.40	0.43	1,744.61
Building Worker Trips	1.32	3.45	45.33	0.05	0.24	0.12	0.36	0.09	0.10	0.19	5,287.17
Coating 12/02/2010-01/01/2012	20.70	0.05	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.24
Architectural Coating	20.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.05	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.24
Time Slice 1/3/2011-12/30/2011	<u>25.87</u>	<u>26.81</u>	<u>58.51</u>	<u>0.07</u>	<u>0.31</u>	<u>1.65</u>	<u>1.97</u>	<u>0.11</u>	<u>1.52</u>	<u>1.63</u>	<u>8,730.42</u>
Active Days: 260											
Building 12/02/2010-01/01/2012	5.17	26.77	57.93	0.07	0.31	1.65	1.96	0.11	1.52	1.63	8,657.13
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	0.59	7.96	5.24	0.02	0.07	0.40	0.47	0.02	0.37	0.39	1,744.89
Building Worker Trips	1.20	3.14	41.85	0.05	0.24	0.12	0.36	0.09	0.10	0.19	5,291.05
Coating 12/02/2010-01/01/2012	20.69	0.04	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.29
Architectural Coating	20.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.29

Phase Assumptions

Phase: Fine Grading 8/2/2010 - 10/1/2010 - Fine Site Grading

Total Acres Disturbed: 12.51

Maximum Daily Acreage Disturbed: 3.13

Fugitive Dust Level of Detail: Default

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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 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: Mass Grading 1/1/2010 - 8/1/2010 - Mass Site Grading

Total Acres Disturbed: 12.51

Maximum Daily Acreage Disturbed: 3.13

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 178.81

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 10/2/2010 - 12/1/2010 - Paving

Acres to be Paved: 3.13

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

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

Phase: Building Construction 12/2/2010 - 1/1/2012 - 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

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3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 12/2/2010 - 1/1/2012 - 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

Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt C.urb924

Project Name: Cloverdale alt C

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

<u>Source</u>	ROG	NOX	CO	SO2	PM10	PM25	CO2
High turnover (sit-down) rest.	48.15	68.69	809.42	0.50	81.72	15.53	49,550.61
Hotel	14.28	17.95	211.55	0.13	21.36	4.06	12,950.55
casino	69.07	98.53	1,160.42	0.71	117.24	22.28	71,075.92
specialty retail	35.32	49.48	582.68	0.36	58.87	11.19	35,689.46
entertainment center	22.64	32.12	378.31	0.23	38.22	7.26	23,171.54
TOTALS (lbs/day, unmitigated)	189.46	266.77	3,142.38	1.93	317.41	60.32	192,438.08

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2010 Temperature (F): 85 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
High turnover (sit-down) rest.		41.96	1000 sq ft	37.80	1,586.09	47,582.64
Hotel		2.94	rooms	141.00	414.54	12,436.20

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
casino		39.43	1000 sq ft	57.71	2,275.51	68,265.16
specialty retail		14.63	1000 sq ft	78.10	1,142.60	34,278.09
entertainment center		26.40	1000 sq ft	28.10	741.84	22,255.20
					6,160.58	184,817.29

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	44.8	2.0	97.3	0.7
Light Truck < 3750 lbs	18.3	2.7	90.7	6.6
Light Truck 3751-5750 lbs	19.8	1.5	98.0	0.5
Med Truck 5751-8500 lbs	7.2	1.4	97.2	1.4
Lite-Heavy Truck 8501-10,000 lbs	1.8	0.0	66.7	33.3
Lite-Heavy Truck 10,001-14,000 lbs	1.0	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.2	8.3	16.7	75.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	100.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.5	66.7	33.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	30.0	30.0	30.0	30.0	30.0	30.0
Trip speeds (mph)	60.0	60.0	60.0	60.0	60.0	60.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
High turnover (sit-down) rest.				5.0	2.5	92.5
Hotel				5.0	2.5	92.5
casino				2.0	1.0	97.0
specialty retail				2.0	1.0	97.0
entertainment center				2.0	1.0	97.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural
Home-based work average speed changed from 35 mph to 60 mph
Home-based work rural trip length changed from 16.8 miles to 30 miles
Home-based shop average speed changed from 35 mph to 60 mph
Home-based shop rural trip length changed from 7.1 miles to 30 miles
Home-based other average speed changed from 35 mph to 60 mph
Home-based other rural trip length changed from 7.9 miles to 30 miles
Commercial-based commute average speed changed from 35 mph to 60 mph

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Operational Changes to Defaults

Commercial-based commute rural trip length changed from 14.7 miles to 30 miles

Commercial-based non-work average speed changed from 35 mph to 60 mph

Commercial-based non-work rural trip length changed from 6.6 miles to 30 miles

Commercial-based customer average speed changed from 35 mph to 60 mph

Commercial-based customer rural trip length changed from 6.6 miles to 30 miles

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt D.urb924

Project Name: Cloverdale alt D

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
2010 TOTALS (lbs/day unmitigated)	28.68	34.08	43.48	0.04	38.86	1.69	40.55	8.12	1.56	9.68	6,065.93
2011 TOTALS (lbs/day unmitigated)	28.30	22.60	40.71	0.04	0.19	1.46	1.65	0.07	1.34	1.41	6,068.57

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)	1.45	1.30	5.68	0.00	0.02	0.02	1,494.91

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)	247.11	353.10	4,159.86	2.54	420.10	79.85	254,711.19

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)	248.56	354.40	4,165.54	2.54	420.12	79.87	256,206.10

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt D.urb924

Project Name: Cloverdale alt D

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
2010 TOTALS (tons/year unmitigated)	0.96	3.23	2.53	0.00	2.53	0.19	2.72	0.53	0.17	0.70	428.35
2011 TOTALS (tons/year unmitigated)	1.53	1.22	2.20	0.00	0.01	0.08	0.09	0.00	0.07	0.08	327.70

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)	0.23	0.24	0.61	0.00	0.00	0.00	272.04

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)	49.45	75.26	804.00	0.44	76.66	14.58	44,310.62

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 (tons/year, unmitigated)	49.68	75.50	804.61	0.44	76.66	14.58	44,582.66

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt D.urb924

Project Name: Cloverdale alt D

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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 Total</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5 Total</u>	<u>CO2</u>
Time Slice 1/1/2010-6/1/2010 Active Days: 108	3.65	34.08	17.11	0.01	38.86	1.69	40.55	8.12	1.56	9.68	3,713.02
Mass Grading 01/01/2010-06/01/2010	3.65	34.08	17.11	0.01	38.86	1.69	40.55	8.12	1.56	9.68	3,713.02
Mass Grading Dust	0.00	0.00	0.00	0.00	38.80	0.00	38.80	8.10	0.00	8.10	0.00
Mass Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Mass Grading On Road Diesel	0.57	8.90	2.05	0.01	0.04	0.44	0.48	0.01	0.40	0.42	1,162.21
Mass Grading Worker Trips	0.08	0.20	2.60	0.00	0.01	0.01	0.02	0.01	0.01	0.01	303.49
Time Slice 6/2/2010-7/1/2010 Active Days: 22	3.08	25.19	15.06	0.00	38.81	1.26	40.07	8.11	1.15	9.26	2,550.80
Fine Grading 06/02/2010-07/01/2010	3.08	25.19	15.06	0.00	38.81	1.26	40.07	8.11	1.15	9.26	2,550.80
Fine Grading Dust	0.00	0.00	0.00	0.00	38.80	0.00	38.80	8.10	0.00	8.10	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
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	0.20	2.60	0.00	0.01	0.01	0.02	0.01	0.01	0.01	303.49

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Time Slice 7/2/2010-10/1/2010 Active Days: 66	2.93	17.37	14.61	0.01	0.03	1.45	1.48	0.01	1.33	1.34	2,010.31
Asphalt 07/02/2010-10/02/2010	2.93	17.37	14.61	0.01	0.03	1.45	1.48	0.01	1.33	1.34	2,010.31
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.64	15.97	9.18	0.00	0.00	1.39	1.39	0.00	1.27	1.27	1,272.04
Paving On Road Diesel	0.06	1.00	0.23	0.00	0.01	0.05	0.05	0.00	0.05	0.05	131.30
Paving Worker Trips	0.15	0.40	5.20	0.01	0.03	0.01	0.04	0.01	0.01	0.02	606.97
Time Slice 11/2/2010-12/31/2010 Active Days: 44	<u>28.68</u>	24.31	<u>43.48</u>	<u>0.04</u>	0.19	1.54	1.73	0.07	1.41	1.48	<u>6,065.93</u>
Building 11/02/2010-06/01/2011	4.87	24.25	42.76	0.04	0.19	1.54	1.73	0.07	1.41	1.48	5,981.67
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	0.40	5.57	3.45	0.01	0.04	0.27	0.31	0.01	0.25	0.26	1,081.85
Building Worker Trips	0.82	2.14	28.11	0.03	0.15	0.07	0.22	0.05	0.06	0.12	3,278.63
Coating 11/02/2010-06/01/2011	23.81	0.05	0.72	0.00	0.00	0.00	0.01	0.00	0.00	0.00	84.26
Architectural Coating	23.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.05	0.72	0.00	0.00	0.00	0.01	0.00	0.00	0.00	84.26
Time Slice 1/3/2011-6/1/2011 Active Days: 108	<u>28.30</u>	<u>22.60</u>	<u>40.71</u>	<u>0.04</u>	<u>0.19</u>	<u>1.46</u>	<u>1.65</u>	<u>0.07</u>	<u>1.34</u>	<u>1.41</u>	<u>6,068.57</u>
Building 11/02/2010-06/01/2011	4.50	22.55	40.04	0.04	0.19	1.46	1.65	0.07	1.34	1.41	5,984.25
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	0.36	4.94	3.25	0.01	0.04	0.25	0.29	0.01	0.23	0.24	1,082.02
Building Worker Trips	0.74	1.95	25.95	0.03	0.15	0.07	0.22	0.05	0.06	0.12	3,281.03
Coating 11/02/2010-06/01/2011	23.81	0.05	0.67	0.00	0.00	0.00	0.01	0.00	0.00	0.00	84.32
Architectural Coating	23.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.05	0.67	0.00	0.00	0.00	0.01	0.00	0.00	0.00	84.32

Phase Assumptions

Phase: Fine Grading 6/2/2010 - 7/1/2010 - Fine Site Grading
 Total Acres Disturbed: 7.76
 Maximum Daily Acreage Disturbed: 1.94
 Fugitive Dust Level of Detail: Default

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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 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: Mass Grading 1/1/2010 - 6/1/2010 - Mass Site Grading

Total Acres Disturbed: 7.76

Maximum Daily Acreage Disturbed: 1.94

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 314.81

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 7/2/2010 - 10/2/2010 - Paving

Acres to be Paved: 1.94

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
- 1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 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 11/2/2010 - 6/1/2011 - 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

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3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 11/2/2010 - 6/1/2011 - 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

Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt D.urb924

Project Name: Cloverdale alt D

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

<u>Source</u>	ROG	NOX	CO	SO2	PM10	PM25	CO2
High turnover (sit-down) rest.	144.90	208.15	2,452.77	1.50	247.63	47.07	150,151.59
casino	69.06	98.51	1,160.22	0.71	117.22	22.28	71,063.60
specialty retail	33.15	46.44	546.87	0.33	55.25	10.50	33,496.00
TOTALS (lbs/day, unmitigated)	247.11	353.10	4,159.86	2.54	420.10	79.85	254,711.19

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2010 Temperature (F): 85 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
High turnover (sit-down) rest.		127.15	1000 sq ft	37.80	4,806.27	144,188.10
casino		39.43	1000 sq ft	57.70	2,275.11	68,253.33
specialty retail		14.63	1000 sq ft	73.30	1,072.38	32,171.37
					8,153.76	244,612.80

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	44.8	2.0	97.3	0.7
Light Truck < 3750 lbs	18.3	2.7	90.7	6.6
Light Truck 3751-5750 lbs	19.8	1.5	98.0	0.5
Med Truck 5751-8500 lbs	7.2	1.4	97.2	1.4
Lite-Heavy Truck 8501-10,000 lbs	1.8	0.0	66.7	33.3
Lite-Heavy Truck 10,001-14,000 lbs	1.0	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.2	8.3	16.7	75.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	100.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.5	66.7	33.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	30.0	30.0	30.0	30.0	30.0	30.0
Trip speeds (mph)	60.0	60.0	60.0	60.0	60.0	60.0
% of Trips - Residential	32.9	18.0	49.1			

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
% of Trips - Commercial (by land use)						
High turnover (sit-down) rest.				5.0	2.5	92.5
casino				2.0	1.0	97.0
specialty retail				2.0	1.0	97.0

Operational Changes to Defaults

- The urban/rural selection has been changed from Urban to Rural
- Home-based work average speed changed from 35 mph to 60 mph
- Home-based work rural trip length changed from 16.8 miles to 30 miles
- Home-based shop average speed changed from 35 mph to 60 mph
- Home-based shop rural trip length changed from 7.1 miles to 30 miles
- Home-based other average speed changed from 35 mph to 60 mph
- Home-based other rural trip length changed from 7.9 miles to 30 miles
- Commercial-based commute average speed changed from 35 mph to 60 mph
- Commercial-based commute rural trip length changed from 14.7 miles to 30 miles
- Commercial-based non-work average speed changed from 35 mph to 60 mph
- Commercial-based non-work rural trip length changed from 6.6 miles to 30 miles
- Commercial-based customer average speed changed from 35 mph to 60 mph
- Commercial-based customer rural trip length changed from 6.6 miles to 30 miles

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt E.urb924

Project Name: cloverdale alt E

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
2010 TOTALS (lbs/day unmitigated)	60.67	74.04	108.60	0.17	83.62	3.92	84.93	17.47	3.60	18.67	19,209.76
2011 TOTALS (lbs/day unmitigated)	59.87	66.76	101.31	0.17	0.73	3.64	4.37	0.26	3.34	3.60	19,216.64

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)	3.04	2.53	11.29	0.00	0.03	0.03	2,907.69

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)	256.96	362.96	4,284.36	2.63	431.61	82.06	261,852.36

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)	260.00	365.49	4,295.65	2.63	431.64	82.09	264,760.05

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt E.urb924

Project Name: cloverdale alt E

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
2010 TOTALS (tons/year unmitigated)	1.65	4.00	3.93	0.00	5.45	0.23	5.68	1.14	0.21	1.35	674.48
2011 TOTALS (tons/year unmitigated)	3.23	3.61	5.47	0.01	0.04	0.20	0.24	0.01	0.18	0.19	1,037.70

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)	0.49	0.45	1.20	0.00	0.00	0.00	529.10

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)	51.20	77.36	827.73	0.46	78.77	14.98	45,554.29

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)	51.69	77.81	828.93	0.46	78.77	14.98	46,083.39

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Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt E.urb924

Project Name: cloverdale alt E

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

<u>Source</u>	ROG	NOX	CO	SO2	PM10	PM25	CO2
High turnover (sit-down) rest.	14.67	21.01	247.56	0.15	24.99	4.75	15,154.90
Fast food rest. w/ drive thru	56.96	81.97	965.91	0.59	97.52	18.54	59,130.35
Free-standing discount store	61.90	88.43	1,041.39	0.64	105.21	20.00	63,785.45
General office building	49.54	68.69	814.03	0.50	81.60	15.52	49,565.46
Industrial park	33.58	45.29	537.43	0.33	53.79	10.23	32,685.85
specialty retail	40.31	57.57	678.04	0.42	68.50	13.02	41,530.35
TOTALS (lbs/day, unmitigated)	256.96	362.96	4,284.36	2.63	431.61	82.06	261,852.36

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2010 Temperature (F): 85 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
High turnover (sit-down) rest.		69.30	1000 sq ft	7.00	485.10	14,553.00

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Fast food rest. w/ drive thru		270.39	1000 sq ft	7.00	1,892.73	56,781.90
Free-standing discount store		45.38	1000 sq ft	45.00	2,042.10	61,263.00
General office building		12.67	1000 sq ft	125.00	1,583.75	47,512.50
Industrial park		6.96	1000 sq ft	150.00	1,044.00	31,320.00
specialty retail		44.32	1000 sq ft	30.00	1,329.60	39,888.00
					8,377.28	251,318.40

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	44.8	2.0	97.3	0.7
Light Truck < 3750 lbs	18.3	2.7	90.7	6.6
Light Truck 3751-5750 lbs	19.8	1.5	98.0	0.5
Med Truck 5751-8500 lbs	7.2	1.4	97.2	1.4
Lite-Heavy Truck 8501-10,000 lbs	1.8	0.0	66.7	33.3
Lite-Heavy Truck 10,001-14,000 lbs	1.0	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.2	8.3	16.7	75.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	100.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.5	66.7	33.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	30.0	30.0	30.0	30.0	30.0	30.0
Trip speeds (mph)	60.0	60.0	60.0	60.0	60.0	60.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
High turnover (sit-down) rest.				5.0	2.5	92.5
Fast food rest. w/ drive thru				5.0	2.5	92.5
Free-standing discount store				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Industrial park				41.5	20.8	37.8
specialty retail				2.0	1.0	97.0

Operational Changes to Defaults

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

Home-based work average speed changed from 35 mph to 60 mph

Home-based work rural trip length changed from 16.8 miles to 30 miles

Home-based shop average speed changed from 35 mph to 60 mph

Home-based shop rural trip length changed from 7.1 miles to 30 miles

Home-based other average speed changed from 35 mph to 60 mph

Home-based other rural trip length changed from 7.9 miles to 30 miles

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Operational Changes to Defaults

Commercial-based commute average speed changed from 35 mph to 60 mph

Commercial-based commute rural trip length changed from 14.7 miles to 30 miles

Commercial-based non-work average speed changed from 35 mph to 60 mph

Commercial-based non-work rural trip length changed from 6.6 miles to 30 miles

Commercial-based customer average speed changed from 35 mph to 60 mph

Commercial-based customer rural trip length changed from 6.6 miles to 30 miles

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\dsa\Application Data\Urbemis\Version9a\Projects\Cloverdale alt E.urb924

Project Name: cloverdale alt E

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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 Total</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5 Total</u>	<u>CO2</u>
Time Slice 1/1/2010-6/1/2010 Active Days: 108	3.15	26.23	15.30	0.00	83.62	1.31	84.93	17.47	1.20	18.67	2,687.54
Mass Grading 01/01/2010-06/01/2010	3.15	26.23	15.30	0.00	83.62	1.31	84.93	17.47	1.20	18.67	2,687.54
Mass Grading Dust	0.00	0.00	0.00	0.00	83.60	0.00	83.60	17.46	0.00	17.46	0.00
Mass Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Mass Grading On Road Diesel	0.07	1.05	0.24	0.00	0.01	0.05	0.06	0.00	0.05	0.05	136.73
Mass Grading Worker Trips	0.08	0.20	2.60	0.00	0.01	0.01	0.02	0.01	0.01	0.01	303.49
Time Slice 6/2/2010-7/1/2010 Active Days: 22	3.08	25.19	15.06	0.00	83.61	1.26	84.87	17.46	1.15	18.62	2,550.80
Fine Grading 06/02/2010-07/01/2010	3.08	25.19	15.06	0.00	83.61	1.26	84.87	17.46	1.15	18.62	2,550.80
Fine Grading Dust	0.00	0.00	0.00	0.00	83.60	0.00	83.60	17.46	0.00	17.46	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
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	0.20	2.60	0.00	0.01	0.01	0.02	0.01	0.01	0.01	303.49

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Time Slice 7/2/2010-10/1/2010 Active Days: 66	3.46	20.62	16.63	0.01	0.04	1.69	1.73	0.01	1.55	1.57	2,384.20
Asphalt 07/02/2010-10/02/2010	3.46	20.62	16.63	0.01	0.04	1.69	1.73	0.01	1.55	1.57	2,384.20
Paving Off-Gas	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.98	18.01	10.28	0.00	0.00	1.57	1.57	0.00	1.44	1.44	1,418.44
Paving On Road Diesel	0.14	2.17	0.50	0.00	0.01	0.11	0.12	0.00	0.10	0.10	282.91
Paving Worker Trips	0.17	0.45	5.85	0.01	0.03	0.01	0.05	0.01	0.01	0.02	682.84
Time Slice 11/2/2010-12/31/2010 Active Days: 44	60.67	74.04	108.60	0.17	0.73	3.92	4.65	0.26	3.60	3.86	19,209.76
Building 11/02/2010-06/01/2011	9.32	73.92	107.04	0.17	0.72	3.92	4.64	0.25	3.60	3.85	19,028.07
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	3.68	52.17	27.41	0.09	0.36	2.55	2.91	0.12	2.35	2.47	9,426.39
Building Worker Trips	1.99	5.21	68.43	0.08	0.36	0.17	0.54	0.13	0.15	0.28	7,980.48
Coating 11/02/2010-06/01/2011	51.34	0.12	1.56	0.00	0.01	0.00	0.01	0.00	0.00	0.01	181.69
Architectural Coating	51.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.12	1.56	0.00	0.01	0.00	0.01	0.00	0.00	0.01	181.69
Time Slice 1/3/2011-6/1/2011 Active Days: 108	59.87	66.76	101.31	0.17	0.73	3.64	4.37	0.26	3.34	3.60	19,216.64
Building 11/02/2010-06/01/2011	8.53	66.65	99.87	0.17	0.72	3.64	4.36	0.25	3.34	3.59	19,034.81
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	3.33	46.25	25.86	0.09	0.36	2.33	2.68	0.12	2.14	2.26	9,427.28
Building Worker Trips	1.81	4.73	63.17	0.08	0.36	0.17	0.54	0.13	0.15	0.28	7,986.33
Coating 11/02/2010-06/01/2011	51.34	0.11	1.44	0.00	0.01	0.00	0.01	0.00	0.00	0.01	181.83
Architectural Coating	51.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.11	1.44	0.00	0.01	0.00	0.01	0.00	0.00	0.01	181.83

Phase Assumptions

Phase: Fine Grading 6/2/2010 - 7/1/2010 - Fine Site Grading

Total Acres Disturbed: 16.72

Maximum Daily Acreage Disturbed: 4.18

Fugitive Dust Level of Detail: Default

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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 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: Mass Grading 1/1/2010 - 6/1/2010 - Mass Site Grading

Total Acres Disturbed: 16.72

Maximum Daily Acreage Disturbed: 4.18

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 37.04

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 7/2/2010 - 10/2/2010 - Paving

Acres to be Paved: 4.18

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

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

Phase: Building Construction 11/2/2010 - 6/1/2011 - 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

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3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 11/2/2010 - 6/1/2011 - 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

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name:

Project Name: cloverdale wastewater

Project Location: Sonoma County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
2010 TOTALS (tons/year unmitigated)	0.30	1.85	1.85	0.00	0.65	0.11	0.76	0.14	0.10	0.24	239.18

Urbemis 2007 Version 9.2.4

Detail Report for Annual Construction Unmitigated Emissions (Tons/Year)

File Name:
Project Name: cloverdale wastewater
Project Location: Sonoma County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006
Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

ROG NOx CO SO2 PM10 Dust PM10 Exhaust PM10 Total PM2.5 Dust PM2.5 Exhaust PM2.5 Total CO2

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2010	0.30	1.85	1.85	0.00	0.65	0.11	0.76	0.14	0.10	0.24	239.18
Mass Grading 01/01/2010-03/01/2010	0.06	0.53	0.29	0.00	0.42	0.03	0.45	0.09	0.02	0.11	49.33
Mass Grading Dust	0.00	0.00	0.00	0.00	0.42	0.00	0.42	0.09	0.00	0.09	0.00
Mass Grading Off Road Diesel	0.06	0.52	0.26	0.00	0.00	0.03	0.03	0.00	0.02	0.02	47.19
Mass 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
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.14
Trenching 01/01/2010-02/01/2010	0.02	0.20	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	19.98
Trenching Off Road Diesel	0.02	0.19	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	18.86
Trenching Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12
Fine Grading 03/02/2010-04/01/2010	0.04	0.29	0.16	0.00	0.23	0.01	0.24	0.05	0.01	0.06	27.02
Fine Grading Dust	0.00	0.00	0.00	0.00	0.23	0.00	0.23	0.05	0.00	0.05	0.00
Fine Grading Off Road Diesel	0.03	0.29	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	25.84
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	1.17
Asphalt 04/02/2010-05/02/2010	0.03	0.18	0.13	0.00	0.00	0.01	0.01	0.00	0.01	0.01	16.33
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	0.03	0.17	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.36
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84
Paving Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.14
Building 04/02/2010-07/02/2010	0.15	0.66	1.17	0.00	0.00	0.04	0.05	0.00	0.04	0.04	126.52
Building Off Road Diesel	0.12	0.55	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	53.50
Building Vendor Trips	0.01	0.07	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.49
Building Worker Trips	0.02	0.04	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.53

Phase Assumptions

Phase: Fine Grading 3/2/2010 - 4/1/2010 - Fine Site Grading

Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1

Page: 3

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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 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: Mass Grading 1/1/2010 - 3/1/2010 - Mass Site Grading

Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1

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 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: Trenching 1/1/2010 - 2/1/2010 - 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 4/2/2010 - 5/2/2010 - Paving

Acres to be Paved: 1.4

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
- 1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 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

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Phase: Building Construction 4/2/2010 - 7/2/2010 - 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

Cloverdale (ESA Project #207737)

	Trip Length	Trip miles	MCAPCD		NSCAPCD		BAAQMD		
			% miles in MCAPCD	Miles in MCAPCD	% miles in NSCAPCD	Miles in NSCAPCD	% miles in BAAQMD	Miles in BAAQMD	
Trips North	7	30	210	0.84	176.4	0.16	33.6	0	0
Trips South	90	30	2700	0	0	0.64	1728	0.36	972
Other Trips	3	30	90	0	0	1	90	0	0
Total Trips	100		3000		176.4		1851.6		972
% of total URBEMIS emissions					6%		62%		32%

Check totals

3000

100%

Cloverdale Operational Emissions Split Into 3 Air Districts
 62% = Northern Sonoma 32% = BAAQMD 6% = Mendocino County

		Alt A			Alt B			Alt C			Alt D			Alt E		
		62%	32%	6%	62%	32%	6%	62%	32%	6%	62%	32%	6%	62%	32%	6%
ROG	lbs/day	182	94	18	127	66	12	117	61	11	153	79	15	159	82	15
	tons/yr	37	19	4	25	13	2	23	12	2	31	16	3	32	16	3
NOx	lbs/day	256	132	25	180	93	17	165	85	16	219	113	21	225	116	22
	tons/yr	55	28	5	38	20	4	35	18	3	47	24	5	48	25	5
CO	lbs/day	3020	1559	292	2116	1092	205	1948	1005	189	2579	1331	250	2656	1371	257
	tons/yr	585	302	57	409	211	40	377	194	36	498	257	48	513	265	50
PM10	lbs/day	305	157	30	214	110	21	197	101	19	260	134	25	268	138	26
	tons/yr	56	29	5	39	20	4	36	19	3	48	25	5	49	25	5
PM2.5	lbs/day	58	30	6	41	21	4	37	19	4	50	26	5	51	26	5
	tons/yr	11	5	1	7	4	1	7	4	1	9	5	1	9	5	1
CO2	lbs/day	184963	95465	17900	129587	66884	12541	119312	61580	11546	157921	81508	15283	162348	83793	15711
	tons/yr	32743	16900	3169	22543	11635	2182	20756	10713	2009	27473	1457	273	2824	1457	273

Urbemis Output lbs/day

	ROG	NOx	CO	PM10	PM2.5	CO2
Alt A	293.98	413.57	4871	492.05	93.52	298328
Alt B	205.64	289.74	3413	344.75	65.51	209011
Alt C	189.46	266.77	3142	317	60	192438
Alt D	247	353.1	4160	420.1	79.85	254711
Alt E	256.96	362.96	4284	431.61	82.06	261852

Urbemis Output tons/year

	ROG	NOx	CO	PM10	PM2.5	CO2
Alt A	59	88.9	943	89.8	17.08	52812
Alt B	40.93	61.76	659.66	62.92	11.96	36360
Alt C	37.7	56.86	607.36	57.93	11	33477
Alt D	49.45	75.26	804	76.66	14.58	44311
Alt E	51.2	77.36	827.73	78.77	14.98	4554.3

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Cloverdale Northern Sonoma County
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 1.0 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 4 (D) VS= .0 CM/S
 MIXH= 1000. M AMB= 1.7 PPM
 SIGTH= 30. DEGREES TEMP= 28.0 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *	EF	H	W
DESCRIPTION	* X1 Y1 X2 Y2 * TYPE	VPH (G/MI)	(M)	(M)
A. Link A	* 1500 1200 1500 0 * AG	1800	6.6	.0 22.2

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

* RECEPTOR	* X	* Y	* Z	* (DEG)	* CONC (PPM)
1. Recpt 1	* 1560	* 600	* 1.8	* 207.	* 1.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Cloverdale Northern Sonoma County
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 1.0 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 4 (D) VS= .0 CM/S
 MIXH= 1000. M AMB= 1.7 PPM
 SIGTH= 30. DEGREES TEMP= 28.0 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *	EF	H	W
DESCRIPTION	* X1 Y1 X2 Y2 * TYPE	VPH (G/MI)	(M)	(M)
A. Link A	* 1500 1200 1500 0 * AG	1970	6.6	.0 22.2

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

* RECEPTOR	* X	* Y	* Z	* (DEG)	* (PPM)
1. Recpt 1	* 1560	* 600	* 1.8	* 207.	* 1.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Cloverdale Northern Sonoma County
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 1.0 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 4 (D) VS= .0 CM/S
 MIXH= 1000. M AMB= 1.7 PPM
 SIGTH= 30. DEGREES TEMP= 28.0 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *	EF	H	W
DESCRIPTION	* X1 Y1 X2 Y2 * TYPE	VPH (G/MI)	(M)	(M)
A. Link A	* 1500 1200 1500 0 * AG	2788	6.6	.0 22.2

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

* RECEPTOR	* X	* Y	* Z	* (DEG)	* CONC (PPM)
1. Recpt 1	* 1560	* 600	* 1.8	* 225.	* 2.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Cloverdale Northern Sonoma County
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 1.0 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 4 (D) VS= .0 CM/S
 MIXH= 1000. M AMB= 1.7 PPM
 SIGTH= 30. DEGREES TEMP= 28.0 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *	EF	H	W
DESCRIPTION	* X1 Y1 X2 Y2 * TYPE	VPH (G/MI)	(M)	(M)
A. Link A	* 1500 1200 1500 0 * AG	2588	6.6	.0 22.2

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

* RECEPTOR	* X	* Y	* Z	* (DEG)	* CONC (PPM)
1. Recpt 1	* 1560	* 600	* 1.8	* 225.	* 2.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Cloverdale Northern Sonoma County
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 1.0 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 4 (D) VS= .0 CM/S
 MIXH= 1000. M AMB= 1.7 PPM
 SIGTH= 30. DEGREES TEMP= 28.0 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *	EF	H	W
DESCRIPTION	* X1 Y1 X2 Y2 * TYPE	VPH (G/MI)	(M)	(M)
A. Link A	* 1500 1200 1500 0 * AG	2554	6.6	.0 22.2

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

* RECEPTOR	* X	* Y	* Z	* (DEG)	* (PPM)
1. Recpt 1	* 1560	* 600	* 1.8	* 224.	* 1.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Cloverdale Northern Sonoma County
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 1.0 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 4 (D) VS= .0 CM/S
 MIXH= 1000. M AMB= 1.7 PPM
 SIGTH= 30. DEGREES TEMP= 28.0 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *	EF	H	W
DESCRIPTION	* X1 Y1 X2 Y2 * TYPE	VPH (G/MI)	(M)	(M)
A. Link A	* 1500 1200 1500 0 * AG	2468	6.6	.0 22.2

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

* RECEPTOR	* X	* Y	* Z	* (DEG)	* (PPM)
1. Recpt 1	* 1560	* 600	* 1.8	* 222.	* 1.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Cloverdale Northern Sonoma County
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 1.0 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 4 (D) VS= .0 CM/S
 MIXH= 1000. M AMB= 1.7 PPM
 SIGTH= 30. DEGREES TEMP= 28.0 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *	EF	H	W
DESCRIPTION	* X1 Y1 X2 Y2 * TYPE	VPH (G/MI)	(M)	(M)
A. Link A	* 1500 1200 1500 0 * AG	2272	6.6	.0 22.2

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

* RECEPTOR	* X	* Y	* Z	* (DEG)	* (PPM)
1. Recpt 1	* 1560	* 600	* 1.8	* 221.	* 1.9

Greenhouse Gas (GHG) Emissions Calculations

ALT A

Project Name: cloverdale
 ESA Proj. Number: 207737

Greenhouse Gas (GHG) Emissions from Area Sources and Vehicles

	Annual Emissions		
	pounds (lbs.)	Tons	Metric Tons
URBEMIS2007 Area Emissions	1,827,900	914	829
URBEMIS2007 Vehicle Emissions	103,796,000	51,898	47,081
Total Emissions (area sources + vehicles)	105,623,900	52,812	47,910

Indirect Greenhouse Gas (GHG) Emissions from Project use of Electricity (Power Plant Emissions)

Estimated Project Annual Electrical Use: 11,766,259 kWh (kilowatt hours)/year
 11,766 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual		CO2 Equivalent Factor	Annual
		Project Electricity mWh	GHGs metric tons		CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	804.54	11,766	4,294	1	4294
Nitrous Oxide (N2O)	0.0037	11,766	0.0	296	6
Methane (CH4)	0.0067	11,766	0.0	23	1
Total Indirect GHG Emissions from Project Electricity Use=					4301

Total Annual Greenhouse Gas (GHG) Emission from Project Operations -- All Sources (CO2 equivalent Metric Tons)

Area Sources	829
Vehicles	47,081
Electrical Use	4301
Total=	52,211

Notes and References:

Total Emissions from Indirect Electricity Use
 Formula and Emission Factor from The California Climate Action Registry Report Protocol 2006

Pg. 32 (CCARRP) gives Equations

Pg. 35 (CCARRP) gives CO2 output emission rate (lbs/mWh)
 804.54 (lbs/mWh)

Pg. 85 (CCARRP) gives CO2 equivalency factors

Pg. 87 (CCARRP) gives Methane and Nitrous Oxide electricity emission factors (lbs/mWh)
 Methane - 0.0067 (lbs/mWh)
 Nitrous Oxide - 0.0037 (lbs/mWh)

lbs/metric ton = 2204.62

Percentage of 25,000 208.8%
 Percentage of 174 Million 0.030%

	Tons from URBEMIS	Metric Tons
Construction	1578	1432

Greenhouse Gas (GHG) Emissions Calculations

ALT B

Project Name: cloverdale
 ESA Proj. Number: 207737

Greenhouse Gas (GHG) Emissions from Area Sources and Vehicles

	Annual Emissions		
	pounds (lbs.)	Tons	Metric Tons
URBEMIS2007 Area Emissions	1,192,000	596	541
URBEMIS2007 Vehicle Emissions	72,720,000	36,360	32,985
Total Emissions (area sources + vehicles)	73,912,000	36,956	33,526

Indirect Greenhouse Gas (GHG) Emissions from Project use of Electricity (Power Plant Emissions)

Estimated Project Annual Electrical Use: 8,814,561 kWh (kilowatt hours)/year
 8,815 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual		CO2 Equivalent Factor	Annual
		Project Electricity mWh	GHGs metric tons		CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	804.54	8,815	3,217	1	3217
Nitrous Oxide (N2O)	0.0037	8,815	0.0	296	4
Methane (CH4)	0.0067	8,815	0.0	23	1
Total Indirect GHG Emissions from Project Electricity Use=					3222

Total Annual Greenhouse Gas (GHG) Emission from Project Operations -- All Sources (CO2 equivalent Metric Tons)

Area Sources	541
Vehicles	32,985
Electrical Use	3222
Total=	36,748

Notes and References:

Total Emissions from Indirect Electricity Use
 Formula and Emission Factor from The California Climate Action Registry Report Protocol 2006

Pg. 32 (CCARRP) gives Equations

Pg. 35 (CCARRP) gives CO2 output emission rate (lbs/mWh)
 804.54 (lbs/mWh)

Pg. 85 (CCARRP) gives CO2 equivalency factors

Pg. 87 (CCARRP) gives Methane and Nitrous Oxide electricity emission factors (lbs/mWh)
 Methane - 0.0067 (lbs/mWh)
 Nitrous Oxide - 0.0037 (lbs/mWh)

lbs/metric ton = 2204.62

Percentage of 25,000 147.0%
 Percentage of 174 Million 0.021%

	Tons from URBEMIS	Metric Tons
Construction	1202	1090

Greenhouse Gas (GHG) Emissions Calculations

ALT C

Project Name: cloverdale
 ESA Proj. Number: 207737

Greenhouse Gas (GHG) Emissions from Area Sources and Vehicles

	Annual Emissions		
	pounds (lbs.)	Tons	Metric Tons
URBEMIS2007 Area Emissions	1,135,240	568	515
URBEMIS2007 Vehicle Emissions	66,954,000	33,477	30,370
Total Emissions (area sources + vehicles)	68,089,240	34,045	30,885

Indirect Greenhouse Gas (GHG) Emissions from Project use of Electricity (Power Plant Emissions)

Estimated Project Annual Electrical Use: 8,325,941 kWh (kilowatt hours)/year
 8,326 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual		CO2	Annual
		Project Electricity mWh	GHGs metric tons	Equivalent Factor	CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	804.54	8,326	3,038	1	3038
Nitrous Oxide (N2O)	0.0037	8,326	0.0	296	4
Methane (CH4)	0.0067	8,326	0.0	23	1
Total Indirect GHG Emissions from Project Electricity Use=					3043

Total Annual Greenhouse Gas (GHG) Emission from Project Operations -- All Sources (CO2 equivalent Metric Tons)

Area Sources	515
Vehicles	30,370
Electrical Use	3043
Total=	33,928

Notes and References:

Total Emissions from Indirect Electricity Use
 Formula and Emission Factor from The California Climate Action Registry Report Protocol 2006

Pg. 32 (CCARRP) gives Equations

Pg. 35 (CCARRP) gives CO2 output emission rate (lbs/mWh)
 804.54 (lbs/mWh)

Pg. 85 (CCARRP) gives CO2 equivalency factors

Pg. 87 (CCARRP) gives Methane and Nitrous Oxide electricity emission factors (lbs/mWh)
 Methane - 0.0067 (lbs/mWh)
 Nitrous Oxide - 0.0037 (lbs/mWh)

lbs/metric ton = 2204.62

Percentage of 25,000 135.7%
 Percentage of 174 Million 0.019%

	Tons from URBEMIS	Metric Tons
Construction	1135	1030

Greenhouse Gas (GHG) Emissions Calculations

ALT D

Project Name: cloverdale
 ESA Proj. Number: 207737

Greenhouse Gas (GHG) Emissions from Area Sources and Vehicles

	Annual Emissions		
	pounds (lbs.)	Tons	Metric Tons
URBEMIS2007 Area Emissions	544,000	272	247
URBEMIS2007 Vehicle Emissions	88,622,000	44,311	40,198
Total Emissions (area sources + vehicles)	89,166,000	44,583	40,445

Indirect Greenhouse Gas (GHG) Emissions from Project use of Electricity (Power Plant Emissions)

Estimated Project Annual Electrical Use: 5,094,287 kWh (kilowatt hours)/year
 5,094 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual		CO2 Equivalent Factor	Annual
		Project Electricity mWh	GHGs metric tons		CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	804.54	5,094	1,859	1	1859
Nitrous Oxide (N2O)	0.0037	5,094	0.0	296	3
Methane (CH4)	0.0067	5,094	0.0	23	0
Total Indirect GHG Emissions from Project Electricity Use=					1862

Total Annual Greenhouse Gas (GHG) Emission from Project Operations -- All Sources (CO2 equivalent Metric Tons)

Area Sources	247
Vehicles	40,198
Electrical Use	1862
Total=	42,307

Notes and References:

Total Emissions from Indirect Electricity Use
 Formula and Emission Factor from The California Climate Action Registry Report Protocol 2006

Pg. 32 (CCARRP) gives Equations

Pg. 35 (CCARRP) gives CO2 output emission rate (lbs/mWh)
 804.54 (lbs/mWh)

Pg. 85 (CCARRP) gives CO2 equivalency factors

Pg. 87 (CCARRP) gives Methane and Nitrous Oxide electricity emission factors (lbs/mWh)
 Methane - 0.0067 (lbs/mWh)
 Nitrous Oxide - 0.0037 (lbs/mWh)

lbs/metric ton = 2204.62

Percentage of 25,000 169.2%
 Percentage of 174 Million 0.024%

Construction	Tons from URBEMIS 428	Metric Tons 388
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Greenhouse Gas (GHG) Emissions Calculations

ALT E

Project Name: cloverdale
 ESA Proj. Number: 207737

Greenhouse Gas (GHG) Emissions from Area Sources and Vehicles

	Annual Emissions		
	pounds (lbs.)	Tons	Metric Tons
URBEMIS2007 Area Emissions	1,058,000	529	480
URBEMIS2007 Vehicle Emissions	91,108,000	45,554	41,326
Total Emissions (area sources + vehicles)	92,166,000	46,083	41,806

Indirect Greenhouse Gas (GHG) Emissions from Project use of Electricity (Power Plant Emissions)

Estimated Project Annual Electrical Use: 5,341,600 kWh (kilowatt hours)/year
 5,342 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual		CO2 Equivalent Factor	Annual
		Project Electricity mWh	GHGs metric tons		CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	804.54	5,342	1,949	1	1949
Nitrous Oxide (N2O)	0.0037	5,342	0.0	296	3
Methane (CH4)	0.0067	5,342	0.0	23	0
Total Indirect GHG Emissions from Project Electricity Use=					1952

Total Annual Greenhouse Gas (GHG) Emission from Project Operations -- All Sources (CO2 equivalent Metric Tons)

Area Sources	480
Vehicles	41,326
Electrical Use	1952
Total=	43,758

Notes and References:

Total Emissions from Indirect Electricity Use
 Formula and Emission Factor from The California Climate Action Registry Report Protocol 2006

Pg. 32 (CCARRP) gives Equations

Pg. 35 (CCARRP) gives CO2 output emission rate (lbs/mWh)
 804.54 (lbs/mWh)

Pg. 85 (CCARRP) gives CO2 equivalency factors

Pg. 87 (CCARRP) gives Methane and Nitrous Oxide electricity emission factors (lbs/mWh)
 Methane - 0.0067 (lbs/mWh)
 Nitrous Oxide - 0.0037 (lbs/mWh)

lbs/metric ton = 2204.62

Percentage of 25,000 175.0%
 Percentage of 174 Million 0.025%

Construction	Tons from URBEMIS	Metric Tons
	1038	942

Greenhouse Gas (GHG) Emissions Calculations

Project Name: Cloverdale WWTP
 ESA Proj. Number: 207737

Greenhouse Gas (GHG) Emissions from Area Sources and Vehicles

	Annual Emissions		
	pounds (lbs.)	Tons	Metric Tons
URBEMIS2007 Area Emissions	0	0	0
URBEMIS2007 Vehicle Emissions	0	0	0
Total Emissions (area sources + vehicles)	0	0	0

Indirect Greenhouse Gas (GHG) Emissions from Project use of Electricity (Power Plant Emissions)

Estimated Project Annual Electrical Use: 1,275,000 kWh (kilowatt hours)/year
 1,275 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual		CO2 Equivalent Factor	Annual
		Project Electricity mWh	GHGs metric tons		CO2 Equivalent Emissions (metric ton)
Carbon Dioxide (CO2)	804.54	1,275	465	1	465
Nitrous Oxide (N2O)	0.0037	1,275	0.0	296	1
Methane (CH4)	0.0067	1,275	0.0	23	0
Total Indirect GHG Emissions from Project Electricity Use=					466

Total Annual Greenhouse Gas (GHG) Emission from Project Operations -- All Sources (CO2 equivalent Metric Tons)

Area Sources	0
Vehicles	0
Electrical Use	466
Total=	466

Notes and References:

Total Emissions from Indirect Electricity Use
 Formula and Emission Factor from The California Climate Action Registry Report Protocol 2006

Pg. 32 (CCARRP) gives Equations

Pg. 35 (CCARRP) gives CO2 output emission rate (lbs/mWh)
 804.54 (lbs/mWh)

Pg. 85 (CCARRP) gives CO2 equivalency factors

Pg. 87 (CCARRP) gives Methane and Nitrous Oxide electricity emission factors (lbs/mWh)
 Methane - 0.0067 (lbs/mWh)
 Nitrous Oxide - 0.0037 (lbs/mWh)

lbs/metric ton = 2204.62

Percentage of 25,000 1.9%
 Percentage of 174 Milli 0.0003%

	Tons from URBEMIS	Metric Tons
Construction	239.18	217