C Air Quality Data

HEAVY EQUIPMENT EMISSIONS

Project: El Carro Well
Date: 12/27/2007
Scenario: Well drilling

INPUTS AND EMISSION FACTORS

Equipment Type	Model	Fuel	BHP	Number	Load Factor (Percent)	Hours/Day	Emission Factors (lb/BHP-hr) NOx	ROC	CO	PM10	SOx
Tracked tractor	Caterpillar D6	Diesel	140	0	64	8	0.023	0.002	0.011	0.0010	0.002
Tracked tractor	Caterpillar D8N	Diesel	285	0	64	8	0.023	0.002	0.011	0.0010	0.002
Tracked tractor (cert.)	Caterpillar D8	Diesel	285	0	64	8	0.015	0.002	0.011	0.0009	0.002
Pipelayer	Caterpillar 527G	Diesel	200	0	64	8	0.023	0.002	0.011	0.0010	0.002
Wheeled tractor	Caterpillar 824C	Diesel	315	0	59	8	0.021	0.002	0.010	0.0005	0.002
Landfill compactor	Caterpillar 826C	Diesel	315	0	59	8	0.021	0.002	0.010	0.0005	0.002
Elevating scraper	Caterpillar 623E	Diesel	365	0	72	8	0.019	0.001	0.011	0.0015	0.002
Elevating scraper (cert.)	Caterpillar 623	Diesel	365	0	72	8	0.015	0.002	0.011	0.0009	0.002
Tandem scraper	Caterpillar 637E	Diesel	700	0	72	8	0.019	0.001	0.011	0.0015	0.002
Standard scraper	Caterpillar 631E	Diesel	450	0	72	8	0.019	0.001	0.011	0.0015	0.002
Grader	Caterpillar 140G	Diesel	150	0	61	8	0.021	0.001	0.011	0.0015	0.002
Backhoe	Caterpillar 426	Diesel	70	1	55	16	0.022	0.003	0.015	0.0010	0.002
Wheeled loader	Bobcat	Diesel	65	0	68	8	0.023	0.002	0.011	0.0015	0.002
Wheeled loader	Caterpillar 950E	Diesel	160	0	68	8	0.023	0.002	0.011	0.0015	0.002
Wheeled loader	Caterpillar 966E	Diesel	216	0	68	8	0.023	0.002	0.011	0.0015	0.002
Wheeled loader	Caterpillar 988B	Diesel	375	0	68	8	0.023	0.002	0.011	0.0015	0.002
Excavator	Caterpillar 235	Diesel	250	0	57	8	0.024	0.001	0.011	0.0015	0.002
Excavator	Caterpillar 245	Diesel	360	0	57	8	0.024	0.001	0.011	0.0015	0.002
Off-highway truck	Caterpillar 773B	Diesel	650	0	57	8	0.026	0.005	0.032	0.0020	0.002
Crane	Cummins	Diesel	230	0	43	8	0.023	0.003	0.009	0.0015	0.002
Rock Crusher		Diesel	400	0	78	8	0.024	0.003	0.020	0.0015	0.002
Generator		Diesel	400	1	74	24	0.018	0.002	0.011	0.0010	0.002
Drill rig pumps		Diesel	150	2	74	23	0.018	0.000	0.011	0.0010	0.002
Asphalt paver	Caterpillar AP-1200	Diesel	145	0	62	8	0.023	0.001	0.007	0.0010	0.002
Welding machine	Perkins 4-236	Diesel	63	0	45	8	0.018	0.002	0.011	0.0010	0.002
Water wagon	Caterpillar 3406B	Diesel	350	0	57	8	0.026	0.005	0.032	0.0020	0.002
Roller	Caterpillar CS-431B	Diesel	102	0	56	8	0.020	0.002	0.007	0.0010	0.002

DAILY AND TOTAL EMISSIONS

Equipment Type	Emissions (lb/day) NOx	ROC	CO	PM10	SOx	Total Days	Emissions (Total Tons) NOx	ROC	CO	PM10	SOx
Tracked tractor	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Tracked tractor	0.0	0.0	0.0	0.0	0.0	20	0.00	0.00	0.00	0.00	0.00
Tracked tractor (cert.)	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Pipelayer	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Wheeled tractor	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Landfill compactor	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Elevating scraper	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Elevating scraper (cert.)	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Tandem scraper	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Standard scraper	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Grader	0.0	0.0	0.0	0.0	0.0	10	0.00	0.00	0.00	0.00	0.00
Backhoe	13.6	1.8	9.2	0.6	1.2	50	0.34	0.05	0.23	0.02	0.03
Wheeled loader	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Wheeled loader	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Wheeled loader	0.0	0.0	0.0	0.0	0.0	40	0.00	0.00	0.00	0.00	0.00
Wheeled loader	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Excavator	0.0	0.0	0.0	0.0	0.0	20	0.00	0.00	0.00	0.00	0.00
Excavator	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Off-highway truck	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Crane	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Rock Crusher	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Generator	127.9	14.2	78.1	7.1	14.2	0	0.00	0.00	0.00	0.00	0.00
Drill rig pumps	91.9	0.0	56.2	5.1	10.2	0	0.00	0.00	0.00	0.00	0.00
Asphalt paver	0.0	0.0	0.0	0.0	0.0	5	0.00	0.00	0.00	0.00	0.00
Welding machine	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Water wagon	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Roller	0.0	0.0	0.0	0.0	0.0	5	0.00	0.00	0.00	0.00	0.00
SUM	233.3	16.1	143.6	12.8	25.7		0.34	0.05	0.23	0.02	0.03

Emissions = BHP*Number*Load factor/100*Hours/day*lb/BHP-hr

Emission factors from Nonroad Engine and Vehicle Emissions Study (EPA, 1991)
Load factors from EPA NONROAD Model (in prep): Average Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling (Report No. NR-005, Dec 1997)
1996 Federal Stds: 0.015 NOx, 0.0009 PM, 0.002 THC lb/BHP-hr

HEAVY EQUIPMENT EMISSIONS

Project: El Carro Well
Date: 12/27/2007
Scenario: Pipeline installation

INPUTS AND EMISSION FACTORS

Equipment Type	Model	Fuel	BHP	Number	Load Factor (Percent)	Hours/Day	Emission Factors (lb/BHP-hr) NOx	ROC	CO	PM10	SOx
Tracked tractor	Caterpillar D6	Diesel	140	0	64	8	0.023	0.002	0.011	0.0010	0.002
Tracked tractor	Caterpillar D8N	Diesel	285	0	64	8	0.023	0.002	0.011	0.0010	0.002
Tracked tractor (cert.)	Caterpillar D8	Diesel	285	0	64	8	0.015	0.002	0.011	0.0009	0.002
Pipelayer	Caterpillar 527G	Diesel	200	0	64	8	0.023	0.002	0.011	0.0010	0.002
Wheeled tractor	Caterpillar 824C	Diesel	315	0	59	8	0.021	0.002	0.010	0.0005	0.002
Landfill compactor	Caterpillar 826C	Diesel	315	0	59	8	0.021	0.002	0.010	0.0005	0.002
Elevating scraper	Caterpillar 623E	Diesel	365	0	72	8	0.019	0.001	0.011	0.0015	0.002
Elevating scraper (cert.)	Caterpillar 623	Diesel	365	0	72	8	0.015	0.002	0.011	0.0009	0.002
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Standard scraper	Caterpillar 631E	Diesel	450	0	72	8	0.019	0.001	0.011	0.0015	0.002
Grader	Caterpillar 140G	Diesel	150	0	61	8	0.021	0.001	0.011	0.0015	0.002
Backhoe	Caterpillar 426	Diesel	70	2	55	8	0.022	0.003	0.015	0.0010	0.002
Wheeled loader	Bobcat	Diesel	65	0	68	8	0.023	0.002	0.011	0.0015	0.002
Wheeled loader	Caterpillar 950E	Diesel	160	3	68	8	0.023	0.002	0.011	0.0015	0.002
Wheeled loader	Caterpillar 966E	Diesel	216	0	68	8	0.023	0.002	0.011	0.0015	0.002
Wheeled loader	Caterpillar 988B	Diesel	375	0	68	8	0.023	0.002	0.011	0.0015	0.002
Excavator	Caterpillar 235	Diesel	250	0	57	8	0.024	0.001	0.011	0.0015	0.002
Excavator	Caterpillar 245	Diesel	360	0	57	8	0.024	0.001	0.011	0.0015	0.002
Off-highway truck	Caterpillar 773B	Diesel	650	0	57	8	0.026	0.005	0.032	0.0020	0.002
Crane	Cummins	Diesel	230	0	43	8	0.023	0.003	0.009	0.0015	0.002
Rock Crusher		Diesel	400	0	78	8	0.024	0.003	0.020	0.0015	0.002
Generator		Diesel	100	2	74	8	0.018	0.002	0.011	0.0010	0.002
Air compressor		Diesel	100	1	74	4	0.018	0.000	0.011	0.0010	0.002
Asphalt paver	Caterpillar AP-1200	Diesel	145	0	62	8	0.023	0.001	0.007	0.0010	0.002
Welding machine	Perkins 4-236	Diesel	63	0	45	8	0.018	0.002	0.011	0.0010	0.002
Water wagon	Caterpillar 3406B	Diesel	350	0	57	8	0.026	0.005	0.032	0.0020	0.002
Roller	Caterpillar CS-431B	Diesel	102	2	56	8	0.020	0.002	0.007	0.0010	0.002

DAILY AND TOTAL EMISSIONS

Equipment Type	Emissions (lb/day) NOx	ROC	CO	PM10	SOx	Total Days	Emissions (Total Tons) NOx	ROC	CO	PM10	SOx
Tracked tractor	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Tracked tractor	0.0	0.0	0.0	0.0	0.0	20	0.00	0.00	0.00	0.00	0.00
Tracked tractor (cert.)	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Pipelayer	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Wheeled tractor	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Landfill compactor	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Elevating scraper	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Elevating scraper (cert.)	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Tandem scraper	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Standard scraper	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Grader	0.0	0.0	0.0	0.0	0.0	10	0.00	0.00	0.00	0.00	0.00
Backhoe	13.6	1.8	9.2	0.6	1.2	50	0.34	0.05	0.23	0.02	0.03
Wheeled loader	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Wheeled loader	60.1	5.2	28.7	3.9	5.2	0	0.00	0.00	0.00	0.00	0.00
Wheeled loader	0.0	0.0	0.0	0.0	0.0	40	0.00	0.00	0.00	0.00	0.00
Wheeled loader	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Excavator	0.0	0.0	0.0	0.0	0.0	20	0.00	0.00	0.00	0.00	0.00
Excavator	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Off-highway truck	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Crane	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Rock Crusher	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Generator	21.3	2.4	13.0	1.2	2.4	0	0.00	0.00	0.00	0.00	0.00
Air compressor	5.3	0.0	3.3	0.3	0.6	0	0.00	0.00	0.00	0.00	0.00
Asphalt paver	0.0	0.0	0.0	0.0	0.0	5	0.00	0.00	0.00	0.00	0.00
Welding machine	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Water wagon	0.0	0.0	0.0	0.0	0.0	0	0.00	0.00	0.00	0.00	0.00
Roller	18.3	1.8	6.4	0.9	1.8	5	0.05	0.00	0.02	0.00	0.00
SUM	118.5	11.3	60.6	6.9	11.2		0.38	0.05	0.25	0.02	0.04

Emissions = BHP*Number*Load factor/100*Hours/day*lb/BHP-hr

Emission factors from Nonroad Engine and Vehicle Emissions Study (EPA, 1991)
Load factors from EPA NONROAD Model (in prep): Average Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling (Report No. NR-005, Dec 1997)
1996 Federal Stds: 0.015 NOx, 0.0009 PM, 0.002 THC lb/BHP-hr

Project: El Carro well-drilling
Date: 12/27/07

Title : Santa Barbara County-Summer 2009
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2007/03/22 15:43:50
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season : Summer
Area : Santa Barbara

Daily one-way trips: 40
Miles per trip: 15

Percent Autos: 15
Percent LDT: 50
Percent MDT: 5
Percent HDT: 30
Sum 100

Year: 2009 -- Model Years 1965 to 2009 inclusive -- Summer
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average Santa Barbara County Average

Table 1: Running Exhaust Emissions (grams/mile)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: 60%

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
25	6.038	0.142	0.207	0.205	6.084	0.255	0.1	0.375	6	0.168	0.14	0.213	7.406	0.14	0.101	0.166	4.264	0.191	0.185	0.208	4.255	0.536	0.244	0.438	6.51	0.845	0.268	0.408	20.315	5.084	1.286	1.898	6.708
30	5.142	0.113	0.177	0.167	5.164	0.208	0.086	0.309	5.11	0.134	0.12	0.173	6.31	0.111	0.087	0.133	3.277	0.146	0.158	0.162	3.27	0.409	0.209	0.344	5.014	0.644	0.23	0.332	15.692	3.912	1.042	1.505	5.167
35	4.585	0.095	0.155	0.143	4.605	0.174	0.075	0.266	4.556	0.113	0.105	0.148	5.629	0.092	0.076	0.112	2.624	0.117	0.139	0.133	2.618	0.326	0.183	0.281	4.024	0.512	0.202	0.279	12.634	3.137	0.861	1.229	4.148
40	4.281	0.084	0.139	0.129	4.3	0.155	0.067	0.241	4.254	0.1	0.094	0.132	5.257	0.081	0.068	0.1	2.191	0.097	0.124	0.113	2.186	0.271	0.164	0.238	3.367	0.424	0.181	0.242	10.603	2.623	0.745	1.048	3.471
45	4.167	0.078	0.127	0.122	4.205	0.144	0.062	0.229	4.161	0.093	0.086	0.125	5.142	0.076	0.062	0.094	1.909	0.084	0.114	0.1	1.904	0.235	0.15	0.21	2.939	0.367	0.165	0.217	9.278	2.287	0.692	0.95	3.03
50	4.29	0.076	0.119	0.121	4.309	0.141	0.058	0.228	4.263	0.091	0.081	0.123	5.268	0.074	0.058	0.093	1.735	0.077	0.107	0.091	1.731	0.213	0.141	0.192	2.676	0.332	0.155	0.201	8.464	2.082	0.704	0.928	2.759
Pounds/day																																	SUM
25	0.017	0.028	0.000		0.036	0.070	0.001		0.012	0.081	0.000		0.000	0.005	0.000		0.002	0.005	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.510	0.000	0.749
30	0.015	0.022	0.000		0.031	0.057	0.001		0.010	0.049	0.000		0.000	0.004	0.000		0.002	0.004	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.413	0.000	0.608
35	0.013	0.018	0.000		0.027	0.048	0.001		0.009	0.041	0.000		0.000	0.003	0.000		0.001	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.342	0.000	0.508
40	0.012	0.016	0.000		0.025	0.043	0.001		0.008	0.037	0.000		0.000	0.003	0.000		0.001	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.296	0.000	0.445
45	0.012	0.015	0.000		0.025	0.040	0.001		0.008	0.034	0.000		0.000	0.003	0.000		0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.275	0.000	0.416
50	0.012	0.015	0.000		0.026	0.039	0.001		0.008	0.033	0.000		0.000	0.003	0.000		0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.279	0.000	0.419

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: 60%

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
25	59.589	3.862	0.861	4.447	59.746	7.336	0.675	8.228	59.047	4.744	0.771	5.156	104.32	3.81	0.681	4.158	89.692	2.246	0.902	2.233	89.581	6.448	0.991	4.696	135.299	11.928	2.321	4.798	587.176	56.28	6.25	15.118	137.599
30	53.421	3.535	0.712	4.058	53.562	6.672	0.559	7.465	52.935	4.333	0.638	4.702	93.522	3.491	0.563	3.803	74.358	1.862	0.746	1.851	74.265	5.346	0.82	3.894	112.167	9.889	1.92	3.974	486.786	46.656	5.287	12.623	114.073
35	50.436	3.283	0.617	3.757	50.568	6.16	0.483	6.916	49.977	4	0.552	4.348	88.295	3.225	0.487	3.519	65.13	1.631	0.646	1.619	65.049	4.682	0.709	3.407	98.247	8.662	1.662	3.465	426.378	40.868	4.5	10.946	99.917
40	50.146	3.037	0.559	3.532	50.278	5.776	0.436	6.546	49.689	3.731	0.5	4.08	87.787	3.003	0.442	3.297	60.273	1.509	0.585	1.495	60.198	4.333	0.643	3.148	90.921	8.016	1.506	3.181	394.581	37.82	3.868	9.895	92.466
45	52.505	2.853	0.53	3.375	52.644	5.507	0.415	6.342	52.028	3.52	0.475	3.889	91.919	2.821	0.419	3.131	58.932	1.476	0.555	1.457	58.859	4.237	0.609	3.07	88.898	7.838	1.427	3.074	385.802	36.979	3.452	9.378	90.409
50	57.896	2.707	0.526	3.286	58.049	5.351	0.412	6.312	57.37	3.363	0.471	3.776	101.356	2.677	0.415	3.021	60.879	1.525	0.551	1.499	60.803	4.377	0.605	3.161	91.835	8.096	1.416	3.128	398.547	38.2	3.191	9.369	93.395
Pounds/day																																	SUM
25	0.168	0.752	0.001		0.354	2.028	0.007		0.117	1.733	0.002		0.000	0.134	0.000		0.046	0.061	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.480	0.000	7.883
30	0.151	0.688	0.001		0.317	1.844	0.006		0.105	1.583	0.001		0.000	0.123	0.000		0.038	0.050	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.098	0.000	7.006
35	0.142	0.635	0.001		0.300	1.703	0.005		0.099	1.461	0.001		0.000	0.113	0.000		0.033	0.044	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.786	0.000	6.324
40	0.141	0.591	0.001		0.298	1.596	0.004		0.098	1.363	0.001		0.000	0.105	0.000		0.031	0.041	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.543	0.000	5.815
45	0.148	0.555	0.000		0.312	1.522	0.004		0.103	1.286	0.001		0.000	0.099	0.000		0.030	0.040	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.370	0.000	5.472
50	0.163	0.527	0.000		0.344	1.479	0.004		0.113	1.228	0.001		0.000	0.094	0.000		0.031	0.041	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.266	0.000	5.294

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: 60%

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
25	3.635	0.327	1.158	0.365	3.541	0.641	1.166	0.722	3.526	0.594	1.141	0.618	5.477	0.544	1.163	0.563	1.866	0.413	3.874	1.351	1.862	0.967	4.441	2.416	2.827	2.376	7.259	6.336	18.505	11.356	15.614	15.158	2.911
30	3.802	0.308	1.107	0.346	3.703	0.6	1.115	0.686	3.688	0.554	1.091	0.58	5.728	0.507	1.112	0.528	1.945	0.431	3.704	1.319	1.941	1.028	4.247	2.361	2.946	2.476	6.942	6.098	19.285	11.835	15.247	14.75	3.034
35	3.971	0.292	1.097	0.334	3.867	0.576	1.104	0.666	3.852	0.529	1.081	0.556	5.982	0.483	1.102	0.505	2.024	0.448	3.67	1.322	2.019	1.07	4.208	2.369	3.066	2.577	6.878	6.065	20.085	12.314	14.83	14.469	3.156
40	4.141	0.284	1.126	0.328	4.034	0.565	1.134	0.66	4.018	0.515	1.11	0.544	6.24	0.47	1.131	0.492	2.102	0.465	3.768	1.362	2.096	1.111	4.32	2.44	3.185	2.677	7.061	6.232	20.845	12.792	14.562	14.314	3.279
45	4.314	0.282	1.198	0.328	4.202	0.566	1.206	0.667	4.185	0.512	1.181	0.542	6.499	0.466	1.203	0.49	2.181	0.483	4.008	1.439	2.176	1.153	4.595	2.578	3.304	2.777	7.51	6.616	21.625	13.271	14.444	14.287	3.402
50	4.487	0.285	1.321	0.334	4.37	0.58	1.329	0.688	4.353	0.52	1.302	0.552	6.76	0.472	1.326	0.497	2.28	0.5	4.417	1.562	2.255	1.194	5.064	2.798	3.423	2.877	8.277	7.257	22.405	13.749	14.475	14.387	3.524

Well Drilling 145

Pounds/day																																	SUM
25	0.010	0.084	0.001	0.021	0.177	0.012	0.007	0.217	0.002	0.000	0.019	0.000	0.001	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.275	0.000	6.631
30	0.011	0.080	0.001	0.022	0.166	0.011	0.007	0.202	0.002	0.000	0.018	0.000	0.001	0.012	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.050	0.000	6.376
35	0.011	0.057	0.001	0.023	0.159	0.011	0.006	0.193	0.002	0.000	0.017	0.000	0.001	0.012	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.885	0.000	6.393
40	0.012	0.055	0.001	0.024	0.156	0.011	0.006	0.188	0.002	0.000	0.016	0.000	0.001	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.779	0.000	6.280
45	0.012	0.055	0.001	0.025	0.156	0.012	0.006	0.187	0.002	0.000	0.016	0.000	0.001	0.013	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.732	0.000	6.236
50	0.013	0.055	0.001	0.026	0.160	0.013	0.009	0.190	0.003	0.000	0.017	0.000	0.001	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.744	0.000	6.261

Pollutant Name: PM10 Temperature: 70F Relative Humidity: 60%

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
25	0.035	0.014	0.155	0.015	0.034	0.018	0.086	0.02	0.035	0.029	0.099	0.03	0.036	0.028	0.087	0.028	0.024	0.007	0.05	0.019	0.024	0.012	0.061	0.032	0.024	0.014	0.336	0.275	0.024	0.025	0.883	0.584	0.024
30	0.03	0.011	0.133	0.012	0.029	0.015	0.057	0.017	0.03	0.024	0.085	0.024	0.031	0.023	0.057	0.023	0.019	0.006	0.043	0.016	0.019	0.009	0.053	0.027	0.019	0.011	0.288	0.236	0.019	0.02	0.586	0.5	0.019
35	0.027	0.01	0.116	0.01	0.026	0.013	0.05	0.014	0.027	0.02	0.074	0.02	0.027	0.019	0.05	0.019	0.015	0.005	0.037	0.013	0.015	0.007	0.046	0.023	0.015	0.008	0.253	0.206	0.015	0.016	0.521	0.445	0.015
40	0.025	0.009	0.104	0.009	0.024	0.011	0.044	0.013	0.025	0.018	0.067	0.018	0.026	0.017	0.045	0.017	0.013	0.004	0.033	0.012	0.013	0.006	0.041	0.021	0.013	0.007	0.226	0.185	0.013	0.013	0.489	0.417	0.013
45	0.024	0.008	0.095	0.009	0.024	0.011	0.041	0.012	0.025	0.017	0.061	0.017	0.025	0.016	0.041	0.016	0.011	0.003	0.031	0.011	0.011	0.005	0.038	0.019	0.011	0.006	0.207	0.169	0.011	0.012	0.491	0.418	0.011
50	0.025	0.008	0.089	0.008	0.024	0.01	0.038	0.012	0.025	0.017	0.057	0.017	0.026	0.016	0.038	0.016	0.01	0.003	0.029	0.01	0.01	0.005	0.035	0.017	0.01	0.006	0.194	0.158	0.01	0.011	0.525	0.447	0.01

Pounds/day																																	SUM
25	0.000	0.003	0.000	0.000	0.005	0.001	0.000	0.011	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.271	0.000	0.292
30	0.000	0.002	0.000	0.000	0.004	0.001	0.000	0.009	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.233	0.000	0.250
35	0.000	0.002	0.000	0.000	0.004	0.000	0.000	0.007	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.207	0.000	0.222
40	0.000	0.002	0.000	0.000	0.003	0.000	0.000	0.007	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.194	0.000	0.207
45	0.000	0.002	0.000	0.000	0.003	0.000	0.000	0.006	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.195	0.000	0.207
50	0.000	0.002	0.000	0.000	0.003	0.000	0.000	0.006	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.208	0.000	0.220

Pollutant Name: PM10 - Tire Wear Temperature: 70F Relative Humidity: 60%

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
25	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.036	0.032	0.012
30	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.036	0.032	0.012
35	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.036	0.032	0.012
40	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.036	0.032	0.012
45	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.036	0.032	0.012
50	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.036	0.032	0.012

Pollutant Name: PM10 - Break Wear Temperature: 70F Relative Humidity: 60%

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
25	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.028	0.028	0.028	0.028	0.013
30	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.028	0.028	0.028	0.028	0.013
35	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.028	0.028	0.028	0.028	0.013
40	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.028	0.028	0.028	0.028	0.013
45	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.028	0.028	0.028	0.028	0.013
50	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.028	0.028	0.028	0.028	0.013

Pounds/day: tires & brakes																																	SUM
25	0.000	0.004	0.000	0.000	0.006	0.000	0.000	0.008	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.000	0.045
30	0.000	0.004	0.000	0.000	0.006	0.000	0.000	0.008	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.000	0.045
35	0.000	0.004	0.000	0.000	0.006	0.000	0.000	0.008	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.000	0.045
40	0.000	0.004	0.000	0.000	0.006	0.000	0.000	0.008	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.000	0.045
45	0.000	0.004	0.000	0.000	0.006	0.000	0.000	0.008	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.000	0.045
50	0.000	0.004	0.000	0.000	0.006	0.000	0.000	0.008	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.000	0.045

Well Drilling 2 of 5

Table 2: Starting Emissions (grams/trip)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time min	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
5	3.39	0.083	0	0.127	3.319	0.107	0	0.164	3.258	0.082	0	0.105	3.965	0.08	0	0.096	5.292	0.154	0	0.185	5.28	0.295	0	0.31	8.017	0.565	0	0.584	14.525	1.813	0	2.219	8.257
10	3.361	0.162	0	0.204	3.291	0.209	0	0.26	3.23	0.16	0	0.182	3.931	0.156	0	0.172	5.247	0.301	0	0.312	5.234	0.576	0	0.532	7.948	1.101	0	0.754	14.401	3.144	0	3.282	8.186
20	3.393	0.309	0	0.349	3.322	0.398	0	0.439	3.261	0.306	0	0.326	3.969	0.3	0	0.314	5.297	0.575	0	0.551	5.284	1.094	0	0.942	8.024	2.088	0	1.077	14.538	5.96	0	5.265	8.264
30	3.546	0.44	0	0.48	3.472	0.566	0	0.601	3.407	0.437	0	0.457	4.147	0.43	0	0.444	5.535	0.821	0	0.768	5.522	1.555	0	1.308	8.384	2.96	0	1.378	15.192	8.448	0	7.058	8.635
40	3.819	0.555	0	0.597	3.739	0.714	0	0.746	3.669	0.552	0	0.573	4.466	0.547	0	0.562	5.981	1.041	0	0.963	5.947	1.957	0	1.632	9.03	3.717	0	1.655	16.361	10.809	0	8.659	9.3
50	4.212	0.655	0	0.701	4.124	0.842	0	0.874	4.047	0.653	0	0.676	4.926	0.652	0	0.668	6.575	1.233	0	1.136	6.559	2.301	0	1.913	9.96	4.359	0	1.91	18.045	12.443	0	10.07	10.258
60	4.379	0.74	0	0.786	4.287	0.949	0	0.978	4.208	0.739	0	0.762	5.121	0.743	0	0.759	6.836	1.398	0	1.282	6.819	2.587	0	2.143	10.354	4.887	0	2.1	18.781	13.949	0	11.179	10.664
120	4.33	0.938	0	0.98	4.24	1.158	0	1.174	4.161	0.949	0	0.969	5.065	1.021	0	1.034	6.76	1.753	0	1.589	6.744	2.948	0	2.427	10.24	5.335	0	2.24	18.553	15.413	0	12.189	10.546
180	4.714	0.924	0	0.971	4.615	1.158	0	1.181	4.53	0.939	0	0.962	5.513	1.005	0	1.021	7.359	1.82	0	1.654	7.341	3.109	0	2.563	11.147	5.661	0	2.391	20.196	18.354	0	12.972	11.48
240	5.097	0.977	0	1.028	4.991	1.224	0	1.251	4.898	0.993	0	1.018	5.962	1.064	0	1.082	7.957	1.927	0	1.752	7.938	3.285	0	2.71	12.054	5.977	0	2.538	21.84	17.266	0	13.734	12.414
300	5.481	1.028	0	1.084	5.366	1.266	0	1.319	5.267	1.046	0	1.074	6.41	1.123	0	1.142	8.556	2.031	0	1.846	8.535	3.455	0	2.854	12.96	6.282	0	2.682	23.483	18.147	0	14.474	13.348
360	5.864	1.079	0	1.139	5.742	1.351	0	1.385	5.635	1.098	0	1.128	6.859	1.181	0	1.201	9.155	2.132	0	1.942	9.133	3.62	0	2.993	13.867	6.577	0	2.823	25.126	18.999	0	15.194	14.282
420	6.248	1.128	0	1.192	6.117	1.412	0	1.45	6.004	1.149	0	1.18	7.307	1.237	0	1.259	9.753	2.231	0	2.034	9.73	3.78	0	3.128	14.774	6.861	0	2.961	26.769	19.82	0	15.893	15.216
480	6.631	1.175	0	1.244	6.493	1.471	0	1.512	6.372	1.198	0	1.232	7.756	1.292	0	1.316	10.352	2.328	0	2.124	10.327	3.935	0	3.259	15.881	7.135	0	3.095	28.412	20.612	0	16.571	16.15
540	7.015	1.222	0	1.295	6.868	1.528	0	1.573	6.741	1.246	0	1.282	8.204	1.347	0	1.372	10.951	2.423	0	2.212	10.924	4.084	0	3.385	16.588	7.399	0	3.225	30.055	21.374	0	17.228	17.084
600	7.398	1.266	0	1.344	7.244	1.583	0	1.633	7.109	1.292	0	1.33	8.653	1.4	0	1.426	11.55	2.515	0	2.298	11.521	4.229	0	3.508	17.495	7.653	0	3.353	31.698	22.107	0	17.864	18.018
660	7.782	1.31	0	1.392	7.619	1.637	0	1.691	7.478	1.338	0	1.378	9.101	1.452	0	1.48	12.148	2.604	0	2.382	12.119	4.368	0	3.627	18.402	7.896	0	3.477	33.341	22.809	0	18.479	18.952
720	8.165	1.352	0	1.438	7.995	1.688	0	1.747	7.846	1.382	0	1.424	9.55	1.503	0	1.532	12.747	2.692	0	2.463	12.716	4.502	0	3.741	19.308	8.128	0	3.598	34.984	23.461	0	19.074	19.886
Pounds/day: 180 min soak	0.000886557	0.011991	0		0.001822	0.021338	0		0.000596	0.022864	0		0	0.002352	0		0.00025	0.003272	0	0	0	0	0	0	0	0	0	0	0	0	0	0	SUM 0.06537

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: ALL

Time min	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
5	24.926	0.812	0	1.134	25.317	1.261	0	1.673	25.073	0.868	0	1.04	44.286	0.815	0	1.002	42.738	1.805	0	1.982	42.68	3.617	0	3.48	64.463	8.643	0	6.021	290.337	20.803	0	36.338	65.557
10	22.072	1.594	0	1.864	22.419	2.475	0	2.764	22.203	1.705	0	1.847	39.216	1.602	0	1.76	37.846	3.545	0	3.448	37.794	7.091	0	6.153	57.064	16.935	0	8.338	257.1	40.76	0	47.829	58.052
20	17.039	3.07	0	3.246	17.306	4.759	0	4.823	17.139	3.287	0	3.377	30.272	3.094	0	3.202	29.215	6.83	0	6.221	29.175	13.611	0	11.176	44.065	32.465	0	12.717	198.466	78.139	0	89.621	44.813
30	12.902	4.43	0	4.525	13.105	6.853	0	6.72	12.978	4.747	0	4.792	22.923	4.477	0	4.541	22.122	9.855	0	8.783	22.092	19.559	0	15.77	33.368	46.591	0	16.757	150.286	112.136	0	89.829	33.934
40	9.653	5.672	0	5.702	9.815	8.758	0	8.455	9.72	6.084	0	6.092	17.169	5.749	0	5.778	16.569	12.62	0	11.133	16.546	24.937	0	19.936	24.991	59.312	0	20.459	112.559	142.753	0	108.452	25.415
50	7.322	6.797	0	6.775	7.437	10.47	0	10.027	7.365	7.298	0	7.277	13.009	6.912	0	6.914	12.554	15.125	0	13.273	12.537	29.743	0	23.673	18.936	70.628	0	23.821	85.286	169.969	0	125.489	19.257
60	5.878	7.804	0	7.745	5.97	11.992	0	11.437	5.913	8.39	0	8.348	10.443	7.966	0	7.947	10.078	17.37	0	15.201	10.065	33.977	0	26.982	15.202	80.539	0	26.844	68.467	193.844	0	140.942	15.46
120	16.774	10.732	0	10.768	17.037	15.635	0	15.087	16.873	11.552	0	11.556	29.802	11.274	0	11.313	28.76	21.931	0	19.347	28.721	39.725	0	31.794	43.38	91.43	0	31.78	195.381	221.162	0	169.594	44.116
180	26.504	10.006	0	10.186	26.919	14.898	0	14.58	26.66	10.87	0	10.951	47.069	10.575	0	10.696	45.444	22.063	0	19.623	45.381	40.633	0	32.754	68.544	94.103	0	33.903	308.717	227.626	0	182.62	89.707
240	35.202	10.492	0	10.781	35.755	15.526	0	15.341	35.411	11.43	0	11.569	62.544	11.182	0	11.365	60.359	23.149	0	20.711	60.276	42.043	0	34.086	91.041	98.863	0	35.922	410.041	234.306	0	194.893	92.588
300	42.87	10.949	0	11.334	43.543	16.13	0	16.06	43.123	11.954	0	12.143	76.167	11.741	0	11.979	73.506	24.17	0	21.726	73.405	43.448	0	35.387	110.871	99.712	0	37.835	499.354	241.197	0	206.416	112.752
360	49.506	11.378	0	11.845	50.283	16.711	0	16.737	49.799	12.44	0	12.673	87.956	12.252	0	12.537	84.885	25.125	0	22.667	84.768	44.849	0	36.66	128.034	102.649	0	39.644	578.655	248.302	0	217.188	130.207
420	55.111	11.779	0	12.315	55.976	17.269	0	17.372	55.437	12.889	0	13.158	97.917	12.714	0	13.04	94.496	26.016	0	23.534	94.366	46.245	0	37.903	142.53	105.675	0	41.349	641.944	255.619	0	227.209	144.949
480	59.685	12.152	0	12.742	60.622	17.803	0	17.965	60.038	13.301	0	13.599	106.043	13.129	0	13.486	102.336	26.841	0	24.327	102.196	47.637	0	39.116	154.359	108.788	0	42.948	695.222	263.15	0	236.479	156.978
540	63.228	12.497	0	13.129	64.22	18.314	0	18.516	63.602	13.676	0	13.995	112.338	13.495	0	13.877	108.413	27.801	0	25.046	108.264	49.024	0	40.3	163.522	111.989	0	44.443	736.486	270.894	0	244.997	166.296
600	65.74	12.813	0	13.473	66.771	18.801	0	19.025	66.128	14.014	0	14.348	116.8	13.812	0	14.211	112.719	28.295	0	25.692	112.564	50.406	0	41.455	170.017	115.279	0	45.833	765.742	278.851	0	252.765	172.902
660	67.22	13.101	0	13.776	68.275	19.266	0	19.492	67.617	14.314	0	14.656	119.43	14.082	0	14.49	115.257	28.924	0	26.263	115.099	51.784	0	42.58	173.845	118.656	0	47.118	782.984	287.021	0	259.781	176.795
720	67.869	13.36	0	14.037	68.731	19.706	0	19.917	68.069	14.578	0	14.92	120.228	14.303	0	14.713	116.027	29.488	0	26.761	115.868	53.157	0	43.675	175.007	122.122	0	48.296	788.215	295.404	0	266.047	177.976
Pounds/day: 180 min soak	0.004984578	0.129845	0		0.010629	0.274516	0		0.003509	0.264675	0		0	0.024748	0		0.001541	0.03966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	SUM 0.754109

Well Drilling 375

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: ALL

Time min	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
5	1.105	0.289	0	0.299	1.081	0.332	0	0.334	1.08	0.501	0	0.503	1.683	0.603	0	0.605	0.569	1.301	0	1.137	0.568	1.347	0	1.072	0.862	1.801	0	0.626	3.803	5.351	0	4.034	0.887
10	1.201	0.343	0	0.353	1.175	0.406	0	0.405	1.174	0.577	0	0.58	1.83	0.67	0	0.673	0.618	1.527	0	1.334	0.617	1.823	0	1.449	0.937	2.714	0	0.926	4.134	8.062	0	5.958	0.964
20	1.375	0.439	0	0.45	1.346	0.536	0	0.531	1.345	0.713	0	0.716	2.096	0.79	0	0.793	0.708	1.927	0	1.682	0.707	2.66	0	2.111	1.073	4.317	0	1.452	4.736	12.824	0	9.34	1.105
30	1.527	0.518	0	0.53	1.494	0.642	0	0.635	1.493	0.826	0	0.829	2.327	0.89	0	0.893	0.786	2.257	0	1.97	0.784	3.344	0	2.653	1.191	5.623	0	1.881	5.257	16.704	0	12.097	1.226
40	1.655	0.58	0	0.592	1.62	0.726	0	0.717	1.619	0.915	0	0.918	2.522	0.97	0	0.974	0.852	2.517	0	2.197	0.85	3.876	0	3.073	1.291	6.632	0	2.213	5.698	19.703	0	14.231	1.329
50	1.76	0.626	0	0.638	1.722	0.787	0	0.776	1.721	0.981	0	0.984	2.681	1.031	0	1.034	0.906	2.708	0	2.364	0.904	4.254	0	3.373	1.373	7.345	0	2.447	6.059	21.819	0	15.741	1.413
60	1.841	0.654	0	0.668	1.802	0.824	0	0.813	1.801	1.024	0	1.026	2.805	1.072	0	1.075	0.948	2.829	0	2.469	0.948	4.48	0	3.552	1.436	7.781	0	2.585	6.339	23.055	0	16.628	1.479
120	1.858	0.681	0	0.694	1.818	0.854	0	0.841	1.817	1.075	0	1.077	2.831	1.139	0	1.142	0.957	2.959	0	2.582	0.955	4.564	0	3.619	1.449	7.817	0	2.604	6.398	23.223	0	16.75	1.492
180	1.814	0.684	0	0.696	1.775	0.856	0	0.842	1.774	1.079	0	1.081	2.764	1.143	0	1.146	0.934	2.954	0	2.578	0.932	4.55	0	3.607	1.415	7.789	0	2.593	6.245	23.137	0	16.678	1.457
240	1.755	0.679	0	0.691	1.717	0.85	0	0.836	1.716	1.071	0	1.073	2.674	1.135	0	1.138	0.904	2.934	0	2.56	0.902	4.523	0	3.586	1.389	7.745	0	2.577	6.043	23.007	0	16.572	1.409
300	1.682	0.673	0	0.684	1.646	0.842	0	0.827	1.645	1.06	0	1.061	2.563	1.123	0	1.125	0.866	2.905	0	2.534	0.864	4.485	0	3.555	1.312	7.686	0	2.555	5.791	22.832	0	16.43	1.351
360	1.594	0.664	0	0.674	1.56	0.832	0	0.815	1.559	1.045	0	1.046	2.429	1.105	0	1.107	0.821	2.865	0	2.499	0.819	4.436	0	3.516	1.244	7.612	0	2.527	5.489	22.611	0	16.253	1.28
420	1.492	0.653	0	0.661	1.46	0.818	0	0.801	1.46	1.026	0	1.027	2.274	1.084	0	1.085	0.789	2.815	0	2.456	0.787	4.377	0	3.468	1.164	7.522	0	2.494	5.139	22.346	0	16.041	1.199
480	1.376	0.639	0	0.648	1.347	0.803	0	0.783	1.346	1.004	0	1.003	2.097	1.057	0	1.058	0.709	2.756	0	2.403	0.707	4.306	0	3.411	1.073	7.418	0	2.456	4.738	22.035	0	15.793	1.105
540	1.245	0.623	0	0.629	1.219	0.784	0	0.764	1.218	0.977	0	0.976	1.898	1.026	0	1.026	0.641	2.686	0	2.342	0.64	4.224	0	3.348	0.972	7.298	0	2.412	4.289	21.679	0	15.51	1
600	1.1	0.605	0	0.609	1.077	0.763	0	0.741	1.076	0.947	0	0.945	1.677	0.99	0	0.99	0.567	2.606	0	2.272	0.565	4.132	0	3.272	0.858	7.163	0	2.363	3.789	21.279	0	15.192	0.884
660	0.941	0.585	0	0.587	0.921	0.739	0	0.716	0.921	0.912	0	0.91	1.434	0.95	0	0.949	0.485	2.516	0	2.193	0.484	4.029	0	3.169	0.734	7.013	0	2.308	3.241	20.833	0	14.839	0.756
720	0.767	0.563	0	0.563	0.751	0.713	0	0.687	0.751	0.874	0	0.871	1.169	0.906	0	0.903	0.395	2.417	0	2.105	0.394	3.914	0	3.097	0.599	6.848	0	2.248	2.643	20.342	0	14.45	0.616
Pounds/day: 180 min soak	0.000341157	0.008876	0		0.000701	0.015773	0		0.000233	0.026273	0		0	0.002675	0		3.17E-05	0.00531	0	0	0	0	0	0	0	0	0	0	0	0	0	0	SUM 0.060214

Pollutant Name: PM10 Temperature: 70F Relative Humidity: ALL

Time min	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
5	0.011	0.001	0	0.001	0.011	0.001	0	0.001	0.011	0.001	0	0.002	0.012	0.001	0	0.001	0.011	0.001	0	0.001	0.011	0.001	0	0.001	0.011	0.001	0	0.001	0.011	0.002	0	0.002	0.011
10	0.01	0.002	0	0.002	0.01	0.002	0	0.002	0.01	0.003	0	0.003	0.01	0.003	0	0.003	0.01	0.001	0	0.001	0.01	0.002	0	0.002	0.01	0.003	0	0.001	0.01	0.004	0	0.003	0.01
20	0.008	0.003	0	0.003	0.008	0.004	0	0.004	0.008	0.005	0	0.005	0.006	0.005	0	0.005	0.008	0.002	0	0.002	0.006	0.004	0	0.004	0.008	0.005	0	0.002	0.008	0.007	0	0.005	0.006
30	0.006	0.004	0	0.004	0.006	0.005	0	0.005	0.006	0.006	0	0.006	0.006	0.007	0	0.007	0.006	0.003	0	0.003	0.006	0.006	0	0.005	0.006	0.007	0	0.003	0.006	0.01	0	0.007	0.006
40	0.004	0.005	0	0.005	0.004	0.007	0	0.006	0.004	0.01	0	0.01	0.004	0.009	0	0.009	0.004	0.004	0	0.004	0.004	0.008	0	0.006	0.004	0.01	0	0.003	0.004	0.012	0	0.009	0.004
50	0.003	0.007	0	0.008	0.003	0.008	0	0.008	0.003	0.012	0	0.012	0.003	0.011	0	0.011	0.003	0.005	0	0.004	0.003	0.01	0	0.008	0.003	0.011	0	0.004	0.003	0.015	0	0.011	0.003
60	0.003	0.008	0	0.007	0.003	0.009	0	0.009	0.003	0.014	0	0.014	0.003	0.013	0	0.013	0.003	0.006	0	0.005	0.003	0.011	0	0.009	0.003	0.013	0	0.004	0.003	0.017	0	0.012	0.003
120	0.007	0.011	0	0.011	0.007	0.013	0	0.013	0.007	0.021	0	0.021	0.007	0.019	0	0.019	0.007	0.008	0	0.007	0.007	0.015	0	0.012	0.007	0.018	0	0.006	0.007	0.023	0	0.017	0.007
180	0.011	0.012	0	0.012	0.011	0.014	0	0.014	0.011	0.022	0	0.022	0.012	0.021	0	0.021	0.011	0.009	0	0.008	0.011	0.016	0	0.013	0.011	0.018	0	0.006	0.011	0.024	0	0.018	0.011
240	0.015	0.012	0	0.012	0.015	0.015	0	0.014	0.015	0.023	0	0.023	0.015	0.022	0	0.022	0.015	0.009	0	0.008	0.015	0.016	0	0.013	0.015	0.019	0	0.007	0.015	0.025	0	0.018	0.015
300	0.018	0.013	0	0.013	0.018	0.015	0	0.015	0.019	0.025	0	0.024	0.019	0.023	0	0.023	0.018	0.009	0	0.008	0.018	0.017	0	0.013	0.018	0.019	0	0.007	0.018	0.025	0	0.019	0.018
360	0.021	0.013	0	0.013	0.021	0.016	0	0.016	0.021	0.026	0	0.025	0.022	0.024	0	0.024	0.021	0.01	0	0.009	0.021	0.017	0	0.014	0.021	0.02	0	0.007	0.021	0.026	0	0.02	0.021
420	0.023	0.014	0	0.014	0.023	0.017	0	0.016	0.024	0.027	0	0.026	0.024	0.025	0	0.025	0.023	0.01	0	0.009	0.023	0.018	0	0.014	0.023	0.02	0	0.008	0.023	0.027	0	0.021	0.023
480	0.025	0.014	0	0.014	0.025	0.017	0	0.017	0.026	0.027	0	0.027	0.026	0.026	0	0.026	0.025	0.01	0	0.009	0.025	0.016	0	0.015	0.025	0.021	0	0.008	0.025	0.028	0	0.021	0.025
540	0.027	0.015	0	0.015	0.026	0.018	0	0.017	0.027	0.028	0	0.028	0.028	0.027	0	0.027	0.027	0.011	0	0.01	0.027	0.019	0	0.015	0.027	0.022	0	0.008	0.027	0.028	0	0.022	0.027
600	0.028	0.015	0	0.015	0.027	0.018	0	0.018	0.028	0.029	0	0.029	0.029	0.027	0	0.027	0.028	0.011	0	0.01	0.028	0.019	0	0.016	0.028	0.022	0	0.009	0.028	0.029	0	0.023	0.028
660	0.029	0.015	0	0.016	0.028	0.019	0	0.018	0.029	0.029	0	0.029	0.029	0.028	0	0.028	0.029	0.011	0	0.01	0.029	0.02	0	0.016	0.029	0.023	0	0.009	0.029	0.03	0	0.023	0.029
720	0.029	0.016	0	0.016	0.028	0.019	0	0.018	0.029	0.03	0	0.03	0.03	0.028	0	0.028	0.029	0.012	0	0.01	0.029	0.02	0	0.017	0.029	0.024	0	0.009	0.029	0.031	0	0.024	0.029
Pounds/day: 180 min soak	2.06876E-06	0.000156	0		4.34E-06	0.000258	0		1.45E-06	0.000536	0		0	4.91E-05	0		3.73E-07	1.62E-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	SUM 0.001023

Well Drilling 4 75

Table 4: Hot Soak Emissions (grams/trip)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time min	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
5	0.811	0.06	0	0.07	0.816	0.079	0	0.09	0.816	0.05	0	0.055	0.418	0.033	0	0.035	0.347	0.015	0	0.017	0.346	0.04	0	0.036	0.2	0.017	0	0.016	0.201	0.019	0	0.028	0.201
10	1.494	0.111	0	0.129	1.503	0.146	0	0.167	1.507	0.092	0	0.102	0.77	0.062	0	0.065	0.639	0.028	0	0.031	0.636	0.074	0	0.068	0.369	0.032	0	0.029	0.371	0.036	0	0.053	0.371
20	2.535	0.19	0	0.22	2.551	0.251	0	0.286	2.558	0.158	0	0.175	1.307	0.107	0	0.112	1.085	0.049	0	0.053	1.082	0.128	0	0.117	0.627	0.057	0	0.05	0.629	0.063	0	0.091	0.629
30	3.238	0.245	0	0.284	3.257	0.325	0	0.369	3.266	0.204	0	0.226	1.669	0.138	0	0.145	1.385	0.065	0	0.069	1.382	0.167	0	0.152	0.8	0.075	0	0.064	0.803	0.084	0	0.119	0.803
40	3.493	0.266	0	0.308	3.513	0.353	0	0.4	3.523	0.222	0	0.245	1.8	0.151	0	0.157	1.494	0.071	0	0.076	1.491	0.182	0	0.166	0.863	0.083	0	0.07	0.866	0.092	0	0.13	0.866

Hot soak results are scaled to reflect zero emissions for trip lengths of less than 5 minutes (about 25% of in-use trips).

Pounds/day: 30 min																																	SUM
	0.000808987	0.003179	0	0.001286	0.005989	0	0.00043	0.004967	0	0	0.000323	0	4.7E-05	0.000117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.016947

Table 7: Estimated Travel Fractions

Pollutant Name: Temperature: ALL Relative Humidity: ALL

	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
%VMT	0.005	0.447	0.002	0.453	0.004	0.154	0.006	0.163	0.002	0.211	0.001	0.213	0	0.087	0	0.088	0	0.015	0.005	0.02	0	0.007	0.005	0.011	0	0.003	0.015	0.019	0	0.002	0.011	0.013	0
%TRIP	0.006	0.414	0.002	0.421	0.003	0.14	0.005	0.149	0.001	0.185	0.001	0.187	0	0.069	0	0.069	0.001	0.053	0.007	0.061	0.001	0.028	0.007	0.036	0.003	0.017	0.033	0.053	0.001	0.005	0.002	0.007	0
%VEH	0.01	0.452	0.002	0.464	0.005	0.156	0.006	0.167	0.002	0.201	0.001	0.204	0	0.074	0	0.075	0	0.011	0.004	0.015	0	0.006	0.004	0.01	0	0.003	0.008	0.011	0	0.001	0.002	0.003	0
Project:	0.002	0.147	0.001		0.004	0.209	0.007		0.001	0.276	0.001		0.000	0.027	0.000		0.000	0.020	0.003													0.3	SUM:

Table 8: Evaporative Running Loss Emissions (grams/minute)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time min	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
1	1.586	0.025	0	0.041	1.625	0.715	0	0.709	1.648	0.439	0	0.448	0.832	0.234	0	0.235	1.651	0.229	0	0.173	1.593	0.757	0	0.45	1.71	0.415	0	0.086	2.862	0.57	0	0.091	1.643
2	1.448	0.028	0	0.043	1.196	0.364	0	0.369	1.16	0.224	0	0.23	0.572	0.12	0	0.121	1.102	0.124	0	0.095	1.028	0.406	0	0.242	1.234	0.233	0	0.049	1.795	0.312	0	0.051	1.368
3	1.405	0.033	0	0.047	1.051	0.25	0	0.258	0.995	0.154	0	0.16	0.484	0.083	0	0.084	0.917	0.09	0	0.069	0.838	0.291	0	0.174	1.072	0.173	0	0.038	1.503	0.228	0	0.038	1.274
4	1.38	0.036	0	0.05	0.976	0.195	0	0.205	0.911	0.12	0	0.126	0.44	0.066	0	0.067	0.824	0.074	0	0.057	0.742	0.234	0	0.14	0.99	0.144	0	0.032	1.355	0.186	0	0.031	1.224
5	1.363	0.038	0	0.052	0.93	0.162	0	0.173	0.859	0.1	0	0.106	0.412	0.056	0	0.057	0.787	0.064	0	0.049	0.684	0.2	0	0.12	0.939	0.126	0	0.028	1.284	0.162	0	0.027	1.192
10	1.313	0.041	0	0.055	0.827	0.101	0	0.113	0.746	0.064	0	0.069	0.354	0.038	0	0.039	0.645	0.045	0	0.036	0.561	0.134	0	0.081	0.828	0.093	0	0.022	1.07	0.112	0	0.019	1.113
15	1.279	0.042	0	0.055	0.783	0.084	0	0.096	0.7	0.054	0	0.059	0.33	0.034	0	0.035	0.597	0.04	0	0.032	0.514	0.114	0	0.069	0.78	0.083	0	0.019	0.993	0.095	0	0.017	1.071
20	1.251	0.042	0	0.055	0.753	0.077	0	0.089	0.67	0.05	0	0.055	0.315	0.033	0	0.034	0.568	0.038	0	0.03	0.486	0.105	0	0.064	0.749	0.078	0	0.018	0.945	0.086	0	0.015	1.04
25	1.225	0.041	0	0.054	0.729	0.074	0	0.086	0.647	0.049	0	0.054	0.304	0.032	0	0.033	0.546	0.037	0	0.029	0.466	0.1	0	0.061	0.725	0.076	0	0.018	0.91	0.081	0	0.014	1.014
30	1.202	0.04	0	0.052	0.714	0.071	0	0.082	0.633	0.047	0	0.051	0.298	0.031	0	0.032	0.535	0.036	0	0.028	0.457	0.097	0	0.059	0.71	0.074	0	0.017	0.891	0.079	0	0.014	0.993
35	1.181	0.039	0	0.051	0.7	0.068	0	0.079	0.621	0.045	0	0.049	0.292	0.03	0	0.03	0.524	0.035	0	0.027	0.448	0.093	0	0.057	0.696	0.072	0	0.017	0.873	0.077	0	0.014	0.974
40	1.16	0.038	0	0.049	0.686	0.064	0	0.076	0.608	0.043	0	0.047	0.286	0.028	0	0.029	0.514	0.034	0	0.027	0.439	0.09	0	0.055	0.682	0.07	0	0.016	0.856	0.076	0	0.013	0.955
45	1.141	0.036	0	0.048	0.673	0.062	0	0.073	0.597	0.041	0	0.045	0.281	0.027	0	0.028	0.505	0.033	0	0.026	0.431	0.088	0	0.054	0.669	0.068	0	0.016	0.839	0.074	0	0.013	0.937
50	1.094	0.035	0	0.046	0.652	0.059	0	0.07	0.579	0.039	0	0.043	0.272	0.026	0	0.027	0.491	0.032	0	0.025	0.42	0.085	0	0.052	0.648	0.066	0	0.016	0.811	0.072	0	0.013	0.903
55	1.037	0.033	0	0.044	0.627	0.056	0	0.066	0.558	0.037	0	0.041	0.263	0.025	0	0.026	0.475	0.031	0	0.024	0.408	0.082	0	0.05	0.623	0.065	0	0.015	0.778	0.071	0	0.012	0.863
60	0.987	0.031	0	0.041	0.605	0.054	0	0.064	0.54	0.035	0	0.039	0.255	0.024	0	0.024	0.461	0.03	0	0.024	0.398	0.08	0	0.049	0.601	0.063	0	0.015	0.748	0.069	0	0.012	0.828

Pounds/day: 30 min per trip																																	SUM
	0.000228059	0.000519	0	0.000282	0.001308	0	8.33E-05	0.001144	0	0	7.25E-05	0	1.81E-05	6.47E-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.003718

RESULTS: pounds per day

Speed	ROG	CO	NOx	PM10
25	0.83	8.64	6.89	0.34
30	0.69	7.76	6.64	0.30
35	0.59	7.08	6.45	0.27
40	0.53	6.57	6.34	0.25
45	0.50	6.23	6.30	0.25
50	0.51	6.05	6.32	0.27

Well Drilling 5 of

Project: El Carro well-pipeline installation
Date: 12/27/07

Title : Santa Barbara County-Summer 2009
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2007/03/22 15:43:50
Scen Year: 2009 -- All model years in the range 1985 to 2009 selected
Season : Summer
Area : Santa Barbara

Daily one-way trips: 30
Miles per trip: 15

Percent Autos: 20
Percent LDT: 55
Percent MDT: 5
Percent HDT: 20
Sum 100

Year: 2009 -- Model Years 1985 to 2009 Inclusive --
Emfac2007 Emission Factors: V2.3 Nov 1 2006

Summer

County Average | Santa Barbara | County Average

Table 1. Running Exhaust Emissions (grams/mile)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: 60%

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
25	6.036	0.142	0.207	0.205	6.084	0.255	0.1	0.375	6	0.168	0.14	0.213	7.406	0.14	0.101	0.166	4.264	0.191	0.185	0.206	4.255	0.536	0.244	0.438	6.51	0.845	0.268	0.408	20.315	5.084	1.286	1.898	6.708
30	5.142	0.113	0.177	0.167	5.184	0.206	0.086	0.309	5.11	0.134	0.12	0.173	6.31	0.111	0.087	0.133	3.277	0.146	0.158	0.162	3.27	0.409	0.209	0.344	5.014	0.644	0.23	0.332	15.862	3.912	1.042	1.505	5.167
35	4.585	0.095	0.155	0.143	4.605	0.174	0.075	0.266	4.556	0.113	0.105	0.148	5.629	0.092	0.076	0.112	2.624	0.117	0.138	0.133	2.618	0.326	0.183	0.281	4.024	0.512	0.202	0.278	12.634	3.137	0.861	1.229	4.148
40	4.281	0.084	0.139	0.129	4.3	0.155	0.067	0.241	4.254	0.1	0.094	0.132	5.257	0.081	0.068	0.1	2.191	0.097	0.124	0.113	2.186	0.271	0.164	0.238	3.367	0.424	0.181	0.242	10.603	2.623	0.745	1.048	3.471
45	4.187	0.078	0.127	0.122	4.205	0.144	0.062	0.229	4.161	0.093	0.086	0.125	5.142	0.076	0.062	0.094	1.909	0.084	0.114	0.1	1.904	0.235	0.15	0.21	2.939	0.367	0.165	0.217	9.278	2.287	0.692	0.95	3.03
50	4.29	0.076	0.119	0.121	4.309	0.141	0.058	0.228	4.263	0.091	0.081	0.123	5.268	0.074	0.058	0.093	1.735	0.077	0.107	0.091	1.731	0.213	0.141	0.192	2.678	0.332	0.155	0.201	8.464	2.082	0.704	0.928	2.759

Pounds/day

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	SUM LHV NCAT
25	0.017	0.028	0.000		0.030	0.058	0.001		0.010	0.051	0.000		0.000	0.004	0.000		0.002	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.255	0.000	0.459
30	0.015	0.022	0.000		0.025	0.047	0.001		0.008	0.040	0.000		0.000	0.003	0.000		0.001	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.207	0.000	0.373
35	0.013	0.018	0.000		0.023	0.040	0.001		0.007	0.034	0.000		0.000	0.002	0.000		0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.171	0.000	0.313
40	0.012	0.016	0.000		0.021	0.035	0.001		0.007	0.030	0.000		0.000	0.002	0.000		0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.148	0.000	0.276
45	0.012	0.015	0.000		0.021	0.033	0.001		0.007	0.028	0.000		0.000	0.002	0.000		0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.137	0.000	0.256
50	0.012	0.015	0.000		0.021	0.032	0.000		0.007	0.027	0.000		0.000	0.002	0.000		0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.140	0.000	0.259

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: 60%

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
25	59.589	3.862	0.881	4.447	59.746	7.336	0.575	8.226	59.047	4.744	0.771	5.156	104.32	3.81	0.681	4.158	89.692	2.248	0.902	2.233	89.581	6.448	0.991	4.898	135.299	11.928	2.321	4.798	587.178	56.28	8.25	15.118	137.599
30	53.421	3.535	0.712	4.058	53.562	6.672	0.559	7.465	52.935	4.333	0.638	4.702	93.522	3.491	0.583	3.803	74.358	1.862	0.746	1.851	74.265	5.346	0.82	3.894	112.167	9.889	1.92	3.974	486.786	46.858	5.267	12.623	114.073
35	50.436	3.283	0.617	3.757	50.588	6.16	0.483	6.916	49.977	4	0.552	4.348	88.285	3.225	0.487	3.519	65.13	1.631	0.646	1.619	65.049	4.682	0.708	3.407	98.247	8.662	1.662	3.465	426.378	40.858	4.5	10.946	99.917
40	50.146	3.037	0.559	3.532	50.278	5.776	0.438	6.546	49.689	3.731	0.5	4.06	87.787	3.003	0.442	3.297	60.273	1.509	0.585	1.495	60.198	4.333	0.643	3.148	90.921	8.015	1.506	3.181	394.581	37.82	3.888	9.865	92.456
45	52.505	2.853	0.53	3.375	52.644	5.507	0.415	6.342	52.028	3.52	0.475	3.889	91.919	2.821	0.419	3.131	58.932	1.478	0.555	1.457	58.859	4.237	0.609	3.07	88.896	7.838	1.427	3.074	385.802	36.979	3.452	9.378	90.409
50	57.896	2.707	0.526	3.288	58.049	5.351	0.412	6.312	57.37	3.363	0.471	3.776	101.358	2.677	0.415	3.021	60.879	1.525	0.551	1.499	60.803	4.377	0.605	3.161	91.835	8.096	1.416	3.128	398.547	38.2	3.191	9.389	93.385

Pounds/day

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	SUM LHV NCAT
25	0.168	0.752	0.001		0.282	1.673	0.005		0.096	1.429	0.001		0.000	0.100	0.000		0.034	0.045	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.240	0.000	5.840
30	0.151	0.688	0.001		0.262	1.521	0.005		0.086	1.308	0.001		0.000	0.092	0.000		0.028	0.038	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.049	0.000	5.229
35	0.142	0.635	0.001		0.247	1.405	0.004		0.081	1.205	0.001		0.000	0.085	0.000		0.025	0.033	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.893	0.000	4.759
40	0.141	0.591	0.001		0.246	1.317	0.004		0.081	1.124	0.001		0.000	0.079	0.000		0.023	0.031	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.771	0.000	4.411
45	0.148	0.555	0.000		0.257	1.256	0.003		0.085	1.081	0.001		0.000	0.074	0.000		0.022	0.030	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.685	0.000	4.179
50	0.163	0.527	0.000		0.284	1.220	0.003		0.093	1.013	0.001		0.000	0.070	0.000		0.023	0.031	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.633	0.000	4.065

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: 60%

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
25	3.635	0.327	1.158	0.385	3.541	0.641	1.168	0.722	3.528	0.594	1.141	0.618	5.477	0.544	1.183	0.583	1.888	0.413	3.874	1.351	1.862	0.987	4.441	2.416	2.627	2.376	7.259	6.336	18.505	11.358	15.814	15.158	2.911
30	3.802	0.308	1.107	0.346	3.703	0.8	1.115	0.886	3.688	0.554	1.081	0.58	5.728	0.507	1.112	0.526	1.945	0.431	3.704	1.319	1.941	1.028	4.247	2.361	2.946	2.476	5.942	6.098	19.265	11.835	15.247	14.75	3.034
35	3.971	0.292	1.097	0.334	3.867	0.576	1.104	0.886	3.852	0.529	1.081	0.556	5.982	0.483	1.102	0.505	2.024	0.448	3.87	1.322	2.019	1.07	4.208	2.369	3.086	2.577	6.878	6.085	20.065	12.314	14.83	14.469	3.156
40	4.141	0.284	1.128	0.328	4.034	0.565	1.134	0.88	4.018	0.515	1.11	0.544	6.24	0.47	1.131	0.492	2.102	0.465	3.768	1.362	2.098	1.111	4.32	2.44	3.185	2.677	7.061	6.232	20.846	12.792	14.562	14.314	3.279
45	4.314	0.282	1.198	0.328	4.202	0.588	1.206	0.887	4.185	0.512	1.181	0.542	6.498	0.465	1.203	0.49	2.181	0.483	4.006	1.439	2.178	1.153	4.595	2.576	3.304	2.777	7.51	6.618	21.625	13.271	14.444	14.287	3.402
50	4.487	0.285	1.321	0.334	4.37	0.58	1.329	0.889	4.353	0.52	1.302	0.552	6.76	0.472	1.326	0.497	2.26	0.5	4.417	1.562	2.255	1.194	5.064	2.796	3.423	2.877	8.277	7.257	22.405	13.748	14.475	14.387	3.524

Pipeline 1 of 5

Pounds/day

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT	SUM
25	0.010	0.064	0.001		0.017	0.146	0.009		0.006	0.179	0.002		0.000	0.014	0.000		0.001	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.138	0.000	3.608
30	0.011	0.060	0.001		0.018	0.137	0.009		0.006	0.167	0.002		0.000	0.013	0.000		0.001	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.025	0.000	3.468
35	0.011	0.057	0.001		0.019	0.131	0.009		0.006	0.159	0.002		0.000	0.013	0.000		0.001	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.942	0.000	3.371
40	0.012	0.055	0.001		0.020	0.129	0.009		0.007	0.155	0.002		0.000	0.012	0.000		0.001	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.889	0.000	3.311
45	0.012	0.055	0.001		0.021	0.129	0.010		0.007	0.154	0.002		0.000	0.012	0.000		0.001	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.866	0.000	3.290
50	0.013	0.056	0.001		0.021	0.132	0.011		0.007	0.157	0.002		0.000	0.012	0.000		0.001	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.872	0.000	3.307

Pollutant Name: PM10 Temperature: 70F Relative Humidity: 60%

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
25	0.035	0.014	0.155	0.015	0.034	0.018	0.066	0.02	0.035	0.029	0.099	0.03	0.036	0.026	0.067	0.028	0.024	0.007	0.05	0.019	0.024	0.012	0.061	0.032	0.024	0.014	0.336	0.275	0.024	0.025	0.683	0.584	0.024
30	0.03	0.011	0.133	0.012	0.029	0.015	0.057	0.017	0.03	0.024	0.085	0.024	0.031	0.023	0.057	0.023	0.019	0.006	0.043	0.016	0.019	0.009	0.053	0.027	0.019	0.011	0.288	0.236	0.019	0.02	0.586	0.5	0.019
35	0.027	0.01	0.116	0.01	0.026	0.013	0.05	0.014	0.027	0.02	0.074	0.02	0.027	0.019	0.05	0.019	0.015	0.005	0.037	0.013	0.015	0.007	0.046	0.023	0.015	0.008	0.253	0.206	0.015	0.016	0.521	0.445	0.015
40	0.025	0.009	0.104	0.009	0.024	0.011	0.044	0.013	0.025	0.018	0.067	0.018	0.028	0.017	0.045	0.017	0.013	0.004	0.033	0.012	0.013	0.006	0.041	0.021	0.013	0.007	0.226	0.185	0.013	0.013	0.469	0.417	0.013
45	0.024	0.008	0.095	0.009	0.024	0.011	0.041	0.012	0.025	0.017	0.061	0.017	0.025	0.016	0.041	0.016	0.011	0.003	0.031	0.011	0.011	0.005	0.038	0.019	0.011	0.006	0.207	0.169	0.011	0.012	0.491	0.418	0.011
50	0.025	0.008	0.089	0.008	0.024	0.01	0.038	0.012	0.025	0.017	0.057	0.017	0.026	0.016	0.038	0.016	0.01	0.003	0.029	0.01	0.01	0.005	0.035	0.017	0.01	0.006	0.194	0.158	0.01	0.011	0.525	0.447	0.01

Pounds/day

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT	SUM
25	0.000	0.003	0.000		0.000	0.004	0.001		0.000	0.009	0.000		0.000	0.001	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.136	0.000	0.153
30	0.000	0.002	0.000		0.000	0.003	0.000		0.000	0.007	0.000		0.000	0.001	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.116	0.000	0.131
35	0.000	0.002	0.000		0.000	0.003	0.000		0.000	0.006	0.000		0.000	0.001	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.103	0.000	0.116
40	0.000	0.002	0.000		0.000	0.003	0.000		0.000	0.005	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.097	0.000	0.108
45	0.000	0.002	0.000		0.000	0.003	0.000		0.000	0.005	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.097	0.000	0.106
50	0.000	0.002	0.000		0.000	0.002	0.000		0.000	0.005	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.104	0.000	0.114

Pollutant Name: PM10 - Tire Wear Temperature: 70F Relative Humidity: 60%

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
25	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.036	0.032	0.012
30	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.036	0.032	0.012
35	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.036	0.032	0.012
40	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.036	0.032	0.012
45	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.036	0.032	0.012
50	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.036	0.032	0.012

Pollutant Name: PM10 - Break Wear Temperature: 70F Relative Humidity: 60%

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
25	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.028	0.028	0.028	0.028	0.013
30	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.028	0.028	0.028	0.028	0.013
35	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.028	0.028	0.028	0.028	0.013
40	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.028	0.028	0.028	0.028	0.013
45	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.028	0.028	0.028	0.028	0.013
50	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.028	0.028	0.028	0.028	0.013

Pounds/day: tires & brakes

Speed MPH	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT	SUM
25	0.000	0.004	0.000		0.000	0.005	0.000		0.000	0.006	0.000		0.000	0.001	0.000		0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.000	0.029
30	0.000	0.004	0.000		0.000	0.005	0.000		0.000	0.006	0.000		0.000	0.001	0.000		0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.000	0.029
35	0.000	0.004	0.000		0.000	0.005	0.000		0.000	0.006	0.000		0.000	0.001	0.000		0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.000	0.029
40	0.000	0.004	0.000		0.000	0.005	0.000		0.000	0.006	0.000		0.000	0.001	0.000		0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.000	0.029
45	0.000	0.004	0.000		0.000	0.005	0.000		0.000	0.006	0.000		0.000	0.001	0.000		0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.000	0.029
50	0.000	0.004	0.000		0.000	0.005	0.000		0.000	0.006	0.000		0.000	0.001	0.000		0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.000	0.029

Pipeline 2 of 5

Table 2: Starting Emissions (grams/trip)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time min	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
5	3.39	0.083	0	0.127	3.319	0.107	0	0.164	3.258	0.082	0	0.105	3.985	0.08	0	0.086	5.292	0.154	0	0.185	5.28	0.295	0	0.31	8.017	0.565	0	0.584	14.525	1.613	0	2.219	8.257
10	3.361	0.162	0	0.204	3.291	0.209	0	0.28	3.23	0.16	0	0.182	3.931	0.156	0	0.172	5.247	0.301	0	0.312	5.234	0.576	0	0.532	7.948	1.101	0	0.754	14.401	3.144	0	3.282	8.186
20	3.369	0.309	0	0.348	3.322	0.398	0	0.439	3.261	0.305	0	0.326	3.989	0.3	0	0.314	5.297	0.575	0	0.561	5.284	1.094	0	0.942	8.024	2.088	0	1.077	14.538	5.96	0	5.265	8.264
30	3.546	0.44	0	0.48	3.472	0.568	0	0.601	3.407	0.437	0	0.457	4.147	0.43	0	0.444	5.535	0.821	0	0.768	5.522	1.555	0	1.308	8.384	2.96	0	1.378	15.192	8.448	0	7.058	8.635
40	3.819	0.555	0	0.597	3.739	0.714	0	0.746	3.669	0.552	0	0.573	4.466	0.547	0	0.562	5.981	1.041	0	0.963	5.947	1.957	0	1.832	9.03	3.717	0	1.855	16.361	10.609	0	8.659	9.3
50	4.212	0.655	0	0.701	4.124	0.842	0	0.874	4.047	0.653	0	0.678	4.928	0.652	0	0.668	6.575	1.233	0	1.136	6.559	2.301	0	1.913	9.96	4.359	0	1.91	18.045	12.443	0	10.07	10.256
60	4.379	0.74	0	0.786	4.287	0.949	0	0.978	4.208	0.739	0	0.762	5.121	0.743	0	0.759	6.836	1.398	0	1.282	6.819	2.587	0	2.143	10.354	4.887	0	2.1	18.761	13.949	0	11.179	10.664
120	4.33	0.938	0	0.98	4.24	1.158	0	1.174	4.161	0.949	0	0.969	5.065	1.021	0	1.034	6.78	1.763	0	1.589	6.744	2.948	0	2.427	10.24	5.335	0	2.24	18.553	15.413	0	12.189	10.546
180	4.714	0.924	0	0.971	4.615	1.158	0	1.181	4.53	0.939	0	0.962	5.513	1.005	0	1.021	7.369	1.82	0	1.654	7.341	3.109	0	2.563	11.147	5.661	0	2.391	20.196	16.354	0	12.972	11.48
240	5.097	0.977	0	1.026	4.991	1.224	0	1.251	4.896	0.993	0	1.016	5.962	1.064	0	1.082	7.957	1.927	0	1.752	7.938	3.285	0	2.71	12.054	5.977	0	2.538	21.84	17.286	0	13.734	12.414
300	5.481	1.028	0	1.084	5.396	1.288	0	1.319	5.267	1.046	0	1.074	6.41	1.123	0	1.142	8.558	2.031	0	1.846	8.535	3.455	0	2.854	12.96	6.282	0	2.682	23.483	18.147	0	14.474	13.348
360	5.864	1.079	0	1.139	5.742	1.351	0	1.385	5.635	1.098	0	1.128	6.859	1.181	0	1.201	9.155	2.132	0	1.942	9.133	3.62	0	2.998	13.867	6.577	0	2.823	25.126	18.999	0	15.194	14.282
420	6.248	1.128	0	1.192	6.117	1.412	0	1.45	6.004	1.149	0	1.18	7.307	1.237	0	1.259	9.753	2.231	0	2.034	9.73	3.78	0	3.128	14.774	6.861	0	2.961	26.769	19.82	0	15.893	15.216
480	6.631	1.175	0	1.244	6.493	1.471	0	1.512	6.372	1.199	0	1.232	7.756	1.292	0	1.316	10.352	2.328	0	2.124	10.327	3.935	0	3.259	15.681	7.135	0	3.095	28.412	20.612	0	16.571	16.15
540	7.015	1.222	0	1.295	6.868	1.528	0	1.573	6.741	1.246	0	1.282	8.204	1.347	0	1.372	10.951	2.423	0	2.212	10.924	4.084	0	3.385	16.588	7.369	0	3.225	30.055	21.374	0	17.228	17.084
600	7.398	1.266	0	1.344	7.244	1.583	0	1.633	7.109	1.292	0	1.33	8.653	1.4	0	1.426	11.55	2.515	0	2.298	11.521	4.229	0	3.506	17.495	7.653	0	3.353	31.698	22.107	0	17.864	18.018
660	7.782	1.31	0	1.392	7.619	1.637	0	1.691	7.478	1.338	0	1.378	9.101	1.452	0	1.48	12.148	2.604	0	2.382	12.119	4.368	0	3.627	18.402	7.896	0	3.477	33.341	22.809	0	18.479	18.952
720	8.185	1.352	0	1.438	7.985	1.688	0	1.747	7.846	1.382	0	1.424	9.56	1.503	0	1.532	12.747	2.692	0	2.463	12.716	4.502	0	3.741	19.308	8.128	0	3.598	34.984	23.481	0	19.074	19.886

Pounds/day: 180 min soak

																																	SUM
	0.000886557	0.011991	0		0.001503	0.017604	0		0.000492	0.018863	0		0	0.001764	0		0.000187	0.002454	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.055744

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: ALL

Time min	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
5	24.926	0.812	0	1.134	25.317	1.261	0	1.673	25.073	0.868	0	1.04	44.266	0.815	0	1.002	42.738	1.805	0	1.982	42.68	3.617	0	3.48	84.463	8.643	0	8.021	290.337	20.803	0	36.338	65.557
10	22.072	1.594	0	1.864	22.419	2.475	0	2.764	22.203	1.705	0	1.847	39.216	1.602	0	1.76	37.846	3.545	0	3.448	37.794	7.091	0	6.153	57.084	16.935	0	9.338	257.1	40.75	0	47.829	58.052
20	17.039	3.07	0	3.246	17.306	4.759	0	4.823	17.139	3.287	0	3.377	30.272	3.094	0	3.202	29.215	6.83	0	6.221	29.175	13.611	0	11.176	44.085	32.465	0	12.717	198.466	78.139	0	89.821	44.813
30	12.902	4.43	0	4.525	13.105	6.853	0	6.72	12.978	4.747	0	4.792	22.923	4.477	0	4.541	22.122	9.855	0	8.783	22.082	19.559	0	15.77	33.368	46.591	0	16.757	150.286	112.136	0	89.829	33.934
40	9.863	5.672	0	5.702	9.815	8.756	0	8.455	9.72	6.064	0	6.092	17.169	5.749	0	5.778	16.569	12.62	0	11.133	16.546	24.937	0	19.936	24.991	59.312	0	20.459	112.559	142.753	0	108.452	25.415
50	7.322	6.797	0	6.775	7.437	10.47	0	10.027	7.365	7.298	0	7.277	13.008	6.912	0	6.914	12.554	15.125	0	13.273	12.537	29.743	0	23.673	18.936	70.828	0	23.821	85.286	169.989	0	125.486	19.257
60	5.878	7.604	0	7.745	5.97	11.992	0	11.437	5.913	8.39	0	8.348	10.443	7.986	0	7.947	10.078	17.37	0	15.201	10.065	33.977	0	26.962	15.202	80.539	0	26.844	68.467	193.844	0	140.942	15.46
120	16.774	10.732	0	10.786	17.037	15.635	0	15.087	16.873	11.552	0	11.558	29.802	11.274	0	11.313	28.76	21.931	0	19.347	28.721	36.725	0	31.794	43.38	91.43	0	31.78	195.381	221.182	0	169.584	44.116
180	28.504	10.006	0	10.186	28.919	14.898	0	14.56	28.86	10.87	0	10.951	47.089	10.575	0	10.696	45.444	22.063	0	19.623	45.381	40.633	0	32.754	68.544	94.103	0	33.903	306.717	227.628	0	182.62	69.707
240	35.202	10.482	0	10.781	35.755	15.526	0	15.341	35.411	11.43	0	11.569	62.544	11.182	0	11.365	60.359	23.149	0	20.711	60.278	42.043	0	34.066	91.041	96.863	0	35.922	410.041	234.306	0	194.893	92.586
300	42.87	10.949	0	11.334	43.543	16.13	0	16.06	43.123	11.954	0	12.143	76.167	11.741	0	11.979	73.508	24.17	0	21.726	73.405	43.448	0	35.387	110.871	99.712	0	37.835	499.354	241.197	0	206.416	112.752
360	49.508	11.378	0	11.845	50.283	16.711	0	16.737	49.799	12.44	0	12.673	87.958	12.252	0	12.537	84.885	25.125	0	22.867	84.768	44.849	0	36.88	128.034	102.649	0	39.644	576.655	248.302	0	217.188	130.207
420	55.111	11.779	0	12.315	56.978	17.268	0	17.372	55.437	12.889	0	13.158	97.917	12.714	0	13.04	94.496	26.016	0	23.534	94.368	46.245	0	37.803	142.53	105.675	0	41.349	641.944	255.619	0	227.209	144.949
480	59.685	12.152	0	12.742	60.622	17.803	0	17.985	60.038	13.301	0	13.599	106.043	13.129	0	13.486	102.336	26.841	0	24.327	102.198	47.637	0	39.116	154.359	108.788	0	42.948	695.222	263.15	0	236.479	156.976
540	63.228	12.497	0	13.129	64.22	18.314	0	18.516	63.602	13.676	0	13.995	112.338	13.495	0	13.877	108.413	27.801	0	25.046	108.264	49.024	0	40.3	163.522	111.989	0	44.443	736.486	270.684	0	244.997	166.298
600	66.74	12.813	0	13.473	66.771	18.801	0	19.025	66.128	14.014	0	14.348	116.8	13.812	0	14.211	112.718	28.295	0	25.692	112.564	50.406	0	41.455	170.017	115.279	0	45.833	765.742	278.851	0	252.765	172.802
660	67.22	13.101	0	13.776	68.275	19.288	0	19.482	67.617	14.314	0	14.656	119.43	14.082	0	14.49	115.257	28.924	0	26.263	115.099	51.784	0	42.58	173.845	118.656	0	47.118	782.984	287.021	0	259.781	176.795
720	67.899	13.36	0	14.037	68.731	19.706	0	19.917	68.089	14.578	0	14.92	120.228	14.303	0	14.713	116.027	29.486	0	26.761	115.868	53.157	0	43.675	175.007	122.122	0	48.298	788.215	295.404	0	266.047	177.976

Pounds/day: 180 min soak

																																	SUM
	0.004984578	0.129845	0		0.008769	0.226478	0		0.002885	0.218357	0		0	0.018561	0		0.001156	0.029745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.640789

Pipeline 345

Pollutant Name: Oxides of Nitrogen   Temperature: 70F   Relative Humidity: ALL

Time min	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
5	1.105	0.289	0	0.289	1.061	0.332	0	0.334	1.08	0.501	0	0.503	1.683	0.603	0	0.605	0.569	1.301	0	1.137	0.588	1.347	0	1.072	0.862	1.801	0	0.626	3.803	5.351	0	4.034	0.887
10	1.201	0.343	0	0.353	1.175	0.406	0	0.405	1.174	0.577	0	0.58	1.83	0.67	0	0.673	0.618	1.527	0	1.334	0.617	1.823	0	1.449	0.937	2.714	0	0.926	4.134	8.062	0	5.958	0.964
20	1.375	0.439	0	0.45	1.346	0.536	0	0.531	1.345	0.713	0	0.716	2.096	0.79	0	0.793	0.708	1.927	0	1.682	0.707	2.66	0	2.111	1.073	4.317	0	1.452	4.736	12.824	0	9.34	1.105
30	1.527	0.518	0	0.53	1.494	0.642	0	0.635	1.493	0.826	0	0.829	2.327	0.89	0	0.893	0.786	2.257	0	1.97	0.784	3.344	0	2.653	1.191	5.623	0	1.861	5.257	16.704	0	12.087	1.226
40	1.655	0.58	0	0.582	1.62	0.726	0	0.717	1.619	0.915	0	0.918	2.522	0.97	0	0.974	0.852	2.517	0	2.197	0.85	3.876	0	3.073	1.291	6.632	0	2.213	5.696	19.703	0	14.231	1.329
50	1.76	0.626	0	0.638	1.722	0.787	0	0.776	1.721	0.981	0	0.984	2.681	1.031	0	1.034	0.906	2.708	0	2.364	0.904	4.254	0	3.373	1.373	7.345	0	2.447	6.059	21.819	0	15.741	1.413
60	1.841	0.654	0	0.668	1.802	0.824	0	0.813	1.801	1.024	0	1.026	2.805	1.072	0	1.075	0.948	2.829	0	2.469	0.946	4.48	0	3.552	1.436	7.761	0	2.585	6.339	23.056	0	16.628	1.479
120	1.858	0.681	0	0.694	1.818	0.854	0	0.841	1.817	1.075	0	1.077	2.831	1.139	0	1.142	0.957	2.959	0	2.582	0.955	4.564	0	3.619	1.449	7.817	0	2.604	6.398	23.223	0	16.75	1.492
180	1.814	0.684	0	0.696	1.775	0.856	0	0.842	1.774	1.079	0	1.081	2.784	1.143	0	1.146	0.934	2.954	0	2.578	0.932	4.55	0	3.607	1.415	7.789	0	2.593	6.245	23.137	0	16.678	1.457
240	1.755	0.679	0	0.691	1.717	0.85	0	0.836	1.716	1.071	0	1.073	2.674	1.135	0	1.138	0.904	2.934	0	2.56	0.902	4.523	0	3.586	1.369	7.745	0	2.577	6.043	23.007	0	16.572	1.409
300	1.682	0.673	0	0.684	1.646	0.842	0	0.827	1.645	1.06	0	1.061	2.563	1.123	0	1.125	0.866	2.905	0	2.534	0.864	4.485	0	3.555	1.312	7.686	0	2.555	5.791	22.832	0	16.43	1.351
360	1.594	0.664	0	0.674	1.56	0.832	0	0.815	1.559	1.045	0	1.046	2.429	1.105	0	1.107	0.821	2.865	0	2.499	0.819	4.436	0	3.516	1.244	7.612	0	2.527	5.489	22.611	0	16.253	1.28
420	1.492	0.653	0	0.661	1.46	0.818	0	0.801	1.46	1.026	0	1.027	2.274	1.084	0	1.085	0.769	2.815	0	2.456	0.767	4.377	0	3.468	1.164	7.522	0	2.494	5.139	22.346	0	16.041	1.199
480	1.376	0.639	0	0.646	1.347	0.803	0	0.783	1.346	1.004	0	1.003	2.097	1.057	0	1.058	0.709	2.756	0	2.403	0.707	4.306	0	3.411	1.073	7.418	0	2.456	4.738	22.035	0	15.793	1.105
540	1.245	0.623	0	0.629	1.219	0.784	0	0.764	1.218	0.977	0	0.976	1.898	1.026	0	1.026	0.641	2.686	0	2.342	0.64	4.224	0	3.346	0.972	7.298	0	2.412	4.289	21.679	0	15.51	1
600	1.1	0.605	0	0.609	1.077	0.763	0	0.741	1.076	0.947	0	0.945	1.677	0.99	0	0.99	0.567	2.606	0	2.272	0.565	4.132	0	3.272	0.858	7.163	0	2.363	3.789	21.279	0	15.192	0.884
660	0.941	0.585	0	0.587	0.921	0.739	0	0.716	0.921	0.912	0	0.91	1.434	0.95	0	0.949	0.485	2.516	0	2.193	0.484	4.029	0	3.189	0.734	7.013	0	2.308	3.241	20.833	0	14.839	0.756
720	0.767	0.563	0	0.563	0.751	0.713	0	0.687	0.751	0.874	0	0.871	1.169	0.906	0	0.903	0.395	2.417	0	2.105	0.394	3.914	0	3.097	0.599	6.848	0	2.248	2.643	20.342	0	14.45	0.616
Pounds/day: 180 min soak	0.000341157	0.008676	0		0.000578	0.013013	0		0.000193	0.021675	0		0	0.002006	0		2.38E-05	0.003963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	SUM 0.050686

Pollutant Name: PM10   Temperature: 70F   Relative Humidity: ALL

Time min	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
5	0.011	0.001	0	0.001	0.011	0.001	0	0.001	0.011	0.001	0	0.002	0.012	0.001	0	0.001	0.011	0.001	0	0.001	0.011	0.001	0	0.001	0.011	0.001	0	0.001	0.011	0.002	0	0.002	0.011
10	0.01	0.002	0	0.002	0.01	0.002	0	0.002	0.01	0.003	0	0.003	0.01	0.003	0	0.003	0.01	0.001	0	0.001	0.01	0.002	0	0.002	0.01	0.003	0	0.001	0.01	0.004	0	0.003	0.01
20	0.008	0.003	0	0.003	0.008	0.004	0	0.004	0.008	0.005	0	0.005	0.008	0.005	0	0.005	0.008	0.002	0	0.002	0.008	0.004	0	0.004	0.008	0.005	0	0.002	0.008	0.007	0	0.005	0.008
30	0.006	0.004	0	0.004	0.006	0.005	0	0.005	0.006	0.008	0	0.008	0.006	0.007	0	0.007	0.006	0.003	0	0.003	0.006	0.006	0	0.005	0.006	0.007	0	0.003	0.006	0.01	0	0.007	0.006
40	0.004	0.005	0	0.005	0.004	0.007	0	0.006	0.004	0.01	0	0.01	0.004	0.009	0	0.009	0.004	0.004	0	0.004	0.004	0.008	0	0.006	0.004	0.01	0	0.003	0.004	0.012	0	0.009	0.004
50	0.003	0.007	0	0.006	0.003	0.008	0	0.008	0.003	0.012	0	0.012	0.003	0.011	0	0.011	0.003	0.005	0	0.004	0.003	0.01	0	0.008	0.003	0.011	0	0.004	0.003	0.015	0	0.011	0.003
60	0.003	0.008	0	0.007	0.003	0.009	0	0.009	0.003	0.014	0	0.014	0.003	0.013	0	0.013	0.003	0.006	0	0.005	0.003	0.011	0	0.009	0.003	0.013	0	0.004	0.003	0.017	0	0.012	0.003
120	0.007	0.011	0	0.011	0.007	0.013	0	0.013	0.007	0.021	0	0.021	0.007	0.019	0	0.019	0.007	0.008	0	0.007	0.007	0.015	0	0.012	0.007	0.018	0	0.006	0.007	0.023	0	0.017	0.007
180	0.011	0.012	0	0.012	0.011	0.014	0	0.014	0.011	0.022	0	0.022	0.012	0.021	0	0.021	0.011	0.009	0	0.008	0.011	0.016	0	0.013	0.011	0.018	0	0.006	0.011	0.024	0	0.018	0.011
240	0.015	0.012	0	0.012	0.015	0.015	0	0.014	0.015	0.023	0	0.023	0.015	0.022	0	0.022	0.015	0.009	0	0.008	0.015	0.016	0	0.013	0.015	0.019	0	0.007	0.015	0.025	0	0.018	0.015
300	0.018	0.013	0	0.013	0.018	0.015	0	0.015	0.019	0.025	0	0.024	0.019	0.023	0	0.023	0.018	0.009	0	0.008	0.018	0.017	0	0.013	0.018	0.019	0	0.007	0.018	0.025	0	0.019	0.018
360	0.021	0.013	0	0.013	0.021	0.016	0	0.016	0.021	0.026	0	0.025	0.022	0.024	0	0.024	0.021	0.01	0	0.009	0.021	0.017	0	0.014	0.021	0.02	0	0.007	0.021	0.026	0	0.02	0.021
420	0.023	0.014	0	0.014	0.023	0.017	0	0.016	0.024	0.027	0	0.026	0.024	0.025	0	0.025	0.023	0.01	0	0.009	0.023	0.018	0	0.014	0.023	0.02	0	0.008	0.023	0.027	0	0.021	0.023
480	0.025	0.014	0	0.014	0.025	0.017	0	0.017	0.026	0.027	0	0.027	0.026	0.026	0	0.026	0.025	0.01	0	0.009	0.025	0.018	0	0.015	0.025	0.021	0	0.008	0.025	0.028	0	0.021	0.025
540	0.027	0.015	0	0.015	0.026	0.018	0	0.017	0.027	0.028	0	0.028	0.028	0.027	0	0.027	0.027	0.011	0	0.01	0.027	0.019	0	0.015	0.027	0.022	0	0.008	0.027	0.028	0	0.022	0.027
600	0.028	0.015	0	0.015	0.027	0.018	0	0.018	0.028	0.029	0	0.029	0.029	0.027	0	0.027	0.028	0.011	0	0.01	0.028	0.019	0	0.016	0.028	0.022	0	0.009	0.028	0.029	0	0.023	0.028
660	0.029	0.015	0	0.016	0.028	0.019	0	0.018	0.029	0.029	0	0.029	0.029	0.028	0	0.028	0.029	0.011	0	0.01	0.029	0.02	0	0.016	0.029	0.023	0	0.009	0.029	0.03	0	0.023	0.029
720	0.029	0.016	0	0.016	0.028	0.019	0	0.018	0.029	0.03	0	0.03	0.03	0.028	0	0.028	0.029	0.012	0	0.01	0.029	0.02	0	0.017	0.029	0.024	0	0.009	0.029	0.031	0	0.024	0.029
Pounds/day: 180 min soak	2.06876E-06	0.000156	0		3.58E-06	0.000213	0		1.19E-06	0.000442	0		0	3.89E-05	0		2.8E-07	1.21E-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	SUM 0.000867

Pipeline 4/45

Table 4: Hot Soak Emissions (grams/trip)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time min	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
5	0.811	0.06	0	0.07	0.616	0.079	0	0.09	0.616	0.05	0	0.055	0.418	0.033	0	0.035	0.347	0.015	0	0.017	0.346	0.04	0	0.036	0.2	0.017	0	0.016	0.201	0.019	0	0.028	0.201
10	1.494	0.111	0	0.129	1.503	0.146	0	0.167	1.507	0.092	0	0.102	0.77	0.062	0	0.065	0.639	0.028	0	0.031	0.636	0.074	0	0.068	0.369	0.032	0	0.029	0.371	0.036	0	0.053	0.371
20	2.535	0.19	0	0.22	2.551	0.251	0	0.286	2.556	0.158	0	0.175	1.307	0.107	0	0.112	1.085	0.049	0	0.053	1.082	0.128	0	0.117	0.627	0.057	0	0.05	0.629	0.063	0	0.091	0.629
30	3.238	0.245	0	0.284	3.257	0.325	0	0.369	3.266	0.204	0	0.226	1.669	0.138	0	0.145	1.385	0.065	0	0.069	1.382	0.167	0	0.152	0.8	0.075	0	0.064	0.803	0.084	0	0.119	0.803
40	3.493	0.266	0	0.308	3.513	0.353	0	0.4	3.523	0.222	0	0.245	1.8	0.151	0	0.157	1.494	0.071	0	0.076	1.491	0.182	0	0.166	0.863	0.063	0	0.07	0.866	0.092	0	0.13	0.866

Hot soak results are scaled to reflect zero emissions for trip lengths of less than 5 minutes (about 25% of in-use trips).

Pounds/day: 30 min																																	SUM
	0.000808957	0.003179	0		0.001081	0.004941	0		0.000355	0.004096	0		0	0.000242	0		3.52E-05	8.76E-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.014607

Table 7: Estimated Travel Fractions

Pollutant Name: Temperature: ALL Relative Humidity: ALL

	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
%VMT	0.005	0.447	0.002	0.453	0.004	0.154	0.006	0.163	0.002	0.211	0.001	0.213	0	0.067	0	0.068	0	0.015	0.005	0.02	0	0.007	0.005	0.011	0	0.003	0.015	0.019	0	0.002	0.011	0.013	0
%TRIP	0.006	0.414	0.002	0.421	0.003	0.14	0.005	0.149	0.001	0.185	0.001	0.187	0	0.069	0	0.069	0.001	0.053	0.007	0.081	0.001	0.028	0.007	0.036	0.003	0.017	0.033	0.053	0.001	0.005	0.002	0.007	0
%VEH	0.01	0.452	0.002	0.484	0.005	0.156	0.008	0.167	0.002	0.201	0.001	0.204	0	0.074	0	0.075	0	0.011	0.004	0.015	0	0.008	0.004	0.01	0	0.003	0.008	0.011	0	0.001	0.002	0.003	0
Project:	0.003	0.196	0.001		0.005	0.230	0.008		0.002	0.304	0.002		0.000	0.027	0.000		0.000	0.020	0.003													0.2	SUM:

Table 8: Evaporative Running Loss Emissions (grams/minute)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time min	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL	LHV NCAT
1	1.598	0.025	0	0.041	1.625	0.715	0	0.709	1.646	0.439	0	0.448	0.832	0.234	0	0.235	1.651	0.229	0	0.173	1.593	0.757	0	0.45	1.71	0.415	0	0.066	2.662	0.57	0	0.091	1.643
2	1.448	0.028	0	0.043	1.198	0.364	0	0.369	1.16	0.224	0	0.23	0.572	0.12	0	0.121	1.102	0.124	0	0.095	1.028	0.406	0	0.242	1.234	0.233	0	0.049	1.795	0.312	0	0.051	1.368
3	1.405	0.033	0	0.047	1.051	0.25	0	0.258	0.995	0.154	0	0.16	0.464	0.083	0	0.084	0.917	0.09	0	0.069	0.836	0.291	0	0.174	1.072	0.173	0	0.038	1.503	0.228	0	0.038	1.274
4	1.38	0.036	0	0.05	0.976	0.195	0	0.205	0.911	0.12	0	0.126	0.44	0.068	0	0.067	0.824	0.074	0	0.057	0.742	0.234	0	0.14	0.99	0.144	0	0.032	1.355	0.186	0	0.031	1.224
5	1.383	0.038	0	0.052	0.93	0.162	0	0.173	0.859	0.1	0	0.108	0.412	0.056	0	0.057	0.767	0.064	0	0.049	0.684	0.2	0	0.12	0.939	0.126	0	0.026	1.264	0.162	0	0.027	1.192
10	1.313	0.041	0	0.055	0.827	0.101	0	0.113	0.746	0.084	0	0.089	0.354	0.038	0	0.039	0.645	0.045	0	0.036	0.581	0.134	0	0.081	0.826	0.093	0	0.022	1.07	0.112	0	0.019	1.113
15	1.279	0.042	0	0.055	0.783	0.084	0	0.096	0.7	0.054	0	0.059	0.33	0.034	0	0.035	0.597	0.04	0	0.032	0.514	0.114	0	0.069	0.78	0.083	0	0.019	0.993	0.095	0	0.017	1.071
20	1.251	0.042	0	0.055	0.753	0.077	0	0.089	0.67	0.05	0	0.055	0.315	0.033	0	0.034	0.568	0.036	0	0.03	0.486	0.105	0	0.064	0.749	0.078	0	0.018	0.945	0.086	0	0.015	1.04
25	1.225	0.041	0	0.054	0.729	0.074	0	0.086	0.647	0.049	0	0.054	0.304	0.032	0	0.033	0.546	0.037	0	0.029	0.466	0.1	0	0.061	0.725	0.076	0	0.016	0.91	0.081	0	0.014	1.014
30	1.202	0.04	0	0.052	0.714	0.071	0	0.082	0.633	0.047	0	0.051	0.298	0.031	0	0.032	0.535	0.036	0	0.028	0.457	0.097	0	0.059	0.71	0.074	0	0.017	0.891	0.079	0	0.014	0.983
35	1.181	0.039	0	0.051	0.7	0.068	0	0.079	0.621	0.045	0	0.049	0.292	0.03	0	0.03	0.524	0.035	0	0.027	0.448	0.093	0	0.057	0.696	0.072	0	0.017	0.873	0.077	0	0.014	0.974
40	1.16	0.038	0	0.049	0.686	0.064	0	0.076	0.608	0.043	0	0.047	0.286	0.028	0	0.029	0.514	0.034	0	0.027	0.439	0.09	0	0.055	0.682	0.07	0	0.016	0.856	0.076	0	0.013	0.955
45	1.141	0.036	0	0.048	0.673	0.062	0	0.073	0.597	0.041	0	0.045	0.281	0.027	0	0.028	0.505	0.033	0	0.026	0.431	0.088	0	0.054	0.669	0.068	0	0.016	0.839	0.074	0	0.013	0.937
50	1.094	0.035	0	0.046	0.652	0.059	0	0.07	0.579	0.039	0	0.043	0.272	0.026	0	0.027	0.491	0.032	0	0.025	0.42	0.085	0	0.052	0.648	0.066	0	0.016	0.811	0.072	0	0.013	0.903
55	1.037	0.033	0	0.044	0.627	0.058	0	0.066	0.558	0.037	0	0.041	0.263	0.025	0	0.026	0.475	0.031	0	0.024	0.406	0.082	0	0.05	0.623	0.065	0	0.015	0.778	0.071	0	0.012	0.863
60	0.987	0.031	0	0.041	0.605	0.054	0	0.064	0.54	0.035	0	0.039	0.255	0.024	0	0.024	0.461	0.03	0	0.024	0.398	0.08	0	0.049	0.601	0.063	0	0.015	0.748	0.069	0	0.012	0.828

Pounds/day: 30 min per trip																																	SUM
	0.000226059	0.000519	0		0.000233	0.001079	0		6.87E-05	0.000944	0		0	5.44E-05	0		1.36E-05	4.65E-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.003186

RESULTS: pounds per day

Speed	ROG	CO	NOx	PM10
25	0.53	6.48	3.66	0.18
30	0.45	5.67	3.52	0.16
35	0.39	5.40	3.42	0.15
40	0.35	5.05	3.36	0.14
45	0.33	4.82	3.34	0.14
50	0.33	4.71	3.36	0.14

Pipeline 5 of 5