

Kansas City PM Characterization Study

Final Report

Appendix W

Remote Sensing Data Second-by-Second Round 1 Model Year Vehicle Specific Power

Assessment and Standards Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

Sponsors:

National Renewable Energy Laboratory, U.S. Department of Energy
Federal Highway Administration, U.S. Department of Transportation
STAPPA-ALAPCO Emission Inventory Improvement Program
Coordinating Research Council Inc. (Project No. E-69)

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United States
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Agency

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mygrp	vsp_bin	r_n	s_n	tm_n_mear	rvsp_mean	rvsp_var	svsp_mear	svsp_var	rspeed_me	rspeed_var	sspeed_me	sspeed_va	rhc_ppm_n
81	0	1	4	180	-0.11203		-0.025633	0.00045	27.36343	28.29181	7.033759	135.0792	164.9515
81	3	25	3	1194	1.728781	0.610613	0.082654	0.004892	22.0604	42.08593	1.678024	2.023111	341.5352
1994	0	4	9	256	-0.097424	0.006643	-1.616845	6.93846	25.95218	27.15642	4.901422	57.85284	62.58809
1994	3	138	8	978.875	1.669362	0.80198	0.209957	0.067601	21.1492	35.4539	3.580007	18.24158	84.30688
1994	306	258	3	127.3333	4.742632	0.646474	4.412237	0.036849	22.86062	26.10955	25.90554	31.95191	81.20585
1994	609	604	3	106	7.635469	0.65839	7.408025	0.001748	24.43561	18.81325	28.81263	85.81596	76.96396
1994	912	831	3	92.33333	10.59467	0.713862	10.44574	0.011596	25.87995	12.77765	33.33489	114.0356	58.55913
1994	1218	1358	3	96	14.54893	2.650966	14.51158	0.000132	28.72598	12.97037	35.7561	195.1463	58.16862
1994	1824	415	2	26	20.25986	2.683251	20.34191	0.031503	31.61014	11.70486	50.74511	0.156596	65.88253
1994	2430	63	2	10	26.08284	2.106726	26.78191	0.65812	33.84857	12.79533	49.29927	8.290236	91.08333
1995	0	5	11	171.0909	-0.116717	0.007247	-3.052619	7.951346	26.48289	32.55045	13.91429	97.69157	50.27819
1995	3	167	7	835.8571	1.58943	0.654339	0.367873	0.06041	21.87557	32.13256	6.397085	18.71649	59.99587
1995	306	326	4	164	4.70428	0.74691	4.476331	0.00429	23.105	26.46938	28.95595	1.162676	96.33641
1995	609	664	4	135	7.649005	0.711584	7.436483	0.006264	24.33863	19.21262	33.62834	3.278511	61.54895
1995	912	1069	4	107	10.48889	0.708727	10.48314	0.015648	25.82921	14.76602	36.40744	5.67678	49.55198
1995	1218	1768	4	127.75	14.67386	2.87271	14.16172	0.027833	28.4532	12.06798	43.97956	4.665775	47.49991
1995	1824	512	4	29.25	20.20378	2.540019	20.17704	0.184939	31.98648	11.91941	46.8469	49.23417	51.70986
1995	2430	80	4	8	26.17593	2.696712	26.37253	0.227128	33.51475	13.84685	43.79008	8.569452	54.316
1995	3099	27	2	10.5	32.92428	4.254191	40.35732	159.5869	35.4237	22.42191	43.43972	17.88999	106.8307
1996	0	3	10	242.6	-0.070754	0.007346	-2.636404	7.645868	25.87	18.5173	7.99536	81.08432	72.13774
1996	3	148	10	933.2	1.62165	0.679673	0.319532	0.10745	22.79297	35.1499	5.206102	25.77032	80.30061
1996	306	330	5	141.4	4.73942	0.678033	4.487225	0.0095	22.63073	27.09623	26.09776	43.18342	35.83639
1996	609	653	5	125	7.685369	0.744562	7.454708	0.001577	24.38778	20.60105	30.89126	48.15528	40.20897
1996	912	1057	4	133	10.53087	0.73803	10.54713	0.001854	25.88616	13.05804	39.06196	2.882844	32.17074
1996	1218	1799	4	138.25	14.66119	2.858663	14.48415	0.060298	28.60568	12.919	44.91233	1.713916	35.31525
1996	1824	527	4	29.75	20.12617	2.5289	20.51843	0.203363	31.53241	11.02665	46.95155	13.42855	39.67829
1996	2430	97	4	9.75	26.16772	2.436288	26.10013	0.623694	35.01041	20.2733	48.68039	21.42383	41.7533
1996	3099	37	2	3.5	1093.037	2138899	33.31693	1.395959	33.71757	49.54354	42.1248	5.873335	82.32189
1997	0	2	17	237.9412	-0.096956	0.009476	-1.781286	6.551711	25.939	20.22273	8.08514	85.38599	49.16333
1997	3	163	15	952.8	1.602874	0.755781	0.298829	0.078421	23.34515	31.03311	4.843527	17.86888	50.24939
1997	306	419	5	177.6	4.680104	0.686999	4.495692	0.002744	22.532	27.22243	29.53097	0.187715	25.19473
1997	609	821	5	147	7.722207	0.682127	7.456428	0.005236	24.04553	20.37028	33.64949	2.708508	55.8628
1997	912	1280	5	135.6	10.5395	0.682751	10.50659	0.010552	25.74709	14.39764	39.08318	1.303432	25.17728
1997	1218	2457	5	142.6	14.63801	2.678529	14.38144	0.045665	28.50435	13.13721	44.59043	0.760327	25.68873
1997	1824	750	5	23.2	20.19417	2.558786	20.77685	0.110194	32.01539	11.83219	49.33446	10.29935	25.35963
1997	2430	124	5	8.2	25.89407	2.301443	26.45177	0.450748	35.37161	14.38529	45.17693	25.59733	30.80548
1997	3099	27	1	2	33.6635	7.395346	30.72778		35.73593	33.41135	44.3622		80.94444
1998	0	5	11	173.3636	-0.08334	0.001038	-3.074975	8.056117	26.04895	28.88571	11.81762	110.3816	13.55942
1998	3	173	8	878.5	1.555442	0.759277	0.378195	0.087647	22.46069	29.05693	6.378349	23.79745	28.75931

mygrp	vsp_bin	r_n	s_n	tm_n_mear	rvsp_mean	rvsp_var	svsp_mear	svsp_var	rspeed_me	rspeed_var	sspeed_me	sspeed_va	rhc_ppm_n
1998	306	423	4	178.5	4.777674	0.725941	4.489399	0.004606	22.56017	30.60901	29.44843	3.905977	13.57593
1998	609	900	4	149.75	7.684995	0.686275	7.453907	0.001003	23.9235	17.66416	33.74279	2.701432	16.32913
1998	912	1426	4	131.75	10.57262	0.71867	10.46844	0.001118	25.71358	14.30051	38.83988	1.20378	18.58168
1998	1218	2653	4	143	14.75901	2.895214	14.30318	0.012551	28.49958	12.94845	44.92861	0.752526	17.97184
1998	1824	916	4	20.75	20.23659	2.468931	19.98204	0.172346	31.83857	12.91585	50.10412	6.726139	21.472
1998	2430	158	4	8.75	26.33372	2.962359	26.74487	1.937421	34.42658	13.63412	42.18104	30.93661	29.34171
1998	3099	23	2	3.5	34.10896	9.285426	34.38098	27.06864	37.27304	19.08617	44.20792	5.930706	81.87652
1999	0	2	15	274.7333	-0.178693	0.000631	-3.513319	6.656568	25.98595	19.92278	15.36006	81.67144	34.15163
1999	3	179	12	666.8333	1.513247	0.739528	0.480583	0.078463	22.52413	32.76026	7.988808	20.63957	9.244134
1999	306	393	8	179.5	4.756571	0.700961	4.491011	0.005192	22.66234	27.231	29.36186	1.955068	14.59702
1999	609	971	8	146.875	7.652011	0.710395	7.494057	0.004905	23.80622	19.05435	33.17935	5.670709	13.88288
1999	912	1462	8	119.25	10.55677	0.69694	10.5158	0.004575	25.83995	15.02039	39.10786	2.526565	25.68741
1999	1218	2991	8	146	14.71654	2.803368	14.42827	0.034101	28.59317	12.1575	44.4557	1.905048	19.75938
1999	1824	946	8	31.625	20.28642	2.849927	20.27703	0.069763	31.90365	12.06122	50.57366	17.30145	17.00248
1999	2430	201	8	10.125	25.98365	2.437513	26.65553	0.426828	34.05438	17.34668	45.77262	17.07711	28.68697
1999	3099	34	6	2.833333	645.567	1675685	32.50422	2.51793	35.11294	54.77961	40.80252	5.11479	45.39706
2000	0	1	12	354.5	-0.057851		-2.64427	7.547296	26.37516	25.42075	9.67044	84.8245	10.55486
2000	3	185	12	737.1667	1.600609	0.801201	0.363814	0.10313	22.29249	22.94594	6.077856	29.21583	10.3413
2000	306	461	6	179.8333	4.76483	0.720785	4.513621	0.006188	22.1959	26.77018	30.37481	1.170625	11.04876
2000	609	1000	6	151	7.675579	0.738889	7.441475	0.001995	24.14939	18.56132	33.2363	0.932476	9.64043
2000	912	1606	6	126.6667	10.60558	0.724202	10.51703	0.00115	25.79355	15.02846	39.60403	3.372884	11.51511
2000	1218	3266	6	143.5	14.72917	2.808849	14.43795	0.04045	28.48113	11.7774	44.52786	1.439977	10.17599
2000	1824	1026	6	24.5	20.22176	2.580508	20.54958	0.16435	31.68432	12.79908	49.7203	10.35217	14.96744
2000	2430	195	6	7.333333	26.08903	2.474472	26.58309	0.551399	34.752	12.66732	42.25945	9.396152	15.10569
2000	3099	96	4	2.75	1182.012	1968126	32.68697	4.084047	33.56844	51.53958	43.3424	85.92947	20.59667
2001	0	3	13	190.6923	-0.124034	0.008036	-2.331291	7.422348	26.11944	23.99842	10.23021	106.5219	13.26024
2001	3	188	9	873.8889	1.673219	0.548654	0.344443	0.089225	22.3417	31.99685	5.768939	24.38135	0.417553
2001	306	436	5	146.8	4.750237	0.679849	4.415174	0.026404	22.22686	23.17954	26.74492	34.63992	5.931078
2001	609	905	5	121.8	7.648664	0.702548	7.267467	0.135133	23.72702	19.98483	30.04559	73.12563	4.821702
2001	912	1506	4	126.5	10.57362	0.762505	10.51837	0.005077	25.81475	14.96464	39.9857	3.621262	10.47501
2001	1218	2849	4	144.5	14.72824	2.826091	14.30138	0.044477	28.56062	12.87536	44.05477	2.613103	7.567466
2001	1824	962	4	22.75	20.23497	2.582318	20.41841	0.022654	31.79412	12.27862	50.28702	13.12125	10.75015
2001	2430	205	4	10.5	26.10809	2.74176	26.15522	0.026997	34.54454	17.32844	46.13675	16.99424	16.06941
2001	3099	107	2	1	1100.893	2265559	30.77626	0.008039	32.77355	46.88569	49.8937	13.88856	8.678972
2002	0	2	6	279.1667	-0.063335	0.000399	-4.190591	5.435688	27.65732	23.79248	16.84972	59.04609	6.118969
2002	3	129	5	592	1.649165	0.688339	0.555598	0.046009	21.99953	26.12504	9.294374	15.59669	2.27093
2002	306	369	4	171.25	4.721596	0.683571	4.546037	0.001501	22.22076	21.55857	29.37632	1.471222	7.702602
2002	609	721	4	153.75	7.529089	0.766307	7.412975	0.005402	23.95397	18.03872	34.27219	8.044454	4.309903
2002	912	1136	4	128.25	10.63117	0.708823	10.44978	0.035306	25.84776	13.9154	38.98662	1.986957	4.933741

mygrp	vsp_bin	r_n	s_n	tm_n_mear	rvsp_mean	rvsp_var	svsp_mear	svsp_var	rspeed_mear	rspeed_var	sspeed_mear	sspeed_var	rhc_ppm_n
2002	1218	2231	4	142.75	14.72189	2.847101	14.38399	0.058895	28.47765	12.62336	43.92324	1.4859	4.617324
2002	1824	839	4	27.75	20.27745	2.605376	20.3117	0.114691	31.7331	11.78279	50.28896	9.322214	6.636818
2002	2430	162	4	8.5	26.19885	2.500145	26.25742	0.182843	35.14784	13.50694	45.01388	15.98119	8.259506
2002	3099	89	2	3	1936.199	3223567	33.05438	12.51522	31.6273	47.59227	39.62142	0.00575	10.61112
2003	0	0	3	274.3333	.	.	-3.652591	9.819539	27.64518	25.36476	13.11022	94.71074	5.98904
2004	0	0	1	380	.	.	-5.510371	.	28.07877	22.36193	17.8579	.	3.618883
8385	0	0	8	238.625	.	.	-0.917676	4.791137	28.62737	27.06599	3.34386	41.26257	46.77
8385	3	28	6	1010.333	1.747848	0.806976	0.171321	0.056597	22.57214	27.44922	3.053585	15.30485	428.3168
8385	306	60	1	199	4.473999	0.683986	4.351329	.	22.4135	23.63828	29.33072	.	238.0142
8385	609	153	1	128	7.541561	0.704646	7.627801	.	24.34961	15.27631	36.07098	.	270.8605
8385	912	176	1	114	10.58862	0.701305	10.47808	.	26.1879	15.44117	37.36859	.	174.7711
8385	1218	257	1	151	14.33287	2.770873	14.38687	.	28.62366	12.1953	42.59035	.	192.4407
8385	1824	65	1	27	20.52322	2.393346	20.33262	.	32.72615	12.34259	50.88894	.	151.1977
8385	2430	7	1	12	25.63042	1.04073	25.1204	.	34.94143	24.33428	47.38028	.	205.9829
8385	3099	1	1	1	31.2182	.	33.59496	.	33.84	.	49.4233	.	38.69
8689	0	3	27	185.6667	-0.136735	0.003999	-2.1353	7.005587	25.96868	40.7392	6.45929	63.16538	225.3503
8689	3	119	23	994.8696	1.577779	0.78329	0.307047	0.08777	20.93462	31.94836	5.198298	22.98318	189.1339
8689	306	315	8	175	4.785614	0.666392	4.504839	0.004886	22.47492	25.86161	29.19812	1.144156	177.3892
8689	609	605	8	152.25	7.588028	0.730146	7.459296	0.001585	23.91471	16.3401	33.61268	3.659462	152.2228
8689	912	728	8	124.25	10.52287	0.719724	10.48177	0.00244	25.91956	14.44827	39.37469	2.980678	156.5203
8689	1218	1100	8	147.625	14.57361	2.734622	14.42437	0.015459	28.58355	11.32684	44.27813	1.734531	124.5358
8689	1824	318	8	25	20.28267	2.682074	20.51264	0.16848	31.34786	14.59608	50.3557	6.495875	102.8878
8689	2430	57	8	10.75	26.11659	2.364535	25.95398	0.410574	32.7686	14.32795	47.80293	13.86272	155.4851
8689	3099	21	4	2	33.28166	4.093481	32.28561	1.325625	34.99952	27.31468	41.20556	25.6345	250.3305
9093	0	6	20	204.2	-0.097482	0.004032	-2.398126	6.57868	26.37934	25.46441	11.41351	94.22827	65.8924
9093	3	317	14	832.7857	1.685102	0.811699	0.404973	0.093767	21.58028	32.26638	6.599783	23.76767	150.1142
9093	306	728	8	144.375	4.697634	0.714593	4.463751	0.016157	22.89177	25.19667	31.33356	79.19755	144.4307
9093	609	1411	8	112.5	7.604664	0.748959	7.436873	0.020895	24.22259	19.52074	35.1028	49.26539	107.4315
9093	912	1936	8	98.75	10.5115	0.74609	10.40146	0.065691	25.98216	14.57021	39.55564	60.21342	97.37079
9093	1218	3339	8	107.75	14.63183	2.718404	14.40563	0.031288	28.71911	12.50471	42.68338	31.54019	83.36582
9093	1824	953	8	21.375	20.262	2.51557	20.10125	0.58666	31.73616	11.88846	46.85895	56.71521	81.34977
9093	2430	174	7	6.857143	26.13712	2.493969	26.12491	0.464383	33.78029	20.83763	45.67776	22.46786	85.53638
9093	3099	45	5	21.4	89.40596	71161.33	52.08212	1983.474	35.69756	42.51981	42.10531	110.9769	98.66756

rhc_ppm_v	shc_ppm_r	shc_ppm_v	rco_perc_n	rco_perc_v	sco_perc_r	sco_perc_v	rco2_perc	rco2_perc	sco2_perc	sco2_perc	rnx_ppm_n	rnx_ppm_v	snx_ppm_r	snx_ppm_var
111740.4	4321.323	8771814	1.139804	3.831796	3.516583	7.936394	14.20128	2.010332	10.71471	4.235413	704.5849	679844.7	269.5798	45635.08
131405.2	3750.892	9166448	2.7724	10.03166	3.120964	9.553001	13.042	5.1699	11.53925	0.767887	258.7056	42389.89	687.4196	510385.1
5896.233	294.9323	46606.38	0.433689	0.517152	0.175883	0.0183	14.69536	0.270974	13.5942	4.257731	1196.97	683909.4	154.152	3404.575
31028.02	301.6888	26982.2	0.576243	0.862359	0.23065	0.029043	14.62442	0.458234	14.14982	1.57491	273.4533	140541.4	295.9402	27880.3
50081.01	301.7353	82409.27	0.493226	1.662864	0.256671	0.046909	14.67213	0.870546	15.05819	0.000543	576.9099	457696	287.6634	28282.94
67458.56	345.96	120106.2	0.460006	1.058501	0.217745	0.026794	14.6924	0.552139	15.1077	0.000392	728.8241	537532.3	398.2244	54572.33
8806.838	762.7625	1178622	0.436664	1.102027	0.219241	0.028528	14.7078	0.57185	15.14355	0.002506	781.2031	609874.2	431.1098	7210.325
17253.5	884.1383	1687518	0.435103	0.761957	0.231529	0.047913	14.70412	0.393472	15.14356	0.010985	920.9017	771627.7	525.9786	3623.37
14762.89	322.3201	57333.7	0.875122	3.325128	1.095337	1.322124	14.38506	1.702553	14.62217	0.282472	1020.315	966277.7	587.8922	208.6682
25307.61	1090.361	3036.715	1.402063	3.153765	3.223973	0.167604	14.0081	1.61449	13.1729	0.000509	932.7916	1011832	592.1251	1813.619
15426.46	287.972	18831.38	0.396995	0.799705	0.236885	0.013075	14.74325	0.414303	13.88651	1.425999	615.508	365489.3	150.8412	5678.594
74867.59	498.6189	128959.6	0.412939	0.42052	0.534953	0.373099	14.74329	0.227344	14.09351	0.996044	267.6384	312365.9	264.3573	30182.05
235563.8	220.2868	13340.31	0.389575	0.53517	0.399962	0.006666	14.7504	0.289482	14.86673	0.019039	479.0935	373939.3	292.9655	10600.95
56063.08	190.7712	8310.381	0.322096	0.496719	0.438274	0.001033	14.79687	0.261187	14.86952	0.005656	588.5786	425799.5	338.4375	22126.21
14947.42	173.9902	7106.613	0.309757	0.517512	0.337051	0.001523	14.80119	0.271266	14.9774	0.002452	738.8092	659202.9	382.627	22849.07
17533.1	172.8556	6434.247	0.424881	1.003991	0.354673	0.002606	14.71735	0.519551	14.92553	0.016197	772.8208	615601.8	476.3079	87676.39
5935.024	344.8302	30272.7	0.603146	1.525246	1.098655	0.946524	14.58396	0.784113	14.52569	0.39412	926.0588	701423.8	556.439	49420.89
6782.785	475.1719	123126.9	1.18875	3.82813	1.343314	1.066586	14.16413	1.960235	14.39946	0.359015	930.8488	534149.2	983.1391	261435.8
7169.83	395.2787	1455.169	3.051111	8.359503	0.547601	0.005735	12.82444	4.216756	14.88812	0.000437	1010.443	1276160	753.0235	124089
16554.57	210.391	14865.11	0.449772	0.761378	0.174818	0.024788	14.69755	0.399542	12.25085	14.96333	775.856	476637.6	70.54985	3787.541
192883.4	257.3201	43045.9	0.463196	0.864576	0.228941	0.019967	14.70547	0.465215	14.10029	2.460742	301.4243	325756.7	154.2168	5466.5
10480.96	234.7509	56476.91	0.217448	0.108493	0.228801	0.015763	14.88058	0.060667	15.01344	0.039972	398.6351	330509.1	225.4361	13037.72
19126.86	207.0866	37719.33	0.284681	0.488857	0.221775	0.020423	14.82781	0.257779	15.0788	0.028051	509.6674	492232.4	226.4513	7452.643
6352.353	123.1883	7839.131	0.257514	0.537014	0.206339	0.027864	14.84774	0.28106	15.15807	0.019561	515.9703	358245.3	236.0747	8353.237
31686.74	129.6702	11530.44	0.31631	0.651696	0.193146	0.028627	14.80345	0.339903	15.17839	0.018744	558.8602	408642.3	281.0163	10730.33
5054.948	179.8785	35932.59	0.507065	1.210468	0.203922	0.031483	14.66319	0.62503	15.18269	0.024056	659.8026	470354.1	416.3684	8521.363
5197.575	205.3109	32717.43	0.765524	2.731136	0.528222	0.280516	14.4734	1.398202	14.97761	0.091665	792.9766	714215.8	625.6699	9669.289
3837.844	558.134	380807.4	2.476141	6.54343	0.957104	0.45416	13.24703	3.321727	14.61701	0.345634	759.6719	679474.9	539.114	10875.49
14326.15	124.5531	8877.666	0.218397	0.50105	0.115434	0.007553	14.86633	0.255874	13.69263	1.981911	747.8547	336415.8	117.7197	2663.99
75278.14	158.5567	5131.909	0.321387	0.338853	0.183467	0.011669	14.81215	0.185848	14.36687	0.488975	193.8447	229267.9	187.3353	13140.13
3548.726	90.64956	1162.94	0.242292	0.21846	0.181627	0.033023	14.86685	0.115207	15.04804	0.017704	302.4326	233572	172.8987	12987.81
313591.9	91.92582	2225.05	0.252723	0.396745	0.20214	0.050466	14.85218	0.221391	15.12321	0.014778	447.1004	397132.4	196.1575	13902.74
5857.03	96.68639	2860.981	0.203818	0.225925	0.185359	0.052614	14.88841	0.118684	15.18471	0.016451	461.1316	327430.4	209.7555	10695.86
3077.359	112.5253	7005.965	0.276445	0.566855	0.168004	0.033583	14.83484	0.294155	15.22501	0.012871	502.5733	385312.3	227.7313	14121.26
2927.793	218.5687	75600.54	0.45427	1.081218	0.411334	0.207172	14.70684	0.557569	15.04662	0.122632	516.1365	353568.3	418.6234	67543.62
3969.39	510.0765	676266.9	0.498831	1.704238	1.556266	5.299071	14.67274	0.882305	14.41806	2.07606	579.7052	482619.3	455.8475	12696.62
20828.16	974.143	.	1.722078	3.630617	4.491	.	13.79593	1.896648	12.1123	.	490.4356	297541.5	572.1038	.
1554.363	197.9679	91100.5	0.242292	0.567755	0.120671	0.019135	14.85767	0.292437	13.80376	4.88027	535.6238	383987	142.5683	38402.93
21066.54	144.1604	12304.87	0.298131	0.732862	0.167788	0.013235	14.83156	0.388738	14.77166	0.025126	146.2149	81072.72	83.70197	2737.603

rhc_ppm_v	shc_ppm_r	shc_ppm_v	rco_perc_n	rco_perc_v	sco_perc_r	sco_perc_v	rco2_perc_r	rco2_perc_v	sco2_perc_r	sco2_perc_v	rnx_ppm_n	rnx_ppm_v	snx_ppm_r	snx_ppm_var
4173.062	60.49668	568.6382	0.200353	0.402814	0.049196	0.002221	14.89856	0.209696	15.16998	0.009503	258.251	230593.3	139.5515	2301.225
4618.184	52.34982	441.6834	0.171295	0.308106	0.033445	0.00073	14.91823	0.162058	15.21633	0.010529	293.3237	230765.1	176.7593	9576.165
4109.785	41.71928	448.7488	0.17392	0.223775	0.023734	0.000415	14.91381	0.118623	15.24885	0.010167	353.9766	273758.2	176.4673	8023.714
3883.231	43.21579	420.6201	0.218132	0.478221	0.028415	0.000479	14.88139	0.248512	15.26299	0.009371	381.1257	268364.5	255.1878	16526.29
3325.12	50.77116	808.8483	0.402997	0.986723	0.045413	0.002657	14.74571	0.509316	15.26822	0.012256	460.3167	411675.6	391.326	54234.88
4036.924	47.7475	699.263	0.612765	1.269449	0.035222	0.002851	14.59481	0.656583	15.2634	0.012238	464.5727	287944	726.9506	113341.6
9416.72	84.7078	966.9619	2.60913	8.020436	0.259025	0.002391	13.15043	4.091159	15.12059	0.000671	704.0887	544115	779.1878	68113.91
7388.584	115.9911	40739.67	0.22157	0.466489	0.100048	0.016348	14.86432	0.241074	13.19687	8.319946	757.2779	480179.9	72.65087	5089.71
3054.815	90.60049	2995.051	0.254358	0.255417	0.109843	0.005889	14.86609	0.132828	13.35255	7.135807	115.0791	99179.81	91.3078	2387.528
3598.478	54.65822	2916.838	0.200549	0.224528	0.097064	0.025523	14.90087	0.117259	14.10746	2.598708	186.6427	146897.3	130.7517	13113.97
3962.314	50.05768	1723.672	0.139019	0.229288	0.083871	0.016145	14.94465	0.120197	14.42964	1.445427	204.1013	141533.9	142.2801	19971
50978.04	61.40337	2381.821	0.13295	0.109764	0.102356	0.023216	14.94637	0.060983	14.65559	0.75707	254.6351	169795	150.0234	21761.3
23748.37	70.49745	3400.546	0.183935	0.344879	0.100377	0.014273	14.90919	0.18078	14.81492	0.372577	294.2658	201200	166.5331	26485.09
2789.761	130.8945	16979.87	0.319346	0.762436	0.287601	0.147379	14.81087	0.393662	14.85923	0.245403	323.4655	182573.5	238.2248	54897.49
4699.67	243.974	114873.6	0.970284	3.531866	0.557174	0.933192	14.34597	1.82289	14.83392	0.333117	262.5263	84447.92	355.0655	70969.72
4316.567	441.8697	408646.1	1.366435	4.621857	0.788581	1.716718	14.05765	2.377182	14.67811	0.976827	385.02	224554.7	459.7285	55624.46
2082.204	66.29535	4774.104	0.081783	0.067534	0.093308	0.008921	14.97694	0.036922	13.44252	14.97564	453.6935	384063.4	42.62221	658.5662
2882.917	69.4844	4051.156	0.225258	0.318889	0.092843	0.007926	14.888	0.16703	13.78408	16.73602	81.50508	65199.76	52.6593	836.6545
5179.392	60.72604	1547.174	0.142369	0.167933	0.081091	0.003272	14.9436	0.089867	15.18116	0.023718	165.6902	162517.3	97.34508	3960.611
5075.101	61.95688	2136.027	0.108955	0.152861	0.063346	0.001368	14.96786	0.081859	15.21359	0.025065	171.6117	174593.6	90.2239	2637.915
5016.873	63.88151	2756.519	0.119464	0.168998	0.065028	0.00065	14.95876	0.08817	15.21862	0.02193	208.7425	160435.4	108.8741	2527.73
3436.123	66.57606	3108.01	0.12087	0.175808	0.061777	0.001592	14.95723	0.091804	15.23012	0.022462	230.832	137274.9	104.4359	6130.338
2805.781	84.5141	5196.138	0.320128	1.050046	0.150305	0.017099	14.81261	0.541637	15.17361	0.016861	275.3884	192880	236.8443	37961.46
2048.082	228.0991	37991.75	0.686112	2.336353	1.126889	1.655494	14.54867	1.199965	14.59393	0.419868	324.0874	233411.3	351.8485	80461.04
1904.099	629.111	177173.4	0.946049	3.220969	2.280458	2.535636	14.36927	1.660306	13.66105	0.962385	122.891	50594.87	346.0986	42395.76
2087.322	99.00545	53762.75	0.119731	0.152813	0.125836	0.10464	14.95184	0.080012	14.49592	1.091228	391.2271	331100.1	29.70424	1110.648
3133.368	182.6427	122080.5	0.145827	0.137959	0.242812	0.250395	14.94723	0.071345	14.63613	0.379449	62.31021	28221.16	32.65119	529.9859
2139.706	305.4149	318057.5	0.099219	0.07944	0.495541	1.037559	14.97798	0.04195	14.86517	0.561216	86.04791	52044.8	42.2755	3191.134
1681.012	209.584	121218.7	0.055285	0.021088	0.32742	0.427807	15.00893	0.011746	15.04312	0.251396	115.3491	108523.2	20.29946	76.93676
3407.543	234.3895	129237	0.083868	0.080429	0.388596	0.48759	14.98749	0.043117	15.003	0.266064	132.1313	107171.2	20.974	106.5921
1391.415	121.6055	14036.05	0.10941	0.212704	0.143294	0.042151	14.96877	0.110536	15.16875	0.047744	143.6086	96875.89	32.60086	384.7093
2315.408	145.551	30001.17	0.202097	0.52242	0.147483	0.044073	14.90086	0.269629	15.18127	0.042891	179.1826	135251.4	64.99139	1240.369
4629.189	160.6663	31771.02	0.286656	0.940482	0.163767	0.053307	14.83834	0.485278	15.19426	0.029176	227.1904	187112.1	82.03202	1936.879
2055.191	82.5465	3233.286	0.845135	3.382509	0.0711	0.000238	14.43935	1.741548	15.3107	0.005141	189.2039	188536.4	108.3613	9240.032
1600.172	18.08869	290.0915	0.091221	0.148285	0.035277	0.001525	14.98159	0.077589	14.43972	0.225253	146.2905	139549.7	19.89324	145.401
1434.836	24.15215	205.0445	0.109309	0.060639	0.048184	0.003579	14.9731	0.032053	14.75675	0.051362	53.91419	20560.72	29.59254	281.806
2384.168	30.22454	457.3945	0.092433	0.067064	0.085968	0.00704	14.98257	0.035447	15.22919	0.005858	94.11247	80012.36	15.40225	93.72726
4915.206	33.38583	498.628	0.057354	0.047097	0.075613	0.003715	15.0084	0.02579	15.26426	0.006861	86.92412	68287.32	23.27652	220.8159
2033.522	40.10859	676.0195	0.058368	0.03703	0.104136	0.006201	15.0077	0.019717	15.26349	0.008071	86.2724	48641.69	28.59104	910.5159

rhc_ppm_v	shc_ppm_r	shc_ppm_v	rco_perc_n	rco_perc_v	sco_perc_r	sco_perc_v	rco2_perc	rco2_perc	sco2_perc	sco2_perc	rnx_ppm_n	rnx_ppm_v	snx_ppm_r	snx_ppm_var
2477.98	43.93557	840.7964	0.075067	0.101901	0.111811	0.012881	14.99435	0.053168	15.26108	0.009471	125.3624	87951.99	32.06734	1256.979
1012.285	58.7964	848.452	0.156	0.411308	0.15193	0.009589	14.93626	0.212103	15.25953	0.010334	127.8002	66603.45	63.46978	3526
730.1006	62.72525	738.5114	0.433139	1.498778	0.141558	0.007646	14.73531	0.773285	15.2462	0.009951	190.7457	64435.96	139.0159	16364.62
680.4774	147.459	15154.01	0.408822	1.249391	0.34565	0.155849	14.75247	0.644757	15.20004	0.001575	158.3507	207740.4	175.348	3312.44
1762.607	24.80634	238.8612	0.077435	0.178068	0.019572	0.000346	14.99406	0.09255	15.00641	0.093774	84.01058	58773.97	11.48259	17.47418
1339.736	16.45659	.	0.048526	0.051923	0.080318	.	15.01548	0.027248	14.2777	.	58.01029	34466	15.1799	.
6372.405	2428.229	10601495	0.17705	0.60593	2.208353	7.284976	14.89789	0.319839	11.67713	7.342191	739.395	785992.2	231.8667	13723.55
242436	2414.259	7495258	3.44	9.604104	2.424657	7.547319	12.5475	4.965479	12.00686	8.645916	455.7729	217754.4	539.6581	71029.55
89635.96	265.6904	.	2.152833	9.507478	0.346382	.	13.464	4.921913	14.28014	.	874.2912	581608.1	167.4666	.
327513.4	262.2626	.	1.667699	5.587622	0.556837	.	13.80144	2.88531	14.32071	.	1145.535	922550	177.1028	.
125828.2	272.9303	.	1.383971	4.690187	0.787881	.	14.00824	2.404531	14.39734	.	1190.769	1272299	241.7674	.
213347.5	286.9952	.	1.588803	5.285275	1.051183	.	13.85922	2.714605	14.34033	.	1200.675	1064347	305.3139	.
79046.67	492.949	.	1.539658	6.207756	2.988893	.	13.90354	3.190267	13.23418	.	1041.349	928370.9	307.1817	.
8777.458	887.3234	.	4.894286	18.30756	5.458742	.	11.51714	9.398924	11.78963	.	514.4829	503412.3	420.957	.
.	1185.85	.	4.8	5.9813	.	5.9813	11.59	.	11.0779	.	522.27	.	413.1654	.
334167.3	1081.414	2050965	0.770526	1.529919	0.74352	1.683086	14.45184	0.789291	11.69817	10.23305	1048.088	723188.3	223.7683	50168.7
73744.07	911.9493	823479.9	1.217199	4.164211	0.795558	0.588789	14.15084	2.160965	12.91472	5.059985	522.6233	376819.4	404.966	47027.85
282181.1	666.7651	161868.2	0.743167	1.942706	0.729792	0.570895	14.47483	1.006517	14.09495	0.863381	961.636	1043963	612.4696	164180.6
101477.6	694.0735	222939.8	0.827963	2.984392	0.720848	0.508691	14.40957	1.539116	14.28204	0.568847	1122.828	1213539	722.0859	258357.6
114544.4	615.3492	166742.1	1.05108	3.751077	0.708081	0.67024	14.24633	1.923632	14.44725	0.552552	1218.462	1134239	799.2841	292999.5
93795.9	672.0111	227751	0.926039	2.991459	0.752861	0.88134	14.33525	1.536165	14.50951	0.535995	1292.231	1184877	954.2478	430337.5
15140.02	791.108	262028.1	1.268853	3.197293	1.253154	1.571816	14.09679	1.634949	14.2917	0.820258	1148.101	1086600	1097.308	353711.7
68964.73	1243.021	1122647	2.304561	5.077254	2.021266	4.623197	13.35018	2.582848	13.83216	1.917921	1145.935	980223.7	1189.123	368442.8
166209.4	1877.343	209020.6	3.383152	4.56245	2.997958	7.675415	12.59143	2.373623	12.66242	1.269066	690.9267	351573.5	1041.601	478064.7
8144.929	871.7503	2499229	0.661943	2.067138	0.403615	0.092164	14.53918	1.066583	13.03091	4.413242	970.069	626765.3	277.8996	55464.57
194672.3	917.4005	2551811	0.648263	1.099554	0.489882	0.081128	14.56397	0.586156	13.95115	1.24609	441.8329	382031.6	404.0627	67068.3
179599.2	983.0085	2292867	0.756895	2.410405	0.509094	0.099013	14.47492	1.249695	14.65438	0.157459	750.8731	621230.5	739.617	306069.6
116555.2	961.5166	2253008	0.642166	2.457412	0.510815	0.124476	14.55272	1.275073	14.66694	0.1693	930.6097	793129.9	848.3271	404090.3
141643	903.24	1863122	0.54021	1.383359	0.499487	0.10549	14.62236	0.724163	14.71151	0.119386	1043.492	905007.9	866.1591	470304.4
50945.41	877.7029	1936141	0.657517	1.934577	0.444852	0.080369	14.53879	0.998979	14.77227	0.125395	1051.095	921015.1	1019.029	496095.8
34636.17	995.653	1970662	1.036566	3.215788	0.48179	0.102387	14.26591	1.650781	14.75054	0.120766	1078.71	920001.2	1129.662	454499.1
24149.48	1347.008	2683388	1.518286	4.419165	1.027858	0.933884	13.92534	2.26501	14.41234	0.376673	928.06	595247.6	1320.969	421410.1
6844.646	3048.81	10398860	1.990222	4.829693	2.431541	3.679421	13.578	2.451407	13.259	2.635074	1174.581	974643.7	929.7697	391721.2