

03402

HOURLY AVERAGE CO LEVELS

4/23/91, coal only, bypass stack

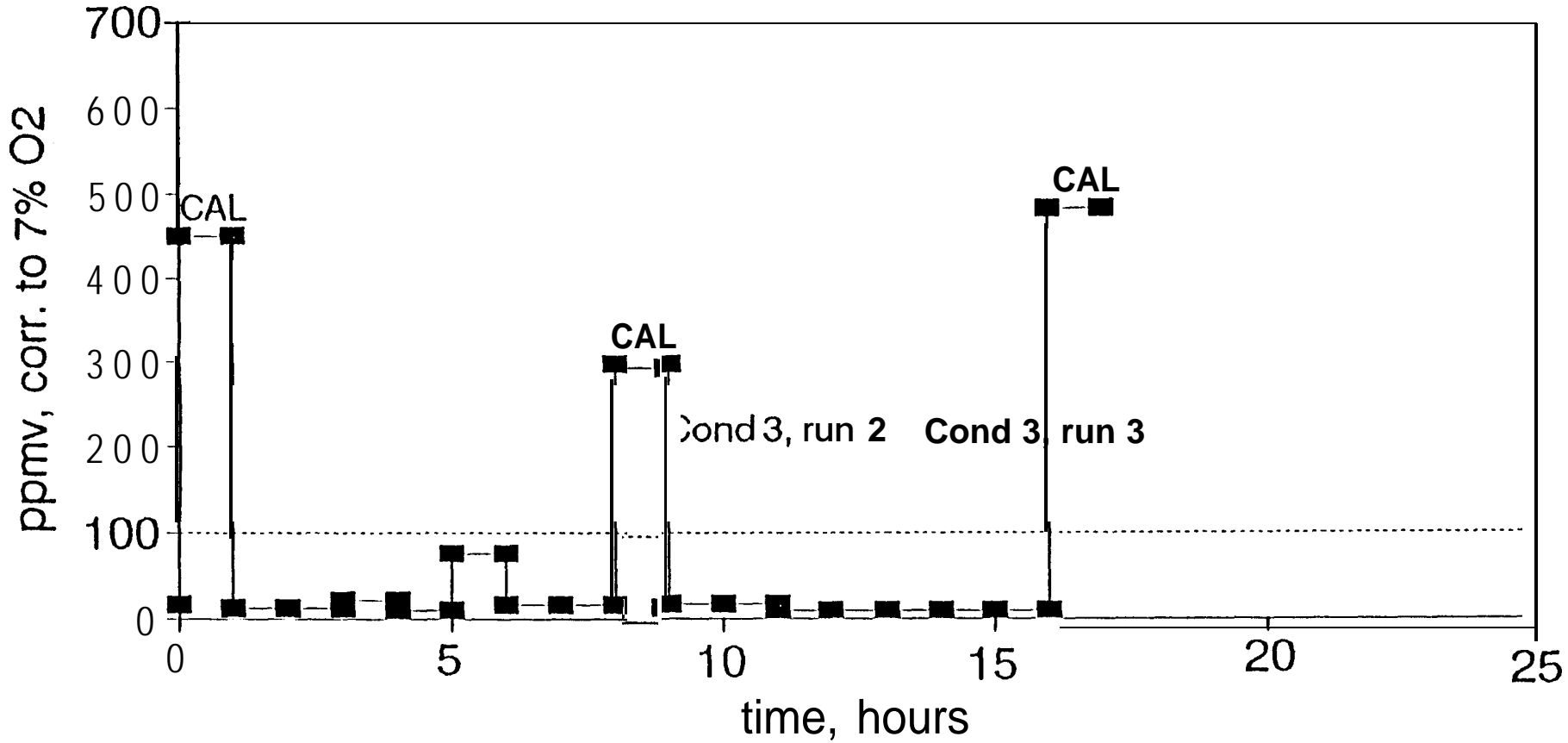


FIGURE 22.

SELECTED PIC EMISSIONS

5 Semivolatiles, 3 Volatiles

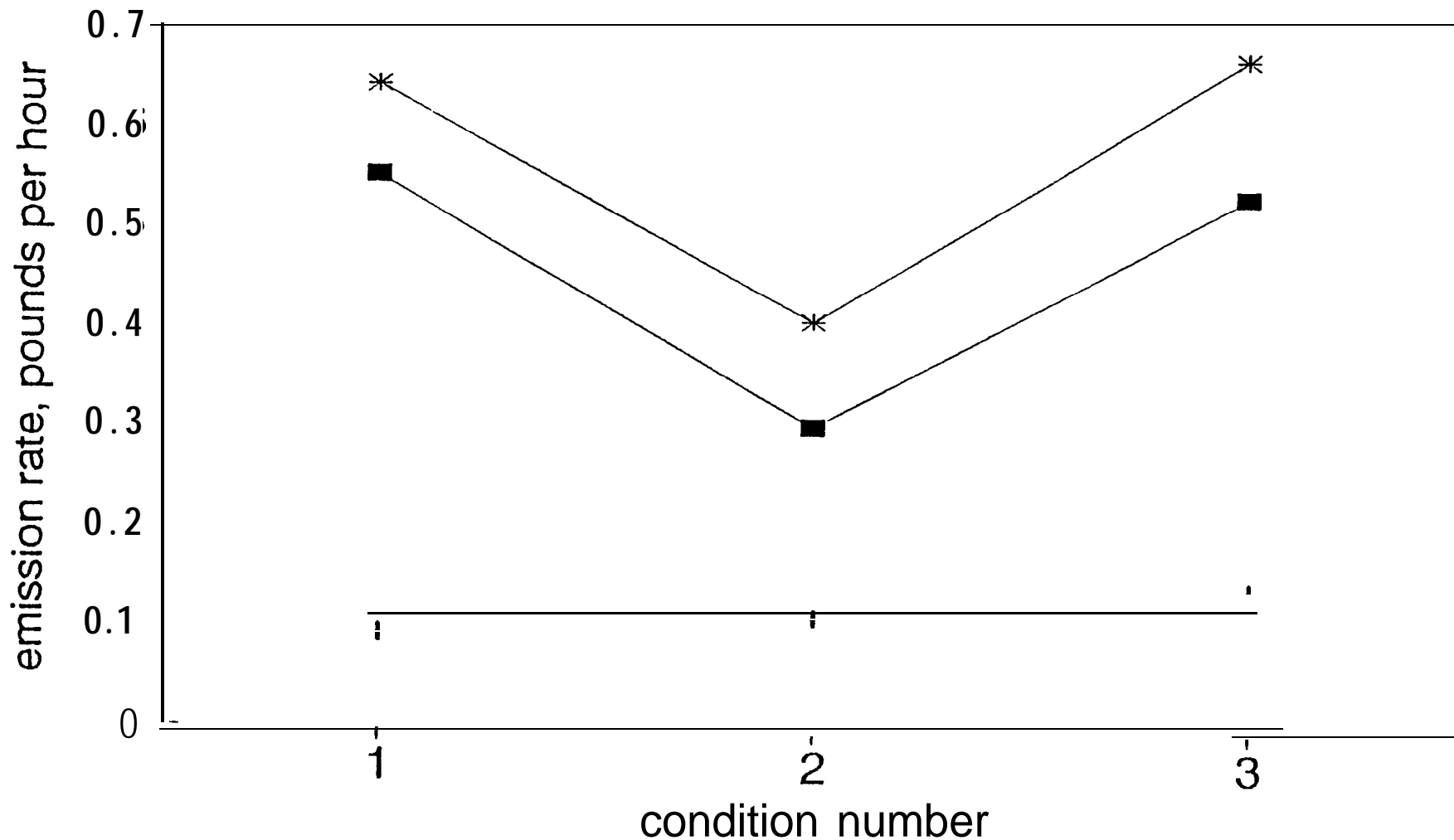


FIGURE 23.

SWPCCo, Hydrogen Chloride

Conditions 1, 2, 4 (LHWF/tires/coal)

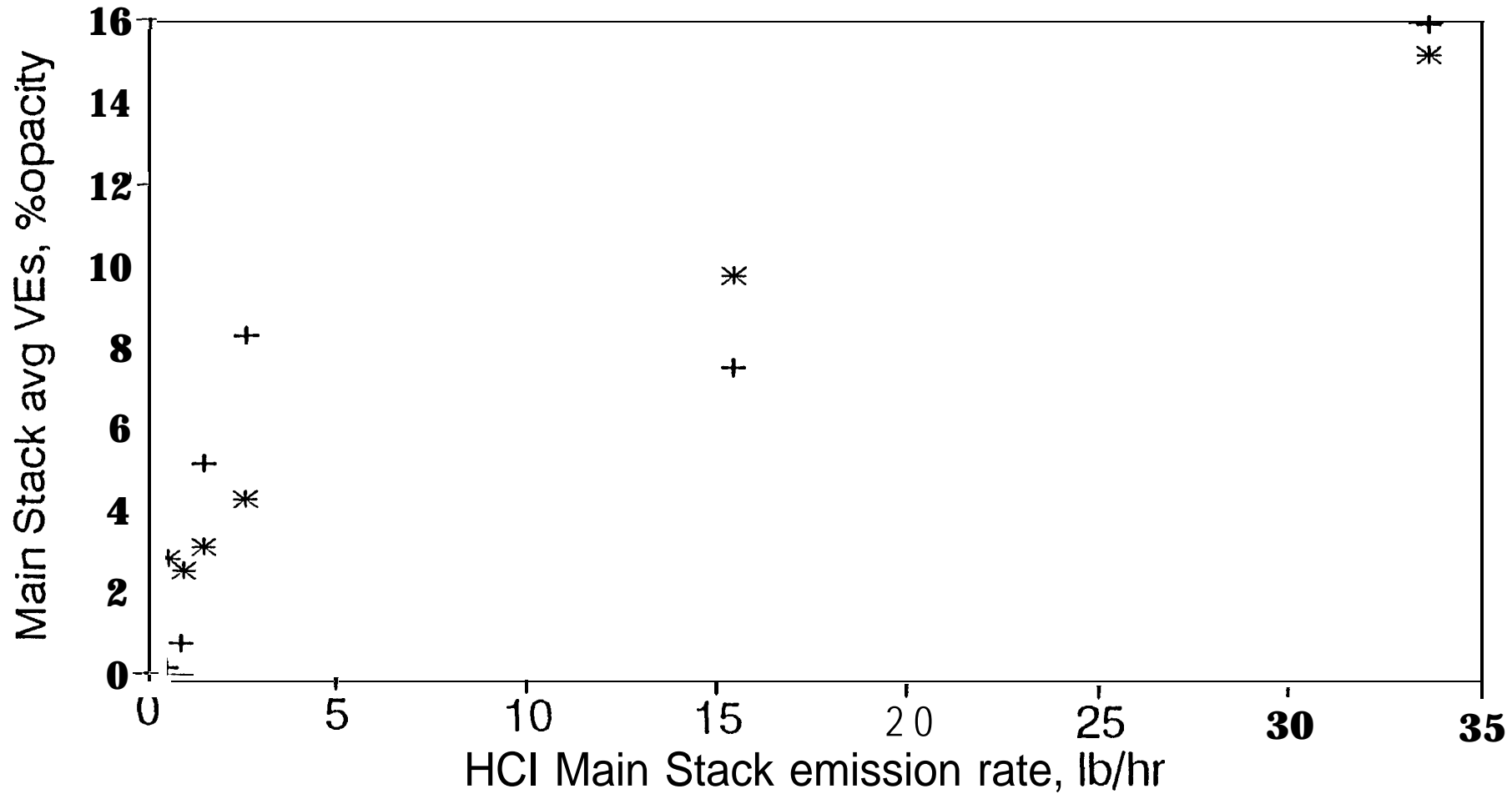


FIGURE 24.

+ measured VEs * VEs = f(HCl,SO2)

SVPCCO, Sulfur Dioxide

Conditions 1, 2, 4 (LHWF/tires/coal)

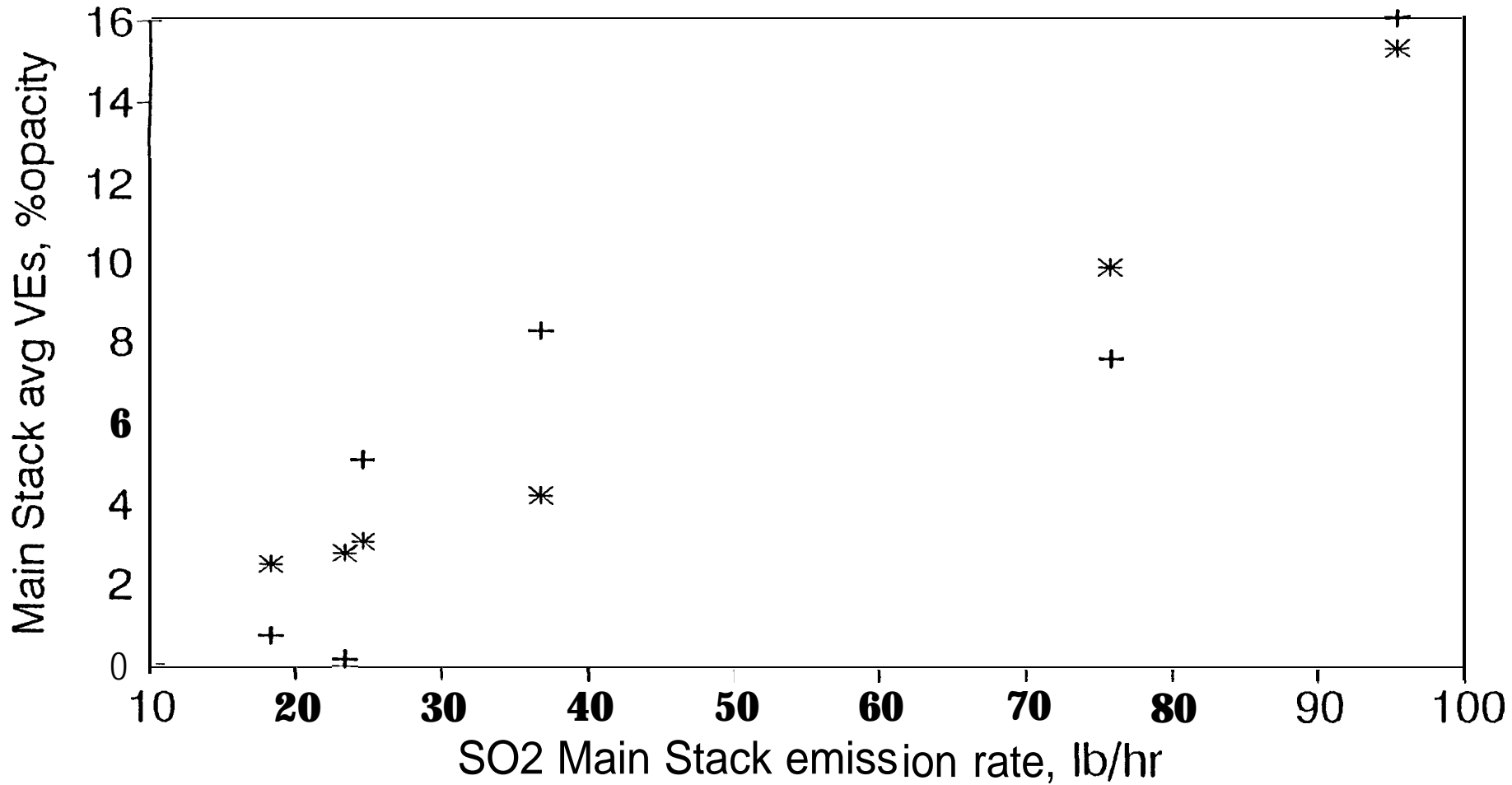


FIGURE 25.

+ measured VEs * VEs = f(HCl,SO2)

Some nearest Neija bars



Scale 1:24000

State Route 235

1125m

1920m

Hyde

Dighton 4-S

Trabein

LIVNEVNI

Enon

M21

871m

SWPCCO
main
stack

696m

NS-Y

Rantzong

Lvökw

1975 Map
USGS
"Yellow Springs"

FIGURE 26.

	lbs/hour		Tires +				Total
	INPUTS		spike +				
	Kiln Feed	Coal	LHWF	LHWF	spike	Tires	
	Cond 1	Cond 1	Cond 1	Cond 1	Cond 1	Cond 1	Cond 1
Chlorine	88.94285	3107972	108.0284	33.21897	89.3	3.508457	210.0508
Antimony	0.484308	0.033512	0.949231	0.065405	0.87	0.013828	1.487051
Arsenic	1.37344	0.044238	0.490724	0.003425	0.47	0.017299	1.908402
Barium	37.13758	1.751254	129.8576	1.380115	11.39	0.215844	51.8748
Beryllium	0.058893	0.04357	0.090888	0.000888	0.09	0.000201	0.191149
Cadmium	0.042733	0.002328	1.323295	0.009205	1.11	0.00409	1.368358
Chromium	8.387509	0.223175	7.740013	7.878965	0	0.083048	14.3307
Lead	2.478523	0.209112	13.97273	13.93361	0	0.039127	16.65837
Mercury	0.039884	0.001552	0.090418	0.000338	0.09	7.93E-05	0.131852
Nickel	1.906749	0.184875	5.791211	5.733151	0	0.058061	7.862835
Selenium	0.142444	0.01293	0.010957	0.004051	0	0.008907	0.186331
Silver	0.071222	0.002328	1.733003	0.002603	1.73	0.0004	1.808553
Sulfur	382.895	118.3485	58.8458	42.03507	0	14.61053	358.0871
Thallium	1.27111%	0.007761	a	0.011802	a	0.00502	1.715749
Vanadium	5.470685	0.375322	0.014171	0.012902	0	0.001389	5.860178
Zinc	4.392388	0.208429	35.69924	20.1567	0	15.54254	40.30005
* not spiked							
11 metals	50.09809	2.488875	45.17823	28.80955	15.95	0.418881	97.78618
3 metals	11.13424	0.591312	38.15023	20.1913	0.42	15.54893	47.87598
14 metals	61.23333	3.080387	81.32848	48.99085	1e.37	15.98781	145.8422

	lbs/hour		Tires +				Total
	INPUTS		spike +				
	Kiln Feed	Coal	LHWF	LHWF	spike	Tires	
	Cond 2	Cond 2	Cond 2	Cond 2	Cond 2	Cond 2	Cond 2
Chlorine	78.90581	0.748813	75.34322	19.33274	54.6	1.41048	152.9974
Antimony	0.489661	0.025658	0.423961	0.011155	0.4	0.012805	0.93928
Arsenic	1.058532	0.015501	0.144103	0.002787	0.11	0.031316	1.218135
Barium	48.20414	1.781066	13.13999	0.293285	12.83	0.016703	61.1052
Beryllium	0.050408	0.023243	0.051048	0.000834	0.05	0.000212	0.124695
Cadmium	0.043205	0.002264	0.482019	0.031328	0.45	0.000691	0.527488
Chromium	8.854393	0.220131	8.141703	8.074194	0	0.087509	1121623
Lead	5.556502	0.203997	1a92897	10.88571	0	0.043266	18.88947
Mercury	0.040325	0.001509	0.050838	0.000557	0.05	7.84E-05	0.08247
Nickel	1.915151	0.188483	2697757	2621214	0	0.078543	1761392
Selenium	0.144018	0.033567	0.006462	0.002787	0	0.003678	a194047
Silver	0.043205	0.002264	0.901612	0.001022	a	0.000591	0.947082
Sulfur	321.0481	141.1738	25.31729	13.79288	0	11.52482	487.5392
Thallium	0.818886	0.007547	0.128847	0.011412	0.1	0.017238	0.95506
Vanadium	4926566	0.366869	0.013166	0.011844	0	0.001321	5.308403
Zinc	4.472911	0.176173	27.53332	18.08918	0	9.444144	32.18441
* not spiked							
11 metals	62.39954	2.457684	38.96828	21.92487	14.79	0.25339	101.8255
3 metals	10.21837	0.552369	2767514	16.11244	0.1	9.4627	38.44589
14 metals	72.61791	3.010072	64.84339	40.0373	14.89	9.716091	140.2714

	lbs/hour		Tires +				Total
	INPUTS		spike +				
	Kiln Feed	Coal	LHWF	LHWF	spike	Tires	
	Cond 3	Cond 3	Cond 3	Cond 3	Cond 3	Cond 3	Cond 3
Chlorine	5.746534	52.54772	0	0	0	a	58.29625
Antimony	0.493581	0.040059	0	0	0	a	a53362
Arsenic	1.230128	0.082898	0	0	0	a	1.313026
Barium	37.92436	2639239	0	0	0	0	40.56359
Beryllium	0.107422	0.088285	0	0	0	0	0.175687
Cadmium	0.04355	0.003535	0	0	0	0	a047064
Chromium	8.357149	0.356005	0	0	0	0	8.713154
Lead	6.508908	0.363727	0	0	0	0	6.875835
Mercury	0.01742	0.002356	0	0	0	0	0.019776
Nickel	2.097834	0.278951	0	0	a	0	2376565
Selenium	0.145185	0.025755	0	0	0	0	0.17092
Silver	0.04355	0.008789	0	0	0	0	0.052339
Sulfur	290.1026	188.3072	0	0	0	0	488.41
Thallium	0.592564	0.011762	0	0	0	0	0.604346
Vanadium	5.474753	0.655433	0	a	0	0	8.130185
Zinc	4.509406	0.335504	0	a	0	0	4.84491
* not spiked							
11 metals	56.96884	3.872578	0	a	0	0	60.84142
3 metals	10.57672	1.002719	0	0	0	0	11.57944
14 metals	67.54556	4.875297	0	0	0	0	72.42086

TABLE 1 - METALS INPUTS

	OUTPUTS						Total	Total
	Mean St	Byp Stk	Chkr St	Chkr	Byp Dst	Stacks	Output	
	Cond 1	Cond 1	Cond 1	Cond 1	Cond 1	Cond 1	Cond 1	
Chlorine (HCl)	1.5283333	0.4733333	0	0	0	1.9996667	1.9996667	
Chlorine (FP)	0.000434	0.106	1.3E-06	0.168081	138.366	0.106447	138.62963	
TOTAL CHLORINE	1.5287673	0.5783333	1.3E-06	0.168081	138.366	2.1061137	141.62919	
Antimony	0.0003983	0.0002083	0.000281	0.4780064	0.0701425	0.0008667	0.5470136	
Arsenic	3.11E-06	0.0001028	0.0001463	2.3670847	0.096836	0.0003403	2.4771086	
Barium	0.0006663	0.0028667	0.0025867	58.108814	0.2557514	0.0058087	58.368174	
Beryllium	4.507E-08	1.813E-06	1.63E-06	0.1773256	0.0058534	1.006E-06	0.1832889	
Cadmium	0.0001823	0.0007843	0.0001883	0.0848808	0.4736734	0.001136	0.6686803	
Chromium	0.000482	0.0008317	0.0010303	15.628608	0.936678	0.002424	18.588806	
Lead	0.001048	0.00838	0.007846	8.7202104	5.888623	0.018254	14.607887	
Mercury	0.0046647	0.0028833	0.002456	0.010848	0.000848	0.0008866	0.0178286	
Nickel	0.0006813	0.0006247	0.00188	5.8882886	0.320088	0.0028888	6.233003	
* Selenium	0.0002848	7.38E-05	0.0005231	0.0840406	0.0442147	0.0008666	0.1281108	
Silver	0.0002883	0.0001813	0.0001577	0.2236477	0.57518	0.0006863	0.783181	
Sulfur (SO2)	18.233333	1.8888887	0	0	0	18.13	18.13	
Sulfur (FP)	0.012	0.136	0.018	813.41077	180.12	0.182	783.88277	
TOTAL SULFUR	18.245333	2.0318887	0.018	813.41077	180.12	18.312	811.82277	
Thallium	8.073E-06	0.0003017	5.25E-06	0.0840406	0.0862884	0.0004148	0.1707518	
* Vanadium	0.000729	0.000333	0.0006303	8.8033882	0.2333881	0.0018823	7.0364888	
Zinc	0.0022487	0.00383	0.0074787	28.885228	2.1084278	0.0133633	28.008808	
* not spiked								
11 metals	0.0084128	0.0168807	0.0145807	88.7768	8.8726648	0.0388742	88.488128	
3 metals	0.0030384	0.0042647	0.0081586	33.788868	2.4281121	0.0154608	36.211231	
14 metals	0.0114482	0.0211463	0.0227402	123.54828	11.088787	0.0653348	134.70038	

	OUTPUTS						Total	Total
	Mean St	Byp Stk	Chkr St	Chkr	Byp Dst	Stacks	Output	
	Cond 2	Cond 2	Cond 2	Cond 2	Cond 2	Cond 2	Cond 2	
Chlorine (HCl)	1.32	0.5633333	0	0	0	1.8733333	1.8733333	
Chlorine (FP)	0.000157	0.0087	8E-06	0.168941	18.2864	0.009865	18.448206	
TOTAL CHLORINE	1.320157	0.5633333	8E-06	0.168941	18.2864	1.8831983	20.319638	
Antimony	0.0001737	5.82E-05	0.0003684	0.7033858	0.2417008	0.0005802	0.9458788	
Arsenic	8.887E-05	4.577E-05	5.403E-05	1.3204418	0.1758123	0.0001887	1.4882236	
Barium	0.000834	0.0014067	0.0013827	42.800158	0.5448891	0.0038033	43.478818	
Beryllium	4.08E-08	1.983E-06	4.21E-06	0.1436001	0.0254137	1.025E-06	0.1880241	
Cadmium	0.0002237	0.0003477	0.0002	0.0254812	0.4316383	0.0007713	0.4579018	
Chromium	0.0008843	0.000677	0.001214	13.312488	1.5329227	0.0028853	14.848308	
Lead	0.000866	0.0058133	0.0011083	5.8345844	4.5848301	0.0077877	10.427302	
Mercury	0.0058087	0.0019833	0.0001375	0.0101985	0.0008372	0.0078075	0.0187412	
Nickel	0.001114	0.0003013	0.0014063	4.8828864	0.8187301	0.0028207	5.2156482	
* Selenium	0.0003087	3.057E-05	0.0001386	0.0848705	0.1322815	0.0004758	0.2177077	
Silver	0.0001773	0.0001052	0.000183	0.1220178	0.0120112	0.0004666	0.1348844	
Sulfur (SO2)	12.38	3.57	0	0	0	15.96	15.96	
Sulfur (FP)	0.0031	0.13	0.011	183.78456	245.36729	0.1481	428.29588	
TOTAL SULFUR	12.3831	3.7	0.011	183.78456	245.36729	16.0841	446.24588	
Thallium	8.883E-06	0.00029	5.283E-06	0.0848706	0.2180687	0.0004115	0.3044407	
* Vanadium	0.0007887	0.0003413	0.0008323	5.1527811	2.2783511	0.0018833	7.4328156	
Zinc	0.0038467	0.00198	0.0028133	34.18807	4.0758182	0.00836	38.273038	
* not spiked								
11 metals	0.0106883	0.0107511	0.008187	88.080337	8.3017177	0.0274873	77.408542	
3 metals	0.0043252	0.0028214	0.0034883	38.428822	8.573028	0.0184448	48.010283	
14 metals	0.0043252	0.0133724	0.0088863	108.50718	14.874744	0.0378322	123.41983	

	OUTPUTS						Total	Total
	Mean St	Byp Stk	Chkr St	Chkr	Byp Dst	Stacks	Output	
	Cond 3	Cond 3	Cond 3	Cond 3	Cond 3	Cond 3	Cond 3	
Chlorine (HCl)	0.8088887	0.2833333	0	0	0	1.1	1.1	
Chlorine (FP)	0.000125	0.0088	7E-06	0.171294	9.938	0.008832	10.114228	
TOTAL CHLORINE	0.8087917	0.3001333	7E-06	0.171294	9.938	1.108832	11.214228	
Antimony	8.883E-06	4.783E-06	7.883E-06	0.4881048	0.01584	0.0002212	0.5008868	
Arsenic	8.04E-06	8.863E-05	7.487E-05	1.434418	0.0788718	0.0002238	1.5138112	
Barium	0.000753	0.0017033	0.006471	33.867458	1.2083632	0.0078273	35.073788	
Beryllium	4.06E-06	1.803E-05	3.003E-06	0.1077438	0.0048864	2.308E-06	0.1127534	
Cadmium	0.000178	0.0001178	0.0001383	0.0258841	0.0033212	0.0004332	0.0284486	
Chromium	0.0004873	0.0008687	0.0005887	8.9880418	0.448708	0.0017137	9.4144615	
Lead	0.0008643	0.0017867	0.0003633	2.8771538	0.7907878	0.0028243	3.4707458	
Mercury	0.00201	0.0009433	8.8E-06	0.0102778	0.000582	0.0028413	0.013471	
Nickel	0.000857	0.0002523	0.0003817	2.8851833	0.0888818	0.001301	2.7364458	
* Selenium	0.0002487	7.52E-06	4.36E-06	0.088847	0.08253	0.0003644	0.1483614	
Silver	0.000178	8.413E-06	0.0001307	0.0588428	0.0232868	0.0003808	0.0838105	
Sulfur (SO2)	10.283333	3.38	0	0	0	13.663333	13.663333	
Sulfur (FP)	0.0037	0.08	0.007	118.3088	118.8388	0.0807	226.3382	
TOTAL SULFUR	10.287033	3.44	0.007	118.3088	118.8388	13.744033	248.88853	
Thallium	5.88E-06	0.0003233	4.38E-06	0.088847	0.1348328	0.0004254	0.2207082	
* Vanadium	0.0007153	0.0003363	0.000922	5.1747917	0.2152524	0.0015737	5.3818178	
Zinc	0.0078087	0.001886	0.0030463	10.828883	0.2338468	0.012521	11.075181	
* not spiked								
11 metals	0.0053036	0.0053817	0.0073788	50.374653	2.7038064	0.018084	53.088524	
3 metals	0.0085808	0.0023257	0.0036138	18.088132	0.583832	0.0145201	18.687484	
14 metals	0.0138841	0.0077074	0.0108928	68.463785	3.2876384	0.0325641	68.784007	

TABLE 2 - METALS OUTPUTS .

TOXICITY CHARACTERISTIC LEACHATE PROCEDURE (TCLP)

all units in ppm

	BYPASS DUST			CUNKER DUST			REGULATORY LIMIT
	COND 1	COND 2	COND 3	COND 1	COND 2	COND 3	
Antimony	0.088	0.088	0.088	0.088	0.088	0.088	-
Arsenic	0.088	0.088	0.088	0.088	0.088	0.088	5
Barium	0.54	0.655	0.606	1.389	1.612	1.542	100
Beryllium	0.002	0.002	0.002	0.002	0.002	0.002	-
Cadmium	0.006	0.003	0.003	0.003	0.003	0.003	1
Chromium	0.52	0.601	0.303	0.009	0.031	0.055	5
Lead	0.947	0.918	0.107	0.05	0.05	0.05	5
Mercury	0.0025	0.0026	0.0032	0.0025	0.0028	0.0018	0.2
Nickel	0.009	0.009	0.009	0.009	0.009	0.009	-
Selenium	0.023	0.023	0.052	0.0133	0.0133	0.0133	1
Silver	0.015	0.024	0.003	0.003	0.003	0.003	5
Thallium	0.254	0.295	0.465	0.127	0.127	0.076	-
Vanadium	0.012	0.012	0.012	0.028	0.012	0.012	-
Zinc	0.082	0.073	0.056	0.04	0.061	0.055	-

TABLE 3 - TCLP RESULTS.