

US EPA ARCHIVE DOCUMENT

	B	C
1	Source Description	
2		
3	Phase I ID No.	488
4	EPA ID No.	TXD055141378
5	Facility Name	ROLLINS ENVIRONMENTAL SERVICES
6	Facility Location	
7	City	DEER PARK
8	State	TX
9	Unit ID Name/No.	RES (TX) INCINERATOR TRAIN I
10	Other Sister Facilities	None
11	Number of Sister Facilities	0
12	Combustor Class	Commercial incinerator
13	Combustor Type	Rotary kiln
14	Combustor Characteristics	Rotary kiln, old kiln / system arrangement, does not include testing with Train II
15	Capacity (MMBtu/hr)	
16	Soot Blowing	
17	APCS Detailed Acronym	SS/PT/VS/DM
18	APCS General Class	LEWS, HEWS
19	APCS Characteristics	Spray saturator, packed tower, venturi, demister
20	Hazardous Wastes	Liq, sludge, solid
21	Haz Waste Description	
22	Supplemental Fuel	Natural gas
23		
24	Stack Characteristics	
25	Diameter (ft)	
26	Height (ft)	
27	Gas Velocity (ft/sec)	
28	Gas Temperature (°F)	
29		
30	Permitting Status	
31	HWC Burn Status (Date if Terminated)	

	B	C
1	Condition Description	
2		
3	488C1	
4		
5	Report Name/Date	Rollins Environmental Services (TX) Inc. Trial Burn Program Incinerator Train I Emission Test Results, Deer Park, Texas, Prepared by Alliance Technologies Corporation, ID # - 5-919-999, September 1989
6	Report Prepare	Alliance Technologies
7	Testing Firm	Alliance Technologies
8	Cond Descr	
9	Testing Dates	April 12-13, 1989
10	Cond Dates	Apr-89
11		
12	488C2	
13		
14	Report Name/Date	Rollins Environmental Services (TX) Inc. Trial Burn Program Incinerator Train I Emission Test Results, Deer Park, Texas, Prepared by Alliance Technologies Corporation, ID # - 5-919-999, September 1989
15	Report Prepare	Alliance Technologies
16	Testing Firm	Alliance Technologies
17	Cond Descr	
18	Testing Dates	April 14-18, 1989
19	Cond Dates	Apr-89
20		
21	488C3	
22		
23	Report Name/Date	Rollins Environmental Services (TX) Inc. Trial Burn Program Incinerator Train I Emission Test Results, Deer Park, Texas, Prepared by Alliance Technologies Corporation, ID # - 5-919-999, September 1989
24	Report Prepare	Alliance Technologies
25	Testing Firm	Alliance Technologies
26	Cond Descr	
27	Testing Dates	April 16, 1989
28	Cond Dates	Apr-89

	B	C	D	E	F	G	H	I	J	K	L	M
1	Stack Gas Emissions 2											
2												
3												
4	488C1					R1		R2		R3		Cond Avg
5												
6	PM	E1	gr/dscf	y		0.0112		0.0186		0.0102		0.0133
7	CO (RA)	E1	ppmv	y		8.6		9.9		8.4		8.9
8	HCl	E1	ppmv	y	nd	3.7	nd	6.5	nd	4.5		4.9
9	Cl2	E1	ppmv	y	nd	3.8	nd	6.7	nd	4.6		5.1
10	Total Chlorine	E1	ppmv	y		11.4		19.8		6.9		12.7
11												
12	Arsenic	E1	ug/dscm	y		2.9	nd	2.9		3.4		3.1
13	Beryllium	E1	ug/dscm	y	nd	0.1	nd	0.1	nd	0.1		0.1
14	Cadmium	E1	ug/dscm	y		17.7		13.3		8.8		13.3
15	Chromium	E1	ug/dscm	y		40.1		41.8		49.7		43.9
16	Copper	E1	ug/dscm	y		8.9		777.7		1351.2		712.6
17	Iron	E1	ug/dscm	y		1124.3		729.1		1351.2		1068.2
18	Lead	E1	ug/dscm	y		879.9		1506.8		723.8		1036.8
19	Mercury	E1	ug/dscm	y		6.8		20.2		7.7		11.6
20	Nickel	E1	ug/dscm	y		186.2		18.4		33.2		79.3
21	Vanadium	E1	ug/dscm	y		11.7		9.7		10.5		10.6
22	Zinc	E1	ug/dscm	y		2639.7		4957.8		820.3		2806.0
23	SVM	E1	ug/dscm	y		897.6		1520.1		732.6		1050.1
24	LVM	E1	ug/dscm	y		43.1		44.7		53.1		47.0
25												
26	Sampling Train	Metals	E1									
27	Stack Gas Flowrate		dscfm			43426.0		39523.0		43182.0		
28	O2		%			10.1		9.7		10.1		
29	Moisture		%			3.9		10.5		4.6		
30	Temperature		°F			130.5		153.2		132.7		
31												
32	Sampling Train	D/F	E2									
33	Stack Gas Flowrate		dscfm			42692.0		39430.0		41865.0		
34	O2		%			10.0		9.4		9.1		
35	Moisture		%			4.2		4.3		5.5		
36	Temperature		°F			135.0		131.1		134.5		
37												
38	488C2					R1		R2		R3		Cond Avg
39												
40	PM	E1	gr/dscf	y		0.0066		0.0150		0.0097		0.0104
41	CO (RA)	E1	ppmv	y		3.5		3.5		0.2		2.4
42	HCl	E1	ppmv	y	nd	3.8		4.4	nd	2.6		3.6
43	Cl2	E1	ppmv	y	nd	3.1	nd	3.7	nd	2.7		3.2
44	Total Chlorine	E1	ppmv	y		10.0		11.9		8.0		10.0
45	Arsenic	E1	ug/dscm	y	nd	2.9	nd	2.9		4.1		3.3
46	Beryllium	E1	ug/dscm	y	nd	0.1	nd	0.1	nd	0.1	100	0.1
47	Cadmium	E1	ug/dscm	y		8.5		23.1		7.8		13.1
48	Chromium	E1	ug/dscm	y		39.9		27.4		18.5		28.6
49	Copper	E1	ug/dscm	y		779.1		819.7		496.0		698.3
50	Iron	E1	ug/dscm	y		973.9		964.4		766.5		901.6
51	Lead	E1	ug/dscm	y		535.7		771.5		1082.2		796.4
52	Mercury	E1	ug/dscm	y		12.4		8.9		7.9		9.7
53	Nickel	E1	ug/dscm	y		20.0		11.2		11.3		14.2
54	Vanadium	E1	ug/dscm	y		8.9		9.6		1.8		6.8
55	Zinc	E1	ug/dscm	y		1314.8		1880.5		1668.3		1621.2
56	SVM	E1	ug/dscm			544.1		794.6		1089.9		809.6
57	LVM	E1	ug/dscm			42.9		30.3		22.6		32.0
58												
59	Sampling Train	Metals	E1									
60	Stack Gas Flowrate		dscfm			40428.0		40705.0		42321.0		
61	O2		%			9.4		9.3		8.9		
62	Moisture		%			4.9		5.1		5.7		
63	Temperature		°F			136.5		132.1		139.0		
64												
65	488C3					R1		R2		R3		Cond Avg
66												
67	PM	E1	gr/dscf	y		0.0086		0.0082		0.0078		0.0082
68	CO (RA)	E1	ppmv	y		2.5		2.4		2.5		2.5
69	HCl	E1	ppmv	y		12.0		15.5		9.6		12.4
70	Cl2	E1	ppmv	y		18.1		99.3		47.7		55.1
71	Total Chlorine	E1	ppmv	y		48.2		214.1		105.0		122.5

	B	C	D	E	F	G	H	I	J	K	L	M
72	Arsenic	E1	ug/dscm	y	nd	2.8	nd	2.7		3.6		3.0
73	Beryllium	E1	ug/dscm	y	nd	0.1	nd	0.1	nd	0.1	100	0.1
74	Cadmium	E1	ug/dscm	y		10.1		7.6		8.0		8.6
75	Chromium	E1	ug/dscm	y		27.3		21.7		20.6		23.2
76	Copper	E1	ug/dscm	y		782.4		361.4		369.3		504.4
77	Iron	E1	ug/dscm	y		966.5		822.5		843.3		877.4
78	Lead	E1	ug/dscm	y		552.3		338.1		932.1		607.5
79	Mercury	E1	ug/dscm	y		2.3		1.5		1.7		1.8
80	Nickel	E1	ug/dscm	y		18.8		12.2		12.7		14.6
81	Vanadium	E1	ug/dscm	y		13.3		11.4		13.3		12.7
82	Zinc	E1	ug/dscm	y		598.3		548.3		665.8		604.1
83	SVM	E1	ug/dscm	y		562.4		345.7		940.1		616.1
84	LVM	E1	ug/dscm	y		30.1		24.6		24.2		26.3
85												
86	Sampling Train	Metals	E1									
87	Stack Gas Flowrate		dscfm			42707.0		41176.0		42777.0		
88	O2		%			9.3		8.9		9.0		
89	Moisture		%			5.0		6.0		5.5		
90	Temperature		°F			136.5		140.1		137.9		

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z		
Feedstream 2																											
488C1			R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2					
Feedstream Number			F1	F1	F1	F2	F2	F2	F3	F3	F3	F3	F3	F3	F4	F4	F4	F4	F4	F4							
Feed Class			Solid HW	Solid HW	Solid HW	Solid HW	Solid HW	Solid HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	
Feed Class 2																											
Feedstream Description			PCB solids	PCB solids	PCB solids	Contaminated dirt			Contaminated dii			Contaminated dii			PCB liquids			PCB liquids			PCB liquids			T-OX waste water		T-OX waste	
Feedrate	lb/hr		3174	3678	4014	2406	2928	3210	2844	2820	2850	7212	7146														
Heating value	Btu/lb					100	100	100	14614	14633	14600	100	100														
Ash	%wt					81.92	78.56	80.57	0.03	0.02	0.01	0.41	0.41														
Chlorine	ppmw					150	130	130	250000	220000	220000	220	230														
Arsenic	ppmw					1	12	1	11	6.4	5.3	0.15	0.11														
Beryllium	ppmw					1	0.368	1	0.408	1	0.372	1	0.00	0.00													
Cadmium	ppmw					1.3	0.612	1	0.558	1	0.261	1	0.08	0.09													
Chromium	ppmw					23	20.4	19.5	7380	5144	3521	1.73	2.08														
Copper	ppmw					56	31.6	23.3	1026	711	591	0.70	0.84														
Iron	ppmw					13500	17200	14706	14800	12200	6226	60.03	72.43														
Lead	ppmw					114	10.2	1	9.3	1	4.4	0.57	0.65														
Mercury	ppmw					0.989	0.043	0.533	1	0.023	1	0.01	0.01														
Nickel	ppmw					39	53.8	21.4	10700	7200	8105	2.13	2.60														
Vanadium	ppmw					29	33	26	30	22	4.7	0.10	0.10														
Zinc	ppmw					289	162	116	58.6	38.1	45.1	8.47	10.61														
Stack Gas Flowrate	dscfm		43426	39523	43182	43426	39523	43182	43426	39523	43182	43426	39523														
Oxygen	%		10.1	9.7	10.1	10.1	9.7	10.1	10.1	9.7	10.1	10.1	9.7														
Estimated Firing Rate	MMBtu/hr																										
<i>Feedrate MTEC Calculations</i>																											
Ash	mg/dscm					15587	19279	20568	7	5	2	234	246														
Chlorine	ug/dscm					2854	3190	3319	5622630	5199836	4986370	12547	13776														
Arsenic	ug/dscm					100	209	100	281	144	125	9	7														
Beryllium	ug/dscm					100	7	100	9	4	4	0	0														
Cadmium	ug/dscm						25	100	14	6	6	4	5														
Chromium	ug/dscm						438	501	498	165980	121582	79805	99	125													
Copper	ug/dscm						1066	775	595	23075	16805	40	50														
Iron	ug/dscm						256862	422102	375419	332860	288355	3424	4338														
Lead	ug/dscm						2169	100	237	99	104	33	39														
Mercury	ug/dscm						19	1	14	1	0	0	0														
Nickel	ug/dscm						742	1320	546	240649	170176	122	156														
Vanadium	ug/dscm						552	810	664	675	520	6	6														
Zinc	ug/dscm						5499	3976	2961	1318	901	483	635														
SVM	ug/dscm						2194	100	252	105	110	37	44														
LVM	ug/dscm						33.1	654	38	805	788	107	131														
			R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2					
488C2			F1	F1	F1	F2	F2	F2	F3	F3	F3	F4	F4														
Feedstream Number			Solid HW	Solid HW	Solid HW	Solid HW	Solid HW	Solid HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	Liq HW	
Feed Class																											
Feed Class 2																											
Feedstream Description			PCB solids	PCB solids	PCB solids	Contaminated dirt			Contaminated dii			Contaminated dii			PCB liquids			PCB liquids			PCB liquids			T-OX waste water		T-OX waste	
Feed Rate	lb/hr		4872	5028	4644	3222	4194	3660	2568	2964	3306	8958	8988														
Heating value	Btu/lb		0	0	0	100	100	100	14747	14656	14230	100	100														
Ash	%wt		0	0	0	81.11	79.06	73.04	0.01	0.03	0.03	0.32	0.33														
Chlorine	ppmw					96	101	25	240000	230000	290000	120	250														
Arsenic	ppmw					6.2	4.3	1	2.4	4.8	10	0.090	0.120														
Beryllium	ppmw					1	0.083	1	0.096	0.723	1	0.002	0.026														

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX		
1	Feedstream 2																										
2																											
3																											
4	488C1		R3		R1		R2		R3		R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg		
5																											
6	Feedstream Number		F4		F5		F5		F5		F6		F6		F6		F6		F6								
7	Feed Class		Liq HW		Liq HW		Liq HW		Liq HW		Total		Total		Total		Total		Total								
8	Feed Class 2										Total		Total		Total		Total		Total								
9	Feedstream Description		wate T-OX waste		wate Waste liquid		Waste liquid		Waste liquid		Total		Total		Total		Total		Total		HW		HW		HW		HW
10	Feedrate		7542		6312		5244		6144																		
11	Heating value		1		100		9190		8760		8770																
12	Ash		0.4		0.05		0.05		0.06																		
13	Chlorine		220		11000		230000		15000																		
14	Arsenic		0.18		15		18		16																		
15	Beryllium	1	0.00	1	0.903	1	0.766	1	0.88																		
16	Cadmium		0.06	1	0.271	1	0.23	1	1.32																		
17	Chromium		1.15		21300		21900		17700																		
18	Copper		0.52		3320		3308		2554																		
19	Iron		48.62		37900		39000		37900																		
20	Lead		0.34	1	23	1	19	1	22																		
21	Mercury		0.01	1	0.024	1	0.02	1	0.023																		
22	Nickel		1.14		38600		35000		26200																		
23	Vanadium		0.08		34		34		55																		
24	Zinc		6.90		144		150		105																		
25																											
26	Stack Gas Flowrate		43182		43426		39523		43182		43426		39523		43182		42043.7										
27	Oxygen		10.1		10.1		9.7		10.1		10.1		9.7		10.1		10.0										
28																											
29	Estimated Firing Rate								150.27		141.78		149.42		147.26												
30																											
31	<i>Feedrate MTEC Calcula</i>																										
32	Ash		240		25		22		29		15852		19552		20840		18748		15852		19552		20840		18748		
33	Chlorine		13196		549072		10109004		732925		6187103		15325806		5735809		9082906		6187103		15325806		5735809		9082906		
34	Arsenic		11		749		791		782	19	1111	34	1217	34	1200	29	1176	19	1111	34	1217	34	1200	29	1176		
35	Beryllium	100	0	100	45	100	34	100	43	100	56	100	48	100	57	100	54	100	56	100	48	100	57	100	54		
36	Cadmium		3	100	14	100	10	100	64	40	49	86	37	96	88	78	58	40	49	86	37	96	88	78	58		
37	Chromium		69		1063204		962553		864851		1229720		1084760		945223		1086568		1229720		1084760		945223		1086568		
38	Copper		31		165720		145394		124793		189901		163025		138814		163913		189901		163025		138814		163913		
39	Iron		2916		1891804		1714135		1851857		2484949		2428930		2371307		2428395		2484949		2428930		2371307		2428395		
40	Lead		20	100	1148	100	835	100	1075	36	3449	97	1228	90	1460	61	2046	36	3449	97	1228	90	1460	61	2046		
41	Mercury		0	100	1	100	1	100	1	8	21	51	3	10	16	12	13	9	21	69	3	11	16	12	13		
42	Nickel		68		1926745		1538327		1280175		2168257		1709979		1464492		1780910		2168257		1709979		1464492		1780910		
43	Vanadium		5		1697		1494		2687		2929		2830		3462		3074		2929		2830		3462		3074		
44	Zinc		414		7188		6593		5130		14488		12104		9528		12040		14488		12104		9528		12040		
45																											
46	SVM		24	100	1162	100	845	100	1139	36	3497	97	1265	90	1548	62	2103	36	3497	97	1265	90	1548	62	2103		
47	LVM		80		1063997		963378		865676		1230887		1086025		946480		1087797		1230887		1086025		946480		1087797		
48																											
49	488C2		R3		R1		R2		R3		R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg		
50																											
51	Feedstream Number		F4		F5		F5		F5		F6		F6		F6		F6		F6								
52	Feed Class		Liq HW		Liq HW		Liq HW		Liq HW		Total		Total		Total		Total		Total								
53	Feed Class 2										Total		Total		Total		Total		Total		HW		HW		HW		HW
54	Feedstream Description		wate T-OX waste		wate Waste liquid		Waste liquid		Waste liquid		Total		Total		Total		Total		Total		HW		HW		HW		HW
55	Feed Rate		9390		6096		5676		5700																		
56	Heating value		1		100		8476		8191		8879																
57	Ash		0.35		0.01		0.03		0.02																		
58	Chlorine		260		10000		390000		300000																		
59	Arsenic	1	0.200		11		20		15																		
60	Beryllium	1	0.002	1	0.842	1	0.876	1	0.847																		

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z		
1	Cadmium		ppmw								0.29	1	0.144		1.2	1	0.238	1	0.298	1	0.278		0.028		0.031		
2	Chromium		ppmw								19		11		45		6650		9172		2600		0.832		0.787		
3	Copper		ppmw								14		5.1		25		1049		1507		2003		0.863		1.801		
4	Iron		ppmw								13400		13500		14500		11700		16400		4551		43.321		56.927		
5	Lead		ppmw						1		2.1	1	2.4		10	1	3.9	1	4.9	1	23		0.320		0.300		
6	Mercury		ppmw								0.344		0.722		0.421	1	0.021	1	0.026	1	0.022	1	0.003		0.053		
7	Nickel		ppmw								18		7.2		21		8800		19600		28400		1.361		1.321		
8	Vanadium		ppmw								0.83		24		21	1	1.6		13		18		0.050		0.030		
9	Zinc		ppmw								82		27		120		59		81.1		104		4.112		4.142		
0																											
1	Stack Gas Flowrate		dscfm		40428		40705		42321		40428		40705		42321		40428		40705		42321		40428		40705		
2	Oxygen		%		9.4		9.3		8.9		9.4		9.3		8.9		9.4		9.3		8.9		9.4		9.3		
3																											
4	Estimated Firing Rate		MMBtu/hr																								
5																											
6	<i>Feedrate MTEC Calculations</i>																										
7	Ash		mg/dscm								20860		26061		19541	100	2		7		7		229		233		
8	Chlorine		ug/dscm								2469		3329		669		4919401		5358196		7008188		8580		17661		
9	Arsenic		ug/dscm								159		142	100	64		98		140		242		6		8		
0	Beryllium		ug/dscm						100		2	100	3		19	100	16	100	23	100	22	100	0		2		
1	Cadmium		ug/dscm								7	100	5		32	100	5	100	7	100	7		2		2		
2	Chromium		ug/dscm								489		363		1204		136308		213676		62832		60		56		
3	Copper		ug/dscm								360		168		669		21502		35108		48405		62		127		
4	Iron		ug/dscm								344617		445015		387931		239821		382063		109980		3098		4022		
5	Lead		ug/dscm						100		54	100	79		268	100	80	100	114	100	556		23		21		
6	Mercury		ug/dscm								9		24		11	100	0	100	1	100	1	100	0		4		
7	Nickel		ug/dscm								463		237		562		180378		456612		686319		97		93		
8	Vanadium		ug/dscm								21		791		562	100	33		303		435		4		2		
9	Zinc		ug/dscm								2109		890		3210		1209		1889		2513		294		293		
0																											
1	SVM		ug/dscm								87.9		61	100	84		300	100	85	100	121	100	563		23		
2	LVM		ug/dscm								650		508	5	1287		136423		213839		63096		66		66		
3																											
4	488C3				R1		R2		R3		R1		R2		R3		R1		R2		R3		R1		R2		
5																											
6	Feedstream Number				F1		F1		F1		F2		F2		F2		F3		F3		F3		F4		F4		
7	Feed Class				Solid HW		Solid HW		Solid HW		Solid HW		Solid HW		Solid HW		Liq HW		Liq HW		Liq HW		Liq HW		Liq HW		
8	Feed Class 2																										
9	Feedstream Description				PCB solids		PCB solids		PCB solids		Contaminated dirt		Contaminated di		Contaminated di		PCB liquids		PCB liquids		PCB liquids		T-OX waste water		T-OX waste		
0	Feed Rate		lb/hr		3270		3036		4530		4866		5460		3366								10902		9612		
1	Heating value		Btu/lb		0		0		0	1	100		100	1	100							1	100	1	100		
2	Ash		%wt		0		0		0		79.27		76.45		78.97								0.37		0.41		
3	Chlorine		ppmw							1	0		44		26							210		260			
4	Arsenic		ppmw								6.1		8.4		5.4							1	0.20010	1	0.20010		
5	Beryllium		ppmw								0.669		0.837		0.755							1	0.00200	1	0.00100		
6	Cadmium		ppmw								1.1		2.1		1.1							0.02001		0.04002			
7	Chromium		ppmw								6.7		16		8.6							1.10052		1.80086			
8	Copper		ppmw								6.7		17		7.6							1.20057		0.97046			
9	Iron		ppmw								6970		15300		10200							41.01956		25.01193			
0	Lead		ppmw						1		10		10	1	10							0.50024		0.60029			
1	Mercury		ppmw								0.418		0.345	1	0.049							0.01601		0.03202			
2	Nickel		ppmw								5.6		17		8.6							7.60363		3.20153			
3	Vanadium		ppmw								13		24		17							0.02001	1	0.02001			
4	Zinc		ppmw								20		65		17							2.90138		3.10148			
5																											
6	Stack Gas Flowrate		dscfm		42707		41176		42777		42707		41176		42777		42707		41176		42777		42707		41176		
7	Oxygen		%		9.3		8.9		9		9.3		8.9		9		9.3		8.9		9		9.3		8.9		
8																											
9	Ash		mg/dscm								28896		31361		19383								302		296		
0	Chlorine		ug/dscm								100		0		1805		638						17151		18776		

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX
61	Cadmium		0.020	1	0.252	1	0.262	1	0.254																
62	Chromium		1.301		12200		20700		19300																
63	Copper		1.000		1800		3120		2928																
64	Iron		36.017		5130		41900		39700																
65	Lead		0.400	1	4.2	1	22	1	21																
66	Mercury		0.039	1	0.022	1	0.023	1	0.002																
67	Nickel		3.602		18000		31200		30700																
68	Vanadium	1	0.020		37		60		47																
69	Zinc		2.501		72		130		121																
70																									
71	Stack Gas Flowrate		42321		40428		40705		42321		40428		40705		42321		41151.33								
72	Oxygen		8.9		9.4		9.3		8.9		9.4		9.3		8.9		9.2								
73																									
74	Estimated Firing Rate										148.88		151.19		162.57		154.15								
75																									
76	Feedrate MTEC Calcula																								
77	Ash		240		5		13		8		21095		26315		19797		22402		21095		26315		19797		22402
78	Chlorine		17846		486576		17398811		12499741		5417026		22777998		19526444		15907156		5417026		22777998		19526444		15907156
79	Arsenic	100	14		535		892		625		800		1182		945		975		800		1182		945		975
80	Beryllium	100	0	100	41	100	39	100	35	100	60	97	67	75	77	90	68	100	60	97	67	77	90	68	
81	Cadmium		1	100	12	100	12	100	11	64	27	91	26	34	51	56	34	64	27	91	26	34	51	56	34
82	Chromium		89		593623		923475		804150		730480		1137569		868275		912108		730480		1137569		868275		912108
83	Copper		69		87584		139190		121997		109507		174594		171140		151747		109507		174594		171140		151747
84	Iron		2472		249614		1869257		1654132		837149		2700356		2154515		1897340		837149		2700356		2154515		1897340
85	Lead		27	100	204	100	981	100	875	94	361	98	1196	83	1726	90	1094	94	361	98	1196	83	1726	90	1094
86	Mercury		3	100	1	100	1	100	0	16	11	6	29	4	15	7	18	16	11	6	29	4	15	7	18
87	Nickel		247		875837		1391905		1279140		1056776		1848847		1966268		1623964		1056776		1848847		1966268		1623964
88	Vanadium	100	1		1800		2677		1958	2	1858		3773		2956	0	2862	2	1858		3773		2956	0	2862
89	Zinc		172		3503		5800		5042		7116		8872		10937		8975		7116		8872		10937		8975
90																									
91	SVM		29	100	217	100	993	100	886	92	388	98	1222	82	1777	89	1129	92	388	98	1222	82	1777	89	1129
92	LVM	13	103		594199		924407		804810		731339		1138819		869297		913151		731339		1138819		869297		913151
93																									
94	488C3		R3	R1	R1	R2	R2	R3	R3		R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg
95																									
96	Feedstream Number		F4		F5		F5		F5		F6		F6		F6		F6								
97	Feed Class		Liq HW		Liq HW		Liq HW		Liq HW		Total		Total		Total		Total								
98	Feed Class 2										Total		Total		Total		Total								
99	Feedstream Description: wate T-OX waste waste				Waste liquid		Waste liquid		Waste liquid		Total		Total		Total		Total		HW		HW		HW		HW
100	Feed Rate		8940		11940		11448		11490																
101	Heating value	1	100		7967		7724		8220																
102	Ash		0.61		0.02		0.03		0.04																
103	Chlorine		610		410000		380000		400000																
104	Arsenic		0.330157		19	1	5.16		27																
105	Beryllium		0.002001	1	0.168	1	0.849	1	0.894																
106	Cadmium		0.100048	1	0.253	1	0.254	1	1.34																
107	Chromium		4.602194		21500		6226		32000																
108	Copper		1.800859		3150		997		4840																
109	Iron		29.013834		8560		10600		64300																
110	Lead		1.600763	1	22	1	4.2	1	22																
111	Mercury		0.048023	1	0.022	1	0.022	1	0.023																
112	Nickel		3.401622		32200		14500		43900																
113	Vanadium	1	0.040019		57		8.5		81																
114	Zinc		6.403053		126		57		196																
115																									
116	Stack Gas Flowrate		42777		42707		41176		42777																
117	Oxygen		9		9.3		8.9		9																
118																									
119	Ash		398		18		26		34		29216		31683		19815		26905		29216		31683		19815		26905
120	Chlorine		39767		36673255		32683601		33514647		36690406		32704182		33555052		34316547		36690406		32704182		33555052		34316547

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
21	Arsenic		ug/dscm								222		345		133						100		16	100	14
22	Beryllium		ug/dscm								24		34		19						100		0	100	0
23	Cadmium		ug/dscm								40		86		27								2		3
24	Chromium		ug/dscm								244		656		211								90		130
25	Copper		ug/dscm								244		697		187								98		70
26	Iron		ug/dscm								254077		627626		250362								3350		1806
27	Lead		ug/dscm							100	365		410	100	245								41		43
28	Mercury		ug/dscm								15		14	100	1						100		1		2
29	Nickel		ug/dscm								204		697		211								621		231
30	Vanadium		ug/dscm								474		985		417								2	100	1
31	Zinc		ug/dscm								729		2666		417								237		224
32																									
33	SVM		ug/dscm							90.1	405		496	90	272		0		0		0		42		46
34	LVM		ug/dscm								491		1035		362		0		0		0	16	106	10	145

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX
121	Arsenic		22		1699	100	444		2262	1	1938	57	803		2416	9	1719	1	1938	57	803	80	2416	9	1719
122	Beryllium		0 100		15 100		73 100		75 38	40 68	107 80	107 80	94 68	80 38	40 68	107 77	40 68	107 77	40 68	107 77	94 68	80	94 68	80	80
123	Cadmium		7 100		23 100		22 100		112 35	64 20	111 77	146 49	107 35	64 20	111		64 20	111	64 20	111		146 49	107	146 49	107
124	Chromium		300		1923110		535495		2681172	1923444		536281		2681683	1713803		1923444		536281		2681683		1713803		1713803
125	Copper		117		281758		85751		405527	282100		86519		405831	258150		282100		86519		405831		258150		258150
126	Iron		1891		765666		911700		5387480	1023094		1541132		5639733	2734653		1023094		5639733		1541132	95	5639733		2734653
127	Lead		104 100		1968 100		361 100		1843 98	2373 44	815 95	2193 89	1794 98	2373 44	815 50	2193 89	1794 98	2373 44	815 50	2193 89	1794 98	2193 89	1794 98	1794 98	
128	Mercury		3 100		2 100		2 100		2 18	19 10	18 50	6 19	14 18	19 10	18		19 10		18		6 19	14	6 19	14	
129	Nickel		222		2880192		1247137		3678233	2881017		1248066		3678665	2602583		2881017		1248066		3678665		2602583		2602583
130	Vanadium	100	3		5098		731		6787	5574	0	1717		7207	4833		5574	0	1717		7207		4833		4833
131	Zinc		417		11270		4903		16422	12236		7793		17257	12429		12236		7793		17257		12429		12429
132																					94				
133	SVM		111 100		1990 100		383 100		1956 97	2438 41	926 94	2339 87	1901 97	2438 41	926		1901 97	2438 41	926		2339 87	1901	2339 87	1901	
134	LVM		322		1924824		536012		2683509	1925422		537192		2684193	1715602		1925422		537192		2684193		1715602		1715602

	C	D	E	F	G
1	Process Information 2				
2					
3	488C1		R1	R2	R3
4					
5	Kiln Temperature	F	1583	1490	1502
6	Afterburner Temperature	F	2401	2262	2370
7					
8	488C2				
9					
10	Combustion Temperature	F	1487	1472	1616
11	Combustion Temperature	F	2265	2228	2383
12					
13	488C3				
14					
15	Combustion Temperature	F	1512	1475	1692
16	Combustion Temperature	F	2334	2314	2310

	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	488C1													
2					Run 1				Run 2				Run 3	
3	ng/dscm	I-TEF		Total	Total	TEQ		Total	Total	TEQ		Total	Total	TEQ
4		Wt Fact		Full ND	1/2 ND	1/2 ND		Full ND	1/2 ND	1/2 ND		Full ND	1/2 ND	1/2 ND
5	4D 2378	1	1	0.010	0.005	0.005	1	0.002	0.001	0.001	1	0.008	0.004	0.004
6	4D Other	0		20.026	20.026	0.000		3.202	3.202	0.000		2.368	2.368	0.000
7	4D Total	0		20.035	20.035	0.000		3.204	3.204	0.000		2.376	2.376	0.000
8	5D 12378	0.5	1	0.020	0.010	0.005	1	0.005	0.002	0.001	1	0.012	0.006	0.003
9	5D Other	0	2	1.590	1.590	0.000		0.626	0.626	0.000		0.295	0.295	0.000
10	5D Total	0	2	1.610	1.610	0.000		0.631	0.631	0.000		0.307	0.307	0.000
11	6D 123478	0.1	1	0.021	0.010	0.001	1	0.004	0.002	0.000	1	0.011	0.006	0.001
12	6D 123678	0.1	1	0.022	0.011	0.001	2	0.025	0.025	0.002	1	0.012	0.006	0.001
13	6D 123789	0.1	1	0.026	0.013	0.001		0.019	0.019	0.002	1	0.015	0.007	0.001
14	6D Other	0	2	0.192	0.192	0.000		0.041	0.041	0.000		0.118	0.118	0.000
15	6D Total	0	2	0.261	0.261	0.000		0.088	0.088	0.000		0.157	0.157	0.000
16	7D 1234678	0.01	1	0.053	0.027	0.000	2	0.107	0.107	0.001	2	0.085	0.085	0.001
17	7D Other	0	1	0.000	0.000	0.000	2	0.078	0.078	0.000		0.044	0.044	0.000
18	7D Total	0	1	0.053	0.027	0.000	2	0.186	0.186	0.000		0.129	0.129	0.000
19	8D	0.001	2	0.333	0.333	0.000	1	0.052	0.026	0.000	1	0.167	0.083	0.000
20	4F 2378	0.1		0.285	0.285	0.028		0.239	0.239	0.024		0.296	0.296	0.030
21	4F Other	0		4.919	4.919	0.000		2.346	2.346	0.000		1.892	1.892	0.000
22	4F Total	0		5.204	5.204	0.000		2.586	2.586	0.000		2.188	2.188	0.000
23	5F 12378	0.05	1	0.013	0.006	0.000	2	0.053	0.053	0.003		0.064	0.064	0.003
24	5F 23478	0.5	2	0.039	0.039	0.019		0.050	0.050	0.025		0.047	0.047	0.023
25	5F Other	0		0.874	0.874	0.000		0.439	0.439	0.000		0.476	0.476	0.000
26	5F Total	0		0.925	0.925	0.000		0.542	0.542	0.000		0.587	0.587	0.000
27	6F 123478	0.1	2	0.053	0.053	0.005		0.066	0.066	0.007		0.063	0.063	0.006
28	6F 123678	0.1	1	0.012	0.006	0.001		0.032	0.032	0.003		0.039	0.039	0.004
29	6F 123789	0.1	1	0.022	0.011	0.001	1	0.005	0.002	0.000	1	0.014	0.007	0.001
30	6F 234678	0.1	1	0.017	0.008	0.001		0.030	0.030	0.003	1	0.010	0.005	0.000
31	6F Other	0		0.157	0.157	0.000		0.217	0.217	0.000		0.001	0.001	0.000
32	6F Total	0		0.261	0.261	0.000		0.350	0.350	0.000		0.127	0.127	0.000
33	7F 1234678	0.01	2	0.163	0.163	0.002	2	0.111	0.111	0.001		0.119	0.119	0.001
34	7F 1234789	0.01	1	0.043	0.022	0.000	1	0.010	0.005	0.000	1	0.034	0.017	0.000
35	7F Other	0	2	0.013	0.013	0.000	2	0.029	0.029	0.000		0.007	0.007	0.000
36	7F Total	0	2	0.219	0.219	0.000	2	0.149	0.149	0.000		0.160	0.160	0.000
37	8F	0.001	1	0.129	0.065	0.000	2	0.404	0.404	0.000		0.178	0.178	0.000
38	Total PCDD/PCDF			29.031	28.940			8.191	8.165			6.375	6.291	
39	TEQ		37.7	0.088		0.072	6.7	0.076		0.074	23.3	0.089		0.079