

US EPA ARCHIVE DOCUMENT

	B	C
1	Source Description	
2		
3	Phase I ID No.	331
4	EPA ID No.	OHD048415665
5	Facility Name	Ross Environmental Services
6	Facility Location	
7	City	Grafton
8	State	OH
9	Unit ID Name/No.	
10	Other Sister Facilities	
11	Number of Sister Facilities	0
12	Combustor Class	Commercial incinerator
13	Combustor Type	Rotary kiln
14	Combustor Characteristics	Rotary kiln, afterburner
15	Capacity (MMBtu/hr)	
16	Soot Blowing	
17	APCS Detailed Acronym	IWS
18	APCS General Class	IWS
19	APCS Characteristics	Ionizing wet scrubber, 3 stages in parallel, 2 packed towers in series?
20	Hazardous Wastes	Liq, solid
21	Haz Waste Description	
22	Supplemental Fuel	?
23		
24	Stack Characteristics	
25	Diameter (ft)	6.0
26	Height (ft)	135.0
27	Gas Velocity (ft/sec)	8.0
28	Gas Temperature (°F)	121.8
29		
30	Permitting Status	No permit limits for metals or D/F
31	HWC Burn Status (Date if Terminated)	

	B	C
1	Condition Description	
2		
3	331C10	
4		
5	Report Name/Date	Performance Test Report, October 18-19, 2000; Performance Test Emission Results, Final Report, ENSR International, Jan 2001, Project No. 5763-003-300
6	Report Prepare	Ross
7	Testing Firm	ENSR
8	Testing Dates	October 18-19, 2000
9	Cond Dates	Oct-00
10	Condition Descr Content	Low temperature, DRE, high solids, APCD detuned PM, HCl, POHC DRE, Cr, Pb, Hg, Be (metals taken for evaluation purposes, no specific limits), D/F (also taken for evaluation purposes)
11		
12		
13	331C1	
14		
15	Report Name/Date	Emission Test Report, Hazardous Waste Incinerator, Ross Incineration Services, Grafton, OHio, prepared by International Technology Corp, JTN 332282, March 1993
16	Report Prepare	IT Corp
17	Testing Firm	IT Corp
18	Cond Descr	Air Test (Normal Operation)
19	Testing Dates	March 4, 1993
20	Cond Dates	Mar-93
21		
22	331C2	
23		
24	Report Name/Date	Trial Burn Test Report, Ross Incineration Services, Inc., Grafton, Ohio, OHD # 048 415 665, log # 157-257, May 1992
25	Report Prepare	Ross Incineration and IT Corporation
26	Testing Firm	IT Corp
27	Cond Descr	Trial burn
28	Testing Dates	March 4, 1992
29	Cond Dates	Mar-92
30		
31	331C3	
32		
33	Report Name/Date	Trial Burn Test Report, Ross Incineration Services, Inc., Grafton, Ohio, OHD # 048 415 665, log # 157-257, May 1992
34	Report Prepare	Ross Incineration and PEI Associates
35	Testing Firm	IT Corp
36	Cond Descr	Trial burn
37	Testing Dates	March 6, 1992
38	Cond Dates	Mar-92
39		
40	331C4	
41		
42	Report Name/Date	Trial Burn Test Report, Ross Incineration Services, Inc., Grafton, Ohio, Prepared by PEI Associates, PN # 8431-9-3, April 1989
43	Report Prepare	Ross Incineration and PEI Associates
44	Testing Firm	PEI Associates
45	Cond Descr	Trial burn
46	Testing Dates	October 20, 1988
47	Cond Dates	Oct-88
48		
49	331C5	
50		
51	Report Name/Date	Trial Burn Test Report, Ross Incineration Services, Inc., Grafton, Ohio, Prepared by PEI Associates, PN # 8431-9-3, April 1989
52	Report Prepare	Ross Incineration and PEI Associates
53	Testing Firm	PEI Associates
54	Cond Descr	Trial burn
55	Testing Dates	October 22, 1988
56	Cond Dates	Oct-88
57		
58	331C6	
59		
60	Report Name/Date	Trial Burn Test Report, Ross Incineration Services, Inc., Grafton, Ohio, Prepared by PEI Associates, PN # 8431-9-3, April 1989
61	Report Prepare	Ross Incineration and PEI Associates

	B	C
62	Testing Firm	PEI Associates
63	Cond Descr	Trial burn
64	Testing Dates	October 24, 1988
65	Cond Dates	Oct-88
66		
67	331C7	
68		
69	Report Name/Date	Trial Burn Test Report, Ross Incineration Services, Inc., Grafton, Ohio, Prepared by PEI Associates, PN # 8431-9-3, April 1989
70	Report Prepare	Ross Incineration and PEI Associates
71	Testing Firm	PEI Associates
72	Cond Descr	Trial burn
73	Testing Dates	October 18, 1988
74	Cond Dates	Oct-88
75		
76	331C8	
77		
78	Report Name/Date	Trial Burn Test Report, Ross Incineration Services, Inc., Grafton, Ohio, Prepared by PEI Associates, PN # 8431-9-3, April 1989
79	Report Prepare	Ross Incineration and PEI Associates
80	Testing Firm	PEI Associates
81	Cond Descr	
82	Testing Dates	October 26, 1988
83	Cond Dates	Oct-88
84		
85	331C9	
86		
87	Report Name/Date	Trial Burn Test Report, Ross Incineration Services, Inc., Grafton, Ohio, Prepared by PEI Associates, PN # 8431-9-3, April 1989
88	Report Prepare	Ross Incineration and PEI Associates
89	Testing Firm	PEI Associates
90	Cond Descr	Trial burn
91	Testing Dates	October 28, 1988
92	Cond Dates	Oct-88

	B	C	D	E	F	G	H	I	J	K	L	M
1	Stack Gas Emissions 1											
2												
3		Comment	Units	7% O2								
4												
5												
6	331C10	Trial Burn				R1		R2		R3		Cond Avg
7												
8	PM	E1	gr/dscf	y		0.0051		0.0081		0.0081		0.0071
9	HCl	E1	ppmv	y		0.7		1.3		0.5		0.8
10												
11	Mercury	E2	ug/dscm	y		28.9		23.6		23.8		25.4
12	Beryllium	E2	ug/dscm	y	nd	0.1	nd	0.1	nd	0.1		0.1
13	Chromium	E2	ug/dscm	y		88.4		146.4		180.3		138.4
14	Lead	E2	ug/dscm	y		489.0		1045.0		1120.0		884.7
15	LVM	E2	ug/dscm	y	0.1	88.4	0.1	146.4		180.3	0.1	138.4
16	SVM	E2	ug/dscm	y		489.0		1045.0		1120.0		884.7
17												
18	POHC DRE	Monochlorobenzene MCB										
19	POHC Feedrate		lb/hr			48.2		75.8		77.8		
20	Emission Rate	E1	lb/hr									
21	DRE	E1	%		>	99.99985	>	99.99986	>	99.99986		
22												
23	POHC DRE	Trichloroethylene TCE										
24	POHC Feedrate		lb/hr			53.4		61.4		61.7		
25	Emission Rate	E1	lb/hr									
26	DRE	E1	%			99.9997		99.99974		99.99937		
27												
28	Sampling Train	PM, HCl/CE1										
29	Stack Gas Flowrate		dscfm			33425		27925		37270		32873.3
30	O2		%			12.2		13.8		12.9		13.0
31	Moisture		%			14.9		14.0		15.1		14.7
32	Temperature		°F			132		130		133		131.7
33												
34	Sampling Train	Metals E2										
35	Stack Gas Flowrate		dscfm			33425		27925		37270		32873.3
36	O2		%			12.2		13.8		12.87		13.0
37	Moisture		%			13.7		13.5		14.4		13.9
38	Temperature		°F			132		129		132		131.0

	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Stack Gas Emissions 2													
2														
3														
4	331C1					R1		R2		R3		R4		Cond Avg
5														
6	PM	E1	gr/dscf	y		0.0070		0.0080		0.0100				0.0083
7	Arsenic	E1	ug/dscm	y		13.8		16.9		23.5				18.1
8	Beryllium	E1	ug/dscm	y	nd	0.4	nd	0.3	nd	0.3				0.4
9	Cadmium	E1	ug/dscm	y		8.7		25.3		24.5				19.5
10	Chromium	E1	ug/dscm	y		9.1		23.2		23.5				18.6
11	Lead	E1	ug/dscm	y		4655.5		3589.9		1942.8				3396.1
12	Mercury	E1	ug/dscm	y		51.8		44.3		18.4				38.2
13	Nickel	E1	ug/dscm	y	nd	4.7	nd	4.5		45.0				18.1
14	LVM	E1	ug/dscm	y	2	23.2	0.9	40.5	0.7	47.4			1	37.0
15	SVM	E1	ug/dscm	y		4664.2		3615.3		1967.3				3415.6
16														
17	Sampling Train		Dioxin E2											
18	Stack Gas Flowrate		dscfm			35735.0		34577.0		35734.0				
19	O2		%			11.3		11.2		11.0				
20	Moisture		%			11.4		12.2		10.0				
21	Temperature		°F			121.8		124.4		118.7				
22														
23	Sampling Train		Metals E1											
24	Stack Gas Flowrate		dscfm			36417.0		36121.0		36553.0				
25	O2		%			11.3		11.2		11.0				
26	Moisture		%			11.1		12.4		10.4				
27	Temperature		°F			122.1		124.7		118.8				
28														
29	331C2					R1		R2		R3		R4		Cond Avg
30														
31	PM	E1	gr/dscf	y		0.0340		0.0200		0.0190				0.0243
32	CO	E1	ppmv	y		14.3		1.2		1.3				5.6
33	HC	E1	ppmv	y	nd	2.5	nd	2.4	nd	2.5				2.5
34	HCl	E1	ppmv	y	nd	0.7	nd	0.3	nd	0.4				0.5
35	Total Chlorine	E1	ppmv	y	##	0.7	###	0.3	##	0.4			##	0.5
36	Antimony	E2	ug/dscm	y		1424.5		677.2		528.1				876.6
37	Cadmium	E2	ug/dscm	y		2506.4		1009.2		1264.7				1593.4
38	Chromium	E2	ug/dscm	y		961.7		505.1		302.9				589.9
39	Chromium (Hex)	E3	ug/dscm	y		2.6	nd	0.4		5.6				2.9
40	Lead	E2	ug/dscm	y		26606.3		15675.5		14788.0				19023.3
41	SVM	E2	ug/dscm	y		29112.7		16684.7		16052.8				20616.7
42	LVM	E2	ug/dscm	y		961.7		505.1		302.9				589.9
43														
44	Sampling Train		Partic E1											
45	Stack Gas Flowrate		dscfm			35000.0		36000.0		35800.0				
46	O2		%			10.0		9.0		9.8				
47	Moisture		%			10.0		13.0		12.0				
48	Temperature		°F			117.0		126.0		126.0				
49														
50	Sampling Train		Metals E2											
51	Stack Gas Flowrate		dscfm			34800.0		35400.0		35700.0				
52	O2		%			10.0		9.9		9.8				
53	Moisture		%			11.0		13.0		12.0				
54	Temperature		°F			119.0		126.0		123.0				
55														
56	Sampling Train		Cr He E3											
57	Stack Gas Flowrate		dscfm			34400.0		34700.0		35300.0				
58	O2		%			10.0		9.5		9.8				
59	Moisture		%			10.0		11.0		12.0				
60	Temperature		°F			118.0		126.0		123.0				
61														
62	Carbon Tetrachloride	E1	%			99.9989		99.9994		99.9992				
63	Chlorobenzene	E1	%			99.9999		99.9999		99.9999				
64	Carbon Tetrachloride	E1	%			99.9999		99.9999		99.9999		99.9999		
65	Tetrachloroethene	E1	%			99.9999		99.9999		99.9999		99.9999		
66														
67	331C3					R1		R2		R3		R4		Cond Avg
68														
69	PM	E1	gr/dscf	y		0.0150		0.0140		0.0150				0.0147
70	CO (RA)	E1	ppmv	y		1.3		1.3		20.9				7.9
71	HC (RA)	E1	ppmv	y	nd	2.6	nd	2.6		3.4				2.9

	B	C	D	E	F	G	H	I	J	K	L	M	N	O
72	HCl	E1	ppmv	y	nd	0.3	nd	0.4	nd	0.4				0.4
73	Total Chorine	E1	ppmv	y	##	0.3	###	0.4	##	0.4				0.4
74	Arsenic	E2	ug/dscm	y		387.2		287.9		212.4				295.8
75	Chromium	E2	ug/dscm	y		609.7		476.9		436.1				507.6
76	Chromium (Hex)	E3	ug/dscm	y		18.1		32.2		39.6				30.0
77	Lead	E2	ug/dscm	y		6731.1		6794.2		6939.7				6821.7
78	SVM	E2	ug/dscm	y		6731.1		6794.2		6939.7				6821.7
79	LVM	E2	ug/dscm	y		996.9		764.8		648.5				803.4
80														
81	Sampling Train	Partic	E1											
82	Stack Gas Flowrate		dscfm			35600.0		36000.0		36200.0				
83	O2		%			10.0		10.5		10.8				
84	Moisture		%			12.0		14.0		13.0				
85	Temperature		°F			122.0		128.0		126.0				
86														
87	Sampling Train	Metals	E2											
88	Stack Gas Flowrate		dscfm			37600.0		36400.0		35200.0				
89	O2		%			10.5		10.3		9.8				
90	Moisture		%			11.0		13.0		13.0				
91	Temperature		°F			121.0		125.0		125.0				
92														
93	Sampling Train	Cr He	E3											
94	Stack Gas Flowrate		dscfm			34500.0		34700.0		33900.0				
95	O2		%			10.3		10.4		10.3				
96	Moisture		%			11.0		13.0		13.0				
97	Temperature		°F			120.0		124.0		124.0				
98														
99	Carbon Tetrachloride	E1	%			99.9998		99.9999		99.9999				
100	Chlorobenzene	E1	%			99.9998		99.9995		99.9999				
101														
102	331C4					R1		R2		R3		R4		Cond Avg
103														
104	PM	E1	gr/dscf	y		0.0530		0.0389		0.0593		0.0899		0.0603
105	CO (RA)	E1	ppmv	y		69.0		40.0		61.0		84		63.5
106	HCl	E1	ppmv	y		18.4		10.9		17.1		20.5695		16.7
107	Total Chorine	E1	ppmv	y		18.4		10.9		17.1		20.5695		16.7
108														
109	Sampling Train	Partic	E1											
110	Stack Gas Flowrate		dscfm			35514.0		35514.0		35514.0		35514.0		
111	O2		%			12.5		11.8		11.7		12.0		
112	Moisture		%											
113	Temperature		°F											
114														
115	Carbon Tetrachloride	E1	%			99.9999		99.9998		99.9998		99.9997		
116	Tetrachloroethene	E1	%			99.9999		99.9999		99.9999		99.9998		
117														
118	331C5					R1		R2		R3				Cond Avg
119														
120	PM	E1	gr/dscf	y		0.0440		0.0354		0.0378				0.0391
121	CO (RA)	E1	ppmv	y		19.0		23.0		21.0		10		21.0
122	HCl	E1	ppmv	y		12.8		13.7		11.2				12.6
123	Total Chorine	E1	ppmv	y		12.8		13.7		11.2				12.6
124														
125	Sampling Train	Partic	E1											
126	Stack Gas Flowrate		dscfm			35514.0		35514.0		35514.0				
127	O2		%			13.2		12.8		13.2				
128	Moisture		%											
129	Temperature		°F											
130														
131	Carbon Tetrachloride	E1	%			99.9999		99.9999		99.9999				
132	Tetrachloroethene	E1	%			99.9999		99.9999		99.9999				
133														
134	331C6					R1		R2		R3		R4		Cond Avg
135														
136	PM	E1	gr/dscf	y		0.0474		0.0422		0.0725		0.0773		0.0598
137	CO (RA)	E1	ppmv	y		9.0		16.0		8.0		10		10.8
138	HCl	E1	ppmv	y		6.5		3.3		7.9		7.55192		6.3
139	Total Chorine	E1	ppmv	y		6.5		3.3		7.9		7.55192		6.3
140														
141	Sampling Train	Partic	E1											
142	Stack Gas Flowrate		dscfm			35514.0		35514.0		35514.0		35514.0		

	B	C	D	E	F	G	H	I	J	K	L	M	N	O
143	O2		%			11.7		11.5		11.3		11.6		
144	Moisture		%											
145	Temperature		°F											
146														
147	331C7					R1		R2		R3		R4		Cond Avg
148														
149	PM	E1	gr/dscf	y		0.0710		0.0504		0.0376				0.0530
150	CO (RA)	E1	ppmv	y		14.0		15.0		17.0				15.3
151	HCl	E1	ppmv	y		19.0		21.5		12.0				17.5
152	Total Chorine	E1	ppmv	y		19.0		21.5		12.0				17.5
153														
154	Sampling Train		Partic	E1										
155	Stack Gas Flowrate		dscfm			35514.0		35514.0		35514.0				
156	O2		%			14.4		14.6		14.5				
157	Moisture		%											
158	Temperature		°F											
159														
160	Carbon Tetrachloride	E1	%			99.9999		99.9998		99.9998				
161	Tetrachloroethene	E1	%			99.9999		99.9999		99.9999				
162														
163	331C8					R1		R2		R3		R4		Cond Avg
164														
165	PM	E1	gr/dscf	y		0.0564		0.0733		0.0504				0.0600
166	CO (RA)	E1	ppmv	y		37.0		31.0		23.0				30.3
167	HCl	E1	ppmv	y		5.4		5.1		7.6				6.0
168	Total Chorine	E1	ppmv	y		5.4		5.1		7.6				6.0
169														
170	Sampling Train		Partic	E1										
171	Stack Gas Flowrate		dscfm			35514.0		35514.0		35514.0				
172	O2		%			12.6		12.6		13.0				
173	Moisture		%											
174	Temperature		°F											
175														
176	Carbon Tetrachloride	E1	%			99.9999		99.9999		99.9999				
177	Tetrachloroethene	E1	%			99.9999		99.9999		99.9999				
178														
179	331C9					R1		R2		R3		R4		Cond Avg
180														
181	PM	E1	gr/dscf	y		0.0391		0.0584		0.0470				0.0482
182	CO (RA)	E1	ppmv	y		69.0		74.0		76.0				73.0
183	HCl	E1	ppmv	y		2.9		3.0		2.3				2.7
184	Total Chorine	E1	ppmv	y		2.9		3.0		2.3				2.7
185														
186	Sampling Train		Partic	E1										
187	Stack Gas Flowrate		dscfm			35514.0		35514.0		35514.0				
188	O2		%			14.3		13.5		14.1				
189	Moisture		%											
190	Temperature		°F											
191														
192	Carbon Tetrachloride	E1	%			99.9999		99.9999		99.9999				
193	Tetrachloroethene	E1	%			99.9999		99.9999		99.9999				

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
1	Feedstream 1																			
2																				
3																				
4	331C10	Trial burn			Cond Avg		Cond Avg		Cond Avg		Cond Avg		Run 1		Run 2		Run 3		Cond Avg	
5																				
6	Feedstream Number				F1		F2		F3		F4		F5		F5		F5		F5	
7	Feed Class				Solid HW		Solid non-HW		Liq HW		Liq non-HW		Total		Total		Total		Total	
8	Feed Class 2												Total		Total		Total		Total	
9	Feedstream Description				Solid waste energy			Solid waste nonen			Liquid waste ene			Liquid waste noi			Total	Total	Total	Total
10	Feed Rate		lb/hr																	
11	Thermal Feedrate		MM Btu/hr																	
12	Heating Value		Btu/lb																	
13	Density		kg/L																	
14	Ash		wt%		5		70.0		0.01		0.17									
15	Chlorine		wt%		0.1		0.1		1.5		0.33									
16	Chromium		lb/hr										21.7		21.2		22		21.6	
17	Lead		lb/hr										3.5		3.2		3.5		3.4	
18																				
19	Stack Gas Flowrate		dscfm										33425		27925		37270		32873	
20	Oxygen		%										12.2		13.8		12.9		13.0	
21																				
22	Thermal Feedrate		MMBtu/hr																	
23	Estimated Firing Rate		MMBtu/hr																83.8	
24																				
25	<i>Feedrate MTEC Calculations</i>																			
26	Ash		mg/dscm																	
27	Chlorine		ug/dscm																	
28	Chromium		ug/dscm										276154		394690		272788		306168	
29	Lead		ug/dscm										44541		59576		43398		48193	
30																				
31	SVM		ug/dscm										44541		59576		43398		48193	
32	LVM		ug/dscm										276154		394690		272788		306168	

	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Feedstream 2												
2													
3	331C1				R1		R2		R3		Cond Avg		
4													
5	Feedstream Number				F1		F1		F1		F1		
6	Feed Class				Total		Total		Total		Total		
7	Feedstream Description				Total		Total		Total		Total		
8	Feed Rate	lb/hr			22562		22447		23072		22694		
9													
10	331C2				R1		R2		R3		Cond Avg		
11													
12	Feedstream Number				F1		F1		F1		F1		
13	Feed Class				Total		Total		Total		Total		
14	Feed Class 2				Total		Total		Total		Total		
15	Feedstream Description				Total		Total		Total		Total		
16	Feed Rate	lb/hr			25880		25160		25630				
17	Heating Value	Btu/lb											
18	Chlorine	ppmw			80139		79730		77838				
19	Antimony	ppmw			2396		2047		2462				
20	Cadmium	ppmw			808		560		710				
21	Chromium	ppmw			1206		1324		1327				
22	Lead	ppmw			3876		4237		4339				
23													
24	Stack Gas Flowrate	dscfm			35000		36000		35800				
25	Oxygen	%			10		13		9.8				
26													
27	<i>Feedrate MTEC Calculations</i>												
28	Chlorine	ug/dscm			20164814		26072618		18624647		21620693		
29	Antimony	ug/dscm			602805		669362		589080		620416		
30	Cadmium	ug/dscm			203204		183262		169909		185458		
31	Chromium	ug/dscm			303347		432811		317413		351190		
32	Lead	ug/dscm			975184		1385514		1038126		1132941		
33													
34	SVM	ug/dscm			1178387		1568776		1208035		1318399		
35	LVM	ug/dscm			303347		432811		317413		351190		
36													
37	331C3				R1		R2		R3		Cond Avg		
38													
39	Feedstream Number				F1		F1		F1		F1		
40	Feed Class				Total		Total		Total		Total		
41	Feed Class 2				Total		Total		Total		Total		
42	Feedstream Description				Total		Total		Total		Total		
43	Feed Rate	lb/hr			24700		24870		24690				
44	Heating Value	Btu/lb											
45	Chlorine	ppmw			72389		81665		82139				
46	Arsenic	ppmw			281		266		266				
47	Chromium	ppmw			5283		5460		5857				
48	Lead	ppmw			3004		3197		4273				
49													
50	Stack Gas Flowrate	dscfm			35600		36000		36200				
51	Oxygen	%			10		10.5		10.8				
52													
53	<i>Feedrate MTEC Calculations</i>												
54	Chlorine	ug/dscm			17091140		20112420		20559162		19254241		
55	Cadmium	ug/dscm			66434		65457		66503				
56	Chromium	ug/dscm			1247424		1344789		1465905				
57	Lead	ug/dscm			709263		787266		1069522				
58													
59	SVM	ug/dscm			775697		852723		1136025		921482		
60	LVM	ug/dscm			1247424		1344789		1465905		1352706		
61													
62	331C4				R1		R2		R3		R4		Cond Avg
63													
64	Feedstream Number				F1		F1		F1		F1		F1
65	Feed Class				Total		Total		Total		Total		Total
66	Feed Class 2				Total		Total		Total		Total		Total
67	Feedstream Description				Total		Total		Total		Total		Total
68	Feed Rate	lb/hr											
69	Heating Value	Btu/lb			10000		9970		10300		10300		
70	Ash	wt %			8.4		7.9		8.1		8.9		
71	Chlorine	lb/hr			2045.5		2045.5		2045.5		2045.5		
72													
73	Stack Gas Flowrate	dscfm			35514.0		35514.0		35514.0		35514.0		
74	Oxygen	%			12.5		11.8		11.7		12		
75													
76	<i>Feedrate MTEC Calculations</i>												
77	Chlorine	ug/dscm			25363957		23434091		23182111		23954848		23983752
78													
79	331C5				R1		R2		R3		Cond Avg		
80													
81	Feedstream Number				F1		F1		F1		F1		

	B	C	D	E	F	G	H	I	J	K	L	M	N
82	Feed Class				Total		Total		Total		Total		
83	Feed Class 2				Total		Total		Total		Total		
84	Feedstream Description				Total		Total		Total		Total		
85	Feed Rate	lb/hr											
86	Heating Value	Btu/lb			9210		9080		8890				
87	Ash	wt %			9.5		10.8		10.3				
88	Chlorine	lb/hr			2057.1		2057.1		2057.1				
89													
90	Stack Gas Flowrate	dscfm			35514.0		35514.0		35514.0				
91	Oxygen	%			13.2		12.8		13.2				
92													
93	<i>Feedrate MTEC Calculations</i>												
94	Chlorine	ug/dscm			27798154		26442146		27798154		27346151		
95													
96	331C6				R1		R2		R3		R4		Cond Avg
97													
98	Feedstream Number				F1		F1		F1		F1		F1
99	Feed Class				Total		Total		Total		Total		Total
100	Feed Class 2				Total		Total		Total		Total		Total
101	Feedstream Description				Total		Total		Total		Total		Total
102	Feed Rate	lb/hr											
103	Heating Value	Btu/lb			10500		10600		9690		9920		
104	Ash	wt %			11		10.7		11.2		10.7		
105	Chlorine	lb/hr			2160.0		2160.0		2160.0		2160.0		
106													
107	Stack Gas Flowrate	dscfm			35514.0		35514.0		35514.0		35514.0		
108	Oxygen	%			11.7		11.5		11.3		11.6		
109													
110	<i>Feedrate MTEC Calculations</i>												
111	Chlorine	ug/dscm			24480309.6		23964934.6		23470812.3		24219880.7		24033984
112													
113	331C7				R1		R2		R3		Cond Avg		
114													
115	Feedstream Number				F1		F1		F1		F1		
116	Feed Class				Total		Total		Total		Total		
117	Feed Class 2				Total		Total		Total		Total		
118	Feedstream Description				Total		Total		Total		Total		
119	Feed Rate	lb/hr											
120	Heating Value	Btu/lb			6560		6790		7150				
121	Ash	wt %			11.2		10.4		11				
122	Chlorine	lb/hr			1500.0		1414.3		1244.4				
123													
124	Stack Gas Flowrate	dscfm			35514.0		35514.0		35514.0				
125	Oxygen	%			14.4		14.6		14.5				
126													
127	<i>Feedrate MTEC Calculations</i>												
128	Chlorine	ug/dscm			23954848		23291812		20179400		22475354		
129													
130	331C8				R1		R2		R3		Cond Avg		
131													
132	Feedstream Number				F1		F1		F1		F1		
133	Feed Class				Total		Total		Total		Total		
134	Feed Class 2				Total		Total		Total		Total		
135	Feedstream Description				Total		Total		Total		Total		
136	Feed Rate	lb/hr											
137	Heating Value	Btu/lb			14000		14000		14100				
138	Ash	wt %			10.3		10.1		10.2				
139	Chlorine	lb/hr			1627.5		2066.7		1738.0				
140													
141	Stack Gas Flowrate	dscfm			35514.0		35514.0		35514.0				
142	Oxygen	%			12.6		12.6		13				
143													
144	<i>Feedrate MTEC Calculations</i>												
145	Chlorine	ug/dscm			20421508		25932074		22898440		23084007		
146													
147	331C9				R1		R2		R3		Cond Avg		
148													
149	Feedstream Number				F1		F1		F1		F1		
150	Feed Class				Total		Total		Total		Total		
151	Feed Class 2				Total		Total		Total		Total		
152	Feedstream Description				Total		Total		Total		Total		
153	Feed Rate	lb/hr											
154	Heating Value	Btu/lb			12400		12500		12400				
155	Ash	wt %			10.1		10.2		10.2				
156	Chlorine	lb/hr			1380.0		1380.0		2760.0				
157													
158	Stack Gas Flowrate	dscfm			35514.0		35514.0		35514.0				
159	Oxygen	%			14.3		13.5		14.1				
160													
161	<i>Feedrate MTEC Calculations</i>												
162	Chlorine	ug/dscm			21709528		19393845		42160533		27754636		

	B	C	D	E
1	Process Information			
2				
3	331C10			
4				
5	Kiln Temp	F		
6	Scrubber Liquid pH			6.8
7	Scrubber Liquid Specific Gravity			1.03
8	IWS Units Energized			6

	C	D	E	F	G
1	Process Information 2				
2					
3	331C1		R1	R2	R3
4					
5	Afterburner Temperature	F	2051	2058	2049
6	Kiln Temperature	F	2068	2069	2078
7					
8	331C2				
9					
10	Afterburner Temperature	F	2210	2200	2230
11	Kiln Temperature	F	2080	2050	2050
12	PBS pH		8	8.2	7.7
13	IWS pH		9.4	9	7.6
14					
15	331C3				
16					
17	Afterburner Temperature	F	2080	2100	2080
18	Kiln Temperature	F	2050	2060	2060
19	PBS pH		7.9	8	7.9
20	IWS pH		9	8.2	7.5

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	PCDD/PCDF																	
2	N																	
3	Facility Name and ID:		Ross, Grafton, OH															
4	Condition ID:		331C10															
5	Condition/Test Date:		Oct 18-19, 2000															
6																		
7	I-TEF		Run 1				Run 2				Run 3							
8	Wght Fact		Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ		
9			Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND
10	Detected in sample volume (pg)																	
11	2,3,7,8-TCDD	1	19.3	19.30	19.30	19.30	21.2	21.20	21.20	21.20	25.1	25	25	25				
12	1,2,3,7,8-PCDD	0.5	54.2	27.10	54.20	27.10	27.2	13.60	27.20	13.60	63.3	32	63	32				
13	1,2,3,4,7,8-HxCDD	0.1	28.8	2.88	28.80	2.88	nd	22.3	2.23	11.15	1.12	nd	42.1	4	21	2		
14	1,2,3,6,7,8-HxCDD	0.1	67.8	6.78	67.80	6.78	nd	22.4	2.24	11.20	1.12	nd	67.1	7	67	7		
15	1,2,3,7,8,9-HxCDD	0.1	43.5	4.35	43.50	4.35	nd	22.1	2.21	11.05	1.11	nd	41.7	4	21	2		
16	1,2,3,4,6,7,8-HpCDD	0.01	47.3	0.47	47.30	0.47	nd	36.3	0.36	18.15	0.18	nd	70.4	1	70	1		
17	OCDD	0.001	72.3	0.07	72.30	0.07	nd	47.5	0.05	24	0.02	nd	222	0	222	0		
18	2,3,7,8-TCDF	0.1	281	28.10	281.00	28.10		287	28.70	287	28.70		271	27	271	27		
19	1,2,3,7,8-PCDF	0.05	539	27	539	27		400	20.00	400	20.00		477	24	477	24		
20	2,3,4,7,8-PCDF	0.5	458	229	458	229		265	132.50	265	132.50		346	173	346	173		
21	1,2,3,4,7,8-HxCDF	0.1	642	64	642	64		316	31.60	316	31.60		453	45	453	45		
22	1,2,3,6,7,8-HxCDF	0.1	431	43	431	43		268	26.80	268	26.80		324	32	324	32		
23	2,3,4,6,7,8-HxCDF	0.1	166	17	166	17		78.6	7.86	79	7.86		155	16	155	16		
24	1,2,3,7,8,9-HxCDF	0.1	56.2	6	56	6	nd	17.4	1.74	9	0.87	nd	19	2	10	1		
25	1,2,3,4,6,7,8-HpCDF	0.01	414	4	414	4		153	1.53	153	1.53		357	4	357	4		
26	1,2,3,4,7,8,9-HpCDF	0.01	36.4	0	36	0	nd	19.7	0.20	10	0.10	nd	23.4	0	12	0		
27	OCDF	0.001	74	0	74	0	nd	49.9	0.05	25	0.02	nd	68.8	0	69	0		
28	Total TCDD	0	1870	0	1870	0		1920	0.00	1920	0.00		3640	0	3640	0		
29	Total PCDD	0	1930	0	1930	0		1640	0.00	1640	0.00		3060	0	3060	0		
30	Total HxCDD	0	1060	0	1060	0		479	0.00	479	0.00		931	0	931	0		
31	Total HpCDD	0	122	0	122	0		36.3	0.00	36	0.00		187	0	187	0		
32	Total TCDF	0	17200	0	17200	0		18800	0.00	18800	0.00		20000	0	20000	0		
33	Total PCDF	0	12800	0	12800	0		11500	0.00	11500	0.00		11600	0	11600	0		
34	Total HxCDF	0	5210	0	5210	0		3510	0.00	3510	0.00		4300	0	4300	0		
35	Total HpCDF	0	610	0	610	0		153	0.00	153	0.00		619	0	619	0		
36																		
37	Gas sample volume (dscf)			112.84	112.84	112.84		109.77	109.77	109.77				120.91	120.91	120.91		
38	O2 (%)			12.20	12.20	12.20		13.8	13.8	13.8				12.87	12.87	12.87		
39																		
40	PCDD/PCDF (ng in sample)			0.48	40.9	0.48		0.293	38.1	0.288				0.40	44.6	0.39		
41	PCDD/PCDF (ng/dscm @ 7% O2)			0.24	20.40	0.24	3.1	0.18	23.84	0.18	2.7			0.20	22.46	0.20		
42																		
43	TEQ Cond Avg		0.21															
44	Total Cond Avg		22.23															

	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	331C1													
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	0.007	0.003	0.003	1	0.004	0.002	0.002	1	0.005	0.002	0.002
6	4D Other	0		0.054	0.054	0.000		0.030	0.030	0.000		0.034	0.034	0.000
7	4D Total	0		0.060	0.060	0.000		0.034	0.034	0.000		0.039	0.039	0.000
8	5D 12378	0.5	1	0.007	0.004	0.002	1	0.003	0.001	0.001	1	0.005	0.003	0.001
9	5D Other	0		0.008	0.008	0.000		0.005	0.005	0.000		0.004	0.004	0.000
10	5D Total	0	1	0.015	0.008	0.000	1	0.008	0.004	0.000	1	0.009	0.004	0.000
11	6D 123478	0.1	1	0.014	0.007	0.001	1	0.016	0.008	0.001	1	0.014	0.007	0.001
12	6D 123678	0.1	1	0.013	0.007	0.001	1	0.014	0.007	0.001	1	0.012	0.006	0.001
13	6D 123789	0.1	1	0.013	0.007	0.001	1	0.008	0.004	0.000	1	0.013	0.006	0.001
14	6D Other	0		-0.021	-0.021	0.000		-0.023	-0.023	0.000		-0.025	-0.025	0.000
15	6D Total	0	1	0.020	0.010	0.000	1	0.015	0.007	0.000	1	0.014	0.007	0.000
16	7D 1234678	0.01	1	0.024	0.012	0.000	2	0.069	0.069	0.001	2	0.016	0.016	0.000
17	7D Other	0		0.013	0.013	0.000		0.033	0.033	0.000		0.014	0.014	0.000
18	7D Total	0	1	0.037	0.019	0.000		0.102	0.102	0.000	2	0.031	0.031	0.000
19	8D	0.001	1	0.092	0.046	0.000		0.334	0.334	0.000		0.179	0.179	0.000
20	4F 2378	0.1		0.074	0.074	0.007	2	0.011	0.011	0.001		0.130	0.130	0.013
21	4F Other	0		0.582	0.582	0.000		0.203	0.203	0.000		0.498	0.498	0.000
22	4F Total	0		0.656	0.656	0.000	2	0.214	0.214	0.000		0.628	0.628	0.000
23	5F 12378	0.05	2	0.035	0.035	0.002	1	0.012	0.006	0.000	2	0.056	0.056	0.003
24	5F 23478	0.5		0.072	0.072	0.036	1	0.007	0.003	0.002		0.139	0.139	0.069
25	5F Other	0		0.382	0.382	0.000		0.031	0.031	0.000		0.367	0.367	0.000
26	5F Total	0		0.489	0.489	0.000	2	0.050	0.050	0.000		0.562	0.562	0.000
27	6F 123478	0.1	2	0.048	0.048	0.005	1	0.002	0.001	0.000	2	0.054	0.054	0.005
28	6F 123678	0.1	2	0.018	0.018	0.002	1	0.002	0.001	0.000	2	0.017	0.017	0.002
29	6F 123789	0.1	2	0.002	0.002	0.000	1	0.001	0.001	0.000	1	0.002	0.001	0.000
30	6F 234678	0.1	2	0.017	0.017	0.002	2	0.003	0.003	0.000	2	0.018	0.018	0.002
31	6F Other	0		0.088	0.088	0.000		0.018	0.018	0.000		0.092	0.092	0.000
32	6F Total	0		0.173	0.173	0.000	2	0.026	0.026	0.000	2	0.183	0.183	0.000
33	7F 1234678	0.01	2	0.016	0.016	0.000	2	0.017	0.017	0.000	2	0.024	0.024	0.000
34	7F 1234789	0.01	2	0.008	0.008	0.000	1	0.008	0.004	0.000	1	0.005	0.002	0.000
35	7F Other	0		0.002	0.002	0.000		0.040	0.040	0.000		0.037	0.037	0.000
36	7F Total	0	2	0.026	0.026	0.000	2	0.065	0.065	0.000	2	0.066	0.066	0.000
37	8F	0.001	2	0.010	0.010	0.000	2	0.124	0.124	0.000	2	0.124	0.124	0.000
38	Total PCDD/PCDF			1.579	1.496			0.971	0.960			1.834	1.822	
39	TEQ		21.4	0.068		0.061	83.9	0.017		0.010	10.7	0.106		0.100
40														
41	TEQ Cond Avg	full ND		0.064										
42	TEQ Cond Avg	1/2 ND		0.057										