

US EPA ARCHIVE DOCUMENT

	B	C
1	Source Description	
2		
3	Phase II ID No.	2000
4	EPA ID No.	LAD057117434
5	Facility Name	Georgia Gulf Chemicals and Vinyls, LLC.
6	Facility Location	
7	City	Plaquemine
8	State	LA
9	Unit ID Name/No.	Nebraska Boiler
10	Other Sister Facilities	None
11	Number of Sister Facilities	0
12	Combustor Class	Liquid-fired boiler
13	Combustor Type	Liquid-fired
14	Combustor Characteristics	Watertube boiler. Anderson 2000 A-type package boiler, installed 1991, 190 MMBtu/hr, 130,000 lb/hr superheated steam @ 900 psig
15	Capacity (MMBtu/hr)	190
16	Soot Blowing	Yes
17	APCS Detailed Acronym	None
18	APCS General Class	
19	APCS Characteristics	NA
20	Hazardous Wastes	Liq, tar
21	Haz Waste Description	Liquid wastes - Distillation bottom tars from the production of phenol/acetone from cumene (K022)
22	Supplemental Fuel	Natural gas, oil
23		Fuel oil
24		
25	Stack Characteristics	
26	Diameter (ft)	6.7
27	Height (ft)	100
28	Gas Velocity (ft/sec)	50.0
29	Gas Temperature (°F)	460
30		
31	Permitting Status	Tier I metals expect Cr+6, Tier III for Cl, Cr+6
	HWC Burn Status (Date if	
32	Terminated)	

	B	C
1	Cond Description	
2		
3	2000C1	
4		
5	Report Name/Date	Nebraska Boiler Trial Burn Report, December 1997
6	Report Prepare	Walsh Environmental, Inc.
7	Testing Firm	Walsh Environmental, Inc.
8	Testing Dates	August 25-27, 1997
9	Cond Dates	Aug-97
10	Condition Descr	Trial burn, max waste feed, min comb temp
11	Content	PM, HCl/Cl ₂ , DRE for acetophenone, cumene, phenol
12		
13	2000C2	
14		
15	Report Name/Date	Nebraska Boiler Trial Burn Report, December 1997
16	Report Prepare	Walsh Environmental, Inc.
17	Testing Firm	Walsh Environmental, Inc.
18	Testing Dates	August 28 , 1997 - September 2, 1997
19	Cond Dates	Aug-97
20	Condition Descr	Risk burn, normal operating condition
21	Content	DRE, PCDD/PCDF, PM, CO
22		
23	2000C3	
24		
25	Report Name/Date	Nebraska Boiler Trial Burn Report, December 1997
26	Report Prepare	Walsh Environmental, Inc.
27	Testing Firm	Walsh Environmental, Inc.
28	Testing Dates	September 3-4, 1997
29	Cond Dates	Sep-97
30	Condition Descr	Trial burn, lower comb temp, DRE
31	Content	CO, DRE for acetophenone, cumene, phenol
32		
33	2000C4	
34		
35	Report Name/Date	Nebraska Boiler Trial Burn Report, December 1997
36	Report Prepare	Walsh Environmental, Inc.
37	Testing Firm	Walsh Environmental, Inc.
38	Testing Dates	September 5, 1997
39	Cond Dates	Sep-97
40	Condition Descr	Trial burn, Cr+6 burn, max waste, ash, Cl, comb temp
41	Content	Cr+6, PM, HCl/Cl ₂

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Stack Gas Emissions														
2															
3		Commen	Units	7%	O2										
4															
5															
6	2000C1	Trial Burn				R1	R2	R3	R4	R5	Cond Avg				
7								Sootblow							
8	PM	E1	gr/dscf	y		0.0287	0.0254	0.0232							0.0258
9	CO (MHRA)	E1	ppmv	y		2.58	2.18	1.37	1.45	2.49					2.0
10	HCl		g/s			0.000187	0.000194	0.000196							
11	Cl2		g/s			0.000374	0.000485	0.00049							
12	Benzene		g/s			0.0055	0.0005	0.0155	0.0077	0.0069					
13															
14	POHC DRE		Cumene												
15	Feedrate														
16	Emission Rate		E2												
17	DRE	E2	%			99.99104	99.99996	99.99818	99.99006	99.99678					
18															
19	POHC DRE		Phenol												
20	Feedrate														
21	Emmision Rate		E2												
22	DRE	E2	%			99.99995	99.99998	99.99991	99.9999	99.99993					
23															
24	POHC DRE		Acetophenone												
25	Feedrate														
26	Emission Rate		E2												
27	DRE	E2	%			99.9996	99.99993	99.99989	99.99975	99.99984					
28															
29	Sampling Train		PM, HCl/ E1												
30	Stack Gas Flowrate		dscfm			37970.3	38771.8	40816.9							39186.3
31	O2		%			13.5	13.5	13.5							13.5
32	Moisture		%			16.5	15.5	16.2							16.1
33	Temperature		°F			484.1	482.7	470.4							479.1
34															
35	Sampling Train		DRE E2												
36	Stack Gas Flowrate		dscfm			41706.6	41136.8	40589.9	40965.8	40840.5	41144.4				
37	O2		%			13.02	13.5	13.5	13.5	11.6	13.3				
38	Moisture		%			15.6	12.2	15.7	14.4	15.8	14.5				
39	Temperature		°F			486.1	482.8	469.6	473.7	475.1	479.5				
40															
41	HCl	E1	ppmv	y		0.013	0.013	0.013							0.013
42	Cl2	E1	ppmv	y		0.013	0.017	0.016							0.016
43	Total Chlorine	E1	ppmv	y		0.040	0.047	0.045							0.044
44															
45															
46	2000C2	DRE				R1	R2	R3			Cond Avg				
47								sootblow?							
48	PM	E1	gr/dscf	y		0.0133	0.0195	0.0291							0.0206
49	CO (MHRA)	E1	ppmv	y		1.78	1.96	2.96							2.2
50															
51	POHC DRE		Cumene												
52	Feedrate														
53	Emission Rate		E2												
54	DRE	E2	%			99.99994	99.99973	99.99863							
55															
56	POHC DRE		Phenol												
57	Feedrate														
58	Emission Rate		E2												
59	DRE	E2	%			99.99989	99.99995	99.99999							
60															
61	POHC DRE		Acetophenone												
62	Feedrate														
63	Emission Rate		E2												
64	DRE	E2	%			99.99988	99.99986	99.99983							
65															
66	Sampling Train		PM E1												
67	Stack Gas Flowrate		dscfm			26895.1	29069.7	26223.1							27396.0
68	O2		%			11	14.5	10.9							12.1
69	Moisture		%			17.3	19.1	18.7							18.4
70	Temperature		°F			437.2	439.1	444.8							440.4
71															

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
72	Sampling Train	DRE	E2												
73	Stack Gas Flowrate		dscfm			28732.7		24805.2		26033.6					26523.8
74	O2		%			11		10.9		11.2					11.0
75	Moisture		%			17.9		20.2		19.7					19.3
76	Temperature		°F			431.4		434.3		441.7					435.8
77															
78	Sampling Train	PCDD/P(E3													
79	Stack Gas Flowrate		dscfm			28732.7		24805.2		26033.6					26523.8
80	O2		%			11		10.9		11.2					11.0
81	Moisture		%			17.9		20.2		19.7					19.3
82	Temperature		°F			431.4		434.3		441.7					435.8
83															
84	2000C3	DRE Burn				R1		R2		R3					Cond Avg
85															
86	CO (MHRA)	E1	ppmv	y		3.71		5.06		2.05					3.6
87															
88	POHC DRE		Cumene												
89	Feedrate														
90	Emission Rate														
91	DRE	E1	%			99.99296		99.98604		99.96546					
92															
93	POHC DRE		Phenol												
94	Feedrate														
95	Emission Rate														
96	DRE	E1	%			99.99987		99.9998		99.99963					
97															
98	POHC DRE		Acetophenone												
99	Feedrate														
100	Emission Rate														
101	DRE	E1	%			99.99953		99.99954		99.99949					
102															
103	Sampling Train	DRE	E1												
104	Stack Gas Flowrate		dscfm			21916.6		21618.1		22094.1					21876.3
105	O2		%			10.9		10.7		11.1					10.9
106	Moisture		%			21.4		21.2		21.3					21.3
107	Temperature		°F			417.6		421.3		420.1					419.7
108															
109	2000C4	Cr+6 Burn				R1		R2		R3					Cond Avg
110															
111	PM	E1	gr/dscf	y		0.0962		0.1099		0.0924					0.0995
112	CO (MHRA)	E1	ppmv	y		2.36		3.98		2.07					2.8
113	HCl		g/s			0.000189		0.0001915		0.000197					
114	Cl2		g/s			0.000189		0.0001915		0.000197					
115	Chromium (Hex)		g/hr			16.79		18.67		8.7					
116															
117	Sampling Train	PM, HCl/ E1													
118	Stack Gas Flowrate		dscfm			32950.3		32624.9		36820.8					34132.0
119	O2		%			9.4		10.1		11.5					10.3
120	Moisture		%			16.4		16.7		15.4					16.2
121	Temperature		°F			473.9		488		511.3					491.1
122															
123	Sampling Train	Cr+6	E2												
124	Stack Gas Flowrate		dscfm			30355.4		30921.5		38499.2					33258.7
125	O2		%			9.4		10.1		11.5					10.3
126	Moisture		%			13.2		11.5		10.4					11.7
127	Temperature		°F			475.5		487.7		513.8					492.3
128															
129	HCl	E1	ppmv	y		0.010		0.011		0.011					0.011
130	Cl2	E1	ppmv	y		0.005		0.005		0.006					0.005
131	Total Chlorine	E1	ppmv	y		0.020		0.022		0.023					0.021
132	Chromium (Hex)	E2	µg/dscm	y		393.1		456.7		196.1					348.7

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	Feedrates																		
2																			
3																			
4	2000C1		Cond Avg																
5																			
6	Feedstream Number		F3																
7	Feed Class		Total																
8	Feed Class 2		Total																
9	Feedstream Description		Total																
10	Feed Rate																		
11	Feed Rate																		
12	Viscosity																		
13	Specific Gravity																		
14	Density																		
15	Heating Value																		
16	Ash																		
17	Chlorine																		
18																			
19	Stack Gas Flowrate		39186.3																
20	Oxygen		13.5																
21																			
22	Thermal Feedrate		114.9																
23	Estimated Firing Rate		93.3																
24																			
25	Feedrate MTEC Calculator																		
26																			
27	Ash		60.2																
28	Chlorine		100																
29			1809.0																
30	2000C2		Cond Avg																
31																			
32	Feedstream Number		F3																
33	Feed Class		Total																
34	Feed Class 2		Total																
35	Feedstream Description		Total																
36	Feed Rate																		
37	Viscosity																		
38	Specific Gravity																		
39	Density																		
40	Heating Value																		
41	Ash																		
42	Chlorine																		
43	Antimony																		
44	Arsenic																		
45	Barium																		
46	Beryllium																		
47	Cadmium																		
48	Chromium																		
49	Lead																		
50	Mercury																		
51	Nickel																		
52	Selenium																		
53	Silver																		
54	Thallium																		
55																			
56	Stack Gas Flowrate		26523.8																
57	Oxygen		11.0																
58																			
59	Thermal Feedrate		61.2																
60	Estimated Firing Rate		83.9																

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
61																			
62	Feedrate MTEC Calculator																		
63																			
64	Ash		76.3																
65	Chlorine	100	1217.9																
66	Antimony	100	30.4																
67	Arsenic	100	15.2																
68	Barium	100	48.7																
69	Beryllium	100	6.1																
70	Cadmium	100	6.1																
71	Chromium		2961.9																
72	Lead	100	30.4																
73	Mercury	100	12.2																
74	Nickel		949.2																
75	Selenium	100	18.3																
76	Silver	100	6.1																
77	Thallium	100	30.4																
78	SVM	100	18.3																
79	LVM	0.7	2983.2																
80																			
81	2000C3		Cond Avg																
82																			
83	Feedstream Number		F3																
84	Feed Class		Total																
85	Feed Class 2		Total																
86	Feedstream Description		Total																
87	Feed Rate																		
88	Feed Rate																		
89	Viscosity																		
90	Specific Gravity																		
91	Density																		
92	Heating Value																		
93	Ash																		
94	Chlorine																		
95																			
96	Stack Gas Flowrate		21876.27																
97	Oxygen		10.9																
98																			
99	Thermal Feedrate		29.9																
100	Estimated Firing Rate		70.1																
101																			
102	Feedrate MTEC Calculator																		
103																			
104	Ash		115.0																
105	Chlorine	100	651.1																
106																			
107	2000C4		Cond Avg																
108																			
109	Feedstream Number		F3																
110	Feed Class		Oil																
111	Feed Class 2																		
112	Feedstream Description		Fusel Oil*																
113	Feed Rate																		
114	Specific Gravity																		
115	Ash																		
116	Chlorine																		
117	Chromium																		
118																			
119	*Fusel oil spiked with chrorn																		
120																			

	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
121	Stack Gas Flowrate		dscfm		32950.3	32624.9	32624.9	36820.8	36820.8	34132.0	34132.0	34132.0	32950.3	32950.3	32624.9	36820.8	36820.8	34132.0	34132.0	32950.3	32950.3	32625	32625		36820.8
122	Oxygen		%		9.4	10.1	10.1	11.5	11.5	10.3	10.3	10.3	9.4	9.4	10.1	11.5	11.5	10.3	10.3	9.4	9.4	10.1	10.1		11.5
123																									
124	Estimated Firing Rate		MMBtu/hr																						
125																									
126	Feedrate MTEC Calculations																								
127																									
128	Ash		mg/dscm		153.2	155.4	155.4	145.2	145.2	152.1	152.1	152.1									351.5	332.3	332.3		825.7
129	Chlorine		ug/dscm	100	828.1	100	887.8	100	907.2	100	869.4	869.4									80348.6	92309.3	92309.3		202832.8
130	Chromium		ug/dscm		1821.8	1864.3	1864.3	1905.1	1905.1	1869.2	1869.2	1869.2									1305.7	1174.2	1174.2		2234.3

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
121	Stack Gas Flowrate	34132.0	32950.3	32950.3	32950.3	32624.9	32624.9	36820.8	36820.8	34132.0	34132.0								
122	Oxygen	10.3	9.4	9.4	10.1	10.1	11.5	11.5			10.3								
123																			
124	Estimated Firing Rate		121.3	121.3	112.9	112.9	111.0	111.0			115.6								
125																			
126	<i>Feedrate MTEC Calculator</i>																		
127																			
128	Ash	503.2	504.7	504.7	487.7	487.7	970.9	970.9			654.4	504.7	487.7			970.9			654.4
129	Chlorine	125163.5	1	80762.6	1	92753.2	1	203286.4	1	125600.7	1	80762.6	1	92753.2	0	203286.4	1		125600.7
130	Chromium	1571.4	3127.5	3127.5	3038.5	3038.5	4139.4	4139.4			3435.1	3127.5	3038.5			4139.4			3435.1

	A	B	C
1	Process Information		
2			
3	2000C1		Cond Avg
4			
5	Comb Temp	F	2352
6	Steam Production	M lb/hr	89.1
7			
8	2000C2		
9			
10	Comb Temp	F	2173
11	Steam Production	M lb/hr	59.8
12			
13	2000C3		
14			
15	Comb Temp	F	1993
16	Steam Production	M lb/hr	44.2
17			
18	2000C4		
19			
20	Comb Temp	F	2448
21	Steam Production	M lb/hr	79.7

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:	Georgia Gulf Corporation															
4	Condition ID:	2000C2															
5	Condition/Test Date:	Risk burn, normal operating condition, August 28 - September 2, 1997															
6																	
7		I-TEF															
8		Wght Fact															
9																	
10		Detected in sample volume (ng)															
11	2,3,7,8-TCDD	1	0.004	0.0040	0.004	0.004	0.0040	0.004	0.004	0.004	0.004	0.004	0.004	0.008	0.008	0.008	0.008
12	1,2,3,7,8-PCDD	0.5	0.007	0.0035	0.007	0.0035	0.0035	0.0035	0.02	0.010	0.020	0.010	nd	0.020	0.010	0.010	0.005
13	1,2,3,4,7,8-HxCDD	0.1	0.020	0.0020	0.020	0.0020	0.0020	0.0020	0.02	0.002	0.020	0.002		0.020	0.002	0.020	0.002
14	1,2,3,6,7,8-HxCDD	0.1	0.020	0.0020	0.020	0.0020	0.0020	0.0020	0.03	0.003	0.030	0.003		0.020	0.002	0.020	0.002
15	1,2,3,7,8,9-HxCDD	0.1	0.020	0.0020	0.020	0.0020	0.0020	0.0020	0.04	0.004	0.040	0.004		0.040	0.004	0.040	0.004
16	1,2,3,4,6,7,8-HpCDD	0.01	0.040	0.0004	0.040	0.0004	0.0004	0.0004	0.21	0.002	0.210	0.002		0.100	0.001	0.100	0.001
17	OCDD	0.001	0.130	0.0001	0.130	0.0001	0.0001	0.0001	0.36	0.000	0.360	0.000		0.180	0.000	0.180	0.000
18	2,3,7,8-TCDF	0.1	0.080	0.0080	0.080	0.0080	0.0080	0.0080	0.17	0.017	0.170	0.017		0.200	0.020	0.200	0.020
19	1,2,3,7,8-PCDF	0.05	0.010	0.0005	0.010	0.0005	0.0005	0.0005	0.02	0.001	0.020	0.001	nd	0.030	0.002	0.015	0.001
20	2,3,4,7,8-PCDF	0.5	0.030	0.0150	0.030	0.0150	0.0150	0.0150	0.08	0.040	0.080	0.040		0.080	0.040	0.080	0.040
21	1,2,3,4,7,8-HxCDF	0.1	0.010	0.0010	0.010	0.0010	0.0010	0.0010	0.05	0.005	0.050	0.005		0.040	0.004	0.040	0.004
22	1,2,3,6,7,8-HxCDF	0.1	0.007	0.0007	0.007	0.0007	0.0007	0.0007	0.02	0.002	0.020	0.002		0.020	0.002	0.020	0.002
23	2,3,4,6,7,8-HxCDF	0.1	0.010	0.0010	0.010	0.0010	0.0010	0.0010	0.04	0.004	0.040	0.004		0.040	0.004	0.040	0.004
24	1,2,3,7,8,9-HxCDF	0.1	0.010	0.0010	0.010	0.0010	0.0010	0.0010	0.06	0.001	0.060	0.001	nd	0.007	0.0007	0.004	0.0004
25	1,2,3,4,6,7,8-HpCDF	0.01	0.010	0.0001	0.010	0.0001	0.0001	0.0001	0.17	0.002	0.170	0.002	nd	0.030	0.0003	0.015	0.0002
26	1,2,3,4,7,8,9-HpCDF	0.01	0.010	0.0001	0.010	0.0001	0.0001	nd	0.02	0.000	0.010	0.000		0.006	0.0001	0.006	0.0001
27	OCDF	0.001	0.010	0.0000	0.010	0.0000	0.0000	0.0000	0.00029	0.000	0.000	0.000		0.007	0.0000	0.007	0.0000
28																	
29	Gas sample volume (dscf)		126.42		126.42		126.42			115.54		115.54		133.16	133.16		133.16
30	O2 (%)		11.00		11.00		11.00			10.9		10.9		11.20	11.20		11.20
31																	
32	PCDD/PCDF (ng in sample)		0.04		0.04		0.04		0.04	0.097		0.097		0.0997	0.0997		0.0997
33	PCDD/PCDF (ng/dscm @ 7% O2)	0.0	0.016		0.016		0.016	0.2	0.041	0.041		0.041	12.5	0.038	0.038		0.035
34																	
35	TEQ Cond Avg	0.031															