	A	B
1	**Source Description**	
2		
3	Phase II ID No.	753
4	EPA ID No.	LAD041581422
5	Facility Name	Union Carbide Corp.
6	Facility Location	
7	City	Hahnville
8	State	LA
9	Unit ID Name/No.	Boiler 31
10	Other Sister Facilities	None (Boiler No. 30 no longer burns hazardous waste)
11	Combustor	Liquid-fired boiler
12	Combustor Characteristics	Watertube boiler. Package watertube boiler, 241 MMBtu/hr, 125000 lb/hr steam, air preheater
13	Capacity (MMBtu/hr)	241
14	Soot Blowing	Yes
15	APCS	None
16	APCS Characteristics	NA
17	Hazardous Wastes	Liq
18	Haz Waste Description	Liquid waste
19	Supplemental Fuel	Fuel gas
20		
21	Stack Characteristics	
22	Diameter (ft)	6
23	Height (ft)	60
24	Gas Velocity (ft/sec)	44.45
25	Gas Temperature (°F)	260
26		
27	Permitting Status	Tier IA for metals/chlorine
28	HWC Burn Status (Date if Terminated)	

	A	B
1	**Cond Description**	
2		
3	**753C10**	
4		
5	Report Name/Date	Trial Burn Report, Boiler 31, Union Carbide Corporation, June 1998
6	Report Prepar	TRC Environmental Corp
7	Testing Firm	TRC Environmental Corp
8	Testing Dates	March 4-5, 1998
9	Cond Dates	Mar-98
10	Cond Description	Risk burn -- normal operating conditions
11	Content	D/F, CO
12		
13	**753C11**	
14		
15	Report Name/Date	Trial Burn Report, Boiler 31, Union Carbide Corporation, June 1998
16	Report Prepar	TRC Environmental Corp
17	Testing Firm	TRC Environmental Corp
18	Testing Dates	March 6, 1998
19	Cond Dates	Mar-98
20	Cond Description	Trial burn (ash spiking)
21	Content	PM only (no DRE), CO, ash (titanium oxide) spiked

	B	C	D	E	F	G	H	I	J	K	L	M
1	**Stack Gas Emissions**											
2												
3	Cond ID	Comments	Units	7% O2		Run		Run		Run		Cond Avg
4						1		2		3		
5	**Condition 10**	**risk burn, normal operating conditions**										
6												
7	CO (RA)		ppmv	y		3.5		3.3		3		3.3
8												
9	Sampling Train	PCDD/PCDF										
10	Stack Gas Flowrate		dscfm			47401		47700		46841		47314
11	O2		%			12.5		13.3		13.4		13.1
12	Moisture		%			10.4		11.7		11.9		11.3
13	Temperature		°F			269.6		267.7		267.5		268.3
14												
15	Particle Size Distribution											
16	> 10 microns					100						
17	7.1-10					73.1						
18	4.8-7.1					69.8						
19	3.3-4.8					66.4						
20	2.1-3.3					62.8						
21	1.0-2.1					58.4						
22	0.64-1.0					56.5						
23	0.44-0.64					53.4						
24	0-0.44					50.8						
25												
26	**Condition 11**	**trial burn**										
27										sootblowing		
28	PM		gr/dscf	y		0.024		0.022		0.0541		0.0286
29	CO (RA)		ppmv	y		2.5		2.7		2.7		2.6
30												
31	Sampling Train	PM										
32	Stack Gas Flowrate		dscfm			46934		47448		47647		47343
33	O2		%			12		11.6		11.8		11.8
34	Moisture		%			11.7		11.9		12.2		11.9
35	Temperature		°F			260.8		260.5		260.2		260.5

	B	C	D	E	F	G	H	I	J	K	L
1	**Feedstreams**										
2											
3			Units		Run 1		Run 2		Run 3		Cond Avg
4											
5	**753C10**	**(risk burn)**									
6											
7	Feedstream Description				Liq waste		Liq waste		Liq waste		Liq waste
8	Feed Rate		lb/hr		4078		4015		4037		
9	Viscosity		cSt		13.2		12.8		13.2		
10	Heat Content		Btu/lb		8180		9700		8360		
11	Specific Gravity				0.88		0.88		0.88		
12	Ash		g/hr	nd	185	nd	182		366		
13	Chlorine		g/hr		35	nd	18		22		
14	Mercury		g/hr		0.085	nd	0.07	nd	0.07		
15	Lead		g/hr	nd	0.09	nd	0.09	nd	0.09		
16	Cadmium		g/hr	nd	0.004	nd	0.004	nd	0.004		
17	Arsenic		g/hr	nd	0.01	nd	0.01	nd	0.01		
18	Beryllium		g/hr	nd	0.009	nd	0.009	nd	0.009		
19	Chromium		g/hr		3.18		3.13		3.31		
20	Antimony		g/hr	nd	0.1	nd	0.1	nd	0.1		
21											
22	Stack Gas Flowrate		dscfm		47401		47700		46841		
23	O2		%		9.4		9.6		9.5		
24											
25	Haz Waste Firing Rate		M2 Btu/hr		33.4		38.9		33.7		35.4
26	Est. Total Firing Rate		M2 Btu/hr		174.6		172.6		171.0		172.7
27	Supplem Fuel Firing Rate		M2 Btu/hr		141.2		133.7		137.3		137.4
28											
29	*Feedrate MTEC Calculations*										
30	Ash		mg/dscm	nd	2.8	nd	2.8		5.6		2.8
31	Chlorine		µg/dscm		524.8	nd	272.9		336.7		332.7
32	Mercury		µg/dscm		1.3	nd	1.1	nd	1.1		0.8
33	Lead		µg/dscm	nd	1.3	nd	1.4	nd	1.4		0.7
34	Cadmium		µg/dscm	nd	0.1	nd	0.1	nd	0.1		0.0
35	Arsenic		µg/dscm	nd	0.1	nd	0.2	nd	0.2		0.1
36	Beryllium		µg/dscm	nd	0.1	nd	0.1	nd	0.1		0.1
37	Chromium		µg/dscm		47.7		47.5		50.7		48.6
38	Antimony		µg/dscm	nd	1.5	nd	1.5	nd	1.5		0.8
39	SVM		µg/dscm		0.1		0.1		0.1		0.7
40	LVM		µg/dscm		47.8		47.6		50.8		48.7
41											
42	**753C11**	**(trial burn)**									
43											
44	Feedstream Description				Liq waste		Liq waste		Liq waste		Liq Waste
45	Feed Rate		lb/hr		4016		4016		4074		
46	Viscosity		cSt		13.7		13.6		13.6		
47	Heat Content		Btu/lb		9160		8540		8360		
48	Specific Gravity				0.88		0.87		0.88		
49	Ash		g/hr		8327		8327		8514		**spiked ash**
50	Chlorine		g/hr		35		22	nd	18		
51	Mercury		g/hr		0.086	nd	0.07	nd	0.07		
52	Lead		g/hr	nd	0.09	nd	0.09	nd	0.09		
53	Cadmium		g/hr		0.005		0.004	nd	0.004		
54	Arsenic		g/hr	nd	0.01	nd	0.01	nd	0.01		
55	Beryllium		g/hr	nd	0.009	nd	0.009	nd	0.009		
56	Chromium		g/hr		3.22		3.22		3.18		
57	Antimony		g/hr	nd	0.1	nd	0.1	nd	0.1		
58											

	B	C	D	E	F	G	H	I	J	K	L
59	Stack Gas Flowrate		dscfm		46934		47448		47647		
60	O2		%		9.2		7.9		7.8		
61											
62	Thermal Feedrate		M2 Btu/hr		36.8		34.3		34.1		35.0
63	Est. Total Firing Rate		M2 Btu/hr		175.8		197.3		199.7		190.9
64	Supplem Fuel Firing Rate		M2 Btu/hr		139.0		163.0		165.6		155.9
65											
66	*Feedrate MTEC Calculations*										
67	Ash		mg/dscm		124.0		110.5		111.6		115.3
68	Chlorine		µg/dscm		521.1		291.8	nd	236.0		310.3
69	Mercury		µg/dscm		1.3	nd	0.9	nd	0.9		0.7
70	Lead		µg/dscm	nd	1.3	nd	1.2	nd	1.2		0.6
71	Cadmium		µg/dscm		0.1		0.1	nd	0.1		0.1
72	Arsenic		µg/dscm	nd	0.1	nd	0.1	nd	0.1		0.1
73	Beryllium		µg/dscm	nd	0.1	nd	0.1	nd	0.1		0.1
74	Chromium		µg/dscm		47.9		42.7		41.7		44.1
75	Antimony		µg/dscm	nd	1.5	nd	1.3	nd	1.3		0.7
76	SVM		µg/dscm		0.7		0.6		0.6		0.7
77	LVM		µg/dscm		48.1		42.8		41.8		44.2
78											
79	**BIF Feedrate Limits**										
80											
81	Chlorine		g/hr		5622						
82	Mercury		g/hr		1124						
83	Lead		g/hr		1265						
84	Cb		g/hr		1.97						
85	Arsenic		g/hr		1.62						
86	Beryllium		g/hr		1.42						
87	Chromium		g/hr		10.5						
88	Antimony		g/hr		4217						

	A	B	C	D	E	F
1	**Process Information**					
2						
3		Units	Run	Run	Run	Avg
4			1	2	3	
5						
6	**753C10 (risk burn)**					
7						
8	Temp Upstream of Air Preheater	°F	701	697	698	
9	Steam Production Rate	lb/hr	98220	95160	95140	
10						
11						
12	**753C11 (trial burn)**					
13						
14	Temp Upstream of Air Preheater	°F	701	714	719	
15	Steam Production Rate	lb/hr	95300	106570	106330	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	**PCDD/PCDF**														
2															
3	Facility Name and ID: Union Carbide, Hahnville, LA														
4	Condition ID: 753C10														
5	Condition/Test Date: March 4-5, 1998														
6															
7			I-TEF			Run 1				Run 2				Run 3	
8			Wght Fact		Total	Total	TEQ		Total	Total	TEQ		Total	Total	TEQ
9						1/2 ND	1/2 ND			1/2 ND	1/2 ND			1/2 ND	1/2 ND
10	Detected in sample volume (ng)														
11		2,3,7,8-TCDD	1		0.0120	0.0120	0.0120		0.0082	0.0082	0.0082		0.0090	0.0090	0.0090
12		TCDD Other	0												
13		1,2,3,7,8-PCDD	0.5		0.0037	0.0037	0.0019	nd	0.0025	0.0013	0.0006	nd	0.0039	0.0020	0.0010
14		PCDD Other	0												
15		1,2,3,4,7,8-HxCDD	0.1		0.0092	0.0092	0.0009	nd	0.0025	0.0013	0.0001	nd	0.0032	0.0016	0.0002
16		1,2,3,6,7,8-HxCDD	0.1		0.0120	0.0120	0.0012		0.0055	0.0055	0.0006		0.0060	0.0060	0.0006
17		1,2,3,7,8,9-HxCDD	0.1		0.0270	0.0270	0.0027		0.0100	0.0100	0.0010		0.0130	0.0130	0.0013
18		HxCDD Other	0												
19		1,2,3,4,6,7,8-HpCDD	0.01		0.1000	0.1000	0.0010		0.0520	0.0520	0.0005		0.0410	0.0410	0.0004
20		HpCDD Other	0												
21		OCDD	0.001		0.3200	0.3200	0.0003		0.2100	0.2100	0.0002		0.1400	0.1400	0.0001
22		2,3,7,8-TCDF	0.1		0.0470	0.0470	0.0047		0.0320	0.0320	0.0032		0.0190	0.0190	0.0019
23		TCDF Other	0												
24		1,2,3,7,8-PCDF	0.05		0.0088	0.0088	0.0004		0.0054	0.0054	0.0003	nd	0.0026	0.0013	0.0001
25		2,3,4,7,8-PCDF	0.5		0.0140	0.0140	0.0070		0.0079	0.0079	0.0040		0.0057	0.0057	0.0029
26		PCDF Other	0												
27		1,2,3,4,7,8-HxCDF	0.1		0.0300	0.0300	0.0030		0.0170	0.0170	0.0017		0.0120	0.0120	0.0012
28		1,2,3,6,7,8-HxCDF	0.1		0.0110	0.0110	0.0011		0.0076	0.0076	0.0008		0.0048	0.0048	0.0005
29		2,3,4,6,7,8-HxCDF	0.1		0.0180	0.0180	0.0018		0.0130	0.0130	0.0013		0.0084	0.0084	0.0008
30		1,2,3,7,8,9-HxCDF	0.1	nd	0.0029	0.0015	0.0001	nd	0.0029	0.0015	0.0001	nd	0.0023	0.0012	0.0001
31		HxCDF Other	0												
32		1,2,3,4,6,7,8-HpCDF	0.01	nd	0.0019	0.0010	0.0000		0.0370	0.0370	0.0004		0.0190	0.0190	0.0002
33		1,2,3,4,7,8,9-HpCDF	0.01	nd	0.0023	0.0012	0.0000		0.0086	0.0086	0.0001	nd	0.0032	0.0016	0.0000
34		HpCDF Other	0												
35		OCDF	0.001		0.0960	0.0960	0.0001		0.0540	0.0540	0.0001		0.0250	0.0250	0.0000
36															
37		Gas sample volume (dscm)					6.01				6.10				6.04
38		O2 (%)					12.50				13.30				13.40
39															
40		PCDD/PCDF (ng in sample)					0.0383				0.0231				0.0203
41		PCDD/PCDF (ng/dscm @ 7% O2)					0.0105				0.0069				0.0062
42															
43		TEQ Cond Avg	0.0078												
44		As reported in test report					0.0110				0.0071				0.0066