	A	B
1	**Source Description**	
2		
3	Phase II ID No.	849
4	EPA ID No.	TXD008092793
5	Facility Name	Dow Chemical Company
6	Facility Location	
7	City	Freeport
8	State	TX
9	Unit ID Name/No.	F-820AB
10	Other Sister Facilities	None
11	Combustor	Liquid-fired boiler
12	Combustor Characteristics	Firetube boiler. Cleaver-Brooks boiler, horizontal direct fired comb chamber, capacity 32.2 MMBtu/hr, operated @ 1200C
13	Capacity (MMBtu/hr)	32
14	Soot Blowing	None
15	APCS	VS/WS
16	APCS Characteristics	D-830 Venturi scrubber, caustic used in scrubber liquor, scrubber liquid tank gases passed through also
17	Hazardous Wastes	Liq
18	Haz Waste Description	Liquid wastes (TDI Tars)
19	Supplemental Fuel	Natural gas
20		
21	Stack Characteristics	
22	Diameter (ft)	3.5
23	Height (ft)	68.4
24	Gas Velocity (ft/sec)	28.5
25	Gas Temperature (°F)	
26		
27	Permitting Status	Tier I for all metals, Tier lll (Cr+6)
28	HWC Burn Status (Date if Terminated)	

	A	B
1	**Cond Description**	
2		
3	**849C1**	
4		
5	Report Name/Date	F-820AB Trial Burn Report, September 2, 1998
6	Report Prepare	Focus Environmental, Inc.
7	Testing Firm	METCO Environmental
8	Testing Dates	June 8-9,1998
9	Cond Dates	Jun-98
10	Condition Descr	Trial burn, max feed rate, max comb temp and max comb gas flow, min APCS
11	Content	PM, HCl/Cl2, Cr+6, CO, DRE (ODCB)
12		
13	**849C2**	
14		
15	Report Name/Date	F-820AB Trial Burn Report, September 2, 1998
16	Report Prepare	Focus Environmental, Inc.
17	Testing Firm	METCO Environmental
18	Testing Dates	June 3-4, 1998
19	Cond Dates	Jun-98
20	Condition Descr	Trial burn, min comb temp
21	Content	CO, DRE (ODCB)
22		
23	**849C3**	
24		
25	Report Name/Date	F-820AB Second Trial Burn Report and Risk Burn Report, December 9, 1998
26	Report Prepare	Focus Environmental, Inc.
27	Testing Firm	METCO Environmental
28	Testing Dates	September 15-16, 1998
29	Cond Dates	Sep-98
30	Condition Descr	Trial burn, high capacity, max prod, max feed
31	Content	PM, HCl/Cl2, Cr+6, CO (testing only on F 820B)
32		
33	**849C4**	
34		
35	Report Name/Date	F-820AB Second Trial Burn Report and Risk Burn Report, December 9, 1998
36	Report Prepare	Focus Environmental, Inc.
37	Testing Firm	METCO Environmental
38	Testing Dates	September 15-16, 1998
39	Cond Dates	Sep-98
40	Condition Descr	Trial burn, min comb temp
41	Content	CO, DRE (ODCB) (testing only on F 820A)
42		
43	**849C5**	
44		
45	Report Name/Date	F-820AB Second Trial Burn Report and Risk Burn Report, December 9, 1998
46	Report Prepare	Focus Environmental, Inc.
47	Testing Firm	METCO Environmental
48	Testing Dates	June 1-2, 1998
49	Cond Dates	Jun-98
50	Condition Descr	Risk burn, slightly above normal conditions
51	Content	Metals, PCDD/F, PSD

	B	C	D	E	F	G	H	I	J	K	L	M
1	**Stack Gas Emissions**											
2												
3		Comments	Units	7% O2		1		2		3		Average
4												
5	**Condition 1**	**Capacity burn**										
6												
7	PM		gr/dscf	y		0.0041		0.0031		0.0033		0.0035
8	CO (MHRA)		ppmv	y		11.1		9.5		14.4		11.7
9	CO (RA)		ppmv	y		6.5		6		8.3		6.9
10	HCl		g/hr			303		313		374		330.0
11	Cl2		g/hr			4.69	nd	3.6	nd	3.4	nd	3.9
12	Chromium (+6)		g/hr			0		0.024		0.039		0.021
13	Chromium		g/hr			0.06		0.19		0.18		0.140
14												
15	Chromium		µg/dscm	y		3.2		10.5		8.6		7.3
16	Chromium (+6)		µg/dscm	y		0.0		1.3		1.9		1.1
17	HCl		ppmv	y		10.7		11.5		11.9		11.4
18	Cl2		ppmv	y		0.1		0.1		0.1		0.1
19	Total Chlorine		ppmv	y		10.92		11.66		12.02		11.56
20												
21	POHC DRE	ODCB										
22	Feed rate											
23	Emission Rate		lb/hr			1.48E-05	nd	3.60E-06	nd	3.60E-06		
24	DRE		%			99.99979	>	99.99995	>	99.99995		
25												
26	Sampling Train	PM, HCl,Cl2										
27	Stack Gas Flowrate		dscfm			9949		9586		10170		9902
28	O2		%			5.4		5.4		4		4.9
29	Moisture		%									
30	Temperature		°F									
31												
32	Sampling Train	Cr+6/Cr										
33	Stack Gas Flowrate		dscfm			9240		9516		9863		9540
34	O2		%									
35	Moisture		%									
36	Temperature		°F									
37												
38	Sampling Train	DRE										
39	Stack Gas Flowrate		dscfm			9394		9335		9955		9561
40	O2		%									
41	Moisture		%									
42	Temperature		°F									
43												
44	**Condition 2**	**DRE burn**										
45												
46	CO (MHRA)		ppmv	y		90.1		54.1		49.4		64.6
47	CO (RA)		ppmv	y		53.7		30.3		18.1		34.0
48												
49	POHC DRE	ODCB										
50	Feedrate											
51	Emission Rate		lb/hr			5.34E-04		1.01E-03	nd	8.70E-05		
52	DRE		%			99.99241		99.98564	>	99.99877		
53												
54	Sampling Train	DRE										
55	Stack Gas Flowrate		dscfm			6080		6737		6944		6587.0
56	O2		%									
57	Moisture		%									
58	Temperature		°F									
59												
60	**Condition 3**	**Capacity burn**										
61												
62	PM		gr/dscf	y		0.012		0.012		0.011		0.012
63	CO (MHRA)		ppmv	y		26.4		24.7		12		21.0
64	CO (RA)		ppmv	y		13.1		13		11.2		12.4
65	HCl		g/hr			303		313		374		330.0
66	Cl2		g/hr			1.91		2.02		2.03		2.0
67	Chromium (+6)		g/hr		nd			0.018		0.02		0.019
68	Chromium		g/hr			0.21		0.11		0.097		0.14
69												
70	Chromium		µg/dscm	y		18.2		8.8		7.6		11.3
71	Chromium (+6)		µg/dscm	y	nd			1.4		1.6		1.6

	B	C	D	E	F	G	H	I	J	K	L	M
72	HCl		ppmv	y		17.6		16.7		19.7		18.0
73	Cl2		ppmv	y		0.1		0.1		0.1		0.1
74	Total Chlorine		ppmv	y		17.66		16.76		19.78		18.09
75												
76	Sampling Train	PM, HCl/Cl2										
77	Stack Gas Flowrate		dscfm			7369		7500		7641		7503.3
78	O2		%			8.1		7.2		7.3		7.5
79	Moisture		%									
80	Temperature		°F									
81												
82	Sampling Train	Cr+6/Cr										
83	Stack Gas Flowrate		dscfm			7811		7884		7954		7883.0
84	O2		%									
85	Moisture		%									
86	Temperature		°F									
87												
88	**Condition 4**	**DRE burn**										
89												
90	CO (MHRA)		ppmv	y		26.4		24.7		25.5		25.5
91	CO (RA)		ppmv	y		13.1		13.0		15.4		13.8
92												
93	POHC DRE	ODCB										
94	Feedrate											
95	Emission Rate		lb/hr			4.10E-04		8.63E-05		6.88E-05		
96	DRE		%			99.99416		99.99876		99.99902		
97												
98	Sampling Train	DRE										
99	Stack Gas Flowrate		dscfm			7640		6950		7340		7310.0
100	O2		%									
101	Moisture		%									
102	Temperature		°F									
103												
104	**Condition 5**	**Risk Burn**										
105												
106	CO (MHRA)		ppmv	y		33.8		26		44.6		34.8
107	CO (RA)		ppmv	y		12.3		13.2		21.3		15.6
108	Antimony		µg/dscf	n	nd	0.0035	nd	0.0032	nd	0.0064		
109	Arsenic		µg/dscf	n	nd	0.0032	nd	0.003	nd	0.0032		
110	Barium		µg/dscf	n		0		0.0537		0.0011		
111	Beryllium		µg/dscf	n	nd	0.0012	nd	0.001	nd	0.0013		
112	Cadmium		µg/dscf	n		0.0161		0.0106	nd	0.011		
113	Chromium		µg/dscf	n		0.0873		0.123		0.857		
114	Cobalt		µg/dscf	n	nd	0.66		0.922	nd	1.2		
115	Copper		µg/dscf	n		0.0405		0.0402		0.0557		
116	Lead		µg/dscf	n		0.0745		0.0653	nd	0.066		
117	Manganese		µg/dscf	n		0.16		0.175		0.137		
118	Mercury		µg/dscf	n	nd	0.0015	nd	0.0066	nd	0.0066		
119	Molybdenum		µg/dscf	n		0.223	nd	0.16	nd	0.18		
120	Nickel		µg/dscf	n		19		30.1		38.8		
121	Selenium		µg/dscf	n	nd	0.0061	nd	0.0057	nd	0.006		
122	Silver		µg/dscf	n	nd	0.00082	nd	0.003	nd	0.0047		
123	Thallium		µg/dscf	n	nd	0.0053	nd	0.005	nd	0.0052		
124	Vanadium		µg/dscf	n	nd	0.12	nd	0.11	nd	0.12		
125												
126	Antimony		µg/dscm	y	nd	0.1	nd	0.1	nd	0.2		0.1
127	Arsenic		µg/dscm	y	nd	0.1	nd	0.1	nd	0.1		0.05
128	Barium		µg/dscm	y		0.0		1.7		0.03		0.6
129	Beryllium		µg/dscm	y	nd	0.04	nd	0.03	nd	0.04		0.02
130	Cadmium		µg/dscm	y		0.5		0.3	nd	0.3		0.3
131	Chromium		µg/dscm	y		2.8		3.8		26.5		11.0
132	Cobalt		µg/dscm	y	nd	20.8		28.7	nd	37.1		19.2
133	Copper		µg/dscm	y		1.3		1.3		1.7		1.4
134	Lead		µg/dscm	y		2.3		2.0	nd	2.0		1.8
135	Manganese		µg/dscm	y		5.0		5.4		4.2		4.9
136	Mercury		µg/dscm	y	nd	0.05	nd	0.2	nd	0.2		0.1
137	Molybdenum		µg/dscm	y		7.0	nd	5.0	nd	5.6		4.1
138	Nickel		µg/dscm	y		598.7		936.5		1199.6		911.6
139	Selenium		µg/dscm	y	nd	0.2	nd	0.2	nd	0.2		0.1
140	Silver		µg/dscm	y	nd	0.0	nd	0.1	nd	0.1		0.04
141	Thallium		µg/dscm	y	nd	0.2	nd	0.2	nd	0.2		0.1
142	Vanadium		µg/dscm	y	nd	3.8	nd	3.4		3.7		2.4

	B	C	D	E	F	G	H	I	J	K	L	M
143	SVM		µg/dscm	y		2.9		2.4		1.4		2.2
144	LVM		µg/dscm	y		2.8		3.9		26.6		11.1
145												
146	Sampling Train	Metals										
147	Stack Gas Flowrate		dscfm			8608		8515		8558		8560
148	O2		%									
149	Moisture		%									
150	Temperature		°F									
151												
152	Sampling Train	PCDD/PCDF										
153	Stack Gas Flowrate		dscfm			9212		8377		8328		8639
154	O2		%			5.3		5.1		5		5.1
155	Moisture		%									
156	Temperature		°F									
157												
158	Particle Size Distribution	in microns										
159	0.5-1		% wt			4.1						
160	1-5		% wt			71.3						
161	5-10		% wt			1.1						
162	10-20		% wt			5.8						
163	20-50		% wt			11.3						
164	50-100		% wt			6.4						
165	>100		% wt			0.0						

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	**Feedstreams**																					
2																						
3					Run 1		Run 2		Run 3		Cond Avg		Run 1		Run 2		Run 3		Cond Avg		Run 1	
4	**849C1**	**Capacity burn**																				
5																						
6	Feedstream Description				TDI-Tars		TDI-Tars		TDI-Tars		TDI-Tars		Spike		Spike		Spike		Spike		Total	
7	Feed Rate		lb/hr										26.7		26.7		26.7		26.7			
8	F820A		lb/hr		1400		1400		1400		1400											
9	F820B		lb/hr		1400		1401		1403		1401											
10	Thermal Feedrate		MM Btu/hr		30.8		31.2		31.2		31										30.8	
11	Viscosity		cps		580		970		990		847											
12	Heating Value		Btu/lb		11000		11100		11100		11067											
13	Density		lb/gal		10.6		10.9		10.8		11											
14	Ash		lb/hr		0.26		0.23		0.31		0.27		0.33		0.33		0.33		0.33			
15	Chlorine		lb/hr		11.8		12.5		12.6		12.30		3.4		3.4		3.4		3.4			
16	Antimony		g/hr		0.63		0.38		0.43		0.48											
17	Arsenic		g/hr	nd	0.03	nd	0.03	nd	0.03		0.03											
18	Barium		g/hr	nd	0.04	nd	0.04		0.2		0.09											
19	Beryllium		g/hr	nd	0.04	nd	0.04	nd	0.04		0.04											
20	Cadmium		g/hr		0.57		0.54		0.41		0.51											
21	Chromium		g/hr		0.6		0.49		0.51		0.53		2.50		2.50		2.50		2.50			
22	Lead		g/hr		0.57		0.68		0.51		0.59											
23	Mercury		g/hr	nd	0.06	nd	0.06	nd	0.06		0.06											
24	Silver		g/hr	nd	0.07	nd	0.07	nd	0.07		0.07											
25	Thallium		g/hr	nd	0.5	nd	0.5	nd	0.5		0.50											
26																						
27	Stack Gas Flowrate		dscfm		9949		9586		10170		9901.7		9949		9586		10170		9901.7			
28	Oxygen		%		5.4		5.4		4		4.9		5.4		5.4		4		4.9			
29																						
30	Thermal Feedrate		MMBtu/hr		30.8		31.1		31.1		31.0											
31	Estimated Firing Rate		MMBtu/hr		49.3		47.5		54.9		50.5											
32																						
33	*Feedrate MTEC Calculations*																					
34	Ash		mg/dscm		6.3		5.8		6.7		6.2		8.0		8.3		7.1		7.8		14.2	
35	Chlorine		ug/dscm		284593		312892		272802		290095.5		82001		85107		73613		80240.4		366594.3	
36	Antimony		ug/dscm		33.5		21.0		20.5		25.0											
37	Arsenic		ug/dscm	nd	1.6	nd	1.7	nd	1.4		0.8											
38	Barium		ug/dscm	nd	2.1	nd	2.2		9.5		3.9											
39	Beryllium		ug/dscm	nd	2.1	nd	2.2	nd	1.9		1.0											
40	Cadmium		ug/dscm		30.3		29.8		19.6		26.5											
41	Chromium		ug/dscm		31.9		27.0		24.3		27.7		132.8		137.8		119.2		130.0			
42	Lead		ug/dscm		30.3		37.5		24.3		30.7											
43	Mercury		ug/dscm	nd	3.2	nd	3.3	nd	2.9		1.6										1.6	
44	Silver		ug/dscm	nd	3.7	nd	3.9	nd	3.3		1.8											
45	Thallium		ug/dscm	nd	26.6	nd	27.6	nd	23.8		13.0											
46	SVM		ug/dscm		60.6		67.3		43.9		57.2										60.6	
47	LVM		ug/dscm		33.7		28.9		26.0		29.6		132.81		137.84		119.22		130.0		166.5	
48																						
49	**849C2**	**DRE Burn**			Run 1		Run 2		Run 3		Cond Avg		Run 1		Run 2		Run 3		Cond Avg		Run 1	
50																						
51	Feedstream Description				TDI Tars		TDI Tars		TDI Tars		TDI Tars		Spike		Spike		Spike		Spike	Total		
52	Feed Rate		lb/hr										7.05		7.05		7.05		7.05			
53	F820A		lb/hr		351		351		351		351.0											
54	F820B		lb/hr		351		351		353		352.0											
55	Thermal Feedrate		MMBtu/hr		8		8		8.1		8.0										8	
56	Heating Value		Btu/lb		11400		11500		11500		11466.7											
57	Ash		lb/hr		0.11		0.11		0.11		0.11											
58	Chlorine		lb/hr		3.9		4.11		3.85		3.95		3.4		3.4		3.4		3.4			
59	ODCB		lb/hr																7.05			
60																						

	B	X	Y	Z	AA	AB
1	**Feedstreams**					
2						
3		Run 2		Run 3		Cond Avg
4	**849C1**					
5						
6	Feedstream Description	Total		Total		Total
7	Feed Rate					
8	F820A					
9	F820B					
10	Thermal Feedrate	31.2		31.2		31.06667
11	Viscosity					
12	Heating Value					
13	Density					
14	Ash					
15	Chlorine					
16	Antimony					
17	Arsenic					
18	Barium					
19	Beryllium					
20	Cadmium					
21	Chromium					
22	Lead					
23	Mercury					
24	Silver					
25	Thallium					
26						
27	Stack Gas Flowrate					
28	Oxygen					
29						
30	Thermal Feedrate					
31	Estimated Firing Rate					
32						
33	*Feedrate MTEC Calculation*					
34	Ash	14.0		13.9		14.0
35	Chlorine	397998.4		346414.7		370335.8
36	Antimony					
37	Arsenic					
38	Barium					
39	Beryllium					
40	Cadmium					
41	Chromium					
42	Lead					
43	Mercury	1.7		1.4		1.6
44	Silver					
45	Thallium					
46	SVM	67.3		43.9		57.2
47	LVM	166.8		145.2		159.5
48						
49	**849C2**	Run 2		Run 3		Cond Avg
50						
51	Feedstream Description	Total		Total		Total
52	Feed Rate					
53	F820A					
54	F820B					
55	Thermal Feedrate	8		8.1		8.0
56	Heating Value					
57	Ash					
58	Chlorine					
59	ODCB					
60						

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
61	Stack Gas Flowrate		dscfm		6080		6737		6944		6587		6080		6737		6944		6587			
62	Oxygen		%		5.4		5.4		4		4.9		5.4		5.4		4		4.9			
63																						
64	Thermal Feedrate		MMBtu/hr		8.0		8.1		8.1		8.0											
65	Estimated Firing Rate		MMBtu/hr		30.1		33.4		37.5		33.6											
66																						
67	*Feedrate MTEC Calculations*																					
68	Ash		mg/dscm		4.3		3.9		3.5		3.9										4.3	
69	Chlorine		ug/dscm		153916		146385		122081		139711		134183		121097		107812		120257		288098.4	
70																						
71																						
72	**849C3**	**Capacity burn**			Run 1		Run 2		Run 3		Cond Avg		Run 1		Run 2		Run 3		Cond Avg		Run 1	
73																						
74	Feedstream Description				TDI Tars		TDI Tars		TDI Tars		TDI Tars		Spike		Spike		Spike		Spike		Total	
75																						
76	Feed Rate		lb/hr		1401		1399		1400		1400											
77	Thermal Feedrate		MMBtu/hr		16.2		16.1		15.9		16.1										16.2	
78	Heating Value		Btu/lb		11600		11500		11400		11500.0											
79	Ash		lb/hr		0.4		0.29		0.35		0.35		1		1		1		1.00			
80	Chlorine		lb/hr		11.3		9.43		9.86		10.20											
81	Antimony		g/hr		0.35		0.33		0.31		0.33											
82	Arsenic		g/hr	nd	0.02	nd	0.02	nd	0.02		0.02											
83	Barium		g/hr		0.038	nd	0.02	nd	0.02		0.03											
84	Beryllium		g/hr	nd	0.02	nd	0.02	nd	0.02		0.02											
85	Cadmium		g/hr		0.22	nd	0.1		0.16		0.16											
86	Chromium		g/hr		1.1		0.95		1.1		1.05		3.3		3.3		3.3		3.3			
87	Lead		g/hr		0.29		0.36		0.28		0.31											
88	Mercury		g/hr	nd	0.06	nd	0.06	nd	0.06		0.06											
89	Silver		g/hr	nd	0.04	nd	0.04	nd	0.04		0.04											
90	Thallium		g/hr	nd	0.2	nd	0.2	nd	0.2		0.20											
91																						
92	Stack Gas Flowrate		dscfm		7369		7500		7641		7503.3		7369		7500		7641		7503.3			
93	Oxygen		%		8.1		7.2		7.3		7.5		8.1		7.2		7.3		7.5			
94																						
95	Thermal Feedrate		MMBtu/hr		16.3		16.1		16.0		16.1											
96	Estimated Firing Rate		MMBtu/hr		30.2		32.9		33.2		32.1											
97																						
98	*Feedrate MTEC Calculations*																					
99	Ash		mg/dscm		15.8		10.5		12.5		12.92		39.4		36.2		35.8		37.10		55.1	
100	Chlorine		ug/dscm		444966		341050		352576		379530.27										444965.5	
101	Antimony		ug/dscm		30.4		26.3		24.4		27.02											
102	Arsenic		ug/dscm	nd	1.7	nd	1.6	nd	1.6		0.82											
103	Barium		ug/dscm		3.3	nd	1.6	nd	1.6		1.63											
104	Beryllium		ug/dscm	nd	1.7	nd	1.6	nd	1.6		0.82											
105	Cadmium		ug/dscm		19.1	nd	8.0		12.6		11.89											
106	Chromium		ug/dscm		95.4		75.7		86.6		85.91		286.2		262.9		259.9		269.67			
107	Lead		ug/dscm		25.2		28.7		22.1		25.29											
108	Mercury		ug/dscm	nd	5.2	nd	4.8	nd	4.7		2.45										2.6	
109	Silver		ug/dscm	nd	3.5	nd	3.2	nd	3.2		1.63											
110	Thallium		ug/dscm	nd	17.3	nd	15.9	nd	15.8		8.17											
111	SVM		ug/dscm		44.2		32.7		34.7		37.18										44.2	
112	LVM		ug/dscm		97.1		77.3		88.2		87.54		286.2		262.9		259.9		269.7		383.4	
113																						
114	**849C4**	**DRE burn**																				
115					Run 1		Run 2		Run 3		Cond Avg		Run 1		Run 2		Run 3		Cond Avg		Run 1	
116	Feedstream Description				TDI Tars		TDI Tars		TDI Tars		TDI Tars		Spike		Spike		Spike		Spike		Total	
117																						
118	Feed Rate		lb/hr		441		441		441		441		7.05		7.05		7.05		7.05			
119	Thermal Feedrate		MMBtu/hr		5.1		5		5		5.03										5.1	
120	Heating Value		Btu/lb		11600		11400		11300		11433.3											

	B	X	Y	Z	AA	AB
61	Stack Gas Flowrate					
62	Oxygen					
63						
64	Thermal Feedrate					
65	Estimated Firing Rate					
66						
67	*Feedrate MTEC Calculation*					
68	Ash	3.9		3.5		3.9
69	Chlorine	267482.3		229892.9		259968.1
70						
71						
72	**849C3**	Run 2		Run 3		Cond Avg
73						
74	Feedstream Description	Total		Total		Total
75						
76	Feed Rate					
77	Thermal Feedrate	16.1		15.9		16.1
78	Heating Value					
79	Ash					
80	Chlorine					
81	Antimony					
82	Arsenic					
83	Barium					
84	Beryllium					
85	Cadmium					
86	Chromium					
87	Lead					
88	Mercury					
89	Silver					
90	Thallium					
91						
92	Stack Gas Flowrate					
93	Oxygen					
94						
95	Thermal Feedrate					
96	Estimated Firing Rate					
97						
98	*Feedrate MTEC Calculation*					
99	Ash	46.7		48.3		50.0
100	Chlorine	341049.6		352575.7		379530.3
101	Antimony					
102	Arsenic					
103	Barium					
104	Beryllium					
105	Cadmium					
106	Chromium					
107	Lead					
108	Mercury	2.4		2.4		2.5
109	Silver					
110	Thallium					
111	SVM	32.7		34.7		37.2
112	LVM	340.2		348.1		357.2
113						
114	**849C4**					
115		Run 2		Run 3		Cond Avg
116	Feedstream Description	Total		Total		Total
117						
118	Feed Rate					
119	Thermal Feedrate	5.0		5.0		5.0
120	Heating Value					

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
121	Ash		lb/hr		0.13		0.11		0.11		0.1											
122	Chlorine		lb/hr		3.55		3.1		3.09		3.2		3.39		3.37		3.38		3.38			
123	ODCB		lb/hr																7			
124																						
125	Stack Gas Flowrate		dscfm		7640		6950		7340		7310		7640		6950		7340		7310			
126	Oxygen		%		8.1		7.2		7.3		7.5		8.1		7.2		7.3		7.5			
127																						
128	Thermal Feedrate		MMBtu/hr		5.1		5.0		5.0		5.0											
129	Estimated Firing Rate		MMBtu/hr		31.3		30.4		31.9		31.3											
130																						
131	*Feedrate MTEC Calculations*																					
132	Ash		mg/dscm		4.9		4.3		4.1		4.4										4.9	
133	Chlorine		ug/dscm		134832		120988		115024		123454		128755		131526		125819		128524		263586.2	
134																						
135	**849C5**	**Risk burn**																				
136					Run 1		Run 2		Run 3		Cond Avg											
137	Feedstream Description				TDI Tars		TDI Tars		TDI Tars		TDI Tars											
138																						
139	Feed Rate		lb/hr																			
140	F820A		lb/hr		1199		1199		1199		1199											
141	F820B		lb/hr		1201		1201		1201		1201											
142	Thermal Feedrate		MMBtu/hr		27		27.1		27		27											
143	Heating Value		Btu/lb		11300		11300		11300		11300											
144	Ash		lb/hr		0.372		0.24		0.309		0.31											
145	Chlorine		lb/hr		14.2		12.9		15.1		14.07											
146	Antimony		g/hr		0.307		0.47		0.378		0.39											
147	Arsenic		g/hr	nd	0.24	nd	0.24	nd	0.24		0.24											
148	Barium		g/hr	nd	0.037	nd	0.037	nd	0.471		0.18											
149	Beryllium		g/hr	nd	0.031	nd	0.031	nd	0.031		0.03											
150	Cadmium		g/hr		0.203		0.232		0.268		0.23											
151	Chromium		g/hr		0.465		0.471		0.526		0.49											
152	Lead		g/hr		0.473		0.42		0.42		0.44											
153	Mercury		g/hr	nd	0.44	nd	0.44	nd	0.44		0.44											
154	Nickel		g/hr		32		31.4		34.7		32.70											
155	Se		g/hr		0.664		0.737		0.537		0.65											
156	Silver		g/hr	nd	0.061	nd	0.061	nd	0.061		0.06											
157	Thallium		g/hr	nd	0.39	nd	0.39	nd	0.39		0.39											
158	Zinc		g/hr		0.554		0.756		1.57		0.96											
159																						
160	Stack Gas Flowrate		dscfm		8608		8515		8558		8560.3											
161	Oxygen		%		5.3		5.1		5		5.1											
162																						
163	Thermal Feedrate		MMBtu/hr		27.1		27.1		27.1		27.1											
164	Estimated Firing Rate		MMBtu/hr		42.9		43.0		43.5		43.1											
165																						
166	*Feedrate MTEC Calculations*																					
167	Ash		mg/dscm		10.3		6.6		8.4		8.5											
168	Chlorine		ug/dscm		393307.9		356659.8		412791.6		387586.4											
169	Antimony		ug/dscm		18.7		28.6		22.8		23.4											
170	Arsenic		ug/dscm	nd	14.6	nd	14.6	nd	14.5		7.3											
171	Barium		ug/dscm	nd	2.3	nd	2.3	nd	28.4		5.5											
172	Beryllium		ug/dscm	nd	1.9	nd	1.9	nd	1.9		0.9											
173	Cadmium		ug/dscm		12.4		14.1		16.1		14.2											
174	Chromium		ug/dscm		28.4		28.7		31.7		29.6											
175	Lead		ug/dscm		28.9		25.6		25.3		26.6											
176	Mercury		ug/dscm	nd	26.8	nd	26.8	nd	26.5		13.4											
177	Nickel		ug/dscm		1952.3		1912.2		2089.4		1984.6											
178	Se		ug/dscm		40.5		44.9		32.3		39.2											
179	Silver		ug/dscm	nd	3.7	nd	3.7	nd	3.7		1.9											
180	Thallium		ug/dscm	nd	23.8	nd	23.8	nd	23.5		11.8											

	B	X	Y	Z	AA	AB
121	Ash					
122	Chlorine					
123	ODCB					
124						
125	Stack Gas Flowrate					
126	Oxygen					
127						
128	Thermal Feedrate					
129	Estimated Firing Rate					
130						
131	*Feedrate MTEC Calculation*					
132	Ash	4.3		4.1		4.4
133	Chlorine	252514.7		240842.9		251978.7
134						
135	**849C5**					
136						
137	Feedstream Description					
138						
139	Feed Rate					
140	F820A					
141	F820B					
142	Thermal Feedrate					
143	Heating Value					
144	Ash					
145	Chlorine					
146	Antimony					
147	Arsenic					
148	Barium					
149	Beryllium					
150	Cadmium					
151	Chromium					
152	Lead					
153	Mercury					
154	Nickel					
155	Se					
156	Silver					
157	Thallium					
158	Zinc					
159						
160	Stack Gas Flowrate					
161	Oxygen					
162						
163	Thermal Feedrate					
164	Estimated Firing Rate					
165						
166	*Feedrate MTEC Calculation*					
167	Ash					
168	Chlorine					
169	Antimony					
170	Arsenic					
171	Barium					
172	Beryllium					
173	Cadmium					
174	Chromium					
175	Lead					
176	Mercury					
177	Nickel					
178	Se					
179	Silver					
180	Thallium					

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
181	Zinc		ug/dscm		33.8		46.0		94.5		58.1											
182	SVM		ug/dscm		41.2		39.7		41.4		40.8											
183	LVM		ug/dscm		36.6		36.9		39.8		37.8											

	B	X	Y	Z	AA	AB
181	Zinc					
182	SVM					
183	LVM					

	A	B	C
1	**Process Information**		
2			Cond Avg
3	**849C1 Capacity burn**		
4			
5	F-820A Comb Temp	^{o}F	2055
6	F-820B Comb Temp	^{o}F	2064
7	F-820A Prod Rate	gpm	49.5
8	F-820B Prod Rate	gpm	44.3
9	D-830 Scrubber Effluent pH	pH	8.2
10	8201-A Venturi Flow	gpm	323
11	8201-B Venturi Flow	gpm	323
12			
13	**849C2 DRE burn**		
14			
15	F-820A Comb Temp	^{o}F	1407.2
16	F-820B Comb Temp	^{o}F	1409.0
17	F-820A Prod Rate	gpm	16.6
18	F-820B Prod Rate	gpm	15.1
19	D-830 Scrubber Effluent pH	pH	8.10
20	8201-A Venturi Flow	gpm	352.0
21	8201-B Venturi Flow	gpm	360.0
22			
23	**849C3 Capacity burn**		
24			
25	F-820B Comb Temp	^{o}F	2109.2
26	Prod Rate	gpm	43.7
27	D-830 Scrubber Effluent pH	pH	8
28	8201-B Venturi Flow	gpm	319
29			
30	**849C4 DRE burn**		
31			
32	F-820A Comb Temp	^{o}F	1455.8
33	Prod Rate	gpm	18.9
34	D-830 Scrubber Effluent pH	pH	8
35	8201-A Venturi Flow	gpm	475
36			
37	**849C5 Risk burn**		
38			
39	F-820A Comb Temp	^{o}F	1907.6
40	F-820B Comb Temp	^{o}F	1904
41	F-820A Prod Rate	gpm	36.2
42	F-820B Prod Rate	gpm	34.6
43	D-830 Scrubber Effluent pH	pH	8.2
44	8201-A Venturi Flow	gpm	499
45	8201-B Venturi Flow	gpm	419

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	**PCDD/PCDF**														
2															
3	Facility Name and ID:		Dow Chemical Company, Freeport, TX												
4	Condition ID:		849C5												
5	Condition/Test Date:		Risk burn, above normal operating of liquid waste feed rate, normal combustion temperature, June 1-2, 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 (pg)														
11		2,3,7,8-TCDD	1	nd	4.1	2.1	2.1	nd	4.3	2	2.2	nd	4.9	2.5	2.5
12		Total TCDD	0		76.0	76.0	0.0		57	57	0.0		26	26	0.0
13		1,2,3,7,8-PCDD	0.5		8.7	8.7	4.4		10	10	5.0		5.2	5.2	2.6
14		Total PCDD	0		160	160	0		11	11	0.0		66	66	0
15		1,2,3,4,7,8-HxCDD	0.1		17	17	2		15	15	1.5		6.0	6.0	0.6
16		1,2,3,6,7,8-HxCDD	0.1		34	34	3		38	38	3.8		18.0	18.0	1.8
17		1,2,3,7,8,9-HxCDD	0.1		20	20	2		22	22	2.2		9.0	9.0	0.9
18		Total HxCDD	0		310	310	0		200	200	0.0		130	130	0
19		1,2,3,4,6,7,8-HpCDD	0.01		120	120	1		97	97	1.0		51.0	51.0	0.5
20		Total HpCDD	0		240	240	0		140	140	0.0		94	94	0
21		OCDD	0.001		480	480	0		620	620	0.6		500.0	500.0	0.50
22		2,3,7,8-TCDF	0.1		20	20	2		8.5	9	0.9		10.0	10.0	1.00
23		Total TCDF	0		58	58	0		330	330	0.0		300	300	0
24		1,2,3,7,8-PCDF	0.05		31	31	2		27	27	1.4		17.0	17.0	0.9
25		2,3,4,7,8-PCDF	0.5		36	36	18		24	24	12.0		17	17	9
26		Total PCDF	0		420	420	0		27	27	0.0		210	210	0
27		1,2,3,4,7,8-HxCDF	0.1		62	62	6		57	57	5.7		24.0	24.0	2.4
28		1,2,3,6,7,8-HxCDF	0.1		52	52	5		34	34	3.4		19.0	19.0	1.9
29		2,3,4,6,7,8-HxCDF	0.1		43	43	4		23	23	2.3		15.0	15.0	1.5
30		1,2,3,7,8,9-HxCDF	0.1		17	17	2		18	18	1.8		5.3	5.3	0.5
31		Total HxCDF	0		410	410	0		250	250	0.0		140	140	0
32		1,2,3,4,6,7,8-HpCDF	0.01		240	240	2		160	160	1.6		63	63	0.63
33		1,2,3,4,7,8,9-HpCDF	0.01		55	55	1		50	50	0.5		12	12	0.12
34		Total HCDF	0		410	410	0		230	230	0.0		90	90	0
35		OCDF	0.001		1000	1000	1		850	850	0.9		160	160	0.16
36															
37		Gas sample volume (dscf)				126.71	126.71			117.72	117.72			118.02	118.02
38		O2 (%)				5.3	5.3			5.1	5.1			5.00	5.00
39															
40		PCDD/PCDF (pg in sample)				3564.0	58.08			2715.0	46.590			1716.0	26.95
41		PCDD/PCDF (ng/dscm @ 7% O2)				8.270	0.014			0.72	0.012			0.45	0.007
42															
43		TEQ Cond Avg	0.011												
44		Total Cond Avg	3.15												