	B	C
1	**Source Description**	
2		
3	Phase I ID No.	354
4	EPA ID No.	MID000724724
5	Facility Name	DOW CHEMICAL CO.
6	Facility Location	
7	City	MIDLAND
8	State	MI
9	Unit ID Name/No.	UNIT 830
10	Other Sister Facilities	
11	Combustor Class	ONSITE INCINERATOR
12	Combustor Type	Rotary kiln
13	Combustor Characteristics	Rotary kiln, afterburner. Kiln has 14' diameter, 60' long
14	Capacity (MMBtu/hr)	
15	Soot Blowing	
16	APCS	QC/AS/VS/DM/IWS
17	APCS Characteristics	Quench, Acid Scrubber, Venturi Scrubber, Demister, Ionizing Wet Scrubber (Ceilcote, 2 stages)
18	Hazardous Wastes	HW SLD/LIQ/SLUDGE
19	Haz Waste Description	
20	Supplemental Fuel	DIESEL OIL
21		
22	Stack Characteristics	
23	Diameter (ft)	3.0
24	Height (ft)	200.0
25	Gas Velocity (ft/sec)	25.3
26	Gas Temperature (°F)	140.0
27		
28	Permitting Status	
29	HWC Burn Status (Date if Termi	Closing down Kiln Unit 703 (EPA ID No. 353), consolidating with ID 354.

	B	C
1	**Condition Description**	
2		
3	**354C1**	
4		
5	Report Name/Date	830 Incinerator Trial Burn Report, ID # MID 000 724, Summary of Results and Program Description, Dow Chemical Company, March 1992
6	Report Prepare	
7	Testing Firm	
8	Cond Descr	Trial burn, NORMAL KILN TEMP, HIGH CL AND METAL FEED
9	Test Dates	Dec 4-5, 1991
10	Cond Date	04/01/92
11		
12	**354C2**	
13		
14	Report Name/Date	830 Incinerator Trial Burn Report, ID # MID 000 724, Summary of Results and Program Description, Dow Chemical Company, March 1992
15	Report Prepare	
16	Testing Firm	
17	Cond Descr	Trial burn, LOW KILN TEMP, HIGH CL AND SOLIDS FEED
18	Test Dates	Dec 12-13, 1991
19	Cond Date	04/01/92
20		
21	**354C3**	
22		
23	Report Name/Date	830 Incinerator Trial Burn Report, ID # MID 000 724, Summary of Results and Program Description, Dow Chemical Company, March 1992
24	Report Prepare	
25	Testing Firm	
26	Cond Descr	Trial burn, LOW KILN TEMP,MAX ASH&CONTAINER BTU FEED
27	Test Dates	Dec 9-10, 1991
28	Cond Date	04/01/92
29		
30	**354C4**	
31		
32	Report Name/Date	830 Incinerator Trial Burn Report, ID # MID 000 724, Summary of Results and Program Description, Dow Chemical Company, March 1992
33	Report Prepare	
34	Testing Firm	
35	Cond Descr	Trial burn, NORMAL KILN TEMP, MAX CHLOROSILANES FEED
36	Test Dates	Dec 17-18, 1991
37	Cond Date	04/01/92
38		
39	**354C5**	
40		
41	Report Name/Date	830 Incinerator Trial Burn Report, ID # MID 000 724, Summary of Results and Program Description, Dow Chemical Company, March 1992
42	Report Prepare	
43	Testing Firm	
44	Cond Descr	Trial burn, METALS RE-TEST; HIGH CHLORINE
45	Test Dates	Aug 4-5, 1992
46	Cond Date	09/01/92

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	**Stack Gas Emissions 2**															
2						R1		R2		R3		R4		R5		Cond Avg
3	**354C1**															
4																
5	PM		gr/dscf	y		0.0002		0.0012		0.0001						0.0005
6	CO		ppmv	y		3.0		2.9		3.1		3.0				
7	HCl		ppmv	y		1.5		1.7		0.7		0.7				
8	Cl2		ppmv	y		1.8		1.3		5.4		4.6				
9	Total Cl		ppmv	y		5.1		4.3		11.4		10.0				7.7
10	Antimony		ug/dscm	y	nd	4.8	nd	4.7	nd	4.7	nd	4.5				
11	Arsenic		ug/dscm	y	nd	4.8	nd	4.7	nd	4.7	nd	4.5				
12	Barium		ug/dscm	y	nd	0.3	nd	0.3	nd	0.3		0.3				
13	Cadmium		ug/dscm	y	nd	0.3	nd	0.3	nd	0.3	nd	0.3				
14	Chromium		ug/dscm	y	nd	0.5	nd	0.5	nd	0.5	nd	0.5				
15	Lead		ug/dscm	y		2.7	nd	2.0	nd	2.0		1.9				
16	Mercury		ug/dscm	y		1.1		3.4	nd	0.6	nd	0.6				1.4
17	Silver		ug/dscm	y	nd	1.3	nd	1.3	nd	1.4	nd	1.3				
18	SVM		ug/dscm	y		3.1		2.4		2.4		2.3				2.5
19	LVM		ug/dscm	y		2.7		2.6		2.6		2.5				2.6
20																
21	Sampling Train	PM/HCl														
22	Moisture					2.4		2.3		1.7		1.9				
23	Oxygen					11.8		11.5		12.1		11.7				
24	Stack gas flowrate					24900.0		24500.0		24600.0		24800.0				
25	Temperature					75.0		74.0		67.0		69.0				
26																
27	Carbon Tetrachloride	DRE	%			99.99978		99.99967		99.99968		99.99961				
28	HCl	DRE	%			99.995		99.994		99.998		99.998				
29	Monochlorobenzene	DRE	%			99.99983		99.99983		99.99984		99.99984				
30																
31	**354C2**															
32																
33	PM		gr/dscf	y		0.0018		0.0007		0.0006		0.0004				0.0009
34	CO		ppmv	y		2.8		1.4		2.8		4.1				
35	HCl		ppmv	y		0.3		0.3		0.4		0.3				
36	Cl2		ppmv	y		1.1		0.9		1.0		1.0				
37	Total Cl		ppmv	y		2.5		2.1		2.4		2.4				2.4
38																
39	Sampling Train	PM/HCl														
40	Moisture					4.0		4.4		4.1		3.7				
41	Oxygen					11.1		10.8		11.1		10.8				
42	Stack gas flowrate					25300.0		25300.0		24500.0		24400.0				
43	Temperature					86.0		92.0		91.0		88.0				
44																
45	Carbon Tetrachloride	DRE	%			99.99998		99.99998		99.99997		99.99998				
46	HCl	DRE	%			99.998		99.998		99.998		99.998				
47																
48	**354C3**															
49																
50	PM		gr/dscf	y		0.0011		0.0017		0.0017		0.0011				0.0014
51	CO		ppmv	y		4.5		4.4		15.2		1.5				
52	HCl		ppmv	y		0.2		0.2		0.2		0.2				
53	Cl2		ppmv	y		0.1		0.1		0.1		0.1				
54	Total Cl		ppmv	y		0.3		0.3		0.4		0.4				0.4
55																
56	Carbon Tetrachloride	DRE	%			99.9999		99.99995		99.99994		99.99994				
57	HCl	DRE	%			99.998		99.998		99.998		99.998				
58	Monochlorobenzene	DRE	%			99.99986		99.99987		99.99986		99.99986				
59																
60	Sampling Train	PM/HCl														
61	Moisture					4.7		4.7		4.2		4.2				
62	Oxygen					11.7		11.4		11.8		11.7				
63	Stack gas flowrate					25300.0		26200.0		25800.0		25400.0				
64	Temperature					95.0		96.0		92.0		90.0				
65																
66	**354C4**															
67																
68	PM		gr/dscf	y		0.0366		0.0330		0.0226		0.0188		0.0167		0.0255
69	CO		ppmv	y		1.5		1.5		2.8		1.4		1.39		
70	HCl		ppmv	y		0.8		0.8		0.7		0.5		0.51		
71	Cl2		ppmv	y		0.5		0.3		0.8		0.0		0.10		

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
72	Total Cl		ppmv	y		1.7		1.4		2.2		0.6		0.7		1.3
73																
74	Sampling Train	PM/HCl														
75	Moisture					5.5		6.3		5.5		5.8		5.1		
76	Oxygen					11.8		11.9		11.1		11.1		10.9		
77	Stack gas flowrate					25900.0		26900.0		25400.0		26200.0		25300.0		
78	Temperature					92.0		96.0		90.0		93.0		92.0		
79																
80	**354C5**															
81																
82	Antimony		ug/dscm	y	nd	2.5		1.9		3.3		2.8				
83	Arsenic		ug/dscm	y		0.6		0.6		0.6		0.5				
84	Barium		ug/dscm	y		5.7		4.8		5.4		5.5				
85	Cadmium		ug/dscm	y		10.5		9.9		8.8		6.5				
86	Chromium		ug/dscm	y		4.2		3.7		6.9		3.3				
87	Lead		ug/dscm	y		213.1		158.4		180.3		144.1				
88	Mercury		ug/dscm	y		44.3		35.2		49.8		41.6				42.7
89	Silver		ug/dscm	y		5.5		5.4		4.3		1.1				
90	SVM		ug/dscm	y		223.6		168.3		189.1		150.7				182.9
91	LVM		ug/dscm	y		4.8		4.3		7.5		3.9				5.1
92																
93	Sampling Train	Metals														
94	Moisture					18.1		18.1		17.7		19.1				
95	Oxygen					10.4		10.7		10.5		10.8				
96	Stack gas flowrate					25800.0		25100.0		25200.0		25300.0				
97	Temperature					140.0		140.0		137.0		143.0				

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	**Feedstream 2**														
2															
3															
4	**354C1**		R1	R2	R3	R4	R1	R2	R3	R4	R1	R2	R3	R4	R1
5															
6	Feedstream		Burner 1 Diesel POHC				Burner 4 Diesel POHC				Burner 2 Diesel POHC				All chamber v
7	Feedrate	lb/hr													
8	Heating value	Btu/lb													
9	Chlorine	lb/hr	753	761	893	902	811	846	792	761	753	761	901	902	
10	Antimony	lb/hr	0.000324	0.000372	0.000372	0.000384	0.0003528	0.00036	0.00033	0.000324	0.0003276	0.000324	0.0003756	0.000384	0.10339574
11	Arsenic	lb/hr	0.000324	0.000372	0.000372	0.000384	0.0003528	0.00036	0.00033	0.000324	0.0003276	0.000324	0.0003756	0.000384	0.08333388
12	Ash	lb/hr													
13	Barium	lb/hr	0.000324	0.000372	0.000372	0.000384	0.0003528	0.00036	0.00033	0.000324	0.0003276	0.000324	0.0003756	0.000384	0.20590964
14	Cadmium	lb/hr	0.000324	0.000372	0.000372	0.000384	0.0003528	0.00036	0.00033	0.000324	0.0003276	0.000324	0.0003756	0.000384	0.1168438
15	Chromium	lb/hr	0.000324	0.000372	0.000372	0.000384	0.0003528	0.00036	0.00033	0.000324	0.0003276	0.000324	0.0003756	0.000384	0.6371294
16	Lead	lb/hr	0.000405	0.000465	0.000465	0.0006912	0.000441	0.00045	0.0004125	0.0005832	0.0004095	0.000405	0.0004695	0.0006912	1.3205554
17	Mercury	lb/hr	0.000162	0.000186	0.000186	0.000192	0.0001764	0.00018	0.000165	0.000162	0.0001638	0.000162	0.0001878	0.000192	0.11023
18	Silver	lb/hr	0.000324	0.000372	0.000372	0.000384	0.0003528	0.00036	0.00033	0.000324	0.0003276	0.000324	0.0003756	0.000384	0.1069231
19															
20	Stack gas flowrate														
21	Oxygen														
22															
23	Feedrate MTEC Calculations														
24	Chlorine	ug/dscm													
25	Antimony	ug/dscm													
26	Arsenic	ug/dscm													
27	Ash	ug/dscm													
28	Barium	ug/dscm													
29	Cadmium	ug/dscm													
30	Chromium	ug/dscm													
31	Lead	ug/dscm													
32	Mercury	ug/dscm													
33	Silver	ug/dscm													
34															
35	SVM														
36	LVM														
37															
38															
39															
40	**354C2**		R1	R2	R3	R4	R1	R2	R3	R4	R1	R2	R3	R4	R1
41															
42	Feedstream		Burner 1 Diesel POHC				Burner 4 Diesel POHC				Burner 2 Diesel POHC				All chamber v
43	Ash														
44	Chlorine		335	327	338	341	594	581	581	602	335	327	338	359	
45	Feedrate														
46	Heating value														
47															
48	Stack gas flowrate														
49	Oxygen														
50															
51	Feedrate MTEC Calculations														
52	Chlorine	ug/dscm													
53															
54	**354C3**		R1	R2	R3	R4	R1	R2	R3	R4	R1	R2	R3	R4	R1
55															
56	Feedstream		Burner 1 Diesel POHC				Burner 4 Diesel POHC				Burner 2 Diesel POHC				All chamber v
57	Ash	lb/hr													
58	Chlorine	lb/hr													
59	Feedrate														
60	Heating value														

	B	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
1	**Feedstream 2**																
2																	
3																	
4	**354C1**	R2	R3	R4		R1		R2		R3		R4		R5	Cond Avg		
5																	
6	Feedstream	vaste				Total											
7	Feedrate																
8	Heating value																
9	Chlorine					2537		2573		2802		2781					
10	Antimony	0.10317528	0.10317528	0.09722286		0.103304		0.103084		0.103084		0.097137					
11	Arsenic	0.08619986	0.08553848	0.08553848		0.08326		0.086123		0.085463		0.085463					
12	Ash																
13	Barium	0.2017209	0.19488664	0.20414596		0.205727		0.201542		0.194714		0.203965					
14	Cadmium	0.12963048	0.12478036	0.12610312		0.11674		0.129515		0.12467		0.125991					
15	Chromium	0.7517686	0.7583824	0.826725		0.637225		0.750661		0.756828		0.826872					
16	Lead	1.587312	1.2941002	1.6336086		1.320044		1.585022		1.292291		1.631278					
17	Mercury	0.11045046	0.11000954	0.1047185		0.110132		0.110352		0.109912		0.104626					
18	Silver	0.10648218	0.10670264	0.1003093		0.106828		0.106388		0.106608		0.10022					
19																	
20	Stack gas flowrate					24900		24500		24600		24800					
21	Oxygen					11.8		11.5		12.1		11.7					
22																	
23	Feedrate MTEC Cal																
24	Chlorine					4.15E+07		4.14E+07		4.79E+07		4.51E+07			4.40E+07		
25	Antimony					1688		1658		1762		1577					
26	Arsenic					1360		1385		1461		1387					
27	Ash																
28	Barium					3362		3241		3329		3310					
29	Cadmium					1908		2083		2131		2045					
30	Chromium					10412		12073		12940		13420					
31	Lead					21570		25491		22094		26475					
32	Mercury					1800		1775		1879		1698			1788		
33	Silver					1746		1711		1823		1627					
34																	
35	SVM					23477		27574		24226		28520			25949		
36	LVM					11773		13458		14401		14807			13610	(As, Cr only)	
37																	
38																	
39																	
40	**354C2**	R2	R3	R4		R1		R2		R3		R4		R5	Cond Avg		
41																	
42	Feedstream	vaste				Total											
43	Ash																
44	Chlorine					2093		2041		2062		2093					
45	Feedrate																
46	Heating value																
47																	
48	Stack gas flowrate					25300		25300		24500		24400					
49	Oxygen					11.1		10.8		11.1		10.8					
50																	
51	Feedrate MTEC Cal																
52	Chlorine					3.13E+07		2.96E+07		3.18E+07		3.15E+07			3.10E+07		
53																	
54	**354C3**	R2	R3	R4		R1		R2		R3		R4		R5	Cond Avg		
55																	
56	Feedstream	vaste				Total											
57	Ash					9634		8990		8782		8970					
58	Chlorine					888		926		903		903					
59	Feedrate																
60	Heating value																

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
61															
62	Stack gas flowrate														
63	Oxygen														
64															
65	Feedrate MTEC Calculations														
66	Ash	mg/dscm													
67	Chlorine	ug/dscm													
68															
69															
70	**354C4**		R1	R2	R3	R4	R1	R2	R3	R4	R1	R2	R3	R4	R1
71															
72	Feedstream		Burner 1 Diesel POHC				Burner 4 Diesel POHC				Burner 2 Diesel POHC				All chamber v
73	Ash														
74	Feedrate														
75	Heating value														
76															
77	Stack gas flowrate														
78	Oxygen														
79															
80	Feedrate MTEC Calculations														
81	Ash	mg/dscm													
82															
83															
84															
85	**354C5**		R1	R2	R3	R4	R1	R2	R3	R4	R1	R2	R3	R4	R1
86															
87	Feedstream		Burner 1 Diesel POHC				Burner 4 Diesel POHC				Burner 2 Diesel POHC				All chamber v
88	Antimony	lb/hr													
89	Arsenic	lb/hr													
90	Ash	lb/hr													
91	Barium	lb/hr													
92	Cadmium	lb/hr													
93	Chlorine	lb/hr													
94	Chromium	lb/hr													
95	Lead	lb/hr													
96	Mercury	lb/hr													
97	Silver	lb/hr													
98															
99	Stack gas flowrate														
100	Oxygen														
101															
102	Feedrate MTEC Calculations														
103	Antimony														
104	Arsenic														
105	Ash														
106	Barium														
107	Cadmium														
108	Chlorine														
109	Chromium														
110	Lead														
111	Mercury														
112	Silver														
113															
114	SVM														
115	LVM														

	B	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
61																	
62	Stack gas flowrate					25300		26200		25800		25400					
63	Oxygen					11.7		11.4		11.8		11.7					
64																	
65	Feedrate MTEC Cal																
66	Ash					1.53E+05		1.34E+05		1.38E+05		1.42E+05			1.42E+05		
67	Chlorine					1.41E+07		1.38E+07		1.42E+07		1.43E+07			1.41E+07		
68																	
69																	
70	**354C4**	R2	R3	R4		R1		R2		R3		R4		R5	Cond Avg		
71																	
72	Feedstream	vaste				Total											
73	Ash					6298		6477		5800		5569		5581			
74	Feedrate																
75	Heating value																
76																	
77	Stack gas flowrate					25900		26900		25400		26200		25300			
78	Oxygen					11.8		11.9		11.1		11.1		10.9			
79																	
80	Feedrate MTEC Cal																
81	Ash					9.89E+04		9.90E+04		8.63E+04		8.04E+04		8.18E+04	8.93E+04		
82																	
83																	
84																	
85	**354C5**	R2	R3	R4		R1		R2		R3		R4		R5	Cond Avg		
86																	
87	Feedstream	vaste				Total											
88	Antimony					0.2200		0.2110		0.2227		0.0256					
89	Arsenic					0.1941		0.1784		0.2526		0.4178					
90	Ash																
91	Barium					0.3278		0.3324		0.4104		0.3956					
92	Cadmium					0.1965		0.1965		0.2181		0.2275					
93	Chlorine					2834		2841		2846		2844					
94	Chromium					1.2489		1.3192		1.7599		1.6139					
95	Lead					4.8172		4.5370		4.5778		6.5207					
96	Mercury					0.1088		0.1053		0.1159		0.1165					
97	Silver					0.1269		0.1236		0.1344		0.1407					
98																	
99	Stack gas flowrate					25800		25100		25200		25300					
100	Oxygen					10.4		10.7		10.5		10.8					
101																	
102	Feedrate MTEC Cal																
103	Antimony					3012		3055		3150		371					
104	Arsenic					2656		2583		3574		6061					
105	Ash																
106	Barium					4486		4812		5805		5738					
107	Cadmium					2689		2845		3085		3300					
108	Chlorine					3.88E+07		4.11E+07		4.03E+07		4.13E+07			4.09E+07		
109	Chromium					17094		19100		24897		23410					
110	Lead					65935		65691		64760		94585					
111	Mercury					1489		1524		1639		1690			1618		
112	Silver					1737		1789		1901		2042					
113																	
114	SVM					68624		68536		67845		97885			78089		
115	LVM					19750		21683		28471		29471			26542		

	C	D	E	F	G	H	I
1	**Process Information 2**						
2							
3	**354C1**						
4							
5	Kiln Temperature	F	1641	1661	1616	1614	
6	Afterburner Temperature	F	1735	1735	1737	1744	
7	WS Pressure Drop	in H2O	28.2	27.3	27.8	23.8	
8							
9	**354C2**						
10							
11	Kiln Temperature	F	1477	1483	1452	1470	
12	Afterburner Temperature	F	1765	1765	1762	1764	
13	WS Pressure Drop	in H2O	28	27.7	28.4	28.4	
14							
15	**354C3**						
16							
17	Kiln Temperature	F	1377	1377	1389	1369	
18	Afterburner Temperature	F	1704	1708	1706	1706	
19	WS Pressure Drop	in H2O	27.5	27.4	27.2	27.2	
20							
21	**354C4**						
22							
23	Kiln Temperature	F	1564	1566	1558	1564	1562
24	Afterburner Temperature	F	1767	1769	1801	1816	1818
25	WS Pressure Drop	in H2O	28.7	28.8	28.7	29.9	29.7
26							
27	**354C5**						
28							
29	Kiln Temperature	F	1625	1625	1625	1625	
30	Afterburner Temperature	F	1776.2	1781.6	1765.4	1779.8	
31	WS Pressure Drop	in H2O	29.9	29.8	29.4	28.9	

	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	**354C2**																	
2					Run 1				Run 2				Run 3				Run 4	
3	ng/dscm	I-TEF		Total	Total	TEQ		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		Full ND	1/2 ND	1/2 ND
5	4D 2378	1		0.002	0.002	0.002		0.002	0.002	0.002		0.003	0.003	0.003		0.007	0.007	0.007
6	5D 12378	0.5		0.002	0.002	0.001	1	0.001	0.000	0.000	1	0.001	0.001	0.000		0.006	0.006	0.003
7	6D 123478/678	0.1		0.002	0.002	0.000		0.002	0.002	0.000	1	0.002	0.001	0.000		0.005	0.005	0.001
8	6D 123789	0.1		0.001	0.001	0.000	1	0.001	0.001	0.000	1	0.001	0.001	0.000	1	0.003	0.001	0.000
9	7D 1234678	0.01		0.024	0.024	0.000		0.016	0.016	0.000		0.011	0.011	0.000		0.035	0.035	0.000
10	8D	0.001		0.109	0.109	0.000		0.096	0.096	0.000		0.071	0.071	0.000		0.150	0.150	0.000
11	4F 2378	0.1		0.003	0.003	0.000		0.002	0.002	0.000		0.003	0.003	0.000		0.005	0.005	0.000
12	5F 12378	0.05		0.006	0.006	0.000		0.002	0.002	0.000	1	0.003	0.001	0.000		0.009	0.009	0.000
13	5F 23478	0.5		0.003	0.003	0.002		0.002	0.002	0.001		0.002	0.002	0.001		0.006	0.006	0.003
14	6F 123478/678	0.1		0.013	0.013	0.001		0.007	0.007	0.001		0.004	0.004	0.000		0.011	0.011	0.001
15	6F 123789	0.1		0.003	0.003	0.000		0.002	0.002	0.000	1	0.001	0.000	0.000	1	0.001	0.001	0.000
16	6F 234678	0.1	1	0.002	0.001	0.000		0.002	0.002	0.000		0.001	0.001	0.000		0.004	0.004	0.000
17	7F 1234678	0.01		0.025	0.025	0.000		0.011	0.011	0.000		0.005	0.005	0.000		0.018	0.018	0.000
18	7F 1234789	0.01		0.005	0.005	0.000		0.002	0.002	0.000	1	0.001	0.001	0.000	1	0.002	0.001	0.000
19	8F	0.001		0.026	0.026	0.000		0.016	0.016	0.000		0.010	0.010	0.000		0.021	0.021	0.000
20	Total PCDD/PCDF																	
21	TEQ			0.008		0.008		0.006		0.005		0.007		0.006		0.016		0.016