

US EPA ARCHIVE DOCUMENT

	B	C
1	<b>Source Description</b>	
2		
3	Phase II ID No.	1003
4	EPA ID No.	TXD083472266
5	Facility Name	Lyondell Chemical Co.
6	Facility Location	
7	City	Channelview
8	State	TX
9	Unit ID Name/No.	F-57180 Hot Oil Heater
10	Other Sister Facilities	None
11	Number of Sister Facilities	0
12	Combustor Class	Liquid-fired boiler
13	Combustor Type	Liquid injection, process heater
14	Combustor Characteristics	Hot oil heater, John Zink, 25 MM Btu/hr, steam atomized burners, Ljunstrom air preheater
15	Capacity (MMBtu/hr)	25
16	Soot Blowing	Yes (during test run #3 of test condition 1)
17	APCS Detailed Acronym	None
18	APCS General Class	None
19	APCS Characteristics	None
20	Hazardous Wastes	Liq
21	Haz Waste Description	BDO from tank 57637, gamma butyrolactone (GBL) lights, T-640 overheads, and R-311 tetrahydrofuran reactor purge
22	Supplemental Fuel	Natural gas
23		
24	Stack Characteristics	
25	Diameter (ft)	4
26	Height (ft)	129
27	Gas Velocity (ft/sec)	18.6
28	Gas Temperature (°F)	628
29		
30	Permitting Status	Adjusted Tier I for metals and chlorine
31	HWC Burn Status (Date if Terminated)	

	B	C
1	<b>Cond Description</b>	
2		
3	<b>1003C1</b>	
4		
5	Report Name/Date	Recertification of Compliance for F-57180 Hot Oil Heater; 9/06/96
6	Report Preparer	DRE Technologies Inc.
7	Testing Firm	METCO
8	Testing Dates	June 18, 1996
9	Cond Dates	Jun-98
10	Cond Description	CoC; max waste and ash feed rates
11	Content	PM, CO emissions, feed analysis for ash, metals, chlorides
12		
13	<b>1003C2</b>	
14		
15	Report Name/Date	Recertification of Compliance for F-57180 Hot Oil Heater; 9/06/96
16	Report Preparer	DRE Technologies Inc.
17	Testing Firm	METCO
18	Testing Dates	July 9, 1996
19	Cond Dates	Jul-96
20	Cond Description	CoC; min combustion temperature
21	Content	CO emissions only, no feed analysis
22		
23	<b>1003C3</b>	
24		
25	Report Name/Date	Test Report for Recertification of Compliance for F-57180 Hot Oil Heater; 3/09/99
26	Report Preparer	Radian International
27	Testing Firm	Maxim Technologies
28	Testing Dates	December 8, 1998
29	Cond Dates	Dec-98
30	Cond Description	CoC; max waste and ash feed rates
31	Content	PM, CO emissions, feed analysis for ash, metals, chlorides
32		
33	<b>1003C4</b>	
34		
35	Report Name/Date	Test Report for Recertification of Compliance for F-57180 Hot Oil Heater; 3/09/99
36	Report Preparer	Radian International
37	Testing Firm	Maxim Technologies
38	Testing Dates	January 2-3, 1999
39	Cond Dates	Jan-99
40	Cond Description	CoC; min combustion temperature
41	Content	CO emissions only, no feed analysis

	B	C	D	E	F	G	H	I	J	K	L	M
1	<b>Stack Gas Emissions</b>											
2												
3	Cond ID	Comments	Units	7% O2								
4												
5										Sootblow		
6	<b>1003C1</b>					R1	R2	R3		Cond Avg		
7												
8	PM	E1	gr/dscf	y		0.0109	0.0175	0.0273		0.0142		
9	CO (MHRA)	E1	ppmv	y		0.59	0.57	2.87		1.3		
10	CO (RA)	E1	ppmv	y		0.57	0.54	1.37		0.8		
11												
12	Sampling Train	PM	E1									
13	Stack Gas Flowrate		dscfm			6311	6143	6018		6157		
14	O2		%			8.5	8	8.4		8.3		
15	Moisture		%			13.85	13.69	13.76		13.8		
16	Temperature		°F			626	632	626		628		
17												
18	<b>1003C2</b>					R1	R2	R3		Cond Avg		
19												
20	CO (MHRA)	E1	ppmv	y						2.0		
21	CO (RA)	E1	ppmv	y						1.5		
22												
23	<b>1003C3</b>					R1	R2	R3		Cond Avg		
24												
25	PM	E1	gr/dscf	y		0.023	0.02	0.027		0.022		
26	CO (RA)	E1	ppmv	y		3.4	3.5	3.3		3.4		
27	CO (MHRA)	E1	ppmv	y		3.5	3.7	3.4		3.5		
28												
29	Sampling Train	PM	E1									
30	Stack Gas Flowrate		dscfm			6119	5856	6021		5999		
31	O2		%			7.8	8	8.6		8.1		
32	Moisture		%			12.5	12.2	12.56		12.4		
33	Temperature		°F			646	648	651		648		
34												
35	<b>1003C4</b>					R1	R2	R3		Cond Avg		
36												
37	CO (RA)	E1	ppmv	y		28.4	33.2	29.1		30.2		
38	CO (MHRA)	E1	ppmv	y		34	34.8	34.6		34.4		

	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																						
4	1003C1																					
5	Feedstream Number																					
6	Feed Class																					
7	Feed Class 2																					
8	Feed Class 2																					
9	Feedstream Description																					
10	Feed Rate																					
11	Heating Value																					
12	Thermal Feedrate																					
13	Ash																					
14	Chlorine																					
15	Antimony																					
16	Arsenic																					
17	Barium																					
18	Beryllium																					
19	Cadmium																					
20	Chromium																					
21	Lead																					
22	Mercury																					
23																						
24	Stack Gas Flowrate																					
25	O2																					
26																						
27	Feedrate MTEC Calculations																					
28	Ash																					
29	Chlorine																					
30	Antimony																					
31	Arsenic																					
32	Barium																					
33	Beryllium																					
34	Cadmium																					
35	Chromium																					
36	Lead																					
37	Mercury																					
38	SVM																					
39	LVM																					
40																						
41	1003C2																					
42																						
43	Feedstream Number																					
44	Feed Class																					
45	Feedstream Description																					
46	Feed Rate																					
47																						
48	1003C3																					
49																						
50	Feedstream Number																					
51	Feed Class																					
52	Feed Class 2																					
53	Feedstream Description																					
54	Feed Rate																					
55	Thermal Feedrate																					
56	Ash																					
57	Chlorine																					
58	Antimony																					

	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ
1	<b>Feedstreams</b>													
2														
3														
4	<b>1003C1</b>	R2	R3	Cond Avg	R1	R2	R3	Cond Avg						Cond Avg
5														
6	Feedstream Number	F3	F3	F3	F4	F4	F4	F4	F4	F4	F4	F4	F4	F4
7	Feed Class	NG	NG	NG	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
8	Feed Class 2	MF	MF	MF	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
9	Feedstream Descriptic	Nat gas	Nat gas	Nat gas	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
10	Feed Rate	94	423											
11	Heating Value	1.97	8.89	4.28333333	23.5	23.5	31.0	26.0						
12	Thermal Feedrate													
13	Ash													
14	Chlorine													
15	Antimony													
16	Arsenic													
17	Barium													
18	Beryllium													
19	Cadmium													
20	Chromium													
21	Lead													
22	Mercury													
23														
24	Slack Gas Flowrate													
25	O2													
26														
27	Feedrate MTEC Calc													
28	Ash													
29	Chlorine													
30	Antimony													
31	Arsenic													
32	Barium													
33	Beryllium													
34	Cadmium													
35	Chromium													
36	Lead													
37	Mercury													
38	SVM													
39	LVM													
40														
41	<b>1003C2</b>													
42														
43	Feedstream Number													
44	Feed Class													
45	Feedstream Descriptic													
46	Feed Rate													
47														
48	<b>1003C3</b>	R2	R3	Cond Avg	R1	R2	R3	Cond Avg						Cond Avg
49														
50	Feedstream Number	F3	F3	F3	F4	F4	F4	F4	F4	F4	F4	F4	F4	F4
51	Feed Class	NG	NG	NG	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
52	Feed Class 2	MF	MF	MF	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
53	Feedstream Descriptic(Nat gas	Nat gas	Nat gas	Nat gas	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
54	Feed Rate	50150	50600											
55	Thermal Feedrate	2.38	2.4	2.43666667	30.1	28.8	29.8	29.6						
56	Ash													
57	Chlorine													
58	Antimony													

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W		
59	Arsenic				0.33		0.86		0.57															
60	Barium				0.1		0.042		0.29															
61	Beryllium				0.026		0.021		0.01															
62	Cadmium				0.019	nd	0.054		0.25															
63	Chromium				0.398		0.24		0.26															
64	Lead				0.08		0.093		0.012															
65	Mercury				0.019		0.039		0.025															
66																								
67	Stack Gas Flowrate		dscfm		6118.8		5856.2		6021.3		5998.8		6118.8		5856.2		6021.3						5998.8	
68	O2		%		7.8		8.0		8.6				7.8		8.0		8.6						8.1	
69																								
70	<i>Feedrate MTEC Calculations</i>																							
71	Ash		mg/dscm	100	9.9	100	10.6	100	10.9	100	10.5		69.6		73.9		75.6						73.1	
72	Chlorine		µg/dscm	100	37436.7	100	40367.0	100	41490.4	100	39764.7													
73	Antimony		µg/dscm		67.3	100	68.2	100	71.7	68	69.1													
74	Arsenic		µg/dscm		33.7		93.1		62.9		63.2													
75	Barium		µg/dscm		10.2		4.5		32.0		15.6													
76	Beryllium		µg/dscm		2.7		2.3		1.1		2.0													
77	Cadmium		µg/dscm		1.9	100	5.8		27.6	17	11.8													
78	Chromium		µg/dscm		40.6		26.0		28.7		31.8													
79	Lead		µg/dscm		8.2		10.1		1.3		6.5													
80	Mercury		µg/dscm		1.9		4.2		2.8		3.0													
81	SVM		µg/dscm		10.1	36.7	15.9		28.9	11	18.3													
82	LVM		µg/dscm		76.9		121.3		92.7		97.0													
83																								
84	<b>BIF Feedrate Limits</b>																							
85																								
86	Antimony		g/hr								536													
87	Arsenic		g/hr								3													
88	Barium		g/hr								90000													
89	Beryllium		g/hr								3													
90	Cadmium		g/hr								3													
91	Chromium		g/hr								3													
92	Lead		g/hr								161													
93	Mercury		g/hr								537													
94	Silver		g/hr								5400													
95	Thallium		g/hr								900													
96	Chlorine		g/hr								725													

	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ
59	Arsenic													
60	Barium													
61	Beryllium													
62	Cadmium													
63	Chromium													
64	Lead													
65	Mercury													
66														
67	Stack Gas Flowrate													
68	O2													
69														
70	Feedrate MTEC Calcd													
71	Ash						12.5	79.5	13	84.5	12.6	86.5	12.5	83.5
72	Chlorine						100	37436.7	100	40367.0	100	41490.4	100	39764.7
73	Antimony							67.3	100	68.2	100	71.7	67.5	69.1
74	Arsenic							33.7		93.1		62.9		63.2
75	Barium							10.2		4.5		32.0		15.6
76	Beryllium							2.7		2.3		1.1		2.0
77	Cadmium							1.9	100	5.8		27.6	17	11.8
78	Chromium							40.6		26.0		28.7		31.8
79	Lead							8.2		10.1		1.3		6.5
80	Mercury							1.9		4.2		2.8		3.0
81	SVM							10.1	37	15.9		28.9	10.9	18.3
82	LVM							76.9		121.3		92.7		97.0
83														
84	<b>BIF Feedrate Limits</b>													
85														
86	Antimony													
87	Arsenic													
88	Barium													
89	Beryllium													
90	Cadmium													
91	Chromium													
92	Lead													
93	Mercury													
94	Silver													
95	Thallium													
96	Chlorine													



	A	B	C
1	<b>Process Information</b>		
2			
3	Cond ID No.		Cond Avg
4			
5	<b>1003C3</b>		
6			
7	Combustion Temperature	°F	1025
8			
9	<b>1003C4</b>		
10			
11	Combustion Temperature	°F	812