

US EPA ARCHIVE DOCUMENT

	B	C
1	<b>Source Description</b>	
2		
3	Phase I ID No.	489
4	EPA ID No.	TXD055141378
5	Facility Name	ROLLINS ENVIRONMENTAL SERVICES
6	Facility Location	
7	City	DEER PARK
8	State	TX
9	Unit ID Name/No.	INCINERATOR TRAIN II/RRR
10	Other Sister Facilities	None
11	Number of Sister Facilities	0
12	Combustor Class	Commercial incinerator
13	Combustor Type	Rotary kiln, rotary reactor
14	Combustor Characteristics	Old kiln / APCS arrangement. APCS / kiln Train I not used
15	Capacity (MMBtu/hr)	
16	Soot Blowing	
17	APCS Detailed Acronym	SS/PT/VS/DM
18	APCS General Class	LEWS, HEWS
19	APCS Characteristics	Spray saturator, packed bed, venturi scrubber, demister
20	Hazardous Wastes	Liq, sludge, solid
21	Haz Waste Description	
22	Supplemental Fuel	Natural gas
23		
24	Stack Characteristics	
25	Diameter (ft)	
26	Height (ft)	
27	Gas Velocity (ft/sec)	
28	Gas Temperature (°F)	
29		
30	Permitting Status	
31	HWC Burn Status (Date if Terminated)	

	B	C
1	<b>Condition Description</b>	
2		
3	<b>489C1</b>	
4		
5	Report Name/Date	Res(TX) Trial Burn Program Rotary Reactor / Incinerator Train II, Emission Test Results, Final Report, Prepared for Rollins Environmental, Deer Park TX, prepared by Alliance Technologies, Project No. 5-950-999, October 1989
6	Report Prepare	Alliance Technologies
7	Testing Firm	Alliance Technologies
8	Cond Descr	
9	Testing Dates	June 22, 1989
10	Cond Dates	Jun-89

	B	C	D	E	F	G	H	I	J	K	L	M
1	<b>Stack Gas Emissions 2</b>											
2												
3												
4	<b>489C1</b>					R1		R2		R3		Cond Avg
5												
6	PM	E1	gr/dscf	y		0.0113		0.0125		0.0165		0.0134
7	CO (RA)	E1	ppmv	y		0.0		0.0		1.4		0.5
8	HC (RA)	E1	ppmv	y		28.2		30.4		21.4		26.7
9	HCl	E1	ppmv	y	nd	4.2	nd	5.1	nd	8.3		5.8
10	Cl2	E1	ppmv	y	nd	3.5	nd	4.8	nd	6.8		5.1
11	Total Chlorine	E1	ppmv	y		5.6		7.4		11.0		8.0
12	Arsenic	E1	ug/dscm	y	nd	3.6	nd	3.5	nd	3.8	100	3.7
13	Beryllium	E1	ug/dscm	y		0.1		0.2		0.1		0.1
14	Cadmium	E1	ug/dscm	y		261.6		63.5		61.3		128.8
15	Chromium	E1	ug/dscm	y		14.5		10.6		11.5		12.2
16	Copper	E1	ug/dscm	y		163.5		105.9		206.9		158.8
17	Iron	E1	ug/dscm	y		167.2		229.5		164.7		187.1
18	Lead	E1	ug/dscm	y		119.9		77.7		172.4		123.3
19	Mercury	E1	ug/dscm	y		10.9		17.7		38.3		22.3
20	Nickel	E1	ug/dscm	y		69.0		60.0		134.1		87.7
21	Vanadium	E1	ug/dscm	y		2.2		3.9		0.8		2.3
22	Zinc	E1	ug/dscm	y		388.8		293.0		547.8		409.9
23	SVM	E1	ug/dscm	y		381.6		141.2		233.7		252.1
24	LVM	E1	ug/dscm	y		16.4		12.5		13.5		14.1
25												
26	Sampling Train	Metals	E1									
27	Stack Gas Flowrate		dscfm			37398.0		37031.0		39813.0		
28	O2		%			7.4		7.0		8.1		
29	Moisture		%			7.2		7.2		6.7		
30	Temperature		°F			132.6		136.1		135.0		

	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		
1	<b>Feedstream 2</b>																										
2																											
3																											
4	<b>489C1</b>		R1		R2		R3		R1		R2		R3		R1		R2		R3		R1		R2				
5																											
6	Feedstream Number		F1		F1		F1		F2		F2		F2		F3		F3		F3		F3		F4		F4		
7	Feed Class		Liq HW		Liq HW		Liq HW		Sludge HW		Sludge HW		Sludge HW		Solid HW		Solid HW		Solid HW		Solid HW		Solid HW		Solid HW		
8	Feed Class 2																										
9	Feedstream Description		Waste liq		Waste liq		Waste liq		Sludge		Sludge		Sludge		Dirt		Dirt		Dirt				Contaminated	Dirt	Contaminated		
10	Feed Rate	lb/hr	6504		6498		6654		2316		912		0		7386		6084		6858				5934		5934		
11	Heating value	Btu/lb	11782		11666		11960		49		60		47	1	100	1	100	1	100	1	100	1	100	1	2903		
12	Ash	wt %	0.02	nd	0.01		0.01		16.22		9.27		13.55		87.21		80.17		83.31				48.63		29.58		
13	Chlorine	ppmw	340000		330000		330000		2800		3200		3200		80		120	1	70				4600		3000		
14	Arsenic	ppmw	9		13		15		23		20		23	1	6.5		6.9	1	6.8	1			10	1	10		
15	Beryllium	ppmw	10.6		12		15		10.8		9.7		10.4		4.9		6.4		5.7				6		6.6		
16	Cadmium	ppmw	1	0.677	1	0.147	1	0.141	105		87		98		0.54		1.4		0.34				0.86		3.8		
17	Chromium	ppmw	7500		12200		14400		2550		2720		7780		76.5		80.7		154				128		218		
18	Copper	ppmw	1030		1830		2190		1250		1170		1230		43		96.1		64.4				42		107		
19	Iron	ppmw	18100		24700		29600		24600		20600		22700		7990		11300		10600				8430		12200		
20	Lead	ppmw	1	2.2	1	2.4	1	4.7	1200		1200		1200		24		55		19				43		87		
21	Mercury	ppmw	1	0.046	1	0.046		0.061	9.7		9.3		8.6	1	0.094	1	0.096		0.145				2.7		0.78		
22	Nickel	ppmw	12100		21000		23700		6020		3820		4180		28.6		128		28.6				831		519		
23	Vanadium	ppmw	23		25		33		74		51		61		19		23		31				52		26		
24	Zinc	ppmw	55		85		98		6890		5860		6880		227		247		206				278		342		
25																											
26	Stack Gas Flowrate	dscfm	37398		37031		39813		37398		37031		39813		37398		37031		39813				37398		37031		
27	Oxygen	%	7.4		7		8.1		7.4		7		8.1		7.4		7		8.1				7.4		7		
28																											
29	Estimated Firing Rate	MMBtu/hr																									
30																											
31	Ash	mg/dscm	9.6		4.7		4.8		2764.7		610.4		0.0		47406.1		35217.1		41641.5				21237.9		12673.6		
32	Chlorine	ug/dscm	16274901.4		15482688.4		16003992.0		47726.1		21071.6		0.0		4348.7		5271.4		3498.9				200892.8		128535.0		
33	Arsenic	ug/dscm	430.8		609.9		727.5		392.0		131.7		0.0	100	353.3		303.1		339.9	100			436.7	100	428.5		
34	Beryllium	ug/dscm	507.4		563.0		727.5		184.1		63.9		0.0		266.4		281.1		284.9				262.0		282.8		
35	Cadmium	ug/dscm	100	32.4	100	6.9	100	6.8	1789.7		572.9		0.0		29.4		61.5		17.0				37.6		162.8		
36	Chromium	ug/dscm	359005.2		572390.3		698356.0		43464.8		17910.9		0.0		4158.4		3545.0		7697.5				5590.1		9340.2		
37	Copper	ug/dscm	49303.4		85858.5		106208.3		21306.3		7704.3		0.0		2337.4		4221.5		3219.0				1834.2		4584.4		
38	Iron	ug/dscm	866399.2		1158855.8		1435509.6		419307.5		135648.4		0.0		434325.2		496387.0		529828.0				368157.8		522709.1		
39	Lead	ug/dscm	100	105.3	100	112.6	100	227.9	20454.0		7901.9		0.0		1304.6		2416.0		949.7				1877.9		3727.5		
40	Mercury	ug/dscm	100	2.2	100	2.2		3.0	165.3		61.2		0.0	100	5.1	100	4.2		7.2				117.9		33.4		
41	Nickel	ug/dscm	579195.0		985262.0		1149377.6		102611.0		25154.2		0.0		1554.7		5622.8		1429.5				36291.7		22236.6		
42	Vanadium	ug/dscm	1100.9		1172.9		1600.4		1261.3		335.8		0.0		1032.8		1010.3		1549.5				2271.0		1114.0		
43	Zinc	ug/dscm	2632.7		3988.0		4752.7		117440.2		38587.4		0.0		12339.4		10850.2		10296.7				12140.9		14653.0		
44																											
45	SVM	ug/dscm	100	137.7	100	119.5	100	234.8	22243.7		8474.7				1334.0		2477.5		966.7				1915.5		3890.3		
46	LVM	ug/dscm	359943.4		573563.2		699810.9		44040.9		18106.4				7.4		4778.1		4129.2				8322.3	6.9	6288.8	4.3	10051.4

	B	AB	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX
1	Feedstream 2																					
2																						
3																						
4	489C1	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	Cond Avg	R1						
5																						
6	Feedstream Number	F4	F5	F5	F5	F6	F6	F6	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7
7	Feed Class	Solid HW	Liq non-HW	Liq non-HW	Liq non-HW	Liq HW	Liq HW	Liq HW	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
8	Feed Class 2																				HW	
9	Feedstream Description	Contaminated Dir Water		Water	Water	T-OX water	T-OX water	T-OX water	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
10	Feed Rate	5934	102		738	1896	1656	1674														
11	Heating value	2336			100	100	100	100														
12	Ash	33.19	0		0.01	0.7	0.7	0.7														
13	Chlorine	3800			20	200	200	210														
14	Arsenic	1 9.9			1 0.06	0.07	1 0.06	0.06														
15	Beryllium	5.6			0.03	0.02	0.02	0.03														
16	Cadmium	8.61			0.04	0.01	0.01	0.01														
17	Chromium	285			0.28	0.25	0.25	0.31														
18	Copper	85.6			1.10	1.02	1.02	1.2														
19	Iron	12336			50.02	47.00	49	57														
20	Lead	124			0.25	0.24	0.3	0.24														
21	Mercury	0.44			1 0.00	0.05	0.06	0.06														
22	Nickel	700			0.45	0.46	0.43	0.51														
23	Vanadium	41			0.02	0.04	0.1	0.06														
24	Zinc	414			0.78	0.77	0.71	0.79														
25																						
26	Stack Gas Flowrate	39813	37398	37031	39813	37398	37031	39813	37398	37031	39813	37398	37031	39813	38081							
27	Oxygen	8.1	7.4	7	8.1	7.4	7	8.1	7.4	7	8.1	7.4	7	8.1	7.5							
28																						
29	Estimated Firing Rate																				163.2	
30																						
31	Ash	14354.4	0.0	0.0	0.5	97.7	83.7	85.4	71515.9	48589.5	56086.7	58730.7	71515.9									
32	Chlorine	164347.4			107.6	2790.8	2391.3	2562.2	16530659.7	15639957.8	16174507.9	16115041.8	16530659.7									
33	Arsenic	428.2		100	0.3	1.0	100 0.7	0.7	1613.9	1473.9	1496.6	1528.1	1613.9									
34	Beryllium	242.2			0.1	0.3	0.2	0.4	1220.2	1191.0	1255.1	1222.1	1220.2									
35	Cadmium	372.4			0.2	0.1	0.1	0.1	1889.2	804.2	396.6	1030.0	1889.2									
36	Chromium	12326.1			1.5	3.5	3.0	3.8	412222.0	603189.4	718384.8	577932.0	412222.0									
37	Copper	3702.1			5.9	14.2	12.2	14.6	74795.5	102380.9	113150.0	96775.5	74795.5									
38	Iron	533523.4			269.1	655.8	585.9	695.4	2088845.4	2314186.2	2499825.6	2300952.4	2088845.4									
39	Lead	5362.9			1.3	3.3	3.6	2.9	23745.2	14161.6	6544.8	14817.2	23745.2									
40	Mercury	19.0		100	0.0	0.7	0.7	0.7	291.3	101.8	30.0	141.0	291.3									
41	Nickel	30274.5			2.4	6.4	5.1	6.2	719658.8	1038280.7	1181090.3	979676.6	719658.8									
42	Vanadium	1773.2			0.1	0.6	1.2	0.7	5666.6	3634.3	4924.0	4741.6	5666.6									
43	Zinc	17905.2			4.2	10.7	8.5	9.6	144563.9	68087.0	32968.4	81873.1	144563.9									
44																						
45	SVM	5735.3			1.6	3.5	3.7	3.1	25634.4	14965.8	6941.4	15847.2	25634.4									
46	LVM	12996.4		17	1.9	4.7	18 3.9	4.9	415056.0	605854.3	721136.5	580682.2	415056.0									

	B	AY	AZ	BA	BB	BC	BD
1	<b>Feedstream 2</b>						
2							
3							
4	<b>489C1</b>		R2		R3		Cond Avg
5							
6	Feedstream Number						
7	Feed Class						
8	Feed Class 2						
9	Feedstream Description						
10	Feed Rate						
11	Heating value						
12	Ash						
13	Chlorine						
14	Arsenic						
15	Beryllium						
16	Cadmium						
17	Chromium						
18	Copper						
19	Iron						
20	Lead						
21	Mercury						
22	Nickel						
23	Vanadium						
24	Zinc						
25							
26	Stack Gas Flowrate						
27	Oxygen						
28							
29	Estimated Firing Rate						
30							
31	Ash		48589.5		56086.7		58730.7
32	Chlorine		15639957.8		16174507.9		16115041.8
33	Arsenic	29	1473.9		1496.6	27	1528.1
34	Beryllium	1	1191.0	1	1255.1	1	1222.1
35	Cadmium		804.2		396.6		1030.0
36	Chromium		603189.4		718384.8		577932.0
37	Copper		102380.9		113150.0		96775.5
38	Iron		2314186.2		2499825.6		2300952.4
39	Lead		14161.6		6544.8		14817.2
40	Mercury	4	101.8		30.0	2	141.0
41	Nickel		1038280.7		1181090.3		979676.6
42	Vanadium		3634.3		4924.0		4741.6
43	Zinc		68087.0		32968.4		81873.1
44							
45	SVM		14965.8		6941.4		15847.2
46	LVM	0	605854.3	0	721136.5	0	580682.2

	C	D	E	F	G
1	<b>Process Information 2</b>				
2					
3	<b>489C1</b>		R1	R2	R3
4					
5	Afterburner Temperature	F	2000	2026	2030
6	Kiln Exit Temperature	F	1702	1740	1717
7	Rotary Reactor Temperature	F	1465	1465	1471