

EPA Certification Test Report

The following models are EPA certified under the following attached test report:

R-12

	<u>Model #</u>
Wood Stoves	n/a
Wood Inserts	H2100
Wood Fireplaces	n/a
Pellet Stoves	n/a
Pellet Inserts	n/a

Full US Environmental Protection Agency (“EPA”) certification test reports have been reported to the EPA. Test reports may contain sensitive, confidential business information which has been specifically excluded and/or redacted from this publicly posted test report.



**ENERGY AND ENVIRONMENTAL
MEASUREMENT
CORPORATION**

[406] 252-4450 ■ 1744 Mallowney Lane ■ Billings, MT 59101

United States
Environmental Protection Agency
Woodheater Certification Test Report

Regency Industries, LTD.
R-12 Warm Hearth
Noncatalytic Wood Heater
[REDACTED]

REPORT BY:

BILL NOWAK

G.E. WADINGTON

CONFIDENTIAL

RELEASED ONLY BY
AUTHORIZED PERSONNEL

PROJECT NO. W-204

DATE 8/16/91

EEMCO/KENT
1315 S. Central Avenue, Unit C
Kent Washington 98032
(206) 859-8318

EEMCO/TUCSON
3925 Placita de la Escarpa
Tucson, Arizona 85715
(602) ~~XXXXXX~~
290-8965

* * * * *

CONFIDENTIAL

* * * * *

The data and information in this test report is confidential, proprietary information and is not to be released to and/or discussed with any party who is not authorized by the manufacturer or the testing laboratory to receive such data.

* * * * *

CONFIDENTIAL

* * * * *



REPORT CERTIFICATION

The sampling and analysis for the woodstove described in this report was carried out under my direction and supervision.

Date 8-12-91 Signature Bill Nowak

Date _____ Signature _____

I have reviewed all of the testing data and results found in this test report and hereby certify that the test report is authentic and accurate.

Date 8/15/91 Signature Ed Wadington

EPA Weighted Averages Calculations

The weighted average particulate emission rate (PM) for the
R-12 Warm Hearth manufactured by
Regency Industries, Ltd. is 3.4 g/hr.

The weighted average overall efficiency (OE) for the
R-12 Warm Hearth is (default) 63 %.

II. EPA Test Results

*Denotes runs used in weighted average calculations

<u>Run#</u>	<u>Dry Burn Rate/kg/hr</u>	<u>Grams/Hour</u>	<u>Overall Efficiency</u>
<u>4*</u>	<u>0.895</u>	<u>2.645</u>	<u>-----</u>
<u>2*</u>	<u>1.245</u>	<u>2.757</u>	<u>-----</u>
<u>3*</u>	<u>1.573</u>	<u>4.110</u>	<u>-----</u>
<u>1*</u>	<u>3.897</u>	<u>5.907</u>	<u>-----</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>5</u>	<u>1.195</u>	<u>4.842</u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>

BURN RATE AND FLUE GAS DATA
WOODSTOVE DATA SHEET #12
WST2-Form 14 Rev 1/88

Unit: Regency R-12 Date: 6/19/91
Run: 4 Technician(s): R.J.S. TK.C.G.
Page: 1 of 3 DV xv

Minute	Scale lbs Wt	lbs Left	Burn Rate	CO2		O2		TeI	CO		BaI	Wet Bulb	Dry Bulb	% H2O	Calc W/B	Stack	SO2	PPM	Static Press.	Comments
				v.	%CO2	v.	%O2		v.	%CO										
0	469.1	11.9	0	.260	11.6	.341	13.3	13.2	1.06	1.07	6.1	78	89	2.9	102	219	.17	425	.028	FLOW
05	468.5	11.3	.6	.464	11.6	.341	8.6	8.5	.022	.24	48.5	78	92	2.8	129	510	.13	325	.056	805/1.5
10	468.0	10.8	.5	.137	3.4	.654	16.6	16.5	.063	.65	5.3	79	92	3.0	109	286	.20	500	.042	CO2/1.5
15	467.7	10.5	.3	.125	3.1	.664	16.9	16.8	.074	.76	4.1	79	92	3.0	106	271	.23	575	.037	07/1.5
20	467.5	10.3	.2	.136	3.4	.654	16.6	16.4	.080	.81	4.2	79	93	3.0	103	225	.22	550	.034	CO/1.5
25	467.2	10.0	.3	.142	3.6	.649	16.5	16.4	.082	.93	3.8	79	92	3.0	108	215	.22	550	.037	07/1.5
30	467.0	9.8	.2	.166	4.0	.633	16.1	16.6	.095	.96	4.2	78	92	3.0	108	209	.21	525	.031	
35	466.6	9.4	.4	.307	7.7	.496	12.6	12.5	.086	.87	8.8	79	92	3.0	106	242	.19	475	.035	
40	466.1	8.9	.5	.373	9.4	.433	10.9	10.9	.066	.68	13.8	80	91	3.8	110	276	.17	425	.040	
45	465.6	8.4	.5	.394	9.9	.411	10.4	10.3	.066	.68	14.5	80	91	3.8	118	287	.17	425	.042	
50	465.0	7.8	.6	.633	13.4	.264	6.6	6.6	.134	1.35	9.9	79	91	3.0	116	836	.17	425	.046	
55	464.3	7.1	.7	.542	13.6	.263	6.6	6.6	.077	.78	17.4	80	92	3.0	118	350	.16	400	.049	
60	463.6	6.4	.7	.558	14.0	.244	6.1	6.1	.088	.90	15.5	80	93	3.8	118	358	.17	425	.051	FLOW
65	463.0	6.8	.6	.534	13.4	.266	6.7	6.6	.092	.93	14.4	80	93	3.8	118	355	.17	425	.050	CO2/1.5
70	462.6	5.4	.4	.494	12.4	.358	7.8	7.7	.060	.62	20.0	81	93	3.4	117	343	.16	400	.048	02/1.5
75	462.1	4.9	.5	.444	11.1	.355	9.0	8.9	.035	.37	30.0	82	95	3.6	115	322	.16	400	.047	CO/1.5
80	461.8	4.6	.3	.408	10.2	.387	9.8	9.7	.035	.37	28.6	82	95	3.6	114	310	.16	400	.046	
85	461.1	4.2	.4	.436	10.8	.364	9.2	9.1	.041	.43	25.2	80	96	3.6	114	313	.16	400	.044	
90	461.0	3.8	.4	.431	10.8	.363	9.8	9.1	.040	.40	25.7	80	96	3.6	114	311	.16	400	.044	
95	460.7	3.5	.3	.409	10.1	.386	9.7	9.7	.043	.45	22.4	80	96	3.6	113	303	.17	405	.042	
100	460.4	3.0	.3	.394	9.9	.396	10.0	10.0	.048	.50	19.2	80	96	3.6	110	292	.17	405	.040	
105	460.1	2.9	.3	.383	9.6	.406	10.3	10.2	.057	.59	16.3	80	96	3.6	111	285	.17	405	.038	
110	459.9	2.7	.2	.345	8.7	.434	11.0	10.9	.049	.94	9.8	80	96	3.6	110	273	.18	450	.038	
115	459.7	2.5	.2	.308	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	
120	459.5	2.3	.2	.288	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	(4503)
125	459.3	2.1	.2	.288	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	(4503)
130	459.1	1.9	.2	.288	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	(4503)
135	458.9	1.7	.2	.288	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	(4503)
140	458.7	1.5	.2	.288	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	(4503)
145	458.5	1.3	.2	.288	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	(4503)
150	458.3	1.1	.2	.288	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	(4503)
155	458.1	0.9	.2	.288	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	(4503)
160	457.9	0.7	.2	.288	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	(4503)
165	457.7	0.5	.2	.288	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	(4503)
170	457.5	0.3	.2	.288	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	(4503)
175	457.3	0.1	.2	.288	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	(4503)
180	457.1	0.0	.2	.288	7.7	.462	11.7	11.6	.112	1.13	6.8	80	95	3.6	109	260	.19	475	.035	(4503)

BURN RATE AND FLUE GAS DATA
 WOODSTOVE DATA SHEET #12
 WST2-Form 14 Rev 1/88

4572

Unit: REGISTRY R10 Date: 6/19/91
 Run: A Technician(s): BN SS VK
 Page: 2 of 3 CL DK XL

Minute Time	CO ₂		Burn Rate	Scale Wt	lbs left	CO		O ₂		T/C(1)T/C(2)		T/C(3)		4		Comments		
	v.	%CO ₂				v.	%O ₂	Tel	v.	%CO	Bal	Wet Bulb	Dry Bulb	% H ₂ O	Calc W/B		Stack	v.
10	161	4.0	0	459.4	0.2	13	303	7.6	16.8	11.8	6.8	95	3.6	108	119	475	0.34	Flow
15	161	4.0	0	459.0	0.2	13	304	6.9	10.4	13.7	5.0	81	3.4	107	120	500	0.31	SO ₂ 1.5
20	161	4.0	0	459.1	1.9	1	309	5.7	13.4	14.3	4.0	81	3.4	106	120	500	0.29	CO ₂ 1.5
25	161	4.0	0	459.0	1.8	1	308	5.6	13.4	14.3	3.8	81	3.4	105	120	500	0.27	O ₂ 1.5
30	161	4.0	0	458.9	1.7	1	303	4.6	13.9	17.4	2.0	81	3.4	104	120	505	0.25	CO ₂ 1.5
35	161	4.0	0	458.8	1.6	1	307	4.4	14.1	18.6	1.9	81	3.4	103	120	505	0.24	
40	161	4.0	0	458.8	1.6	0	304	4.3	15.8	18.8	1.9	80	3.9	103	120	505	0.23	
45	161	4.0	0	458.7	1.5	1	307	4.2	14.5	18.6	1.9	80	3.0	102	120	550	0.20	
50	161	4.0	0	458.7	1.5	0	305	4.1	14.4	18.9	2.0	80	3.0	101	123	505	0.20	
55	161	4.0	0	458.6	1.4	1	304	4.4	14.8	18.0	2.0	80	3.0	101	120	550	0.19	
60	161	4.0	0	458.5	1.3	1	303	4.3	14.3	18.0	2.0	79	3.0	99	119	550	0.19	
65	161	4.0	0	458.5	1.3	0	302	4.2	14.5	18.2	2.1	79	3.0	98	114	550	0.19	
70	161	4.0	0	458.4	1.2	1	306	4.0	14.7	19.1	2.1	79	3.0	96	116	575	0.18	Flow
75	161	4.0	0	458.4	1.2	0	305	3.9	14.9	18.3	2.1	79	3.0	95	166	575	0.16	SO ₂ 1.5
80	161	4.0	0	458.3	1.1	1	303	3.8	15.0	18.3	2.1	79	3.0	95	164	575	0.17	SO ₂ 1.5
85	161	4.0	0	458.3	1.1	0	304	3.7	15.1	18.1	2.1	78	2.8	94	161	600	0.16	SO ₂ 1.5
90	161	4.0	0	458.2	1.0	1	308	3.7	15.1	18.1	2.1	78	2.8	94	160	600	0.16	
95	161	4.0	0	458.2	1.0	0	300	3.6	15.2	18.2	2.0	78	2.8	93	157	605	0.15	
100	161	4.0	0	458.1	0.9	1	304	3.6	15.3	18.2	2.0	78	2.8	93	154	605	0.14	
105	161	4.0	0	458.1	0.9	0	308	3.8	15.1	18.0	2.1	78	2.8	93	153	605	0.14	
110	161	4.0	0	458.0	0.8	1	309	3.9	15.0	17.9	2.2	78	2.8	92	151	650	0.14	
115	161	4.0	0	458.0	0.8	0	307	4.0	15.1	17.2	2.3	78	2.8	92	151	650	0.14	ACTIVITY RES PCA
120	161	4.0	0	457.9	0.7	1	306	4.0	15.0	17.7	2.3	78	2.8	92	151	650	0.13	
125	161	4.0	0	457.9	0.7	0	305	4.0	15.1	18.1	2.2	77	2.6	91	151	605	0.13	
130	161	4.0	0	457.9	0.7	0	302	4.0	15.0	18.1	2.2	77	2.6	91	189	180	0.13	
135	161	4.0	0	457.9	0.7	0	306	4.0	15.0	18.1	2.2	77	2.6	91	43.5	472	0.13	

TEMPERATURES
RECORD SHEET #14
WST2-Form 1.4 Rev 1/88

Unit: Quincy 8-12 Date: 6/19/91
Run: 4 Technician(s): BN, JS, TK, CG
Page: 1 of 2 DR XI

X 4
5
6
7
8
9
10

T/C#	Minute Time	Stove Top	Left Side	Back	Right Side	Bottom	Firebox	2nd Burn Catalytic	Room Temp	Tube Furnace	Sample Box	Impinger Out	C. Gas Box	C. Gas Impinger	SO2 Impinger	
0	10	345	279	165	333	292	757	694	85	1447	247	367	247	35	35	97
05	15	518	279	184	324	278	753	1280	86	1447	247	36	247	35	35	98
10	20	495	269	192	320	284	573	686	85	1447	247	36	247	35	35	98
15	25	419	261	192	311	289	525	612	85	1447	247	36	247	35	35	97
20	30	417	253	190	300	289	500	605	85	1447	247	36	247	35	35	96
25	35	393	245	187	290	287	487	601	85	1447	247	36	247	35	35	96
30	40	379	238	182	281	283	479	672	85	1447	247	36	247	35	35	95
35	45	414	232	155	273	276	485	1116	85	1447	247	36	247	35	35	96
40	50	478	224	135	264	264	540	1074	85	1447	247	36	247	35	35	96
45	55	484	226	132	259	254	509	895	85	1447	247	36	247	35	35	96
50	1700	517	213	128	257	243	654	1291	85	1447	247	36	247	35	35	96
55	05	588	218	129	258	286	692	1268	85	1447	247	36	247	35	35	98
X	X	(547)	(243)	(171)	(347)	(275)	(7018)	(10,784)	(101)							
40	1710	591	226	130	265	232	761	1272	85	1447	241	36	247	35	35	99
65	15	579	232	131	271	231	787	1168	85	1447	247	36	247	35	35	99
70	20	559	243	136	280	232	801	1159	95	1447	247	36	247	35	35	100
75	25	542	252	135	289	234	813	1098	86	1447	247	36	247	35	35	100
80	180	518	260	137	294	237	826	1020	87	1447	247	36	247	35	35	100
85	35	606	263	137	299	240	850	1083	87	1446	246	37	247	36	36	100
90	40	499	265	138	303	241	865	1095	87	1445	245	37	247	36	36	100
95	45	494	267	140	306	243	846	1090	87	1445	247	37	246	36	36	100
100	50	420	269	140	307	244	839	1135	87	1446	248	38	248	36	36	99
105	55	469	271	141	308	246	838	1051	87	1448	247	38	246	36	36	99
110	1800	453	273	143	307	247	834	974	87	1447	247	38	245	36	36	99
115	1805	431	273	145	305	249	829	909	87	1448	246	38	244	36	36	98
X	X	(600)	(309)	(165)	(353)	(2816)	(9089)	(13072)	(1037)							
X	X	(154)	(603)	(304)	(700)	(615)	(1698)	(33856)	(2058)							

TEMPERATURES
 RECORD SHEET #14
 WST2-Form 1.4 Rev 1/88

Unit: CEGENRY R1D Date: 6/19/91
 Run: 4 Technician(s): BU JS CG TK
 Page: 2 of 3 DK XL

T/C#	Minute	Stove Top	Left Side	Back	Right Side	Bottom	Firebox	2nd Burn	Room Temp	Tube Furnace	Sample Box	Impinger Out	C. Gas Box	C. Gas Impinger	SO2 Impinger
100	10	415	071	147	304	050	855	900	87	1445	045	39	044	36	36
105	15	395	067	146	304	050	808	844	86	1448	046	39	046	36	36
130	20	373	066	147	304	051	778	795	86	1447	046	39	047	36	36
135	25	355	063	146	301	051	747	769	86	1448	047	39	048	36	36
140	30	338	061	144	096	053	700	733	86	1447	047	37	048	36	36
145	35	301	056	103	091	053	695	707	86	1448	047	37	048	36	36
149	40	308	057	140	085	057	675	687	86	1446	047	37	047	36	36
155	45	247	046	138	079	049	657	666	86	1447	047	37	045	36	36
160	50	296	040	136	078	046	636	657	86	1445	047	37	048	36	36
165	55	277	035	134	065	043	619	629	85	1444	047	36	047	36	36
170	00	278	031	133	061	040	616	638	85	1447	047	36	048	36	36
175	05	264	027	131	053	037	598	618	85	1449	046	37	048	36	36
180	10	301	304	185	315	2974	8383	8661	1030						
180	10	258	013	130	019	035	584	603	85	1403	046	37	047	36	36
185	15	050	018	109	043	032	673	689	84	1408	045	37	047	36	36
190	20	045	015	084	040	030	567	581	84	1447	047	37	048	36	36
195	25	039	011	088	035	026	555	564	84	1448	048	37	046	36	36
200	30	034	008	088	032	024	549	563	84	1444	048	37	045	36	36
205	35	024	003	084	027	018	537	548	84	1447	048	37	044	36	36
210	40	023	003	080	024	016	531	534	84	1449	048	38	044	36	36
215	45	020	000	080	021	013	531	537	84	1445	048	38	043	36	36
220	50	017	000	080	018	009	530	540	83	1447	048	38	046	36	36
225	55	015	004	077	015	006	509	548	83	1445	048	38	047	36	37
230	00	014	008	080	014	004	504	544	83	1446	048	38	048	36	37
235	05	013	005	077	012	007	507	545	83	1447	048	38	048	37	37
240	10	015	007	539	0130	0690	6548	6689	1005						
245	15	008	5411	3224	6145	5594	14985	15350	2035						

TEMPERATURES
 RECORD SHEET #14
 WST2-Form 4 Rev 1/88

Unit: PEXENNY R10
 Run: 4
 Page: 3 of 3

Date: 6/19/91
 Technician(s): RAW SS TK
Ge. DIC XL

T/C#	Minute	Stove Top	Left Side	Back	Right Side	Bottom	Firebox	2nd Burn	Room Temp	Tube Furnace	Sample Box	Impinger Out	C. Gas Box	C. Gas Impinger	S02 Impinger	
10	10	914	184	107	016	198	546	547	83	1448	048	38	048	37	37	91
15	15	915	180	106	009	196	553	556	80	1448	048	38	045	37	37	91
20	20	916	181	105	009	194	555	556	80	1447	047	38	046	37	37	91
25	25	915	180	104	009	198	548	540	80	1449	046	38	046	37	37	91
30	30	913	179	104	008	191	534	533	80	1448	044	38	047	37	37	91
35	35	910	177	103	007	189	500	519	80	1448	045	38	047	37	37	90
40	40	906	176	100	005	188	501	500	80	1447	046	38	047	38	37	90
45	45	903	174	101	003	187	498	487	80	1446	046	39	047	38	37	92
50	50	194	170	100	001	185	475	473	80	1445	046	39	047	38	37	90
55	55	195	170	100	008	184	466	463	80	1444	045	39	046	38	37	90
60	60	191	168	118	005	180	460	457	80	1443	045	39	046	38	37	90
65	65	190	168	116	004	181	459	457	81	1442	044	39	045	38	38	90
70	70	1967	1113	1466	0018	0867	6106	6088	891							
75	75	1385	835	834	1597	14012	87939	14584	871	603						
80	80	316	806	39	060	034	638	155	85							
85	85															
90	90															
95	95															
00	00															
05	05															
10	10															
15	15															
20	20															
25	25															
30	30															
35	35															
40	40															
45	45															
50	50															
55	55															
60	60															
65	65															
70	70															
75	75															
80	80															
85	85															
90	90															
95	95															
00	00															
05	05															
												START	080.8			
												END	169.8			
												ΔT	-113.0			

BURN RATE AND FLUE GAS DATA
 WOODSTOVE DATA SHEET #12
 WST2-Form 14 Rev 1/88

Unit: Reservey R-12
 Run: 2 of 2
 Page: 1 of 2

Date: 6/18/91
 Technician(s): BN TK D/K
CG JS XL

460.9

Minute Time	Scale Wt	lbs left	Burn Rate	CO ₂		O ₂		T/C(1)I/C(2)		T/C(3)		SO ₂	Static Press.	Comments	
				v.	%CO ₂	v.	%O ₂	Wet Bulb	Dry Bulb	% H ₂ O	Calc W/B				Stack
0	467.3	10.4	0	29	65	14.4	14.3	48	75	84	25	90	156	22%	Flow FAIR
5	466.8	9.9	.5	365	9.8	11.4	11.3	48.5	76	87	26	108	378	25%	SO ₂ 1.5
10	466.4	9.5	.4	100	8.5	17.8	17.7	48	76	89	25	105	340	24%	CO ₂ 1.5
15	466.8	9.3	.2	293	8.3	17.9	17.9	50	77	90	27	101	200	24%	CO ₂ 1.5
20	466.0	9.1	.2	298	8.5	17.9	17.9	49	77	89	27	100	191	23%	CO ₂ 1.5
25	465.8	8.9	.2	103	8.6	17.8	17.7	47	77	90	27	99	184	23%	
30	465.6	8.7	.2	101	3.0	17.3	17.3	47	77	90	27	99	180	23%	FAIR
35	465.3	8.4	.3	216	5.4	15.1	15.1	40	77	90	27	101	200	24%	* bad
40	464.7	7.8	.6	374	9.4	11.3	11.3	47.8	77	90	27	107	258	24%	
45	464.0	7.1	.7	507	12.7	8.1	8.1	52.8	77	91	27	112	302	25%	
50	463.3	6.4	.7	427	10.2	8.6	8.6	67.8	78	90	28	114	384	26%	
55	462.7	5.8	.6	471	11.8	9.0	9.0	68.8	78	93	28	114	337	26%	
60	462.1	5.0	.6	478	12.0	8.8	8.8	63.1	78	93	28	114	339	26%	Flow
65	461.5	4.6	.6	424	12.1	8.6	8.6	50.8	78	94	28	115	341	26%	SO ₂ 1.5
70	460.9	4.0	.6	440	12.3	8.4	8.4	44.1	78	94	28	115	343	26%	CO ₂ 1.5
75	460.4	3.5	.5	438	11.0	9.8	9.7	57.8	79	95	28	114	324	26%	CO ₂ 1.5
80	459.9	3.0	.5	411	10.3	10.2	10.2	49.1	79	95	28	111	313	25%	
85	459.4	2.5	.5	384	9.6	10.7	10.7	35.7	79	94	28	110	301	25%	
90	459.2	2.3	.2	358	9.0	11.3	11.3	29.9	79	94	28	110	294	25%	
95	458.9	2.0	.3	468	11.7	11.7	11.7	27.3	79	94	28	109	283	25%	
100	458.6	1.7	.3	322	8.1	12.1	12.1	15.8	79	93	28	109	275	25%	
105	458.3	1.4	.3	273	6.8	13.1	13.1	8.9	78	93	28	107	255	25%	
110	458.1	1.2	.2	263	6.6	13.3	13.2	7.5	78	93	28	105	243	24%	
115	458.0	1.1	.1	241	6.0	13.8	13.8	5.6	79	93	28	104	234	24%	
120													354.5		
125													652.5		

Shut down
go up
48A

PRE BURN DATA
RECORD SHEET #13
WST2-Form16

Unit: Remedy R-12 Date: 6/8/91
 Run: 2 Technician(s): BU TK DK
 Page: 1 of 1 CK, SS, XL

Minute	Scale Weight	Burn Rate	Stack	Stove Top	Left Side	Back	Right Side	Bottom	Firebox	2nd Burn	Room Temp	Static	Comments
0	458.9	0	586	1050	370	293	456	341	1087	1594	86	074	Primary Air Set at 5" on vent
5	458.3	.4	346	848	349	258	481	377	1131	1078	87	057	Secondary Air Set at NA
10	458.1	.2	299	730	347	246	483	378	1094	1094	86	054	Fan: ON (1144)
15	458.0	.1	257	598	328	230	477	376	1006	1008	86	019	
20	458.0	0	237	536	367	206	458	371	979	985	86	015	
25	457.9	.1	207	477	357	216	441	363	936	950	86	011	
30	457.8	.1	208	430	308	199	419	359	823	828	85	010	Pumps turned on at: 1405
35	457.7	.1	208	403	314	190	403	345	806	858	84	039	rate coals feed 14sec
40	457.6	.1	195	321	300	185	387	337	786	808	83	036	
45	457.6	0	189	363	289	179	371	331	757	801	83	035	Check WB/DB: 76/28
50	457.5	.1	186	350	283	175	360	306	735	793	83	034	
55	457.4	.1	178	330	267	167	341	318	706	788	80	033	
60	457.4	0	175	321	260	165	331	313	690	765	80	033	
65	457.3	.1	173	310	255	161	321	307	673	755	80	031	
70	457.3	0	170	302	249	159	311	302	657	744	80	030	2646
75	457.2	.1	168	293	243	157	299	298	641	739	81	030	
80	457.1	.1	164	287	237	156	294	290	631	709	82	029	
85	457.1	0	160	279	231	152	286	284	618	690	81	028	
90	457.0	.1	158	274	228	150	281	280	609	680	81	028	
95	457.0	0	156	268	224	148	274	275	598	674	81	026	2378
100	456.9	.1	156	265	220	146	271	271	585	675	81	026	
105	456.9	.1	156	265	220	146	271	271	585	675	81	026	

TEMPERATURES
 RECORD SHEET #14
 WST2-Form14 Rev1/88

9346

Unit: Legona 12-12
 Run: 2
 Page: 1 of 2

Date: 6/18/91
 Technician(s): BW TK, D/C
CH JS, YL

T/C#	Minute	Stove Top	Left Side	Back	Right Side	Bottom	Firebox	2nd Burn	Room Temp	Tube Furnace	Sample Box	Impinger Out	C. Gas Box	C. Gas Impinger	S02 Impinger
0	155	265	240	146	271	271	595	675	81	1444	048	36	048	36	36
5	150	370	287	164	264	257	463	1038	81	1441	048	36	047	36	36
10	5	431	214	182	259	254	439	595	81	1445	048	36	047	36	36
15	10	313	289	186	250	256	394	540	81	1447	046	36	047	36	36
20	15	306	205	186	245	255	373	535	81	1448	045	36	047	36	36
25	20	345	200	194	238	252	358	571	81	1449	046	36	047	36	36
30	25	335	197	183	231	248	350	537	81	1448	046	37	047	36	36
35	30	308	191	150	205	241	373	718	81	1448	047	37	048	36	36
40	35	388	186	136	219	230	408	974	81	1447	048	37	048	36	36
45	40	464	185	131	217	222	506	1164	81	1448	048	38	046	36	36
50	45	546	187	131	209	213	600	244	81	1448	048	38	048	36	36
55	50	557	196	135	230	242	664	1083	82	1448	048	38	048	36	36
60	55	(418)	(218)	(193)	(2813)	(2407)	(5556)	(10016)	(973)						
65	56	541	206	135	240	210	707	1167	82	1448	048	38	048	36	36
70	60	557	214	139	250	212	781	1205	82	1446	048	39	048	36	36
75	65	550	206	144	264	216	840	1209	83	1446	048	39	043	36	36
80	70	545	240	150	278	222	861	1148	83	1447	248	39	243	36	36
85	75	531	251	162	289	227	877	1129	83	1447	249	39	243	36	36
90	80	506	257	171	298	232	896	1084	83	1447	248	39	243	36	36
95	85	492	260	173	304	235	894	1056	83	1449	247	39	243	36	36
100	90	474	264	174	308	239	882	1041	83	1449	247	39	243	36	36
105	95	459	267	177	310	242	875	1001	84	1449	247	39	243	36	36
110	100	430	268	183	310	246	856	949	83	1449	247	39	243	36	36
115	105	410	262	188	308	248	842	908	84	1446	247	36	243	36	36
120	110	392	265	189	307	249	817	861	84	1443	249	36	244	36	36
125	115	(5823)	(2981)	(1986)	(3469)	(2718)	(10144)	(12718)	(997)						
130	120	10610	5465	3899	6342	5685	15700	22794	1970						

BURN RATE AND FLUE GAS DATA
 WOODSTOVE DATA SHEET #12
 WST2-Form 14 Rev 1/88

Unit: Roanoke R-12 Date: 6.19.91
 Run: 30 Technician(s): BN, TK, JS
 Page: 1 of 2 OK

Minute Time	Scale Wt	lbs left	Burn Rate	CO ₂		O ₂		CO		T/C(1)T/C(2)		T/C(3)		4		Static Press.	Comments		
				v.	%CO ₂	v.	%O ₂	TeI	v.	%CO	Bal	Wet Bulb	Dry Bulb	% H ₂ O	Caic W/B			Stack	v.
0	1910	467.1	10.2	0	4.8	15.3	15.3	0.86	8.7	5.5	74	84	24	102	215	.15	375	-0.30	Flow
5	15	416.7	9.3	4	10.5	9.4	9.4	0.32	3.4	30.8	74	86	24	129	510	.12	300	-0.50	SO ₂ 1.5
10	20	466.1	9.2	6	4.8	15.6	15.5	0.53	5.5	8.7	74	86	24	111	302	.18	450	-0.45	002 1.5
15	25	465.6	8.7	5	7.5	13.0	12.9	0.65	6.7	11.3	75	87	2.5	110	298	.17	425	-0.44	02 1.5
20	30	464.9	8.0	7	10.8	9.9	9.8	0.46	4.8	22.6	75	87	2.5	113	345	.15	375	-0.51	00 1.5
25	35	464.1	7.2	8	12.8	7.8	7.7	0.29	3.1	41.2	75	88	2.4	120	394	.14	350	-0.55	
30	40	463.2	6.3	9	13.4	7.1	7.0	0.29	3.1	43.3	75	89	2.4	121	419	.17	405	-0.58	
35	45	462.4	5.5	8	15.3	5.2	5.1	0.72	7.4	20.6	76	90	2.5	124	442	.16	400	-0.60	
40	50	461.6	4.7	8	14.9	5.5	5.4	0.74	7.6	19.6	77	90	2.6	124	442	.15	375	-0.61	
45	55	460.7	3.8	9	14.1	6.4	6.4	0.54	5.6	25.2	77	90	2.6	123	430	.14	350	-0.60	
50	60	459.6	2.7	5	12.2	8.3	8.2	0.16	1.8	67.6	78	91	2.8	121	407	.12	300	-0.57	
55	65	458.4	1.5	2	10.1	9.7	9.7	0.17	1.9	55.8	78	92	2.7	119	379	.12	300	-0.55	
60	70	459.3	2.4	3	9.9	10.3	10.3	0.22	2.4	41.3	78	91	2.8	118	364	.12	300	-0.54	SO ₂ 1.5
65	75	458.9	2.0	1	9.4	11.2	11.2	0.35	3.7	25.3	78	91	2.8	116	342	.12	300	-0.52	002 1.5
70	80	458.6	1.7	3	8.0	12.0	11.9	0.64	6.6	12.2	78	91	2.8	113	322	.13	325	-0.48	02 1.5
75	85	458.4	1.5	2	7.4	12.7	12.6	0.52	5.4	13.7	78	91	2.8	111	307	.13	325	-0.45	00 1.5
80	90	458.2	1.3	2	6.7	13.3	13.2	0.67	6.9	9.7	78	91	2.8	110	295	.13	325	-0.44	
85	95	458.1	1.2	1	5.5	14.2	14.1	1.06	1.07	5.2	78	91	2.8	109	278	.14	350	-0.40	
90	100	458.0	1.1	1	5.3	14.2	14.2	1.06	1.07	5.0	78	90	2.8	107	265	.14	350	-0.39	
95	105	457.9	1.0	1	5.4	14.3	14.2	1.03	1.04	5.2	78	91	2.8	107	259	.14	350	-0.36	
100	110	457.7	0.8	2	5.3	14.2	14.1	1.03	1.04	5.1	78	91	2.8	106	252	.14	350	-0.36	
105	115	457.6	0.7	1	5.4	14.2	14.2	1.10	1.11	4.9	78	90	2.8	106	248	.14	350	-0.35	
110	120	457.5	0.6	1	5.4	14.3	14.2	1.13	1.14	4.8	78	90	2.8	105	245	.14	350	-0.34	
115	125	457.5	0.6	1	5.3	14.3	14.3	1.17	1.18	4.5	78	90	2.8	105	242	.14	350	-0.33	
120	130														349			-0.316	
125	135														8002			-0.32	

PRE BURN DATA
RECORD SHEET #13
WST2-Form16

Unit: Panama R.12 Date: 6.19.91
 Technician(s): BN, JK, JS
 Run: 30 of 1 Page: 1 of 1
Cg. O.V. XI

+6
456.9
450

Minute Time	Scale Weight	Burn Rate	Stack	Stove Top	Left Side	Back	Right Side	Bottom	Firebox	2nd Burn Gas	Room Temp	Static	Comments
0	462.9	0	761	1045	373	304	399	364	847	1540	81	-0.74	Primary Air Set at 6" from Side
05	461.3	1.6	489	887	397	245	405	373	907	1585	82	-0.066	Secondary Air Set at N/A
10	460.5	.8	446	818	397	220	406	372	925	1489	82	-0.063	Fan: ON HIGH
15	459.9	.6	421	741	390	199	407	368	927	1418	82	-0.061	
20	459.5	.4	392	678	386	190	405	363	921	1345	81	-0.057	
25	459.1	.3	367	626	380	187	402	358	940	1217	81	-0.053	
30	458.9	.2	337	575	370	182	401	352	971	1135	81	-0.050	ΔT 316.0 Pumps turned on at: 1140
35	458.7	.2	312	519	363	177	396	346	1001	1043	80	-0.047	316.2
40	458.6	.1	299	485	354	173	391	340	983	1023	80	-0.045	348.6
45	458.5	.1	287	455	345	170	385	334	969	973	80	-0.043	check WB/DB: 77/88
50	458.4	.1	275	431	332	167	377	329	950	911	80	-0.041	327.2
55	458.3	.1	263	408	322	162	369	324	922	880	80	-0.040	317.0
60	458.3	0	254	387	310	159	361	318	899	851	79	-0.038	287.0
65	458.2	.1	247	372	299	156	353	314	889	819	79	-0.036	298.8
70	458.1	.1	240	356	291	153	344	309	883	798	79	-0.036	290.6
75	458.0	.1	233	339	280	150	335	303	864	770	79	-0.033	281.4
80	457.9	.1	228	329	274	148	329	299	864	751	79	-0.033	275.8
85	457.8	.1	223	318	265	146	323	292	857	735	79	-0.031	268.8
90	457.7	.1	229	308	256	145	316	287	729	758	79	-0.031	262.4
95	457.6	.1	223	308	251	143	310	282	724	754	79	-0.031	258.8
100	457.5	.1	221	306	247	143	303	278	715	754	79	-0.030	255.4
105	457.4	0	217	302	245	142	298	276	708	756	79	-0.030	252.6
110	457.3	.1	215	298	242	141	295	273	697	741	79	-0.030	249.8

TEMPERATURES
 RECORD SHEET #14
 WST2-Form 14 Rev 1/88

Unit: POORNA 2-12 Date: 6.19.91
 Run: 30 Technician(s): BN, JS, JK
 Page: 1 of 2 CA, DV, XI

T/C#	Minute	Stove Top	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Time	Top	Left Side	Back	Right Side	Bottom	Firebox	2nd Burn Catalyst	Room Temp	Tube Furnace	Sample Box	Impinger Out	C. Gas Box	C. Gas Impinger	SO2 Impinger		
	0	298	242	141	295	273	697	741	79	1447	249	36	249	35	35	95	
	05	451	245	173	285	262	593	1318	79	1447	249	36	249	35	35	94	
	10	485	238	186	280	263	521	764	79	1447	249	36	249	35	35	95	
	15	480	231	193	274	264	565	949	79	1447	249	36	249	35	35	96	
	20	550	226	199	269	262	606	1017	79	1447	249	36	249	35	35	95	
	25	638	224	208	269	260	717	1173	80	1447	249	36	249	35	35	95	
	30	681	236	214	275	260	816	1322	80	1447	249	37	249	35	35	97	
	35	659	249	182	287	259	862	1379	81	1449	249	37	249	35	35	96	
	40	628	259	172	299	258	883	1436	81	1447	249	37	249	35	35	96	
	45	641	272	170	313	259	971	1310	82	1449	249	37	249	35	35	97	
	50	687	283	148	325	261	950	1250	82	1449	249	37	249	35	35	97	
	55	719	293	149	333	264	950	1144	83	1449	249	37	249	35	35	97	
	60	789	298	2175	3504	3145	957	13803	84	1449	249	38	249	35	35	98	
	65	561	298	168	337	267	957	1095	84	1449	249	38	249	35	35	97	
	70	526	299	172	341	270	938	1071	84	1449	249	38	249	35	35	96	
	75	496	300	175	342	272	915	1032	84	1449	249	38	249	35	35	96	
	80	467	299	176	340	274	913	986	84	1449	249	38	249	35	35	96	
	85	442	298	176	338	277	885	917	84	1449	248	38	248	35	35	96	
	90	417	293	174	336	276	836	858	84	1449	248	38	248	35	35	96	
	95	390	289	171	331	277	812	831	84	1449	247	38	248	35	35	96	
	100	373	284	169	325	276	804	818	84	1449	247	38	248	35	35	97	
	105	355	278	166	318	273	797	805	84	1449	247	36	247	35	35	96	
	110	346	274	164	313	271	789	799	84	1449	247	36	247	35	35	96	
	115	337	269	162	309	269	787	796	83	1449	247	36	247	35	35	96	
	120	329	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	125	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	130	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	135	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	140	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	145	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	150	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	155	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	160	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	165	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	170	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	175	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	180	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	185	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	190	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	195	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	200	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	205	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	210	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	215	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	220	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	225	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	230	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	235	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	240	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	245	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	250	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	255	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	260	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	265	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	270	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	275	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	280	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	285	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	290	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	295	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	300	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	
	305	311	266	161	304	267	783	776	84	1449	247	36	247	35	35	96	

TEMPERATURES
RECORD SHEET #14
WST2-Form14 Rev1/88

Unit: Peaenay R-12 Date: 6.19.91
 Run: 30 Technician(s): BN, IS, TK, CG
 Page: 2 of 2

T/C#	Minute Time	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
		Stove Top	Left Side	Back	Right Side	Bottom	Firebox	2nd Burn Catalytic	Room Temp	Tube Furnace	Sample Box	Impinger Out	C. Gas Box	C. Gas Impinger	S02 Impinger	
120	1410	322	260	160	300	265	766	767	83	1448	247	36	247	35	35	96
125	15	314	257	159	297	264	760	761	83	1449	248	37	247	35	35	96
130	20	307	251	158	294	261	745	736	83	1448	248	37	247	35	35	95
135	25	297	245	157	289	257	729	717	83	1448	248	37	247	35	35	95
140	30	293	242	156	286	256	705	699	83	1447	248	37	247	35	35	96
145	35	284	237	155	281	252	674	672	83	1447	248	37	247	35	35	96
150	40	1917	1192	915	1147	1155	4379	4352	498							
155	45	1745	1037	5154	985	7169	23716	28933	2470							
160	50	1441.8	2164.6	171.8	306.2	2165.6	190.9	164.4	82.3							
165	55															
170	1500															
175	05															
180	10						AT	START	249.8							
								STOP	241.8							
									-8.0							

BURN RATE AND FLUE GAS DATA
WOODSTOVE DATA SHEET #12
WST2-Form 14 Rev 1/88

Unit: Regency R-12
Run: 1 of 1
Page: 1 of 1

Date: 6-18-91
Technician(s): AN JS, TK, CG, DK

456.50

Minute Time	Scale Wt	lbs left	Burn Rate	CO ₂		O ₂		CO		Wet Bulb	Dry Bulb	% H ₂ O	Calc W/B	Stack	SO ₂		Static Press.	Comments
				v.	%CO ₂	v.	%O ₂	v.	%CO						v.	PPM		
0	417.0	10.4	0	.297	7.45	.507	12.8	12.8	.11	75	88	2.4	127	497	.13	325	-.065	Flow
05	465.9	9.3	1.1	.633	15.9	.179	4.5	4.5	.36	74	89	2.3	140	728	.16	400	-.080	80% 1.5
10	464.6	8.0	1.3	.613	15.4	.212	5.3	5.3	.13	75	90	2.4	141	740	.14	350	-.082	60% 1.5
15	463.1	6.5	1.5	.633	15.9	.174	4.3	4.3	.23	75	91	2.4	141	752	.14	350	-.082	60% 1.5
20	461.6	5.0	1.5	.676	16.9	.128	3.2	3.1	.56	76	92	2.5	142	771	.15	375	-.083	60% 1.5
25	460.1	3.5	1.5	.597	15.0	.209	5.2	5.2	.29	76	92	2.5	139	711	.15	375	-.082	
30	459.1	2.5	1.0	.521	13.2	.278	7.0	6.9	.14	76	91	2.5	137	653	.15	375	-.079	
35	458.5	1.9	.6	.423	10.6	.378	9.5	9.5	.08	76	91	2.5	134	592	.15	375	-.076	
40	457.8	1.2	.7	.353	8.9	.447	11.3	11.3	.11	77	91	2.6	130	539	.14	350	-.073	
45	457.5	.9	.3	.320	8.0	.483	12.2	12.2	.13	76	90	2.5	129	508	.12	300	-.070	
50	457.1	.5	.4	.282	7.1	.514	13.0	13.0	.20	76	89	2.5	127	484	.09	225	-.068	
55	456.8	.2	.3	.251	6.3	.510	13.7	13.6	.26	75	88	2.4	126	465	.10	250	-.066	
60	456.6	0	.2	.239	6.0	.549	13.9	13.9	.31					4140			-.906	Flow
														150	.10	250	-.065	80% 1.5
														7150			-.065	80% 1.5
														17810			-.971	80% 1.5
														17810			-.075	80% 1.5

PRE BURN DATA
 RECORD SHEET #13
 WST2-Form16

Unit: LEGACY R-12 Date: 6.18.91
 Technician(s): BNTS TR CO. D.K.L.
 Run: 1 of 1
 Page: 1 of 1

Minute Time	Scale Weight	Burn Rate	T/C#-3	4	5	6	7	8	9	10	11	Static	Comments
				Stove Top	Left Side	Back	Right Side	Bottom	Firebox	2nd Burn Catalytic	Room Temp		
0 10:30	466.3	0		783	465	294	518	463	743	1359	83	-0.066	Primary Air Set at 1110.0° F
05 35	466.0	.3		781	434	230	489	433	1083	1458	83	-0.080	Secondary Air Set at N/A
10 40	463.6	2.4		724	411	209	472	415	1183	1543	83	-0.080	Fan: ON HIGH
15 45	461.4	2.2		674	407	195	468	401	1274	1649	84	-0.081	ΔT
20 50	459.6	1.8		633	416	189	471	394	1388	1638	84	-0.080	487.2
25 55	458.3	1.3		660	422	190	481	392	1476	1518	85	-0.079	489.0
30 1:00	457.5	.8		588	430	188	495	392	1295	1434	85	-0.075	Pumps turned on at: 1105
35 05	457.2	.3		537	445	189	501	396	1218	1221	86	-0.070	459.8
40 10	456.9	.3		499	433	189	498	400	1184	1173	86	-0.067	440.2
45 15	453.8	1.2		546	420	187	482	397	1097	1485	85	-0.073	433.6
50 20	453.2	.1		572	411	187	474	393	1130	1419	84	-0.073	436.8
55 25	457.5	.7		539	399	184	462	389	1125	1337	84	-0.071	430.8
60 30	456.9	.1		515	391	182	454	386	1151	1231	84	-0.068	416.6
65 35	456.6	.3		497	383	182	452	385	1124	1070	83	-0.065	407.2

