EPA Certification Test Report

The following models are EPA certified under the following attached test report:	**EX90**
	Model #
Wood Stoves	n/a
Wood Inserts	n/a
Wood Fireplaces	EX90
	R90
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.

Published May 14, 2015

Model: EX-90
Fireplace Products International, Ltd.
6988 Venture Street
Delta, BC V4G 1H4
CANADA

Certification Test Report

Fireplace Products International, Ltd.

Built-In Room Heater
Model: EX-90

Prepared for:	Fireplace Products International, Ltd. 6988 Venture Street Delta, BC V4G 1H4 CANADA
Prepared by:	OMNI-Test Laboratories, Inc. 5465 SW Western Avenue, Suite G Beaverton, Oregon 97005 (503) 643-3788
Test Period:	February 15, 2005 through February 18, 2005
Report Date:	February 2005
Project Number:	219-S-10-3

Model: EX-90
Fireplace Products International, Ltd.
6988 Venture Street
Delta, BC V4G 1H4
CANADA

AUTHORIZED SIGNATORIES

This report has been reviewed and approved by the following authorized signatories.

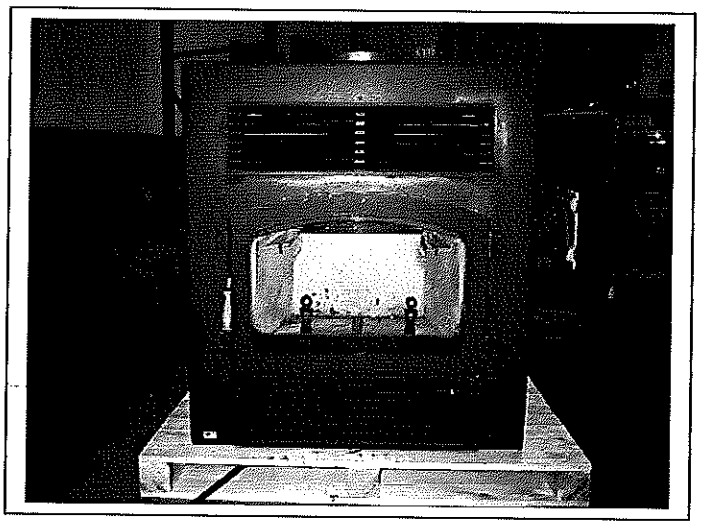
Richard C. Sparwasser, Vice President
OMNI-Test Laboratories, Inc.

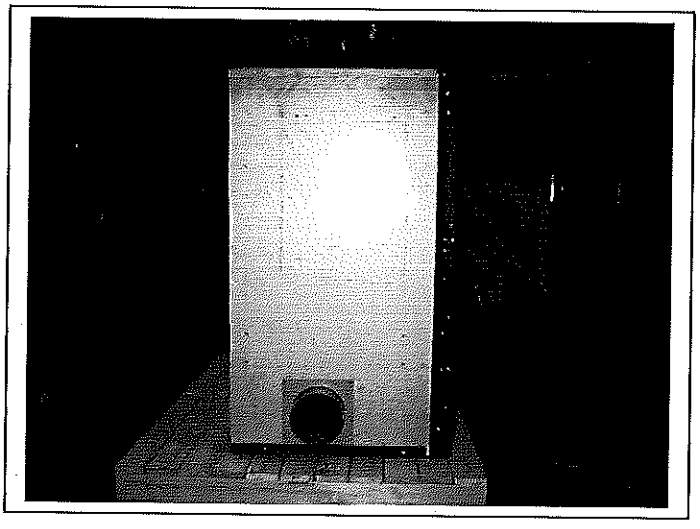
John Voorhees, Project Manager
OMNI-Test Laboratories, Inc.

Bruce Davis, Technician
OMNI-Test Laboratories, Inc.

Model: EX-90
Fireplace Products International, Ltd.
6988 Venture Street
Delta, BC V4G 1H4
CANADA

Fireplace Products International, Ltd.
Model: EX-90
Test Dates: February 15, 2005 through February 18, 2005





Model: EX-90
Fireplace Products International, Ltd.
6988 Venture Street
Delta, BC V4G 1H4
CANADA

Table 1.1 – Particulate Emissions

Run	Burn Rate (kg/hr dry)	Method 5G Emissions (g/hr)
1	0.97	4.03
2	1.15	4.55
3	1.34	1.77
6	3.51	5.36
Weighted particulate emission average of four test runs: 3.72 grams per hour.		

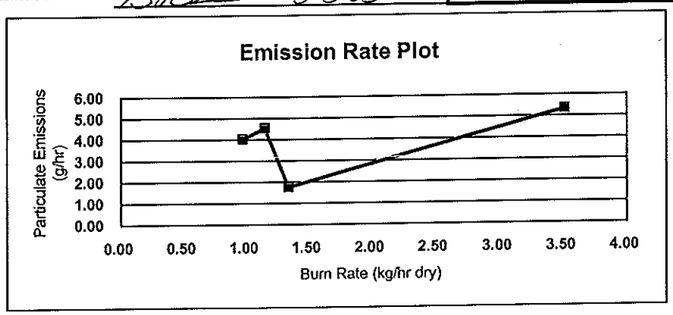
Table 1.2 – Test Facility Conditions

Run	Room Temperature (°F)		Barometric Pressure (in Hg)		Air Velocity (ft/min)	
	Before	After	Before	After	Before	After
1	73	78	30.42	30.39	<50	<50
2	71	76	30.42	30.33	<50	<50
3	74	73	30.30	30.30	<50	<50
6	79	76	29.88	29.85	<50	<50

EPA Weighted Average Emissions
EPA Method 28

Client: FPI
Status: Final
Stove Model: EX-90
Stove Type: Non-Catalytic Stove
Test Dates: February 15 through February 18, 2005
Project Number: 219-S-10-3
Tracking Number: 711
Signature/Date: 3-3-05

Weighted Average (g/hr)
3.72



Run #	1	
Burn Rate (dry kg/hr)	0.97	
Catagory	2	
Overall Efficiency (%)	63%	
Emissions (g/hr)	4.03	
Cap (g/hr)	15	
Weighting Factor	0.490	29.85%
Heat Output (BTU/hr)	11721	
Run #	2	
Burn Rate (dry kg/hr)	1.15	
Catagory	2	
Overall Efficiency (%)	63%	
Emissions (g/hr)	4.55	
Cap (g/hr)	15	
Weighting Factor	0.298	18.18%
Heat Output (BTU/hr)	13896	
Run #	3	
Burn Rate (dry kg/hr)	1.34	
Catagory	3	
Overall Efficiency (%)	63%	
Emissions (g/hr)	1.77	
Cap (g/hr)	15	
Weighting Factor	0.500	30.47%
Heat Output (BTU/hr)	16192	
Run #	6	
Burn Rate (dry kg/hr)	3.51	
Catagory	4	
Overall Efficiency (%)	63%	
Emissions (g/hr)	5.36	
Cap (g/hr)	18	
Weighting Factor	0.353	21.49%
Heat Output (BTU/hr)	42413	

Weighted Average
3.72 ÷ 2 = 1.86

Model: EX-90
Fireplace Products International, Ltd.
6988 Venture Street
Delta, BC V4G 1H4
CANADA

Run 1

OMNI-Test Laboratories, Inc.

Wood Heater Test Data - EPA Method 5G

Signature/Date: [signature] 3.3.05

Run: 1

Manufacturer:	FPI
Model:	EX-90
Tracking No.:	711
Project No.:	219-S-10-3
Test Date:	15-Feb-05
Beginning Clock Time:	17:17
Recording Interval:	10 min.
Total Sampling Time:	300 min.

Velocity Traverse Data

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	
Initial dP	0.022	0.045	0.050	0.026	0.030	0.045	0.050	0.028	"H2O
Initial Temp.	113	113	113	113	113	113	113	113	oF

OMNI Equipment Numbers: _____

PM Control Module:	W001					
Dilution Tunnel MW(dry):	29.00	lb/lb-mole				
Dilution Tunnel MW(wet):	28.56	lb/lb-mole				
Dilution Tunnel H2O:	4.00	percent				
Dilution Tunnel Static:	-0.560	"H2O				
Pitot Tube Cp:	0.99					
Meter Box Y Factor:	1.014					
Barometric Pressure:	Begin	Middle	End	Average		
	30.42	30.4	30.39	30.40	"Hg	

Tunnel Velocity:	13.06	ft/sec.	
Intial Tunnel Flow:	138.1	scfm	
Average Tunnel Flow:	141.5	scfm	
Tunnel Area:	0.196	ft2	
Post-Test Leak Check:	.005@12	cfm@"Hg	
Fuel Moisture (dry basis	20.54	%	
Total Particulate:	46.2	mg	
Filter Holder No.:	A		

Elapsed Time	Particulate Sampling Data								Fuel Weight, lb		Wood Heater Temperature Data, oF											Stack	
	Gas Meter Cubic Feet	Sample Rate, cfm	Orifice dH	Meter oF	Meter Vac. In. Hg.	Dilution Tunnel Temp.	Dilution Tunnel dP	Pro. Rate (10%)	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Filter	Impinger exit	Ambient	Draft In. H2O	Catalyst Temp.
0	0.000		0.01	73	0.0825	113	0.037		12.9		513	292	343	364	329	3218	368.2	508	66	67	73	-0.088	NA
10	4.899	0.49	0.83	74	1.2727	120	0.037	102	11.4	-1.49578	590	331	397	388	383	3218	417.8	496	90	47	74	-0.062	NA
20	9.810	0.49	0.83	75	1.3106	107	0.037	101	10.5	-0.92664	641	330	378	366	348	3218	412.6	481	86	47	73	-0.085	NA
30	14.720	0.49	0.83	76	1.3023	107	0.037	101	9.4	-1.06381	657	336	363	362	327	3218	409.0	505	84	47	73	-0.093	NA
40	19.652	0.49	0.82	77	1.2988	109	0.037	102	8.2	-1.25201	757	312	369	335	276	3218	409.8	555	84	47	74	-0.092	NA
50	24.579	0.49	0.82	78	1.2881	111	0.037	101	6.6	-1.51836	838	356	395	350	305	3218	448.8	615	85	47	74	-0.101	NA
60	29.520	0.49	0.84	79	1.2952	110	0.037	101	5.7	-0.96014	732	332	378	353	312	3218	421.4	579	85	47	75	-0.092	NA
70	34.482	0.50	0.83	80	1.339	107	0.037	101	5.0	-0.63637	641	300	351	349	296	3218	387.4	525	85	47	75	-0.091	NA
80	39.458	0.50	0.82	81	1.3165	105	0.037	101	4.5	-0.58214	615	280	336	340	283	3218	370.8	492	85	47	75	-0.090	NA
90	44.432	0.50	0.84	81	1.2917	103	0.037	101	3.9	-0.53908	604	266	326	363	280	3218	367.8	465	84	47	74	-0.089	NA
100	49.414	0.50	0.83	82	1.313	101	0.037	101	3.5	-0.45615	548	252	311	352	323	3218	357.2	440	83	47	75	-0.087	NA
110	54.392	0.50	0.82	82	1.3438	98	0.037	101	3.1	-0.39873	490	236	296	387	334	3218	348.6	406	82	47	74	-0.085	NA
120	59.373	0.50	0.82	82	1.2881	96	0.037	100	2.7	-0.38756	461	225	290	385	329	3218	338.0	380	82	47	74	-0.081	NA
130	64.355	0.50	0.81	82	1.313	94	0.037	100	2.4	-0.26635	429	217	330	377	341	3218	338.8	356	81	47	74	-0.079	NA
140	69.328	0.50	0.83	82	1.3011	93	0.037	100	2.2	-0.23605	410	225	333	369	320	3218	331.4	338	80	47	74	-0.077	NA
150	74.308	0.50	0.82	82	1.3071	91	0.037	100	2.0	-0.19618	393	234	333	362	337	3218	331.8	323	79	47	73	-0.074	NA
160	79.289	0.50	0.82	82	1.3248	90	0.037	100	1.8	-0.17385	382	272	329	356	321	3218	332.0	313	79	47	74	-0.073	NA
170	84.269	0.50	0.83	82	1.2988	90	0.037	100	1.7	-0.15471	374	285	348	352	329	3218	337.6	304	79	48	74	-0.072	NA
180	89.280	0.50	0.83	82	1.2917	90	0.037	100	1.5	-0.14992	368	281	360	348	326	3218	336.6	298	79	48	75	-0.072	NA
190	94.290	0.50	0.84	82	1.3011	91	0.037	101	1.4	-0.14195	362	281	375	343	325	3218	337.2	292	79	48	75	-0.070	NA
200	99.300	0.50	0.82	83	1.3378	92	0.037	100	1.2	-0.14833	357	280	358	339	324	3218	331.6	286	80	48	76	-0.070	NA
210	104.304	0.50	0.83	83	1.2999	92	0.037	100	1.1	-0.12281	351	278	325	335	320	3218	321.8	282	80	48	77	-0.070	NA
220	109.317	0.50	0.83	83	1.3378	93	0.037	101	1.0	-0.13397	344	280	355	329	316	3218	324.8	274	81	48	77	-0.069	NA
230	114.325	0.50	0.83	84	1.3485	93	0.037	100	0.8	-0.11643	336	284	338	323	312	3218	318.6	270	81	49	77	-0.069	NA
240	119.343	0.50	0.82	84	1.313	93	0.037	101	0.7	-0.15152	329	284	329	317	307	3218	313.2	266	82	49	78	-0.069	NA
250	124.359	0.50	0.83	85	1.3556	93	0.037	100	0.6	-0.11962	321	277	321	312	302	3218	306.6	262	82	49	78	-0.068	NA
260	129.374	0.50	0.82	85	1.313	94	0.037	100	0.5	-0.10048	311	280	331	306	296	3218	304.8	255	82	49	78	-0.066	NA
270	134.395	0.50	0.82	85	1.326	94	0.037	100	0.4	-0.08453	304	277	320	300	290	3218	298.2	249	83	50	78	-0.068	NA
280	139.419	0.50	0.82	86	1.2917	93	0.037	100	0.3	-0.12121	298	274	302	293	286	3218	290.6	244	83	50	79	-0.068	NA
290	144.442	0.50	0.83	86	1.2905	93	0.037	100	0.1	-0.16535	296	271	282	288	283	3218	284.0	242	83	50	79	-0.069	NA
300	149.475	0.50	0.83	86	1.2881	93	0.037	100	0.0	-0.10101	298	268	289	283	283	3218	284.2	240	83	50	78	-0.070	NA
Avg/Total	149.475	0.50	0.80	81.42		98.35	0.037	100.67									84		81.84	48.48		-0.078	#DIV/0!

219-S-10-3__#1low

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Wood Heater Test Data - EPA Method 5G Preburn

Run: 1

Manufacturer:
Model:
Tracking No.:
Project No.: 219-S-10-3
Preburn Date: 15-Feb-05

Coal Bed Range: 2.6-3.2
Actual Coal Bed: 2.6

Signature/Date:

Recording Interval: 10 min.

OMNI Equipment Numbers:

Elapsed Time	Fuel Weight, lb		Wood Heater Temperature Data, oF									Stack	
	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Ambient	Draft In. H2O	Catalyst Temp.
0:00:00	8.5		984	395	597	464	441	3218	576.2	1,050	70	-0.113	
0:10:00	7.3	-1.20575	719	323	436	377	344	3218	439.8	684	71	-0.098	NA
0:20:00	5.9	-1.36365	804	323	415	365	338	3218	449.0	657	71	-0.099	NA
0:30:00	4.5	-1.45775	862	326	437	378	351	3218	470.8	670	73	-0.098	NA
0:40:00	3.5	-0.9729	756	327	411	400	343	3218	447.4	620	73	-0.097	NA
0:50:00	3.0	-0.53908	633	311	380	432	314	3218	414.0	543	72	-0.086	NA
1:00:00	2.6	-0.36205	514	284	333	362	368	3218	372.2	451	74	-0.087	NA
Avg/Total									#VALUE!			-0.097	#DIV/0!

9-7 of 25

Model: EX-90
Fireplace Products International, Ltd.
6988 Venture Street
Delta, BC V4G 1H4
CANADA

Run 2

OMNI-Test Laboratories, Inc.

Wood Heater Test Data - EPA Method 5G

Run: 2

Manufacturer: FPI
Model: EX-90
Tracking No.: 711
Project No.: 219-S-10-3
Test Date: 16-Feb-05
Beginning Clock Time: 10:28
Recording Interval: 10 min.
Total Sampling Time: 250 min.

OMNI Equipment Numbers:

Velocity Traverse Data									
	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	
Initial dP	0.035	0.048	0.050	0.025	0.032	0.046	0.050	0.030	"H2O
Initial Temp.	112	112	112	112	112	112	112	112	oF

PM Control Module: W1
Dilution Tunnel MW(dry): 29.00 lb/lb-mole
Dilution Tunnel MW(wet): 28.56 lb/lb-mole
Dilution Tunnel H2O: 4.00 percent
Dilution Tunnel Static: -0.570 "H2O
Pitot Tube Cp: 0.99
Meter Box Y Factor: 1.014

Barometric Pressure:	Begin	Middle	End	Average
	30.42	30.37	30.33	30.37 "Hg

Signature/Date:

Tunnel Velocity: 13.57 ft/sec.
Intial Tunnel Flow: 143.3 scfm
Average Tunnel Flow: 145.4 scfm
Tunnel Area: 0.196 ft2
Post-Test Leak Check: .004@15 cfm@"Hg
Fuel Moisture (dry basis 21.36 %
Total Particulate: 43.4 mg
Filter Holder No.: A

Elapsed Time	Particulate Sampling Data								Fuel Weight, lb		Wood Heater Temperature Data, oF											Stack	
	Gas Meter Cubic Feet	Sample Rate, cfm	Orifice dH	Meter oF	Meter Vac. In. Hg.	Dilution Tunnel Temp.	Dilution Tunnel dP	Pro. Rate (10%)	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Filter	Impinger exit	Ambient	Draft In. H2O	Catalyst Temp.
0	0.000		0.00	74	0.0837	112	0.040		12.8		469	272	327	370	304	3218	348.4	429	69	68	71	-0.092	NA
10	4.972	0.50	0.85	74	1.39	114	0.040	103	11.7	-1.0784	484	290	369	410	327	3218	376.0	443	82	47	72	-0.089	NA
20	9.929	0.50	0.84	74	1.4113	105	0.040	101	10.8	-0.94738	620	293	363	354	344	3218	394.8	471	77	47	71	-0.090	NA
30	14.889	0.50	0.83	75	1.3781	107	0.040	102	9.6	-1.2217	712	314	373	352	333	3218	416.8	537	77	47	71	-0.098	NA
40	19.833	0.49	0.83	76	1.4184	111	0.040	101	8.2	-1.36684	765	316	382	330	295	3218	417.6	590	78	47	73	-0.100	NA
50	24.776	0.49	0.83	77	1.39	115	0.040	102	6.8	-1.40352	807	349	409	346	316	3218	445.4	632	79	47	74	-0.104	NA
60	29.726	0.49	0.82	78	1.3935	114	0.040	101	5.7	-1.11484	744	356	405	361	332	3218	439.6	614	80	47	74	-0.103	NA
70	34.647	0.49	0.81	79	1.4101	112	0.040	100	5.0	-0.66827	650	326	369	357	312	3218	402.8	563	81	47	74	-0.101	NA
80	39.585	0.49	0.82	80	1.3935	110	0.040	100	4.4	-0.61564	610	299	341	351	344	3218	389.0	529	81	47	74	-0.099	NA
90	44.563	0.50	0.82	80	1.3911	108	0.040	101	3.8	-0.56619	596	284	332	354	307	3218	374.6	505	80	47	74	-0.097	NA
100	49.556	0.50	0.82	81	1.4042	105	0.040	101	3.3	-0.55503	579	275	328	353	332	3218	373.4	480	80	47	73	-0.097	NA
110	54.542	0.50	0.82	81	1.3781	105	0.040	101	2.8	-0.4705	563	267	321	363	352	3218	373.2	467	79	47	75	-0.094	NA
120	59.532	0.50	0.82	81	1.4231	104	0.040	101	2.4	-0.39394	528	259	314	376	378	3218	371.0	442	79	47	75	-0.095	NA
130	64.529	0.50	0.83	82	1.4326	103	0.040	101	2.2	-0.23924	482	247	310	379	323	3218	348.2	411	79	47	74	-0.090	NA
140	69.511	0.50	0.82	82	1.3994	101	0.040	100	1.9	-0.21691	452	234	304	395	305	3218	338.0	390	78	47	75	-0.087	NA
150	74.492	0.50	0.83	82	1.384	100	0.040	100	1.7	-0.20415	436	231	303	389	345	3218	340.8	373	78	47	75	-0.086	NA
160	79.470	0.50	0.84	82	1.39	99	0.040	100	1.6	-0.18661	426	229	381	386	363	3218	357.0	362	78	47	75	-0.086	NA
170	84.469	0.50	0.84	82	1.4125	99	0.040	100	1.4	-0.17385	419	227	381	384	349	3218	352.0	357	78	48	76	-0.084	NA
180	89.487	0.50	0.83	83	1.4136	98	0.040	100	1.2	-0.1882	414	226	381	382	360	3218	352.6	348	80	48	75	-0.084	NA
190	94.514	0.50	0.83	83	1.416	98	0.040	101	1.0	-0.17544	409	224	380	380	331	3218	344.8	342	81	48	76	-0.083	NA
200	99.532	0.50	0.83	83	1.429	98	0.040	100	0.8	-0.18341	405	224	377	378	347	3218	346.2	340	82	48	77	-0.084	NA
210	104.545	0.50	0.82	83	1.3911	98	0.040	100	0.7	-0.17385	398	222	371	377	339	3218	341.4	333	83	48	76	-0.084	NA
220	109.571	0.50	0.83	84	1.4267	97	0.040	100	0.5	-0.16428	389	221	375	373	347	3218	341.0	329	83	48	76	-0.084	NA
230	114.589	0.50	0.83	84	1.4113	97	0.040	100	0.3	-0.16268	384	219	352	368	343	3218	333.2	322	83	48	76	-0.083	NA
240	119.607	0.50	0.83	84	1.4255	97	0.040	100	0.2	-0.17704	379	218	349	364	340	3218	330.0	318	83	49	76	-0.084	NA
250	124.633	0.50	0.82	84	1.4373	96	0.040	100	0.0	-0.15311	370	217	337	360	335	3218	323.8	314	83	49	76	-0.083	NA
Avg/Total	124.633	0.50	0.80	80.31		103.96	0.040	100.69									25		79.65	48.23		-0.091	#DIV/0!

2-12 thru 2-50

OMNI Test Laboratories, Inc.

Wood Heater Test Data - EPA Method 5G Preburn

Run: 2

Manufacturer: FPI
Model: EX-90
Tracking No.: 711
Project No.: 219-S-10-3
Preburn Date: 16-Feb-05

Coal Bed Range: 2.6-3.2
Actual Coal Bed: 2.8

Signature/Date:

Recording Interval: 10 min.

OMNI Equipment Numbers:

Elapsed Time	Fuel Weight, lb		Wood Heater Temperature Data, oF									Stack	
	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Ambient	Draft In. H2O	Catalyst Temp.
0:00:00	9.7		1109	439	707	553	428	3218	647.2	1,124	71	-0.123	
0:10:00	8.2	-1.48805	799	352	493	437	395	3218	495.2	782	72	-0.111	NA
0:20:00	6.7	-1.45775	841	328	458	413	371	3218	482.2	737	72	-0.112	NA
0:30:00	5.3	-1.46094	849	333	453	413	376	3218	484.8	717	71	-0.110	NA
0:40:00	4.3	-1.00001	780	331	433	413	366	3218	464.6	651	72	-0.103	NA
0:50:00	3.7	-0.56619	657	302	392	448	332	3218	426.2	580	72	-0.097	NA
1:00:00	3.0	-0.70495	532	278	347	386	355	3218	379.6	494	71	-0.093	NA
1:07:26	2.8	-0.14992	473	265	322	362	295	3218	343.4	411	71	-0.088	NA
Avg/Total									#VALUE!			-0.105	#DIV/0!

2-15 of 2-35

Model: EX-90
Fireplace Products International, Ltd.
6988 Venture Street
Delta, BC V4G 1H4
CANADA

Run 3

OMNI-Test Laboratories, Inc.

Wood Heater Test Data - EPA Method 5G

Signature/Date: [signature] 3-3-05

Run:	**3**
Manufacturer:	FPI
Model:	EX-90
Tracking No.:	711
Project No.:	219-S-10-3
Test Date:	16-Feb-05
Beginning Clock Time:	16:15
Recording Interval:	10 min.
Total Sampling Time:	210 min.

OMNI Equipment Numbers: _____

Velocity Traverse Data

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	
Initial dP	0.022	0.040	0.048	0.025	0.030	0.045	0.050	0.027	"H2O
Initial Temp.	122	122	122	122	122	122	122	122	oF

PM Control Module:	W1				
Dilution Tunnel MW(dry):	29.00	lb/lb-mole			
Dilution Tunnel MW(wet):	28.56	lb/lb-mole			
Dilution Tunnel H2O:	4.00	percent			
Dilution Tunnel Static:	-0.560	"H2O			
Pitot Tube Cp:	0.99				
Meter Box Y Factor:	1.014				
Barometric Pressure:	Begin	Middle	End	Average	
	30.30	30.3	30.3	30.30	"Hg

Tunnel Velocity:	12.99	ft/sec.
Intial Tunnel Flow:	134.8	scfm
Average Tunnel Flow:	138.0	scfm
Tunnel Area:	0.196	ft2
Post-Test Leak Check:	.008@14	cfm@"Hg
Fuel Moisture (dry basis	21.79	%
Total Particulate:	12.3	mg
Filter Holder No.:	A	

Elapsed Time	Particulate Sampling Data								Fuel Weight, lb		Wood Heater Temperature Data, oF											Stack	
	Gas Meter Cubic Feet	Sample Rate, cfm	Orifice dH	Meter oF	Meter Vac. In. Hg.	Dilution Tunnel Temp.	Dilution Tunnel dP	Pro. Rate (10%)	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Filter	Impinger exit	Ambient	Draft In. H2O	Catalyst Temp:
0	0.000		0.00	77	0.0872	122	0.036		12.6		502	298	360	398	382	3218	388.0	460	73	71	74	-0.101	NA
10	4.964	0.50	0.84	77	1.313	128	0.036	102	11.0	-1.62801	656	360	414	392	390	3218	442.4	557	89	48	74	-0.109	NA
20	9.922	0.50	0.83	77	1.2905	118	0.036	101	9.8	-1.17067	716	380	427	405	347	3218	455.0	573	83	48	74	-0.104	NA
30	14.871	0.49	0.83	78	1.2917	120	0.036	101	8.5	-1.35089	762	406	449	400	369	3218	477.2	620	82	48	73	-0.109	NA
40	19.817	0.49	0.82	79	1.3071	125	0.036	101	6.9	-1.51517	807	378	410	379	339	3218	462.6	655	83	47	74	-0.110	NA
50	24.717	0.49	0.82	80	1.3071	120	0.036	100	5.5	-1.43527	765	360	394	385	342	3218	449.2	634	83	48	74	-0.110	NA
60	29.617	0.49	0.82	81	1.3	119	0.036	100	4.6	-0.94434	682	343	383	387	346	3218	428.2	597	83	48	74	-0.111	NA
70	34.616	0.50	0.83	81	1.2999	115	0.036	101	3.9	-0.65551	620	314	364	377	323	3218	399.6	558	82	48	74	-0.105	NA
80	39.612	0.50	0.84	81	1.3236	113	0.036	101	3.3	-0.60447	595	300	355	374	346	3218	394.0	531	81	48	74	-0.102	NA
90	44.615	0.50	0.84	81	1.3153	110	0.036	101	2.8	-0.54387	569	289	345	379	340	3218	384.4	505	82	48	74	-0.100	NA
100	49.617	0.50	0.83	81	1.3177	107	0.036	101	2.3	-0.45774	541	274	342	388	396	3218	388.2	481	83	48	73	-0.101	NA
110	54.613	0.50	0.83	81	1.3284	105	0.036	100	2.0	-0.33174	516	266	335	439	380	3218	387.2	457	83	48	73	-0.100	NA
120	59.612	0.50	0.83	81	1.2976	102	0.036	100	1.7	-0.24402	490	254	334	433	342	3218	370.6	437	82	47	73	-0.096	NA
130	64.615	0.50	0.83	81	1.3106	100	0.036	100	1.5	-0.22807	470	248	327	426	389	3218	372.0	419	82	48	73	-0.094	NA
140	69.617	0.50	0.83	81	1.2976	98	0.036	100	1.3	-0.21372	457	241	330	419	311	3218	351.6	407	81	48	72	-0.093	NA
150	74.615	0.50	0.83	81	1.3023	97	0.036	100	1.1	-0.18182	447	237	333	413	362	3218	358.4	394	80	48	73	-0.093	NA
160	79.712	0.51	0.83	81	1.294	96	0.036	102	0.9	-0.19298	437	236	387	407	359	3218	365.2	385	80	48	73	-0.091	NA
170	84.813	0.51	0.84	81	1.3236	95	0.036	102	0.7	-0.19458	428	233	428	401	361	3218	370.2	379	80	48	73	-0.090	NA
180	89.949	0.51	0.83	81	1.2869	95	0.036	102	0.5	-0.20734	418	232	427	396	364	3218	367.4	372	79	48	73	-0.089	NA
190	94.954	0.50	0.84	81	1.2917	94	0.036	100	0.3	-0.17704	406	234	421	391	358	3218	362.0	364	79	48	72	-0.090	NA
200	99.951	0.50	0.83	81	1.2917	93	0.036	99	0.1	-0.22276	396	234	407	385	353	3218	355.0	357	79	48	73	-0.087	NA
210	104.951	0.50	0.83	81	1.2917	93	0.036	99	0.0	-0.1	388	232	397	378	347	3218	348.4	351	79	48	73	-0.087	NA
Avg/Total	104.951	0.50	0.79	80.18		107.50	0.036	100.67									40		81.27	48.95		-0.099	#DIV/0!

219-S-10-3 #3
2-20 & 2-50

Wood Heater Test Data - EPA Method 5G Preburn

Run: 3

Manufacturer: FPI
Model: EX-90
Tracking No.: 711
Project No.: 219-S-10-3
Preburn Date: 16-Feb-05

Coal Bed Range: 2.6-3.1
Actual Coal Bed: 2.8

Signature/Date:

Recording Interval: 10 min.

OMNI Equipment Numbers:

Elapsed Time	Fuel Weight, lb		Wood Heater Temperature Data, oF							Stack		Stack	
	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Ambient	Draft In. H2O	Catalyst Temp.
0:00:00	11.2		1045	418	599	483	471	3218	603.2	1,074	79	-0.132	
0:10:00	9.9	-1.27115	758	375	477	439	406	3218	491.0	744	77	-0.123	NA
0:20:00	8.4	-1.48965	819	363	448	412	379	3218	484.2	732	76	-0.122	NA
0:30:00	6.6	-1.81182	901	409	479	425	395	3218	521.8	741	74	-0.119	NA
0:40:00	5.3	-1.3158	858	411	476	428	398	3218	514.2	734	74	-0.124	NA
0:50:00	4.2	-1.11165	819	375	461	426	393	3218	494.8	701	74	-0.116	NA
1:00:00	3.6	-0.57257	700	367	427	417	377	3218	457.6	629	74	-0.113	NA
1:10:00	2.8	-0.79267	561	305	384	392	390	3218	406.4	532	74	-0.104	NA
1:15:11	2.8	-0.08932	509	295	351	423	337	3218	383.0	437	74	-0.096	NA
Avg/Total									#VALUE!			-0.117	#DIV/0!

a-23-4-20

Model: EX-90
Fireplace Products International, Ltd.
6988 Venture Street
Delta, BC V4G 1H4
CANADA

Run 6

OMNI-Test Laboratories, Inc.

Wood Heater Test Data - EPA Method 5G

Run: 6

Manufacturer:	FPI
Model:	EX-90
Tracking No.:	711
Project No.:	219-S-10-3
Test Date:	18-Feb-05
Beginning Clock Time:	13:23
Recording Interval:	10 min.
Total Sampling Time:	80 min.

OMNI Equipment Numbers: _____

Velocity Traverse Data

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	
Initial dP	0.035	0.072	0.076	0.040	0.046	0.063	0.072	0.035	"H2O
Initial Temp.	215	215	215	215	214	214	214	214	oF

PM Control Module:	WI	
Dilution Tunnel MW(dry):	29.00	lb/lb-mole
Dilution Tunnel MW(wet):	28.56	lb/lb-mole
Dilution Tunnel H2O:	4.00	percent
Dilution Tunnel Static:	-0.880	"H2O
Pitot Tube Cp:	0.99	
Meter Box Y Factor:	1.014	

Barometric Pressure:	Begin	Middle	End	Average
	29.88	29.87	29.85	29.87 "Hg

Signature/Date: [signature] 3-3-05

Tunnel Velocity:	17.55	ft/sec.
Intial Tunnel Flow:	153.5	scfm
Average Tunnel Flow:	156.2	scfm
Tunnel Area:	0.196	ft2
Post-Test Leak Check:	.009@14	cfm@"Hg
Fuel Moisture (dry basis	23.25	%
Total Particulate:	15.6	mg
Filter Holder No.:	A	

Elapsed Time	Particulate Sampling Data								Fuel Weight, lb		Wood Heater Temperature Data, oF											Stack	
	Gas Meter Cubic Feet	Sample Rate, cfm	Orifice dH	Meter oF	Meter Vac. In. Hg.	Dilution Tunnel Temp.	Dilution Tunnel dP	Pro. Rate (10%)	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Filter	Impinger exit	Ambient	Draft In. H2O	Catalyst Temp.
0	0.000		-0.01	78	0.0932	215	0.055		12.7		681	416	392	579	483	3218	510.2	721	69	72	79	-0.106	NA
10	4.971	0.50	0.83	77	1.7677	246	0.055	103	9.2	-3.5175	980	547	527	562	521	3218	627.4	1067	70	48	78	-0.145	NA
20	9.898	0.49	0.77	77	2.4451	247	0.055	102	6.2	-2.95378	999	590	556	588	546	3218	655.8	1079	68	49	77	-0.137	NA
30	14.858	0.50	0.83	78	12.2652	237	0.055	102	4.0	-2.25202	947	571	522	576	537	3218	630.6	1020	67	49	77	-0.128	NA
40	19.870	0.50	0.82	79	4.1481	216	0.055	102	2.5	-1.47848	860	490	462	551	502	3218	573.0	909	69	50	75	-0.124	NA
50	24.894	0.50	0.83	80	2.2592	196	0.055	100	1.5	-0.95216	749	423	412	537	466	3218	517.4	797	68	49	76	-0.120	NA
60	29.947	0.51	0.83	81	1.8352	181	0.055	99	0.8	-0.72569	662	370	375	511	442	3218	472.0	729	67	48	75	-0.117	NA
70	35.006	0.51	0.82	82	1.7985	167	0.055	98	0.3	-0.51835	596	372	354	537	408	3218	453.4	662	74	48	77	-0.116	NA
80	40.093	0.51	0.84	82	1.8045	158	0.055	98	0.0	-0.30303	545	350	351	539	489	3218	454.8	609	79	48	76	-0.114	NA
Avg/Total	40.093	0.50	0.73	79.33		206.94	0.055	100.61									55		70.11	51.22		-0.123	#DIV/0!

Wood Heater Test Data - EPA Method 5G Preburn

Run: 6

Manufacturer: FPI
Model: EX-90
Tracking No.: 711
Project No.: 219-S-10-3
Preburn Date: 18-Feb-05

Coal Bed Range: 2.6-3.1
Actual Coal Bed: 2.6

Signature/Date:

Recording Interval: 10 min.

OMNI Equipment Numbers:

Elapsed Time	Fuel Weight, lb		Wood Heater Temperature Data, oF									Stack	
	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Ambient	Draft In. H2O	Catalyst Temp.
0:00:00	27.4		537	387	336	507	473	3218	448.0	397	78	-0.091	
0:10:00	21.6	-5.80708	752	411	326	398	356	3218	448.6	826	75	-0.127	NA
0:20:00	17.0	-4.6093	1047	590	551	494	456	3218	627.6	1200	75	-0.149	NA
0:30:00	11.6	-5.35093	1157	532	664	605	545	3218	700.6	1277	77	-0.141	NA
0:40:00	6.9	-4.71456	1206	562	773	680	553	3218	754.8	1352	76	-0.143	NA
0:50:00	4.5	-2.42267	1077	519	632	641	593	3218	692.4	1139	78	-0.133	NA
1:00:00	3.5	-0.97609	852	496	498	615	526	3218	597.4	923	76	-0.116	NA
1:10:00	2.9	-0.66189	730	433	436	582	500	3218	536.2	808	75	-0.128	NA
1:12:32	2.6	-0.23286	697	421	396	583	486	3218	516.6	660	79	-0.112	NA
Avg/Total									#VALUE!			-0.127	#DIV/0!

2-42 of 2-52