Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources.* AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

Background Report Reference

AP-42 Section Number: 10.6.1

Background Report Section: 4

Reference Number: 14

Title: Letter and Emission Summaries For J. M Huber Corporation,
From P. McDdonald, JM Huber Corp.
To R. Kalagnanam, Commerce, GA

Huber Wood Products

July 1992

WOOD PRODUCTS

J.M. Huber Corporation
Wood Products Division
Route 5, Highway 334
P.O. Box 670
Commerce, GA 30529
404 335-7661
Fax 404 335-7647

July 2,1992

Mr. Ramesh S. Kalagnanam
Midwest Research Institute
401 Harrison Oaks Blvd., Suite 350
Cary, North Carolina 27513-2412

Dear Mr. Kalagnanam;

This letter and attached documentation is supplied in response to your inquiry concerning dryer emissions from our Commerce, Georgia O.S.B. Plant. We appreciate and share your interest in obtaining quality information concerning air emissions from the wood panel industry. It is understood that thuogh the data supplied will be part of a public report , source identification will be anonymous.

Enclosed are the air emission (inlet and outlet) and operational data reports of our most recent compliance and engineering tests for the three WESP's at Commerce, Georgia. These tests were performed while operating the dryers at maximum through-put and not at the normal lower day to day average rate. The wood used is comprised of 90% Southern Yellow Pine and 10% soft hard woods. The three rotary kiln dryers each have individual Geoenergy Wet Electrostatic Precipitators controlling emissions.

The emission testing methods used for the test data supplied are as follows:

DRYER #1,#3 (APRIL 22,24, 1992)

PARTICULATE - METHOD 5
CONDENSABLE PARTICULATE - METHOD 202
VOC - METHOD 25
NOX - METHOD 7E
CO - METHOD 10
HCHO - BIF 0011 (DNPH)

DRYER #2 (MARCH 19, 1992)

PARTICULATE - METHOD 5T
VOC - METHOD 25
NOX - METHOD 7E
CO - METHOD 10B
HCHO - SINGLE POINT MIDGET IMPINGER SAMPLING (DNPH)

During our last telephone conversation you mentioned that you have dryer emission data from December, 1989. This data is for only one dryer without WESP's attached. We feel this data is flawed and should not be used since the dryer was not operating at maximum capacity and emission data since that time indicates it is not representative of our actual inlet loading to the WESP's.

Please accept my sincere apology for the late response to your inquiry concerning dryer emissions. I hope the enclosed information will be useful to you in preparing your report concerning the AP-42 document for the E.P.A.. If you should need further explanation on this data, please do not hesitate to contact me.

Sincerely:

Peter McDonald
Manufacturing Engineer

ENCLOSURE

cc: Billy Martin
Dave Willis
Horst Sturmlinger

HUBER DISK: MRIAP42.LET

TABLE 2-1
SUMMARY OF EMISSIONS
DRYER STACK #1
J. M. HUBER CORPORATION
COMMERCE, GEORGIA

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVERAGE
Particulate - Front Half					
Concentration, gr/dscf	---	0.0141	0.0135	0.0097	0.0124
Emission Rate, lb/hr	---	3.80	3.59	2.78	3.39
Particulate - Back Half					
Concentration, gr/dscf	---	0.0106	0.0125	0.0105	0.0112
Emission Rate, lb/hr	---	2.85	3.32	3.01	3.06
Total Particulate					
Concentration, gr/dscf	---	0.0247	0.0260	0.0202	0.0236
Emission Rate, lb/hr	---	6.66	6.90	5.79	6.45
Formaldehyde					
Concentration, ppm	12.9	13.0	19.6	---	15.2
Emission Rate, lb/hr	2.16	2.00	3.00	---	2.39
Total Gaseous Nonmethane Organics					
Inlet					
Concentration, ppm (as Carbon)	794	756	872	---	807
Emission Rate, lb/hr (as Carbon)	49.2	45.6	51.0	---	48.6
Total VOCs (1.2x carbon emission rate)	59.04	54.72	61.2	---	58.3
Outlet					
Concentration, ppm (as Carbon)	576	945	1102	---	874
Emission Rate, lb/hr (as Carbon)	38.4	55.6	63.8	---	52.6
Total VOCs (1.2x carbon emission rate)	46.08	66.72	76.56	---	63.1
VOC Removal efficiency, %	22.0	-21.9	-25.1	---	-8.4
Carbon Monoxide					
Concentration, ppm	---	180	187	43.7	137
Emission Rate, lb/hr	---	24.8	25.3	6.4	18.8

85% Total PM

TABLE 3
DRYER #1 INLET
PARTICULATE SUMMARY
J. M. HUBER - COMMERCE, GA

SYMBOL	PARAMETER	RUN 1 4/22/92 1122-1230	RUN 2 4/22/92 1447-1550	RUN 3 4/22/92 1815-1920	RUN 4 4/23/92 0833-0937	AVERAGE Runs 2,3,4
	MEASURED DATA					
(Y)	Meter Box Y	0.999	0.999	0.999	0.999	0.999
	Avg Delta H, inches H2O	2.30	2.65	2.37	2.60	2.54
(Bp)	Barometric Pressure, inches Hg	29.23	29.23	29.23	29.23	29.23
(Vm)	Meter Volume, cu.ft	49.400	56.800	53.377	48.858	53.012
(Tm)	Avg Meter Temp, deg F	77.9	85.2	79.4	73.3	79.3
(Pg)	Static Pressure, inches H2O	-17.00	-17.00	-17.00	-17.00	-17.000
(Ts)	Avg Stack Temp, deg F	188.7	184.8	183.6	184.5	184.3
(Vlc)	Water Collected, ml	244.6	282.8	326.7	264.6	291.4
(CO2)	Carbon dioxide, %	3.1	3.1	3.5	2.9	3.2
(O2)	Oxygen, %	17.9	17.9	17.4	17.9	17.7
	Avg Sqrt Delta P, sqrt(inches H2O)	1.411	1.366	1.380	1.355	1.367
(0)	Sample Time, min	60	60	60	60	60
(Dn)	Nozzle Diameter, inches	0.213	0.213	0.213	0.213	0.213
(D)	Stack Diameter, inches	42	42	42	42	42
	Filterable PM					
(Mpw)	Particulate Collected (probe wash), g	0.0076	0.0254	0.0092	0.0952	0.0433
(Mf)	Particulate Collected (filter), g	0.3204	0.3329	0.4553	0.3781	0.3888
	Condensible PM					
(Mii)	H2O Impinger (inorganic) residue, g	0.0086	0.0296	0.0522	0.0160	0.0326
(Mio)	MeCl Impinger (organic) residue, g	0.0667	0.0365	0.0715	0.0650	0.0577
	CALCULATED DATA					
(Vmstd)	Standard Meter Volume, cu.ft	47.580	54.022	51.276	47.499	50.933
(Ps)	Stack Pressure, inches Hg	27.98	27.98	27.98	27.98	27.980
(%Bws)	Moisture, %	19.5	19.8	23.1	20.8	21.2
(Ms)	Molecular Weight-wet, lb/lb-mole	27.0	27.0	26.7	26.9	26.8
(Vs)	Velocity, ft/s	93.8	90.6	92.1	90.1	90.9
(As)	Stack Area, sq.ft	9.62	9.62	9.62	9.62	9.621
(Qa)	Volumetric flow, acfm	54,174	52,320	53,139	52,019	52493
(Qs)	Volumetric flow, dscfm	33,188	32,131	31,350	31,562	31681
(I)	Isokinetic Rate, %	92.9	109.0	106.0	97.5	104.2
	Total filterable (front half) PM					
(Cs)	Particulate Concentration, grain/dscf	0.1064	0.1023	0.1398	0.1537	0.1320
(ER)	Particulate Emission Rate, lb/hr	30.25	28.18	37.55	41.59	35.77
	Organic back half PM					
(Cs)	Particulate Concentration, grain/dscf	0.0216	0.0104	0.0215	0.0211	0.0177
(ER)	Particulate Emission Rate, lb/hr	6.15	2.87	5.78	5.71	4.79
	Inorganic back half PM					
(Cs)	Particulate Concentration, grain/dscf	0.0028	0.0085	0.0157	0.0052	0.0098
(ER)	Particulate Emission Rate, lb/hr	0.79	2.33	4.22	1.41	2.65
	Train Fractionation:					
	filterable, %	81	84	79	85	83
	condensible, %	19	16	21	15	17

Total PM 4.3, 2.1 lb/h

TABLE 2.1.1
DRYER #1 OUTLET
PARTICULATE SUMMARY
J. M. HUBER - COMMERCE, GA

SYMBOL	PARAMETER	RUN 1 4/22/92 1122-1230	RUN 2 4/22/92 1447-1550	RUN 3 4/22/92 1815-1920	RUN 4 4/23/92 0833-0937	Average of Runs 2 to 4
	MEASURED DATA					
(Y)	Meter Box Y	1.010	1.010	1.010	1.010	1.010
	Avg Delta H, inches H2O	0.99	2.04	1.98	2.13	2.05
(Bp)	Barometric Pressure, inches Hg	29.15	29.15	29.15	29.18	29.16
(Vm)	Meter Volume, cu.ft	31.928	44.776	44.065	46.036	44.959
(Tm)	Avg Meter Temp, deg F	80.1	88.4	83.6	88.7	86.9
(Pg)	Static Pressure, inches H2O	1.10	1.10	1.10	1.10	1.100
(Ts)	Avg Stack Temp, deg F	142.6	146.2	147.2	142.2	145.2
(Vlc)	Water Collected, ml	169.2	279.2	281.1	243.8	268.0
(CO2)	Carbon dioxide, %	2.8	2.8	2.7	2.8	2.8
(O2)	Oxygen, %	17.6	18.1	17.5	17.6	17.7
	Avg Sqrt Delta P, sqrt(inches H2O)	0.708	0.648	0.640	0.663	0.650
(θ)	Sample Time, min	60	60	60	60	60
(Dn)	Nozzle Diameter, inches		0.299	0.299	0.299	0.299
(D)	Stack Diameter, inches	60	60	60	60	60
	Filterable PM					
(Mpw)	Particulate Collected (probe wash), g		0.0062	0.0067	0.0074	0.0068
(Mf)	Particulate Collected (filter), g		0.0327	0.0303	0.0202	0.0277
	Condensible PM					
(Mii)	H2O Impinger (inorganic) residue, g		0.0118	0.0102	0.0093	0.0104
(Mio)	MeCl Impinger (organic) residue, g		0.0174	0.0240	0.0206	0.0207
	CALCULATED DATA					
(Vmstd)	Standard Meter Volume, cu.ft	30.778	42.622	42.309	43.852	42.928
(Ps)	Stack Pressure, inches Hg	29.23	29.23	29.23	29.26	29.241
(%Bws)	Moisture, %	20.6	23.6	23.8	20.7	22.7
(Ms)	Molecular Weight-wet, lb/lb-mole	26.9	26.5	26.5	26.8	26.6
(Vs)	Velocity, ft/s	44.5	41.1	40.7	41.7	41.2
(As)	Stack Area, sq.ft	19.63	19.63	19.63	19.63	19.635
(Qa)	Volumetric flow, acfm	52,475	48,461	47,956	49,117	48,511
(Qs)	Volumetric flow, dscfm	35,671	31,506	31,022	33,368	31,965
(I)	Isokinetic Rate, %		90.8	91.6	88.2	90.2
	Total filterable (front half) PM					
(Cs)	Particulate Concentration, grain/dscf		0.0141	0.0135	0.0097	0.0124
(ER)	Particulate Emission Rate, lb/hr		3.80	3.59	2.78	3.39
	Condensible (back half) PM					
(Cs)	Particulate Concentration, grain/dscf		0.0106	0.0125	0.0105	0.0112
(ER)	Particulate Emission Rate, lb/hr		2.85	3.32	3.01	3.06
	Total front and back half PM					
(Cs)	Particulate Concentration, grain/dscf		0.0247	0.0260	0.0202	0.0236
(ER)	Particulate Emission Rate, lb/hr		6.66	6.90	5.79	6.45

TABLE 2.5.1
DRYER STACK #1
CEMS SUMMARY
J. M. HUBER CORPORATION

Run No.	Start Time	Stop Time	CEM Data (Raw) CO (ppm)	Calibration Data CO Cma	Co	Cm	CEM Data (Corrected) CO (ppm)	Volumetric Flow Qa (acfm)	Qs (dscfm)	Mass Emission Rate CO (lb/hr)
2	14:46	15:51	180	598.0	0.0	597.5	180.3	48,500	31,500	24.8
3	18:15	19:20	187	598.0	0.1	597.5	187.2	48,000	31,000	25.3
4	08:31	09:36	44	598.0	0.0	598.0	43.7	49,100	33,400	6.4
Average							137.1			18.8

TABLE 2.2.1
DRYER #1 OUTLET
FORMALDEHYDE TEST SUMMARY
J. M. HUBER - COMMERCE, GA

SYMBOL	PARAMETER	RUN 1 04/22/92 1125-1242	RUN 2 04/22/92 1452-1614	RUN 3 04/22/92 1818-1907	AVERAGE
	MEASURED DATA				
(Y)	Meter Box Y	0.994	0.994	0.994	0.994
	Avg Delta H, inches H2O	1.76	1.57	1.59	1.64
(Bp)	Barometric Pressure, inches Hg	29.15	29.15	29.15	29.15
(Vm)	Meter Volume, cf	43.846	42.249	41.595	42.563
(Tm)	Avg Meter Temp, deg F	82.3	92.3	87.1	87.2
(Pg)	Static Pressure, inches H2O	1.10	1.10	1.10	1.10
(Ts)	Avg Stack Temp, deg F	145.1	148.2	149.0	147.4
(Vlc)	Water Collected, ml	236.5	249.5	258.7	248.2
(CO2)	Carbon dioxide, %	2.8	2.8	2.7	2.8
(O2)	Oxygen, %	17.6	18.1	17.5	17.7
	Avg Sqrt Delta P, (inches H2O)^ 1/2	0.713	0.674	0.678	0.69
(0)	Sample Time, min	60	60	60	60
(Dn)	Nozzle Diameter, inches	0.277	0.277	0.277	0.277
(Ds)	Stack Diameter, inches	60	60	60	60
(Mf)	Total Formaldehyde, mg	19	18	27	21
	CALCULATED DATA				
(Vmstd)	Standard Meter Volume, dscf	41.509	39.254	39.013	39.925
(Ps)	Stack Pressure, inches Hg	29.23	29.23	29.23	29.23
(%Bws)	Moisture (from impingers), %	21.1	23.0	23.8	22.7
(%Bws)	Moisture (at saturation), %	22.8	24.7	25.2	24.2
(Ms)	Molecular Weight-wet, lb/lb-mole	26.8	26.6	26.5	26.6
(Vs)	Velocity, ft/s	45.0	42.8	43.2	43.7
(As)	Stack Area, sq ft	19.63	19.63	19.63	19.63
(Qa)	Volumetric flow, acfm	5.30E+04	5.04E+04	5.09E+04	5.14E+04
(Qs)	Volumetric flow, dscfm	3.56E+04	3.29E+04	3.28E+04	3.38E+04
(I)	Isokinetic Rate, %	91.2	93.3	93.0	92.5
(Cf)	**Formaldehyde Concentration, mg/dscf**	**0.46**	**0.46**	**0.69**	**0.54**
(Cppm)	**Formaldehyde Concentration, ppm**	**12.9**	**13.0**	**19.6**	**15.2**
(ER)	**Formaldehyde Emission Rate, lb/hr**	**2.16**	**2.00**	**3.00**	**2.39**

AIR EMISSIONS TESTING - DRYER OPERATIONS DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/22/92
TEST: #1

DRYER: NO. 1
READINGS TAKEN BY: A. COHEN

TIME	WELLONS TEMP. (f)	WELLONS COMB. TEMP. (f)	WELLONS DRAFT ("h2o)	DRYER INLET TEMP. (f)	DRYER OUTLET TEMP. (f)	DRYER FAN (amp)	DRY MOISTURE (%)	GREEN BIN SPEED (%)	GREEN BIN LEVEL (%)
11:22 AM	1236		0.348	990	201	43		60	79
11:35 AM	1208		0.241	1003	198	43	9.3	58	77
11:45 AM	1209		0.311	973	200	43	5.2	58	74
12:00 PM	1195		0.241	959	203	44	7.0	59	80
12:10 PM	1203		0.307	944	203	44	7.0	59	78
12:15 PM	1209		0.283	951	197	43	6.8	59	76
12:25 PM	1189		0.258	938	203	44		59	78
12:35 PM	1190		0.285	950	198	44		59	76

TIME OF RUN (min)	AVG. TEMP. (f)	AVG. COMB. TEMP. (f)	AVG. DRAFT ("h2o)	AVG. INLET TEMP. (f)	AVG. OUTLET TEMP. (f)	AVG. DRYER FAN (amp)	AVG. MOISTURE (%)	AVG. BIN SPEED (%)	AVG. BIN LEVEL (%)
73	1205		0.284	964	200	44	7.1	59	77

HUBER DISK:FILE0061.WK3

AIR EMISSIONS TESTING - DRYER OPERATIONS DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/22/92
TEST: #2

DRYER: NO. 1
READINGS TAKEN BY: A. COHEN

TIME	WELLONS TEMP. (f)	WELLONS COMB. TEMP. (f)	WELLONS DRAFT ("h2o)	DRYER INLET TEMP. (f)	DRYER OUTLET TEMP. (f)	DRYER FAN (amp)	DRY MOISTURE (%)	GREEN BIN SPEED (%)	GREEN BIN LEVEL (%)
02:50 PM	1192		0.424	1040	193	43	10.4	58	75
03:00 PM	1172		0.309	996	196	44		58	77
03:10 PM	1175		0.315	1027	193	43	8.1	58	78
03:20 PM	1168		0.333	1032	193	43		58	79
03:30 PM	1173		0.407	1039	193	43	8.1	58	80
03:40 PM	1190		0.509	1006	194	43		58	76
03:50 PM	1174		0.345	1015	190	43		58	80
04:00 PM	1166		0.334	959	194	43	8.3	58	76
04:10 PM	1177		0.339	990	194	44	9.0	58	76
04:20 PM	1169		0.309	933	191	44		58	77
04:35 PM	1163		0.380	968	185	43		58	76
04:45 PM	1164		0.372	983	189	43		58	74
04:55 PM	1160		0.361	904	198	43		58	76

TIME OF RUN (min)	AVG. TEMP. (f)	AVG. COMB. TEMP. (f)	AVG. DRAFT ("h2o)	AVG. INLET TEMP. (f)	AVG. OUTLET TEMP. (f)	AVG. DRYER FAN (amp)	AVG. MOISTURE (%)	AVG. BIN SPEED (%)	AVG. BIN LEVEL (%)
125	1173		0.364	992	193	43	8.8	58	77

HUBER DISK:FILE0062.WK3

AIR EMISSIONS TESTING - DRYER OPERATIONS DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/22/92
TEST: #3

DRYER: NO. 1
READINGS TAKEN BY: A. COHEN

TIME	WELLONS TEMP. (f)	WELLONS COMB. TEMP. (f)	WELLONS DRAFT ("h2o)	DRYER INLET TEMP. (f)	DRYER OUTLET TEMP. (f)	DRYER FAN (amp)	DRY MOISTURE (%)	GREEN BIN SPEED (%)	GREEN BIN LEVEL (%)
06:20 PM	1184		0.364	990	194	43		58	77
06:30 PM	1190		0.337	1024	195	42	11.2	58	73
06:40 PM	1217		0.462	1035	193	42		58	75
06:50 PM	1220		0.445	1026	198	42		58	78
07:00 PM	1216		0.421	970	200	42	6.0	58	76
07:10 PM	1209		0.354	973	197	42		58	80
07:20 PM	1231		0.319	965	197	42	7.0	58	75

TIME OF RUN (min)	AVG. TEMP. (f)	AVG. COMB. TEMP. (f)	AVG. DRAFT ("h2o)	AVG. INLET TEMP. (f)	AVG. OUTLET TEMP. (f)	AVG. DRYER FAN (amp)	AVG. MOISTURE (%)	AVG. BIN SPEED (%)	AVG. BIN LEVEL (%)
60	1210		0.386	998	196	42	8.1	58	76

HUBER DISK:FILE0063.WK3

AIR EMISSIONS TESTING - DRYER OPERATIONS DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/23/92
TEST: #4

DRYER: NO. 1
READINGS TAKEN BY: A. COHEN

TIME	WELLONS TEMP. (f)	WELLONS COMB. TEMP. (f)	WELLONS DRAFT ("h2o)	DRYER INLET TEMP. (f)	DRYER OUTLET TEMP. (f)	DRYER FAN (amp)	DRY MOISTURE (%)	GREEN BIN SPEED (%)	GREEN BIN LEVEL (%)
08:30 AM	1269		0.430	1013	187	44	8.0	58	82
08:40 AM	1272		0.433	1010	185	44	10.7	58	83
08:50 AM	1266		0.440	984	190	45		58	84
09:00 AM	1273		0.432	980	189	45		58	81
09:10 AM	1271		0.435	957	191	45	7.8	58	79
09:25 AM	1296		0.480	979	197	45	7.5	58	86
09:35 AM	1292		0.429	984	197	45		58	82
09:45 AM	1290		0.415	1022	197	45	6.4	58	82

TIME OF RUN (min)	AVG. TEMP. (f)	AVG. COMB. TEMP. (f)	AVG. DRAFT ("h2o)	AVG. INLET TEMP. (f)	AVG. OUTLET TEMP. (f)	AVG. DRYER FAN (amp)	AVG. MOISTURE (%)	AVG. BIN SPEED (%)	AVG. BIN LEVEL (%)
75	1279		0.437	991	192	45	8.1	58	82

HUBER DISK:FILE0064.WK3

AIR EMISSIONS TESTING - GEOENERGY DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/22/92
TEST: #1

DRYER: NO. 1
READINGS TAKEN BY: B. BONNER

TIME	PRECIPITATOR VOLTAGE (kv) AVG.	PRECIPITATOR VOLTAGE (kv) PEAK	PRECIPITATOR CURRENT (ma) AVG.	PRECIPITATOR CURRENT (ma) PEAK	QUENCH CHAMBER INLET TEMP. (f)	QUENCH CHAMBER OUTLET TEMP. (f)	QUENCH CHAMBER TEMP. DROP (f)	I.D. FAN (amp)	SPARK COUNT	SPARKS PER MIN.
11:22 AM	52	54	450	550	200.0	144.0	56.0	122.0	34139	
11:27 AM	52	54	450	600	200.0	144.0	56.0	122.0	34216	15.4
11:32 AM	50	52	425	500	201.0	143.0	58.0	122.0	34360	28.8
11:37 AM	53	56	425	600	201.0	143.0	58.0	122.0	34483	24.6
11:42 AM	53	54	450	600	201.0	143.0	58.0	117.0	34627	28.8
11:47 AM	53	54	400	600	201.0	142.0	59.0	123.0	34774	29.4
11:52 AM	54	56	450	500	200.0	143.0	57.0	121.0	34899	25.0
11:57 AM	53	54	375	450	202.0	143.0	59.0	122.0	35027	25.6
12:02 PM	53	54	325	400	202.0	143.0	59.0	122.0	35166	27.8
12:07 PM	51	52	325	450	202.0	142.0	60.0	123.0	35287	24.2
12:12 PM	50	50	375	450	200.0	144.0	56.0	124.0	35424	27.4
12:17 PM	52	56	325	350	201.0	143.0	58.0	122.0	35587	32.6
12:22 PM	52	54	525	600	202.0	143.0	59.0	122.0	35760	34.6
12:27 PM	49	50	425	550	202.0	143.0	59.0	123.0	35832	14.4
12:32 PM	49	50	400	400	201.0	143.0	58.0	122.0	35998	33.2
12:37 PM	48	48	300	400	200.0	144.0	56.0	122.0	36132	26.8
12:42 PM	47	48	350	500	200.0	145.0	55.0	122.0	36305	34.6

TIME OF RUN (min)	AVG. PEAK (kv)	AVG. PEAK (ma)	AVG. INLET TEMP. (f)	AVG. OULET TEMP. (f)	AVG. TEMP. DROP (f)	AVG. I.D. FAN (amp)	TOTAL SPARKS FOR RUN	AVG. SPARKS PER MIN.
80	53	500	200.9	143.2	57.7	121.9	2166	27.1

HUBER DISK:FILE0065.WK3

AIR EMISSIONS TESTING - GEOENERGY DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/22/92 DRYER: NO. 1
TEST: #2 READINGS TAKEN BY: B. BONNER

TIME	PRECIPITATOR VOLTAGE (kv) AVG.	PRECIPITATOR VOLTAGE (kv) PEAK	PRECIPITATOR CURRENT (ma) AVG.	PRECIPITATOR CURRENT (ma) PEAK	QUENCH CHAMBER INLET TEMP. (f)	QUENCH CHAMBER OUTLET TEMP. (f)	QUENCH CHAMBER TEMP. DROP (f)	I.D. FAN (amp)	SPARK COUNT	SPARKS PER MIN.
03:00 PM	49	50	375	400	199.0	147.0	52.0	120.0	40040	
03:05 PM	48	48	325	350	199.0	148.0	51.0	121.0	40146	21.2
03:10 PM	49	50	400	550	193.0	148.0	45.0	121.0	40299	30.6
03:15 PM	48	48	300	400	197.0	149.0	48.0	120.0	40456	31.4
03:20 PM	50	50	450	500	197.0	148.0	49.0	121.0	40561	21.0
03:25 PM	49	50	350	450	197.0	147.0	50.0	120.0	40699	27.6
03:30 PM	49	50	375	400	195.0	147.0	48.0	121.0	40832	26.6
03:35 PM	50	50	450	500	197.0	146.0	51.0	121.0	40965	26.6
03:40 PM	48	48	350	450	197.0	147.0	50.0	121.0	41096	26.2
03:45 PM	49	50	300	400	196.0	147.0	49.0	121.0	41242	29.2
03:50 PM	49	50	400	450	194.0	146.0	48.0	121.0	41396	30.8
03:55 PM	49	50	350	450	196.0	145.0	51.0	122.0	41505	21.8
04:00 PM	50	50	375	400	197.0	145.0	52.0	122.0	41642	27.4
04:05 PM	49	50	375	400	196.0	145.0	51.0	121.0	41767	25.0
04:10 PM	48	48	350	425	197.0	145.0	52.0	122.0	41909	28.4
04:15 PM	48	48	300	400	197.0	143.0	54.0	123.0	42039	26.0
04:20 PM	48	48	325	400	196.0	142.0	54.0	123.0	42188	29.8
04:25 PM	48	48	325	375	195.0	142.0	53.0	123.0	42337	29.8
04:30 PM	47	48	350	375	194.0	142.0	52.0	122.0	42434	19.4
04:35 PM	48	48	350	375	192.0	145.0	47.0	121.0	42561	25.4
04:40 PM	48	48	300	400	194.0	145.0	49.0	122.0	42703	28.4
04:45 PM	48	48	350	400	197.0	144.0	53.0	122.0	42843	28.0
04:50 PM	48	48	350	375	199.0	142.0	57.0	123.0	42976	26.6

TIME OF RUN (min)	AVG. PEAK (kv)	AVG. PEAK (ma)	AVG. INLET TEMP. (f)	AVG. OULET TEMP. (f)	AVG. TEMP. DROP (f)	AVG. I.D. FAN (amp)	TOTAL SPARKS FOR RUN	AVG. SPARKS PER MIN.
110	49	418	196.1	145.4	50.7	121.5	2936	26.7

HUBER DISK:FILEOO66.WK3

AIR EMISSIONS TESTING - GEOENERGY DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/22/92 DRYER: NO. 1
TEST: #3 READINGS TAKEN BY: B. BONNER

TIME	PRECIPITATOR VOLTAGE (kv) AVG.	PRECIPITATOR VOLTAGE (kv) PEAK	PRECIPITATOR CURRENT (ma) AVG.	PRECIPITATOR CURRENT (ma) PEAK	QUENCH CHAMBER INLET TEMP. (f)	QUENCH CHAMBER OUTLET TEMP. (f)	QUENCH CHAMBER TEMP. DROP (f)	I.D. FAN (amp)	SPARK COUNT	SPARKS PER MIN.
06:15 PM	50	50	275	300	190.0	148.0	42.0	122.0	45480	
06:20 PM	50	50	350	400	192.0	149.0	43.0	122.0	45671	38.2
06:25 PM	48	48	325	400	192.0	149.0	43.0	122.0	45790	23.8
06:30 PM	48	48	400	400	193.0	149.0	44.0	122.0	45938	29.6
06:35 PM	49	50	325	400	193.0	148.0	45.0	121.0	46091	30.6
06:40 PM	49	50	350	400	193.0	150.0	43.0	122.0	46211	24.0
06:45 PM	50	52	300	300	191.0	149.0	42.0	121.0	46358	29.4
06:50 PM	49	50	325	350	196.0	148.0	48.0	122.0	46509	30.2
06:55 PM	49	50	325	350	196.0	147.0	49.0	123.0	46641	26.4
07:00 PM	49	50	300	350	196.0	147.0	49.0	122.0	46780	27.8
07:05 PM	50	50	325	350	196.0	147.0	49.0	122.0	46959	35.8
07:10 PM	49	50	350	400	196.0	148.0	48.0	122.0	47056	19.4
07:15 PM	48	48	325	350	197.0	149.0	48.0	121.0	47175	23.8
07:20 PM	49	50	350	450	197.0	148.0	49.0	122.0	47328	30.6
07:25 PM	50	50	350	400	197.0	148.0	49.0	121.0	47450	24.4

TIME OF RUN (min)	AVG. PEAK (kv)	AVG. PEAK (ma)	AVG. INLET TEMP. (f)	AVG. OULET TEMP. (f)	AVG. TEMP. DROP (f)	AVG. I.D. FAN (amp)	TOTAL SPARKS FOR RUN	AVG. SPARKS PER MIN.
70	50	373	194.3	148.3	46.1	121.8	1970	28.1

HUBER DISK:FILE0067.WK3

AIR EMISSIONS TESTING - GEOENERGY DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/23/92
TEST: #4

DRYER: NO. 1
READINGS TAKEN BY: B. BONNER

TIME	PRECIPITATOR VOLTAGE (kv) AVG.	PRECIPITATOR VOLTAGE (kv) PEAK	PRECIPITATOR CURRENT (ma) AVG.	PRECIPITATOR CURRENT (ma) PEAK	QUENCH CHAMBER INLET TEMP. (f)	QUENCH CHAMBER OUTLET TEMP. (f)	QUENCH CHAMBER TEMP. DROP (f)	I.D. FAN (amp)	SPARK COUNT	SPARKS PER MIN.
08:30 AM	50	52	350	400	195.0	143.0	52.0	115.0	60313	
08:35 AM	49	50	425	500	193.0	143.0	50.0	121.0	60457	28.8
08:40 AM	50	50	425	450	192.0	143.0	49.0	122.0	60599	28.4
08:45 AM	51	52	300	450	193.0	142.0	51.0	122.0	60738	27.8
08:50 AM	51	52	350	400	193.0	142.0	51.0	122.0	60882	28.8
08:55 AM	50	50	350	400	194.0	142.0	52.0	122.0	60993	22.2
09:00 AM	50	50	350	400	194.0	141.0	53.0	122.0	61128	27.0
09:05 AM	51	52	375	400	193.0	141.0	52.0	123.0	61271	28.6
09:10 AM	50	50	350	400	194.0	141.0	53.0	120.0	61402	26.2
09:15 AM	50	50	350	400	194.0	142.0	52.0	123.0	61542	28.0
09:20 AM	49	50	300	400	196.0	141.0	55.0	123.0	61669	25.4
09:25 AM	50	50	350	400	197.0	141.0	56.0	123.0	61809	28.0
09:30 AM	50	50	375	400	195.0	141.0	54.0	123.0	61984	35.0
09:35 AM	50	50	350	400	197.0	141.0	56.0	124.0	62081	19.4
09:40 AM	49	50	325	350	197.0	142.0	55.0	123.0	62208	25.4
09:45 AM	51	52	375	450	198.0	143.0	55.0	123.0	62392	36.8
09:50 AM	51	52	400	450	199.0	143.0	56.0	123.0	62476	16.8
09:55 AM	51	52	400	450	200.0	142.0	58.0	123.0	62611	27.0

TIME OF RUN (min)	AVG. PEAK (kv)	AVG. PEAK (ma)	AVG. INLET TEMP. (f)	AVG. OULET TEMP. (f)	AVG. TEMP. DROP (f)	AVG. I.D. FAN (amp)	TOTAL SPARKS FOR RUN	AVG. SPARKS PER MIN.
85	51	417	195.2	141.9	53.3	122.1	2298	27.0

HUBER DISK:FILE0068.WK3

AIR EMISSIONS TESTING - GREEN BIN DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/22/92
TEST: #1,#2,#3

DRYER: NO. 1
READINGS TAKEN BY: C. THOMAS

TIME	BELT SPEED ("/min)	GREEN BIN LEVEL	DRYER INLET M.C. (%)	DRYER OUTLET M.C. (%)
11:35 AM	4.030	4.25/7	47.4	9.0
11:41 AM			48.2	
11:45 AM	4.045	4.25/7		5.2
12:00 PM	4.053	4.25/7	44.2	7.0
12:10 PM	4.045	4.25/7		7.0
12:15 PM	4.045	4.25/7		6.8
12:25 PM	4.060	4.25/7	47.2	
02:50 PM	4.022	4.25/7		10.4
02:55 PM			49.4	
03:10 PM	4.015	4.25/7		8.1
03:15 PM			48.0	
03:30 PM	4.000	4.5/7		8.1
03:45 PM	4.000	4.25/7	47.0	
04:00 PM	4.000	4.25/7		8.3
04:05 PM			45.6	
04:10 PM	4.000	4.25/7		9.0
05:50 PM	3.993	4.25/7		
06:15 PM	3.985	4.25/7	47.0	
06:20 PM	4.022	4.25/7	49.2	11.2
06:45 PM	4.007	4.25/7		
07:00 PM	4.015	4.25/7		6.0
07:15 PM	4.007	4.5/7	49.1	
07:20 PM	4.030	4.25/7		7.0
AVERAGE	4.020	4.25/7	47.5	7.9

HUBER DISK:FILE0069.WK3

AIR EMISSIONS TESTING - GREEN BIN DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/23/92
TEST: #4

DRYER: NO. 1
READINGS TAKEN BY: C. THOMAS

TIME	BELT SPEED ("/min)	GREEN BIN LEVEL	DRYER INLET M.C. (%)	DRYER OUTLET M.C. (%)
08:35 AM	3.956	4.5/7	44.5	8.0
08:40 AM	3.963	4.75/7	48.2	10.7
09:10 AM	4.007	4.5/7	45.5	7.8
09:25 AM	4.022	4.5/7	46.4	7.5
09:35 AM	4.007	4.5/7	47.4	
09:45 AM	4.000	4.75/7	45.9	6.4
AVERAGE	3.993	4.5/7	46.3	8.1

HUBER DISK:FILE0070.WK3

AIR EMISSIONS TESTING - GREEN BIN MASS FLOW CALIBRATION
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DRYER: NO. 1

DATE	BIN SPEED (%)	BELT SPEED ("/min)	BIN LEVEL (%)	MASS FLOW GREEN (#/hour) ton/hr	WOOD M.C. (%)	MASS FLOW O.D. (#/hour) t/hr
21-Jun-91	50	3.52	92	19,540	4.2	18,752
24-Jun-91	51	3.54	46	18,561	4.1	17,830
25-Jun-91	45	3.13	36	13,573	2.8	13,203
25-Jun-91	45	3.14	38	14,949	3.7	14,416
01-Aug-91	58	3.91	77	22,414	5.7	21,205
22-Apr-92	59	4.08	75	22,446 11.22	7.1	20,957 10.48

HUBER DISK: FILE0016.WK3

EVEN THOUGH IT SAYS "GREEN" THESE MUST BE PRODUCTION BASED ON M.C. AND OVEN DRY (O.D) RATES PROVIDED

SUMMARY OF TEST RESULTS
J.M. Huber Corp - Commerce, GA
Number 2 Dryer ESP Inlet
March 19, 1992

	Run #1	Run #2	Run #3
Volume @ Meter (Vm):	17.732	18.039	17.932
Sqrt Delta P:	1.383	1.392	1.397
Sampling Time (min):	30.0	30.0	30.0
Barometric Pressure (Pb):	29.00	28.97	28.94
Delta H (H):	1.04	1.06	1.07
Volume in Impingers (mls):	122.7	124.1	126.4
Static Pressure (in. wc.):	-17.5	-17.5	-17.5
Stack Pressure (Ps):	27.71	27.68	27.65
Stack Temperature (Ts):	197	194	199
Meter Coefficient (Y):	0.993	0.993	0.993
Pitot Coefficient (Cp):	0.840	0.840	0.840
Meter Temperature (Tm):	68	70	70
Area Stack (As):	9.17	9.17	9.17
Area Nozzle (An):	0.000187	0.000187	0.000187
Percent CO2 (%):	3.0	3.0	3.0
Percent O2 (%):	18.0	18.0	18.0
Percent N2 (%):	79.0	79.0	79.0
Milligrams, non-cond:	150.7	101.4	111.0
Milligrams, cond:	126	143.3	125
Molecular Weight Dry (Md):	29.20	29.20	29.20
Volume Water (Vwstd):	5.78	5.84	5.95
Volume Gas Sampled (Vmstd):	17.105	17.318	17.198
Stack Gas Moisture (%):	25.2	25.2	25.7
Molecular Weight Wet (Ms):	26.37	26.38	26.32
Volume Gas Sampled (Vma):	30.737	31.004	31.259
Stack Gas Velocity, (Vs):	94.16	94.61	95.46
Volumetric Flowrate (Qs):	28,830	29,075	28,896
Volumetric Flowrate (Qa):	51,808	52,052	52,520
gr/dscf Non-Condens. (cs):	0.1359	0.0903	0.0996
gr/dscf Condensables (cs):	0.1137	0.1277	0.1121
Condensables, #/Hour (E):	28.09	31.82	27.78
Non-Condensables, #/Hour (E):	33.59	22.52	24.67
Total Emissions, #/Hour (E):	61.68	54.33	52.44
Percent Isokinetic Sampling:	97.05	97.43	97.36

77. CE %

56.15 AVG

SUMMARY OF TEST RESULTS
J.M. Huber Corp. - Commerce, GA
Number 2 Dryer ESP Outlet
March 19, 1992

	Run #1	Run #2	Run #3
Volume @ Meter (Vm):	36.401	35.422	39.420
Sqrt Delta P:	0.592	0.606	0.633
Sampling Time (min):	60.0	60.0	60.0
Barometric Pressure (Pb):	29.01	28.97	28.94
Delta H (H):	1.46	1.57	1.73
Volume in Impingers (mls):	244.5	257.9	295.9
Static Pressure (in. wc.):	1.2	1.2	1.2
Stack Pressure (Ps):	29.10	29.06	29.03
Stack Temperature (Ts):	151	149	148
Meter Coefficient (Y):	1.022	1.022	1.022
Pitot Coefficient (Cp):	0.840	0.840	0.840
Meter Temperature (Tm):	67	68	74
Area Stack (As):	18.35	18.35	18.35
Area Nozzle (An):	0.000431	0.000431	0.000431
Percent CO2 (%):	3.5	3.0	3.5
Percent O2 (%):	17.0	17.5	17.0
Percent N2 (%):	79.5	79.5	79.5
Milligrams, non-cond:	48.5	64.0	39.5
Milligrams, cond:	90.8	68.6	84.5
Molecular Weight Dry (Md):	29.24	29.18	29.24
Volume Water (Vwstd):	11.51	12.14	13.93
Volume Gas Sampled (Vmstd):	36.258	35.177	38.684
Stack Gas Moisture (%):	24.1	25.7	26.5
Molecular Weight Wet (Ms):	26.53	26.31	26.26
Volume Gas Sampled (Vma):	56.836	56.194	62.444
Stack Gas Velocity, (Vs):	37.82	38.84	40.59
Volumetric Flowrate (Qs):	26,560	26,765	27,684
Volumetric Flowrate (Qa):	41,635	42,756	44,688
gr/dscf Non-Condens. (cs):	0.0206	0.0281	0.0158
gr/dscf Condensables (cs):	0.0386	0.0301	0.0337
Condensables, #/Hour (E):	8.80	6.90	8.00
Non-Condensables, #/Hour (E):	4.70	6.44	3.74
Total Emissions, #/Hour (E):	13.50	13.34	11.74
Percent Isokinetic Sampling:	96.93	93.32	99.22

12.86 avg

J.M. Huber Corp.
Commerce, GA
Dryer #2 ESP
March 19, 1992
VOC Emissions

Dryer No. 2 ESP Inlet	Run 1	Run 2	Run 3	
Gas Flowrate (DSCFM):	28830	29075	28896	
VOC Concentration (mgC/cu M):	475	788	1387	
VOC Concentration (PPMC):	952	1578	2779	AVERAGE
Total VOC as Carbon (Lb/hr):	51.25	85.75	150.01	95.67

Dryer No. 2 ESP Outlet	Run 1	Run 2	Run 3	
Gas Flowrate (DSCFM):	26560	26765	27684	
VOC Concentration (mgC/cu M):	681	147	885	
VOC Concentration (PPMC):	1364	294	1773	AVERAGE
Total VOC as Carbon (Lb/hr):	67.70	14.73	91.70	58.04

REMOVAL EFFICIENCY(%): 39.3

Carbon Monoxide Calculations
J.M. Huber, Corp.
Commerce, Georgia
#2 Dryer
March 19, 1992

CO - ESP Inlet	Run 1	Run 2	Run 3
Gas Flowrate (DSCFM):	28830	29075	28896
CO Concentration (mg/cu M):	548.62	578.91	512.51
CO Concentration (PPM):	471	497	440
CO Emission Rate, (lb/hr):	59.19	62.99	55.42
Average CO Emission Rate, (lb/hr):		59.20	

Carbon Monoxide Calculations
J.M. Huber, Corp.
Commerce, Georgia
#2 Dryer
March 19, 1992

CO - ESP Outlet	Run 1	Run 2	Run 3
Gas Flowrate (DSCFM):	26560	26765	27684
CO Concentration (mg/cu M):	519.50	489.22	492.71
CO Concentration (PPM):	446	420	423
CO Emission Rate, (lb/hr):	51.64	49.00	51.05
Average CO Emission Rate, (lb/hr):		50.56	

J.M. Huber Corporation

Commerce, Georgia

SUMMARY OF NOx RESULTS
March 19, 1992

RUN #	TIME	NOx AVERAGE PPM	DSCFM	NOx EMISSION RATE (lb/hr) (AS NO2)	ALLOWABLE RATE (lb/hr) (AS NO2)
1	1058-1131	2	26560	0.38	3.94
3	1811-1910	15	27684	2.98	3.94
	AVERAGES	8.50	27122	1.68	3.94

TABULATION OF TEST RESULTS
J.M. Huber Corp. - Commerce, GA
#2 Dryer ESP Outlet
Formaldehyde Testing
March 19, 1992

	Run 1	Run 2	Run 3
Volume @ Meter, liters:	57.38	60.39	59.86
Barometric Pressure (Pb):	29.01	28.97	28.94
Meter Pressure (in. wc.)	1.8	1.8	1.8
Meter Coefficient (Y):	1.012	1.012	1.012
Meter Temperature (Tm):	73	79	72
Stack Temperature (Ts):	151	149	148
Stack Pressure (Ps):	29.10	29.06	29.03
Wet Fraction (Bws):	0.241	0.257	0.265
Volume Gas Sampled, std l:	55.99	58.22	58.38
Volume Gas Sampled, actual l:	66.61	69.14	69.28
Volumetric Flowrate (Qs):	26560	26765	27684
Volumetric Flowrate (Qa):	41635	42756	44688

Formaldehyde

Molecular weight:	30.03	30.03	30.03
Milligrams Analyte:	0.297	0.215	0.380
Concentration, mg/dscm:	5.3048	3.6929	6.5096
Concentration, mg/acm:	4.4586	3.1097	5.4849
Concentration, PPM:	4.32	3.01	5.30
Emission Rate, gram/hour:	239.38	167.93	306.18
Emission Rate, pounds/hour:	0.53	0.37	0.67

AIR EMISSIONS TESTING - DRYER OPERATIONS DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 3/19/92 DRYER: NO. 2
TEST: #1 READINGS TAKEN BY: D. TREXLER

TIME	WELLONS TEMP. (f)	WELLONS COMB. TEMP. (f)	WELLONS DRAFT ("h2o)	DRYER INLET TEMP. (f)	DRYER OUTLET TEMP. (f)	DRYER FAN (amp)	CORE MOISTURE METER (%)	GREEN BIN SPEED (%)	GREEN BIN LEVEL (%)
10:10 AM	1437		0.384	954	225	46	4.70	60	80
10:20 AM	1438		0.360	954	229	46		60	80
10:30 AM	1435		0.347	961	225	46	4.90	60	80
10:40 AM	1428		0.305	952	227	46		60	80
10:50 AM	1426		0.335	948	230	46	4.50	60	83
11:00 AM	1431		0.307	959	229	46		60	78
11:10 AM	1439		0.370	954	229	46		60	82
11:20 AM	1445		0.424	953	227	46		60	85
11:30 AM	1440		0.368	958	222	46		60	80
11:40 AM	1440		0.398	955	221	46	5.00	60	80

TIME OF RUN (min)	AVG. TEMP. (f)	AVG. COMB. TEMP. (f)	AVG. DRAFT ("h2o)	AVG. INLET TEMP. (f)	AVG. OUTLET TEMP. (f)	AVG. DRYER FAN (amp)	AVG. CORE MOISTURE (%)	AVG. BIN SPEED (%)	AVG. BIN LEVEL (%)
90	1436		0.360	955	226	46	4.78	60	81

HUBER DISK:FILE0056.WK3

AIR EMISSIONS TESTING - DRYER OPERATIONS DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 3/19/92 DRYER: NO. 2
TEST: #2 READINGS TAKEN BY: D. TREXLER

TIME	WELLONS TEMP. (f)	WELLONS COMB. TEMP. (f)	WELLONS DRAFT ("h2o)	DRYER INLET TEMP. (f)	DRYER OUTLET TEMP. (f)	DRYER FAN (amp)	CORE MOISTURE METER (%)	GREEN BIN SPEED (%)	GREEN BIN LEVEL (%)
02:00 PM	1435		0.359	957	223	46		60	82
02:10 PM	1429		0.378	951	223	46	4.80	60	82
02:20 PM	1432		0.377	938	221	46		60	79
02:30 PM	1432		0.389	955	219	46	5.40	60	81
02:40 PM	1441		0.372	953	221	46		60	78
TESTING INTERRUPTED BECAUSE OF THUNDER STORMS									
04:40 PM	1446		0.406	942	220	46	5.40	60	84
04:50 PM	1445		0.375	978	214	46		60	79
05:00 PM	1439		0.388	962	210	46	5.20	60	78

TIME OF RUN (min)	AVG. TEMP. (f)	AVG. COMB. TEMP. (f)	AVG. DRAFT ("h2o)	AVG. INLET TEMP. (f)	AVG. OUTLET TEMP. (f)	AVG. DRYER FAN (amp)	AVG. CORE MOISTURE (%)	AVG. BIN SPEED (%)	AVG. BIN LEVEL (%)
60	1437		0.381	955	219	46	5.20	60	80

HUBER DISK:FILE0057.WK3

AIR EMISSIONS TESTING - DRYER OPERATIONS DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 3/19/92 DRYER: NO. 2
TEST: #3 READINGS TAKEN BY: D. TREXLER

TIME	WELLONS TEMP. (f)	WELLONS COMB. TEMP. (f)	WELLONS DRAFT ("h2o)	DRYER INLET TEMP. (f)	DRYER OUTLET TEMP. (f)	DRYER FAN (amp)	CORE MOISTURE METER (%)	GREEN BIN SPEED (%)	GREEN BIN LEVEL (%)
06:05 PM	1441		0.386	945	226	46		60	80
06:15 PM	1435		0.324	955	226	46	4.10	60	83
06:25 PM	1434		0.348	951	228	46		60	78
06:35 PM	1439		0.376	947	226	46	3.80	60	74
06:45 PM	1437		0.350	950	224	46		60	77
06:55 PM	1446		0.409	952	223	46		60	76
07:05 PM	1446		0.401	944	225	46	4.90	60	76
07:15 PM	1442		0.407	944	226	46		60	75
07:25 PM	1438		0.416	936	227	46		60	74

TIME OF RUN (min)	AVG. TEMP. (f)	AVG. COMB. TEMP. (f)	AVG. DRAFT ("h2o)	AVG. INLET TEMP. (f)	AVG. OUTLET TEMP. (f)	AVG. DRYER FAN (amp)	AVG. CORE MOISTURE (%)	AVG. BIN SPEED (%)	AVG. BIN LEVEL (%)
80	1440		0.380	947	226	46	4.27	60	77

HUBER DISK:FILE0058.WK3

AIR EMISSIONS TESTING - GEOENERGY DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 3/19/92 DRYER: NO. 2
TEST: #1 READINGS TAKEN BY: B. BONNER

TIME	PRECIPITATOR VOLTAGE (kv) AVG.	PRECIPITATOR VOLTAGE (kv) PEAK	PRECIPITATOR CURRENT (ma) AVG.	PRECIPITATOR CURRENT (ma) PEAK	QUENCH CHAMBER INLET TEMP. (f)	QUENCH CHAMBER OUTLET TEMP. (f)	QUENCH CHAMBER TEMP. DROP (f)	I.D. FAN (amp)	SPARK COUNT	SPARKS PER MIN.
10:10 AM	48	52	325	400	213.0	150.0	63.0	124.2	14225	
10:15 AM	45	46	400	600	214.0	149.8	64.2	123.9	14336	22.2
10:20 AM	47	48	400	600	214.0	150.1	63.9	124.5	14453	23.4
10:25 AM	50	52	300	350	214.0	150.5	63.5	123.6	14573	24.0
10:30 AM	49	50	500	600	213.2	149.7	63.5	124.7	14683	22.0
10:35 AM	47	48	300	350	214.7	149.8	64.9	123.5	14797	22.8
10:40 AM	47	48	400	600	215.4	149.6	65.8	124.6	14911	22.8
10:45 AM	49	52	425	450	216.9	149.5	67.4	124.0	15013	20.4
10:50 AM	51	54	525	600	215.8	149.1	66.7	123.6	15120	21.4
10:55 AM	51	54	450	550	216.8	149.6	67.2	125.2	15223	20.6
11:00 AM	49	52	550	600	217.0	149.7	67.3	124.3	15326	20.6
11:05 AM	51	52	525	600	217.0	149.7	67.3	124.5	15434	21.6
11:10 AM	48	50	350	400	217.5	149.7	67.8	124.6	15543	21.8
11:15 AM	49	52	425	500	216.3	149.7	66.6	123.2	15653	22.0
11:20 AM	51	52	525	600	215.6	149.0	66.6	124.7	15749	19.2
11:25 AM	51	52	525	600	214.4	149.8	64.6	124.2	15846	19.4
11:30 AM	47	48	550	600	214.3	150.1	64.2	125.0	15948	20.4
11:35 AM	52	52	525	600	213.4	149.8	63.6	124.7	16042	18.8
11:40 AM	51	52	550	600	213.1	148.9	64.2	124.2	16119	15.4

TIME OF RUN (min)	AVG. PEAK (kv)	AVG. PEAK (ma)	AVG. INLET TEMP. (f)	AVG. OULET TEMP. (f)	AVG. TEMP. DROP (f)	AVG. I.D. FAN (amp)	TOTAL SPARKS FOR RUN	AVG. SPARKS PER MIN.
90	51	537	215.1	149.7	65.4	124.3	1894	21.0

HUBER DISK:FILE0053.WK3

AIR EMISSIONS TESTING - GEOENERGY DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 3/19/92 DRYER: NO. 2
TEST: #2 READINGS TAKEN BY: B. BONNER

TIME	PRECIPITATOR VOLTAGE (kv) AVG.	PRECIPITATOR VOLTAGE (kv) PEAK	PRECIPITATOR CURRENT (ma) AVG.	PRECIPITATOR CURRENT (ma) PEAK	QUENCH CHAMBER INLET TEMP. (f)	QUENCH CHAMBER OUTLET TEMP. (f)	QUENCH CHAMBER TEMP. DROP (f)	I.D. FAN (amp)	SPARK COUNT	SPARKS PER MIN.
02:00 PM	47	48	550	600	212.2	148.8	63.4	123.5	18668	
02:05 PM	46	48	575	600	211.9	148.2	63.7	124.6	18741	14.6
02:10 PM	48	48	500	600	211.8	148.1	63.7	124.0	18824	16.6
02:15 PM	49	50	400	600	212.1	148.8	63.3	124.7	18912	17.6
02:20 PM	48	50	500	600	210.6	149.3	61.3	124.7	18997	17.0
02:25 PM	49	50	475	600	209.4	148.9	60.5	124.6	19075	15.6
02:30 PM	49	50	475	600	209.8	149.3	60.5	125.0	19157	16.4
02:35 PM	50	50	500	600	210.9	150.0	60.9	123.7	19245	17.6
02:40 PM	48	50	400	450	209.4	148.8	60.6	125.3	19327	16.4
02:45 PM	49	50	475	600	210.1	150.2	59.9	125.0	19420	18.6
TESTING INTERRUPTED BECAUSE OF THUNDERSTORMS										
04:35 PM	48	50	500	600	211.6	150.3	61.3	123.4	21737	
04:40 PM	49	50	450	550	209.4	149.8	59.6	123.9	21813	15.2
04:45 PM	50	50	450	600	207.7	149.5	58.2	123.6	21882	13.8
04:50 PM	48	50	575	600	206.1	149.0	57.1	123.7	21983	20.2
04:55 PM	52	52	450	450	204.6	148.5	56.1	124.3	22080	19.4
05:00 PM	48	52	525	600	204.0	149.2	54.8	124.0	22186	21.2
05:05 PM	51	52	500	600	203.7	149.2	54.5	123.5	22286	20.0

TIME OF RUN (min)	AVG. PEAK (kv)	AVG. PEAK (ma)	AVG. INLET TEMP. (f)	AVG. OULET TEMP. (f)	AVG. TEMP. DROP (f)	AVG. I.D. FAN (amp)	TOTAL SPARKS FOR RUN	AVG. SPARKS PER MIN.
75	50	579	209.1	149.2	60.0	124.2	3412	17.3

HUBER DISK:FILE0054.WK3

AIR EMISSIONS TESTING - GEOENERGY DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 3/19/92 DRYER: NO. 2
TEST: #3 READINGS TAKEN BY: B. BONNER

TIME	PRECIPITATOR VOLTAGE (kv) AVG.	PRECIPITATOR VOLTAGE (kv) PEAK	PRECIPITATOR CURRENT (ma) AVG.	PRECIPITATOR CURRENT (ma) PEAK	QUENCH CHAMBER INLET TEMP. (f)	QUENCH CHAMBER OUTLET TEMP. (f)	QUENCH CHAMBER TEMP. DROP (f)	I.D. FAN (amp)	SPARK COUNT	SPARKS PER MIN.
06:05 PM	50	54	500	600	215.7	149.0	66.7	124.6	23506	
06:10 PM	53	54	375	550	215.7	148.7	67.0	124.5	23575	13.8
06:15 PM	51	52	525	600	216.1	148.9	67.2	124.7	23676	20.2
06:20 PM	54	56	450	600	216.3	149.1	67.2	124.6	23769	18.6
06:25 PM	50	50	500	500	216.8	148.0	68.8	124.9	23872	20.6
06:30 PM	52	56	400	400	217.1	148.5	68.6	125.7	23979	21.4
06:35 PM	49	52	525	600	215.5	148.3	67.2	124.9	24096	23.4
06:40 PM	54	56	525	550	215.4	148.5	66.9	124.6	24188	18.4
06:45 PM	49	50	450	500	215.0	148.3	66.7	125.2	24281	18.6
06:50 PM	52	54	425	450	214.8	148.3	66.5	124.7	24396	23.0
06:55 PM	53	54	450	500	213.8	148.0	65.8	124.6	24488	18.4
07:00 PM	52	56	500	600	214.5	148.0	66.5	125.3	24577	17.8
07:05 PM	54	56	550	600	215.6	148.5	67.1	125.0	24674	19.4
07:10 PM	51	52	400	500	215.8	148.1	67.7	124.5	24764	18.0
07:15 PM	52	56	550	600	216.3	148.1	68.2	126.0	24867	20.6
07:20 PM	50	50	550	600	217.2	148.1	69.1	125.0	24976	21.8

TIME OF RUN (min)	AVG. PEAK (kv)	AVG. PEAK (ma)	AVG. INLET TEMP. (f)	AVG. OULET TEMP. (f)	AVG. TEMP. DROP (f)	AVG. I.D. FAN (amp)	TOTAL SPARKS FOR RUN	AVG. SPARKS PER MIN.
75	54	547	215.7	148.4	67.3	124.9	1470	19.6

HUBER DISK:FILEOO55.WK3

AIR EMISSIONS TESTING - GREEN BIN DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 3/19/92
TEST: #1,#2,#3

DRYER: NO. 2
READINGS TAKEN BY: C. THOMAS

TIME	BELT SPEED ("/min)	GREEN BIN LEVEL	DRYER INLET M.C. (%)	DRYER OUTLET M.C. (%)
08:35 AM			47.4	
08:45 AM				6.4
09:15 AM	4.16	4.5/7	48.7	4.9
09:40 AM	4.17	4.5/7	47.6	
09:50 AM	4.11			5.6
10:10 AM	4.13	4.5/7	49.4	4.7
10:25 AM	4.14	4.5/7	49.6	
10:35 AM	4.14	4.5/7		4.9
10:45 AM	4.14		48.7	
10:55 AM	4.14	4.5/7		4.5
11:10 AM		4.5/7	50.1	
11:35 AM	4.13	4.5/7	46.4	5.0
12:30 PM	4.11	4.5/7	44.8	
01:00 PM	4.11	4.5/7	46.0	4.2
01:45 PM	4.10		47.7	
02:10 PM	4.10			4.8
02:20 PM	4.08	4.5/7	49.7	5.4
02:45 PM	4.08	4.5/7	48.2	
03:45 PM	4.10	4.5/7	47.4	
04:25 PM	4.04	4.5/7	49.8	
04:35 PM	4.11	4.5/7		5.4
04:55 PM	4.11	4.25/7		5.2
05:15 PM	4.09	4.25/7	50.8	
06:05 PM	4.07	4.25/7	48.3	4.1
06:30 PM				3.8
06:50 PM	4.12	4.25/7		4.9
AVERAGE	4.11	4.5/7	48.3	4.9

HUBER DISK:FILE0059.WK3

AIR EMISSIONS TESTING - GREEN BIN MASS FLOW CALIBRATION
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DRYER: NO. 2

DATE	BIN SPEED (%)	BELT SPEED ("/min)	BIN LEVEL (%)	MASS FLOW GREEN (#/hour)	WOOD M.C. (%)	MASS FLOW O.D. (#/hour)
24-Oct-91	53	3.63	59	20,154	4.9	19,210
23-Apr-92	56	3.90	75	22,096	5.5	20,577
	60%				5.0	22,400

HUBER DISK: FILE0051.WK3

TABLE 2-1
SUMMARY OF EMISSIONS
DRYER STACK #3
J. M. HUBER CORPORATION
COMMERCE, GEORGIA

PARAMETER	RUN 1	RUN 2	RUN 3	AVERAGE
Particulate - Front Half				
Concentration, gr/dscf	0.0263	0.0130	0.0289	0.0227
Emission Rate, lb/hr	7.03	3.70	8.39	6.37
Particulate - Back Half				
Concentration, gr/dscf	0.0306	0.0295	0.0189	0.0263
Emission Rate, lb/hr	8.19	8.41	5.47	7.36
Total Particulate				
Concentration, gr/dscf	0.0568	0.0425	0.0478	0.0490
Emission Rate, lb/hr	15.2	12.1	13.9	13.7
Formaldehyde				
Concentration, ppm	27.0	26.2	33.9	29.0
Emission Rate, lb/hr	4.21	4.22	5.36	4.60
Total Gaseous Nonmethane Organics				
Inlet				
Concentration, ppm (as Carbon)	822	2837	1134	1598
Emission Rate, lb/hr (as Carbon)	49.5	168.0	65.0	94.2
Total VOCs (1.2x carbon emission rate)	59.4	201.6	78.0	113.0
Outlet				
Concentration, ppm (as Carbon)	517	848	1178	848
Emission Rate, lb/hr (as Carbon)	30.2	52.7	74.4	52.4
Total VOCs (1.2x carbon emission rate)	36.2	63.2	89.3	62.9
VOC Removal efficiency, %	39.0	68.6	-14.5	
VOC Removal efficiency, % Based on the 3 run averages				44.3
Carbon Monoxide				
Concentration, ppm	257	286	284	276
Emission Rate, lb/hr	35.0	41.4	41.9	39.4
Nitrogen Oxides (as NO2)				
Concentration, ppm	17.3	16.9	16.2	16.8
Emission Rate, lb/hr	3.9	4.0	3.9	3.9

TABLE 7
DRYER #3 INLET
PARTICULATE SUMMARY
J. M. HUBER - COMMERCE, GA

SYMBOL	PARAMETER	RUN 1 4/24/92 0856-1025	RUN 2 4/24/92 1156-1319	RUN 3 4/24/92 1428-1532	AVERAGE
	MEASURED DATA				
(Y)	Meter Box Y	1.002	1.002	1.002	1.002
	Avg Delta H, inches H2O	2.76	2.55	2.43	2.58
(Bp)	Barometric Pressure, inches Hg	29.12	29.12	29.12	29.12
(Vm)	Meter Volume, cu.ft	50.280	53.694	50.603	51.526
(Tm)	Avg Meter Temp, deg F	74.3	87.8	89.5	83.9
(Pg)	Static Pressure, inches H2O	-17.3	-17.3	-17.3	-17.3
(Ts)	Avg Stack Temp, deg F	210.0	209.6	203.0	207.5
(Vlc)	Water Collected, ml	239.1	314.3	319.8	291.1
(CO2)	Carbon dioxide, %	4.0	3.9	4.0	4.0
(O2)	Oxygen, %	17.0	17.0	17.0	17.0
	Avg Sqrt Delta P, sqrt(inches H2O)	1.389	1.419	1.389	1.40
(θ)	Sample Time, min	60	60	60	60
(Dn)	Nozzle Diameter, inches	0.213	0.213	0.213	0.213
(D)	Stack Diameter, inches	42	42	42	42
	Filterable PM				
(Mpw)	Particulate Collected (probe wash), g	0.0569	0.0321	0.1382	0.0757
(Mf)	Particulate Collected (filter), g	0.4892	0.4624	0.4714	0.4743
	Condensible PM				
(Mii)	H2O Impinger (inorganic) residue, g	0.0298	0.0589	0.0717	0.0535
(Mio)	MeCl Impinger (organic) residue, g	0.0526	0.0626	0.0597	0.0583
	CALCULATED DATA				
(Vmstd)	Standard Meter Volume, cu.ft	48.774	50.775	47.690	49.079
(Ps)	Stack Pressure, inches Hg	27.85	27.85	27.85	27.85
(%Bws)	Moisture, %	18.7	22.6	24.0	21.8
(Ms)	Molecular Weight-wet, lb/lb-mole	27.2	26.8	26.6	26.9
(Vs)	Velocity, ft/s	93.8	96.6	94.4	94.9
(As)	Stack Area, sq.ft	9.62	9.62	9.62	9.62
(Qa)	Volumetric flow, acfm	54,156	55,767	54,470	54,798
(Qs)	Volumetric flow, dscfm	32,262	31,681	30,676	31,540
(I)	Isokinetic Rate, %	98.0	103.9	100.8	100.9
	Total filterable (front half) PM				
(Cs)	Particulate Concentration, grain/dscf	0.1728	0.1503	0.1972	0.1734
(ER)	Particulate Emission Rate, lb/hr	47.77	40.80	51.85	46.81
	Organic back half PM				
(Cs)	Particulate Concentration, grain/dscf	0.0166	0.0190	0.0193	0.0183
(ER)	Particulate Emission Rate, lb/hr	4.60	5.17	5.08	4.95
	Inorganic back half PM				
(Cs)	Particulate Concentration, grain/dscf	0.0094	0.0179	0.0232	0.0168
(ER)	Particulate Emission Rate, lb/hr	2.61	4.86	6.10	4.52
	Train Fractionation:				
	filterable, %	87	80	82	83
	condensible, %	13	20	18	17

56.28

TABLE 2.1.1
DRYER #3 OUTLET
PARTICULATE SUMMARY
J. M. HUBER - COMMERCE, GA

SYMBOL	PARAMETER	RUN 1 4/24/92 0857-1020	RUN 2 4/24/92 1200-1301	RUN 3 4/24/92 1427-1534	AVERAGE
	MEASURED DATA				
(Y)	Meter Box Y	1.010	1.010	1.010	1.010
	Avg Delta H, inches H2O	2.16	2.47	2.48	2.37
(Bp)	Barometric Pressure, inches Hg	29.12	29.12	29.12	29.12
(Vm)	Meter Volume, cu.ft	46.330	49.754	50.565	48.883
(Tm)	Avg Meter Temp, deg F	79.9	86.3	94.3	86.8
(Pg)	Static Pressure, inches H2O	1.20	1.20	1.20	1.20
(Ts)	Avg Stack Temp, deg F	148.6	150.2	150.6	149.8
(Vlc)	Water Collected, ml	292.2	319.1	295.7	302.3
(CO2)	Carbon dioxide, %	3.1	3.1	3.1	3.1
(O2)	Oxygen, %	17.7	17.7	17.7	17.7
	Avg Sqrt Delta P, sqrt(inches H2O)	0.644	0.690	0.692	0.68
(0)	Sample Time, min	60	60	60	60
(Dn)	Nozzle Diameter, inches	0.299	0.299	0.299	0.299
(D)	Stack Diameter, inches	60	60	60	60
	Filterable PM				
(Mpw)	Particulate Collected (probe wash), g	0.0583	0.0135	0.0582	0.0433
(Mf)	Particulate Collected (filter), g	0.0179	0.0265	0.0311	0.0252
	Condensible PM				
(Mii)	H2O Impinger (inorganic) residue, g	0.0267	0.0298	0.0201	0.0255
(Mio)	MeCl Impinger (organic) residue, g	0.0620	0.0612	0.0381	0.0538
	CALCULATED DATA				
(Vmstd)	Standard Meter Volume, cu.ft	44.763	47.545	47.624	46.644
(Ps)	Stack Pressure, inches Hg	29.21	29.21	29.21	29.21
(%Bws)	Moisture, %	23.5	24.0	22.6	23.4
(Ms)	Molecular Weight-wet, lb/lb-mole	26.6	26.5	26.7	26.6
(Vs)	Velocity, ft/s	41.0	44.0	44.0	43.0
(As)	Stack Area, sq.ft	19.63	19.63	19.63	19.63
(Qa)	Volumetric flow, acfm	48,247	51,817	51,832	50,632
(Qs)	Volumetric flow, dscfm	31,245	33,249	33,845	32,780
(I)	Isokinetic Rate, %	96.2	96.0	94.5	95.5
	Total filterable (front half) PM				
(Cs)	Particulate Concentration, grain/dscf	0.0263	0.0130	0.0289	0.0227
(ER)	Particulate Emission Rate, lb/hr	7.03	3.70	8.39	6.37
	Condensible (back half) PM				
(Cs)	Particulate Concentration, grain/dscf	0.0306	0.0295	0.0189	0.0263
(ER)	Particulate Emission Rate, lb/hr	8.19	8.41	5.47	7.36
	Total front and back half PM				
(Cs)	Particulate Concentration, grain/dscf	0.0568	0.0425	0.0478	0.0490
(ER)	Particulate Emission Rate, lb/hr	15.22	12.11	13.86	13.73

TABLE 2.5.1
DRYER STACK #3
CEMS SUMMARY
J. M. HUBER CORPORATION

Run No.	Start Time	Stop Time	CEM Data (Raw) CO (ppm)	CEM Data (Raw) NOx (ppm)	Calibration Data CO Cma	CO Co	CO Cm	NOx Cma	NOx Co	NOx Cm	CEM Data (Corrected) CO (ppm)	CEM Data (Corrected) NOx (ppm)	Volumetric Flow Qa (acfm)	Volumetric Flow Qs (dscfm)	Mass Emission Rates CO (lb/hr)	Mass Emission Rates NOx (lb/hr)
1	08:57	10:02	257	17.4	598.0	0.0	597.0	47.6	0.0	47.7	257	17.3	48,300	31,200	35.0	3.9
2	12:00	13:05	286	16.9	598.0	0.0	597.5	47.6	0.0	47.7	286	16.9	51,800	33,200	41.4	4.0
3	14:31	15:36	284	16.2	598.0	0.1	597.0	47.6	0.1	47.6	284	16.2	51,800	33,800	41.9	3.9
Average											276	16.8			39.4	3.9

TABLE 2.2.1
DRYER #3 OUTLET
FORMALDEHYDE TEST SUMMARY
J. M. HUBER - COMMERCE, GA

SYMBOL	PARAMETER	RUN 1 04/24/92 0857-1013	RUN 2 04/24/92 1153-1311	RUN 3 04/24/92 1424-1534	AVERAGE
	MEASURED DATA				
(Y)	Meter Box Y	0.994	0.994	0.994	0.994
	Avg Delta H, inches H2O	1.02	1.03	1.00	1.02
(Bp)	Barometric Pressure, inches Hg	29.12	29.12	29.12	29.12
(Vm)	Meter Volume, cf	34.177	34.784	34.424	34.462
(Tm)	Avg Meter Temp, deg F	79.2	89.7	95.5	88.1
(Pg)	Static Pressure, inches H2O	1.20	1.20	1.20	1.20
(Ts)	Avg Stack Temp, deg F	148.7	150.1	151.2	150.0
(Vlc)	Water Collected, ml	220.0	221.6	217.1	219.6
(CO2)	Carbon dioxide, %	3.1	3.1	3.1	3.1
(O2)	Oxygen, %	17.7	17.7	17.7	17.7
	Avg Sqrt Delta P, (inches H2O)^ 1/2	0.691	0.718	0.705	0.70
(0)	Sample Time, min	60	60	60	60
(Dn)	Nozzle Diameter, inches	0.238	0.238	0.238	0.238
(Ds)	Stack Diameter, inches	60	60	60	60
(Mf)	Total Formaldehyde, mg	31	30	38	33
	CALCULATED DATA				
(Vmstd)	Standard Meter Volume, dscf	32.447	32.395	31.721	32.188
(Ps)	Stack Pressure, inches Hg	29.21	29.21	29.21	29.21
(%Bws)	Moisture (from impingers), %	24.2	24.4	24.4	24.3
(%Bws)	Moisture (at saturation), %	25.0	25.9	26.6	25.8
(Ms)	Molecular Weight-wet, lb/lb-mole	26.5	26.5	26.5	26.5
(Vs)	Velocity, ft/s	44.0	45.8	45.0	44.9
(As)	Stack Area, sq ft	19.63	19.63	19.63	19.63
(Qa)	Volumetric flow, acfm	5.18E+04	5.39E+04	5.30E+04	5.29E+04
(Qs)	Volumetric flow, dscfm	3.33E+04	3.45E+04	3.38E+04	3.38E+04
(I)	Isokinetic Rate, %	103.3	99.6	99.4	100.8
(Cf)	**Formaldehyde Concentration, mg/dscf**	0.96	0.93	1.20	1.0
(Cppm)	**Formaldehyde Concentration, ppm**	27.0	26.2	33.9	29.0
(ER)	**Formaldehyde Emission Rate, lb/hr**	4.21	4.22	5.36	4.60

AIR EMISSIONS TESTING - DRYER OPERATIONS DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/24/92 DRYER: NO. 3
TEST: #1 READINGS TAKEN BY: D. CASTELLON

TIME	WELLONS TEMP. (f)	WELLONS COMB. TEMP. (f)	WELLONS DRAFT ("h2o)	DRYER INLET TEMP. (f)	DRYER OUTLET TEMP. (f)	DRYER FAN (amp)	DRY MOISTURE (%)	GREEN BIN SPEED (%)	GREEN BIN LEVEL (%)
08:35 AM	1381		0.518	1016	213	46	5.2	56	79
08:45 AM	1376		0.428	1000	219	45		56	75
08:55 AM	1379		0.470	997	226	46	5.6	55	77
09:05 AM	1375		0.435	996	239	46		57	78
09:15 AM	1370		0.446	993	228	45		58	77
09:25 AM	1368		0.480	994	219	45	9.8	58	75
09:35 AM	1386		0.442	1002	220	45		58	79
09:45 AM	1390		0.498	994	220	45		58	76
09:55 AM	1386		0.475	996	215	45	5.0	58	84
10:05 AM	1389		0.478	996	218	45		58	88
10:15 AM	1383		0.449	992	225	45	12.0	58	82
10:25 AM	1378		0.424	985	229	45	4.9	58	77
10:35 AM	1371		0.481	959	230	45		58	72

TIME OF RUN (min)	AVG. TEMP. (f)	AVG. COMB. TEMP. (f)	AVG. DRAFT ("h2o)	AVG. INLET TEMP. (f)	AVG. OUTLET TEMP. (f)	AVG. DRYER FAN (amp)	AVG. MOISTURE (%)	AVG. BIN SPEED (%)	AVG. BIN LEVEL (%)
120	1379		0.463	994	223	45	7.1	57	78

HUBER DISK:FILE0071.WK3

AIR EMISSIONS TESTING - DRYER OPERATIONS DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/24/92 DRYER: NO. 3
TEST: #2 READINGS TAKEN BY: D. CASTELLON

TIME	WELLONS TEMP. (f)	WELLONS COMB. TEMP. (f)	WELLONS DRAFT ("h2o)	DRYER INLET TEMP. (f)	DRYER OUTLET TEMP. (f)	DRYER FAN (amp)	DRY MOISTURE (%)	GREEN BIN SPEED (%)	GREEN BIN LEVEL (%)
11:30 AM	1376		0.491	1002	221	45		58	75
11:40 AM	1377		0.434	1003	218	45	8.7	58	72
11:50 AM	1380		0.490	994	228	45		58	78
12:00 PM	1376		0.475	985	232	45		58	75
12:10 PM	1384		0.428	974	230	45	4.0	58	68
12:20 PM	1373		0.461	998	226	45		58	70
12:30 PM	1385		0.467	998	221	45	4.9	58	72
12:40 PM	1375		0.423	994	222	45		58	73
12:50 PM	1380		0.410	1003	219	45		58	76
01:00 PM	1380		0.467	1000	214	45		58	71
01:10 PM	1361		0.351	994	209	45	4.9	58	74

TIME OF RUN (min)	AVG. TEMP. (f)	AVG. COMB. TEMP. (f)	AVG. DRAFT ("h2o)	AVG. INLET TEMP. (f)	AVG. OUTLET TEMP. (f)	AVG. DRYER FAN (amp)	AVG. MOISTURE (%)	AVG. BIN SPEED (%)	AVG. BIN LEVE (%)
100	1377		0.445	995	222	45	5.6	58	73

HUBER DISK:FILE0072.WK3

AIR EMISSIONS TESTING - DRYER OPERATIONS DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/24/92 DRYER: NO. 3
TEST: #3 READINGS TAKEN BY: D. CASTELLON

TIME	WELLONS TEMP. (f)	WELLONS COMB. TEMP. (f)	WELLONS DRAFT ("h2o)	DRYER INLET TEMP. (f)	DRYER OUTLET TEMP. (f)	DRYER FAN (amp)	DRY MOISTURE (%)	GREEN BIN SPEED (%)	GREEN BIN LEVEL (%)
02:30 PM	1370		0.382	1010	209	45	5.6	58	72
02:40 PM	1373		0.426	1000	209	45		58	74
02:50 PM	1377		0.480	994	207	45	6.0	58	73
03:00 PM	1383		0.443	1013	210	45		58	71
03:10 PM	1345		0.285	992	211	45		58	65
03:20 PM	1340		0.200	995	216	45		58	60
03:30 PM	1283		0.170	974	232	45		60	55
03:40 PM	1235		0.202	1009	232	45	10.3	60	50
03:50 PM	1228		0.228	974	233	44		60	43
04:00 PM	1212		0.210	973	227	44		60	37
04:11 PM	1207		0.238	1005	226	45		60	34

TIME OF RUN (min)	AVG. TEMP. (f)	AVG. COMB. TEMP. (f)	AVG. DRAFT ("h2o)	AVG. INLET TEMP. (f)	AVG. OUTLET TEMP. (f)	AVG. DRYER FAN (amp)	AVG. MOISTURE (%)	AVG. BIN SPEED (%)	AVG. BIN LEVEL (%)
101	1305		0.297	994	219	45	7.3	59	58

HUBER DISK:FILE0073.WK3

AIR EMISSIONS TESTING - GEOENERGY DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/24/92
TEST: #1

DRYER: NO. 3
READINGS TAKEN BY: B. BONNER

TIME	PRECIPITATOR VOLTAGE (kv) AVG.	PRECIPITATOR VOLTAGE (kv) PEAK	PRECIPITATOR CURRENT (ma) AVG.	PRECIPITATOR CURRENT (ma) PEAK	QUENCH CHAMBER INLET TEMP. (f)	QUENCH CHAMBER OUTLET TEMP. (f)	QUENCH CHAMBER TEMP. DROP (f)	I.D. FAN (amp)	SPARK COUNT	SPARKS PER MIN.
08:45 AM	53	53	300	350	218.0	147.0	71.0	129.0	51525	
08:50 AM	52	52	325	350	221.0	147.0	74.0	129.0	51700	35.0
08:55 AM	52	52	300	325	222.0	147.0	75.0	129.0	51842	28.4
09:00 AM	52	53	325	350	222.0	146.0	76.0	129.0	51958	23.2
09:05 AM	52	52	300	300	225.0	146.0	79.0	129.0	52062	20.8
09:10 AM	54	54	350	425	227.0	147.0	80.0	129.0	52213	30.2
09:15 AM	52	52	250	275	225.0	148.0	77.0	128.0	52344	26.2
09:20 AM	52	52	350	375	223.0	148.0	75.0	128.0	52492	29.6
09:25 AM	53	56	325	350	221.0	149.0	72.0	128.0	52657	33.0
09:30 AM	54	54	325	350	221.0	148.0	73.0	128.0	52765	21.6
09:35 AM	53	54	325	400	222.0	149.0	73.0	128.0	52923	31.6
09:40 AM	52	52	350	400	221.0	148.0	73.0	128.0	53065	28.4
09:45 AM	52	53	350	375	220.0	149.0	71.0	128.0	53186	24.2
09:50 AM	52	54	300	325	219.0	149.0	70.0	128.0	53356	34.0
09:55 AM	53	54	325	350	220.0	149.0	71.0	128.0	53524	33.6
10:00 AM	51	53	375	500	220.0	148.0	72.0	128.0	53652	25.6
10:05 AM	53	54	300	400	221.0	148.0	73.0	128.0	53778	25.2
10:10 AM	53	54	375	400	223.0	147.0	76.0	129.0	53921	28.6
10:15 AM	52	52	325	375	224.0	148.0	76.0	129.0	54006	17.0
10:20 AM	55	56	275	300	226.0	148.0	78.0	129.0	54185	35.8
10:25 AM	52	52	315	325	228.0	148.0	80.0	129.0	54342	31.4
10:30 AM	54	54	325	350	228.0	147.0	81.0	129.0	54420	15.6
10:35 AM	53	54	300	325	228.0	147.0	81.0	129.0	54557	27.4

TIME OF RUN (min)	AVG. PEAK (kv)	AVG. PEAK (ma)	AVG. INLET TEMP. (f)	AVG. OULET TEMP. (f)	AVG. TEMP. DROP (f)	AVG. I.D. FAN (amp)	TOTAL SPARKS FOR RUN	AVG. SPARKS PER MIN.
110	53	360	222.8	147.7	75.1	128.5	3032	27.6

HUBER DISK:FILE0074.WK3

AIR EMISSIONS TESTING - GEOENERGY DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/24/92 DRYER: NO. 3
TEST: #2 READINGS TAKEN BY: B. BONNER

TIME	PRECIPITATOR VOLTAGE (kv) AVG.	PRECIPITATOR VOLTAGE (kv) PEAK	PRECIPITATOR CURRENT (ma) AVG.	PRECIPITATOR CURRENT (ma) PEAK	QUENCH CHAMBER INLET TEMP. (f)	QUENCH CHAMBER OUTLET TEMP. (f)	QUENCH CHAMBER TEMP. DROP (f)	I.D. FAN (amp)	SPARK COUNT	SPARKS PER MIN.
11:30 AM	54	54	350	375	223.0	148.0	75.0	129.0	56119	
11:35 AM	52	53	350	375	223.0	148.0	75.0	129.0	56290	34.2
11:40 AM	53	54	350	375	221.0	148.0	73.0	128.0	56431	28.2
11:45 AM	54	54	300	350	223.0	148.0	75.0	129.0	56556	25.0
11:50 AM	52	52	350	400	225.0	147.0	78.0	129.0	56701	29.0
11:55 AM	52	54	350	400	227.0	148.0	79.0	129.0	56837	27.2
12:00 PM	51	52	300	350	229.0	148.0	81.0	129.0	56978	28.2
12:05 PM	53	54	325	350	227.0	148.0	79.0	128.0	57103	25.0
12:10 PM	53	54	350	425	228.0	148.0	80.0	129.0	57247	28.8
12:15 PM	54	56	350	375	227.0	149.0	78.0	128.0	57369	24.4
12:20 PM	52	53	350	450	227.0	149.0	78.0	128.0	57496	25.4
12:25 PM	53	54	350	450	226.0	150.0	76.0	127.0	57646	30.0
12:30 PM	55	56	375	400	225.0	150.0	75.0	128.0	57771	25.0
12:35 PM	55	56	375	400	225.0	150.0	75.0	128.0	57931	32.0
12:40 PM	53	54	325	375	225.0	150.0	75.0	128.0	58050	23.8
12:45 PM	54	54	375	450	222.0	149.0	73.0	128.0	58204	30.8
12:50 PM	55	56	400	450	224.0	150.0	74.0	128.0	58331	25.4
12:55 PM	53	55	350	450	222.0	150.0	72.0	127.0	58470	27.8
01:00 PM	53	54	275	350	221.0	151.0	70.0	127.0	58629	31.8
01:05 PM	55	56	325	450	220.0	151.0	69.0	128.0	58734	21.0
01:10 PM	54	54	350	400	217.0	151.0	66.0	127.0	58868	26.8
01:15 PM	54	56	275	350	215.0	150.0	65.0	128.0	59006	27.6

TIME OF RUN (min)	AVG. PEAK (kv)	AVG. PEAK (ma)	AVG. INLET TEMP. (f)	AVG. OULET TEMP. (f)	AVG. TEMP. DROP (f)	AVG. I.D. FAN (amp)	TOTAL SPARKS FOR RUN	AVG. SPARKS PER MIN.
105	54	398	223.7	149.1	74.6	128.1	2887	27.5

HUBER DISK:FILE0075.WK3

AIR EMISSIONS TESTING - GEOENERGY DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/24/92 DRYER: NO. 3
TEST: #3 READINGS TAKEN BY: B. BONNER

TIME	PRECIPITATOR VOLTAGE (kv) AVG.	PRECIPITATOR VOLTAGE (kv) PEAK	PRECIPITATOR CURRENT (ma) AVG.	PRECIPITATOR CURRENT (ma) PEAK	QUENCH CHAMBER INLET TEMP. (f)	QUENCH CHAMBER OUTLET TEMP. (f)	QUENCH CHAMBER TEMP. DROP (f)	I.D. FAN (amp)	SPARK COUNT	SPARKS PER MIN.
02:30 PM	52	52	350	375	217.0	151.0	66.0	127.0	61161	
02:35 PM	52	52	350	425	216.0	150.0	66.0	128.0	61285	24.8
02:40 PM	52	54	300	350	216.0	150.0	66.0	127.0	61420	27.0
02:45 PM	53	54	350	425	215.0	150.0	65.0	128.0	61559	27.8
02:50 PM	53	54	275	325	215.0	150.0	65.0	128.0	61701	28.4
02:55 PM	53	54	350	375	215.0	150.0	65.0	128.0	61853	30.4
03:00 PM	53	54	350	400	215.0	149.0	66.0	128.0	61970	23.4
03:05 PM	53	54	325	350	217.0	149.0	68.0	128.0	62101	26.2
03:10 PM	54	54	350	400	216.0	150.0	66.0	128.0	62243	28.4
03:15 PM	52	54	350	400	217.0	151.0	66.0	128.0	62392	29.8
03:20 PM	53	54	350	375	220.0	149.0	71.0	128.0	62526	26.8
03:25 PM	55	56	375	450	224.0	149.0	75.0	127.0	62662	27.2
03:30 PM	53	55	325	375	228.0	149.0	79.0	128.0	62803	28.2
03:35 PM	53	54	325	350	229.0	149.0	80.0	128.0	62934	26.2

TIME OF RUN (min)	AVG. PEAK (kv)	AVG. PEAK (ma)	AVG. INLET TEMP. (f)	AVG. OULET TEMP. (f)	AVG. TEMP. DROP (f)	AVG. I.D. FAN (amp)	TOTAL SPARKS FOR RUN	AVG. SPARKS PER MIN.
65	54	384	218.6	149.7	68.9	127.8	1773	27.3

HUBER DISK:FILE0076.WK3

AIR EMISSIONS TESTING - GREEN BIN DATA SHEET
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DATE: 4/24/92
TEST: #1,#2,#3

DRYER: NO. 3
READINGS TAKEN BY: C. THOMAS

TIME	BELT SPEED ("/min)	GREEN BIN LEVEL	DRYER INLET M.C. (%)	DRYER OUTLET M.C. (%)
08:35 AM			45.2	5.2
08:55 AM			45.6	5.6
09:05 AM	4.060	4.25/7		
09:25 AM	3.971	4.25/7	45.3	9.8
09:55 AM	3.978	4.5/7		5.0
10:05 AM	4.000	4.75/7	45.0	
10:15 AM	4.000	4.5/7		12.0
10:25 AM	4.000	4.25/7		4.9
10:35 AM	4.000	4.25/7	46.0	
11:40 AM	4.007	4.25/7		8.7
11:50 AM	4.007	4.25/7	46.8	
12:10 PM	4.015	4.0/7		4.0
12:20 PM	4.007	4.0/7	45.6	
12:30 PM	4.000	4.18/7		4.9
12:40 PM	4.015	4.25/7	44.6	
01:10 PM	4.015	4.25/7	46.0	4.9
02:30 PM	4.007	4.25/7		5.6
02:40 PM	4.015	4.25/7	47.2	
02:50 PM	4.022	4.25/7		6.0
03:00 PM	4.030	4.0/7	42.2	
03:30 PM	4.170	3.0/7	45.8	
03:40 PM	4.178	3.0/7		10.3
AVERAGE	4.025	4.25/7	45.4	6.7

HUBER DISK:FILE0077.WK3

AIR EMISSIONS TESTING - GREEN BIN MASS FLOW CALIBRATION
J. M. HUBER CORPORATION - COMMERCE, GEORGIA

DRYER: NO. 3

DATE	BIN SPEED (%)	BELT SPEED ("/min)	BIN LEVEL (%)	MASS FLOW GREEN (#/hour)	WOOD M.C. (%)	MASS FLOW O.D. (#/hour)
24-Oct-91	56	3.86	57	18,588	5.2	17,670
23-Apr-92	58	3.90	78	22,820	7.0	21,324
24-Apr-92	60	4.10	43	22,632	6.2	21,310

Oven dried

HUBER DISK: FILE0052.WK3