Rayonier

Performance Fibers

Fernandina Mill

September 19, 2008

RECEIVED

SEP 22 2008

BUREAU OF AIR REGULATION

Certified Mail, Return Receipt Requested

Mr. Jeffery F. Koerner, P. E.
Bureau of Air Regulation
Division of Air Resources Management
2600 Blair Stone Road, MS 5505
Tallahassee, FL 32399-2400

RE: Request to Modify Air Construction Permit 0890004-018-AC and
Air Construction Permit 0890004-022-AV

Project No.: 0890004-023-AC

Dear Mr. Koerner:

Air Construction Permit 0890004-018AC
Rayonier Performance Fiber LLC ("Rayonier") is requesting that Air Construction Permit 0890004-018 be renewed as described below. The permit was issued on February 20, 2006 to Rayonier for the purpose of approving the construction of No. 6 boiler and a two phase production increase at its Fernandina Beach dissolving sulfite pulp mill. The permit includes an expiration date of March 1, 2009. Rayonier is requesting that this deadline be extended to allow for the completion of construction.

The construction authorized by the permit is more than half completed. The No. 6 boiler is operational, the new evaporators are installed and operational and the revised digester operating rate instituted, but due to other operational problems the phase 1 annual production has not yet been achieved.

There are two remaining projects authorized by this Air Construction Permit. The phase two production increase to 175,000 ADMT/day is approved at Condition D.1.b: "Upon successful installation and submittal of the engineering report of the HCE blow heat recovery system to control VOC emissions from all the HCE cells, the facility's production shall not exceed 175,000 ADMT per consecutive 12-months, rolling total." Construction of the HCE blow heat recovery system has been delayed by market conditions and is now on the budget for 2013. This system is comparable to an LVHC system on a Kraft mill and may take as long as a year to complete. Rayonier is asking for an expiration date 10 years from the date of issuance, or until 2016. The actual annual production rate has not been increased above the previously permitted rate of 162,000 ADMT/day.

The second remaining project is the bleach plant scrubber and/or other equipment installation needed to comply with 40 CFR 63.445. This project is being engineered now and will be completed by the deadline of March 2010 required by Condition F1 of the permit. This deadline is after the permit expiration.

It is clear from the Part 403.087 FS there is no limit on the term of an air construction permit, though there is for a water permit (10 years). From Department rules 62-210.300 Air Construction Permit shall be issued for a period of time sufficient to allow the construction and operation while the owner/operator is conducting testing or otherwise demonstrating initial compliance. Rayonier is hereby advising that additional time is necessary to allow for completion of construction and subsequent compliance demonstrations.

Rayonier requests the expiration date for this permit be extended to February 2016 or 10 years from the date of issuance.

Air Construction Permit 0890004-001-AC

This application also requests Air Construction Permit 0890004-001-AC be modified to increase the limit on red liquor solids firing rate for 70,000 to 73,000 pounds per hour. Attached is a stack test conducted May 14, 2008 by STACS demonstrating that the boiler is now capable of firing red liquor solids at a rate of 73,000 pounds per hour while still complying with its existing permit limits. No change to the emission limit is requested. Actual emission increases will not exceed the PSD Significance Levels in part because the annual rate will not increase above that permitted from the production increase. This appears to be a minor modification.

If you have questions regarding this application please contact David Rogers at (904)277-1346, email: david.rogers@rayonier.com or David Tudor at (904)557-8332, email: david.tudor@rayonier.com .

Sincerely,

F. J. Perrett
General Manager

cc: Bruce Mitchell
Corrine Brown
Christopher Kirts
Terry Cole, FPPA-EA
Rita Felton-Smith

SOURCE TESTING AND CONSULTING SERVICES, INC.
1100 Purple Glory Drive
Apex, NC 27502
PH: (919) 367-2200/FAX: (919) 367-2222
www.stacsinc.com

September 8, 2008

David Rogers
Rayonier Environmental
Rayonier Performance Fibers, LLC.
Foot of Gum Street
Fernandina Beach, Florida 32034

RE: Sulfite Recovery Boiler Engineering Tests

Dear Mr. Rogers:

Source Testing And Consulting Services, Inc. (STACS) conducted a series of elevated load engineering tests at the Rayonier Performance Fibers, LLC facility in Fernandina Beach, Florida. Testing was conducted at the Sulfite Recovery Boiler using EPA Methods 1-4 for volumetric flow-rate determination and EPA Method 5 for particulate matter. Three one-hour test runs were conducted.

The results of these tests are summarized in the attached Table 1. We have also provided the analytical data and the field data sheets used in sampling, as well as the pre-test and post-test dry gas meter calibration data and facility process data.

If you have any questions concerning this information or if I may be of service in any other way, please do not hesitate to contact me at (919) 367-2200 or by e-mail at billmayhew@stacsinc.com. Thank you and best regards.

Sincerely,

SOURCE TESTING AND CONSULTING SERVICES, INC.

Bill Mayhew

Bill Mayhew
Principal Engineer

Table 1. **Summary of Emissions Testing Data - Total Solid Particulate Matter**
Rayonier
SRB Stack

Parameter	**Units**	Run #	1	2	3	AVERAGE
		Date:	14-May-08	16-May-08	16-May-08	
		Start Time:	16:10	8:20	12:40	
		Stop Time:	17:12	9:21	13:42	
Sampling Train & Analytical Parameters:						
Total Solid Particulate Matter:	g		0.0410	0.0482	0.0500	0.0464
Metered Volume:	dscf		34.837	35.371	37.961	36.056
Gas Stream Volumetric Flowrate:	dscfm		130,858	134,438	141,930	135,742
Oxygen:	%V, dry		7.2	6.0	8.0	7.1
Carbon Dioxide:	%V, dry		12.0	13.0	12.0	12.3
Total Solid Particulate (TSP) Matter Emissions:						
TSP Concentration:	gr/dscf		0.01816	0.02103	0.02033	0.01984
TSP Mass Emission Rate:	lb/hr		20.372	24.233	24.728	23.111
TSP Mass Emission Rate:	grams/dscm		0.0416	0.0481	0.0465	0.0454
TSP Mass Emission Rate @ 8% O2:	grams/dscm		0.0391	0.0417	0.0465	0.0424

SUMMARY OF EMISSIONS SAMPLING DATA

Plant: Rayonier	Location: SRB Stack		Run #	1	2	3	AVERAGE
Condition: Normal			Date	14-May-08	16-May-08	16-May-08	
Unit: SRB Stack	Method: Method 5		Start Time	16:10	8 20	12 40	
Parameter		**Units**	Stop Time	17.12	9 21	13:42	
Sampling Time		min		60	60	60	60
AMBIENT DATA:							
Ambient Temperature		deg F		69	70	70	69 67
Location Height above Pbar reading		feet		214	214	214	214
Barometnc Pressure		in Hg		30 06	29 98	29.98	30 01
Corrected Barometnc Pressure (to location)		in. Hg		29 85	29 77	29.77	29 79
GAS METER DATA:							
Dry Gas Meter Correction Factor (gamma)		Dimensionless		0 9754	0 9754	0 9754	0 9754
Average Meter Differential Pressure		in H2O		1.1983	1.2833	2.5583	1 6800
Absolute Meter Pressure		in. Hg		29 93	29 86	29 95	29 92
Average Meter Temperature		degrees F		75.7	76 0	78 9	76 9
Metered Dry Sample Gas Volume		dcf		36 220	36 889	39 678	37.596
Average Sampling Rate		dscfm		0 581	0 590	0 633	0 601
Standard Metered Volume		dscf		34 837	35 371	37.961	36 056
Standard Metered Volume		dscm		0 9866	1.0017	1 0751	1 0211
MOISTURE DATA:							
Moisture Determination Technique.				Gravimetnc	Gravimetnc	Gravimetric	
Relative Humidity		%RH		#N/A	#N/A	#N/A	#N/A
Saturated Vapor Pressure of Water.		inches Hg		2 4313	2 6079	2.9178	2 6523
Vapor Phase Moisture Content at Saturation.		% Volume		8 16	8 78	9.82	8.92
Total Condensate Collected		grams H20		78 1	81.2	99 6	86.30
Standard Volume of Water Vapor		scf		3 682	3 829	4.696	4.069
Measured Moisture Content		mole fraction		0 0956	0 0977	0 1101	0.1011
Measured Moisture Content		% Volume		9 56	9.77	11.01	10.11
Gas Stream Vapor Phase Moisture (Bs):		% Volume		8 16	8 78	9 82	8.92
FIXED GAS DATA:							
Oxygen Concentration, Dry Basis		% Volume		7 2	6 0	8.0	7.1
Carbon Dioxide Concentration, Dry Basis		% Volume		12 0	13 0	12 0	12 3
Carbon Monoxide Concentration, Dry Basis		% Volume		0 0	0 0	0 0	0 0
Other Primary Gas Constituent, Dry Basis		% Volume		#N/A	#N/A	#N/A	#N/A
Nitrogen Concentration, Dry Basis (gas balance)		% Volume		80 8	81.0	80 0	80.6
Gas Molecular Weight, Dry Basis		lb/lb-mole		30 208	30 320	30 240	30 256
Gas Molecular Weight, Wet Basis		lb/lb-mole		29 212	29 239	29 038	29.163
Fo Calculated		Dimensionless		1.142	1.146	1.075	1.121
Excess Air:		%		50 89	38 96	60 90	50 25
Ultimate CO2		%V,d		18 31	18 23	19 44	18 66
DUCT CONFIGURATION:							
Duct Geometry (C = Circular, R = Rectangular)				C	C	C	
Duct Dimensions (Diameter)		inches		88	88	88	88
Effective Duct Diameter (De)		inches		88	88	88	88
Stack Cross-Sectional Area		ft2		42 24	42 24	42 24	42 24
DUCT GAS CONDITIONS:							
Static Pressure of Gas Stream		in. H2O		-0 510	-0 640	-0 570	-0 573
Absolute Duct Gas Pressure		in. Hg		29 809	29 719	29.724	29 751
Gas Stream Temperature		degrees F		107.75	110 17	114 08	110 67
Gas Stream Wet Bulb Temperature.		degrees F		0	0	0	0
VELOCITY DATA:							
Pitot Tube Coefficient		Dimensionless		0 84	0 84	0 84	0.84
Avg Square Root of Velocity Head		(in H2O)^0 5		1.0465	1.0868	1.1605	1.0979
Gas Stream Velocity		ft/sec		60 681	63 221	67.966	63.956
Gas Stream Velocity		ft/min		3640 86	3793 26	4077.98	3837.37
Gas Stream Velocity		meters/min		1109 73	1156 19	1242.97	1169 63
Gas Stream Velocity		mi/hr		41.378	43 108	46 343	43 609
FLOWRATE/ENGLISH UNITS							
Actual Volumetnc Flow Rate, Wet Basis		acfm		153778 9	160215 9	172241.7	162078 8
Standard Volumetnc Flow Rate, Wet Basis		scfm		142479 4	147370 1	157378 1	149075 9
Standard Volumetric Flow Rate, Dry Basis		dscfm		130858 3	134437.9	141929 8	135741.9
Standard Volumetnc Flow Rate, Wet Basis		kscfh		8548.76	8842 21	9442 68	8944 55
Standard Volumetnc Flow Rate, Dry Basis		kdscfh		7851.50	8066 27	8515 77	8144 51
Total Mass Flow Rate (wet)		kpph		648.14	671.00	711.86	676.93
FLOWRATE/METRIC UNITS							
Actual Volumetnc Flow Rate, Wet Basis		acmm		4355 02	4537.31	4877.89	4590 07
Standard Volumetnc Flow Rate, Wet Basis		scmm		4035 02	4173 52	4456 95	4221.83
Standard Volumetnc Flow Rate, Dry Basis		dscmm		3705 91	3807 28	4019 44	3844 21
ISOKINETIC SAMPLING DATA:							
Nozzle Diameter.		inches		0 189	0 189	0 189	0.189
Area of Nozzle		ft^2		1.948E-04	1.948E-04	1.948E-04	1.948E-04
Isokinetic Sampling Rate:		%I		96 2	95 1	96 7	96 0
PARTICULATE MATTER:							
Particulate Matter Collected:		grams		0 0410	0 0482	0 0500	0 0464
Particulate Matter Concentration.		grams/dscm		0 04156	0 04812	0 04651	0 04539
Particulate Matter Mass Emission Rate:		grams/sec		2.567	3 053	3 116	2.912
Particulate Matter Concentration:		lb/dscf		2 59E-06	3 00E-06	2.90E-06	2.83E-06
Particulate Matter Concentration:		grains/dscf		0 01816	0 02103	0 02033	0 01984
Particulate Matter Mass Emission Rate.		lb/hr		20 372	24 233	24.728	23 111

STACS ISOKINETIC SAMPLING FIELD DATA SHEET

Facility:	Rayonier SRB	Meter #:	A-4	Baro. Press:	30.06	Page #:	
Unit:		DH@:	1.9	Ambient Temp:	89	Pitot LC:	
Location:		DGM Factor:	0.9754	Nozzle Dia:	0.189		
Test Type:	MS	Pitot #:		Static P:	-0.51		
Run #:	Eng 1	Pitot Coef:	0.84	Stack Dimensions:	88"		
Condition:				Stack Height:			
Operator(s):	KLC	K-Factor:	1.1	Init. Leak Check:	0.002 cfm@ 15 "Hg		
Date:	5/14/08	Filter#:	722	Final Leak Check:	0.001 cfm@ 10 "Hg		

Traverse Point Number	Time	Gas Meter Reading Vm(ft3)	Velocity Head ("H2O)	Orifice Press. ("H2O)	Stack Temp (F)	Probe Temp (F)	Filter Temp (F)	Impinger Temp (F)	Dry Gas Meter Temp. Inlet (F)	Dry Gas Meter Temp. Outlet (F)	Vacuum ("Hg)
B-1	1610/0	678.326	1.3	1.4	107	236	252	65	73	73	4
2	5	681.71	1.2	1.3	111	240	254	57	75	72	4
3	10	684.79	1.2	1.3	107	252	258	58	76	72	4
4	15	687.85	1.1	1.2	108	250	250	58	78	73	4
5	20	690.84	0.99	1.1	109	253	261	58	79	73	4
6	25	693.72	1.0	1.1	106	251	246	58	79	73	4
A-1	1642/30	696.589	0.80	0.86	107	243	256	58	79	73	4
2	35	699.2	1.1	1.2	102	251	248	58	79	73	4
3	40	702.35	1.1	1.2	108	248	252	58	80	73	4
4	45	705.40	1.2	1.3	108	243	235	58	80	73	4
5	50	708.52	1.2	1.3	108	230	250	59	81	74	4
6	55	711.67	1.0	1.1	108	232	234	60	81	75	4
	1712/60	714.546									
Avg/Tot.											

Impinger	1	2	3	4	5	Total
Final	165	104		209		
Initial	100	100		199.4		
Total	65	4		9.1		78.1

ORSAT/CEM	1	2	3	4
O2	7.2			
CO2	12.0			

Traverse Point %'s

6 Point (4.4) (14.6) (29.6) (70.4) (85.4) (95.6)

12 Point (2.1)(6.7)(11.8)(17.7)(25.0)(35.6)(64.4)(75.0)(82.3)(88.2)(93.3)(97.9)

Note: Nearest upstream disturbance or exit must be 2 duct diameters away and nearest downstream disturbance must be at least 8 diameter away to use 6 points per traverse.

19.9 lbs/hr

STACS ISOKINETIC SAMPLING FIELD DATA SHEET

Facility:	Rayonier	Meter #:	A-4	Baro. Press:	29.98	Page #:	
Unit:	SRB	DH@:	1.9	Ambient Temp:	70	Pitot LC:	✓
Location:	Fernandina Beach FL	DGM Factor:	0.9754	Nozzle Dia:	0.187		
Test Type:	M5	Pitot #:		Static P:	-0.64		
Run #:	Eng 2	Pitot Coef:	0.84	Stack Dimensions:	88"		
Condition:				Stack Height:			
Operator(s):	KIC	K-Factor:	1.1	Init Leak Check:	0.004	cfm@ 15	"Hg
Date:	5/16/08	Filter#:	SRB-1	Final Leak Check:		cfm@	"Hg

Traverse Point Number	Time	Gas Meter Reading Vm(ft3)	Velocity Head ("H2O)	Orifice Press. ("H2O)	Stack Temp (F)	Probe Temp (F)	Filter Temp (F)	Impinger Temp (F)	Dry Gas Meter Temp. Inlet (F)	Dry Gas Meter Temp. Outlet (F)	Vacuum ("Hg)
A-1	0820/0	828.609	1.2	1.3	109	260	257	66	74	73	3
2	5	831.82	1.2	1.3	110	261	262	50	74	70	3
3	10	834.91	1.3	1.4	110	259	257	53	76	71	4
4	15	838.11	1.2	1.3	110	260	261	55	79	72	4
5	20	841.19	1.2	1.3	110	255	250	56	81	71	3
6	25	844.26	1.0	1.1	110	254	250	57	81	72	3
B-1	0851/30	847.094	1.2	1.3	111	256	254	61	80	73	3
2	35	850.36	1.3	1.4	109	256	243	56	83	73	3
3	40	853.48	1.3	1.4	109	245	243	55	83	73	3
4	45	856.65	1.2	1.3	109	246	253	58	81	75	3
5	50	859.72	1.1	1.2	114	242	255	58	81	74	3
6	55	862.65	1.0	1.1	111	247	258	58	81	74	3
	0921/60	865.514									
Avg/Tot.											

Impinger	1	2	3	4	5
Final	162	110		2075	
Initial	100	100		1981.3	
Total	62	10			

ORSAT/CEM	1	2	3	4
O2	6.0			
CO2	13.2			

Total Traverse Point %'s

6 Point (4.4) (14.6) (29.6) (70.4) (85.4) (95.6)

12 Point (2.1)(6.7)(11.8)(17.7)(25.0)(35.6)(64.4)(75.0)(82.3)(88.2)(93.3)(97.9)

Note: Nearest upstream disturbance or exit must be 2 duct diameters away and nearest downstream disturbance must be at least 8 diameter away to use 6 points per traverse.

STACS ISOKINETIC SAMPLING FIELD DATA SHEET

Facility:	Rayonier	Meter #:	A-4	Baro. Press:		Page #:	
Unit:	SRB	DH@:	1.9	Ambient Temp:	70	Pitot LC:	✓
Location:	Fernandina Beach FL	DGM Factor:	0.9754	Nozzle Dia:	0.189		
Test Type:	MS	Pitot #:		Static P:	-0.57		
Run #:	Eng 3	Pitot Coef:	0.84	Stack Dimensions:			
Condition:				Stack Height:			
Operator(s):	KK	K-Factor:	1.1	Init. Leak Check:	0.002 cfm@	15	"Hg
Date:	5/16/08	Filter#:	SRB-3	Final Leak Check.	0.001 cfm@	7	"Hg

Traverse Point Number	Time	Gas Meter Reading Vm(ft3)	Velocity Head ("H2O)	Orifice Press. ("H2O)	Stack Temp (F)	Probe Temp (F)	Filter Temp (F)	Impinger Temp (F)	Dry Gas Meter Temp. Inlet (F)	Dry Gas Meter Temp. Outlet (F)	Vacuum ("Hg)
A-1	1240/0	878.487	1.4	1.54	112	256	254	55	73	73	4
2	5	882.15	1.4	1.54	112	255	257	55	74	73	4
3	10	885.65	1.4	1.54	114	253	253	56	77	73	4
4	15	889.00	1.4	1.54	115	252	257	56	78	73	4
5	20	892.37	1.3	1.4	113	255	251	57	79	74	4
6	25	895.56	1.3	1.4	114	252	255	58	80	74	4
B-1	1312/30	898.524	1.4	1.54	115	240	257	63	82	75	4
2	35	901.92	1.5	1.65	115	250	262	57	84	78	4
3	40	905.44	1.5	1.65	114	255	256	57	86	80	4
4	45	908.86	1.3	1.4	114	248	257	58	87	81	4
5	50	912.09	1.3	1.4	116	242	250	59	87	81	4
6	55	915.29	1.0	1.1	115	240	255	60	88	82	4
	1342/60	918.165									
Avg/Tot.											

Impinger	1	2	3	4	5
Final	190	100	0	220.3	
Initial	100	100	0	210.7	
Total	90				

ORSAT/CEM	1	2	3	4
O2	8.0			
CO2	12.0			

Total Traverse Point %'s

6 Point (4.4) (14.6) (29.6) (70.4) (85.4) (95.6)

12 Point (2.1)(6.7)(11.8)(17.7)(25.0)(35.6)(64.4)(75.0)(82.3)(88.2)(93.3)(97.9)

Note: Nearest upstream disturbance or exit must be 2 duct diameters away and nearest downstream disturbance must be at least 8 diameter away to use 6 points per traverse.

SRB Engineering tests

Source Testing and Consulting Services Inc.

Gravimetric Analysis Data Sheet

Date									
Time									
Beaker/ Filter#	Sample ID	Volume	Tare (g)	Final Weights(g) 1st wt.	2nd wt.	3rd wt.	4th wt.	Final wt.	Net wt. Gain
69	SRB-1-A	150	66.4342	.4384	.4384			.4384	.0042
722	SRB-1-F		.3658	.4026	.4026			.4026	.0368
38	SRB-2-A	150	61.1226	.1346	.1346			.1346	.0120
SRB1	SRB-2-F		.3830	.4192	.4192			.4192	.0362
321	SRB-3-A	150	60.3858	.3986	.3986			.3986	.0128
SRB3	SRB-3-F		.4008	.4380	.4380			.4380	.0372

.0410

.0482

.0500

Calibration									
Date									
Time									
0.1g wt.									
0.5g wt.									
1g wt.									
50g wt.									
100g wt.									

Source Testing And Consulting Services
Meter Box Calibration

Calibration Date: 1-15-08
Meter Box: A-4
Technician: MLH

Orifice ID	Y Calibration	Delta H @ Cal.	Vac
40	pass	pass	pass
48	pass	pass	pass
55	pass	pass	pass
63	pass	pass	pass
73	pass	pass	pass

PART 1: Orifice Calibration

Calibration Orifice Set: D1 Critical Vacuum: 13 9
Barometric Pressure (in. Hg): 29.690

Collected Data

Orifice ID	Run #	Delta H	Initial Meter Volume (cu ft)	Final Meter Volume (cu ft)	Init Meter Temp (F)	Final Meter Temp (F)	Init Amb Temp (F)	Final Amb Temp (F)	Run Time min	sec	K Factor	Vac
40	1	0.30	980.300	986.931	63.00	62.00	60.00	61.00	21	12	0.2361	26
40	2	0.30	986.931	991.937	61.00	62.00	61.00	63.00	16	0	0.2361	26
48	1	0.66	938.492	945.335	60.00	61.00	62.00	61.00	15	0	0.3431	25
48	2	0.66	945.335	950.883	61.00	62.00	61.00	63.00	12	12	0.3431	25
55	1	1.20	967.473	974.207	63.00	64.00	62.00	61.00	11	12	0.453	23
55	2	1.20	974.207	979.914	63.00	64.00	62.00	61.00	9	30	0.453	23
63	1	2.00	953.728	961.728	62.00	63.00	63.00	62.00	10	18	0.5875	22
63	2	2.00	961.728	967.024	63.00	63.00	62.00	62.00	6	48	0.5875	22
73	1	3.70	992.705	999.101	62.00	63.00	63.00	63.00	6	0	0.8106	19
73	2	3.70	999.101	1005.515	63.00	64.00	63.00	63.00	6	0	0.8106	19

Calculated Data

Orifice ID	Run #	Meter Volume (cu ft)	Meter Volume (std cu ft)	Corrected Meter Volume (std cu ft)	Ave Meter Temp (F)	Ave Amb Temp (F)	Y	Delta H @
40	1	6.631	6.65157	6.51376	62.5	60.5	0.9793	1.7951
40	2	5.006	5.03116	4.90898	61.5	62	0.9757	1.8037
	AVE						0.9775	1.7994
48	1	6.843	6 89674	6.69106	60.5	61.5	0.9702	1.8842
48	2	5.548	5.58085	5.43946	61.5	62	0.9747	1.8824
	AVE						0.9724	1.8833
55	1	6.734	6.75700	6.59628	63.5	61.5	0.9762	1.9592
55	2	5.707	5.72649	5.59506	63.5	61.5	0.9770	1.9592
	AVE						0.9766	1.9592
63	1	8	8.05858	7.85981	62 5	62.5	0.9753	1.9565
63	2	5 296	5.32968	5.19149	63	62	0.9741	1.9528
	AVE						0.9747	1.9546
73	1	6.396	6.46982	6.31418	62.5	63	0.9759	1.9191
73	2	6.414	6.47564	6.31418	63.5	63	0.9751	1.9155
	AVE						0.9755	1.9173
					Average for All Runs		0.9754	1.9028

Source Testing And Consulting Services
Meter Box Calibration

Calibration Date: 1-15-08
Meter Box: A-4
Technician: MLH

PART 2: Thermocouple Calibration

T/C Calibrator Make: Tegam T/C Calibrator Model: 840A

Calibrator Output (F)	Meter Reading (F)	Error (F)	Allowable Error (F)	Result
25.0	24	-1	9.24	pass
68.0	66	-2	9.88	pass
222.0	222	0	10.64	pass
406.0	405	-1	11.24	pass
799.0	800	1	13.24	pass
1194.0	1205	11	19.24	pass
1585.0	1592	7	33 24	pass
1981.0	1960	-21	49.24	pass

POST TEST METER CALIBRATION DATA - EMC APPROVED ALTERNATIVE METHOD (ALT - 009)

Plant:	Rayonier	**Location:**	SRB Stack		Run #	1	2	3 AVERAGE
Condition:	Normal	**Meter #:**	**A-4**		Date:	5/14/08	5/14/08	5/14/08
Unit:	SRB Stack	**Method:**	Method 5		Start Time:	9:30	11:45	13:15
Parameter				**Units**	Stop Time:	10:32	12:48	14:17
Sampling Time				min.		60.00	60.00	60.00 **60.0**
GAS METER DATA:								
Average Meter Differential Pressure				in. H2O		1.26	1.40	1.22 **1.29**
Absolute Meter Pressure				in. Hg		29.95	29.96	29.95 **29.95**
Average Meter Temperature				degrees F		76.75	76.75	79.83 **77.78**
Metered Dry Sample Gas Volume				dcf		36.236	35.24	35.951 **35.81**
Gas Molecular Weight, Dry Basis				lb/lb-mole		30.41	30.36	30.20 **30.32**
Pre Test Calibration Factors								
DeltaH@				in. H2O		1.9	1.9	1.9 **1.900**
Dry Gas Meter Correction Factor (gamma)				Dimensionless		0.9754	0.9754	0.9754 **0.9754**
Post Test Data								
Calculated Meter Correction Factor (Yqa)				Dimensionless		**0.9941**	**1.0798**	**0.9938** **1.0226**
Difference (Post Test and Pretest Y - Maximum Average Allowed 5%)				%		**1.91%**	**10.70%**	**1.89%** **4.83%**

Recovery Boiler Compliance Test

Date: 14-May-08

From SRB gas sampling worksheets

Run: # Eng 1

	Start of Test hour	min	End of Test hour	min	Difference	%of hour	
Time	16	07	17	11	64	0.9375	
"B" Liquor Flow, gallons	106684.4		119132.1		12447.7	11669.72	gph
Liquor Flow, gpm meter	195		198		196.5	11790	gph
Liquor Temperature, deg F	197		197		197		
Liquor Hydrometer Reading	1.25		1.25		1.25		
Liquor solids, % OD	59.8		59.3		59.55		
No. of Liquor guns	10		10		10		
No. of oil guns	0		0		0		
No. of oil guns @ pressure	0		0		0		
Steam load, lbs/hr chart x 1000	395		394		394.5		
Steam Flow Integrator x 1000, lb	3643.5		4065.1		421600	395250	lb/hr
Steam Temperature, deg F	869		868		868.5		
Steam Pressure, psi	1006		999		1002.5		
SO2, ppm	242		258		250.3715		
Brinks By-pass Position	Closed		Closed				
Methanol System	In Operation		In Operation				

Liquor Flow Calculation	(gph)(8.345)(sp.gr.)(%OD)	73237.23	lb/hr	
	TSP Mass Emission Rate results:	19.9	lb/hr	20.37
	Average PM readout on the Recovery CAM Particulate Monitor*:	17.4	mg/m3	41.6
	* BETA GUARD PARTICULATE MONITOR. MANUFATURER F., MECHANICAL SYSTEMS INC.			STACK
(End of test value - Start of test value)(60 min /hr / Test time, min.) = Units/hr				TEST DATA

Recovery Boiler Compliance Test

Date: 16-May-08

From SRB gas sampling worksheets

Run: # Eng 2

	Start of Test hour	min	End of Test hour	min	Difference	%of hour	
Time	8	19	9	21	62	0.967742	
"B" Liquor Flow, gallons	20205.9		32434.2		12228.3	11833.84	gph
Liquor Flow, gpm meter	198		202		200	12000	gph
Liquor Temperature, deg F	196		196		196		
Liquor Hydrometer Reading	1.25		1.25		1.25		
Liquor solids, % OD	58.6		58.6		58.6		
No. of Liquor guns	10		10		10		
No. of oil guns	0		0		0		
No. of oil guns @ pressure	0		0		0		
Steam load, lbs/hr chart x 1000	383		402		392.5		
Steam Flow Integrator x 1000, lb	657.9		1061.5		403600	390580.6	lb/hr
Steam Temperature, deg F	862		866		864		
Steam Pressure, psi	995		1001		998		
SO2, ppm	315		249		282		
Brinks By-pass Position	Closed		Closed				
Methanol System	In Operation		In Operation				

Liquor Flow Calculation	(gph)(8.345)(sp.gr.)(%OD)	73352.55	lb/hr	
	TSP Mass Emission Rate results:	24.3	lb/hr	24.23
	Average PM readout on the Recovery CAM Particulate Monitor*:	17.8	mg/m3	48.1
	* BETA GUARD PARTICULATE MONITOR. MANUFATURER F., MECHANICAL SYSTEMS INC.			STACS
(End of test value - Start of test value)(60 min./hr / Test time, min.) = Units/hr				TEST DATA

Recovery Boiler Compliance Test

Date: 16-May-08

Run: # Eng 3

	Start of Test hour	min	End of Test hour	min	Difference	%of hour	
Time	12	40	13	42	62	0.967742	
"B" Liquor Flow, gallons	67772.9		79625.9		11853	11470.65	gph
Liquor Flow, gpm meter	192		190		191	11460	gph
Liquor Temperature, deg F	197		197		197		
Liquor Hydrometer Reading	1.25		1.25		1.25		
Liquor solids, % OD	60.4		60.8		60.6		
No. of Liquor guns	10		10		10		
No. of oil guns	0		0		0		
No. of oil guns @ pressure	0		0		0		
Steam load, lbs/hr chart x 1000	384		373		378.5		
Steam Flow Integrator x 1000, lb	2265		2658.1		393100	380419.4	lb/hr
Steam Temperature, deg F	865		876		870.5		
Steam Pressure, psi	991		988		989.5		
SO2, ppm	101		127		114		
Brinks By-pass Position	Closed		Closed				
Methanol System	In Operation		In Operation				

Liquor Flow Calculation	(gph)(8.345)(sp.gr.)(%OD)	72509.82	lb/hr	
	TSP Mass Emission Rate results:	24.6	lb/hr	24.73
	Average PM readout on the Recovery CAM Particulate Monitor*:	15.5	mg/m3	46.5

* BETA GUARD PARTICULATE MONITOR. MANUFATURER F., MECHANICAL SYSTEMS INC. STACS

(End of test value - Start of test value)(60 min /hr / Test time, min.) = Units/hr TEST DATA

Sulfite Recovery Boiler Scrubber Stack Test Analysis for 14-May-08

Steam Output from the Sulfite Recovery Boiler

Run Number	Steam Production [1000 lb./hr. of 1000 BTU/lb. Steam] Sulfite Recovery Boiler
Eng 1	395
Eng 2	391
Eng 3	380
Average	389

Oil Input to Boiler					Liquor Input to Boiler		Test Result	
	Sulfite Recovery Boiler						Particulate	Particulate
Run Number	Gal. Oil	Test Min.	BTU/gal	MMBTU/hr from Oil	Gal. Liquor	Liquor Flow lbs/hr.	(per Stack test) lbs/hr.	CAM PM Monitor mg/m3
Eng 1	0	64	154,335	0	11670	73,237	19.9	17.4
Eng 2	0	62	154,335	0	11834	73,353	24.3	17.8
Eng 3	0	62	154,335	0	11471	72,510	24.6	15.5
Average	0	63	154,335	0	11,658	73,033	22.9	

Permit Maximum [lbs/hr. SSL]	70,000
Recovery Boiler Actual Total % of Capacity =	104%
Permit Maximum (particulate)	43.18 lbs/hr.