Greentech Manufacturing Inc.

Project # 19-551
Model: Crown Royal Stoves RS7300E
Type: Residential Outdoor Wood-Fired Hydronic Heater
Original Report Date: April 17, 2020
Revision date: March 14, 2025

ASTM E2618-13 Measurement of Particulate Emissions and Heating Efficiency of Solid Fuel-Fired Hydronic Heating Appliances

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Revision History

Date: April 17, 2020 – Original Issue
Date: June 2, 2022 – The following changes were made per request from EPA:

- Added weighted average HHV efficiency, see page 8
- B415 Calculations page was included in Appendix A, discussion thereof was added to Page 10
- Technician run notes were added to Appendix A
- Efficiency and PM output based on the 1-hour filter sample were included, see page 8
- Filter train precision in % was added to run results sheets, see Appendix A
- Low burn rate discussion added on page 10
- Fuel loaded direction specified on page 11
- Owners' Manual updated to include guidance on proper draft, establishment of good combustion at the lowest burn rate, and information on smoke and CO detectors, see Appendix B
- Updated dilution tunnel diagram on page 17

Date: September 26, 2022 – The following changes were made per request from EPA:

- Added fuel load density data and discussion on page 10
- Revised discussion of efficiency results on page 10. Added expanded, general discussion of efficiency result discrepancy, see Appendix F.
- Added explanation of negative 1st hour emission results on page 9.
- Corrected erroneous firebox volume and fuel target weight entries on test run data sheets, see Appendix A

Revision 3: Date: March 12, 2025 – Reviewed report and quality documents for 5 year renewal:

- Manufacturer provided revised Quality documents included in Appendix E of CBI report.
- Revised label added, see page 264 of Non CBI PDF.

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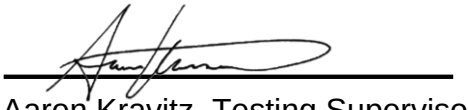
Affidavit

PFS-TECO was contracted by Greentech Manufacturing Inc. to provide testing services for the Crown Royal Stoves RS7300E Residential Hydronic Heater per ASTM E2618-13 and 40 CFR Part 60 Subpart QQQQ. All testing and associated procedures were conducted at Greentech's International Falls, MN laboratory beginning on 1/13/2020 and ending on 1/17/2020. Greentech's International Falls laboratory is located at 2716 Crescent Dr, International Falls, MN 56649. Testing procedures followed ASTM E2618, *Standard Test Method for Measurement of Particulate Emissions and Heating Efficiency of Solid Fuel-Fired Hydronic Heating Appliances*. Particulate sampling was performed per ASTM E2515, *Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel.*

PFS-TECO is accredited by the U.S. Environmental Protection Agency for the certification and auditing of wood heaters pursuant to subpart AAA of 40 CFR Part 60, New Source Performance Standards for Residential Wood Heaters and subpart QQQQ of 40 CFR Part 60, Standards of Performance for New Hydronic Heaters and Forced Air Furnaces, Methods 28R, 28WHH, 28 WHH-PTS, and all methods listed in Sections 60.534 and 60.5476. PFS-TECO holds EPA Accreditation Certificate Numbers 4 and 4M (mobile). PFS-TECO is accredited by IAS to ISO 17020:2012 "Criteria for Bodies Performing Inspections", and ISO 17025:2005 "Requirements for Testing Laboratories." PFS-TECO is also accredited by Standards Council of Canada to ISO 17065:2012 "Requirements for Bodies Operating Product Certification Systems."

The following people were associated with the testing, analysis and report writing associated with this project.



Aaron Kravitz, Testing Supervisor

Introduction

Greentech Manufacturing Inc. of International Falls, MN, contracted with PFS-TECO to perform EPA certification testing on RS7300E residential hydronic heater. All testing was performed at Greentech's International Falls, MN laboratory. Testing was performed by Mr. Aaron Kravitz.

Notes

- Prior to start of testing, 50 hours of conditioning was performed per ASTM E2618.
- Prior to start of testing, the dilution tunnel was cleaned with a steel brush.
- Front filters were changed on sample train A at one hour for all 4 test runs.
- In accordance with 40 CFR §60.5476, the burn rate categories specified in Method 28WHH were used in place of those specified by ASTM E2618.
- A total of 4 test runs were performed, 1 at the maximum burn rate category, 1 at the medium high burn rate category, 1 at the medium low burn rate category, and 1 at the low burn rate category.

Wood Heater Identification and Testing

- Appliance Tested: *Crown Royal Stoves RS7300E*
- Serial Number: *Un-serialized Prototype – PFS Tracking Number 0047*
- Manufacturer*: Greentech Manufacturing Inc.*
- Catalyst: *No*
- Type: *Wood-Fired Hydronic Heater*
- Style: *Outdoor*
- Usable Firebox Volume: *12.83 ft^3 (13 ft^3 used for fuel load assembly)*
- Date Received: *Monday, January 13, 2020*
- Wood Heater Aging: *October 23 – December 4, 2019*
- Testing Period – Start: *Monday, January 13, 2020* Finish: *Friday, January 17, 2020*
- Test Location: *Greentech's International Falls laboratory, 2716 Crescent Dr, International Falls, MN 56649*
- Elevation: *≈1100 Feet above sea level*
- Test Technician(s): *Aaron Kravitz*
- Observers: *Cody Holmestad and Ryan Horne of Greentech*

Test Procedures and Equipment

All Sampling and analytical procedures were performed by Aaron Kravitz. All procedures used are directly from ASTM E2618 and ASTM E2515. See the list below for equipment used. See Appendix C submitted with this report for calibration data.

Equipment List:

Equipment ID#	Equipment Description
VC-GSE350	Floor scale w/digital weight indicator
129	APEX XC-50 Digital Emissions Sampling Box A
130	APEX XC-50 Digital Emissions Sampling Box B
145	Omega Handheld Logger w/ RTDs
109A/B	Troemner 100mg/200mg Audit Weights
139	5 lb audit weight
107	Sartorius Analytical Balance
095	Anemometer
141	Microtector
140	Delmhorst J-2000 Wood Moisture Meter
064	Digital Barometer **
101	Dewalt Tape Measure
102	Digital Calipers
N/A*	Electromagnetic Flow Meter
N/A*	CAI Combustion Gas Analyzer

*Client-owned equipment. Calibrations verified prior to each test run.

** -Test dates occurred with 6 months of Barometer Calibration.

Results

A total of 4 test runs were performed on the RS7300E. The weighted average year-round use emissions rate for the 4 run test series was measured to be **0.080 lb/mmBtu heat output** with a delivered efficiency of **75%.** The average CO emission rate for the 4 tests was **3.1 g/min.** The maximum emissions rate for any one burn was **0.12 lb/mmBtu heat output.** The RS7300E Residential Hydronic Heater meets the cord wood alternative compliance option for particulate matter emission limit of ≤ 0.15 lb/mmBtu heat output per CFR 40 part 60, §60.5474 (b).

Detailed individual run data can be found in Appendix A submitted with this report.

Table 1A. Data Summary Part A

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						Θ	W_{fuel}	MC_{ave}	Q_{in}	Q_{out}
Category	Run No	Load % Capacity	Target Load BTU/hr	Actual Load BTU/hr	Actual Load % of max	Test Duration hrs	Wood Wt lb	Wood Moisture % DB	Heat Input (HHV) BTU	Heat Output BTU
I	2	< 15% of max	< 29859	29,773	15%	23.38	134.0	21.6	947,625	696,202
II	4	16-24% of max	31849 - 47774	43,231	22%	15.12	133.1	23.1	929,925	653,516
III	3	25-50% of max	49764 - 99529	87,572	44%	8.38	133.0	22.0	937,229	734,141
IV	1	Max capacity	N/A	199,057	100%	4.22	133.5	20.2	955,242	839,358

Table 1B. Data Summary Part B

			$T2_{Min}$	E_T	E	E	$E_{g/hr}$	$E_{g/kg}$	η_{del}	H_{SLM}
Category	Run No	Load % Capacity	Min Return Temp ºF	Total PM Emissions g	PM Output Based lb/mmBTU Out	PM Output Based g/MJ	PM Rate g/hr	PM Factor g/kg	Delivered Efficiency %	Stack Loss Efficiency %
I	2	< 15% of max	165	23.7	0.075	0.032	1.01	0.47	73.5%	77.6%
II	4	16-24% of max	160	34.9	0.118	0.051	2.31	0.71	70.3%	66.2%
III	3	25-50% of max	151	21.6	0.065	0.028	2.58	0.44	78.3%	79.5%
IV	1	Maximum	159	9.5	0.025	0.011	2.24	0.19	87.9%	83.1%

Table 1C. Hangtag Information

MANUFACTURER:	Greentech Manufacturing, Inc.		
MODEL NUMBER:	RS7300E		
MAXIMUM OUTPUT RATING:	Q_{max}	199,000	BTU/HR
ANNUAL EFFICIENCY RATING:	η_{avg}	75%	(Using higher heating value)
PARTICLE EMISSIONS:	E_{avg}	1.8	GRAMS/HR (average)
		0.08	LBS/MILLION BTU OUTPUT
CARBON MONOXIDE:	$O_{g/MIN}$	3.1	GRAMS/MINUTE

Table 2A. Heating Season Weighting

Category	Weighting Factor (F_i)	$\eta_{del,\,i} \times F_i$	$E_{g/MJ,\,i} \times F_i$	$E_{g/kg,\,i} \times F_i$	$E_{lb/mmBTU\ Out,\,i} \times F_i$	$E_{g/hr,\,i} \times F_i$	HSLM × F_i
I	0.175	12.8%	0.006	0.083	0.013	0.177	13.6%
II	0.275	19.3%	0.014	0.195	0.032	0.635	18.2%
III	0.450	35.2%	0.013	0.197	0.029	1.161	35.8%
IV	0.100	8.8%	0.001	0.019	0.002	0.224	8.3%
Total	1.000	76.2%	0.033	0.494	0.077	2.197	75.9%

Table 2B. Year-Round Use Weighting

Category	Weighting Factor (F_i)	$\eta_{del,\,i} \times F_i$	$E_{g/MJ,\,i} \times F_i$	$E_{g/kg,\,i} \times F_i$	$E_{lb/mmBTU\ Out,\,i} \times F_i$	$E_{g/hr,\,i} \times F_i$	HSLM × F_i
I	0.437	32.1%	0.014	0.206	0.033	0.441	33.9%
II	0.238	16.7%	0.012	0.169	0.028	0.550	15.8%
III	0.275	21.5%	0.008	0.120	0.018	0.710	21.9%
IV	0.050	4.4%	0.001	0.009	0.001	0.112	4.2%
Total	1.000	74.7%	0.034	0.505	0.080	1.813	75.7%

Table 3. CO emissions & First Hour PM

Category	CO emissions (g/min)	First Hour Emissions (g/hr)	Fire Hour Emissions (lb/mmBTU)
I	1.69	-0.37*	N/A – no filter catch*
II	3.05	3.3	0.643
III	4.15	0.38*	0.009
IV	3.38	1.19	0.012

*For these runs, the unit was off for the entire first hour of the test and near zero catch weights were observed, causing the near-zero results shown above. The results are within measurement uncertainty limits. The first hour emissions result is negative for Run 2 because the first hour filter catch was zero, but the background filter catch was nonzero. As the average ambient emissions were subtracted from the first hour result in accordance with the Method, a negative emission rate resulted. Without subtracting ambient emissions, the result would be 0.0 g/hr – which is consistent with a unit's being off for that hour.

Test Run Narrative

Run 1

Run 1 was performed on 1/13/2019 as a category 4 (maximum output) test per EPA Method 28WHH. The unit was operated for one hour at the desired output rate prior to loading the test fuel. The unit did not cycle off during the test and the return water temperature did not drop below 120F, so the test is considered a valid measure of maximum output. Heat output was 199,057 Btu/hr, and emissions rate was 0.03 lb/mmBtu heat output. Delivered efficiency was 88.2%. The Train A front filter was changed at 1 hr to determine 1st hour emissions. All test results were appropriate and valid. There were no anomalies and all test criteria were met.

Run 2

Run 2 was performed on 1/14/2019 as a category 1 test per EPA Method 28WHH. The unit was operated for one hour at the desired output rate prior to loading the test fuel. Output was under 15% of maximum and the return water temperature did not drop below 120F, so the test is considered a valid category 1. Heat output was 29,733 Btu/hr, and emissions rate was 0.08 lb/mmBtu heat output. Delivered efficiency was 73.5%. The Train A front filter was changed at 1 hr to determine 1st hour emissions. All test results were appropriate and valid. There were no anomalies and all test criteria were met.

Run 3

Run 3 was performed on 1/15/2019 as a category 3 test per EPA Method 28WHH. The unit was operated for one hour at the desired output rate prior to loading the test fuel. Heat output was 87,572 Btu/hr, and emissions rate was 0.07 lb/mmBtu heat output. Output was between 25-50% of maximum and the return water temperature did not drop below 120F, so the test is considered a valid category 3. Delivered efficiency was 78.3%. The Train A front filter was changed at 1 hr to determine 1st hour emissions. All test results were appropriate and valid. There were no anomalies and all test criteria were met.

Run 4

Run 3 was performed on 1/15/2019 as a category 2 test per EPA Method 28WHH. The unit was operated for one hour at the desired output rate prior to loading the test fuel. Heat output was 43,231 Btu/hr, and emissions rate was 0.12 lb/mmBtu heat output. Output was between 15-24% of maximum and the return water temperature did not drop below 120F, so the test is considered a valid category 2. Delivered efficiency was 70.3%. The Train A front filter was changed at 1 hr to determine 1st hour emissions. All test results were appropriate and valid. There were no anomalies and all test criteria were met.

Efficiency Discussion

Two methods were used to determine efficiency for each run: delivered output, which measures energy output at the heat load, and stack loss output, which calculates energy lost through the stack and assumes that all other heat output is useful heat. Theoretically, efficiency calculated from the stack loss output should always be higher than that calculated from delivered output.

However, calculations for two runs performed generated delivered efficiency values higher than stack loss efficiency, see table 1B.

While the precise cause of this discrepancy cannot be definitively assessed, it does not indicate a source of excessive measurement uncertainty or error, systemic bias, or any deviation from the test method. Several factors related to specific measurement procedures and calculations specified by ASTM E2618 may contribute to this discrepancy. These are explored in detail in Appendix F.

Low Burn Rate Discussion

The 7300E, like all wood-fired hydronic heaters, is functionally a single burn rate appliance. Users have no control of the air settings between “off” and “on;” heat output is varied instead by switching between these two settings. Therefore, all tests conducted on the unit were conducted at a burn rate no higher than that which an end user may achieve.

Test Fuel Loading Density Discussion

Test fuel loading density was determined in compliance with ASTM E2515 section 12.2.3. The manufacturer’s written instructions (see Appendix B) specify loading the firebox 75% full. Filling the firebox to the specified level with fuel as specified in section 12.2.1 resulted in a loading density of 10.41 lb per cubic foot. As this is greater that 10 lb per cubic foot, the manufacturer’s loading instructions were used for determining loading density, and the initial fuel load became the fuel for Run 1. Subsequent fuel loads used the number of pieces most closely corresponding to this density, per the method. The resultant loading densities for each run are shown below:

Run	Loading Density (lb/ft^3)
1	10.41
2	10.44
3	10.37
4	10.37

Test Conditions Summary

Testing conditions for all runs fell within allowable specifications of ASTM E2618 and ASTM E2515. A summary of facility conditions, fuel burned, and run times is listed below.

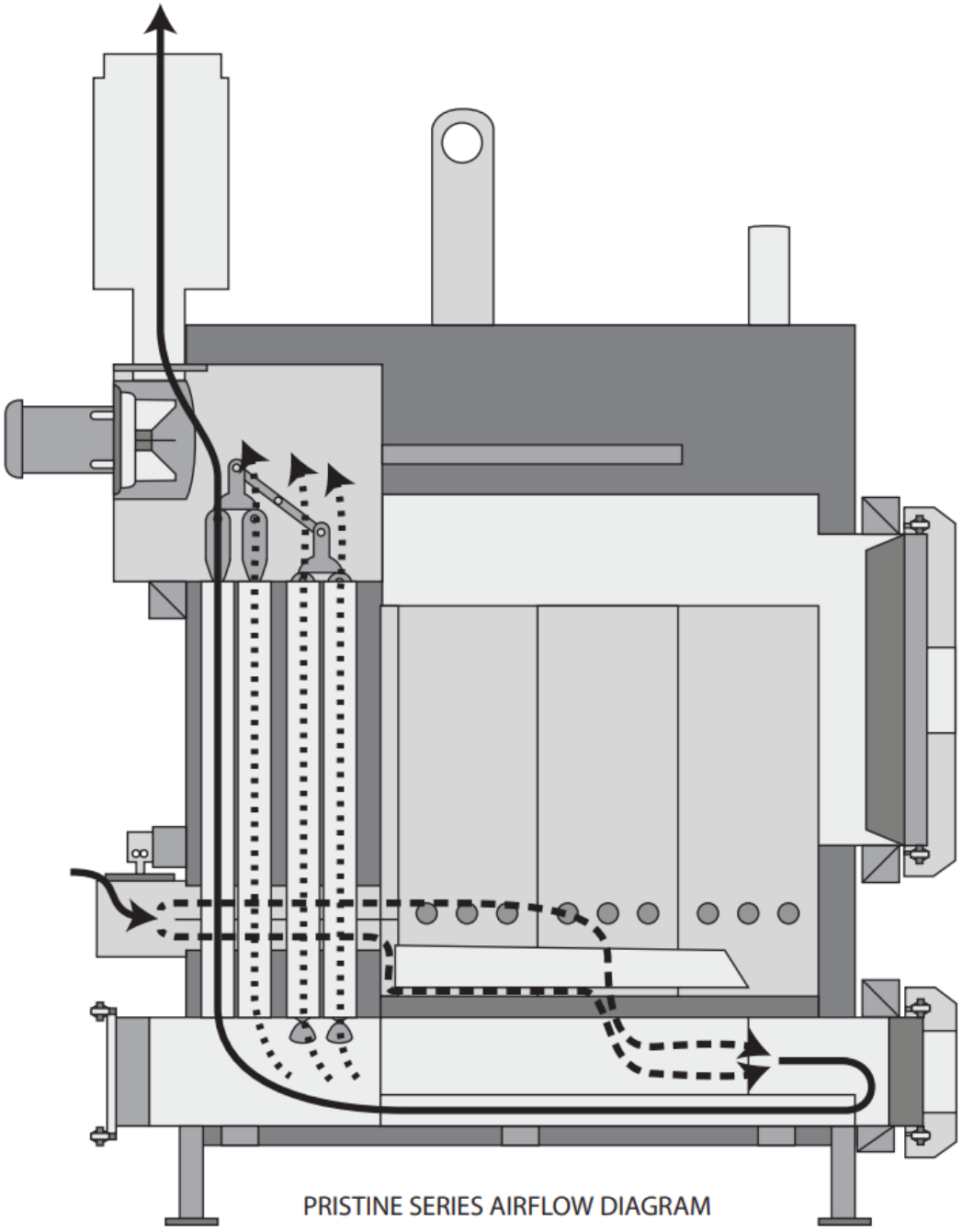
Run	Ambient (°F)		Relative Humidity (%)		Average Barometric Pressure (In. Hg.)	Preburn Fuel Weight (lbs)	Test Fuel Weight (lbs)	Test Fuel Moisture (%DB)	Test Run Time (Min)
	Pre	Post	Pre	Post					
1	73	76	30.2	29.0	28.71	127.0	133.5	20.2%	253
2	68	66	30.0	24.9	28.78	119.0	134.0	21.6%	1403
3	64	65	32.0	40.0	28.97	136.0	133.0	22.0%	503
4	61	62	40.0	24.2	29.29	129.0	133.1	23.1%	907

Appliance Operation and Test Settings

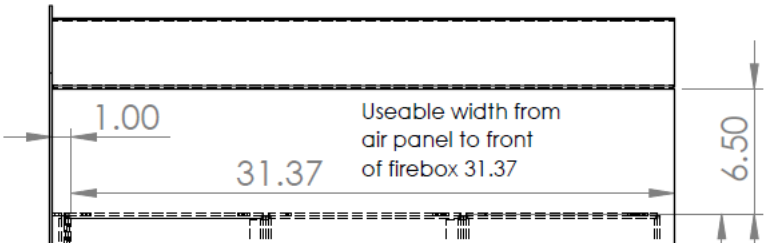
The appliance was operated according to procedures as described in the Operations Manual, found in Appendix B submitted with this report. Detailed run information can be found in Appendix A submitted with this report.

Fuel was loaded in a north/south direction, in parallel with the firebox's longest dimension. See firebox diagram shown below for details.

Appliance Air Flow, Firebox, & Photographs

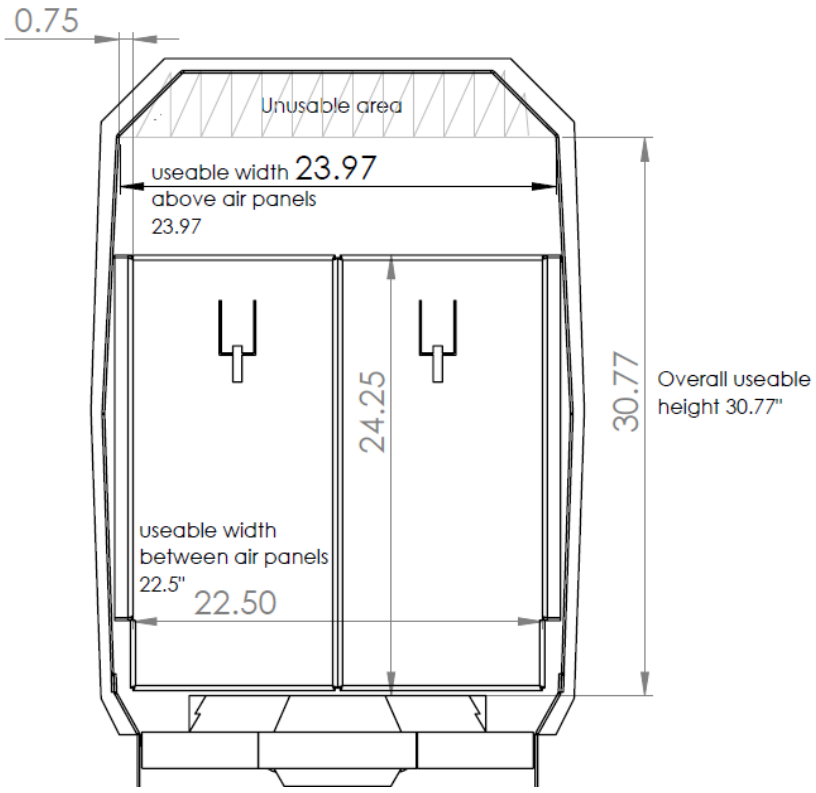


PRISTINE SERIES AIRFLOW DIAGRAM



Useable firebox volume:

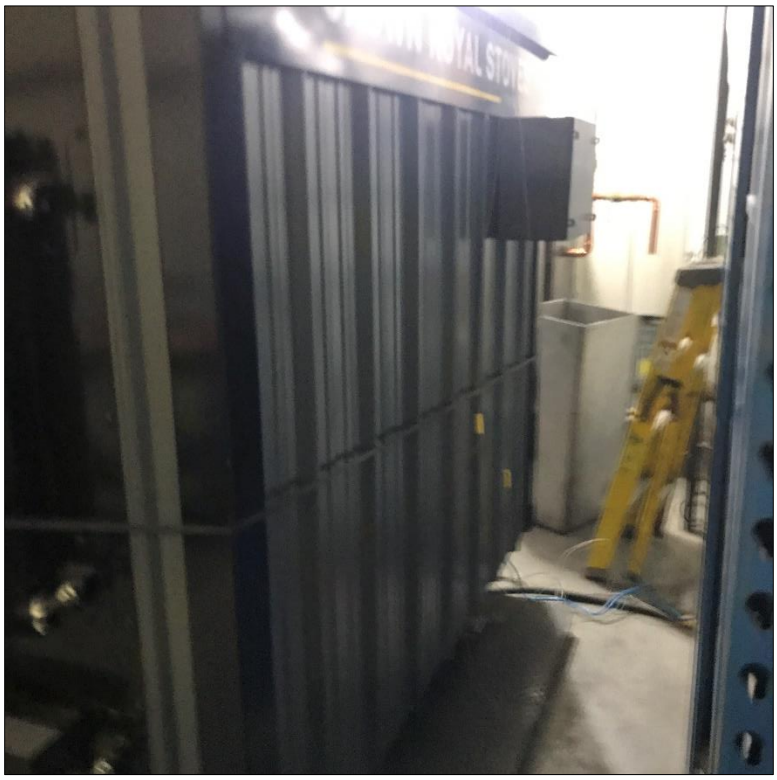
From top of air panels to bottom
of firebox area: 22.5 x 24.25 x 31.37
=9.91 cu.ft.
From top of air panels to the highest
usable area: 23.97 x 6.5 x 32.37
=2.92 cu.ft.
Total Cubic Feet= 12.83



Appliance Front

Appliance Left

Appliance Right



Appliance Rear

Test Fuel Properties

Test fuel used was maple cordwood, air-dried to the specified moisture content range. Typical fuel loads are pictured below:

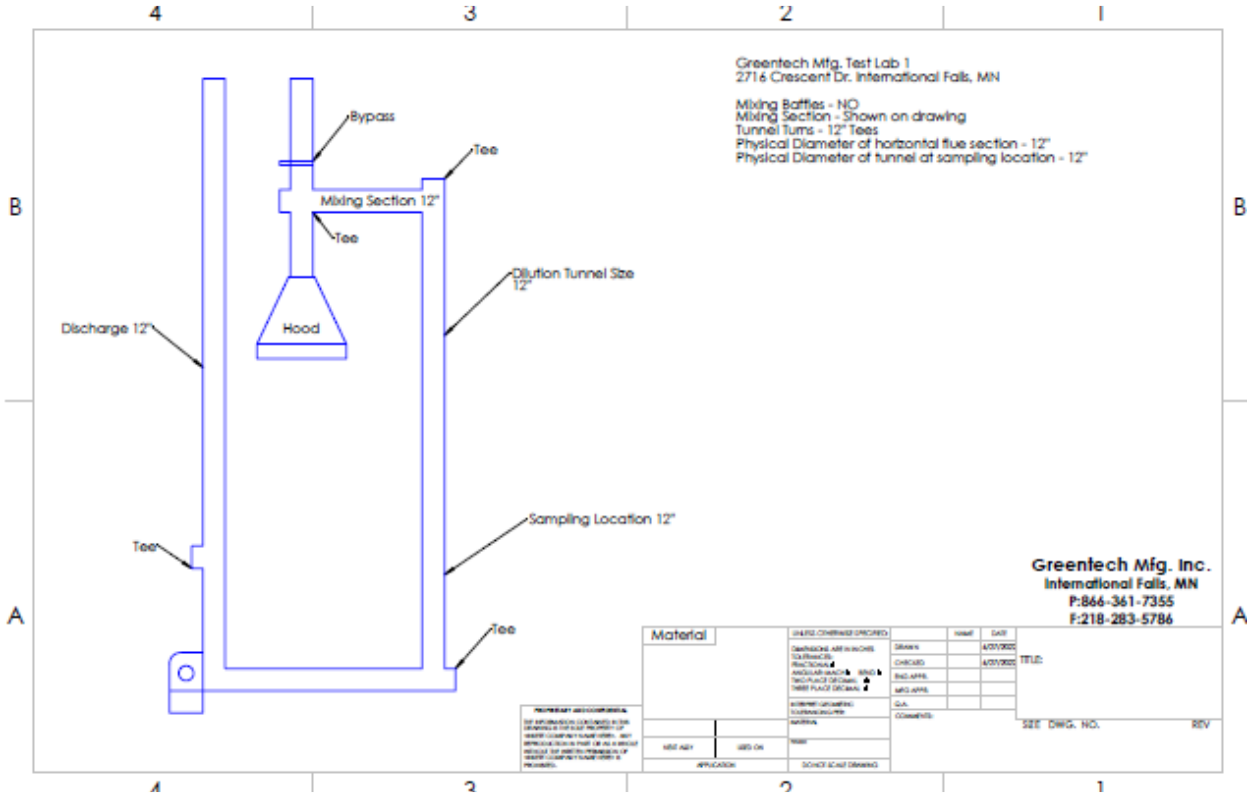
Typical Test Fuel Load

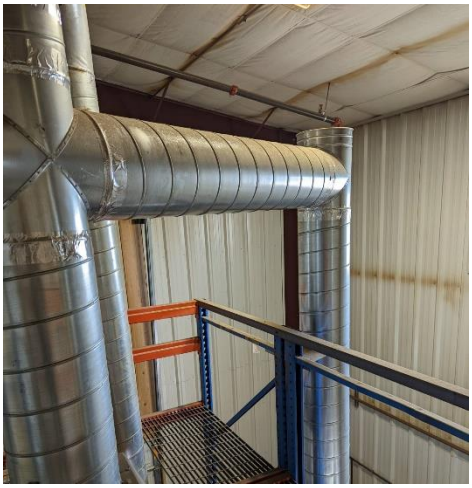
Typical Test Fuel Loaded in Test Unit

Sampling Locations and Descriptions

Sample ports are located 16.5 feet downstream from any disturbances and 2 feet upstream from any disturbances. Flow rate traverse data was collected 8 feet downstream from any disturbances and 4 feet upstream from any disturbances. (See below).

Sample Points





Sampling Methods

ASTM E2515 was used in collecting particulate samples. The dilution tunnel is 12 inches in diameter. All sampling conditions per ASTM E2515 were followed. No alternate procedures were used, and no sampling intervals fell outside of proportional rates of +/- 10%.

Analytical Methods Description

All sample recovery and analysis procedures followed ASTM E2515 procedures. At the end of each test run, filters, O-Rings and probes were removed from their housings, dessicated for a minimum of 24 hours, and then weighed at 6 hour intervals to a constant weight per ASTM E2515-11 Section 10.

Calibration, Quality Control and Assurances

Calibration procedures and results were conducted per EPA Method 28WHH, ASTM E2515-11 and ASTM E2618. Test method quality control procedures (leak checks, volume meter checks, stratification checks, proportionality results) followed the procedures outlined.

Appliance Sealing and Storage

Upon completion of testing, the appliance was secured with metal strapping and the seal below was applied, the appliance was then returned to the manufacturer's location at: 2716 Crescent Dr, International Falls, MN 56649, for archival.

Sealing Label

ATTENTION:

THIS SEAL IS NOT TO BE BROKEN WITHOUT PRIOR AUTHORIZATION FROM THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY.

THIS APPLIANCE HAS BEEN SEALED INACCORDANCE WITH REQUIREMNTS OF 40CFR PART 60 SUBPART AAA §60.535 (a)(2)(vii)

REPORT #_____ DATE SEALED_____

MANUFACTURER_____ MODEL #_____

Sealed Unit

7300E
CROWN ROYAL
STOVES
PRISTINE SERIES
WARNING
DOOR MAY BE HOT
USA
WARNING

List of Appendices

The following appendices have been submitted electronically in conjunction with this report:

Appendix A – Test Run Data, Technician Notes, Sample Analysis, and Photos

Appendix B – Labels and Manuals

Appendix C –Equipment Calibration Records

Appendix D – Design Drawings (CBI Report Only)

Appendix E – Manufacturer QAP (CBI Report Only)

Appendix F – Efficiency Measurement and Calculation Discussion

HYDRONIC HEATER TEST DATA PACKET
ASTM E2618/E2515

Run 1 Data Summary

Client:	Greentech
Model:	Pristine 7300E
Job #:	19-551
Tracking #:	0047
Test Date:	1/13/2020

Technician Signature

5/13/2022
Date

TEST RESULTS - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

Particulate Data

	Ambient Sample	Sample Train A	Sample Train B	1st Hour Filter
Total Sample Volume (ft^3)	46.356	39.304	40.913	9.189
Average Gas Velocity in Dilution Tunnel (ft/sec)	15.7			
Average Gas Flow Rate in Dilution Tunnel (dscf/hr)	39519.9			
Average Gas Meter Temperature (°F)	75.1	85.9	89.6	74.3
Total Sample Volume (dscf)	43.686	36.258	37.878	8.661
Average Tunnel Temperature (°F)	96.9			
Total Time of Test (min)	253			
Total Particulate Catch (mg)	0.7	2.6	2.8	0.4
Particulate Concentration, dry-standard (g/dscf)	0.0000160	0.0000717	0.0000739	0.0000462
Total PM Emissions (g)	2.67	9.28	9.65	1.19
Particulate Emission Rate (g/hr)	0.63	2.20	2.29	1.19
Emissions Factor (g/kg)	-	0.18	0.19	-
Difference from Average Total Particulate Emissions (%)	-	1.9%	1.9%	-
Difference from Average Emissions Factor (g/kg)	-	0.00	0.00	-

Boiler/ HEX Data

Appliance Average Start Temperature (F)	157.0	
Appliance Average Final Temperature (F)	145.0	**First Hour**
Heat Output (BTU)	839,358	228,333
Heat Output Rate (BTU/hr)	199,057	
Heat Input - HHV (BTU)	955,242	275,482
Heat Input - LHV (BTU)	887,265	

Emissions Rates and Factors

Total Particulate Emissions (g)	9.5	1.2
Emissions Factor (g/MJ)	0.0107	
Emissions Factor (g/kg)	0.1874	
Emissions Rate (g/hr)	2.24	
Emissions Rate (lb/mmbtu output)	0.025	0.012
HHV Delivered Efficiency (%)	87.9%	82.9%
LHV Delivered Efficiency (%)	94.6%	
HHV SLM Efficiency (%)	83.1%	
LHV SLM Efficiency (%)	88.9%	
CO Emissions (g/min)	3.38	

Quality Checks	Requirement	Observed	Result
Dual Train Precision	Each train within 7.5% of average emissions (in grams), or emission factors within 0.5 g/kg	See Above	OK
Filter Temps	<90 °F	79.0	OK
Face Velocity	< 30 ft/min	9.0	OK
Leakage Rate	Less than 4% of average sample rate	0 cfm	OK
Ambient Temp	55-90 °F	Min: 72 / Max: 77	OK
Negative Probe Weight Evaluation	<5% of Total Catch	Probe Catch Not Negative	OK
Pro-Rate Variation	90% of readings between 90-110%; none greater than 120% or less than 80%	See Data Tabs	OK
Return Temp > 120°F	>120°F	159.0	OK

B415.1 Efficiency Results

Manufacturer: Greentech
Model: Pristine 7300E
Date: 01/13/20
Run: 1
Control #: 19-551
Test Duration: 253
Output Category: 4

Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
Overall Efficiency	83.1%	88.9%
Combustion Efficiency	99.0%	99.0%
Heat Transfer Efficiency	84.0%	89.8%

Output Rate (kJ/h)	196,753	186,641	**(Btu/h)**
Burn Rate (kg/h)	11.86	26.14	**(lb/h)**
Input (kJ/h)	236,771	224,603	**(Btu/h)**

Test Load Weight (dry kg)	50.02	110.24	**dry lb**
MC wet (%)	16.80		
MC dry (%)	20.19		
Particulate (g)	9.46		
CO (g)	855		
Test Duration (h)	4.22		

Emissions	Particulate	CO
g/MJ Output	0.01	1.03
g/kg Dry Fuel	0.19	17.09
g/h	2.24	202.68
g/min	0.04	3.38
lb/MM Btu Output	0.03	2.39

Air/Fuel Ratio (A/F)	10.43

VERSION: **2.2** **12/14/2009**

BOILER CORDWOOD FUEL DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

Firebox Volume (ft^3):	12.83	Minimun Piece Weight (lbs):	6.60
Target Load Weight (lbs):	133.50	Maximun Piece Weight (lbs):	22.00
Number of Fuel Pieces Allowed:	8 - 15	80% of piece of weight range (lbs):	8.8 to 19.8

Pretest Fuel Information

Length (in)	Weight (lbs)	MC (%DB)	Length (in)	Weight (lbs)	MC (%DB)
20.00	127.00	25.0			
20.00		24.0			
20.00		19.0			
20.00		21.0			
20.00		21.0			
20.00		20.0			
20.00		25.0			
20.00		28.0			
20.00		18.0			
20.00		19.0			
20.00		21.0			
20.00		20.0			

Total Preburn Weight (lbs): 127.00
Averge Preburn Moisture (% DB): 21.75

Test Fuel Information

Length (in)	Weight (lbs)	Moisture Content (%DB)					Avg MC (%DB)	Dry Weight (lbs)
20.00	10.00	22.0	24.0	22.0	18.0	22.0	21.60	8.22
20.00	11.00	26.0	27.0	19.0	18.0	19.0	21.80	9.03
20.00	11.00	20.0	20.0	18.0	21.0	18.0	19.40	9.21
20.00	9.00	22.0	20.0	21.0	23.0	21.0	21.40	7.41
20.00	8.80	21.0	23.0	21.0	24.0	20.0	21.80	7.22
20.00	9.00	18.0	26.0	20.0	19.0	20.0	20.60	7.46
20.00	10.00	21.0	18.0	21.0	16.0	17.0	18.60	8.43
20.00	11.00	18.0	20.0	19.0	19.0	22.0	19.60	9.20
20.00	7.10	21.0	21.0	18.0	19.0	17.0	19.20	5.96
20.00	10.00	20.0	20.0	19.0	18.0	18.0	19.00	8.40
20.00	7.00	19.0	19.0	19.0	17.0	19.0	18.60	5.90
20.00	8.80	19.0	19.0	17.0	19.0	18.0	18.40	7.43
20.00	12.00	18.0	24.0	21.0	20.0	21.0	20.80	9.93
20.00	8.80	22.0	24.0	23.0	18.0	20.0	21.40	7.25
Total (lbs):	133.50						Total Dry Weight (lbs):	111.07

Allowable Coal Bed Range (10-20%): 13.4 - 26.7

Quality checks

Individual Piece Weights:	OK
80% Piece weight range:	OK
Piece Count:	OK

DILUTION TUNNEL & MISC. DATA - ASTM E2618 / E2515

Client:	Greentech	Job #:	19-551
Model:	Pristine 7300E	Tracking #:	0047
Run #:	1	Technician:	AK
Test Start Time:	16:50	Date:	1/13/2020
Manufacturer's Rated Output (BTU/hr):	210,000		

253

Total Sampling Time (min):	253
Recording Interval (min):	1
Meter Box γ Factor:	0.992 (A)
Meter Box γ Factor:	1.002 (B)
Meter Box γ Factor:	0.996 (Ambient)
Induced Draft Check (in. H_2O):	0
Smoke Capture Check (%):	100%
Date Flue Pipe Last Cleaned:	
Boiler Dry Weight (lbs):	2559
Supply Side Water Weight (lbs):	1951

	Pre-Test	Post Test	Avg.
Barometric Pressure (in. Hg)	28.76	28.65	28.71
Relative Humidity (%)	30.2	29.0	
Room Air Velocity (ft/min)	0	0	
Scale Audit (lbs)	10.0	10.0	
Ambient Sample Volume:		46.356	ft^3

Sample Train Post-Test Leak Checks

(A)	0.000	cfm @	-10	in. Hg
(B)	0.000	cfm @	-10	in. Hg
(Ambient)	0.000	cfm @	-15	in. Hg

DILUTION TUNNEL FLOW

Traverse Data

Point	dP (in H_2O)	Temp (°F)
1	0.032	88
2	0.045	88
3	0.045	88
4	0.048	88
5	0.035	88
6	0.026	88
7	0.023	87
8	0.038	87
9	0.040	87
10	0.420	87
11	0.037	87
12	0.029	87
Center	0.042	87

Static Pressure: -0.160 in. H_2O

Dilution Tunnel H_2O:	2.00	percent
Tunnel Diameter:	12	inches
Pitot Tube Cp:	0.99	[unitless]
Dilution Tunnel MW(dry):	29.00	lb/lb-mole
Dilution Tunnel MW(wet):	28.78	lb/lb-mole
Tunnel Area:	0.7854	ft^2
V_{strav}:	15.53	ft/sec
V_{scent}:	14.10	ft/sec
F_p:	1.101	[ratio]
Initial Tunnel Flow:	668.9	scf/min

TEST FUEL PROPERTIES

Default Fuel Values

Fuel Type:	D. Fir	Oak
HHV (kJ/kg)	19,810	19,887
%C	48.73	50
%H	6.37	6.3
%O	43.9	42.9
%Ash	0.5	0.5

Actual Fuel Used Properties

Fuel Type:	Maple
HHV (kJ/kg)	19,960
%C	50.64
%H	6.02
%O	41.74
%Ash	1.35
MC (%DB)	20.2%

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
0	0.001		0.042	1.00	68	-5.47		132.5		96	286	67	73
1	0.127	0.126	0.042	1.00	68	-5.47	84	132.0	-0.5	97	287	69	74
2	0.276	0.149	0.042	1.00	68	-5.47	99	130.9	-1.1	96	286	69	72
3	0.426	0.150	0.042	1.00	68	-5.47	100	129.9	-1	97	287	69	73
4	0.577	0.151	0.042	1.00	68	-5.47	101	129.1	-0.8	97	288	69	73
5	0.728	0.151	0.042	1.00	68	-5.47	101	127.9	-1.2	97	288	69	74
6	0.880	0.152	0.042	1.00	68	-5.47	101	128.0	0.1	97	289	70	73
7	1.029	0.149	0.042	1.00	68	-5.47	99	127.1	-0.9	97	289	70	73
8	1.178	0.149	0.042	1.00	69	-5.47	99	125.9	-1.2	97	289	70	74
9	1.330	0.152	0.042	1.00	69	-5.47	101	126.0	0.1	97	289	71	74
10	1.484	0.154	0.042	1.00	69	-5.47	102	125.1	-0.9	97	288	71	74
11	1.638	0.154	0.042	1.00	69	-5.47	102	125.0	-0.1	97	288	71	74
12	1.793	0.155	0.042	1.00	69	-5.47	103	123.9	-1.1	97	288	72	74
13	1.948	0.155	0.042	1.00	70	-5.47	103	124.1	0.2	97	288	72	74
14	2.101	0.153	0.042	1.00	70	-5.47	102	123.0	-1.1	98	287	72	74
15	2.255	0.154	0.042	1.00	70	-5.47	102	122.0	-1	98	287	72	74
16	2.410	0.155	0.042	1.00	70	-5.47	103	122.1	0.1	98	287	72	74
17	2.563	0.153	0.042	1.00	71	-5.47	101	121.1	-1	98	286	73	74
18	2.716	0.153	0.042	1.00	71	-5.47	101	119.9	-1.2	97	286	73	74
19	2.870	0.154	0.042	1.00	71	-5.47	102	120.0	0.1	98	286	73	74
20	3.025	0.155	0.042	1.00	71	-5.47	103	119.0	-1	98	285	73	74
21	3.179	0.154	0.042	1.00	72	-5.47	102	117.7	-1.3	97	285	73	74
22	3.332	0.153	0.042	1.00	72	-5.47	101	118.5	0.8	98	284	73	74
23	3.488	0.156	0.042	1.00	72	-5.47	103	117.0	-1.5	98	284	74	74
24	3.642	0.154	0.042	1.00	72	-5.47	102	116.9	-0.1	98	283	74	74
25	3.795	0.153	0.042	1.00	73	-5.47	101	115.9	-1	98	283	74	74
26	3.950	0.155	0.042	1.00	73	-5.47	102	115.0	-0.9	98	282	74	75
27	4.105	0.155	0.042	1.00	73	-5.47	102	114.9	-0.1	98	283	74	74
28	4.259	0.154	0.042	1.00	74	-5.47	101	114.0	-0.9	98	282	74	75
29	4.412	0.153	0.042	1.00	74	-5.47	101	112.8	-1.2	97	282	74	75
30	4.566	0.154	0.042	1.00	74	-5.47	101	112.9	0.1	98	282	74	74
31	4.720	0.154	0.042	1.00	74	-5.47	101	112.1	-0.8	97	281	74	74

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
32	4.876	0.156	0.042	1.00	75	-5.47	102	112.1	0	97	280	74	75
33	5.030	0.154	0.042	1.00	75	-5.47	101	110.9	-1.2	97	280	74	74
34	5.184	0.154	0.042	1.00	75	-5.47	101	110.9	0	97	279	74	74
35	5.339	0.155	0.042	1.00	76	-5.47	102	110.0	-0.9	98	280	75	74
36	5.494	0.155	0.042	1.00	76	-5.47	102	108.9	-1.1	98	280	75	74
37	5.647	0.153	0.042	1.00	76	-5.47	100	108.0	-0.9	98	280	75	74
38	5.801	0.154	0.042	1.00	76	-5.47	101	108.1	0.1	98	280	75	74
39	5.955	0.154	0.042	1.00	77	-5.47	101	106.9	-1.2	98	280	75	74
40	6.111	0.156	0.042	1.00	77	-5.47	102	107.0	0.1	98	280	75	74
41	6.265	0.154	0.042	1.00	77	-5.47	101	106.0	-1	98	280	75	74
42	6.418	0.153	0.042	1.00	77	-5.47	100	105.0	-1	98	280	75	74
43	6.573	0.155	0.042	1.00	78	-5.47	101	104.9	-0.1	98	281	75	75
44	6.729	0.156	0.042	1.00	78	-5.47	102	104.0	-0.9	98	281	75	75
45	6.883	0.154	0.042	1.00	78	-5.47	101	103.0	-1	98	281	75	75
46	7.035	0.152	0.042	1.00	79	-5.47	99	102.9	-0.1	98	281	75	75
47	7.189	0.154	0.042	1.00	79	-5.47	100	102.0	-0.9	98	280	75	75
48	7.344	0.155	0.042	1.00	79	-5.47	101	102.0	0	98	280	75	74
49	7.498	0.154	0.042	1.00	79	-5.47	100	101.0	-1	98	280	75	75
50	7.651	0.153	0.042	1.00	79	-5.47	100	100.7	-0.3	98	280	75	75
51	7.806	0.155	0.042	1.00	80	-5.47	101	100.0	-0.7	98	280	75	74
52	7.960	0.154	0.042	1.00	80	-5.47	100	98.9	-1.1	98	281	75	75
53	8.115	0.155	0.042	1.00	80	-5.47	101	99.0	0.1	98	281	75	75
54	8.268	0.153	0.042	1.00	80	-5.47	100	98.0	-1	98	281	75	75
55	8.421	0.153	0.042	1.00	81	-5.47	99	96.9	-1.1	98	280	75	75
56	8.576	0.155	0.042	1.00	81	-5.47	101	97.0	0.1	98	280	75	75
57	8.731	0.155	0.042	1.00	81	-5.47	101	96.0	-1	98	280	75	75
58	8.882	0.151	0.042	1.00	81	-5.47	98	94.9	-1.1	98	280	75	75
59	9.036	0.154	0.042	1.00	82	-5.47	100	95.0	0.1	98	280	75	75
60	9.190	0.154	0.042	1.00	82	-5.47	100	94.0	-1	98	279	75	76
61	9.349	0.159	0.042	1.00	82	-5.47	103	93.9	-0.1	99	279	78	76
62	9.504	0.155	0.042	1.00	82	-5.47	101	93.0	-0.9	99	279	78	76
63	9.659	0.155	0.042	1.00	82	-5.47	101	93.0	0	99	279	77	76

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
64	9.817	0.158	0.042	1.00	83	-5.47	102	91.9	-1.1	99	279	77	77
65	9.972	0.155	0.042	1.00	83	-5.47	100	91.0	-0.9	99	278	77	77
66	10.127	0.155	0.042	1.00	83	-5.47	101	91.0	0	100	278	77	77
67	10.282	0.155	0.042	1.00	83	-5.47	101	90.0	-1	100	278	76	77
68	10.436	0.154	0.042	1.00	83	-5.47	100	89.9	-0.1	100	278	76	77
69	10.591	0.155	0.042	1.00	84	-5.47	100	89.0	-0.9	100	277	76	77
70	10.747	0.156	0.042	1.00	84	-5.47	101	88.9	-0.1	100	277	77	77
71	10.903	0.156	0.042	1.00	84	-5.47	101	88.0	-0.9	100	276	77	76
72	11.056	0.153	0.042	1.00	84	-5.47	99	87.0	-1	100	276	77	75
73	11.215	0.159	0.042	1.00	84	-5.47	103	87.0	0	99	275	76	76
74	11.371	0.156	0.042	1.00	84	-5.47	101	86.0	-1	99	275	77	76
75	11.526	0.155	0.042	1.00	85	-5.47	100	86.1	0.1	99	275	77	76
76	11.681	0.155	0.042	1.00	85	-5.47	100	85.0	-1.1	99	274	77	76
77	11.837	0.156	0.042	1.00	85	-5.47	101	85.0	0	99	274	77	76
78	11.994	0.157	0.042	1.00	85	-5.47	101	84.0	-1	99	273	77	76
79	12.148	0.154	0.042	1.00	85	-5.47	99	84.0	0	99	273	77	76
80	12.305	0.157	0.042	1.00	85	-5.47	101	82.9	-1.1	99	273	77	76
81	12.462	0.157	0.042	1.00	85	-5.47	101	83.0	0.1	99	272	77	76
82	12.616	0.154	0.042	1.00	86	-5.47	99	82.0	-1	99	272	77	76
83	12.773	0.157	0.042	1.00	86	-5.47	101	80.9	-1.1	98	271	77	75
84	12.930	0.157	0.042	1.00	86	-5.47	101	81.0	0.1	98	271	77	76
85	13.084	0.154	0.042	1.00	86	-5.47	99	80.0	-1	98	271	77	75
86	13.240	0.156	0.042	1.00	86	-5.47	100	80.0	0	98	270	77	76
87	13.397	0.157	0.042	1.00	86	-5.47	101	79.0	-1	98	270	77	75
88	13.553	0.156	0.042	1.00	86	-5.47	100	78.9	-0.1	98	270	76	75
89	13.708	0.155	0.042	1.00	87	-5.47	100	77.9	-1	98	270	76	75
90	13.866	0.158	0.042	1.00	87	-5.47	102	78.4	0.5	98	269	76	76
91	14.022	0.156	0.042	1.00	87	-5.47	100	77.0	-1.4	98	269	76	75
92	14.177	0.155	0.042	1.00	87	-5.47	100	77.0	0	98	269	76	76
93	14.334	0.157	0.042	1.00	87	-5.47	101	76.0	-1	98	269	76	75
94	14.492	0.158	0.042	1.00	87	-5.47	102	75.1	-0.9	98	268	76	75
95	14.646	0.154	0.042	1.00	87	-5.47	99	74.9	-0.2	98	268	76	75

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
96	14.802	0.156	0.042	1.00	87	-5.47	100	73.9	-1	98	268	76	75
97	14.958	0.156	0.042	1.00	88	-5.47	100	74.0	0.1	97	268	76	76
98	15.114	0.156	0.042	1.00	88	-5.47	100	73.0	-1	98	268	76	75
99	15.269	0.155	0.042	1.00	88	-5.47	99	73.0	0	98	267	76	76
100	15.426	0.157	0.042	1.00	88	-5.47	101	72.0	-1	97	267	76	75
101	15.583	0.157	0.042	1.00	88	-5.47	101	71.0	-1	98	267	76	75
102	15.737	0.154	0.042	1.00	88	-5.47	99	71.0	0	98	267	76	76
103	15.895	0.158	0.042	1.00	88	-5.47	101	70.0	-1	98	266	76	76
104	16.053	0.158	0.042	1.00	88	-5.47	101	70.0	0	97	266	76	76
105	16.207	0.154	0.042	1.00	88	-5.47	99	69.0	-1	98	266	76	76
106	16.363	0.156	0.042	1.00	88	-5.47	100	69.1	0.1	98	265	76	75
107	16.520	0.157	0.042	1.00	88	-5.47	101	68.0	-1.1	97	265	76	76
108	16.677	0.157	0.042	1.00	89	-5.47	100	68.0	0	97	265	76	75
109	16.832	0.155	0.042	1.00	89	-5.47	99	67.0	-1	97	264	76	76
110	16.991	0.159	0.042	1.00	89	-5.47	102	67.0	0	98	264	76	76
111	17.146	0.155	0.042	1.00	89	-5.47	99	66.0	-1	97	264	76	76
112	17.303	0.157	0.042	1.00	89	-5.47	100	65.0	-1	97	263	76	76
113	17.461	0.158	0.042	1.00	89	-5.47	101	65.0	0	97	263	76	76
114	17.618	0.157	0.042	1.00	89	-5.47	100	65.0	0	97	262	76	76
115	17.773	0.155	0.042	1.00	89	-5.47	99	64.0	-1	97	262	76	76
116	17.929	0.156	0.042	1.00	89	-5.47	100	63.0	-1	97	262	76	76
117	18.087	0.158	0.042	1.00	89	-5.47	101	63.0	0	97	262	76	76
118	18.241	0.154	0.042	1.00	89	-5.47	98	62.0	-1	96	262	76	76
119	18.398	0.157	0.042	1.00	89	-5.47	100	61.9	-0.1	97	262	76	76
120	18.555	0.157	0.042	1.00	89	-5.47	100	60.6	-1.3	97	262	76	75
121	18.711	0.156	0.042	1.00	89	-5.47	100	61.0	0.4	97	262	76	76
122	18.868	0.157	0.042	1.00	90	-5.47	100	59.9	-1.1	97	261	76	76
123	19.025	0.157	0.042	1.00	90	-5.47	100	58.3	-1.6	97	261	76	76
124	19.179	0.154	0.042	1.00	90	-5.47	98	59.0	0.7	97	261	76	75
125	19.337	0.158	0.042	1.00	90	-5.47	101	58.9	-0.1	97	260	76	75
126	19.494	0.157	0.042	1.00	90	-5.47	100	57.8	-1.1	97	260	76	75
127	19.649	0.155	0.042	1.00	90	-5.47	99	57.0	-0.8	97	259	76	75

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
128	19.806	0.157	0.042	1.00	90	-5.47	100	57.2	0.2	96	259	76	75
129	19.962	0.156	0.042	1.00	90	-5.47	100	55.9	-1.3	96	258	76	75
130	20.117	0.155	0.042	1.00	90	-5.47	99	56.1	0.2	96	258	76	75
131	20.274	0.157	0.042	1.00	90	-5.47	100	54.9	-1.2	96	258	76	76
132	20.430	0.156	0.042	1.00	90	-5.47	100	54.9	0	96	258	76	75
133	20.585	0.155	0.042	1.00	90	-5.47	99	54.0	-0.9	96	257	76	75
134	20.742	0.157	0.042	1.00	90	-5.47	100	52.9	-1.1	96	257	76	76
135	20.898	0.156	0.042	1.00	90	-5.47	100	52.9	0	96	257	76	75
136	21.053	0.155	0.042	1.00	90	-5.47	99	52.0	-0.9	96	258	76	75
137	21.210	0.157	0.042	1.00	90	-5.47	100	52.0	0	96	258	76	75
138	21.369	0.159	0.042	1.00	90	-5.47	102	50.9	-1.1	96	258	76	75
139	21.524	0.155	0.042	1.00	90	-5.47	99	50.9	0	96	259	76	75
140	21.681	0.157	0.042	1.00	90	-5.47	100	50.0	-0.9	96	260	76	75
141	21.839	0.158	0.042	1.00	90	-5.47	101	49.8	-0.2	96	260	76	75
142	21.995	0.156	0.042	1.00	90	-5.47	100	48.9	-0.9	96	261	76	75
143	22.152	0.157	0.042	1.00	90	-5.47	100	47.9	-1	96	261	76	75
144	22.309	0.157	0.042	1.00	90	-5.47	100	47.9	0	96	262	76	75
145	22.465	0.156	0.042	1.00	91	-5.47	99	46.9	-1	96	263	76	75
146	22.620	0.155	0.042	1.00	91	-5.47	99	46.9	0	96	264	75	75
147	22.779	0.159	0.042	1.00	91	-5.47	101	45.8	-1.1	96	265	75	75
148	22.936	0.157	0.042	1.00	91	-5.47	100	44.9	-0.9	96	265	75	76
149	23.091	0.155	0.042	1.00	91	-5.47	99	44.9	0	96	266	75	76
150	23.247	0.156	0.042	1.00	91	-5.47	99	43.8	-1.1	96	266	75	75
151	23.405	0.158	0.042	1.00	91	-5.47	101	43.4	-0.4	96	266	75	76
152	23.559	0.154	0.042	1.00	91	-5.47	98	42.9	-0.5	96	267	75	75
153	23.716	0.157	0.042	1.00	91	-5.47	100	42.4	-0.5	96	267	75	76
154	23.874	0.158	0.042	1.00	91	-5.47	101	41.8	-0.6	96	267	75	76
155	24.028	0.154	0.042	1.00	91	-5.47	98	40.8	-1	96	268	75	75
156	24.184	0.156	0.042	1.00	91	-5.47	99	40.8	0	96	268	76	76
157	24.340	0.156	0.042	1.00	91	-5.47	99	39.8	-1	96	269	75	76
158	24.494	0.154	0.042	1.00	91	-5.47	98	39.8	0	96	269	75	75
159	24.652	0.158	0.042	1.00	91	-5.47	101	38.8	-1	96	269	75	76

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
160	24.811	0.159	0.042	1.00	91	-5.47	101	38.8	0	96	269	75	75
161	24.966	0.155	0.042	1.00	91	-5.47	99	37.8	-1	96	269	75	75
162	25.121	0.155	0.042	1.00	91	-5.47	99	38.4	0.6	96	269	75	74
163	25.278	0.157	0.042	1.00	91	-5.47	100	36.8	-1.6	96	269	75	74
164	25.434	0.156	0.042	1.00	91	-5.47	99	36.8	0	96	269	75	73
165	25.592	0.158	0.042	1.00	91	-5.47	101	35.8	-1	96	269	75	73
166	25.749	0.157	0.042	1.00	91	-5.47	100	35.8	0	96	269	75	73
167	25.906	0.157	0.042	1.00	91	-5.47	100	34.8	-1	96	268	75	73
168	26.062	0.156	0.042	1.00	91	-5.47	99	34.8	0	96	268	75	74
169	26.220	0.158	0.042	1.00	91	-5.47	101	33.9	-0.9	96	268	75	73
170	26.376	0.156	0.042	1.00	91	-5.47	99	33.9	0	96	268	75	73
171	26.532	0.156	0.042	1.00	91	-5.47	99	32.7	-1.2	96	268	75	73
172	26.688	0.156	0.042	1.00	91	-5.47	99	32.7	0	96	268	75	74
173	26.844	0.156	0.042	1.00	91	-5.47	99	31.8	-0.9	96	268	74	74
174	27.001	0.157	0.042	1.00	91	-5.47	100	31.8	0	96	268	74	73
175	27.158	0.157	0.042	1.00	91	-5.47	100	31.7	-0.1	96	268	74	75
176	27.316	0.158	0.042	1.00	91	-5.47	101	30.7	-1	96	268	74	75
177	27.471	0.155	0.042	1.00	91	-5.47	99	30.6	-0.1	96	267	75	75
178	27.629	0.158	0.042	1.00	91	-5.47	101	29.8	-0.8	96	267	75	75
179	27.786	0.157	0.042	1.00	91	-5.47	100	29.8	0	96	267	75	75
180	27.940	0.154	0.042	1.00	91	-5.47	98	28.7	-1.1	96	267	75	75
181	28.097	0.157	0.042	1.00	91	-5.47	100	28.7	0	97	267	75	75
182	28.254	0.157	0.042	1.00	91	-5.47	100	27.8	-0.9	97	267	75	75
183	28.409	0.155	0.042	1.00	91	-5.47	99	27.8	0	97	267	75	75
184	28.567	0.158	0.042	1.00	91	-5.47	101	27.0	-0.8	96	267	75	75
185	28.724	0.157	0.042	1.00	91	-5.47	100	26.8	-0.2	97	267	75	75
186	28.879	0.155	0.042	1.00	91	-5.47	99	26.7	-0.1	97	266	75	75
187	29.036	0.157	0.042	1.00	91	-5.47	100	25.8	-0.9	97	266	75	76
188	29.192	0.156	0.042	1.00	91	-5.47	99	24.9	-0.9	96	266	75	76
189	29.349	0.157	0.042	1.00	91	-5.47	100	24.8	-0.1	96	266	75	76
190	29.506	0.157	0.042	1.00	91	-5.47	100	24.3	-0.5	97	265	75	76
191	29.664	0.158	0.042	1.00	91	-5.47	101	23.8	-0.5	97	265	75	76

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
192	29.819	0.155	0.042	1.00	91	-5.47	99	23.8	0	97	265	75	76
193	29.974	0.155	0.042	1.00	91	-5.47	99	23.0	-0.8	97	265	75	76
194	30.130	0.156	0.042	1.00	91	-5.47	99	22.8	-0.2	97	265	75	76
195	30.286	0.156	0.042	1.00	91	-5.47	99	21.8	-1	97	265	75	76
196	30.440	0.154	0.042	1.00	91	-5.47	98	21.8	0	97	265	75	76
197	30.597	0.157	0.042	1.00	91	-5.47	100	21.8	0	97	265	75	76
198	30.755	0.158	0.042	1.00	91	-5.47	101	20.9	-0.9	97	264	75	75
199	30.911	0.156	0.042	1.00	91	-5.47	99	19.9	-1	96	262	75	75
200	31.067	0.156	0.042	1.00	91	-5.47	99	19.8	-0.1	95	262	75	76
201	31.224	0.157	0.042	1.00	91	-5.47	100	18.9	-0.9	95	262	75	75
202	31.380	0.156	0.042	1.00	91	-5.47	99	18.9	0	95	262	75	75
203	31.534	0.154	0.042	1.00	91	-5.47	98	18.9	0	95	263	75	76
204	31.691	0.157	0.042	1.00	91	-5.47	100	17.9	-1	96	264	75	75
205	31.848	0.157	0.042	1.00	91	-5.47	100	17.9	0	95	264	75	76
206	32.003	0.155	0.042	1.00	91	-5.47	99	17.0	-0.9	95	264	75	76
207	32.158	0.155	0.042	1.00	91	-5.47	99	16.9	-0.1	95	263	75	76
208	32.315	0.157	0.042	1.00	91	-5.47	100	15.9	-1	95	263	75	76
209	32.471	0.156	0.042	1.00	91	-5.47	99	16.0	0.1	95	263	75	76
210	32.626	0.155	0.042	1.00	91	-5.47	99	14.9	-1.1	96	264	75	76
211	32.783	0.157	0.042	1.00	91	-5.47	100	14.9	0	96	264	75	76
212	32.941	0.158	0.042	1.00	91	-5.47	101	14.0	-0.9	96	264	75	76
213	33.094	0.153	0.042	1.00	91	-5.47	97	13.9	-0.1	96	264	75	76
214	33.250	0.156	0.042	1.00	91	-5.47	99	13.9	0	96	264	75	76
215	33.406	0.156	0.042	1.00	91	-5.47	99	13.2	-0.7	96	265	75	75
216	33.563	0.157	0.042	1.00	91	-5.47	100	13.0	-0.2	96	265	75	75
217	33.717	0.154	0.042	1.00	91	-5.47	98	12.0	-1	96	265	75	75
218	33.874	0.157	0.042	1.00	91	-5.47	100	12.0	0	96	264	75	75
219	34.031	0.157	0.042	1.00	91	-5.47	100	11.9	-0.1	96	264	75	75
220	34.186	0.155	0.042	1.00	91	-5.47	99	11.0	-0.9	96	264	75	75
221	34.341	0.155	0.042	1.00	91	-5.47	99	10.9	-0.1	96	264	75	76
222	34.496	0.155	0.042	1.00	91	-5.47	99	9.9	-1	96	264	75	75
223	34.654	0.158	0.042	1.00	91	-5.47	101	10.0	0.1	96	263	75	75

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
224	34.808	0.154	0.042	1.00	91	-5.47	98	9.9	-0.1	96	263	75	75
225	34.962	0.154	0.042	1.00	91	-5.47	98	9.0	-0.9	96	263	75	75
226	35.118	0.156	0.042	1.00	92	-5.47	99	9.0	0	96	262	75	76
227	35.274	0.156	0.042	1.00	92	-5.47	99	8.0	-1	96	262	75	76
228	35.429	0.155	0.042	1.00	92	-5.47	99	8.0	0	96	261	75	76
229	35.585	0.156	0.042	1.00	92	-5.47	99	8.0	0	95	260	75	75
230	35.742	0.157	0.042	1.00	92	-5.47	100	7.5	-0.5	95	259	75	75
231	35.896	0.154	0.042	1.00	92	-5.47	98	7.1	-0.4	95	259	75	76
232	36.049	0.153	0.042	1.00	92	-5.47	97	6.9	-0.2	95	259	75	76
233	36.205	0.156	0.042	1.00	92	-5.47	99	6.0	-0.9	96	259	75	75
234	36.361	0.156	0.042	1.00	92	-5.47	99	5.9	-0.1	95	259	75	75
235	36.514	0.153	0.042	1.00	92	-5.47	97	6.0	0.1	96	259	75	75
236	36.668	0.154	0.042	1.00	92	-5.47	98	6.0	0	96	259	75	75
237	36.824	0.156	0.042	1.00	92	-5.47	99	5.0	-1	96	259	75	75
238	36.979	0.155	0.042	1.00	92	-5.47	99	5.0	0	96	259	75	76
239	37.134	0.155	0.042	1.00	92	-5.47	99	5.0	0	96	259	75	76
240	37.289	0.155	0.042	1.00	92	-5.47	99	4.0	-1	96	259	75	76
241	37.444	0.155	0.042	1.00	92	-5.47	99	4.0	0	96	258	75	75
242	37.599	0.155	0.042	1.00	92	-5.47	99	4.0	0	96	258	75	76
243	37.753	0.154	0.042	1.00	92	-5.47	98	3.4	-0.6	96	258	75	76
244	37.908	0.155	0.042	1.00	92	-5.47	99	3.0	-0.4	96	257	75	76
245	38.066	0.158	0.042	1.00	92	-5.47	100	3.0	0	96	257	75	76
246	38.222	0.156	0.042	1.00	92	-5.47	99	3.0	0	96	257	75	76
247	38.376	0.154	0.042	1.00	92	-5.47	98	2.0	-1	96	256	75	76
248	38.531	0.155	0.042	1.00	92	-5.47	99	1.7	-0.3	95	255	75	76
249	38.688	0.157	0.042	1.00	92	-5.47	100	2.0	0.3	95	255	75	75
250	38.843	0.155	0.042	1.00	92	-5.47	99	1.0	-1	95	255	75	76
251	38.996	0.153	0.042	1.00	92	-5.47	97	1.0	0	95	255	75	76
252	39.149	0.153	0.042	1.00	92	-5.47	97	0.9	-0.1	95	255	75	76
253	39.304	0.155	0.042	1.00	92	-5.47	99	0.0	-0.9	95	255	75	76
Avg/Tot	39.304	0.155	0.042	1.00	86	-5.47	100			97	269	75	75.1

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
0	0.001		0.00	69	-1		68	2.000	11.78	0.00
1	0.133	0.132	1.08	70	-1.2	85	70	2.250	15.95	0.44
2	0.290	0.157	1.11	70	-1.16	101	70	2.240	14.42	0.12
3	0.450	0.160	1.10	70	-1.1	103	70	2.230	12.75	0.07
4	0.607	0.157	1.06	70	-1.13	101	70	2.240	12.59	0.04
5	0.765	0.158	1.05	70	-1.18	101	70	2.240	12.08	0.05
6	0.921	0.156	1.05	70	-1.1	100	71	2.240	11.72	0.03
7	1.075	0.154	1.01	70	-1.03	99	71	2.240	11.31	0.02
8	1.231	0.156	1.01	70	-1.04	100	71	2.240	11.31	0.00
9	1.390	0.159	1.12	71	-1.08	102	71	2.240	11.22	0.00
10	1.553	0.163	1.16	71	-1.03	104	72	2.240	11.02	0.00
11	1.714	0.161	1.11	71	-1.2	103	72	2.240	11.06	0.01
12	1.876	0.162	1.13	71	-1.11	104	72	2.240	10.69	0.00
13	2.035	0.159	1.10	72	-1.16	102	72	2.210	10.57	0.02
14	2.197	0.162	1.06	72	-1.08	104	73	2.240	10.54	0.01
15	2.357	0.160	1.08	72	-1.05	102	73	2.250	10.44	0.02
16	2.514	0.157	1.10	72	-1.06	100	73	2.250	10.58	0.01
17	2.672	0.158	1.13	73	-1.03	101	73	2.240	10.45	0.04
18	2.831	0.159	1.10	73	-1.04	101	73	2.240	10.39	0.00
19	2.990	0.159	1.04	73	-1.07	101	74	2.240	10.19	0.00
20	3.151	0.161	1.11	73	-1.14	103	74	2.240	10.32	0.02
21	3.308	0.157	1.07	74	-1.11	100	74	2.240	10.10	0.05
22	3.466	0.158	1.07	74	-1.12	101	74	2.270	10.14	0.00
23	3.627	0.161	0.92	74	-1.09	103	74	2.240	10.04	0.00
24	3.783	0.156	1.06	75	-1.04	99	74	2.240	9.90	0.02
25	3.940	0.157	1.06	75	-1.15	100	74	2.240	9.84	0.02
26	4.098	0.158	1.05	75	-1.03	100	74	2.170	10.08	0.02
27	4.256	0.158	1.07	76	-1.03	100	74	2.180	10.10	0.01
28	4.414	0.158	1.04	76	-1.14	100	74	2.240	9.91	0.03
29	4.573	0.159	1.09	76	-1.04	101	75	2.270	9.87	0.02
30	4.730	0.157	1.09	77	-1.16	99	75	2.230	9.76	0.00
31	4.890	0.160	1.06	77	-1.18	101	75	2.260	9.68	0.01

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
32	5.050	0.160	1.10	77	-1.03	101	75	2.230	9.45	0.03
33	5.208	0.158	1.11	77	-1.04	100	75	2.260	9.07	0.10
34	5.367	0.159	1.06	78	-1.1	100	75	2.220	8.52	0.17
35	5.529	0.162	1.10	78	-1.2	102	75	2.260	9.56	0.10
36	5.688	0.159	1.06	78	-1.17	101	75	2.250	9.99	0.04
37	5.845	0.157	1.09	79	-1.18	99	75	2.230	10.03	0.02
38	6.004	0.159	1.08	79	-1.05	100	75	2.260	9.84	0.01
39	6.165	0.161	1.08	79	-1.2	102	75	2.240	9.56	0.03
40	6.323	0.158	1.11	80	-1.05	100	75	2.230	9.50	0.04
41	6.481	0.158	1.08	80	-1.14	100	75	2.240	9.36	0.06
42	6.640	0.159	1.07	80	-1.11	100	75	2.240	9.42	0.05
43	6.797	0.157	1.10	81	-1.07	99	75	2.240	9.70	0.01
44	6.956	0.159	1.09	81	-1.07	100	75	2.230	10.04	0.01
45	7.118	0.162	1.09	81	-1.16	102	75	2.230	10.02	0.02
46	7.276	0.158	0.99	81	-1.16	99	75	2.230	9.98	0.04
47	7.432	0.156	1.07	82	-1.18	98	75	2.240	9.97	0.00
48	7.592	0.160	1.05	82	-1.15	100	75	2.240	9.87	0.05
49	7.750	0.158	1.10	82	-1.2	99	75	2.240	9.71	0.07
50	7.906	0.156	1.07	83	-1.06	98	75	2.260	9.71	0.02
51	8.066	0.160	1.10	83	-1.07	100	75	2.240	9.46	0.03
52	8.224	0.158	1.14	83	-1.05	99	75	2.230	9.46	0.04
53	8.381	0.157	0.81	83	-1.09	98	76	2.250	9.46	0.06
54	8.540	0.159	1.06	84	-1.12	99	76	2.240	9.41	0.04
55	8.699	0.159	1.08	84	-1.06	99	76	2.200	9.35	0.04
56	8.858	0.159	1.02	84	-1.06	99	76	2.280	9.22	0.05
57	9.018	0.160	1.16	84	-1.13	100	76	2.240	8.80	0.11
58	9.184	0.166	1.11	85	-1.07	104	76	2.230	8.67	0.15
59	9.350	0.166	1.15	85	-1.2	104	76	2.250	8.78	0.12
60	9.514	0.164	1.09	85	-1.18	102	77	2.240	8.78	0.12
61	9.680	0.166	1.13	85	-1.21	104	77	2.260	8.80	0.11
62	9.844	0.164	1.12	85	-1.14	102	78	2.240	8.66	0.13
63	10.009	0.165	1.13	86	-1.04	103	78	2.230	8.89	0.07

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
64	10.169	0.160	1.12	86	-1.2	100	78	2.260	8.86	0.11
65	10.330	0.161	1.09	86	-1.05	100	78	2.230	8.81	0.11
66	10.490	0.160	1.17	86	-1.05	100	78	2.250	8.83	0.13
67	10.652	0.162	1.09	87	-1.18	101	79	2.240	8.57	0.13
68	10.814	0.162	1.14	87	-1.04	101	79	2.240	8.46	0.16
69	10.973	0.159	1.07	87	-1.06	99	79	2.250	8.43	0.16
70	11.135	0.162	1.09	87	-1.05	101	79	2.240	8.52	0.13
71	11.297	0.162	1.14	87	-1.11	101	79	2.240	8.23	0.16
72	11.456	0.159	1.09	88	-1.2	99	78	2.240	8.23	0.19
73	11.616	0.160	1.07	88	-1.03	99	78	2.240	8.22	0.13
74	11.776	0.160	1.15	88	-1.21	99	78	2.240	8.14	0.17
75	11.936	0.160	1.03	88	-1.19	99	78	2.250	8.52	0.20
76	12.099	0.163	1.06	88	-1.16	101	78	2.240	8.52	0.26
77	12.258	0.159	1.07	89	-1.06	99	78	2.230	8.52	0.07
78	12.420	0.162	1.07	89	-1.05	100	78	2.240	8.52	0.17
79	12.581	0.161	1.08	89	-1.05	100	78	2.230	8.52	0.16
80	12.739	0.158	1.11	89	-1.08	98	78	2.250	8.52	0.20
81	12.902	0.163	1.10	89	-1.16	101	78	2.240	8.52	0.02
82	13.062	0.160	1.11	89	-1.04	99	78	2.250	8.52	0.00
83	13.221	0.159	1.08	90	-1.12	98	77	2.240	8.52	0.00
84	13.383	0.162	0.99	90	-1.09	100	77	2.250	8.52	0.00
85	13.542	0.159	1.09	90	-1.03	98	77	2.240	8.52	0.16
86	13.705	0.163	1.05	90	-1.12	101	77	2.230	8.52	0.17
87	13.866	0.161	1.09	90	-1.04	100	77	2.240	8.52	0.16
88	14.023	0.157	1.07	90	-1.21	97	77	2.230	8.52	0.14
89	14.185	0.162	1.09	90	-1.2	100	77	2.260	8.52	0.15
90	14.346	0.161	1.11	91	-1.1	99	77	2.240	8.52	0.01
91	14.507	0.161	1.10	91	-1.05	99	77	2.260	8.52	0.00
92	14.670	0.163	1.32	91	-1.1	101	77	2.240	8.52	0.00
93	14.829	0.159	1.09	91	-1.19	98	77	2.310	8.52	0.00
94	14.991	0.162	1.04	91	-1.1	100	77	2.220	8.52	0.16
95	15.152	0.161	0.86	91	-1.2	99	77	2.230	8.52	0.20

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
96	15.311	0.159	1.03	91	-1.18	98	77	2.180	8.52	0.16
97	15.472	0.161	1.10	91	-1.04	99	77	2.260	8.52	0.17
98	15.630	0.158	1.13	92	-1.06	97	77	2.240	8.84	0.20
99	15.790	0.160	1.31	92	-1.21	99	77	2.230	8.80	0.20
100	15.952	0.162	1.06	92	-1.2	100	77	2.230	8.72	0.25
101	16.113	0.161	1.11	92	-1.04	99	77	2.240	8.65	0.22
102	16.276	0.163	2.25	92	-1.07	100	77	2.230	8.59	0.27
103	16.437	0.161	1.10	92	-1.04	99	76	2.270	8.54	0.28
104	16.595	0.158	1.07	92	-1.04	97	76	2.250	8.54	0.26
105	16.758	0.163	1.07	92	-1.05	100	76	2.240	8.40	0.32
106	16.920	0.162	1.06	92	-1.09	100	76	2.240	8.36	0.31
107	17.081	0.161	1.09	92	-1.19	99	76	2.240	8.34	0.29
108	17.243	0.162	1.08	93	-1.15	100	76	2.230	8.33	0.30
109	17.405	0.162	1.10	93	-1.1	100	76	2.250	8.24	0.32
110	17.567	0.162	1.10	93	-1.19	100	76	2.210	8.04	0.35
111	17.726	0.159	1.14	93	-1.19	98	76	2.250	8.00	0.34
112	17.886	0.160	1.11	93	-1.19	98	76	2.240	8.06	0.32
113	18.051	0.165	1.13	93	-1.04	101	76	2.260	8.17	0.46
114	18.212	0.161	0.80	93	-1.2	99	76	2.250	9.08	0.29
115	18.374	0.162	0.71	93	-1.06	100	76	2.230	8.66	0.22
116	18.537	0.163	1.06	93	-1.06	100	76	2.240	8.78	0.28
117	18.700	0.163	1.12	93	-1.2	100	76	2.230	8.62	0.28
118	18.864	0.164	1.06	93	-1.19	101	76	2.240	8.38	0.32
119	19.024	0.160	1.07	93	-1.07	98	76	2.240	8.38	0.37
120	19.187	0.163	1.13	93	-1.15	100	76	2.310	8.10	0.37
121	19.347	0.160	1.11	93	-1.2	98	76	2.230	8.11	0.37
122	19.509	0.162	1.08	93	-1.15	100	76	2.240	8.11	0.37
123	19.670	0.161	1.17	94	-1.2	99	76	2.250	8.15	0.41
124	19.832	0.162	0.96	94	-1.15	99	76	2.250	8.30	0.40
125	19.995	0.163	1.08	94	-1.04	100	76	2.240	8.23	0.40
126	20.157	0.162	1.08	94	-1.2	99	76	2.240	8.52	0.47
127	20.323	0.166	1.11	94	-1.18	102	76	2.290	8.55	0.41

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
128	20.483	0.160	1.09	94	-1.07	98	76	2.220	8.62	0.41
129	20.646	0.163	1.15	94	-1.18	100	76	2.240	8.36	0.34
130	20.806	0.160	1.21	94	-1.13	98	76	2.240	8.25	0.34
131	20.969	0.163	1.13	94	-1.08	100	76	2.230	8.19	0.35
132	21.132	0.163	1.10	94	-1.2	100	76	2.230	8.05	0.41
133	21.295	0.163	1.11	94	-1.19	100	76	2.230	8.17	0.46
134	21.458	0.163	1.08	94	-1.2	100	76	2.240	8.26	0.45
135	21.623	0.165	1.12	94	-1.16	101	76	2.240	8.09	0.42
136	21.787	0.164	1.09	94	-1.06	101	76	2.240	8.43	0.39
137	21.948	0.161	1.09	94	-1.17	99	76	2.230	8.34	0.38
138	22.112	0.164	1.09	94	-1.05	101	76	2.240	8.32	0.39
139	22.273	0.161	1.27	94	-1.04	99	76	2.250	9.26	0.26
140	22.436	0.163	1.00	94	-1.04	100	76	2.230	9.93	0.19
141	22.596	0.160	1.14	94	-1.12	98	76	2.410	9.92	0.16
142	22.760	0.164	1.83	95	-1.04	100	76	2.240	10.07	0.13
143	22.923	0.163	1.13	95	-1.2	100	76	2.250	10.39	0.10
144	23.085	0.162	1.06	95	-1.13	99	76	2.240	10.39	0.08
145	23.250	0.165	1.06	95	-1.07	101	76	2.240	10.12	0.09
146	23.412	0.162	1.20	95	-1.06	99	76	2.240	10.03	0.11
147	23.576	0.164	1.09	95	-1.05	100	76	2.210	9.83	0.16
148	23.736	0.160	1.10	95	-1.07	98	76	2.240	9.50	0.19
149	23.901	0.165	1.08	95	-1.14	101	76	2.250	9.73	0.12
150	24.063	0.162	1.06	95	-1.1	99	76	2.240	9.64	0.15
151	24.229	0.166	1.21	95	-1.18	102	76	2.240	9.49	0.15
152	24.391	0.162	1.15	95	-1.16	99	76	2.240	9.93	0.09
153	24.557	0.166	1.25	95	-1.07	102	76	2.250	9.94	0.08
154	24.720	0.163	1.11	95	-1.19	100	76	2.240	10.01	0.06
155	24.884	0.164	1.12	95	-1.1	100	76	2.260	9.95	0.08
156	25.047	0.163	1.09	95	-1.2	100	76	2.250	10.47	0.05
157	25.213	0.166	0.83	95	-1.15	102	76	2.210	10.71	0.05
158	25.373	0.160	1.13	95	-1.09	98	76	2.240	10.50	0.03
159	25.541	0.168	1.16	95	-1.12	103	76	2.240	10.14	0.02

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
160	25.701	0.160	1.12	95	-1.19	98	76	2.230	10.07	0.02
161	25.866	0.165	1.10	95	-1.18	101	76	2.230	10.09	0.03
162	26.031	0.165	1.13	95	-1.12	101	76	2.250	10.24	0.04
163	26.194	0.163	1.08	95	-1.07	100	76	2.240	10.05	0.04
164	26.357	0.163	1.00	95	-1.2	100	76	2.230	9.83	0.06
165	26.520	0.163	1.13	95	-1.06	100	76	2.240	9.50	0.10
166	26.683	0.163	1.13	95	-1.08	100	75	2.240	9.53	0.08
167	26.846	0.163	1.07	95	-1.2	100	75	2.240	9.30	0.11
168	27.012	0.166	1.12	95	-1.21	102	75	2.250	9.45	0.12
169	27.174	0.162	1.15	95	-1.05	99	75	2.240	9.48	0.08
170	27.336	0.162	1.29	95	-1.21	99	75	2.230	9.45	0.10
171	27.500	0.164	1.14	95	-1.05	100	75	2.230	9.42	0.10
172	27.663	0.163	1.09	95	-1.05	100	75	2.240	9.51	0.09
173	27.827	0.164	1.15	95	-1.17	100	75	2.240	9.46	0.10
174	27.994	0.167	1.10	95	-1.08	102	75	2.230	9.51	0.07
175	28.155	0.161	1.10	95	-1.11	99	75	2.240	9.35	0.10
176	28.323	0.168	1.13	95	-1.19	103	75	2.250	9.64	0.20
177	28.486	0.163	1.08	95	-1.14	100	75	2.240	9.83	0.13
178	28.650	0.164	0.95	95	-1.21	100	75	2.290	9.65	0.07
179	28.815	0.165	1.01	95	-1.19	101	75	2.230	9.06	0.18
180	28.980	0.165	1.15	95	-1.19	101	75	2.250	9.66	0.16
181	29.143	0.163	1.10	95	-1.19	100	75	2.230	9.61	0.15
182	29.308	0.165	1.10	95	-1.08	101	75	2.230	9.79	0.15
183	29.470	0.162	1.12	95	-1.05	99	75	2.220	9.29	0.17
184	29.637	0.167	1.03	95	-1.05	102	76	2.240	9.20	0.17
185	29.800	0.163	1.14	95	-1.15	100	76	2.240	9.07	0.19
186	29.963	0.163	1.25	95	-1.04	100	76	2.240	8.91	0.16
187	30.126	0.163	1.14	95	-1.11	100	76	2.230	8.79	0.16
188	30.290	0.164	1.09	95	-1.13	100	76	2.180	8.60	0.18
189	30.452	0.162	1.15	95	-1.14	99	76	2.260	8.55	0.18
190	30.617	0.165	1.08	95	-1.14	101	76	2.260	8.56	0.13
191	30.778	0.161	1.12	95	-1.19	99	76	2.240	8.68	0.18

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
192	30.944	0.166	1.10	95	-1.15	102	76	2.250	8.58	0.23
193	31.108	0.164	1.16	95	-1.21	100	76	2.240	8.61	0.19
194	31.270	0.162	1.11	95	-1.2	99	76	2.230	8.70	0.17
195	31.434	0.164	1.07	95	-1.07	100	76	2.240	8.85	0.20
196	31.598	0.164	1.03	95	-1.17	100	76	2.250	8.75	0.20
197	31.760	0.162	1.13	95	-1.21	99	76	2.240	8.67	0.19
198	31.923	0.163	0.98	95	-1.04	100	76	2.230	8.64	0.22
199	32.089	0.166	1.08	95	-1.19	102	76	2.240	11.65	0.01
200	32.251	0.162	1.13	95	-1.1	99	76	2.240	11.08	0.03
201	32.417	0.166	1.08	95	-1.21	101	76	2.240	10.64	0.06
202	32.579	0.162	1.05	95	-1.18	99	76	2.240	10.16	0.06
203	32.742	0.163	1.15	95	-1.07	100	76	2.260	10.39	0.04
204	32.905	0.163	1.08	95	-1.13	100	76	2.240	10.10	0.06
205	33.069	0.164	1.09	95	-1.14	100	76	2.260	9.85	0.04
206	33.229	0.160	1.06	95	-1.05	98	76	2.220	9.81	0.05
207	33.393	0.164	1.12	96	-1.14	100	76	2.250	9.67	0.02
208	33.554	0.161	1.15	96	-1.2	98	76	2.240	9.64	0.00
209	33.718	0.164	1.08	96	-1.07	100	76	2.230	9.55	0.03
210	33.881	0.163	1.11	96	-1.19	100	76	2.250	9.85	0.04
211	34.045	0.164	1.13	96	-1.17	100	76	2.250	10.05	0.05
212	34.208	0.163	0.91	96	-1.19	100	76	2.240	9.88	0.05
213	34.371	0.163	1.10	96	-1.21	100	76	2.250	9.60	0.06
214	34.537	0.166	1.18	96	-1.05	101	76	2.240	9.45	0.05
215	34.697	0.160	1.09	96	-1.21	98	76	2.200	9.43	0.07
216	34.862	0.165	1.14	96	-1.19	101	76	2.230	9.28	0.05
217	35.025	0.163	1.07	96	-1.04	100	76	2.280	9.25	0.08
218	35.190	0.165	1.12	96	-1.18	101	75	2.240	9.03	0.04
219	35.353	0.163	1.15	96	-1.07	100	75	2.230	9.04	0.07
220	35.517	0.164	1.09	96	-1.09	100	75	2.230	8.79	0.06
221	35.679	0.162	1.31	96	-1.19	99	75	2.230	8.73	0.07
222	35.842	0.163	1.10	96	-1.06	100	75	2.240	8.47	0.09
223	36.006	0.164	1.23	96	-1.09	100	75	2.240	8.57	0.11

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
224	36.168	0.162	1.09	96	-1.07	99	75	2.240	8.23	0.14
225	36.330	0.162	1.07	96	-1.17	99	75	2.230	8.34	0.13
226	36.492	0.162	1.12	96	-1.12	99	76	2.240	8.22	0.16
227	36.657	0.165	1.11	96	-1.13	101	76	2.230	8.07	0.13
228	36.822	0.165	0.71	96	-1.08	101	76	2.230	8.49	0.08
229	36.987	0.165	1.08	96	-1.16	101	76	2.240	8.18	0.14
230	37.148	0.161	1.22	96	-1.16	98	76	2.240	8.11	0.14
231	37.314	0.166	1.14	96	-1.21	101	76	2.240	8.18	0.14
232	37.474	0.160	1.06	96	-1.07	98	76	2.240	8.57	0.14
233	37.640	0.166	0.82	96	-1.14	101	76	2.270	8.37	0.17
234	37.802	0.162	1.13	96	-1.14	99	76	2.250	8.18	0.19
235	37.969	0.167	1.13	96	-1.18	102	76	2.250	8.00	0.17
236	38.133	0.164	1.12	96	-1.21	100	76	2.230	7.83	0.14
237	38.298	0.165	1.09	96	-1.08	101	76	2.230	7.94	0.19
238	38.461	0.163	1.07	96	-1.16	100	76	2.230	7.77	0.20
239	38.627	0.166	1.12	96	-1.2	101	76	2.250	7.76	0.17
240	38.792	0.165	1.16	96	-1.1	101	76	2.260	7.79	0.19
241	38.957	0.165	0.89	96	-1.19	101	76	2.240	7.83	0.17
242	39.122	0.165	1.10	96	-1.2	101	76	2.240	7.64	0.17
243	39.283	0.161	1.12	96	-1.12	98	76	2.250	7.72	0.18
244	39.446	0.163	1.04	96	-1.22	100	76	2.230	7.63	0.16
245	39.608	0.162	1.24	96	-1.11	99	76	2.270	7.46	0.23
246	39.772	0.164	1.06	96	-1.07	100	76	2.240	7.74	0.15
247	39.934	0.162	1.33	96	-1.22	99	76	2.230	7.38	0.16
248	40.099	0.165	1.12	96	-1.05	101	76	2.240	8.96	0.08
249	40.260	0.161	1.10	96	-1.12	98	76	2.240	9.10	0.05
250	40.424	0.164	1.05	96	-1.19	100	76	2.250	9.09	0.07
251	40.588	0.164	1.41	96	-1.13	100	76	2.240	8.91	0.10
252	40.751	0.163	0.99	96	-1.19	99	76	2.240	8.54	0.14
253	40.913	0.162	1.33	96	-1.06	99	76	2.240	8.26	0.11
Avg/Tot	40.913	0.162	1.10	90	-1.12	100	76	2.240	9.22	0.14

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
0	4.30		45.71	173.83	139	175	1.00	35.87	
1	4.21		45.71	173.41	139	175	1.00	35.16	4496
2	4.28		45.71	173.41	140	175	1.00	35.68	4563
3	4.04		45.71	173.36	139	175	1.00	33.71	4308
4	4.21		45.71	173.36	139	175	1.00	35.14	4492
5	4.19		45.71	173.17	139	175	1.00	34.97	4463
6	4.38		45.75	173.08	139	175	1.00	36.59	4665
7	4.17		45.80	172.99	139	175	1.00	34.78	4429
8	3.98		45.80	172.80	139	175	1.00	33.18	4219
9	4.23		45.80	172.61	139	174	1.00	35.33	4485
10	4.32		45.80	172.47	139	174	1.00	36.05	4572
11	4.21		45.80	172.37	139	174	1.00	35.14	4454
12	4.13		45.80	171.99	138	174	1.00	34.42	4349
13	4.19		45.71	171.62	138	173	1.00	34.95	4406
14	4.25		45.75	171.48	138	173	1.00	35.50	4469
15	4.13		45.75	171.24	138	173	1.00	34.43	4326
16	4.21		45.80	171.10	138	173	1.00	35.14	4408
17	4.12		45.75	170.91	138	173	1.00	34.41	4312
18	4.10		45.75	170.72	138	172	1.00	34.24	4284
19	4.10		45.75	170.63	137	172	1.00	34.24	4281
20	4.28		45.71	170.30	137	172	1.00	35.68	4450
21	4.15		45.71	170.16	137	172	1.00	34.61	4312
22	5.02		45.66	169.69	136	171	1.00	41.87	5199
23	3.23		45.71	170.11	137	171	1.00	26.91	3352
24	3.29		45.75	171.57	143	171	1.00	27.45	3458
25	3.18		45.85	171.67	144	171	1.00	26.56	3346
26	3.33		45.89	171.76	144	171	1.00	27.82	3506
27	3.35		45.94	171.76	144	171	1.00	27.99	3526
28	3.25		46.03	171.90	144	171	1.00	27.10	3415
29	3.16		46.08	171.99	144	172	1.00	26.37	3325
30	3.12		46.12	172.04	144	172	1.00	26.02	3280
31	3.27		46.17	172.04	144	172	1.00	27.27	3437
32	3.37		46.26	172.14	144	172	1.00	28.16	3549
33	3.22		46.31	172.04	144	172	1.00	26.90	3387
34	3.29		46.31	172.28	144	172	1.00	27.43	3460
35	3.20		46.31	172.23	144	172	1.00	26.73	3370
36	3.22		46.31	172.09	144	172	1.00	26.90	3388
37	3.42		46.31	172.18	144	172	1.00	28.51	3593
38	3.31		46.31	172.23	145	172	1.00	27.63	3483
39	3.31		46.35	172.23	144	172	1.00	27.61	3480
40	3.22		46.31	172.42	145	172	1.00	26.90	3397
41	3.27		46.35	172.37	144	172	1.00	27.25	3438
42	3.18		46.31	172.65	145	172	1.00	26.55	3358
43	3.27		46.35	172.51	145	172	1.00	27.26	3443
44	3.23		46.35	172.61	145	172	1.00	26.91	3402
45	3.14		46.35	172.65	145	172	1.00	26.17	3310
46	3.20		46.35	172.65	145	172	1.00	26.71	3378
47	3.24		46.35	172.61	145	172	1.00	27.07	3422

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
48	3.22		46.35	172.75	144	173	1.00	26.89	3404
49	3.35		46.35	172.75	145	172	1.00	27.95	3538
50	3.14		46.35	172.75	145	172	1.00	26.17	3312
51	3.22		46.35	172.65	144	173	1.00	26.89	3401
52	3.33		46.35	172.65	145	172	1.00	27.78	3513
53	3.28		46.35	172.75	145	173	1.00	27.39	3466
54	3.24		46.35	172.80	145	173	1.00	27.06	3426
55	3.26		46.35	172.65	145	172	1.00	27.24	3445
56	3.29		46.35	172.61	145	172	1.00	27.42	3466
57	3.26		46.35	172.61	145	172	1.00	27.24	3444
58	3.20		46.35	172.70	145	172	1.00	26.71	3379
59	3.35		46.35	172.75	145	172	1.00	27.95	3537
60	3.37		46.35	172.70	145	172	1.00	28.12	3557
61	3.21		46.40	172.70	145	173	1.00	26.78	3386
62	3.26		46.40	172.51	145	172	1.00	27.24	3440
63	3.29		46.45	172.51	145	172	1.00	27.42	3461
64	3.33		46.45	172.42	145	172	1.00	27.78	3504
65	3.46		46.45	172.47	145	172	1.00	28.84	3639
66	3.24		46.40	172.37	145	172	1.00	27.07	3414
67	3.22		46.40	172.28	144	172	1.00	26.88	3388
68	3.35		46.40	172.18	144	172	1.00	27.95	3519
69	3.22		46.40	172.23	144	172	1.00	26.88	3386
70	3.20		46.45	172.14	144	172	1.00	26.72	3363
71	3.26		46.45	171.95	144	172	1.00	27.24	3423
72	3.28		46.40	171.99	144	172	1.00	27.40	3445
73	3.26		46.40	171.95	144	172	1.00	27.23	3423
74	3.16		46.40	171.90	144	172	1.00	26.34	3309
75	3.26		46.40	171.81	144	172	1.00	27.22	3418
76	3.28		46.40	171.67	144	171	1.00	27.41	3437
77	3.18		46.40	171.43	144	171	1.00	26.50	3318
78	3.22		46.40	171.29	144	171	1.00	26.86	3358
79	3.31		46.40	171.19	144	171	1.00	27.58	3446
80	3.33		46.40	171.15	144	171	1.00	27.76	3468
81	3.18		46.40	171.01	143	171	1.00	26.50	3306
82	3.30		46.40	170.96	144	171	1.00	27.57	3438
83	3.30		46.40	170.72	143	171	1.00	27.57	3432
84	3.30		46.40	170.53	143	170	1.00	27.57	3427
85	3.20		46.35	170.35	143	170	1.00	26.67	3312
86	3.35		46.40	170.39	143	170	1.00	27.93	3467
87	3.03		46.40	170.30	143	170	1.00	25.26	3133
88	3.22		46.40	170.16	143	170	1.00	26.85	3327
89	3.11		46.40	169.97	143	170	1.00	25.97	3213
90	3.24		46.40	170.06	143	170	1.00	27.02	3346
91	3.24		46.40	169.83	143	169	1.00	27.08	3346
92	3.24		46.35	169.73	143	170	1.00	27.03	3339
93	3.07		46.31	169.69	142	169	1.00	25.60	3163
94	3.26		46.35	169.59	142	170	1.00	27.21	3358
95	3.13		46.35	169.40	142	169	1.00	26.14	3220

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
96	3.28		46.35	169.36	142	169	1.00	27.38	3372
97	3.22		46.35	169.21	142	169	1.00	26.84	3302
98	3.15		46.35	169.07	142	169	1.00	26.31	3233
99	3.15		46.35	168.93	142	169	1.00	26.31	3229
100	3.17		46.35	168.93	142	169	1.00	26.49	3251
101	3.24		46.31	168.93	142	169	1.00	27.02	3318
102	3.30		46.35	168.79	142	169	1.00	27.55	3378
103	3.26		46.35	168.70	142	168	1.00	27.21	3333
104	3.24		46.35	168.70	142	168	1.00	27.02	3310
105	3.13		46.35	168.51	142	168	1.00	26.14	3197
106	3.15		46.35	168.41	141	168	1.00	26.30	3214
107	3.24		46.35	168.37	142	168	1.00	27.02	3301
108	3.20		46.35	168.41	142	168	1.00	26.67	3259
109	3.22		46.35	168.18	141	168	1.00	26.84	3274
110	3.23		46.31	167.99	141	168	1.00	26.93	3281
111	3.39		46.31	167.94	141	168	1.00	28.26	3441
112	3.11		46.35	167.85	141	167	1.00	25.95	3157
113	3.13		46.35	167.66	141	168	1.00	26.12	3172
114	3.24		46.35	167.57	141	167	1.00	27.02	3280
115	3.05		46.35	167.52	141	167	1.00	25.41	3083
116	3.22		46.35	167.38	141	167	1.00	26.84	3252
117	3.17		46.35	167.38	141	167	1.00	26.49	3210
118	3.38		46.35	167.38	141	167	1.00	28.23	3421
119	3.15		46.35	167.33	141	167	1.00	26.32	3188
120	3.26		46.35	167.24	141	167	1.00	27.20	3292
121	3.13		46.40	167.05	141	167	1.00	26.13	3156
122	1.89		46.40	167.52	141	167	1.00	15.76	1911
123	2.38		46.45	168.32	147	167	1.00	19.88	2426
124	2.43		46.54	168.60	147	167	1.00	20.24	2473
125	2.40		46.59	169.07	147	168	1.00	20.04	2458
126	2.47		46.68	169.03	147	168	1.00	20.59	2523
127	2.45		46.72	169.03	148	168	1.00	20.41	2499
128	2.51		46.82	169.64	148	169	1.00	20.94	2575
129	2.36		46.86	169.78	148	169	1.00	19.70	2424
130	2.45		46.95	169.87	148	169	1.00	20.42	2513
131	2.49		47.00	170.06	149	169	1.00	20.77	2559
132	2.47		47.05	170.06	149	169	1.00	20.59	2536
133	2.38		47.14	170.30	149	169	1.00	19.87	2450
134	2.44		47.18	170.72	149	169	1.00	20.40	2523
135	2.45		47.23	170.63	149	169	1.00	20.41	2522
136	2.46		47.28	171.19	150	170	1.00	20.50	2543
137	2.39		47.28	171.29	150	170	1.00	19.96	2478
138	2.44		47.28	171.43	150	170	1.00	20.39	2535
139	2.40		47.28	171.38	150	170	1.00	20.05	2492
140	2.40		47.28	171.76	150	171	1.00	20.04	2498
141	2.44		47.28	171.81	150	170	1.00	20.40	2544
142	2.49		47.28	172.04	150	170	1.00	20.76	2593
143	2.38		47.32	172.18	150	171	1.00	19.87	2484

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
144	2.39		47.32	172.37	151	171	1.00	19.91	2493
145	2.45		47.32	172.51	151	171	1.00	20.41	2558
146	2.47		47.32	173.08	151	172	1.00	20.59	2593
147	2.43		47.32	173.69	152	172	1.00	20.24	2560
148	2.38		47.32	173.74	152	172	1.00	19.90	2518
149	2.45		47.32	173.83	152	173	1.00	20.41	2585
150	2.46		47.37	174.35	152	173	1.00	20.56	2614
151	2.43		47.37	174.63	152	173	1.00	20.23	2578
152	2.34		47.37	174.92	153	174	1.00	19.51	2492
153	2.45		47.37	175.34	153	174	1.00	20.41	2615
154	2.43		47.32	175.67	153	174	1.00	20.24	2600
155	2.38		47.32	175.76	153	175	1.00	19.88	2556
156	2.40		47.32	176.05	153	175	1.00	20.03	2582
157	4.05		47.28	174.30	157	175	1.00	33.80	4299
158	3.53		47.14	174.49	144	175	1.00	29.44	3754
159	3.58		47.00	174.21	144	175	1.00	29.86	3803
160	3.60		46.91	173.74	143	174	1.00	30.05	3816
161	3.62		46.72	173.79	143	174	1.00	30.21	3844
162	3.54		46.59	173.74	143	174	1.00	29.50	3756
163	3.54		46.45	172.94	143	174	1.00	29.50	3736
164	3.54		46.35	172.84	143	173	1.00	29.50	3736
165	3.69		46.21	172.61	142	173	1.00	30.76	3893
166	3.43		46.12	172.47	142	173	1.00	28.62	3621
167	3.54		46.12	172.42	142	173	1.00	29.52	3733
168	3.62		46.08	172.04	141	173	1.00	30.22	3812
169	3.45		46.08	171.43	141	172	1.00	28.81	3615
170	3.54		46.08	171.38	141	172	1.00	29.51	3702
171	3.54		46.03	171.43	141	172	1.00	29.51	3705
172	3.54		46.03	171.05	141	172	1.00	29.52	3695
173	3.58		46.03	170.35	140	171	1.00	29.88	3719
174	3.69		46.03	170.53	141	171	1.00	30.76	3835
175	3.73		45.98	170.35	140	171	1.00	31.11	3874
176	3.54		45.98	170.20	140	171	1.00	29.51	3670
177	3.62		45.94	169.78	140	170	1.00	30.23	3749
178	3.54		45.98	169.87	140	171	1.00	29.51	3661
179	3.58		46.03	169.50	140	170	1.00	29.88	3693
180	3.58		46.03	169.31	140	170	1.00	29.88	3688
181	3.58		46.03	169.31	139	170	1.00	29.88	3688
182	3.60		45.98	169.26	140	170	1.00	30.05	3709
183	3.67		45.98	168.79	139	170	1.00	30.59	3761
184	3.62		45.98	168.32	140	169	1.00	30.23	3703
185	3.52		46.03	168.27	139	168	1.00	29.35	3592
186	3.54		46.03	168.37	139	169	1.00	29.52	3616
187	3.64		46.08	167.99	139	169	1.00	30.42	3713
188	3.64		46.08	168.23	139	169	1.00	30.42	3720
189	3.67		46.08	167.94	138	169	1.00	30.59	3732
190	3.49		46.08	167.89	139	169	1.00	29.16	3557
191	3.71		46.08	167.24	138	168	1.00	30.96	3755

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
192	3.56		46.08	166.67	138	167	1.00	29.70	3586
193	3.45		46.08	167.05	138	167	1.00	28.80	3488
194	3.45		46.08	166.72	138	167	1.00	28.81	3479
195	3.52		46.08	166.67	137	167	1.00	29.35	3543
196	3.64		46.08	166.43	137	167	1.00	30.41	3664
197	3.77		46.08	166.20	137	167	1.00	31.48	3786
198	3.77		46.08	166.11	137	167	1.00	31.48	3783
199	3.77		46.08	165.87	137	167	1.00	31.48	3775
200	3.54		46.03	166.06	137	167	1.00	29.52	3548
201	3.50		46.08	165.54	137	166	1.00	29.17	3489
202	3.52		46.03	165.35	137	166	1.00	29.35	3506
203	3.67		46.03	165.49	137	166	1.00	30.59	3659
204	3.56		46.08	165.49	137	166	1.00	29.68	3549
205	3.56		46.03	165.54	137	166	1.00	29.69	3553
206	3.56		46.03	164.97	137	165	1.00	29.70	3537
207	3.75		46.03	164.93	136	166	1.00	31.31	3728
208	3.45		46.03	164.88	136	166	1.00	28.81	3428
209	3.58		46.03	164.79	136	165	1.00	29.88	3553
210	3.58		46.03	164.31	136	165	1.00	29.88	3538
211	3.73		46.03	164.45	136	166	1.00	31.12	3690
212	3.73		46.03	164.36	136	165	1.00	31.12	3687
213	3.73		46.03	164.50	136	165	1.00	31.12	3691
214	3.69		46.03	164.41	136	165	1.00	30.76	3646
215	3.52		46.03	164.27	136	165	1.00	29.35	3474
216	3.52		45.98	163.80	136	165	1.00	29.34	3461
217	3.39		45.98	163.94	136	165	1.00	28.27	3338
218	3.56		45.98	163.65	135	164	1.00	29.69	3498
219	3.69		45.98	163.56	136	165	1.00	30.77	3623
220	3.52		45.98	163.56	136	164	1.00	29.34	3454
221	3.51		45.98	163.42	135	165	1.00	29.33	3449
222	3.52		45.98	163.32	135	164	1.00	29.35	3448
223	3.52		45.98	163.09	135	164	1.00	29.34	3440
224	3.52		45.98	162.90	135	164	1.00	29.34	3434
225	3.52		45.98	162.85	135	164	1.00	29.34	3433
226	3.52		45.98	162.33	135	163	1.00	29.35	3419
227	3.52		46.03	162.76	135	164	1.00	29.34	3429
228	3.51		46.03	162.24	134	163	1.00	29.33	3412
229	3.52		46.03	162.05	134	163	1.00	29.34	3408
230	3.52		46.03	161.91	134	163	1.00	29.34	3404
231	3.52		46.03	161.49	134	162	1.00	29.34	3391
232	3.52		46.03	161.16	134	162	1.00	29.35	3383
233	3.41		46.03	161.44	134	162	1.00	28.45	3287
234	3.60		46.03	161.01	134	162	1.00	30.06	3460
235	3.75		46.03	160.73	133	161	1.00	31.31	3596
236	3.49		46.03	160.83	133	162	1.00	29.16	3352
237	3.52		46.03	160.31	134	161	1.00	29.35	3358
238	3.52		46.03	160.36	133	161	1.00	29.35	3359
239	3.52		46.03	160.21	133	161	1.00	29.34	3354

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
240	3.66		46.03	159.88	133	161	1.00	30.58	3486
241	3.56		46.03	159.70	133	160	1.00	29.68	3378
242	3.60		46.03	159.84	133	161	1.00	30.05	3424
243	3.60		46.03	159.51	132	161	1.00	30.05	3414
244	3.62		46.03	159.60	132	160	1.00	30.23	3438
245	3.67		46.03	159.13	132	160	1.00	30.59	3464
246	3.41		46.03	158.71	132	159	1.00	28.45	3210
247	3.41		46.03	158.47	132	159	1.00	28.44	3202
248	3.73		46.03	158.80	132	160	1.00	31.13	3515
249	3.75		46.03	158.66	132	160	1.00	31.30	3530
250	3.49		46.03	158.42	132	159	1.00	29.15	3281
251	3.41		46.03	157.86	132	159	1.00	28.44	3184
252	3.37		45.98	158.19	131	160	1.00	28.08	3155
253	3.37		45.98	157.72	131	159	1.00	28.08	3142
Average	3	#DIV/0!	46	169	141	169	1	28	3422
								TOTAL:	**865862**

LAB SAMPLE DATA - ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 1

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/13/2020

	Sample ID	Tare, mg	Total, mg	Final, mg	Catch, mg
Train A Filters - First Hour	3663	118.5	118.5	118.9	0.4
Train A Filters - Remainder	3664	118.2	239.1	241.0	1.9
	3665	120.9			
Train A Probe	1A	115627.6	115627.6	115627.8	0.2
Train A O-Rings	1A	3567.1	3567.1	3567.2	0.1
Train B Filters	3666	119.9	238.9	240.8	1.9
	3667	119.0			
Train B Probe	1B	115900.9	115900.9	115900.9	0.0
Train B O-Rings	1B	3555.4	3555.4	3556.3	0.9
Background Filter	3668	119.0	119.0	119.7	0.7

Placed in Dessicator on:	1/17/2020

Train A Filters - First Hour	118.8	1/21 14:40	118.9	1/22 8:21				
Train A Filters - Remainder	241.0	1/21 14:40	241.0	1/22 8:22				
Train A Probe	115627.7	1/21 14:32	115627.8	1/22 8:13				
Train A O-Rings	3567.2	1/21 14:36	3567.2	1/22 8:20				
Train B Filters	240.9	1/21 14:41	240.8	1/22 8:22				
Train B Probe	115900.9	1/21 14:32	115900.9	1/22 8:13				
Train B O-Rings	3556.2	1/21 14:36	3556.3	1/22 8:20				
Background Filter	119.7	1/21 14:41	119.7	1/22 8:29				

1st hour Sub-Total, mg:	0.4
Remainder Sub-Total, mg:	2.2
Train 1 Aggregate, mg:	**2.6**
Train 2 Aggregate, mg:	**2.8**
Ambient Aggregate, mg:	0.7

ASTM E2618 Hydronic Heater Run Sheets

Client: Greentech Job Number: 19-551 Tracking #: 47
Model: RS7300E Run Number: 1 Test Date: 1/13/2020

Wood Heater Run Notes

Pre-Test Notes
Pre-Test Start Time: 15:50
Target Load (BTU/hr): 210,000

Time	Notes
0 min	Began preburn
45 min	Stirred remaining fuel load to ensure uniform charcoal bed
60 min	End PB

Test Notes
Test Burn Start Time: 16:50
Target Load (BTU/hr): 210,000 (Category 4)

Time	Notes
0 min	Loaded test fuel within 60 seconds, door closed immediately
60 min	Changed 1st hour filter
253 min	End of Test

Test Burn End Time: 21:03

Flue Gas Concentration Measurement

Calibration Gas Values: Span Gas CO_2 (%): 15.30 CO (%): 4.98

Calibration Results:

	Pre Test			Post Test		
	Zero		Span	Zero		Span
Time	15:55		15:58	21:09		21:11
CO_2	0.00		15.30	0.06		15.42
CO	0.000		4.980	0.018		5.002

Flue Gas Probe Leak Check: Initial: No Leakage Final: No Leakage

Technician Signature: Date: 1/13/2020

HYDRONIC HEATER TES DATA PACKET
ASTM E2618/E2515

Run 2 Data Summary

Client:	Greentech
Model:	Pristine 7300E
Job #:	19-551
Tracking #:	0047
Test Date:	1/14/2020

Techician Signature

5/13/2022
Date

TEST RESULTS - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

Particulate Data

	Ambient Sample	Sample Train A	Sample Train B	1st Hour Filter
Total Sample Volume (ft^3)	251.626	218.746	226.716	9.303
Average Gas Velocity in Dilution Tunnel (ft/sec)	15.3			
Average Gas Flow Rate in Dilution Tunnel (dscf/hr)	40512.7			
Average Gas Meter Temperature (°F)	67.4	88.4	91.5	76.9
Total Sample Volume (dscf)	241.268	201.091	209.676	8.736
Average Tunnel Temperature (°F)	71.3			
Total Time of Test (min)	1403			
Total Particulate Catch (mg)	2.2	7.2	6.8	0.0
Particulate Concentration, dry-standard (g/dscf)	0.0000091	0.0000358	0.0000324	0.0000000
Total PM Emissions (g)	8.64	25.28	22.08	-0.37
Particulate Emission Rate (g/hr)	0.37	1.08	0.94	-0.37
Emissions Factor (g/kg)	-	0.50	0.44	-
Difference from Average Total Particulate Emissions (%)	-	6.7%	6.7%	-
Difference from Average Emissions Factor (g/kg)	-	0.03	0.03	-

Boiler/ HEX Data

Appliance Average Start Temperature (F)	164.5	
Appliance Average Final Temperature (F)	165.5	**First Hour**
Heat Output (BTU)	696,202	37,669
Heat Output Rate (BTU/hr)	29,773	
Heat Input - HHV (BTU)	947,625	91,934
Heat Input - LHV (BTU)	880,189	

Emissions Rates and Factors

Total Particulate Emissions (g)	23.7	N/A - no fiter catch
Emissions Factor (g/MJ)	0.0322	
Emissions Factor (g/kg)	0.4728	
Emissions Rate (g/hr)	1.01	
Emissions Rate (lb/mmbtu output)	0.075	N/A - no fiter catch
HHV Delivered Efficiency (%)	73.5%	41.0%
LHV Delivered Efficiency (%)	79.1%	
HHV SLM Efficiency (%)	77.6%	
LHV SLM Efficiency (%)	83.1%	
CO Emissions (g/min)	1.69	

Quality Checks	Requirement	Observed	Result
Dual Train Precision	Each train within 7.5% of average emissions (in grams), or emission factors within 0.5 g/kg	See Above	OK
Filter Temps	<90 °F	78.0	OK
Face Velocity	< 30 ft/min	8.9	OK
Leakage Rate	Less than 4% of average sample rate	0 cfm	OK
Ambient Temp	55-90 °F	Min: 66 / Max: 73	OK
Negative Probe Weight Evaluation	<5% of Total Catch	Probe Catch Not Negative	OK
Pro-Rate Variation	90% of readings between 90-110%; none greater than 120% or less than 80%	See Data Tabs	OK
Return Temp > 120°F	>120°F	165.0	OK

B415.1 Efficiency Results

Manufacturer: Greentech
Model: Pristine 7300E
Date: 01/14/20
Run: 2
Control #: 19-551
Test Duration: 1403
Output Category: 1

Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
Overall Efficiency	77.6%	83.1%
Combustion Efficiency	98.0%	98.0%
Heat Transfer Efficiency	79.2%	84.8%

Output Rate (kJ/h)	32,628	30,951	**(Btu/h)**
Burn Rate (kg/h)	2.14	4.71	**(lb/h)**
Input (kJ/h)	42,034	39,874	**(Btu/h)**

Test Load Weight (dry kg)	49.99	110.19	**dry lb**
MC wet (%)	17.77		
MC dry (%)	21.61		
Particulate (g)	23.68		
CO (g)	2,367		
Test Duration (h)	23.38		

Emissions	Particulate	CO
g/MJ Output	0.03	3.10
g/kg Dry Fuel	0.47	47.35
g/h	1.01	101.25
g/min	0.02	1.69
lb/MM Btu Output	0.07	7.21

Air/Fuel Ratio (A/F)	38.18

VERSION: **2.2** **12/14/2009**

BOILER CORDWOOD FUEL DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

Firebox Volume (ft^3):	12.83	Minimun Piece Weight (lbs):	6.60
Target Load Weight (lbs):	133.50	Maximun Piece Weight (lbs):	22.00
Number of Fuel Pieces Allowed:	8 - 15	80% of piece of weight range (lbs):	8.8 to 19.8

Pretest Fuel Information

Length (in)	Weight (lbs)	MC (%DB)	Length (in)	Weight (lbs)	MC (%DB)
20.00	119.00	19.0			
20.00		19.0			
20.00		18.0			
20.00		19.0			
20.00		22.0			
20.00		23.0			
20.00		19.0			
20.00		20.0			
20.00		21.0			
20.00		24.0			
20.00		24.0			
20.00		19.0			

Total Preburn Weight (lbs): 119.00
Averge Preburn Moisture (% DB): 20.58

Test Fuel Information

Length (in)	Weight (lbs)	Moisture Content (%DB)					Avg MC (%DB)	Dry Weight (lbs)
20.00	9.00	23.0	22.0	19.0	23.0	23.0	22.00	7.38
20.00	7.00	21.0	20.0	19.0	18.0	20.0	19.60	5.85
20.00	9.00	20.0	19.0	18.0	19.0	20.0	19.20	7.55
20.00	11.00	25.0	25.0	19.0	25.0	25.0	23.80	8.89
20.00	8.00	28.0	26.0	21.0	27.0	27.0	25.80	6.36
20.00	14.00	24.0	22.0	25.0	26.0	26.0	24.60	11.24
20.00	10.00	23.0	25.0	21.0	24.0	22.0	23.00	8.13
20.00	11.00	19.0	19.0	19.0	20.0	19.0	19.20	9.23
20.00	10.00	19.0	19.0	20.0	18.0	21.0	19.40	8.38
20.00	10.00	20.0	20.0	19.0	20.0	20.0	19.80	8.35
20.00	11.00	18.0	20.0	20.0	17.0	17.0	18.40	9.29
20.00	15.00	21.0	25.0	24.0	22.0	25.0	23.40	12.16
20.00	9.00	28.0	21.0	18.0	21.0	20.0	21.60	7.40
Total (lbs):	134.00						Total Dry Weight (lbs):	110.19

Allowable Coal Bed Range (10-20%): 13.4 - 26.8

Quality checks

Individual Piece Weights:	OK
80% Piece weight range:	OK
Piece Count:	OK

DILUTION TUNNEL & MISC. DATA - ASTM E2618 / E2515

Client:	Greentech	Job #:	19-551
Model:	Pristine 7300E	Tracking #:	0047
Run #:	2	Technician:	AK
Test Start Time:	1:11	Date:	1/14/2020

Manufacturer's Rated Output (BTU/hr): 210,000

1403

Total Sampling Time (min):	1403
Recording Interval (min):	1
Meter Box γ Factor:	0.992 (A)
Meter Box γ Factor:	1.002 (B)
Meter Box γ Factor:	0.996 (Ambient)
Induced Draft Check (in. H_2O):	0
Smoke Capture Check (%):	100%
Date Flue Pipe Last Cleaned:	1/7/2020
Boiler Dry Weight (lbs):	2559
Supply Side Water Weight (lbs):	1951

	Pre-Test	Post Test	Avg.
Barometric Pressure (in. Hg)	28.66	28.90	28.78
Relative Humidity (%)	30.0	24.9	
Room Air Velocity (ft/min)	0	0	
Scale Audit (lbs)	10.0	10.0	
Ambient Sample Volume:		251.626	ft^3

Sample Train Post-Test Leak Checks

(A)	0.000	cfm @	-10	in. Hg
(B)	0.000	cfm @	-10	in. Hg
(Ambient)	0.000	cfm @	-15	in. Hg

DILUTION TUNNEL FLOW

Traverse Data

Point	dP (in H_2O)	Temp (°F)
1	0.032	88
2	0.045	88
3	0.045	88
4	0.048	88
5	0.035	88
6	0.026	88
7	0.023	87
8	0.038	87
9	0.040	87
10	0.420	87
11	0.037	87
12	0.029	87
Center	0.042	87

Static Pressure: -0.160 in. H_2O

Dilution Tunnel H_2O:	2.00	percent
Tunnel Diameter:	12	inches
Pitot Tube Cp:	0.99	[unitless]
Dilution Tunnel MW(dry):	29.00	lb/lb-mole
Dilution Tunnel MW(wet):	28.78	lb/lb-mole
Tunnel Area:	0.7854	ft^2
V_{strav}:	15.56	ft/sec
V_{scent}:	14.13	ft/sec
F_p:	1.101	[ratio]
Initial Tunnel Flow:	669.8	scf/min

TEST FUEL PROPERTIES

Default Fuel Values

Fuel Type:	D. Fir	Oak
HHV (kJ/kg)	19,810	19,887
%C	48.73	50
%H	6.87	6.9
%O	43.9	42.9
%Ash	0.5	0.5

Actual Fuel Used Properties

Fuel Type:	Maple
HHV (kJ/kg)	19,960
%C	50.64
%H	6.02
%O	41.74
%Ash	1.35
MC (%DB)	21.6%

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
0	0.000		0.042	0.05	72	-5.47		134.0		88	225	70	68
1	0.134	0.134	0.042	0.40	72	-5.47	90	133.0	-1	90	235	71	69
2	0.291	0.157	0.042	0.42	72	-5.47	106	132.9	-0.1	90	240	71	68
3	0.445	0.154	0.042	0.39	72	-5.47	104	132.9	0	91	245	72	68
4	0.599	0.154	0.042	0.40	72	-5.47	104	131.0	-1.9	91	250	72	68
5	0.753	0.154	0.042	0.39	72	-5.47	104	130.2	-0.8	92	255	72	68
6	0.908	0.155	0.042	0.44	72	-5.47	104	130.0	-0.2	92	258	72	69
7	1.061	0.153	0.042	0.39	72	-5.47	103	129.0	-1	93	261	72	68
8	1.216	0.155	0.042	0.40	72	-5.47	105	127.9	-1.1	93	264	73	68
9	1.371	0.155	0.042	0.42	73	-5.47	104	127.1	-0.8	93	266	73	69
10	1.524	0.153	0.042	0.42	73	-5.47	103	127.0	-0.1	94	268	73	69
11	1.678	0.154	0.042	0.40	73	-5.47	104	125.7	-1.3	94	270	73	69
12	1.831	0.153	0.042	0.42	73	-5.47	103	125.0	-0.7	94	271	73	69
13	1.985	0.154	0.042	0.40	73	-5.47	104	124.0	-1	95	273	73	69
14	2.139	0.154	0.042	0.36	73	-5.47	104	123.9	-0.1	95	274	73	69
15	2.293	0.154	0.042	0.36	73	-5.47	104	123.2	-0.7	95	275	74	69
16	2.446	0.153	0.042	0.45	74	-5.47	103	122.0	-1.2	96	277	74	69
17	2.599	0.153	0.042	0.40	74	-5.47	103	120.9	-1.1	96	278	74	69
18	2.757	0.158	0.042	0.42	74	-5.47	105	120.1	-0.8	77	266	74	69
19	2.913	0.156	0.042	0.42	74	-5.47	103	120.0	-0.1	75	253	73	69
20	3.068	0.155	0.042	0.44	74	-5.47	102	119.9	-0.1	73	242	73	69
21	3.226	0.158	0.042	0.40	75	-5.47	104	119.1	-0.8	73	232	73	69
22	3.382	0.156	0.042	0.47	75	-5.47	103	120.0	0.9	72	224	72	69
23	3.537	0.155	0.042	0.40	75	-5.47	102	119.9	-0.1	72	217	72	69
24	3.695	0.158	0.042	0.41	75	-5.47	104	120.0	0.1	72	211	72	68
25	3.851	0.156	0.042	0.43	75	-5.47	103	120.0	0	71	206	73	69
26	4.005	0.154	0.042	0.40	76	-5.47	101	120.0	0	71	201	75	69
27	4.162	0.157	0.042	0.40	76	-5.47	103	119.9	-0.1	71	197	74	70
28	4.317	0.155	0.042	0.40	76	-5.47	102	120.0	0.1	71	194	74	69
29	4.473	0.156	0.042	0.40	76	-5.47	102	120.1	0.1	71	190	73	69
30	4.629	0.156	0.042	0.40	77	-5.47	102	119.9	-0.2	71	187	73	69
31	4.786	0.157	0.042	0.39	77	-5.47	103	120.0	0.1	71	184	73	69

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
32	4.940	0.154	0.042	0.43	77	-5.47	101	120.0	0	71	181	72	69
33	5.097	0.157	0.042	0.43	77	-5.47	103	120.0	0	71	179	72	69
34	5.252	0.155	0.042	0.43	78	-5.47	101	120.0	0	71	177	72	69
35	5.406	0.154	0.042	0.38	78	-5.47	101	120.0	0	71	174	72	69
36	5.562	0.156	0.042	0.43	78	-5.47	102	120.5	0.5	71	172	72	69
37	5.718	0.156	0.042	0.40	78	-5.47	102	120.0	-0.5	71	170	71	70
38	5.873	0.155	0.042	0.42	78	-5.47	101	120.0	0	71	168	71	69
39	6.029	0.156	0.042	0.38	79	-5.47	102	119.9	-0.1	71	166	71	69
40	6.186	0.157	0.042	0.41	79	-5.47	102	120.0	0.1	71	164	71	70
41	6.341	0.155	0.042	0.43	79	-5.47	101	120.0	0	71	162	71	70
42	6.495	0.154	0.042	0.43	79	-5.47	100	119.9	-0.1	71	161	71	70
43	6.651	0.156	0.042	0.30	80	-5.47	102	120.0	0.1	71	159	71	70
44	6.807	0.156	0.042	0.44	80	-5.47	102	120.1	0.1	71	158	71	70
45	6.962	0.155	0.042	0.47	80	-5.47	101	119.9	-0.2	71	156	71	70
46	7.119	0.157	0.042	0.38	80	-5.47	102	120.0	0.1	71	155	71	70
47	7.275	0.156	0.042	0.42	81	-5.47	101	120.1	0.1	71	153	71	70
48	7.430	0.155	0.042	0.43	81	-5.47	101	120.9	0.8	70	152	71	70
49	7.587	0.157	0.042	0.39	81	-5.47	102	120.9	0	70	151	70	70
50	7.743	0.156	0.042	0.40	81	-5.47	101	120.2	-0.7	70	149	70	70
51	7.899	0.156	0.042	0.41	81	-5.47	101	119.9	-0.3	70	148	70	70
52	8.053	0.154	0.042	0.42	82	-5.47	100	121.0	1.1	70	147	70	69
53	8.209	0.156	0.042	0.43	82	-5.47	101	121.7	0.7	70	145	70	70
54	8.368	0.159	0.042	0.42	82	-5.47	103	121.0	-0.7	70	144	70	70
55	8.523	0.155	0.042	0.38	82	-5.47	100	121.0	0	70	143	70	69
56	8.678	0.155	0.042	0.42	82	-5.47	100	121.0	0	70	142	70	69
57	8.834	0.156	0.042	0.43	83	-5.47	101	120.9	-0.1	70	141	70	69
58	8.989	0.155	0.042	0.33	83	-5.47	100	121.0	0.1	70	139	70	69
59	9.146	0.157	0.042	0.43	83	-5.47	102	121.1	0.1	70	139	70	70
60	9.303	0.157	0.042	0.35	83	-5.47	102	121.0	-0.1	70	138	70	69
61	9.459	0.156	0.042	0.37	83	-5.47	101	121.0	0	70	136	70	70
62	9.613	0.154	0.042	0.44	83	-5.47	100	121.1	0.1	70	135	70	70
63	9.771	0.158	0.042	0.39	84	-5.47	102	121.0	-0.1	70	135	70	69

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
64	9.926	0.155	0.042	0.41	84	-5.47	100	120.9	-0.1	70	133	70	69
65	10.081	0.155	0.042	0.38	84	-5.47	100	120.7	-0.2	70	133	70	69
66	10.238	0.157	0.042	0.39	84	-5.47	101	121.1	0.4	70	132	70	69
67	10.392	0.154	0.042	0.42	84	-5.47	99	120.9	-0.2	70	131	70	69
68	10.548	0.156	0.042	0.42	84	-5.47	101	121.1	0.2	70	130	70	69
69	10.706	0.158	0.042	0.40	84	-5.47	102	121.0	-0.1	70	129	70	69
70	10.862	0.156	0.042	0.44	85	-5.47	101	121.0	0	70	128	70	69
71	11.016	0.154	0.042	0.40	85	-5.47	99	121.0	0	70	127	70	69
72	11.173	0.157	0.042	0.39	85	-5.47	101	121.0	0	70	126	70	69
73	11.330	0.157	0.042	0.44	85	-5.47	101	121.0	0	70	126	70	69
74	11.485	0.155	0.042	0.40	85	-5.47	100	121.0	0	70	125	70	69
75	11.641	0.156	0.042	0.45	85	-5.47	101	121.0	0	70	125	70	69
76	11.800	0.159	0.042	0.38	85	-5.47	102	120.9	-0.1	69	124	70	69
77	11.956	0.156	0.042	0.43	86	-5.47	100	121.0	0.1	69	123	70	69
78	12.113	0.157	0.042	0.36	86	-5.47	101	121.1	0.1	69	123	69	69
79	12.271	0.158	0.042	0.47	86	-5.47	102	120.9	-0.2	69	122	69	69
80	12.426	0.155	0.042	0.37	86	-5.47	100	121.0	0.1	69	121	69	69
81	12.584	0.158	0.042	0.44	86	-5.47	102	121.0	0	69	120	69	69
82	12.740	0.156	0.042	0.44	86	-5.47	100	120.9	-0.1	69	120	69	69
83	12.897	0.157	0.042	0.42	86	-5.47	101	121.0	0.1	69	119	69	69
84	13.056	0.159	0.042	0.43	86	-5.47	102	121.1	0.1	69	119	69	69
85	13.211	0.155	0.042	0.41	86	-5.47	100	121.2	0.1	69	118	69	69
86	13.367	0.156	0.042	0.38	87	-5.47	100	121.0	-0.2	69	117	69	69
87	13.525	0.158	0.042	0.43	87	-5.47	101	120.2	-0.8	69	117	69	69
88	13.682	0.157	0.042	0.41	87	-5.47	101	121.0	0.8	69	116	69	69
89	13.838	0.156	0.042	0.42	87	-5.47	100	121.0	0	69	116	69	69
90	13.996	0.158	0.042	0.38	87	-5.47	101	121.1	0.1	69	115	69	69
91	14.151	0.155	0.042	0.43	87	-5.47	99	121.0	-0.1	69	114	69	69
92	14.308	0.157	0.042	0.39	87	-5.47	101	121.0	0	69	114	69	69
93	14.465	0.157	0.042	0.39	87	-5.47	101	121.0	0	69	114	69	69
94	14.620	0.155	0.042	0.39	87	-5.47	99	121.0	0	69	113	69	69
95	14.778	0.158	0.042	0.45	87	-5.47	101	120.9	-0.1	69	112	69	69

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
96	14.936	0.158	0.042	0.42	87	-5.47	101	121.1	0.2	69	112	69	69
97	15.090	0.154	0.042	0.42	87	-5.47	99	121.1	0	69	111	69	69
98	15.246	0.156	0.042	0.32	88	-5.47	100	120.9	-0.2	69	111	69	69
99	15.405	0.159	0.042	0.43	88	-5.47	102	121.0	0.1	69	110	69	69
100	15.561	0.156	0.042	0.43	88	-5.47	100	121.0	0	69	110	69	69
101	15.718	0.157	0.042	0.43	88	-5.47	101	120.9	-0.1	69	109	69	69
102	15.874	0.156	0.042	0.40	88	-5.47	100	121.1	0.2	69	109	69	69
103	16.031	0.157	0.042	0.39	88	-5.47	101	121.1	0	69	108	69	68
104	16.190	0.159	0.042	0.43	88	-5.47	102	120.9	-0.2	69	108	69	69
105	16.346	0.156	0.042	0.40	88	-5.47	100	121.0	0.1	69	108	69	69
106	16.503	0.157	0.042	0.42	88	-5.47	101	121.1	0.1	69	108	69	69
107	16.660	0.157	0.042	0.44	88	-5.47	101	121.9	0.8	69	107	69	68
108	16.817	0.157	0.042	0.42	88	-5.47	101	121.2	-0.7	69	107	69	68
109	16.974	0.157	0.042	0.44	88	-5.47	101	122.1	0.9	69	106	69	68
110	17.133	0.159	0.042	0.39	88	-5.47	102	121.0	-1.1	69	106	69	68
111	17.288	0.155	0.042	0.33	88	-5.47	99	121.5	0.5	69	106	69	68
112	17.445	0.157	0.042	0.38	88	-5.47	101	122.1	0.6	69	105	69	68
113	17.603	0.158	0.042	0.37	89	-5.47	101	122.0	-0.1	69	105	69	68
114	17.757	0.154	0.042	0.39	89	-5.47	98	122.0	0	68	105	69	68
115	17.915	0.158	0.042	0.42	89	-5.47	101	122.0	0	68	104	68	68
116	18.075	0.160	0.042	0.41	89	-5.47	102	122.0	0	68	104	68	68
117	18.230	0.155	0.042	0.47	89	-5.47	99	121.9	-0.1	69	104	69	70
118	18.388	0.158	0.042	0.35	89	-5.47	101	122.1	0.2	69	104	69	69
119	18.543	0.155	0.042	0.42	89	-5.47	99	122.0	-0.1	69	103	70	69
120	18.700	0.157	0.042	0.43	89	-5.47	100	121.9	-0.1	69	102	70	69
121	18.859	0.159	0.042	0.43	89	-5.47	102	122.1	0.2	69	102	70	69
122	19.014	0.155	0.042	0.42	89	-5.47	99	122.0	-0.1	69	102	70	69
123	19.171	0.157	0.042	0.44	89	-5.47	100	121.9	-0.1	69	102	70	69
124	19.329	0.158	0.042	0.41	89	-5.47	101	122.0	0.1	69	102	70	69
125	19.484	0.155	0.042	0.42	89	-5.47	99	122.0	0	69	101	70	69
126	19.642	0.158	0.042	0.42	89	-5.47	101	121.9	-0.1	69	101	69	69
127	19.800	0.158	0.042	0.40	89	-5.47	101	122.1	0.2	69	101	69	68

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
128	19.957	0.157	0.042	0.41	89	-5.47	100	122.0	-0.1	69	100	69	69
129	20.113	0.156	0.042	0.44	89	-5.47	100	121.9	-0.1	69	100	69	68
130	20.270	0.157	0.042	0.41	89	-5.47	100	122.1	0.2	69	100	69	69
131	20.426	0.156	0.042	0.41	89	-5.47	100	122.0	-0.1	69	99	69	68
132	20.585	0.159	0.042	0.41	89	-5.47	102	121.9	-0.1	68	99	69	68
133	20.742	0.157	0.042	0.39	89	-5.47	102	122.0	0.1	83	156	70	68
134	20.897	0.155	0.042	0.51	89	-5.47	100	121.9	-0.1	80	181	70	68
135	21.054	0.157	0.042	0.41	89	-5.47	102	121.0	-0.9	83	189	70	68
136	21.211	0.157	0.042	0.40	89	-5.47	102	121.0	0	85	195	70	68
137	21.368	0.157	0.042	0.39	89	-5.47	102	121.0	0	86	201	70	68
138	21.525	0.157	0.042	0.45	90	-5.47	102	120.5	-0.5	87	210	70	68
139	21.680	0.155	0.042	0.43	90	-5.47	101	118.7	-1.8	87	218	71	68
140	21.838	0.158	0.042	0.42	90	-5.47	103	118.0	-0.7	88	225	71	68
141	21.995	0.157	0.042	0.38	90	-5.47	102	117.0	-1	89	232	71	68
142	22.151	0.156	0.042	0.43	90	-5.47	101	116.9	-0.1	89	238	71	68
143	22.307	0.156	0.042	0.45	90	-5.47	102	115.0	-1.9	90	243	71	68
144	22.464	0.157	0.042	0.47	90	-5.47	102	114.9	-0.1	90	247	71	68
145	22.620	0.156	0.042	0.37	90	-5.47	102	113.3	-1.6	91	251	72	68
146	22.777	0.157	0.042	0.43	90	-5.47	102	112.9	-0.4	91	254	72	68
147	22.935	0.158	0.042	0.38	90	-5.47	103	112.0	-0.9	92	257	72	68
148	23.091	0.156	0.042	0.42	90	-5.47	102	110.4	-1.6	92	260	72	68
149	23.246	0.155	0.042	0.50	90	-5.47	101	110.1	-0.3	92	262	72	69
150	23.402	0.156	0.042	0.41	90	-5.47	102	109.0	-1.1	93	264	72	69
151	23.559	0.157	0.042	0.40	90	-5.47	102	107.9	-1.1	93	267	73	68
152	23.713	0.154	0.042	0.40	90	-5.47	100	107.1	-0.8	93	268	73	69
153	23.870	0.157	0.042	0.38	90	-5.47	103	106.0	-1.1	94	270	73	69
154	24.026	0.156	0.042	0.40	90	-5.47	102	104.9	-1.1	94	271	73	68
155	24.181	0.155	0.042	0.39	90	-5.47	101	105.1	0.2	94	273	73	69
156	24.337	0.156	0.042	0.43	90	-5.47	102	103.9	-1.2	95	274	73	69
157	24.494	0.157	0.042	0.41	90	-5.47	103	102.9	-1	95	276	73	69
158	24.649	0.155	0.042	0.39	90	-5.47	100	102.0	-0.9	76	263	73	69
159	24.806	0.157	0.042	0.42	90	-5.47	101	101.1	-0.9	73	251	72	69

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
160	24.964	0.158	0.042	0.41	90	-5.47	101	100.9	-0.2	72	240	72	68
161	25.118	0.154	0.042	0.38	90	-5.47	98	101.1	0.2	71	230	72	69
162	25.276	0.158	0.042	0.41	90	-5.47	101	101.0	-0.1	70	222	72	69
163	25.434	0.158	0.042	0.47	90	-5.47	101	100.9	-0.1	70	216	72	68
164	25.589	0.155	0.042	0.44	90	-5.47	99	100.0	-0.9	70	210	71	68
165	25.745	0.156	0.042	0.40	90	-5.47	100	100.1	0.1	70	205	71	68
166	25.903	0.158	0.042	0.38	90	-5.47	101	101.0	0.9	70	200	71	68
167	26.060	0.157	0.042	0.45	90	-5.47	100	101.0	0	70	196	71	68
168	26.219	0.159	0.042	0.41	90	-5.47	101	100.0	-1	69	193	71	69
169	26.375	0.156	0.042	0.42	90	-5.47	100	100.9	0.9	69	189	71	68
170	26.532	0.157	0.042	0.38	90	-5.47	100	101.0	0.1	69	186	71	69
171	26.690	0.158	0.042	0.42	90	-5.47	101	101.1	0.1	69	184	70	68
172	26.845	0.155	0.042	0.37	90	-5.47	99	101.0	-0.1	69	181	70	68
173	27.003	0.158	0.042	0.42	90	-5.47	101	101.0	0	69	178	70	68
174	27.160	0.157	0.042	0.39	90	-5.47	100	101.0	0	69	176	70	68
175	27.317	0.157	0.042	0.41	90	-5.47	100	101.0	0	69	174	70	68
176	27.474	0.157	0.042	0.42	90	-5.47	100	101.0	0	69	172	70	68
177	27.632	0.158	0.042	0.42	90	-5.47	101	101.1	0.1	69	170	70	69
178	27.787	0.155	0.042	0.38	90	-5.47	99	101.0	-0.1	69	168	69	68
179	27.946	0.159	0.042	0.37	90	-5.47	101	101.0	0	69	166	69	68
180	28.102	0.156	0.042	0.43	90	-5.47	100	101.1	0.1	69	164	69	68
181	28.258	0.156	0.042	0.39	90	-5.47	100	101.0	-0.1	69	162	69	68
182	28.418	0.160	0.042	0.39	90	-5.47	102	100.9	-0.1	69	161	69	68
183	28.574	0.156	0.042	0.44	90	-5.47	100	101.1	0.2	69	159	69	68
184	28.733	0.159	0.042	0.38	90	-5.47	101	101.0	-0.1	69	157	69	68
185	28.891	0.158	0.042	0.42	90	-5.47	101	100.9	-0.1	69	156	69	68
186	29.046	0.155	0.042	0.41	90	-5.47	99	101.0	0.1	69	154	69	68
187	29.204	0.158	0.042	0.37	90	-5.47	101	101.2	0.2	69	153	69	69
188	29.362	0.158	0.042	0.44	91	-5.47	101	101.0	-0.2	70	152	70	68
189	29.517	0.155	0.042	0.45	91	-5.47	99	101.0	0	70	150	70	69
190	29.676	0.159	0.042	0.37	90	-5.47	102	100.9	-0.1	70	149	70	69
191	29.832	0.156	0.042	0.40	90	-5.47	100	101.0	0.1	70	148	70	69

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
192	29.988	0.156	0.042	0.38	90	-5.47	100	101.0	0	69	146	70	69
193	30.147	0.159	0.042	0.45	90	-5.47	101	101.0	0	69	145	70	69
194	30.304	0.157	0.042	0.40	90	-5.47	100	101.0	0	69	144	70	69
195	30.461	0.157	0.042	0.39	90	-5.47	100	101.0	0	69	143	70	69
196	30.620	0.159	0.042	0.37	90	-5.47	101	101.1	0.1	69	142	70	69
197	30.775	0.155	0.042	0.39	90	-5.47	99	100.9	-0.2	69	140	70	68
198	30.933	0.158	0.042	0.43	91	-5.47	101	101.0	0.1	69	139	69	69
199	31.090	0.157	0.042	0.42	91	-5.47	100	102.0	1	69	138	69	69
200	31.246	0.156	0.042	0.39	91	-5.47	99	100.9	-1.1	69	137	69	68
201	31.403	0.157	0.042	0.45	91	-5.47	100	101.7	0.8	69	136	69	68
202	31.562	0.159	0.042	0.43	91	-5.47	101	101.1	-0.6	69	135	69	68
203	31.717	0.155	0.042	0.38	91	-5.47	99	101.9	0.8	69	134	69	68
204	31.874	0.157	0.042	0.43	91	-5.47	100	101.0	-0.9	69	134	69	67
205	32.030	0.156	0.042	0.39	91	-5.47	99	102.0	1	69	132	69	68
206	32.186	0.156	0.042	0.45	91	-5.47	99	101.7	-0.3	69	131	69	68
207	32.344	0.158	0.042	0.40	91	-5.47	101	101.9	0.2	69	130	69	68
208	32.500	0.156	0.042	0.45	91	-5.47	99	102.0	0.1	69	129	69	67
209	32.658	0.158	0.042	0.29	91	-5.47	101	102.0	0	69	128	69	68
210	32.816	0.158	0.042	0.40	91	-5.47	101	101.9	-0.1	69	128	69	68
211	32.973	0.157	0.042	0.42	91	-5.47	100	102.0	0.1	69	127	69	67
212	33.131	0.158	0.042	0.38	91	-5.47	101	102.1	0.1	68	126	68	68
213	33.289	0.158	0.042	0.34	91	-5.47	101	101.9	-0.2	68	125	68	68
214	33.444	0.155	0.042	0.40	91	-5.47	99	102.0	0.1	68	125	68	68
215	33.603	0.159	0.042	0.38	91	-5.47	101	102.0	0	68	124	68	67
216	33.760	0.157	0.042	0.38	91	-5.47	100	101.9	-0.1	68	123	68	68
217	33.916	0.156	0.042	0.41	91	-5.47	99	102.0	0.1	68	123	68	68
218	34.075	0.159	0.042	0.38	91	-5.47	101	102.4	0.4	68	122	68	68
219	34.231	0.156	0.042	0.39	91	-5.47	99	101.9	-0.5	68	121	68	67
220	34.388	0.157	0.042	0.47	91	-5.47	100	102.0	0.1	68	120	68	68
221	34.547	0.159	0.042	0.40	91	-5.47	101	102.1	0.1	68	120	68	68
222	34.704	0.157	0.042	0.43	91	-5.47	100	101.9	-0.2	68	119	68	68
223	34.863	0.159	0.042	0.43	91	-5.47	101	102.0	0.1	68	119	68	68

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
224	35.022	0.159	0.042	0.43	91	-5.47	101	102.0	0	68	118	68	68
225	35.177	0.155	0.042	0.39	91	-5.47	99	102.0	0	68	118	68	67
226	35.336	0.159	0.042	0.45	91	-5.47	101	102.0	0	68	117	68	67
227	35.493	0.157	0.042	0.40	91	-5.47	100	102.1	0.1	68	116	68	68
228	35.650	0.157	0.042	0.38	91	-5.47	100	101.9	-0.2	68	116	68	68
229	35.809	0.159	0.042	0.44	91	-5.47	101	101.9	0	68	115	68	67
230	35.964	0.155	0.042	0.40	91	-5.47	99	102.0	0.1	68	114	68	68
231	36.121	0.157	0.042	0.40	91	-5.47	100	101.9	-0.1	68	114	68	68
232	36.280	0.159	0.042	0.38	91	-5.47	101	101.8	-0.1	68	113	68	67
233	36.436	0.156	0.042	0.40	91	-5.47	99	102.1	0.3	68	112	67	67
234	36.594	0.158	0.042	0.33	91	-5.47	101	102.0	-0.1	68	112	67	68
235	36.753	0.159	0.042	0.39	91	-5.47	101	101.9	-0.1	68	112	67	67
236	36.909	0.156	0.042	0.43	91	-5.47	99	102.0	0.1	68	112	67	67
237	37.069	0.160	0.042	0.44	91	-5.47	102	102.0	0	68	111	67	67
238	37.225	0.156	0.042	0.41	90	-5.47	99	101.9	-0.1	68	111	67	67
239	37.383	0.158	0.042	0.40	90	-5.47	101	102.0	0.1	68	110	67	67
240	37.543	0.160	0.042	0.39	90	-5.47	102	102.0	0	68	109	67	67
241	37.699	0.156	0.042	0.47	90	-5.47	99	102.0	0	68	109	67	67
242	37.858	0.159	0.042	0.43	91	-5.47	101	102.0	0	68	109	67	67
243	38.016	0.158	0.042	0.39	90	-5.47	101	102.0	0	68	108	67	67
244	38.171	0.155	0.042	0.49	90	-5.47	99	101.9	-0.1	68	108	67	67
245	38.328	0.157	0.042	0.44	91	-5.47	100	102.5	0.6	68	107	67	68
246	38.486	0.158	0.042	0.39	91	-5.47	101	102.0	-0.5	68	107	68	69
247	38.642	0.156	0.042	0.42	91	-5.47	99	102.9	0.9	69	106	69	68
248	38.801	0.159	0.042	0.47	90	-5.47	101	103.0	0.1	68	106	69	68
249	38.956	0.155	0.042	0.38	90	-5.47	99	103.0	0	68	106	69	69
250	39.115	0.159	0.042	0.41	90	-5.47	101	102.9	-0.1	68	106	68	68
251	39.273	0.158	0.042	0.38	90	-5.47	101	103.0	0.1	68	105	68	69
252	39.429	0.156	0.042	0.36	90	-5.47	99	103.0	0	68	105	68	68
253	39.587	0.158	0.042	0.38	90	-5.47	101	102.6	-0.4	68	105	68	68
254	39.745	0.158	0.042	0.42	90	-5.47	101	103.0	0.4	68	105	68	68
255	39.901	0.156	0.042	0.42	90	-5.47	99	103.1	0.1	68	104	68	67

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
256	40.061	0.160	0.042	0.41	90	-5.47	102	102.9	-0.2	68	103	68	67
257	40.218	0.157	0.042	0.41	90	-5.47	100	102.9	0	68	103	68	67
258	40.374	0.156	0.042	0.40	90	-5.47	99	103.0	0.1	68	103	68	68
259	40.533	0.159	0.042	0.39	90	-5.47	101	103.0	0	68	103	68	67
260	40.689	0.156	0.042	0.40	90	-5.47	99	103.0	0	68	102	68	67
261	40.846	0.157	0.042	0.41	90	-5.47	100	103.0	0	68	102	68	68
262	41.005	0.159	0.042	0.41	90	-5.47	101	103.0	0	68	102	68	68
263	41.160	0.155	0.042	0.44	90	-5.47	99	103.0	0	68	101	68	67
264	41.319	0.159	0.042	0.40	90	-5.47	101	103.0	0	69	101	69	68
265	41.477	0.158	0.042	0.37	90	-5.47	101	103.0	0	69	101	70	69
266	41.632	0.155	0.042	0.40	90	-5.47	99	103.0	0	69	101	70	69
267	41.789	0.157	0.042	0.45	90	-5.47	100	103.0	0	69	100	71	69
268	41.948	0.159	0.042	0.40	90	-5.47	101	103.1	0.1	69	100	71	70
269	42.102	0.154	0.042	0.42	90	-5.47	98	102.9	-0.2	70	99	72	69
270	42.259	0.157	0.042	0.38	90	-5.47	100	103.0	0.1	69	99	72	69
271	42.416	0.157	0.042	0.40	90	-5.47	100	103.1	0.1	69	99	72	69
272	42.572	0.156	0.042	0.43	90	-5.47	100	103.0	-0.1	69	100	71	69
273	42.730	0.158	0.042	0.39	90	-5.47	101	103.0	0	69	99	71	69
274	42.886	0.156	0.042	0.44	90	-5.47	100	103.1	0.1	75	146	71	69
275	43.041	0.155	0.042	0.48	90	-5.47	100	103.0	-0.1	83	173	72	69
276	43.197	0.156	0.042	0.39	90	-5.47	101	102.0	-1	82	183	71	69
277	43.354	0.157	0.042	0.38	90	-5.47	101	102.0	0	83	189	71	69
278	43.509	0.155	0.042	0.43	90	-5.47	100	101.0	-1	84	195	71	68
279	43.667	0.158	0.042	0.53	90	-5.47	102	101.0	0	85	200	71	68
280	43.824	0.157	0.042	0.39	90	-5.47	102	101.0	0	86	206	72	69
281	43.980	0.156	0.042	0.41	90	-5.47	101	100.0	-1	88	212	72	69
282	44.137	0.157	0.042	0.52	90	-5.47	102	98.9	-1.1	89	218	73	69
283	44.294	0.157	0.042	0.38	90	-5.47	102	99.1	0.2	89	223	73	70
284	44.450	0.156	0.042	0.39	90	-5.47	102	98.0	-1.1	90	228	74	70
285	44.606	0.156	0.042	0.40	90	-5.47	102	96.8	-1.2	91	233	74	70
286	44.763	0.157	0.042	0.38	90	-5.47	102	96.0	-0.8	91	238	75	70
287	44.917	0.154	0.042	0.38	90	-5.47	100	95.0	-1	91	242	75	69

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
288	45.073	0.156	0.042	0.38	90	-5.47	102	93.9	-1.1	92	246	75	69
289	45.229	0.156	0.042	0.38	90	-5.47	102	93.1	-0.8	92	249	75	69
290	45.384	0.155	0.042	0.31	90	-5.47	101	92.0	-1.1	92	252	75	69
291	45.539	0.155	0.042	0.44	90	-5.47	101	90.9	-1.1	92	255	75	69
292	45.696	0.157	0.042	0.41	90	-5.47	102	90.0	-0.9	93	258	75	69
293	45.850	0.154	0.042	0.44	90	-5.47	100	89.0	-1	93	260	75	69
294	46.005	0.155	0.042	0.39	90	-5.47	101	87.9	-1.1	93	263	74	69
295	46.160	0.155	0.042	0.36	90	-5.47	101	87.0	-0.9	94	265	74	69
296	46.316	0.156	0.042	0.45	91	-5.47	102	86.0	-1	94	267	74	69
297	46.469	0.153	0.042	0.40	91	-5.47	100	85.0	-1	95	269	75	70
298	46.625	0.156	0.042	0.44	91	-5.47	102	84.0	-1	95	271	75	70
299	46.781	0.156	0.042	0.43	91	-5.47	102	83.1	-0.9	96	272	76	70
300	46.937	0.156	0.042	0.39	91	-5.47	102	81.9	-1.2	96	274	76	71
301	47.092	0.155	0.042	0.38	91	-5.47	100	80.8	-1.1	79	264	76	71
302	47.251	0.159	0.042	0.40	91	-5.47	102	80.0	-0.8	75	252	76	71
303	47.407	0.156	0.042	0.39	91	-5.47	100	80.0	0	73	241	76	70
304	47.563	0.156	0.042	0.40	91	-5.47	100	80.0	0	72	232	75	70
305	47.721	0.158	0.042	0.42	91	-5.47	101	79.0	-1	72	223	75	70
306	47.878	0.157	0.042	0.49	91	-5.47	100	79.0	0	71	216	74	69
307	48.036	0.158	0.042	0.38	91	-5.47	101	79.0	0	71	210	74	70
308	48.195	0.159	0.042	0.44	91	-5.47	101	79.0	0	71	205	74	69
309	48.351	0.156	0.042	0.40	91	-5.47	99	78.9	-0.1	70	201	73	69
310	48.508	0.157	0.042	0.41	91	-5.47	100	79.0	0.1	70	197	73	69
311	48.666	0.158	0.042	0.39	91	-5.47	101	79.0	0	70	193	73	69
312	48.822	0.156	0.042	0.41	91	-5.47	99	79.0	0	70	190	73	69
313	48.981	0.159	0.042	0.40	91	-5.47	101	78.9	-0.1	70	187	73	70
314	49.138	0.157	0.042	0.44	91	-5.47	100	79.0	0.1	71	184	73	70
315	49.294	0.156	0.042	0.41	91	-5.47	100	78.9	-0.1	71	181	73	70
316	49.453	0.159	0.042	0.44	91	-5.47	101	79.0	0.1	71	179	74	70
317	49.610	0.157	0.042	0.40	91	-5.47	100	79.0	0	71	176	74	70
318	49.766	0.156	0.042	0.43	91	-5.47	100	79.0	0	71	174	74	70
319	49.924	0.158	0.042	0.37	91	-5.47	101	78.9	-0.1	71	172	74	70

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
320	50.080	0.156	0.042	0.51	91	-5.47	100	79.1	0.2	71	170	74	70
321	50.236	0.156	0.042	0.42	91	-5.47	100	79.0	-0.1	71	168	73	70
322	50.395	0.159	0.042	0.42	91	-5.47	101	79.1	0.1	70	166	73	70
323	50.551	0.156	0.042	0.41	91	-5.47	99	79.0	-0.1	70	164	73	69
324	50.708	0.157	0.042	0.39	91	-5.47	100	78.9	-0.1	70	163	73	69
325	50.867	0.159	0.042	0.34	91	-5.47	101	78.9	0	70	161	72	69
326	51.025	0.158	0.042	0.42	91	-5.47	101	79.0	0.1	70	159	72	69
327	51.184	0.159	0.042	0.43	91	-5.47	101	79.0	0	70	157	72	69
328	51.342	0.158	0.042	0.39	91	-5.47	101	78.9	-0.1	70	156	72	69
329	51.497	0.155	0.042	0.47	91	-5.47	99	79.0	0.1	70	155	72	69
330	51.653	0.156	0.042	0.38	91	-5.47	99	80.0	1	70	153	72	69
331	51.811	0.158	0.042	0.46	91	-5.47	101	80.0	0	71	152	73	70
332	51.965	0.154	0.042	0.39	91	-5.47	98	80.0	0	71	150	73	70
333	52.122	0.157	0.042	0.40	91	-5.47	100	80.1	0.1	71	149	74	70
334	52.279	0.157	0.042	0.39	91	-5.47	100	80.1	0	71	147	74	70
335	52.435	0.156	0.042	0.41	91	-5.47	100	80.0	-0.1	71	146	74	70
336	52.592	0.157	0.042	0.34	91	-5.47	100	80.1	0.1	71	145	74	69
337	52.751	0.159	0.042	0.43	91	-5.47	101	79.9	-0.2	70	144	73	70
338	52.906	0.155	0.042	0.42	91	-5.47	99	80.0	0.1	70	142	73	70
339	53.063	0.157	0.042	0.49	91	-5.47	100	80.0	0	70	141	73	69
340	53.220	0.157	0.042	0.39	91	-5.47	100	79.5	-0.5	70	140	73	69
341	53.375	0.155	0.042	0.37	91	-5.47	99	79.9	0.4	70	139	72	69
342	53.534	0.159	0.042	0.41	91	-5.47	101	80.1	0.2	70	138	72	69
343	53.689	0.155	0.042	0.43	91	-5.47	99	80.0	-0.1	70	137	72	69
344	53.845	0.156	0.042	0.43	91	-5.47	99	80.0	0	70	136	72	69
345	54.004	0.159	0.042	0.40	91	-5.47	101	80.1	0.1	69	135	72	68
346	54.161	0.157	0.042	0.34	91	-5.47	100	79.9	-0.2	69	134	71	69
347	54.318	0.157	0.042	0.37	91	-5.47	100	80.0	0.1	70	133	72	69
348	54.476	0.158	0.042	0.40	91	-5.47	101	80.0	0	71	132	72	70
349	54.632	0.156	0.042	0.42	91	-5.47	100	80.0	0	71	131	73	70
350	54.788	0.156	0.042	0.39	91	-5.47	100	80.0	0	71	130	73	69
351	54.945	0.157	0.042	0.40	91	-5.47	100	80.1	0.1	70	130	73	70

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
352	55.100	0.155	0.042	0.39	91	-5.47	99	80.0	-0.1	70	129	73	69
353	55.258	0.158	0.042	0.41	91	-5.47	101	80.0	0	70	128	73	69
354	55.415	0.157	0.042	0.37	91	-5.47	100	80.1	0.1	70	127	72	69
355	55.572	0.157	0.042	0.41	91	-5.47	100	80.0	-0.1	70	126	72	69
356	55.730	0.158	0.042	0.41	91	-5.47	101	79.7	-0.3	70	126	72	69
357	55.889	0.159	0.042	0.39	91	-5.47	101	80.0	0.3	69	124	72	69
358	56.044	0.155	0.042	0.42	91	-5.47	99	80.0	0	69	123	71	69
359	56.200	0.156	0.042	0.39	91	-5.47	99	80.0	0	69	123	71	68
360	56.358	0.158	0.042	0.43	91	-5.47	101	80.0	0	69	123	71	68
361	56.514	0.156	0.042	0.41	91	-5.47	99	80.6	0.6	69	122	71	69
362	56.673	0.159	0.042	0.38	91	-5.47	101	79.9	-0.7	69	121	71	69
363	56.830	0.157	0.042	0.39	91	-5.47	100	80.0	0.1	70	120	72	69
364	56.986	0.156	0.042	0.40	91	-5.47	99	80.0	0	70	119	72	69
365	57.144	0.158	0.042	0.38	91	-5.47	101	80.0	0	70	119	73	69
366	57.299	0.155	0.042	0.41	91	-5.47	99	80.0	0	70	119	73	69
367	57.454	0.155	0.042	0.39	91	-5.47	99	80.1	0.1	70	118	73	69
368	57.612	0.158	0.042	0.41	91	-5.47	101	81.0	0.9	70	117	73	69
369	57.767	0.155	0.042	0.37	91	-5.47	99	80.9	-0.1	69	117	73	69
370	57.923	0.156	0.042	0.42	91	-5.47	99	81.1	0.2	69	116	72	69
371	58.080	0.157	0.042	0.40	91	-5.47	100	80.9	-0.2	69	116	72	68
372	58.237	0.157	0.042	0.41	91	-5.47	100	80.0	-0.9	69	115	72	68
373	58.395	0.158	0.042	0.42	91	-5.47	101	81.1	1.1	69	115	71	69
374	58.552	0.157	0.042	0.43	91	-5.47	100	81.0	-0.1	68	114	71	68
375	58.706	0.154	0.042	0.44	91	-5.47	98	81.0	0	68	113	71	68
376	58.864	0.158	0.042	0.42	91	-5.47	101	81.0	0	68	113	71	68
377	59.022	0.158	0.042	0.38	91	-5.47	101	81.0	0	68	113	71	69
378	59.178	0.156	0.042	0.37	91	-5.47	99	80.9	-0.1	69	112	71	68
379	59.335	0.157	0.042	0.40	91	-5.47	100	81.1	0.2	69	111	72	68
380	59.492	0.157	0.042	0.43	91	-5.47	100	81.0	-0.1	69	111	72	68
381	59.647	0.155	0.042	0.40	91	-5.47	99	80.9	-0.1	69	110	72	69
382	59.804	0.157	0.042	0.40	91	-5.47	100	81.0	0.1	69	110	73	69
383	59.962	0.158	0.042	0.35	91	-5.47	101	81.0	0	70	109	73	69

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
384	60.116	0.154	0.042	0.43	91	-5.47	98	80.9	-0.1	69	109	73	68
385	60.274	0.158	0.042	0.41	91	-5.47	101	81.0	0.1	69	109	73	68
386	60.431	0.157	0.042	0.41	91	-5.47	100	81.0	0	69	108	72	68
387	60.587	0.156	0.042	0.42	91	-5.47	99	80.9	-0.1	69	108	72	68
388	60.745	0.158	0.042	0.42	91	-5.47	101	81.0	0.1	68	107	72	68
389	60.904	0.159	0.042	0.38	91	-5.47	101	81.0	0	68	107	71	68
390	61.059	0.155	0.042	0.42	91	-5.47	99	81.0	0	68	106	71	67
391	61.215	0.156	0.042	0.42	91	-5.47	99	81.0	0	68	106	71	68
392	61.373	0.158	0.042	0.46	91	-5.47	101	80.9	-0.1	68	106	71	68
393	61.528	0.155	0.042	0.37	91	-5.47	99	81.0	0.1	68	105	70	68
394	61.685	0.157	0.042	0.45	91	-5.47	100	81.0	0	69	105	71	68
395	61.841	0.156	0.042	0.39	91	-5.47	99	81.0	0	69	105	72	68
396	61.996	0.155	0.042	0.38	91	-5.47	99	80.9	-0.1	69	104	72	68
397	62.155	0.159	0.042	0.40	91	-5.47	101	81.0	0.1	69	104	72	69
398	62.311	0.156	0.042	0.37	91	-5.47	99	81.1	0.1	69	104	73	68
399	62.466	0.155	0.042	0.33	91	-5.47	99	80.9	-0.2	69	103	72	68
400	62.623	0.157	0.042	0.39	91	-5.47	100	80.9	0	69	103	72	68
401	62.778	0.155	0.042	0.40	91	-5.47	99	81.2	0.3	68	103	72	68
402	62.936	0.158	0.042	0.37	91	-5.47	101	81.0	-0.2	68	103	71	68
403	63.093	0.157	0.042	0.43	91	-5.47	100	81.0	0	68	102	71	68
404	63.250	0.157	0.042	0.43	91	-5.47	100	81.0	0	68	102	71	68
405	63.408	0.158	0.042	0.42	91	-5.47	101	81.5	0.5	68	102	71	67
406	63.566	0.158	0.042	0.37	91	-5.47	101	80.9	-0.6	68	101	70	67
407	63.721	0.155	0.042	0.39	91	-5.47	99	81.0	0.1	68	101	70	67
408	63.879	0.158	0.042	0.40	91	-5.47	101	81.0	0	68	101	70	68
409	64.038	0.159	0.042	0.42	91	-5.47	101	80.9	-0.1	68	101	71	68
410	64.193	0.155	0.042	0.41	91	-5.47	99	81.0	0.1	68	101	71	68
411	64.350	0.157	0.042	0.42	91	-5.47	100	80.8	-0.2	69	100	72	68
412	64.508	0.158	0.042	0.45	91	-5.47	101	81.0	0.2	69	100	72	69
413	64.664	0.156	0.042	0.39	91	-5.47	99	81.0	0	69	99	72	68
414	64.821	0.157	0.042	0.39	91	-5.47	100	81.0	0	68	99	72	68
415	64.978	0.157	0.042	0.37	91	-5.47	100	80.9	-0.1	68	99	72	68

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
416	65.132	0.154	0.042	0.40	91	-5.47	98	81.8	0.9	68	98	71	68
417	65.290	0.158	0.042	0.53	91	-5.47	101	81.0	-0.8	68	98	71	67
418	65.447	0.157	0.042	0.40	91	-5.47	100	80.9	-0.1	67	98	71	67
419	65.600	0.153	0.042	0.40	91	-5.47	99	81.0	0.1	84	163	72	67
420	65.756	0.156	0.042	0.43	91	-5.47	100	80.1	-0.9	80	178	71	67
421	65.913	0.157	0.042	0.38	91	-5.47	101	80.0	-0.1	81	185	71	67
422	66.067	0.154	0.042	0.41	91	-5.47	99	80.0	0	82	191	71	68
423	66.223	0.156	0.042	0.37	91	-5.47	101	80.1	0.1	84	197	71	68
424	66.380	0.157	0.042	0.45	90	-5.47	102	78.9	-1.2	85	202	72	67
425	66.534	0.154	0.042	0.43	90	-5.47	100	79.0	0.1	86	208	73	68
426	66.691	0.157	0.042	0.41	90	-5.47	102	78.0	-1	87	214	73	68
427	66.848	0.157	0.042	0.36	90	-5.47	102	76.9	-1.1	87	220	74	68
428	67.003	0.155	0.042	0.39	90	-5.47	101	77.0	0.1	88	225	74	68
429	67.159	0.156	0.042	0.41	90	-5.47	101	76.0	-1	88	230	74	68
430	67.314	0.155	0.042	0.36	90	-5.47	101	75.0	-1	88	235	74	68
431	67.468	0.154	0.042	0.41	90	-5.47	100	74.0	-1	89	239	74	68
432	67.622	0.154	0.042	0.42	90	-5.47	100	74.0	0	89	243	73	67
433	67.779	0.157	0.042	0.40	90	-5.47	102	73.0	-1	89	247	73	67
434	67.936	0.157	0.042	0.39	90	-5.47	102	72.5	-0.5	90	250	73	67
435	68.091	0.155	0.042	0.43	90	-5.47	101	71.0	-1.5	90	254	73	66
436	68.248	0.157	0.042	0.37	90	-5.47	102	69.9	-1.1	90	257	73	67
437	68.405	0.157	0.042	0.40	90	-5.47	102	68.9	-1	91	260	73	67
438	68.558	0.153	0.042	0.40	90	-5.47	100	68.0	-0.9	91	263	73	68
439	68.714	0.156	0.042	0.38	90	-5.47	102	67.7	-0.3	92	265	74	68
440	68.870	0.156	0.042	0.38	90	-5.47	102	66.2	-1.5	92	267	74	68
441	69.025	0.155	0.042	0.28	90	-5.47	101	65.1	-1.1	92	268	74	68
442	69.181	0.156	0.042	0.39	90	-5.47	102	64.0	-1.1	93	270	75	69
443	69.338	0.157	0.042	0.41	90	-5.47	102	63.1	-0.9	93	272	75	69
444	69.493	0.155	0.042	0.42	90	-5.47	101	63.0	-0.1	94	273	76	69
445	69.649	0.156	0.042	0.42	90	-5.47	102	62.0	-1	94	275	76	69
446	69.807	0.158	0.042	0.39	90	-5.47	101	62.2	0.2	76	265	75	68
447	69.964	0.157	0.042	0.40	90	-5.47	100	60.0	-2.2	72	252	74	68

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
448	70.120	0.156	0.042	0.43	90	-5.47	100	59.1	-0.9	71	241	74	68
449	70.278	0.158	0.042	0.42	90	-5.47	101	59.0	-0.1	70	231	73	67
450	70.435	0.157	0.042	0.39	90	-5.47	100	59.0	0	69	223	73	67
451	70.591	0.156	0.042	0.40	90	-5.47	100	58.0	-1	69	216	73	67
452	70.748	0.157	0.042	0.38	90	-5.47	100	57.9	-0.1	68	210	72	67
453	70.904	0.156	0.042	0.41	90	-5.47	99	58.0	0.1	68	205	72	67
454	71.060	0.156	0.042	0.44	90	-5.47	99	58.0	0	68	200	71	67
455	71.220	0.160	0.042	0.44	90	-5.47	102	58.0	0	68	196	71	67
456	71.375	0.155	0.042	0.39	90	-5.47	99	58.0	0	68	193	72	68
457	71.532	0.157	0.042	0.39	90	-5.47	100	58.1	0.1	68	189	72	68
458	71.688	0.156	0.042	0.39	90	-5.47	100	58.0	-0.1	69	186	72	68
459	71.843	0.155	0.042	0.41	90	-5.47	99	58.0	0	69	183	73	68
460	72.000	0.157	0.042	0.42	90	-5.47	100	58.0	0	69	181	73	69
461	72.158	0.158	0.042	0.42	90	-5.47	101	58.0	0	69	178	73	68
462	72.315	0.157	0.042	0.43	90	-5.47	100	58.0	0	69	175	74	69
463	72.473	0.158	0.042	0.40	90	-5.47	101	58.0	0	69	173	73	68
464	72.632	0.159	0.042	0.43	90	-5.47	101	58.0	0	68	171	73	67
465	72.788	0.156	0.042	0.44	90	-5.47	99	58.0	0	68	169	72	67
466	72.946	0.158	0.042	0.38	90	-5.47	101	58.0	0	68	167	72	68
467	73.103	0.157	0.042	0.37	90	-5.47	100	58.0	0	68	165	72	67
468	73.260	0.157	0.042	0.43	90	-5.47	100	57.8	-0.2	68	163	71	67
469	73.420	0.160	0.042	0.43	90	-5.47	102	58.0	0.2	68	161	71	67
470	73.577	0.157	0.042	0.40	90	-5.47	100	58.0	0	67	160	71	67
471	73.732	0.155	0.042	0.39	90	-5.47	99	57.9	-0.1	67	158	70	66
472	73.891	0.159	0.042	0.43	90	-5.47	101	58.0	0.1	67	156	70	67
473	74.046	0.155	0.042	0.44	90	-5.47	99	58.0	0	68	155	71	67
474	74.202	0.156	0.042	0.45	90	-5.47	99	57.9	-0.1	68	153	71	68
475	74.361	0.159	0.042	0.38	90	-5.47	101	58.0	0.1	68	152	71	68
476	74.517	0.156	0.042	0.39	90	-5.47	99	58.0	0	68	150	72	68
477	74.673	0.156	0.042	0.40	90	-5.47	100	58.0	0	69	149	72	67
478	74.831	0.158	0.042	0.43	90	-5.47	101	58.0	0	69	148	72	69
479	74.985	0.154	0.042	0.40	90	-5.47	98	58.0	0	69	146	73	68

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
480	75.143	0.158	0.042	0.45	90	-5.47	101	58.0	0	69	145	73	69
481	75.300	0.157	0.042	0.41	90	-5.47	100	58.7	0.7	69	143	73	68
482	75.456	0.156	0.042	0.39	90	-5.47	99	59.0	0.3	68	142	72	68
483	75.613	0.157	0.042	0.40	90	-5.47	100	58.0	-1	68	141	72	68
484	75.770	0.157	0.042	0.38	90	-5.47	100	57.9	-0.1	68	140	72	67
485	75.924	0.154	0.042	0.38	90	-5.47	98	58.4	0.5	68	139	71	68
486	76.082	0.158	0.042	0.40	90	-5.47	101	58.0	-0.4	68	137	71	67
487	76.239	0.157	0.042	0.43	90	-5.47	100	58.9	0.9	67	136	71	67
488	76.395	0.156	0.042	0.43	90	-5.47	99	59.6	0.7	67	135	71	67
489	76.553	0.158	0.042	0.40	90	-5.47	101	59.0	-0.6	67	134	70	67
490	76.711	0.158	0.042	0.43	90	-5.47	101	58.9	-0.1	67	133	70	68
491	76.866	0.155	0.042	0.39	90	-5.47	99	59.0	0.1	68	132	70	67
492	77.022	0.156	0.042	0.41	90	-5.47	99	59.0	0	68	131	71	68
493	77.180	0.158	0.042	0.42	90	-5.47	101	59.0	0	68	131	71	68
494	77.336	0.156	0.042	0.40	90	-5.47	99	59.0	0	68	130	72	68
495	77.493	0.157	0.042	0.43	90	-5.47	100	59.1	0.1	68	129	72	68
496	77.651	0.158	0.042	0.42	90	-5.47	101	58.9	-0.2	68	127	72	68
497	77.806	0.155	0.042	0.43	90	-5.47	99	59.0	0.1	69	127	72	69
498	77.964	0.158	0.042	0.40	90	-5.47	101	59.0	0	69	126	73	69
499	78.121	0.157	0.042	0.43	90	-5.47	100	58.9	-0.1	69	125	73	68
500	78.277	0.156	0.042	0.40	89	-5.47	100	58.9	0	68	124	73	67
501	78.434	0.157	0.042	0.37	89	-5.47	100	58.7	-0.2	68	124	72	68
502	78.592	0.158	0.042	0.44	89	-5.47	101	59.0	0.3	68	123	72	67
503	78.747	0.155	0.042	0.37	89	-5.47	99	59.0	0	67	122	71	67
504	78.904	0.157	0.042	0.42	89	-5.47	100	59.0	0	67	121	71	66
505	79.061	0.157	0.042	0.37	89	-5.47	100	58.9	-0.1	67	121	71	66
506	79.216	0.155	0.042	0.41	89	-5.47	99	59.0	0.1	67	120	70	66
507	79.375	0.159	0.042	0.36	89	-5.47	101	59.0	0	67	119	70	67
508	79.532	0.157	0.042	0.43	89	-5.47	100	58.9	-0.1	67	118	70	66
509	79.689	0.157	0.042	0.39	89	-5.47	100	59.0	0.1	67	118	70	66
510	79.847	0.158	0.042	0.38	89	-5.47	101	59.0	0	67	117	70	66
511	80.004	0.157	0.042	0.44	89	-5.47	100	59.0	0	68	116	71	67

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
512	80.161	0.157	0.042	0.40	89	-5.47	100	58.9	-0.1	68	116	71	67
513	80.319	0.158	0.042	0.39	89	-5.47	101	59.0	0.1	68	116	71	67
514	80.474	0.155	0.042	0.42	89	-5.47	99	59.0	0	68	115	72	68
515	80.630	0.156	0.042	0.40	89	-5.47	100	58.9	-0.1	68	115	72	67
516	80.787	0.157	0.042	0.40	89	-5.47	100	59.0	0.1	67	114	71	67
517	80.943	0.156	0.042	0.42	89	-5.47	100	59.0	0	67	113	71	66
518	81.099	0.156	0.042	0.40	89	-5.47	100	59.0	0	67	113	71	66
519	81.257	0.158	0.042	0.40	89	-5.47	101	59.0	0	67	112	70	66
520	81.413	0.156	0.042	0.43	89	-5.47	100	58.8	-0.2	67	111	70	66
521	81.569	0.156	0.042	0.41	89	-5.47	99	58.9	0.1	66	111	70	66
522	81.727	0.158	0.042	0.40	89	-5.47	101	59.0	0.1	66	111	69	66
523	81.883	0.156	0.042	0.44	89	-5.47	99	59.0	0	66	110	69	67
524	82.040	0.157	0.042	0.44	89	-5.47	100	59.0	0	67	110	69	67
525	82.198	0.158	0.042	0.44	89	-5.47	101	59.0	0	67	110	69	67
526	82.354	0.156	0.042	0.44	89	-5.47	100	59.0	0	67	110	70	67
527	82.512	0.158	0.042	0.40	89	-5.47	101	58.9	-0.1	67	108	71	67
528	82.669	0.157	0.042	0.41	89	-5.47	100	59.0	0.1	68	108	71	67
529	82.825	0.156	0.042	0.41	89	-5.47	100	59.2	0.2	68	108	71	67
530	82.981	0.156	0.042	0.43	89	-5.47	100	60.0	0.8	68	107	72	67
531	83.138	0.157	0.042	0.37	89	-5.47	100	59.5	-0.5	67	107	71	67
532	83.295	0.157	0.042	0.38	89	-5.47	100	60.0	0.5	67	107	71	67
533	83.451	0.156	0.042	0.40	89	-5.47	100	60.0	0	67	106	71	67
534	83.609	0.158	0.042	0.39	89	-5.47	101	60.0	0	67	106	70	67
535	83.765	0.156	0.042	0.43	89	-5.47	100	60.0	0	67	105	71	67
536	83.922	0.157	0.042	0.41	89	-5.47	100	60.0	0	68	105	71	67
537	84.078	0.156	0.042	0.42	89	-5.47	100	60.0	0	68	104	71	67
538	84.233	0.155	0.042	0.44	89	-5.47	99	60.0	0	68	104	72	67
539	84.387	0.154	0.042	0.43	89	-5.47	98	59.9	-0.1	68	103	72	67
540	84.544	0.157	0.042	0.42	89	-5.47	100	60.0	0.1	68	103	72	67
541	84.700	0.156	0.042	0.40	89	-5.47	100	60.0	0	68	103	72	67
542	84.855	0.155	0.042	0.42	89	-5.47	99	59.8	-0.2	68	102	73	67
543	85.013	0.158	0.042	0.39	89	-5.47	101	60.0	0.2	68	102	73	67

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
544	85.168	0.155	0.042	0.40	89	-5.47	99	60.0	0	68	101	73	67
545	85.323	0.155	0.042	0.40	89	-5.47	99	60.0	0	68	101	73	68
546	85.480	0.157	0.042	0.38	89	-5.47	100	60.0	0	68	101	73	68
547	85.635	0.155	0.042	0.44	89	-5.47	99	59.9	-0.1	68	101	73	68
548	85.788	0.153	0.042	0.37	89	-5.47	98	60.0	0.1	68	101	73	68
549	85.945	0.157	0.042	0.45	89	-5.47	100	60.0	0	69	101	73	68
550	86.102	0.157	0.042	0.45	89	-5.47	100	60.0	0	68	100	74	69
551	86.256	0.154	0.042	0.41	89	-5.47	98	60.0	0	68	100	74	68
552	86.412	0.156	0.042	0.41	89	-5.47	100	59.9	-0.1	68	100	74	67
553	86.568	0.156	0.042	0.41	89	-5.47	100	60.0	0.1	69	99	74	68
554	86.723	0.155	0.042	0.45	89	-5.47	99	60.1	0.1	69	99	74	68
555	86.880	0.157	0.042	0.40	89	-5.47	100	60.0	-0.1	68	99	74	68
556	87.037	0.157	0.042	0.39	89	-5.47	100	59.2	-0.8	69	98	74	68
557	87.193	0.156	0.042	0.38	89	-5.47	100	60.0	0.8	69	98	74	68
558	87.349	0.156	0.042	0.40	89	-5.47	100	60.0	0	69	98	74	68
559	87.506	0.157	0.042	0.41	89	-5.47	100	60.4	0.4	69	97	74	68
560	87.661	0.155	0.042	0.42	89	-5.47	99	60.0	-0.4	69	98	74	68
561	87.816	0.155	0.042	0.37	89	-5.47	99	60.0	0	69	97	74	68
562	87.973	0.157	0.042	0.43	89	-5.47	100	60.0	0	69	97	74	69
563	88.129	0.156	0.042	0.42	89	-5.47	100	60.3	0.3	69	97	74	69
564	88.284	0.155	0.042	0.38	89	-5.47	99	60.0	-0.3	69	97	74	68
565	88.441	0.157	0.042	0.38	89	-5.47	100	59.9	-0.1	69	96	74	68
566	88.597	0.156	0.042	0.40	89	-5.47	100	60.0	0.1	69	96	74	69
567	88.750	0.153	0.042	0.37	89	-5.47	98	60.1	0.1	69	95	74	68
568	88.905	0.155	0.042	0.40	89	-5.47	99	59.9	-0.2	69	95	74	69
569	89.061	0.156	0.042	0.43	89	-5.47	100	60.0	0.1	69	95	74	68
570	89.216	0.155	0.042	0.39	89	-5.47	99	60.0	0	69	95	74	68
571	89.372	0.156	0.042	0.40	89	-5.47	100	60.0	0	69	95	74	68
572	89.531	0.159	0.042	0.43	89	-5.47	102	60.0	0	69	94	75	69
573	89.686	0.155	0.042	0.40	89	-5.47	99	60.0	0	69	95	75	68
574	89.841	0.155	0.042	0.38	89	-5.47	99	60.0	0	69	94	75	68
575	89.997	0.156	0.042	0.44	89	-5.47	100	60.0	0	69	95	75	68

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
576	90.153	0.156	0.042	0.46	89	-5.47	100	60.5	0.5	69	95	75	68
577	90.306	0.153	0.042	0.42	89	-5.47	98	60.0	-0.5	69	94	74	68
578	90.463	0.157	0.042	0.38	89	-5.47	100	59.6	-0.4	69	95	74	69
579	90.620	0.157	0.042	0.42	89	-5.47	100	60.1	0.5	69	94	75	68
580	90.774	0.154	0.042	0.41	89	-5.47	98	60.0	-0.1	69	94	75	68
581	90.930	0.156	0.042	0.44	89	-5.47	101	60.0	0	85	153	76	69
582	91.086	0.156	0.042	0.38	89	-5.47	101	60.0	0	81	173	75	69
583	91.241	0.155	0.042	0.43	89	-5.47	100	59.0	-1	81	182	76	69
584	91.394	0.153	0.042	0.39	89	-5.47	99	59.0	0	83	191	76	68
585	91.551	0.157	0.042	0.43	89	-5.47	102	58.0	-1	84	199	75	68
586	91.708	0.157	0.042	0.42	89	-5.47	102	57.9	-0.1	85	206	75	69
587	91.862	0.154	0.042	0.41	89	-5.47	100	56.9	-1	86	212	75	69
588	92.018	0.156	0.042	0.42	89	-5.47	101	57.0	0.1	87	218	75	68
589	92.176	0.158	0.042	0.40	89	-5.47	103	56.1	-0.9	88	223	75	70
590	92.331	0.155	0.042	0.38	89	-5.47	101	55.6	-0.5	88	227	75	69
591	92.486	0.155	0.042	0.42	89	-5.47	101	55.0	-0.6	89	231	75	70
592	92.641	0.155	0.042	0.38	89	-5.47	101	54.3	-0.7	89	234	75	69
593	92.798	0.157	0.042	0.40	89	-5.47	102	53.9	-0.4	90	237	75	71
594	92.950	0.152	0.042	0.42	89	-5.47	99	53.0	-0.9	90	239	75	69
595	93.105	0.155	0.042	0.40	89	-5.47	101	51.9	-1.1	90	242	75	69
596	93.261	0.156	0.042	0.44	89	-5.47	102	51.9	0	91	244	75	70
597	93.417	0.156	0.042	0.40	89	-5.47	102	50.9	-1	91	246	75	70
598	93.571	0.154	0.042	0.37	89	-5.47	100	49.9	-1	91	248	75	70
599	93.727	0.156	0.042	0.37	89	-5.47	102	48.9	-1	92	251	75	70
600	93.882	0.155	0.042	0.42	89	-5.47	101	49.0	0.1	92	253	75	70
601	94.035	0.153	0.042	0.42	89	-5.47	100	47.9	-1.1	92	255	75	70
602	94.190	0.155	0.042	0.41	89	-5.47	101	46.5	-1.4	93	257	75	69
603	94.346	0.156	0.042	0.41	89	-5.47	102	45.3	-1.2	93	259	75	69
604	94.502	0.156	0.042	0.41	89	-5.47	102	44.9	-0.4	93	261	75	70
605	94.655	0.153	0.042	0.41	89	-5.47	100	43.8	-1.1	93	263	75	69
606	94.810	0.155	0.042	0.40	89	-5.47	101	43.9	0.1	92	264	75	69
607	94.966	0.156	0.042	0.40	89	-5.47	100	42.9	-1	76	245	74	70

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
608	95.121	0.155	0.042	0.45	89	-5.47	100	42.9	0	74	233	74	71
609	95.276	0.155	0.042	0.41	89	-5.47	99	41.8	-1.1	73	225	74	70
610	95.433	0.157	0.042	0.43	89	-5.47	101	41.9	0.1	72	219	74	70
611	95.590	0.157	0.042	0.38	89	-5.47	101	41.9	0	72	215	74	70
612	95.745	0.155	0.042	0.43	89	-5.47	99	40.8	-1.1	72	210	73	71
613	95.901	0.156	0.042	0.37	89	-5.47	100	40.8	0	71	206	73	70
614	96.058	0.157	0.042	0.41	89	-5.47	101	40.8	0	71	202	73	70
615	96.213	0.155	0.042	0.41	89	-5.47	99	40.8	0	71	198	73	70
616	96.371	0.158	0.042	0.41	89	-5.47	101	40.9	0.1	71	195	73	71
617	96.528	0.157	0.042	0.39	89	-5.47	101	40.8	-0.1	71	192	73	70
618	96.682	0.154	0.042	0.39	89	-5.47	99	40.8	0	71	189	73	70
619	96.837	0.155	0.042	0.41	89	-5.47	99	40.8	0	71	186	73	70
620	96.994	0.157	0.042	0.40	89	-5.47	101	40.9	0.1	71	184	73	71
621	97.149	0.155	0.042	0.42	89	-5.47	99	40.9	0	71	182	73	70
622	97.302	0.153	0.042	0.38	89	-5.47	98	40.9	0	71	179	73	71
623	97.458	0.156	0.042	0.43	90	-5.47	100	40.9	0	71	178	73	73
624	97.614	0.156	0.042	0.43	90	-5.47	100	40.8	-0.1	71	175	73	72
625	97.768	0.154	0.042	0.43	90	-5.47	98	39.9	-0.9	71	174	72	71
626	97.925	0.157	0.042	0.38	90	-5.47	100	40.9	1	71	172	72	70
627	98.081	0.156	0.042	0.39	90	-5.47	100	40.8	-0.1	71	170	72	71
628	98.235	0.154	0.042	0.41	90	-5.47	98	40.9	0.1	71	169	72	72
629	98.391	0.156	0.042	0.39	90	-5.47	100	39.8	-1.1	71	167	72	71
630	98.547	0.156	0.042	0.40	90	-5.47	100	40.8	1	71	166	72	72
631	98.703	0.156	0.042	0.42	90	-5.47	100	40.1	-0.7	71	164	72	71
632	98.859	0.156	0.042	0.40	90	-5.47	100	39.8	-0.3	71	164	72	72
633	99.015	0.156	0.042	0.35	90	-5.47	100	39.8	0	71	162	72	71
634	99.172	0.157	0.042	0.40	90	-5.47	100	40.8	1	71	160	71	71
635	99.325	0.153	0.042	0.40	90	-5.47	98	40.2	-0.6	71	159	71	71
636	99.482	0.157	0.042	0.43	90	-5.47	100	39.9	-0.3	71	157	71	71
637	99.639	0.157	0.042	0.40	90	-5.47	100	39.8	-0.1	71	156	71	73
638	99.793	0.154	0.042	0.39	90	-5.47	98	40.8	1	71	155	71	73
639	99.949	0.156	0.042	0.50	90	-5.47	100	39.8	-1	71	155	71	70

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
640	100.108	0.159	0.042	0.41	90	-5.47	102	39.8	0	71	155	71	70
641	100.264	0.156	0.042	0.38	90	-5.47	100	39.8	0	70	154	71	70
642	100.418	0.154	0.042	0.42	90	-5.47	98	39.8	0	70	154	71	69
643	100.574	0.156	0.042	0.39	90	-5.47	100	39.8	0	70	154	71	69
644	100.730	0.156	0.042	0.39	90	-5.47	100	39.9	0.1	70	153	71	69
645	100.885	0.155	0.042	0.38	90	-5.47	99	39.8	-0.1	69	152	71	69
646	101.042	0.157	0.042	0.42	90	-5.47	100	39.8	0	69	152	70	69
647	101.200	0.158	0.042	0.43	90	-5.47	101	39.7	-0.1	69	152	70	69
648	101.355	0.155	0.042	0.41	90	-5.47	99	39.8	0.1	69	150	70	69
649	101.511	0.156	0.042	0.39	90	-5.47	100	39.8	0	69	151	70	68
650	101.669	0.158	0.042	0.39	90	-5.47	101	39.8	0	69	149	70	68
651	101.826	0.157	0.042	0.38	90	-5.47	100	39.8	0	69	149	70	68
652	101.981	0.155	0.042	0.38	90	-5.47	99	40.1	0.3	68	148	70	68
653	102.138	0.157	0.042	0.38	90	-5.47	100	39.8	-0.3	68	146	70	68
654	102.296	0.158	0.042	0.44	90	-5.47	101	39.9	0.1	68	145	70	68
655	102.449	0.153	0.042	0.44	90	-5.47	98	39.8	-0.1	68	146	70	68
656	102.607	0.158	0.042	0.39	90	-5.47	101	39.8	0	68	146	70	68
657	102.764	0.157	0.042	0.37	90	-5.47	100	39.8	0	68	146	70	68
658	102.919	0.155	0.042	0.37	90	-5.47	99	39.8	0	68	145	69	68
659	103.076	0.157	0.042	0.39	90	-5.47	100	40.8	1	68	144	69	68
660	103.234	0.158	0.042	0.39	90	-5.47	101	39.8	-1	68	144	69	67
661	103.389	0.155	0.042	0.41	90	-5.47	99	39.8	0	68	142	69	67
662	103.547	0.158	0.042	0.39	90	-5.47	101	39.8	0	68	142	69	68
663	103.706	0.159	0.042	0.34	90	-5.47	101	40.9	1.1	68	143	69	67
664	103.861	0.155	0.042	0.42	90	-5.47	99	39.8	-1.1	68	142	69	67
665	104.017	0.156	0.042	0.43	90	-5.47	99	40.8	1	68	140	69	67
666	104.173	0.156	0.042	0.42	90	-5.47	99	40.9	0.1	68	140	69	68
667	104.330	0.157	0.042	0.43	90	-5.47	100	40.8	-0.1	67	141	69	67
668	104.485	0.155	0.042	0.39	90	-5.47	99	40.8	0	67	140	69	66
669	104.644	0.159	0.042	0.39	90	-5.47	101	40.7	-0.1	67	140	68	67
670	104.803	0.159	0.042	0.39	90	-5.47	101	40.8	0.1	67	139	68	67
671	104.957	0.154	0.042	0.44	90	-5.47	98	40.8	0	67	139	68	67

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
672	105.115	0.158	0.042	0.39	90	-5.47	101	40.8	0	67	140	68	67
673	105.272	0.157	0.042	0.42	90	-5.47	100	39.8	-1	67	140	68	67
674	105.425	0.153	0.042	0.42	90	-5.47	97	40.8	1	67	139	68	67
675	105.583	0.158	0.042	0.43	90	-5.47	101	40.4	-0.4	67	138	68	67
676	105.739	0.156	0.042	0.43	90	-5.47	99	40.8	0.4	67	137	68	67
677	105.894	0.155	0.042	0.40	90	-5.47	99	40.8	0	67	136	68	67
678	106.051	0.157	0.042	0.45	90	-5.47	100	40.8	0	67	136	68	67
679	106.209	0.158	0.042	0.42	90	-5.47	101	40.8	0	67	135	68	67
680	106.364	0.155	0.042	0.40	90	-5.47	99	40.8	0	67	134	68	67
681	106.520	0.156	0.042	0.39	90	-5.47	99	40.8	0	67	135	68	67
682	106.679	0.159	0.042	0.37	90	-5.47	101	40.9	0.1	67	135	68	66
683	106.835	0.156	0.042	0.36	90	-5.47	99	40.7	-0.2	67	135	68	67
684	106.991	0.156	0.042	0.41	90	-5.47	99	40.8	0.1	67	134	68	66
685	107.148	0.157	0.042	0.42	90	-5.47	100	40.8	0	67	134	68	67
686	107.305	0.157	0.042	0.41	90	-5.47	100	40.8	0	67	133	68	66
687	107.462	0.157	0.042	0.42	90	-5.47	100	40.8	0	67	133	68	67
688	107.621	0.159	0.042	0.44	90	-5.47	101	40.9	0.1	67	133	68	67
689	107.778	0.157	0.042	0.39	90	-5.47	100	40.8	-0.1	67	133	67	67

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
0	0.000		0.00	74	-1		70	2.000	6.40	0.35
1	0.137	0.137	1.19	74	-1.38	89	71	2.240	9.17	0.07
2	0.297	0.160	1.10	74	-1.76	104	71	2.240	10.15	0.06
3	0.457	0.160	1.05	74	-1.31	104	71	2.220	10.66	0.03
4	0.615	0.158	1.08	74	-1.31	103	72	2.230	10.47	0.07
5	0.770	0.155	1.05	74	-1.28	101	72	2.250	10.25	0.03
6	0.927	0.157	1.07	74	-1.21	102	72	2.230	9.58	0.07
7	1.091	0.164	1.09	74	-1.09	107	72	2.250	9.56	0.05
8	1.250	0.159	0.94	74	-1.19	104	72	2.240	9.35	0.03
9	1.409	0.159	1.09	74	-1.08	104	73	2.240	9.14	0.09
10	1.570	0.161	1.10	74	-1.11	105	73	2.400	8.89	0.08
11	1.729	0.159	1.09	74	-1.1	104	73	2.240	8.48	0.07
12	1.886	0.157	1.07	74	-1.21	102	73	2.250	8.31	0.08
13	2.045	0.159	1.08	75	-1.19	104	73	2.230	7.95	0.10
14	2.204	0.159	1.01	75	-1.04	104	73	2.260	7.72	0.09
15	2.361	0.157	1.07	75	-1.18	102	73	2.240	7.77	0.07
16	2.522	0.161	1.08	75	-1.08	105	74	2.250	7.88	0.08
17	2.685	0.163	1.08	75	-1.09	106	74	2.230	7.91	0.06
18	2.845	0.160	1.21	76	-1.2	102	73	2.240	6.36	0.14
19	3.007	0.162	1.07	76	-1.05	104	73	2.230	0.84	(0.02)
20	3.166	0.159	1.07	76	-1.08	101	73	2.240	0.32	(0.05)
21	3.328	0.162	1.12	76	-1.19	103	73	2.240	0.24	(0.03)
22	3.492	0.164	1.05	76	-1.05	104	72	2.240	0.12	(0.04)
23	3.652	0.160	1.10	77	-1.08	102	72	2.230	0.40	(0.04)
24	3.813	0.161	1.13	77	-1.05	102	72	2.230	(0.06)	0.00
25	3.973	0.160	1.10	77	-1.11	102	72	2.240	0.01	0.01
26	4.138	0.165	1.17	77	-1.04	105	75	2.250	0.12	(0.03)
27	4.297	0.159	1.09	78	-1.11	101	76	2.240	0.01	(0.03)
28	4.457	0.160	1.06	78	-1.13	101	75	2.240	0.08	0.01
29	4.618	0.161	1.07	78	-1.05	102	74	2.240	0.00	0.00
30	4.777	0.159	1.10	78	-1.2	101	74	2.220	0.09	(0.07)
31	4.938	0.161	1.11	79	-1.15	102	73	2.240	0.04	(0.02)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
32	5.096	0.158	1.07	79	-1.09	100	73	2.240	0.00	(0.06)
33	5.255	0.159	1.10	79	-1.13	101	73	2.230	(0.01)	(0.06)
34	5.416	0.161	1.05	79	-1.12	102	73	2.240	0.04	(0.04)
35	5.578	0.162	1.12	80	-1.2	102	72	2.240	0.10	0.02
36	5.736	0.158	1.05	80	-1.16	100	72	2.240	(0.04)	(0.01)
37	5.895	0.159	1.12	80	-1.1	100	72	2.240	0.04	(0.03)
38	6.053	0.158	1.08	80	-1.04	100	72	2.240	0.18	(0.03)
39	6.213	0.160	1.08	81	-1.04	101	72	2.230	(0.20)	(0.05)
40	6.373	0.160	1.10	81	-1.2	101	72	2.240	(0.03)	0.01
41	6.531	0.158	1.09	81	-1.18	100	72	2.240	0.10	(0.02)
42	6.691	0.160	1.57	81	-1.19	101	71	2.240	(0.07)	0.02
43	6.851	0.160	1.07	82	-1.08	101	71	2.240	0.00	(0.03)
44	7.011	0.160	1.88	82	-1.03	101	71	2.240	0.01	(0.03)
45	7.173	0.162	1.07	82	-1.07	102	71	2.230	(0.01)	(0.01)
46	7.332	0.159	1.05	82	-1.05	100	71	2.230	(0.04)	0.01
47	7.490	0.158	1.11	83	-1.15	99	71	2.240	(0.01)	(0.04)
48	7.651	0.161	1.10	83	-1.05	101	71	2.230	(0.02)	(0.01)
49	7.810	0.159	1.11	83	-1.18	100	71	2.250	0.07	(0.08)
50	7.970	0.160	1.06	83	-1.07	100	71	2.240	(0.02)	(0.02)
51	8.132	0.162	1.41	84	-1.11	102	71	2.240	(0.07)	(0.01)
52	8.289	0.157	1.04	84	-1.12	98	71	2.220	0.06	(0.04)
53	8.448	0.159	1.32	84	-1.19	100	71	2.240	(0.07)	(0.02)
54	8.610	0.162	1.08	84	-1.2	102	70	2.290	(0.04)	(0.01)
55	8.769	0.159	1.10	84	-1.2	100	70	2.230	0.00	(0.07)
56	8.931	0.162	1.09	85	-1.07	101	70	2.260	(0.02)	(0.03)
57	9.091	0.160	1.08	85	-1.05	100	70	2.240	0.00	(0.06)
58	9.250	0.159	0.30	85	-1.13	99	70	2.240	(0.02)	(0.02)
59	9.411	0.161	1.09	85	-1.03	101	70	2.250	0.02	(0.05)
60	9.570	0.159	1.10	85	-1.18	99	70	2.250	0.02	(0.11)
61	9.726	0.156	1.09	86	-1.19	97	70	2.220	0.08	(0.07)
62	9.888	0.162	1.07	86	-1.2	101	70	2.250	(0.02)	(0.01)
63	10.049	0.161	1.10	86	-1.16	101	70	2.230	0.06	(0.01)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
64	10.205	0.156	1.09	86	-1.14	97	70	2.240	0.02	(0.03)
65	10.366	0.161	1.04	86	-1.03	101	70	2.240	0.07	(0.04)
66	10.526	0.160	1.06	87	-1.11	100	70	2.230	(0.01)	0.02
67	10.684	0.158	1.09	87	-1.07	98	70	2.230	0.06	(0.03)
68	10.844	0.160	1.09	87	-1.09	100	70	2.280	0.00	(0.04)
69	11.002	0.158	1.06	87	-1.19	98	70	2.230	(0.01)	(0.02)
70	11.160	0.158	1.09	87	-1.04	98	70	2.240	(0.11)	(0.02)
71	11.320	0.160	1.06	87	-1.05	100	70	2.240	0.10	(0.05)
72	11.479	0.159	1.08	88	-1.08	99	70	2.230	(0.07)	(0.08)
73	11.639	0.160	1.10	88	-1.16	100	70	2.240	0.09	(0.06)
74	11.799	0.160	1.08	88	-1.04	100	70	2.240	0.04	(0.04)
75	11.957	0.158	1.05	88	-1.11	98	70	2.240	0.05	(0.02)
76	12.120	0.163	1.08	88	-1.04	101	70	2.230	0.01	(0.01)
77	12.282	0.162	1.08	88	-1.13	101	70	2.240	(0.10)	(0.02)
78	12.439	0.157	1.06	88	-1.11	98	70	2.220	0.07	(0.04)
79	12.601	0.162	1.03	89	-1.09	100	70	2.240	0.05	(0.07)
80	12.760	0.159	0.72	89	-1.04	99	70	2.230	0.04	(0.07)
81	12.921	0.161	1.05	89	-1.14	100	69	2.240	(0.09)	(0.02)
82	13.081	0.160	1.08	89	-1.04	99	69	2.300	0.09	0.00
83	13.241	0.160	1.09	89	-1.07	99	69	2.250	(0.04)	(0.01)
84	13.400	0.159	1.07	89	-1.08	99	69	2.240	0.14	(0.08)
85	13.562	0.162	0.98	89	-1.14	100	69	2.240	0.02	(0.03)
86	13.719	0.157	1.11	89	-1.14	97	69	2.240	0.08	(0.07)
87	13.881	0.162	1.09	90	-1.12	100	69	2.270	(0.04)	(0.03)
88	14.043	0.162	1.36	90	-1.03	100	69	2.280	0.05	(0.02)
89	14.202	0.159	1.08	90	-1.16	98	69	2.240	0.13	(0.02)
90	14.363	0.161	0.84	90	-1.18	100	69	2.240	0.04	(0.04)
91	14.524	0.161	1.11	90	-1.19	100	69	2.240	0.02	(0.02)
92	14.682	0.158	1.10	90	-1.18	98	69	2.230	0.00	(0.04)
93	14.844	0.162	1.10	90	-1.04	100	69	2.250	0.09	0.03
94	15.003	0.159	1.84	90	-1.18	98	69	2.230	(0.10)	(0.06)
95	15.164	0.161	1.08	90	-1.14	100	69	2.240	(0.04)	(0.01)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
96	15.324	0.160	1.08	90	-1.11	99	69	2.230	0.06	(0.05)
97	15.483	0.159	1.09	90	-1.03	98	69	2.290	(0.06)	(0.03)
98	15.642	0.159	1.04	91	-1.18	98	69	2.240	(0.03)	(0.01)
99	15.802	0.160	0.92	91	-1.06	99	69	2.250	(0.05)	(0.09)
100	15.959	0.157	1.09	91	-1.2	97	69	2.240	(0.08)	0.00
101	16.122	0.163	1.07	91	-1.11	101	69	2.200	0.09	(0.03)
102	16.282	0.160	1.10	91	-1.14	99	69	2.250	0.03	(0.01)
103	16.442	0.160	1.05	91	-1.14	99	69	2.240	(0.17)	(0.08)
104	16.602	0.160	1.09	91	-1.15	99	69	2.240	(0.17)	(0.09)
105	16.761	0.159	0.32	91	-1.18	98	69	2.250	(0.01)	(0.05)
106	16.922	0.161	1.05	91	-1.1	100	69	2.240	0.03	0.01
107	17.082	0.160	1.08	91	-1.08	99	69	2.250	(0.06)	(0.02)
108	17.240	0.158	1.06	91	-1.03	98	69	2.230	(0.10)	(0.02)
109	17.401	0.161	1.12	91	-1.07	100	69	2.230	0.03	(0.04)
110	17.560	0.159	1.08	91	-1.07	98	69	2.230	0.04	(0.03)
111	17.718	0.158	1.00	91	-1.2	98	69	2.080	(0.01)	(0.02)
112	17.880	0.162	1.12	92	-1.2	100	69	2.240	0.03	(0.06)
113	18.041	0.161	1.05	92	-1.03	99	69	2.240	0.00	(0.03)
114	18.200	0.159	1.05	92	-1.03	98	69	2.240	(0.08)	0.01
115	18.361	0.161	1.11	92	-1.03	99	69	2.240	(0.03)	(0.03)
116	18.522	0.161	1.08	92	-1.2	99	69	2.240	0.03	0.02
117	18.682	0.160	1.04	92	-1.03	99	69	2.240	(0.02)	0.04
118	18.843	0.161	1.09	92	-1.03	99	70	2.240	(0.05)	0.03
119	19.002	0.159	1.03	92	-1.13	98	71	2.240	(0.07)	(0.05)
120	19.162	0.160	1.09	92	-1.06	99	71	2.230	0.00	(0.01)
121	19.323	0.161	1.08	92	-1.08	99	71	2.240	0.05	(0.08)
122	19.482	0.159	1.06	92	-1.05	98	71	2.230	0.15	(0.02)
123	19.643	0.161	0.97	92	-1.18	99	70	2.240	0.03	(0.05)
124	19.801	0.158	1.15	92	-1.15	97	70	2.230	(0.01)	(0.04)
125	19.962	0.161	1.04	92	-1.2	99	70	2.250	(0.06)	(0.02)
126	20.122	0.160	1.10	92	-1.03	99	70	2.240	(0.03)	(0.04)
127	20.282	0.160	1.10	92	-1.19	99	70	2.240	(0.01)	(0.05)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
128	20.445	0.163	1.35	92	-1.09	101	70	2.230	(0.01)	(0.05)
129	20.606	0.161	1.02	92	-1.17	99	70	2.210	(0.02)	(0.14)
130	20.766	0.160	1.07	92	-1.08	99	70	2.230	0.04	(0.03)
131	20.928	0.162	1.06	92	-1.19	100	70	2.230	0.02	(0.06)
132	21.089	0.161	1.18	92	-1.18	99	70	2.240	(0.04)	(0.02)
133	21.249	0.160	1.07	92	-1.19	100	71	2.300	5.12	0.47
134	21.410	0.161	0.80	92	-1.19	100	70	2.240	0.28	0.02
135	21.568	0.158	1.05	92	-1.12	99	70	2.240	0.56	0.05
136	21.731	0.163	1.11	93	-1.09	102	70	2.230	1.11	0.15
137	21.892	0.161	1.04	93	-1.2	101	71	2.250	3.05	0.40
138	22.052	0.160	1.07	93	-1.14	100	71	2.240	6.77	0.18
139	22.214	0.162	1.05	93	-1.08	101	71	2.240	8.36	0.05
140	22.375	0.161	1.10	93	-1.12	101	71	2.240	9.44	0.00
141	22.536	0.161	1.07	93	-1.18	101	71	2.240	9.74	0.00
142	22.697	0.161	1.07	93	-1.07	101	71	2.240	9.65	(0.01)
143	22.855	0.158	1.05	93	-1.04	99	72	2.240	9.59	0.14
144	23.014	0.159	1.04	93	-1.09	100	72	2.240	9.31	0.02
145	23.175	0.161	1.08	93	-1.04	101	72	2.240	9.18	(0.14)
146	23.340	0.165	1.09	93	-1.2	104	72	2.240	8.85	0.11
147	23.500	0.160	1.08	93	-1.2	101	72	2.240	8.79	0.08
148	23.660	0.160	1.10	93	-1.03	101	72	2.240	8.50	0.09
149	23.818	0.158	1.24	93	-1.17	99	72	2.250	8.32	0.04
150	23.980	0.162	1.06	93	-1.2	102	73	2.290	7.95	0.05
151	24.143	0.163	0.93	93	-1.12	103	73	2.240	7.56	0.09
152	24.303	0.160	1.05	93	-1.08	101	73	2.250	7.24	0.07
153	24.464	0.161	1.06	93	-1.06	101	73	2.230	6.95	0.11
154	24.628	0.164	1.06	93	-1.04	103	73	2.280	6.81	0.08
155	24.790	0.162	1.15	93	-1.19	102	73	2.240	6.81	0.09
156	24.949	0.159	0.97	93	-1.18	100	73	2.220	6.64	0.08
157	25.110	0.161	1.29	93	-1.18	102	73	2.240	7.03	0.05
158	25.268	0.158	1.05	93	-1.06	98	73	2.230	6.14	0.06
159	25.431	0.163	1.08	93	-1.19	101	73	2.230	0.82	(0.08)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
160	25.589	0.158	1.08	93	-1.18	98	72	2.240	0.49	(0.01)
161	25.749	0.160	1.04	93	-1.06	99	72	2.240	0.40	0.00
162	25.912	0.163	1.08	93	-1.19	100	72	2.220	0.23	(0.01)
163	26.068	0.156	1.13	93	-1.07	96	72	2.240	0.33	0.03
164	26.230	0.162	1.06	93	-1.04	100	72	2.240	0.04	0.02
165	26.391	0.161	0.99	93	-1.04	99	71	2.230	0.56	0.03
166	26.548	0.157	1.08	93	-1.03	97	71	2.240	0.44	0.00
167	26.709	0.161	1.08	93	-1.17	99	71	2.250	0.21	(0.01)
168	26.870	0.161	1.04	93	-1.16	99	71	2.230	0.16	(0.12)
169	27.028	0.158	1.10	93	-1.18	97	71	2.240	(0.07)	(0.02)
170	27.190	0.162	1.03	93	-1.13	100	71	2.230	0.17	(0.03)
171	27.349	0.159	1.06	93	-1.04	98	71	2.240	0.15	(0.04)
172	27.510	0.161	1.07	93	-1.04	99	70	2.240	0.01	0.02
173	27.671	0.161	1.06	93	-1.11	99	70	2.230	0.05	(0.01)
174	27.832	0.161	1.05	93	-1.03	99	70	2.240	(0.23)	(0.03)
175	27.993	0.161	1.11	93	-1.15	99	70	2.240	(0.04)	(0.03)
176	28.155	0.162	1.20	93	-1.2	100	70	2.230	(0.30)	(0.07)
177	28.312	0.157	0.96	93	-1.11	97	70	2.250	(0.03)	(0.05)
178	28.473	0.161	1.10	94	-1.19	99	70	2.240	0.00	(0.02)
179	28.633	0.160	1.06	94	-1.08	98	70	2.370	(0.03)	(0.02)
180	28.791	0.158	1.13	94	-1.04	97	70	2.250	(0.04)	(0.07)
181	28.953	0.162	1.09	94	-1.19	100	70	2.240	0.01	(0.01)
182	29.112	0.159	1.09	94	-1.19	98	70	2.240	0.00	(0.03)
183	29.273	0.161	1.12	94	-1.09	99	69	2.250	(0.08)	(0.03)
184	29.436	0.163	1.11	94	-1.05	100	69	2.240	(0.09)	(0.05)
185	29.596	0.160	1.11	94	-1.19	98	69	2.220	(0.08)	(0.03)
186	29.759	0.163	1.06	94	-1.08	100	69	2.240	0.01	0.06
187	29.920	0.161	0.97	94	-1.07	99	70	2.230	(0.02)	(0.04)
188	30.078	0.158	1.05	94	-1.14	97	71	2.280	(0.06)	(0.01)
189	30.238	0.160	1.03	94	-1.07	98	72	2.250	(0.09)	(0.02)
190	30.396	0.158	1.29	94	-1.09	97	72	2.290	0.06	(0.06)
191	30.558	0.162	1.05	94	-1.05	100	72	2.230	0.01	(0.07)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
192	30.720	0.162	1.04	94	-1.2	100	72	2.240	(0.05)	(0.09)
193	30.878	0.158	1.07	94	-1.15	97	71	2.240	(0.06)	(0.03)
194	31.040	0.162	0.99	94	-1.19	100	71	2.240	0.01	(0.04)
195	31.200	0.160	1.06	94	-1.05	98	71	2.240	(0.01)	(0.04)
196	31.359	0.159	1.06	94	-1.18	98	71	2.240	0.00	(0.03)
197	31.521	0.162	1.10	94	-1.04	100	71	2.240	0.01	(0.02)
198	31.683	0.162	1.06	94	-1.03	100	71	2.240	(0.06)	(0.04)
199	31.841	0.158	1.05	94	-1.18	97	70	2.240	(0.09)	0.07
200	32.002	0.161	1.08	94	-1.04	99	70	2.240	(0.01)	(0.03)
201	32.162	0.160	1.09	94	-1.15	98	70	2.240	(0.06)	(0.03)
202	32.323	0.161	1.06	94	-1.13	99	70	2.250	(0.16)	(0.04)
203	32.484	0.161	1.07	94	-1.03	99	70	2.240	(0.01)	0.01
204	32.644	0.160	1.07	94	-1.19	98	70	2.230	(0.24)	(0.07)
205	32.805	0.161	1.08	94	-1.06	99	70	2.240	(0.06)	(0.02)
206	32.968	0.163	1.04	94	-1.05	100	70	2.240	0.03	(0.05)
207	33.126	0.158	1.06	94	-1.12	97	70	2.210	0.03	(0.04)
208	33.287	0.161	1.07	94	-1.07	99	70	2.240	0.05	(0.01)
209	33.448	0.161	1.05	94	-1.13	99	69	2.230	(0.03)	(0.09)
210	33.608	0.160	1.06	94	-1.11	98	69	2.240	(0.17)	(0.05)
211	33.769	0.161	1.07	94	-1.03	99	69	2.240	0.04	0.03
212	33.928	0.159	1.08	94	-1.18	98	69	2.240	(0.02)	(0.06)
213	34.088	0.160	1.06	94	-1.05	98	69	2.140	(0.06)	(0.01)
214	34.248	0.160	1.08	94	-1.04	98	69	2.240	0.06	(0.13)
215	34.409	0.161	1.12	94	-1.09	99	69	2.170	0.04	(0.05)
216	34.568	0.159	1.06	94	-1.08	98	69	2.250	(0.06)	(0.05)
217	34.729	0.161	1.05	94	-1.09	99	69	2.220	(0.07)	(0.03)
218	34.890	0.161	0.99	94	-1.03	99	69	2.240	(0.02)	(0.08)
219	35.053	0.163	1.06	94	-1.17	100	69	2.250	(0.01)	(0.06)
220	35.213	0.160	1.59	94	-1.03	98	69	2.190	(0.03)	(0.29)
221	35.375	0.162	1.02	94	-1.08	99	69	2.240	(0.10)	0.01
222	35.536	0.161	1.14	94	-1.03	99	69	2.250	(0.08)	(0.03)
223	35.695	0.159	1.09	94	-1.15	98	68	2.260	(0.03)	0.00

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
224	35.853	0.158	1.04	94	-1.03	97	68	2.240	(0.06)	0.00
225	36.017	0.164	1.07	94	-1.09	101	68	2.240	(0.06)	(0.05)
226	36.177	0.160	1.06	94	-1.04	98	68	2.240	(0.03)	(0.05)
227	36.340	0.163	1.09	94	-1.17	100	68	2.280	(0.03)	(0.03)
228	36.503	0.163	1.05	94	-1.05	100	68	2.230	(0.22)	(0.08)
229	36.661	0.158	1.08	94	-1.18	97	68	2.240	0.00	(0.05)
230	36.823	0.162	1.12	94	-1.04	99	68	2.210	0.02	(0.07)
231	36.983	0.160	1.24	94	-1.04	98	68	2.240	0.00	(0.05)
232	37.142	0.159	1.06	94	-1.06	98	68	2.230	(0.04)	(0.04)
233	37.306	0.164	1.04	94	-1.18	101	68	2.250	0.01	(0.05)
234	37.463	0.157	1.08	94	-1.07	96	68	2.240	(0.13)	(0.03)
235	37.627	0.164	1.25	94	-1.19	101	68	2.240	(0.07)	(0.07)
236	37.790	0.163	1.08	94	-1.12	100	68	2.240	(0.05)	(0.05)
237	37.950	0.160	0.97	94	-1.11	98	68	2.220	(0.02)	(0.09)
238	38.113	0.163	1.02	94	-1.17	100	68	2.230	0.03	(0.06)
239	38.274	0.161	1.00	94	-1.05	99	68	2.230	(0.13)	(0.02)
240	38.436	0.162	1.06	94	-1.03	99	68	2.230	0.01	(0.05)
241	38.598	0.162	1.04	94	-1.1	99	68	2.240	(0.11)	(0.04)
242	38.756	0.158	1.07	94	-1.2	97	68	2.260	0.03	(0.05)
243	38.918	0.162	1.11	94	-1.05	99	68	2.240	(0.03)	(0.04)
244	39.080	0.162	1.04	94	-1.17	99	68	2.240	0.00	(0.31)
245	39.242	0.162	1.03	94	-1.17	99	68	2.230	(0.12)	(0.03)
246	39.402	0.160	1.06	94	-1.12	98	69	2.250	(0.06)	(0.05)
247	39.563	0.161	1.05	94	-1.19	99	70	2.250	(0.03)	(0.01)
248	39.722	0.159	1.09	94	-1.04	98	70	2.250	(0.09)	(0.02)
249	39.883	0.161	1.10	94	-1.12	99	70	2.250	(0.04)	(0.03)
250	40.041	0.158	1.13	94	-1.19	97	70	2.250	0.49	(0.06)
251	40.203	0.162	1.06	94	-1.13	99	70	2.240	(0.08)	(0.06)
252	40.363	0.160	1.04	94	-1.08	98	70	2.320	(0.10)	(0.03)
253	40.522	0.159	1.39	94	-1.07	98	69	2.230	(0.06)	(0.01)
254	40.683	0.161	1.05	94	-1.04	99	69	2.230	(0.08)	(0.03)
255	40.846	0.163	1.12	94	-1.13	100	69	2.260	(0.04)	(0.02)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
256	41.007	0.161	1.10	94	-1.16	99	69	2.230	0.02	(0.03)
257	41.171	0.164	1.02	94	-1.1	101	69	2.240	0.06	(0.05)
258	41.330	0.159	1.20	94	-1.19	98	69	2.230	0.03	(0.08)
259	41.494	0.164	1.08	94	-1.18	101	69	2.230	(0.03)	(0.02)
260	41.654	0.160	1.07	94	-1.08	98	69	2.240	(0.03)	(0.03)
261	41.815	0.161	1.49	94	-1.04	99	69	2.240	0.01	(0.06)
262	41.975	0.160	1.07	94	-1.03	98	69	2.230	0.02	0.00
263	42.135	0.160	1.08	94	-1.03	98	69	2.250	(0.04)	0.00
264	42.295	0.160	1.12	94	-1.04	98	70	2.260	(0.12)	(0.03)
265	42.459	0.164	1.08	94	-1.18	101	71	2.150	(0.06)	(0.05)
266	42.618	0.159	1.09	94	-1.12	98	72	2.220	(0.08)	(0.03)
267	42.779	0.161	1.09	94	-1.07	99	73	2.240	(0.12)	(0.08)
268	42.941	0.162	1.06	94	-1.04	100	73	2.240	(0.10)	(0.03)
269	43.098	0.157	1.04	94	-1.05	97	74	2.240	0.01	(0.09)
270	43.260	0.162	1.02	94	-1.13	100	74	2.240	(0.04)	(0.05)
271	43.421	0.161	0.84	94	-1.19	99	73	2.180	(0.07)	(0.01)
272	43.580	0.159	1.07	94	-1.2	98	73	2.250	(0.04)	(0.03)
273	43.741	0.161	1.09	94	-1.03	99	73	2.250	(0.25)	(0.03)
274	43.901	0.160	1.08	94	-1.06	99	72	2.240	(0.11)	(0.03)
275	44.059	0.158	1.04	94	-1.07	98	74	2.240	0.58	0.04
276	44.219	0.160	1.08	94	-1.19	100	72	2.240	0.35	(0.02)
277	44.379	0.160	1.05	94	-1.15	100	72	2.240	0.85	0.15
278	44.538	0.159	1.05	94	-1.07	99	72	2.240	1.77	0.20
279	44.699	0.161	1.10	94	-1.14	100	73	2.250	2.87	0.21
280	44.858	0.159	1.11	94	-1.19	99	73	2.250	4.40	0.27
281	45.019	0.161	0.67	94	-1.14	101	73	2.250	5.34	0.16
282	45.178	0.159	1.03	94	-1.1	100	74	2.240	6.14	0.14
283	45.337	0.159	1.08	94	-1.04	100	75	2.240	7.02	0.05
284	45.500	0.163	0.73	94	-1.05	102	76	2.240	7.51	0.07
285	45.661	0.161	1.07	94	-1.16	101	76	2.240	7.91	0.02
286	45.820	0.159	0.94	94	-1.1	100	77	2.240	8.12	0.07
287	45.982	0.162	1.07	94	-1.06	102	76	2.240	8.74	0.04

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
288	46.142	0.160	1.20	94	-1.14	100	76	2.280	8.64	0.06
289	46.300	0.158	1.08	94	-1.2	99	76	2.230	8.58	0.08
290	46.462	0.162	1.05	94	-1.18	102	76	2.230	8.68	0.08
291	46.623	0.161	0.98	94	-1.15	101	76	2.150	8.61	0.08
292	46.782	0.159	1.09	94	-1.06	100	76	2.250	8.16	0.07
293	46.944	0.162	1.06	94	-1.09	102	76	2.240	8.19	0.07
294	47.102	0.158	1.06	94	-1.05	99	76	2.240	7.97	0.06
295	47.262	0.160	1.07	94	-1.13	101	75	2.230	7.89	0.12
296	47.423	0.161	1.04	94	-1.03	101	75	2.240	7.77	0.10
297	47.581	0.158	1.07	94	-1.03	99	76	2.230	7.99	0.06
298	47.741	0.160	1.06	94	-1.2	101	76	2.240	7.88	0.11
299	47.905	0.164	0.96	94	-1.06	103	77	2.240	7.82	0.13
300	48.062	0.157	1.48	94	-1.04	99	78	2.230	7.74	0.09
301	48.224	0.162	1.07	94	-1.19	101	78	2.240	7.61	0.09
302	48.389	0.165	1.05	94	-1.07	102	78	2.240	1.30	0.01
303	48.549	0.160	1.07	94	-1.14	99	77	2.240	0.71	0.02
304	48.710	0.161	0.98	94	-1.13	99	76	2.240	0.55	0.02
305	48.873	0.163	1.07	94	-1.19	100	76	2.230	0.38	0.05
306	49.033	0.160	1.00	94	-1.04	99	75	2.230	0.34	0.04
307	49.196	0.163	1.08	94	-1.1	100	75	2.240	0.28	0.03
308	49.358	0.162	1.06	94	-1.13	100	75	2.240	0.13	0.14
309	49.517	0.159	1.06	94	-1.18	98	74	2.240	0.22	0.04
310	49.677	0.160	1.05	94	-1.14	98	74	2.240	0.09	0.02
311	49.837	0.160	0.91	94	-1.09	98	74	2.250	0.11	(0.01)
312	49.997	0.160	0.93	94	-1.19	98	73	2.240	0.12	0.01
313	50.158	0.161	1.07	94	-1.05	99	74	2.240	0.07	0.01
314	50.318	0.160	1.09	94	-1.15	99	74	2.230	(0.02)	0.02
315	50.479	0.161	1.06	94	-1.05	99	75	2.240	0.02	0.03
316	50.641	0.162	1.07	94	-1.12	100	75	2.250	(0.01)	0.05
317	50.799	0.158	1.04	94	-1.08	97	76	2.240	(0.02)	(0.04)
318	50.962	0.163	1.12	94	-1.19	100	76	2.250	(0.07)	(0.04)
319	51.122	0.160	1.15	94	-1.12	99	76	2.240	0.10	(0.04)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
320	51.281	0.159	1.04	94	-1.2	98	75	2.240	(0.03)	0.03
321	51.445	0.164	1.06	94	-1.1	101	75	2.250	(0.32)	0.04
322	51.606	0.161	1.07	94	-1.19	99	74	2.240	(0.06)	(0.04)
323	51.766	0.160	1.02	94	-1.03	98	74	2.250	0.00	(0.04)
324	51.929	0.163	1.03	94	-1.14	100	74	2.240	(0.05)	(0.06)
325	52.088	0.159	1.04	94	-1.14	98	73	2.230	0.04	0.01
326	52.248	0.160	1.07	94	-1.1	98	73	2.240	(0.05)	(0.01)
327	52.408	0.160	1.05	94	-1.04	98	73	2.240	(0.10)	(0.02)
328	52.567	0.159	1.07	94	-1.04	98	73	2.220	0.02	(0.08)
329	52.731	0.164	1.10	94	-1.08	101	73	2.190	(0.04)	(0.02)
330	52.890	0.159	1.10	94	-1.14	98	73	2.270	(0.04)	(0.06)
331	53.050	0.160	1.07	94	-1.05	99	74	2.240	0.01	(0.02)
332	53.211	0.161	1.04	94	-1.14	99	75	2.250	(0.06)	(0.03)
333	53.369	0.158	1.03	94	-1.03	97	76	2.230	0.01	(0.13)
334	53.531	0.162	0.96	94	-1.03	100	76	2.290	(0.05)	0.00
335	53.695	0.164	1.13	94	-1.15	101	76	2.240	(0.05)	(0.03)
336	53.854	0.159	1.05	94	-1.04	98	76	2.240	(0.18)	(0.11)
337	54.015	0.161	1.21	94	-1.13	99	75	2.220	(0.08)	(0.02)
338	54.175	0.160	1.09	94	-1.18	98	75	2.240	(0.08)	(0.04)
339	54.336	0.161	1.04	94	-1.04	99	74	2.190	0.02	0.04
340	54.497	0.161	1.06	94	-1.14	99	74	2.230	(0.03)	(0.04)
341	54.655	0.158	1.03	94	-1.11	97	74	2.230	0.00	(0.05)
342	54.817	0.162	1.19	94	-1.11	100	73	2.230	(0.05)	(0.04)
343	54.981	0.164	1.07	94	-1.13	101	73	2.250	(0.06)	(0.04)
344	55.142	0.161	1.08	94	-1.13	99	73	2.250	(0.03)	(0.01)
345	55.303	0.161	1.09	94	-1.16	99	73	2.240	(0.08)	(0.02)
346	55.465	0.162	1.04	94	-1.15	100	73	2.240	(0.17)	(0.01)
347	55.624	0.159	1.09	94	-1.19	98	73	2.240	(0.16)	(0.05)
348	55.786	0.162	1.06	94	-1.2	100	74	2.240	(0.01)	(0.07)
349	55.949	0.163	1.10	94	-1.19	100	75	2.250	(0.05)	(0.03)
350	56.109	0.160	1.05	94	-1.03	99	75	2.240	0.11	(0.04)
351	56.269	0.160	0.90	94	-1.04	98	75	2.240	(0.14)	0.01

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
352	56.428	0.159	1.06	94	-1.13	98	75	2.180	0.00	(0.04)
353	56.589	0.161	1.18	94	-1.11	99	74	2.230	0.02	(0.02)
354	56.750	0.161	1.12	94	-1.08	99	74	2.230	0.09	(0.05)
355	56.909	0.159	1.07	94	-1.14	98	74	2.240	(0.25)	(0.03)
356	57.071	0.162	1.04	94	-1.18	100	73	2.240	0.21	(0.03)
357	57.232	0.161	0.86	94	-1.17	99	73	2.240	(0.02)	(0.04)
358	57.392	0.160	1.04	94	-1.09	98	73	2.240	0.07	(0.02)
359	57.555	0.163	1.07	94	-1.2	100	72	2.230	(0.07)	(0.02)
360	57.719	0.164	0.88	94	-1.13	101	72	2.240	(0.08)	(0.05)
361	57.879	0.160	1.07	94	-1.03	98	72	2.240	(0.05)	0.00
362	58.043	0.164	1.06	94	-1.04	101	72	2.230	(0.18)	(0.05)
363	58.204	0.161	1.06	94	-1.19	99	73	2.230	(0.18)	(0.08)
364	58.364	0.160	1.08	94	-1.04	98	73	2.240	(0.07)	(0.04)
365	58.525	0.161	1.10	94	-1.04	99	74	2.240	(0.10)	(0.07)
366	58.685	0.160	1.10	94	-1.15	98	74	2.240	(0.03)	(0.05)
367	58.847	0.162	0.96	94	-1.15	100	75	2.230	0.00	(0.04)
368	59.009	0.162	1.09	94	-1.14	100	74	2.240	(0.12)	(0.04)
369	59.169	0.160	1.03	94	-1.08	98	74	2.230	(0.05)	(0.04)
370	59.331	0.162	1.08	94	-1.2	100	73	2.240	(0.14)	(0.01)
371	59.494	0.163	1.00	94	-1.12	100	73	2.240	0.00	(0.03)
372	59.655	0.161	0.93	94	-1.04	99	73	2.230	(0.04)	(0.02)
373	59.818	0.163	1.06	94	-1.03	100	72	2.240	0.00	(0.01)
374	59.977	0.159	1.08	94	-1.04	98	72	2.250	(0.10)	(0.01)
375	60.136	0.159	1.14	94	-1.06	98	72	2.180	0.06	(0.03)
376	60.299	0.163	1.10	94	-1.02	100	71	2.240	(0.11)	(0.10)
377	60.458	0.159	1.08	94	-1.14	98	71	2.250	(0.02)	(0.05)
378	60.620	0.162	1.18	94	-1.18	100	72	2.250	(0.10)	(0.05)
379	60.782	0.162	0.34	94	-1.07	100	72	2.240	(0.01)	(0.05)
380	60.940	0.158	1.05	94	-1.1	97	73	2.230	(0.13)	(0.02)
381	61.100	0.160	1.10	94	-1.03	98	74	2.240	(0.03)	(0.08)
382	61.262	0.162	1.10	94	-1.09	100	74	2.240	(0.04)	(0.11)
383	61.420	0.158	1.08	94	-1.1	97	74	2.240	(0.10)	(0.03)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
384	61.582	0.162	0.83	94	-1.08	100	74	2.250	(0.19)	(0.06)
385	61.742	0.160	1.02	94	-1.02	98	73	2.240	0.20	(0.01)
386	61.904	0.162	1.07	94	-1.07	100	73	2.240	(0.04)	(0.07)
387	62.066	0.162	1.05	94	-1.14	100	72	2.240	(0.20)	(0.05)
388	62.225	0.159	1.06	94	-1.18	98	72	2.240	(0.06)	(0.04)
389	62.388	0.163	1.08	94	-1.17	100	72	2.250	(0.12)	(0.05)
390	62.548	0.160	1.09	94	-1.19	98	72	2.240	(0.02)	(0.03)
391	62.706	0.158	1.04	94	-1.09	97	71	2.230	0.01	0.01
392	62.867	0.161	1.03	94	-1.19	99	71	2.250	(0.15)	0.00
393	63.031	0.164	0.77	94	-1.13	101	71	2.240	(0.09)	(0.06)
394	63.191	0.160	1.31	94	-1.03	98	71	2.250	(0.03)	(0.03)
395	63.353	0.162	1.11	94	-1.19	100	72	2.240	0.01	(0.05)
396	63.512	0.159	1.14	94	-1.1	98	73	2.230	0.06	(0.11)
397	63.673	0.161	1.08	94	-1.15	99	73	2.290	(0.05)	(0.03)
398	63.835	0.162	1.18	94	-1.03	100	74	2.240	0.00	(0.07)
399	63.993	0.158	1.09	94	-1.04	97	73	2.200	(0.09)	(0.03)
400	64.154	0.161	1.08	94	-1.03	99	73	2.180	(0.02)	(0.03)
401	64.315	0.161	1.07	94	-1.07	99	72	2.250	0.07	(0.01)
402	64.474	0.159	0.76	94	-1.04	98	72	2.240	(0.08)	(0.03)
403	64.634	0.160	1.07	94	-1.05	98	72	2.260	(0.08)	(0.02)
404	64.796	0.162	1.03	94	-1.19	99	71	2.240	(0.08)	0.00
405	64.958	0.162	1.09	94	-1.19	99	71	2.250	(0.03)	0.00
406	65.122	0.164	1.11	94	-1.05	101	71	2.240	(0.02)	(0.07)
407	65.284	0.162	1.10	94	-1.08	99	71	2.240	(0.03)	(0.05)
408	65.444	0.160	0.80	94	-1.14	98	71	2.230	(0.07)	(0.08)
409	65.605	0.161	1.08	94	-1.14	99	71	2.240	(0.04)	0.01
410	65.766	0.161	1.20	94	-1.07	99	71	2.270	(0.05)	(0.04)
411	65.928	0.162	1.08	94	-1.04	100	72	2.250	(0.09)	(0.03)
412	66.092	0.164	0.92	94	-1.05	101	73	2.230	0.17	(0.07)
413	66.250	0.158	1.08	94	-1.1	97	73	2.240	(0.09)	0.02
414	66.411	0.161	1.04	94	-1.17	99	72	2.240	(0.13)	(0.05)
415	66.570	0.159	1.08	94	-1.09	98	72	2.230	0.03	0.00

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
416	66.731	0.161	1.17	94	-1.17	99	71	2.240	(0.05)	(0.04)
417	66.894	0.163	1.12	94	-1.15	100	71	2.250	(0.09)	(0.05)
418	67.054	0.160	1.09	94	-1.03	98	71	2.240	(0.03)	(0.05)
419	67.217	0.163	1.07	94	-1.11	102	72	2.250	2.57	0.57
420	67.379	0.162	1.02	94	-1.19	101	71	2.310	0.40	0.07
421	67.539	0.160	1.07	94	-1.12	99	70	2.230	0.69	0.13
422	67.701	0.162	1.10	94	-1.03	101	71	2.240	1.65	0.25
423	67.862	0.161	0.85	94	-1.18	100	71	2.240	2.69	0.25
424	68.024	0.162	1.05	94	-1.14	101	72	2.240	3.79	0.37
425	68.187	0.163	1.11	93	-1.14	102	73	2.290	5.13	0.27
426	68.345	0.158	1.04	93	-1.12	99	73	2.240	6.43	0.11
427	68.504	0.159	1.06	93	-1.03	100	74	2.240	7.49	0.04
428	68.665	0.161	1.35	93	-1.04	101	74	2.230	7.65	0.03
429	68.822	0.157	1.01	93	-1.2	98	74	2.240	8.18	(0.02)
430	68.984	0.162	1.06	93	-1.19	102	74	2.230	8.44	0.03
431	69.146	0.162	1.09	93	-1.2	102	74	2.240	8.58	0.05
432	69.307	0.161	1.06	93	-1.2	101	74	2.250	8.89	0.08
433	69.470	0.163	1.12	93	-1.07	102	74	2.230	9.03	0.06
434	69.632	0.162	1.23	93	-1.03	102	73	2.280	8.97	0.08
435	69.792	0.160	1.06	93	-1.13	100	73	2.240	8.94	0.10
436	69.954	0.162	1.26	93	-1.05	102	73	2.240	8.91	0.13
437	70.116	0.162	1.05	93	-1.04	102	73	2.240	8.83	0.04
438	70.275	0.159	1.08	93	-1.09	100	73	2.230	8.70	0.08
439	70.436	0.161	1.05	93	-1.04	101	74	2.230	8.55	0.09
440	70.597	0.161	0.85	93	-1.03	101	75	2.240	8.28	0.05
441	70.755	0.158	1.02	93	-1.2	99	75	2.210	8.22	0.17
442	70.918	0.163	1.05	93	-1.08	103	76	2.250	8.12	0.10
443	71.076	0.158	1.09	93	-1.05	99	76	2.260	8.01	0.09
444	71.237	0.161	1.61	93	-1.2	101	76	2.240	7.78	0.06
445	71.399	0.162	0.97	93	-1.05	102	77	2.240	8.24	0.12
446	71.557	0.158	1.11	93	-1.15	98	76	2.170	7.74	0.07
447	71.717	0.160	0.97	93	-1.03	99	75	2.230	1.33	(0.01)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
448	71.878	0.161	1.11	93	-1.18	99	74	2.250	0.58	0.01
449	72.036	0.158	1.07	93	-1.06	97	74	2.250	0.53	0.00
450	72.195	0.159	1.13	93	-1.12	98	73	2.230	0.54	(0.06)
451	72.357	0.162	1.08	93	-1.2	100	73	2.230	0.39	(0.02)
452	72.518	0.161	1.07	93	-1.2	99	72	2.240	0.34	(0.03)
453	72.682	0.164	1.06	93	-1.18	101	72	2.250	0.19	0.02
454	72.839	0.157	0.53	93	-1.09	97	71	2.240	0.29	0.01
455	72.998	0.159	1.49	93	-1.19	98	72	2.240	0.02	(0.01)
456	73.160	0.162	1.10	93	-1.09	100	72	2.240	0.31	0.02
457	73.318	0.158	1.10	93	-1.09	97	72	2.270	0.12	0.00
458	73.479	0.161	0.94	93	-1.04	99	73	2.240	0.03	0.02
459	73.639	0.160	1.07	93	-1.18	99	73	2.250	0.05	(0.02)
460	73.797	0.158	1.10	93	-1.04	97	74	2.240	0.03	(0.02)
461	73.960	0.163	0.90	93	-1.19	100	74	2.240	0.06	(0.04)
462	74.122	0.162	1.08	93	-1.11	100	74	2.240	0.13	(0.02)
463	74.283	0.161	0.99	93	-1.03	99	74	2.240	0.15	(0.03)
464	74.448	0.165	1.08	93	-1.03	102	73	2.240	(0.01)	(0.01)
465	74.607	0.159	1.38	93	-1.04	98	73	2.240	0.00	0.01
466	74.768	0.161	1.09	93	-1.12	99	72	2.210	0.06	(0.04)
467	74.929	0.161	1.05	93	-1.18	99	72	2.230	0.05	(0.04)
468	75.089	0.160	1.07	93	-1.2	98	72	2.240	0.14	0.00
469	75.250	0.161	1.11	93	-1.04	99	71	2.160	(0.06)	0.01
470	75.411	0.161	1.09	93	-1.19	99	71	2.200	(0.04)	(0.02)
471	75.569	0.158	1.05	93	-1.04	97	71	2.220	(0.02)	(0.05)
472	75.730	0.161	1.08	93	-1.11	99	70	2.250	(0.10)	0.02
473	75.887	0.157	0.98	93	-1.03	97	71	2.250	(0.08)	(0.01)
474	76.048	0.161	0.95	93	-1.18	99	72	2.220	(0.10)	(0.04)
475	76.209	0.161	1.05	93	-1.13	99	72	2.230	(0.02)	(0.06)
476	76.369	0.160	1.12	93	-1.08	98	72	2.230	0.00	(0.04)
477	76.531	0.162	1.06	93	-1.13	100	73	2.240	(0.04)	(0.03)
478	76.693	0.162	1.07	93	-1.1	100	73	2.250	(0.11)	(0.03)
479	76.854	0.161	1.00	93	-1.15	99	74	2.240	(0.06)	(0.03)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
480	77.015	0.161	1.10	93	-1.07	99	74	2.250	(0.07)	(0.04)
481	77.177	0.162	1.03	93	-1.15	100	74	2.240	(0.05)	0.01
482	77.339	0.162	1.31	93	-1.11	100	74	2.270	0.01	(0.03)
483	77.500	0.161	0.97	93	-1.03	99	73	2.250	(0.09)	(0.04)
484	77.660	0.160	1.07	93	-1.03	98	73	2.260	(0.03)	(0.02)
485	77.820	0.160	1.09	93	-1.19	98	73	2.230	0.08	(0.03)
486	77.981	0.161	1.07	93	-1.04	99	72	2.130	0.07	(0.03)
487	78.141	0.160	1.06	93	-1.09	98	72	2.250	0.04	0.01
488	78.303	0.162	0.96	93	-1.08	100	72	2.160	(0.03)	(0.02)
489	78.466	0.163	1.08	93	-1.07	100	71	2.230	(0.04)	(0.02)
490	78.627	0.161	1.02	93	-1.15	99	71	2.240	0.01	(0.06)
491	78.791	0.164	1.07	93	-1.13	101	71	2.240	(0.05)	(0.03)
492	78.952	0.161	1.11	93	-1.14	99	72	2.240	(0.23)	(0.02)
493	79.113	0.161	1.12	93	-1.16	99	72	2.250	(0.09)	(0.07)
494	79.275	0.162	1.04	93	-1.04	100	73	2.240	(0.01)	(0.03)
495	79.437	0.162	1.77	93	-1.03	100	73	2.250	(0.05)	(0.02)
496	79.600	0.163	1.06	93	-1.15	100	73	2.240	(0.13)	0.00
497	79.758	0.158	1.13	93	-1.13	97	74	2.260	(0.05)	(0.04)
498	79.917	0.159	1.09	93	-1.19	98	74	2.240	0.00	(0.02)
499	80.079	0.162	1.05	93	-1.18	100	74	2.240	(0.03)	(0.05)
500	80.241	0.162	1.10	93	-1.2	100	74	2.240	(0.10)	0.05
501	80.399	0.158	1.08	93	-1.13	97	73	2.220	(0.02)	(0.05)
502	80.561	0.162	1.03	93	-1.07	100	72	2.240	(0.15)	0.01
503	80.721	0.160	1.23	93	-1.12	98	72	2.240	0.00	(0.04)
504	80.882	0.161	1.04	93	-1.04	99	72	2.170	(0.08)	(0.03)
505	81.045	0.163	1.11	93	-1.19	100	71	2.240	(0.01)	0.02
506	81.203	0.158	0.98	93	-1.16	97	71	2.230	(0.04)	(0.06)
507	81.365	0.162	1.18	93	-1.15	100	70	2.230	(0.05)	(0.13)
508	81.527	0.162	1.03	93	-1.18	100	70	2.240	(0.12)	(0.03)
509	81.687	0.160	1.06	93	-1.19	98	70	2.250	(0.07)	(0.04)
510	81.852	0.165	0.99	93	-1.14	101	71	2.230	(0.02)	(0.10)
511	82.013	0.161	1.01	93	-1.06	99	71	2.240	(0.12)	(0.01)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
512	82.173	0.160	1.06	93	-1.08	98	72	2.240	(0.11)	0.01
513	82.334	0.161	1.09	93	-1.05	99	72	2.100	(0.07)	(0.02)
514	82.495	0.161	1.05	93	-1.19	99	73	2.240	(0.21)	(0.02)
515	82.656	0.161	1.06	93	-1.2	99	73	2.240	(0.04)	(0.02)
516	82.816	0.160	1.07	93	-1.02	98	72	2.240	0.07	(0.02)
517	82.978	0.162	1.06	93	-1.09	100	72	2.230	(0.02)	(0.05)
518	83.140	0.162	1.09	93	-1.05	100	71	2.230	(0.03)	(0.02)
519	83.303	0.163	1.10	93	-1.16	100	71	2.240	(0.08)	(0.02)
520	83.463	0.160	1.32	93	-1.03	98	70	2.240	0.04	(0.07)
521	83.626	0.163	1.08	93	-1.14	100	70	2.200	(0.05)	(0.03)
522	83.787	0.161	1.05	93	-1.14	99	70	2.230	(0.05)	(0.03)
523	83.947	0.160	1.08	93	-1.12	98	70	2.240	(0.02)	(0.12)
524	84.109	0.162	0.94	93	-1.15	100	70	2.250	(0.05)	(0.01)
525	84.270	0.161	1.05	93	-1.19	99	70	2.240	(0.13)	(0.01)
526	84.433	0.163	1.08	93	-1.04	100	71	2.250	(0.06)	(0.01)
527	84.597	0.164	1.03	93	-1.03	101	71	2.220	(0.01)	(0.03)
528	84.755	0.158	1.05	93	-1.19	97	71	2.230	(0.12)	(0.01)
529	84.917	0.162	1.10	93	-1.02	100	72	2.250	0.01	0.00
530	85.078	0.161	1.05	92	-1.04	99	72	2.240	(0.05)	(0.03)
531	85.239	0.161	1.08	92	-1.03	99	72	2.240	(0.06)	(0.05)
532	85.402	0.163	1.07	92	-1.03	100	71	2.260	(0.02)	(0.05)
533	85.563	0.161	1.09	92	-1.07	99	71	2.250	(0.05)	(0.03)
534	85.726	0.163	0.93	92	-1.19	100	71	2.230	0.04	(0.04)
535	85.889	0.163	1.08	92	-1.03	100	71	2.230	(0.04)	(0.04)
536	86.045	0.156	1.06	92	-1.19	96	72	2.220	0.01	(0.02)
537	86.206	0.161	1.05	92	-1.14	99	72	2.240	(0.09)	(0.02)
538	86.368	0.162	0.97	92	-1.07	100	73	2.230	(0.12)	0.02
539	86.526	0.158	0.96	92	-1.15	97	73	2.240	(0.11)	0.00
540	86.687	0.161	1.08	92	-1.07	99	73	2.240	(0.08)	(0.04)
541	86.848	0.161	1.05	92	-1.04	99	74	2.230	(0.06)	0.00
542	87.009	0.161	1.08	92	-1.05	99	74	2.240	(0.03)	(0.01)
543	87.170	0.161	1.02	92	-1.13	99	74	2.250	(0.08)	0.00

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
544	87.330	0.160	1.01	92	-1.11	99	74	2.230	0.00	(0.01)
545	87.489	0.159	1.05	92	-1.03	98	74	2.230	0.00	(0.04)
546	87.652	0.163	1.08	92	-1.15	100	75	2.240	(0.04)	(0.05)
547	87.810	0.158	1.09	92	-1.05	97	75	2.250	(0.07)	(0.01)
548	87.973	0.163	1.11	92	-1.18	100	75	2.240	(0.31)	(0.01)
549	88.134	0.161	1.07	92	-1.08	99	75	2.240	(0.13)	(0.02)
550	88.293	0.159	1.01	92	-1.05	98	75	2.240	(0.05)	0.00
551	88.455	0.162	1.05	92	-1.19	100	75	2.350	(0.03)	(0.04)
552	88.617	0.162	1.05	92	-1.02	100	75	2.220	0.03	(0.06)
553	88.778	0.161	1.11	92	-1.13	99	76	2.260	(0.23)	(0.04)
554	88.941	0.163	1.12	92	-1.05	101	76	2.200	(0.22)	(0.01)
555	89.100	0.159	1.11	92	-1.03	98	76	2.240	(0.12)	0.03
556	89.263	0.163	1.07	92	-1.18	101	76	2.290	0.00	(0.03)
557	89.425	0.162	1.07	92	-1.17	100	76	2.240	(0.08)	(0.07)
558	89.585	0.160	1.07	92	-1.03	99	76	2.230	0.09	(0.05)
559	89.746	0.161	1.03	92	-1.11	99	76	2.240	(0.48)	(0.03)
560	89.907	0.161	1.10	92	-1.15	99	76	2.230	(0.11)	(0.02)
561	90.065	0.158	1.09	92	-1.19	97	76	2.240	0.10	(0.01)
562	90.229	0.164	0.76	92	-1.04	101	76	2.240	(0.09)	(0.02)
563	90.391	0.162	1.08	92	-1.19	100	76	2.150	0.02	(0.07)
564	90.551	0.160	1.11	92	-1.2	99	76	2.240	(0.03)	(0.04)
565	90.714	0.163	1.12	92	-1.15	101	76	2.240	(0.06)	(0.05)
566	90.873	0.159	1.04	92	-1.08	98	76	2.230	(0.10)	(0.03)
567	91.034	0.161	1.08	92	-1.12	99	76	2.230	(0.04)	(0.04)
568	91.196	0.162	1.05	92	-1.18	100	76	2.290	(0.10)	(0.02)
569	91.355	0.159	1.08	92	-1.03	98	76	2.250	(0.04)	(0.01)
570	91.520	0.165	1.11	92	-1.18	102	76	2.250	(0.04)	(0.02)
571	91.682	0.162	1.00	92	-1.03	100	76	2.240	0.00	(0.06)
572	91.841	0.159	1.09	92	-1.18	98	76	2.240	(0.09)	(0.01)
573	92.003	0.162	1.10	92	-1.11	100	76	2.230	0.02	(0.02)
574	92.164	0.161	1.09	92	-1.03	99	76	2.230	(0.06)	(0.06)
575	92.325	0.161	1.10	92	-1.19	99	77	2.250	(0.09)	(0.02)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
576	92.487	0.162	1.09	92	-1.04	100	76	2.240	(0.01)	(0.03)
577	92.647	0.160	1.02	92	-1.03	99	76	2.230	(0.11)	(0.01)
578	92.809	0.162	1.09	92	-1.2	100	76	2.230	(0.02)	(0.03)
579	92.970	0.161	1.04	92	-1.02	99	76	2.240	(0.06)	(0.05)
580	93.129	0.159	1.08	92	-1.03	98	77	2.240	(0.08)	(0.04)
581	93.290	0.161	1.07	92	-1.03	101	78	2.240	7.93	1.96
582	93.453	0.163	1.07	92	-1.14	102	77	2.240	0.67	0.06
583	93.612	0.159	1.09	92	-1.18	99	78	2.240	1.73	0.26
584	93.774	0.162	1.09	92	-1.17	101	78	2.250	3.93	0.34
585	93.938	0.164	1.10	92	-1.2	103	78	2.250	5.52	0.20
586	94.098	0.160	1.04	92	-1.04	100	78	2.250	5.87	0.21
587	94.261	0.163	1.27	92	-1.19	102	77	2.240	6.22	0.19
588	94.422	0.161	1.10	92	-1.05	101	77	2.240	6.32	0.22
589	94.582	0.160	1.18	92	-1.17	100	77	2.240	6.31	0.21
590	94.745	0.163	1.14	92	-1.04	102	76	2.240	6.48	0.28
591	94.906	0.161	1.09	92	-1.06	101	76	2.240	6.44	0.30
592	95.070	0.164	1.08	92	-1.05	103	76	2.250	6.61	0.31
593	95.234	0.164	1.24	92	-1.09	103	76	2.240	6.72	0.34
594	95.396	0.162	1.05	92	-1.05	102	76	2.260	6.81	0.38
595	95.558	0.162	0.82	92	-1.05	102	75	2.250	7.04	0.38
596	95.721	0.163	1.18	92	-1.14	103	75	2.230	7.35	0.37
597	95.880	0.159	1.07	92	-1.09	100	75	2.240	7.38	0.33
598	96.043	0.163	1.09	92	-1.15	103	75	2.240	7.64	0.27
599	96.204	0.161	1.22	92	-1.19	101	74	2.240	8.14	0.16
600	96.362	0.158	1.09	92	-1.09	100	74	2.210	8.50	0.16
601	96.524	0.162	1.12	92	-1.04	102	74	2.180	8.41	0.17
602	96.682	0.158	1.07	92	-1.09	100	74	2.240	8.71	0.12
603	96.842	0.160	1.04	92	-1.07	101	74	2.240	8.48	0.15
604	97.005	0.163	1.09	92	-1.15	103	74	2.240	8.34	0.13
605	97.165	0.160	1.06	92	-1.2	101	74	2.240	8.28	0.14
606	97.327	0.162	1.09	92	-1.13	102	75	2.250	8.20	0.08
607	97.491	0.164	1.07	92	-1.19	102	74	2.240	8.21	0.66

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
608	97.649	0.158	1.09	92	-1.07	98	74	2.250	11.55	4.99
609	97.810	0.161	1.06	92	-1.14	100	73	2.240	12.62	5.47
610	97.973	0.163	1.08	92	-1.09	101	73	2.250	13.59	5.47
611	98.133	0.160	1.07	92	-1.04	99	73	2.240	13.09	5.47
612	98.294	0.161	1.07	92	-1.07	100	73	2.240	12.61	5.47
613	98.455	0.161	1.11	92	-1.13	100	73	2.230	11.93	5.47
614	98.616	0.161	1.04	92	-1.07	100	73	2.240	11.86	5.47
615	98.781	0.165	1.08	92	-1.11	102	73	2.240	12.11	5.47
616	98.940	0.159	1.06	92	-1.05	98	73	2.230	11.59	5.24
617	99.102	0.162	1.07	92	-1.05	100	73	2.230	10.81	4.80
618	99.263	0.161	1.12	92	-1.05	100	73	2.250	11.18	4.83
619	99.424	0.161	1.11	93	-1.06	99	74	2.250	10.14	4.43
620	99.584	0.160	0.82	93	-1.14	99	74	2.250	10.09	4.35
621	99.743	0.159	1.11	93	-1.2	98	74	2.230	9.52	4.08
622	99.905	0.162	1.10	93	-1.05	100	73	2.260	9.25	3.78
623	100.068	0.163	1.07	93	-1.16	101	73	2.240	8.73	3.64
624	100.226	0.158	1.08	93	-1.18	97	73	2.230	8.72	3.54
625	100.386	0.160	1.06	93	-1.11	99	73	2.240	8.15	3.31
626	100.548	0.162	1.09	93	-1.04	100	73	2.240	7.67	3.10
627	100.708	0.160	1.10	93	-1.19	99	73	2.240	7.14	2.90
628	100.869	0.161	1.10	93	-1.13	99	73	2.240	6.80	2.71
629	101.032	0.163	1.11	93	-1.11	101	72	2.240	6.36	2.49
630	101.192	0.160	1.09	93	-1.06	99	72	2.230	6.30	2.44
631	101.357	0.165	0.99	93	-1.13	102	72	2.240	5.92	2.32
632	101.516	0.159	1.06	93	-1.04	98	72	2.240	5.88	2.25
633	101.678	0.162	1.10	93	-1.12	100	71	2.240	5.50	2.08
634	101.840	0.162	1.07	93	-1.04	100	71	2.260	4.28	1.66
635	102.000	0.160	0.81	93	-1.03	99	71	2.280	4.39	1.62
636	102.164	0.164	1.17	93	-1.09	101	71	2.230	4.20	1.62
637	102.327	0.163	1.06	93	-1.03	101	71	2.190	4.13	1.53
638	102.488	0.161	1.08	93	-1.17	99	71	2.280	4.33	1.64
639	102.651	0.163	1.09	93	-1.13	101	71	2.240	4.46	1.63

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
640	102.813	0.162	1.10	93	-1.05	100	71	2.250	5.09	1.86
641	102.972	0.159	1.05	93	-1.07	98	71	2.230	4.81	1.74
642	103.135	0.163	1.09	93	-1.2	100	71	2.240	4.93	1.79
643	103.298	0.163	1.06	93	-1.03	100	71	2.240	4.59	1.71
644	103.460	0.162	1.14	93	-1.18	100	71	2.260	4.68	1.62
645	103.624	0.164	1.06	93	-1.19	101	70	2.220	4.22	1.47
646	103.784	0.160	1.05	93	-1.2	99	70	2.240	4.21	1.54
647	103.948	0.164	1.06	93	-1.09	101	70	2.230	4.17	1.50
648	104.109	0.161	1.11	93	-1.07	99	70	2.250	3.92	1.39
649	104.269	0.160	1.11	93	-1.13	99	70	2.250	3.84	1.32
650	104.429	0.160	0.96	93	-1.13	99	70	2.240	3.55	1.24
651	104.593	0.164	1.23	93	-1.18	101	70	2.240	3.61	1.20
652	104.755	0.162	1.06	93	-1.19	100	70	2.230	3.71	1.24
653	104.918	0.163	1.01	93	-1.08	100	70	2.240	2.98	0.99
654	105.079	0.161	1.05	93	-1.03	99	70	2.240	3.20	1.05
655	105.243	0.164	1.06	93	-1.13	101	70	2.220	3.41	1.20
656	105.404	0.161	1.11	93	-1.04	99	70	2.240	3.38	1.25
657	105.563	0.159	1.19	93	-1.13	98	69	2.240	3.43	1.10
658	105.724	0.161	1.14	93	-1.14	99	69	2.230	3.26	1.11
659	105.889	0.165	1.04	93	-1.08	102	69	2.230	3.06	1.05
660	106.049	0.160	1.06	93	-1.14	98	69	2.230	2.93	0.96
661	106.215	0.166	1.06	93	-1.16	102	69	2.250	2.65	0.83
662	106.375	0.160	1.17	93	-1.03	98	69	2.240	2.61	0.94
663	106.538	0.163	1.09	93	-1.14	100	69	2.250	2.97	1.01
664	106.699	0.161	1.09	93	-1.14	99	69	2.240	2.52	0.89
665	106.859	0.160	1.05	93	-1.04	98	69	2.240	2.50	0.84
666	107.022	0.163	1.08	93	-1.18	100	69	2.240	2.47	0.82
667	107.184	0.162	1.13	93	-1.18	100	69	2.240	2.74	0.96
668	107.346	0.162	1.08	93	-1.04	100	69	2.230	2.80	0.92
669	107.508	0.162	1.08	93	-1.02	100	69	2.240	2.67	0.90
670	107.667	0.159	1.07	93	-1.19	98	68	2.240	2.22	0.77
671	107.830	0.163	1.08	93	-1.04	100	68	2.240	2.48	0.88

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
672	107.991	0.161	1.03	93	-1.19	99	68	2.230	2.75	0.85
673	108.154	0.163	1.44	93	-1.19	100	68	2.220	2.57	0.89
674	108.314	0.160	1.11	93	-1.04	98	68	2.250	2.56	0.84
675	108.477	0.163	1.12	93	-1.06	100	68	2.240	2.56	0.93
676	108.640	0.163	1.04	93	-1.19	100	68	2.220	2.28	0.73
677	108.804	0.164	1.08	93	-1.19	101	68	2.240	2.29	0.70
678	108.966	0.162	1.08	93	-1.07	100	68	2.240	2.09	0.68
679	109.128	0.162	1.08	93	-1.06	100	68	2.240	2.18	0.70
680	109.292	0.164	1.04	93	-1.12	101	68	2.240	2.11	0.71
681	109.451	0.159	1.06	93	-1.16	98	68	2.240	2.41	0.70
682	109.613	0.162	1.09	93	-1.04	100	68	2.250	2.33	0.71
683	109.774	0.161	1.08	93	-1.05	99	68	2.240	2.26	0.79
684	109.935	0.161	1.06	93	-1.19	99	68	2.230	2.07	0.78
685	110.097	0.162	0.96	93	-1.05	100	68	2.240	2.42	0.78
686	110.259	0.162	1.11	93	-1.14	100	68	2.240	2.20	0.69
687	110.423	0.164	1.05	93	-1.15	101	68	2.250	2.21	0.69
688	110.587	0.164	1.09	93	-1.15	101	68	2.240	2.57	0.75
689	110.750	0.163	1.08	93	-1.11	100	68	2.240	2.30	0.70

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
0	0.62		54.85	168.84	162	167	1.00	5.16	
1	0.65		54.85	168.74	163	168	1.00	5.46	623
2	0.59		54.85	168.56	163	168	1.00	4.94	563
3	0.61		54.85	168.51	164	169	1.00	5.09	579
4	0.58		54.80	168.60	164	170	1.00	4.84	551
5	0.60		54.80	168.79	165	170	1.00	4.99	570
6	0.58		54.85	169.07	166	171	1.00	4.83	552
7	0.58		54.85	169.55	166	172	1.00	4.84	555
8	0.64		54.85	170.16	167	173	1.00	5.32	614
9	0.60		54.85	170.68	168	173	1.00	4.98	578
10	0.56		54.89	171.38	169	174	1.00	4.67	545
11	0.58		54.89	172.14	170	175	1.00	4.83	567
12	0.58		54.89	172.84	170	176	1.00	4.84	571
13	0.66		54.94	173.64	171	177	1.00	5.47	650
14	0.67		54.94	174.54	172	178	1.00	5.55	665
15	0.59		54.94	175.34	173	179	1.00	4.92	593
16	0.58		54.94	176.24	174	180	1.00	4.83	586
17	0.62		54.98	177.09	175	181	1.00	5.16	630
18	0.60		54.98	177.94	176	181	1.00	4.99	615
19	0.56		54.98	178.80	176	182	1.00	4.67	579
20	0.60		54.98	179.65	176	182	1.00	4.99	623
21	0.66		55.03	180.64	177	182	1.00	5.48	689
22	0.64		55.08	181.68	177	183	1.00	5.32	674
23	0.58		55.08	182.63	177	183	1.00	4.84	618
24	0.58		55.08	183.39	177	183	1.00	4.83	620
25	0.60		55.08	183.67	177	183	1.00	5.00	644
26	0.56		55.12	184.00	177	183	1.00	4.67	603
27	0.64		55.08	184.10	177	183	1.00	5.31	686
28	0.58		55.12	184.34	177	183	1.00	4.83	625
29	0.60		55.12	184.43	177	183	1.00	4.99	646
30	0.61		55.12	184.48	177	183	1.00	5.07	656
31	0.64		55.12	184.57	177	183	1.00	5.35	694
32	0.60		55.12	184.57	177	183	1.00	5.01	649
33	0.62		55.12	184.62	177	183	1.00	5.16	668
34	0.60		55.12	184.62	177	183	1.00	4.99	647
35	0.68		55.12	184.57	177	182	1.00	5.65	732
36	0.54		55.12	184.53	177	182	1.00	4.51	584
37	0.68		55.12	184.53	177	182	1.00	5.65	732
38	0.62		55.12	184.48	177	182	1.00	5.16	668
39	0.64		55.12	184.43	177	182	1.00	5.31	688
40	0.64		55.12	184.38	177	182	1.00	5.32	688
41	0.56		55.12	184.34	177	182	1.00	4.67	604
42	0.64		55.12	184.24	177	182	1.00	5.33	689
43	0.60		55.12	184.20	177	182	1.00	5.02	648
44	0.59		55.12	184.05	177	182	1.00	4.93	637
45	0.60		55.17	183.96	176	182	1.00	5.01	646
46	0.58		55.17	183.91	176	181	1.00	4.84	624
47	0.52		55.17	183.77	176	181	1.00	4.35	560

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
48	0.56		55.17	183.67	176	181	1.00	4.66	600
49	0.60		55.21	183.58	176	181	1.00	5.00	643
50	0.60		55.21	183.48	176	181	1.00	5.00	642
51	0.58		55.21	183.34	176	181	1.00	4.83	619
52	0.56		55.21	183.25	176	181	1.00	4.68	600
53	0.58		55.26	183.10	176	181	1.00	4.84	619
54	0.62		55.21	183.01	175	180	1.00	5.16	661
55	0.54		55.21	182.87	175	180	1.00	4.51	576
56	0.71		55.26	182.73	175	180	1.00	5.95	760
57	0.65		55.26	182.63	175	180	1.00	5.45	695
58	0.56		55.26	182.49	175	180	1.00	4.70	598
59	0.57		55.26	182.40	175	180	1.00	4.76	606
60	0.59		55.26	182.25	175	180	1.00	4.90	623
61	0.60		55.26	182.11	175	180	1.00	5.01	636
62	0.56		55.26	182.02	174	179	1.00	4.68	594
63	0.58		55.26	181.87	174	179	1.00	4.84	613
64	0.64		55.26	181.73	174	179	1.00	5.33	675
65	0.60		55.26	181.59	174	179	1.00	5.00	632
66	0.68		55.21	181.45	174	179	1.00	5.64	713
67	0.58		55.21	181.30	174	179	1.00	4.84	610
68	0.64		55.21	181.16	173	178	1.00	5.32	671
69	0.56		55.21	180.97	173	178	1.00	4.68	589
70	0.52		55.21	180.83	173	178	1.00	4.37	549
71	0.60		55.21	180.69	173	178	1.00	5.00	628
72	0.66		55.21	180.55	173	178	1.00	5.49	689
73	0.64		55.21	180.40	173	178	1.00	5.36	672
74	0.58		55.21	180.22	173	178	1.00	4.88	610
75	0.62		55.21	180.07	172	177	1.00	5.16	646
76	0.54		55.17	179.93	172	177	1.00	4.51	563
77	0.58		55.17	179.79	172	177	1.00	4.84	603
78	0.60		55.17	179.65	172	177	1.00	5.01	624
79	0.52		55.17	179.46	172	177	1.00	4.36	542
80	0.56		55.17	179.32	172	177	1.00	4.67	581
81	0.56		55.17	179.13	171	176	1.00	4.68	581
82	0.52		55.12	178.94	171	176	1.00	4.36	540
83	0.58		55.12	178.80	171	176	1.00	4.84	600
84	0.62		55.12	178.65	171	176	1.00	5.16	639
85	0.58		55.12	178.46	171	176	1.00	4.84	598
86	0.62		55.12	178.32	171	176	1.00	5.13	633
87	0.54		55.12	178.13	170	175	1.00	4.54	559
88	0.58		55.12	177.99	170	175	1.00	4.84	595
89	0.64		55.12	177.80	170	175	1.00	5.34	655
90	0.66		55.12	177.66	170	175	1.00	5.49	674
91	0.60		55.12	177.47	170	175	1.00	5.00	612
92	0.52		55.12	177.28	170	175	1.00	4.36	533
93	0.58		55.08	177.09	170	174	1.00	4.84	592
94	0.58		55.08	176.95	169	174	1.00	4.85	592
95	0.54		55.08	176.76	169	174	1.00	4.52	551

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
96	0.58		55.08	176.57	169	174	1.00	4.84	588
97	0.62		55.12	176.43	169	174	1.00	5.17	628
98	0.56		55.12	176.24	169	173	1.00	4.70	569
99	0.58		55.12	176.10	168	173	1.00	4.84	587
100	0.55		55.12	175.91	168	173	1.00	4.56	551
101	0.53		55.12	175.72	168	173	1.00	4.43	535
102	0.60		55.12	175.53	168	173	1.00	5.02	605
103	0.64		55.12	175.39	168	173	1.00	5.32	641
104	0.58		55.12	175.20	168	172	1.00	4.85	583
105	0.60		55.12	175.01	167	172	1.00	5.01	601
106	0.54		55.08	174.82	167	172	1.00	4.53	543
107	0.58		55.08	174.68	167	172	1.00	4.84	580
108	0.52		55.08	174.49	167	172	1.00	4.36	521
109	0.60		55.08	174.30	167	171	1.00	5.02	599
110	0.58		55.08	174.16	167	171	1.00	4.84	577
111	0.62		55.08	173.93	166	171	1.00	5.16	614
112	0.58		55.08	173.74	166	171	1.00	4.85	576
113	0.62		55.08	173.60	166	171	1.00	5.17	614
114	0.62		55.08	173.41	166	171	1.00	5.18	614
115	0.58		55.08	173.22	166	170	1.00	4.84	573
116	0.58		55.08	173.03	165	170	1.00	4.84	572
117	0.58		55.08	172.84	165	170	1.00	4.85	572
118	0.56		55.08	172.65	165	170	1.00	4.68	551
119	0.70		55.08	172.47	165	170	1.00	5.83	685
120	0.58		55.08	172.32	165	170	1.00	4.85	570
121	0.58		55.08	172.14	165	169	1.00	4.84	568
122	0.58		55.08	171.95	164	169	1.00	4.85	568
123	0.56		55.08	171.76	164	169	1.00	4.69	548
124	0.66		55.03	171.57	164	169	1.00	5.49	641
125	0.60		55.08	171.38	164	169	1.00	5.02	584
126	0.56		55.08	171.19	164	168	1.00	4.68	544
127	0.60		55.12	171.01	164	168	1.00	5.02	582
128	0.56		55.12	170.82	163	168	1.00	4.69	543
129	0.56		55.12	170.63	163	168	1.00	4.70	544
130	0.59		55.12	170.49	163	168	1.00	4.91	567
131	0.62		55.12	170.30	163	167	1.00	5.18	597
132	0.64		55.12	170.06	163	167	1.00	5.33	613
133	0.56		55.12	169.87	162	167	1.00	4.70	540
134	0.60		55.12	169.73	162	167	1.00	5.01	575
135	0.56		55.12	169.50	162	167	1.00	4.68	536
136	0.62		55.12	169.36	162	167	1.00	5.18	593
137	0.66		55.12	169.12	162	167	1.00	5.50	628
138	0.54		55.08	168.93	162	167	1.00	4.52	516
139	0.60		55.08	168.74	162	167	1.00	5.02	571
140	0.60		55.08	168.56	162	167	1.00	5.01	569
141	0.60		55.08	168.51	162	167	1.00	5.01	569
142	0.51		55.08	168.41	163	168	1.00	4.24	482
143	0.60		55.08	168.37	163	169	1.00	5.02	569

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
144	0.56		55.03	168.41	164	169	1.00	4.68	531
145	0.63		55.03	168.56	164	170	1.00	5.26	598
146	0.58		55.03	168.79	165	171	1.00	4.85	553
147	0.56		55.03	169.17	166	172	1.00	4.69	536
148	0.54		55.03	169.69	167	172	1.00	4.52	519
149	0.54		55.03	170.25	168	173	1.00	4.52	522
150	0.52		55.03	171.01	168	174	1.00	4.37	507
151	0.64		55.03	171.67	169	175	1.00	5.33	622
152	0.58		55.03	172.56	170	176	1.00	4.85	571
153	0.60		55.03	173.27	171	177	1.00	5.02	594
154	0.58		55.03	174.16	172	178	1.00	4.84	578
155	0.64		55.03	175.01	173	179	1.00	5.34	641
156	0.60		55.08	175.95	174	180	1.00	5.01	606
157	0.56		55.08	176.80	175	181	1.00	4.70	572
158	0.62		55.08	177.80	176	182	1.00	5.17	635
159	0.58		55.08	178.70	176	182	1.00	4.84	600
160	0.62		55.08	179.65	177	183	1.00	5.16	643
161	0.64		55.08	180.64	177	183	1.00	5.34	671
162	0.54		55.08	181.64	177	183	1.00	4.52	573
163	0.56		55.08	182.68	178	183	1.00	4.70	600
164	0.66		55.08	183.53	178	183	1.00	5.50	707
165	0.60		55.08	183.96	178	183	1.00	5.02	647
166	0.54		55.08	184.29	178	183	1.00	4.52	585
167	0.56		55.12	184.57	178	184	1.00	4.70	609
168	0.62		55.12	184.81	178	184	1.00	5.17	672
169	0.58		55.12	185.00	178	184	1.00	4.85	631
170	0.62		55.12	185.05	178	184	1.00	5.17	673
171	0.58		55.12	185.14	178	184	1.00	4.85	632
172	0.60		55.12	185.19	178	184	1.00	5.02	654
173	0.57		55.12	185.28	178	184	1.00	4.71	614
174	0.59		55.12	185.28	178	183	1.00	4.89	638
175	0.59		55.12	185.33	178	183	1.00	4.91	640
176	0.69		55.12	185.33	178	183	1.00	5.71	745
177	0.52		55.12	185.33	178	183	1.00	4.37	569
178	0.64		55.12	185.28	178	183	1.00	5.33	694
179	0.58		55.12	185.24	178	183	1.00	4.85	632
180	0.56		55.12	185.24	178	183	1.00	4.69	611
181	0.60		55.08	185.19	178	183	1.00	5.02	653
182	0.64		55.08	185.09	178	183	1.00	5.34	695
183	0.58		55.08	185.05	177	183	1.00	4.84	630
184	0.56		55.08	184.95	177	183	1.00	4.69	610
185	0.60		55.08	184.90	177	182	1.00	5.01	651
186	0.60		55.08	184.81	177	182	1.00	5.02	652
187	0.56		55.08	184.67	177	182	1.00	4.70	609
188	0.56		55.08	184.62	177	182	1.00	4.70	609
189	0.66		55.08	184.53	177	182	1.00	5.50	713
190	0.56		55.08	184.38	177	182	1.00	4.68	606
191	0.58		55.08	184.29	177	182	1.00	4.81	622

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
192	0.62		55.08	184.20	176	182	1.00	5.17	669
193	0.68		55.08	184.05	176	182	1.00	5.66	731
194	0.60		55.08	183.96	176	181	1.00	5.01	646
195	0.64		55.08	183.86	176	181	1.00	5.34	689
196	0.58		55.12	183.72	176	181	1.00	4.84	624
197	0.58		55.12	183.58	176	181	1.00	4.86	625
198	0.60		55.17	183.44	176	181	1.00	5.02	644
199	0.56		55.17	183.30	176	181	1.00	4.70	602
200	0.58		55.12	183.20	175	181	1.00	4.85	622
201	0.62		55.17	183.06	175	180	1.00	5.17	662
202	0.60		55.17	182.92	175	180	1.00	5.02	642
203	0.58		55.17	182.73	175	180	1.00	4.85	620
204	0.56		55.17	182.63	175	180	1.00	4.70	600
205	0.64		55.12	182.44	175	180	1.00	5.36	683
206	0.58		55.12	182.35	175	180	1.00	4.83	615
207	0.55		55.12	182.16	174	179	1.00	4.62	588
208	0.61		55.12	182.02	174	179	1.00	5.11	649
209	0.64		55.12	181.83	174	179	1.00	5.34	678
210	0.54		55.08	181.68	174	179	1.00	4.52	573
211	0.51		55.08	181.54	174	179	1.00	4.21	533
212	0.66		55.08	181.40	174	179	1.00	5.49	695
213	0.62		55.08	181.21	173	178	1.00	5.18	654
214	0.54		55.08	181.07	173	178	1.00	4.53	572
215	0.62		55.08	180.93	173	178	1.00	5.19	654
216	0.54		55.08	180.74	173	178	1.00	4.53	570
217	0.54		55.03	180.60	173	178	1.00	4.54	571
218	0.56		55.03	180.45	173	178	1.00	4.70	590
219	0.62		55.03	180.26	172	177	1.00	5.18	650
220	0.52		55.03	180.07	172	177	1.00	4.38	548
221	0.60		55.03	179.93	172	177	1.00	5.02	627
222	0.64		55.03	179.74	172	177	1.00	5.34	667
223	0.62		55.03	179.60	172	177	1.00	5.15	642
224	0.62		54.98	179.41	172	177	1.00	5.18	645
225	0.68		54.98	179.22	171	176	1.00	5.66	705
226	0.60		54.98	179.08	171	176	1.00	5.02	623
227	0.66		54.98	178.89	171	176	1.00	5.51	683
228	0.52		54.98	178.70	171	176	1.00	4.38	542
229	0.62		54.98	178.56	171	176	1.00	5.19	642
230	0.56		54.98	178.37	171	176	1.00	4.70	580
231	0.54		54.98	178.18	170	175	1.00	4.53	559
232	0.62		54.98	177.99	170	175	1.00	5.19	639
233	0.60		54.94	177.80	170	175	1.00	5.02	617
234	0.62		54.94	177.66	170	175	1.00	5.19	638
235	0.56		54.94	177.47	170	175	1.00	4.70	576
236	0.55		54.94	177.28	170	174	1.00	4.55	557
237	0.60		54.94	177.09	169	174	1.00	5.03	615
238	0.62		54.94	176.95	169	174	1.00	5.17	632
239	0.53		54.94	176.76	169	174	1.00	4.43	541

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
240	0.55		54.94	176.57	169	174	1.00	4.61	561
241	0.61		54.94	176.38	169	174	1.00	5.06	615
242	0.56		54.94	176.19	169	173	1.00	4.70	570
243	0.62		54.94	176.00	168	173	1.00	5.19	629
244	0.56		54.89	175.81	168	173	1.00	4.70	570
245	0.53		54.89	175.62	168	173	1.00	4.38	530
246	0.64		54.89	175.48	168	173	1.00	5.35	646
247	0.58		54.89	175.25	168	172	1.00	4.86	586
248	0.58		54.89	175.11	168	172	1.00	4.87	586
249	0.58		54.89	174.87	167	172	1.00	4.86	584
250	0.62		54.89	174.73	167	172	1.00	5.20	624
251	0.55		54.89	174.54	167	172	1.00	4.55	545
252	0.58		54.89	174.35	167	172	1.00	4.87	582
253	0.58		54.89	174.16	167	171	1.00	4.87	581
254	0.64		54.89	173.97	166	171	1.00	5.34	637
255	0.58		54.94	173.79	166	171	1.00	4.88	580
256	0.58		54.94	173.60	166	171	1.00	4.84	574
257	0.60		54.94	173.41	166	170	1.00	5.02	596
258	0.58		54.94	173.22	166	170	1.00	4.86	576
259	0.54		54.94	173.03	165	170	1.00	4.54	537
260	0.58		54.94	172.84	165	170	1.00	4.88	576
261	0.60		54.94	172.61	165	170	1.00	5.02	592
262	0.62		54.94	172.42	165	170	1.00	5.19	610
263	0.64		54.94	172.23	165	169	1.00	5.35	629
264	0.58		54.94	172.09	165	169	1.00	4.86	570
265	0.58		54.94	171.85	164	169	1.00	4.87	570
266	0.58		54.94	171.67	164	169	1.00	4.86	568
267	0.60		54.89	171.48	164	169	1.00	5.03	587
268	0.58		54.89	171.29	164	169	1.00	4.86	566
269	0.56		54.89	171.10	164	168	1.00	4.70	547
270	0.58		54.89	170.91	163	168	1.00	4.88	566
271	0.58		54.89	170.72	163	168	1.00	4.83	560
272	0.62		54.94	170.58	163	168	1.00	5.19	601
273	0.63		54.94	170.35	163	168	1.00	5.24	605
274	0.59		54.98	170.20	163	167	1.00	4.90	565
275	0.60		54.98	170.01	162	167	1.00	5.03	580
276	0.56		55.03	169.83	162	167	1.00	4.70	540
277	0.68		55.03	169.59	162	167	1.00	5.68	652
278	0.52		55.08	169.45	162	166	1.00	4.38	501
279	0.62		55.08	169.21	162	167	1.00	5.19	593
280	0.54		55.08	169.03	162	166	1.00	4.54	518
281	0.58		55.08	168.79	162	167	1.00	4.85	552
282	0.62		55.08	168.56	162	167	1.00	5.19	590
283	0.66		55.08	168.32	162	167	1.00	5.50	624
284	0.60		55.08	168.23	162	167	1.00	5.02	569
285	0.60		55.08	168.18	162	168	1.00	5.02	569
286	0.60		55.08	168.23	163	168	1.00	5.02	569
287	0.58		55.03	168.23	163	168	1.00	4.84	549

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
288	0.60		55.03	168.46	164	169	1.00	5.04	572
289	0.65		55.03	168.56	164	170	1.00	5.41	615
290	0.60		55.03	168.84	165	171	1.00	5.02	573
291	0.60		55.03	169.12	166	171	1.00	5.02	573
292	0.56		55.08	169.64	167	172	1.00	4.69	538
293	0.60		55.08	170.16	168	173	1.00	5.02	578
294	0.62		55.08	170.77	168	174	1.00	5.18	600
295	0.58		55.12	171.48	169	175	1.00	4.86	566
296	0.58		55.12	172.18	170	176	1.00	4.85	569
297	0.60		55.12	173.08	171	177	1.00	5.01	591
298	0.52		55.12	174.07	172	178	1.00	4.37	520
299	0.56		55.12	174.96	173	179	1.00	4.68	561
300	0.58		55.12	175.91	175	181	1.00	4.85	587
301	0.60		55.12	176.80	176	182	1.00	5.00	609
302	0.60		55.12	177.99	177	182	1.00	5.01	616
303	0.65		55.08	178.98	177	183	1.00	5.46	677
304	0.57		55.08	180.07	177	183	1.00	4.76	596
305	0.58		55.08	181.16	178	183	1.00	4.84	610
306	0.57		55.08	182.25	178	184	1.00	4.71	600
307	0.56		55.12	183.48	178	184	1.00	4.69	602
308	0.56		55.12	183.96	178	184	1.00	4.68	604
309	0.54		55.12	184.38	178	184	1.00	4.52	584
310	0.62		55.17	184.81	178	184	1.00	5.16	670
311	0.56		55.17	185.05	179	184	1.00	4.67	607
312	0.54		55.21	185.24	179	184	1.00	4.52	588
313	0.56		55.21	185.38	179	184	1.00	4.67	609
314	0.64		55.21	185.52	179	184	1.00	5.33	695
315	0.60		55.21	185.66	179	184	1.00	4.98	651
316	0.56		55.21	185.66	179	184	1.00	4.68	611
317	0.60		55.21	185.75	179	184	1.00	5.00	653
318	0.58		55.21	185.80	179	184	1.00	4.84	632
319	0.66		55.17	185.85	179	184	1.00	5.48	716
320	0.62		55.17	185.85	179	184	1.00	5.13	671
321	0.59		55.17	185.89	179	184	1.00	4.93	646
322	0.58		55.17	185.85	178	184	1.00	4.84	633
323	0.60		55.17	185.85	178	184	1.00	4.99	653
324	0.62		55.21	185.80	178	184	1.00	5.16	674
325	0.62		55.21	185.80	178	184	1.00	5.15	673
326	0.58		55.21	185.71	178	183	1.00	4.84	632
327	0.58		55.21	185.66	178	183	1.00	4.84	632
328	0.58		55.26	185.61	178	183	1.00	4.83	630
329	0.62		55.26	185.52	178	183	1.00	5.15	671
330	0.60		55.26	185.47	178	183	1.00	4.98	650
331	0.64		55.26	185.38	178	183	1.00	5.31	692
332	0.54		55.26	185.28	178	183	1.00	4.51	587
333	0.62		55.26	185.19	178	183	1.00	5.14	669
334	0.60		55.21	185.09	177	183	1.00	4.99	649
335	0.57		55.21	184.95	177	182	1.00	4.79	622

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
336	0.56		55.17	184.86	177	182	1.00	4.66	605
337	0.59		55.17	184.76	177	182	1.00	4.91	637
338	0.62		55.17	184.62	177	182	1.00	5.16	668
339	0.60		55.17	184.48	177	182	1.00	4.99	646
340	0.62		55.17	184.38	177	182	1.00	5.15	666
341	0.56		55.21	184.24	176	182	1.00	4.66	602
342	0.56		55.21	184.15	176	182	1.00	4.65	601
343	0.58		55.21	183.96	176	181	1.00	4.83	622
344	0.56		55.21	183.86	176	181	1.00	4.66	601
345	0.62		55.26	183.72	176	181	1.00	5.15	662
346	0.60		55.26	183.53	176	181	1.00	4.99	641
347	0.56		55.26	183.39	176	181	1.00	4.65	597
348	0.56		55.26	183.25	175	181	1.00	4.65	596
349	0.58		55.21	183.10	175	181	1.00	4.82	617
350	0.62		55.21	182.96	175	180	1.00	5.13	656
351	0.61		55.21	182.82	175	180	1.00	5.07	648
352	0.58		55.17	182.63	175	180	1.00	4.82	615
353	0.58		55.17	182.49	175	180	1.00	4.83	615
354	0.64		55.12	182.35	174	180	1.00	5.31	677
355	0.60		55.12	182.20	174	179	1.00	4.98	633
356	0.60		55.12	182.02	174	179	1.00	4.98	633
357	0.60		55.17	181.83	174	179	1.00	4.98	632
358	0.52		55.17	181.73	174	179	1.00	4.34	550
359	0.52		55.17	181.50	174	179	1.00	4.33	548
360	0.67		55.17	181.35	173	179	1.00	5.62	710
361	0.66		55.17	181.16	173	178	1.00	5.48	691
362	0.60		55.17	180.97	173	178	1.00	4.98	628
363	0.58		55.17	180.83	173	178	1.00	4.82	606
364	0.57		55.17	180.69	173	178	1.00	4.75	597
365	0.62		55.12	180.50	173	178	1.00	5.15	646
366	0.58		55.12	180.31	172	178	1.00	4.82	604
367	0.58		55.12	180.12	172	177	1.00	4.82	603
368	0.64		55.12	179.93	172	177	1.00	5.30	663
369	0.58		55.08	179.79	172	177	1.00	4.83	603
370	0.52		55.08	179.60	172	177	1.00	4.33	540
371	0.62		55.08	179.41	172	177	1.00	5.14	640
372	0.58		55.08	179.22	171	176	1.00	4.83	600
373	0.54		55.08	179.08	171	176	1.00	4.49	558
374	0.62		55.08	178.89	171	176	1.00	5.14	637
375	0.60		55.12	178.70	171	176	1.00	4.99	618
376	0.60		55.12	178.51	171	176	1.00	4.98	615
377	0.62		55.12	178.37	170	175	1.00	5.14	634
378	0.61		55.12	178.18	170	175	1.00	5.11	630
379	0.64		55.12	177.94	170	175	1.00	5.30	652
380	0.56		55.12	177.80	170	175	1.00	4.65	572
381	0.58		55.08	177.61	170	175	1.00	4.81	590
382	0.54		55.08	177.42	170	174	1.00	4.51	552
383	0.54		55.03	177.23	169	174	1.00	4.50	550

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
384	0.54		54.98	177.04	169	174	1.00	4.49	549
385	0.58		54.98	176.80	169	174	1.00	4.82	588
386	0.60		54.94	176.66	169	174	1.00	4.98	607
387	0.58		54.94	176.43	168	173	1.00	4.82	586
388	0.58		54.89	176.24	168	173	1.00	4.83	587
389	0.67		54.89	176.05	168	173	1.00	5.62	682
390	0.62		54.89	175.81	168	173	1.00	5.14	622
391	0.60		54.89	175.62	168	173	1.00	5.01	605
392	0.58		54.89	175.48	168	173	1.00	4.80	580
393	0.54		54.89	175.25	167	172	1.00	4.54	547
394	0.63		54.89	175.06	167	172	1.00	5.25	632
395	0.58		54.89	174.87	167	172	1.00	4.83	580
396	0.66		54.89	174.68	167	172	1.00	5.47	656
397	0.60		54.89	174.49	167	172	1.00	4.99	598
398	0.58		54.85	174.26	167	171	1.00	4.82	576
399	0.60		54.85	174.12	166	171	1.00	4.98	594
400	0.56		54.80	173.88	166	171	1.00	4.66	556
401	0.56		54.80	173.69	166	171	1.00	4.66	554
402	0.54		54.80	173.50	166	171	1.00	4.51	536
403	0.64		54.80	173.27	165	170	1.00	5.30	629
404	0.62		54.80	173.08	165	170	1.00	5.14	609
405	0.62		54.80	172.89	165	170	1.00	5.13	607
406	0.62		54.80	172.65	165	170	1.00	5.14	606
407	0.57		54.85	172.47	165	169	1.00	4.75	559
408	0.58		54.80	172.28	164	169	1.00	4.82	567
409	0.64		54.80	172.09	164	169	1.00	5.30	623
410	0.56		54.80	171.85	164	169	1.00	4.66	547
411	0.64		54.80	171.67	164	169	1.00	5.30	621
412	0.62		54.80	171.48	164	168	1.00	5.14	600
413	0.62		54.75	171.24	163	168	1.00	5.15	600
414	0.60		54.75	171.05	163	168	1.00	4.98	580
415	0.62		54.75	170.86	163	168	1.00	5.16	599
416	0.60		54.71	170.63	163	168	1.00	4.98	578
417	0.62		54.75	170.44	163	167	1.00	5.14	595
418	0.68		54.75	170.25	163	167	1.00	5.63	651
419	0.54		54.75	170.01	162	167	1.00	4.52	521
420	0.58		54.75	169.83	162	167	1.00	4.79	552
421	0.65		54.80	169.64	162	166	1.00	5.42	623
422	0.59		54.75	169.45	161	166	1.00	4.91	564
423	0.58		54.75	169.21	161	166	1.00	4.82	552
424	0.67		54.75	169.03	161	166	1.00	5.62	643
425	0.62		54.75	168.79	161	166	1.00	5.16	589
426	0.60		54.75	168.51	161	167	1.00	4.98	568
427	0.64		54.75	168.27	162	167	1.00	5.30	603
428	0.58		54.71	168.08	162	167	1.00	4.82	547
429	0.58		54.71	168.04	162	167	1.00	4.83	548
430	0.58		54.66	167.99	162	168	1.00	4.83	548
431	0.60		54.66	168.08	163	168	1.00	4.99	567

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
432	0.64		54.66	168.27	163	169	1.00	5.31	604
433	0.59		54.62	168.56	164	169	1.00	4.96	566
434	0.58		54.62	168.88	164	170	1.00	4.83	552
435	0.63		54.66	169.03	165	171	1.00	5.22	598
436	0.62		54.66	169.36	166	172	1.00	5.15	591
437	0.68		54.66	169.83	167	172	1.00	5.63	649
438	0.62		54.66	170.35	168	173	1.00	5.16	597
439	0.60		54.66	170.91	168	174	1.00	4.98	579
440	0.62		54.66	171.67	169	175	1.00	5.16	604
441	0.58		54.62	172.47	170	176	1.00	4.83	570
442	0.60		54.62	173.27	171	178	1.00	4.98	592
443	0.54		54.57	174.21	173	179	1.00	4.51	540
444	0.66		54.57	175.15	174	180	1.00	5.48	661
445	0.58		54.52	176.14	175	181	1.00	4.83	588
446	0.60		54.52	177.09	176	182	1.00	4.99	613
447	0.58		54.52	178.27	177	183	1.00	4.83	598
448	0.63		54.52	179.36	177	183	1.00	5.28	660
449	0.64		54.52	180.50	178	183	1.00	5.35	675
450	0.60		54.52	181.54	178	184	1.00	5.01	637
451	0.58		54.57	182.82	178	184	1.00	4.82	619
452	0.60		54.57	183.86	178	184	1.00	4.99	646
453	0.56		54.57	184.53	178	184	1.00	4.66	606
454	0.62		54.57	184.90	178	184	1.00	5.16	673
455	0.58		54.57	185.19	179	184	1.00	4.83	631
456	0.66		54.57	185.47	179	184	1.00	5.48	718
457	0.60		54.57	185.66	179	184	1.00	4.98	654
458	0.64		54.52	185.80	180	185	1.00	5.31	698
459	0.62		54.48	185.89	178	185	1.00	5.15	677
460	0.58		54.48	186.04	178	184	1.00	4.84	637
461	0.42		54.52	186.08	180	185	1.00	3.52	464
462	0.58		54.43	186.23	180	184	1.00	4.80	634
463	0.42		54.48	186.23	180	184	1.00	3.53	466
464	0.50		54.57	186.32	179	184	1.00	4.19	552
465	0.74		54.43	186.46	180	185	1.00	6.13	811
466	0.54		54.48	186.27	180	185	1.00	4.50	594
467	0.46		54.52	186.41	179	184	1.00	3.86	510
468	0.60		54.57	186.32	180	184	1.00	4.99	658
469	0.52		54.57	186.37	179	184	1.00	4.34	572
470	0.62		54.62	186.37	179	184	1.00	5.15	679
471	0.60		54.71	186.32	179	184	1.00	4.98	656
472	0.48		54.71	186.32	179	184	1.00	4.02	530
473	0.52		54.75	186.27	179	184	1.00	4.34	572
474	0.56		54.75	186.23	179	184	1.00	4.66	613
475	0.54		54.80	186.13	179	184	1.00	4.49	591
476	0.54		54.80	186.13	179	184	1.00	4.52	594
477	0.50		54.80	186.08	179	184	1.00	4.18	549
478	0.54		54.80	185.99	179	184	1.00	4.50	591
479	0.56		54.85	185.94	179	184	1.00	4.66	612

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
480	0.56		54.85	185.85	179	184	1.00	4.66	612
481	0.56		54.85	185.80	179	183	1.00	4.66	610
482	0.56		54.85	185.71	179	183	1.00	4.67	612
483	0.56		54.85	185.61	178	183	1.00	4.66	611
484	0.54		54.89	185.52	178	183	1.00	4.49	587
485	0.50		54.89	185.42	178	183	1.00	4.19	547
486	0.56		54.94	185.38	178	183	1.00	4.66	609
487	0.50		54.94	185.24	178	183	1.00	4.18	545
488	0.50		54.98	185.14	178	183	1.00	4.19	546
489	0.58		54.98	185.00	178	183	1.00	4.84	631
490	0.49		55.03	184.95	178	182	1.00	4.08	531
491	0.54		55.03	184.86	178	182	1.00	4.52	588
492	0.58		55.03	184.72	177	182	1.00	4.82	626
493	0.54		55.03	184.62	177	182	1.00	4.47	581
494	0.54		55.03	184.48	177	182	1.00	4.50	583
495	0.54		55.03	184.38	177	182	1.00	4.50	583
496	0.50		54.98	184.20	177	182	1.00	4.17	540
497	0.46		54.98	184.10	177	182	1.00	3.86	499
498	0.54		54.98	183.96	177	181	1.00	4.49	580
499	0.46		54.98	183.82	176	181	1.00	3.87	499
500	0.54		54.98	183.67	176	181	1.00	4.50	580
501	0.58		54.98	183.53	176	181	1.00	4.82	620
502	0.52		55.03	183.44	176	181	1.00	4.34	558
503	0.56		55.03	183.34	176	181	1.00	4.66	599
504	0.62		55.03	183.20	176	181	1.00	5.15	661
505	0.51		55.08	183.06	176	180	1.00	4.25	545
506	0.62		55.12	182.92	175	180	1.00	5.14	658
507	0.54		55.17	182.77	175	180	1.00	4.47	572
508	0.48		55.17	182.63	175	180	1.00	4.02	513
509	0.60		55.21	182.49	175	180	1.00	4.99	636
510	0.60		55.21	182.35	175	180	1.00	4.98	634
511	0.56		55.21	182.20	175	179	1.00	4.66	593
512	0.44		55.21	182.06	175	179	1.00	3.69	468
513	0.56		55.21	181.92	175	179	1.00	4.67	593
514	0.62		55.21	181.73	174	179	1.00	5.15	652
515	0.40		55.21	181.59	174	179	1.00	3.37	427
516	0.50		55.17	181.45	174	179	1.00	4.18	528
517	0.58		55.17	181.30	174	179	1.00	4.81	608
518	0.56		55.17	181.12	174	178	1.00	4.66	588
519	0.46		55.21	180.97	174	178	1.00	3.87	487
520	0.54		55.21	180.83	173	178	1.00	4.51	567
521	0.58		55.21	180.64	173	178	1.00	4.79	602
522	0.62		55.26	180.50	173	178	1.00	5.15	645
523	0.58		55.26	180.31	173	178	1.00	4.88	611
524	0.58		55.26	180.17	173	177	1.00	4.83	604
525	0.56		55.26	179.98	173	177	1.00	4.66	582
526	0.56		55.26	179.84	172	177	1.00	4.67	583
527	0.58		55.26	179.70	172	177	1.00	4.83	601

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
528	0.60		55.26	179.55	172	177	1.00	4.98	620
529	0.60		55.26	179.36	172	177	1.00	4.99	620
530	0.56		55.26	179.22	172	176	1.00	4.66	579
531	0.48		55.21	179.03	172	176	1.00	4.01	498
532	0.60		55.17	178.89	171	176	1.00	4.99	618
533	0.56		55.17	178.70	171	176	1.00	4.67	578
534	0.52		55.12	178.56	171	176	1.00	4.36	539
535	0.50		55.12	178.37	171	176	1.00	4.19	517
536	0.45		55.08	178.18	171	175	1.00	3.74	461
537	0.58		55.08	178.04	171	175	1.00	4.80	591
538	0.56		55.03	177.85	170	175	1.00	4.66	573
539	0.56		55.03	177.66	170	175	1.00	4.67	574
540	0.60		55.03	177.47	170	175	1.00	4.98	611
541	0.52		54.98	177.33	170	174	1.00	4.34	532
542	0.62		54.98	177.14	170	174	1.00	5.16	631
543	0.58		54.98	177.00	170	174	1.00	4.83	590
544	0.62		54.98	176.80	169	174	1.00	5.15	628
545	0.58		55.03	176.62	169	174	1.00	4.84	589
546	0.60		55.03	176.43	169	174	1.00	4.99	607
547	0.52		55.03	176.24	169	173	1.00	4.33	526
548	0.60		55.03	176.05	169	173	1.00	4.98	604
549	0.55		55.08	175.91	168	173	1.00	4.61	557
550	0.57		55.08	175.72	168	173	1.00	4.77	576
551	0.54		55.12	175.53	168	173	1.00	4.53	546
552	0.58		55.12	175.34	168	172	1.00	4.84	582
553	0.62		55.17	175.15	168	172	1.00	5.16	619
554	0.64		55.21	175.01	168	172	1.00	5.30	636
555	0.56		55.21	174.77	167	172	1.00	4.66	558
556	0.52		55.26	174.63	167	172	1.00	4.33	518
557	0.62		55.26	174.44	167	172	1.00	5.16	615
558	0.54		55.26	174.26	167	171	1.00	4.50	536
559	0.52		55.26	174.12	167	171	1.00	4.33	515
560	0.60		55.31	173.93	167	171	1.00	4.99	593
561	0.54		55.31	173.69	166	171	1.00	4.50	533
562	0.54		55.31	173.55	166	171	1.00	4.50	533
563	0.52		55.31	173.36	166	170	1.00	4.33	511
564	0.54		55.31	173.17	166	170	1.00	4.51	532
565	0.51		55.35	172.99	166	170	1.00	4.21	496
566	0.50		55.35	172.80	165	170	1.00	4.17	490
567	0.56		55.35	172.61	165	170	1.00	4.65	546
568	0.60		55.40	172.47	165	170	1.00	4.97	582
569	0.50		55.40	172.23	165	169	1.00	4.18	489
570	0.50		55.45	172.09	165	169	1.00	4.17	487
571	0.54		55.45	171.90	165	169	1.00	4.48	523
572	0.56		55.49	171.71	164	169	1.00	4.65	542
573	0.56		55.49	171.52	164	169	1.00	4.65	541
574	0.52		55.49	171.33	164	169	1.00	4.32	501
575	0.56		55.49	171.15	164	168	1.00	4.65	539

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
576	0.56		55.49	171.01	164	168	1.00	4.65	537
577	0.58		55.49	170.82	164	168	1.00	4.79	554
578	0.61		55.45	170.63	163	168	1.00	5.11	589
579	0.52		55.45	170.44	163	168	1.00	4.34	500
580	0.56		55.40	170.25	163	167	1.00	4.65	534
581	0.62		55.40	170.11	163	167	1.00	5.13	589
582	0.56		55.35	169.92	162	167	1.00	4.64	532
583	0.50		55.35	169.73	162	167	1.00	4.16	477
584	0.60		55.31	169.55	162	167	1.00	4.97	568
585	0.52		55.31	169.36	162	167	1.00	4.31	492
586	0.54		55.31	169.17	162	167	1.00	4.48	511
587	0.50		55.26	168.98	162	167	1.00	4.16	474
588	0.56		55.31	168.74	162	167	1.00	4.64	527
589	0.54		55.31	168.56	162	167	1.00	4.47	507
590	0.60		55.31	168.41	163	168	1.00	4.97	562
591	0.55		55.35	168.41	163	168	1.00	4.55	515
592	0.56		55.40	168.46	164	169	1.00	4.70	532
593	0.59		55.40	168.56	164	169	1.00	4.90	555
594	0.54		55.45	168.79	165	170	1.00	4.48	509
595	0.59		55.49	169.07	165	170	1.00	4.96	564
596	0.52		55.49	169.36	166	171	1.00	4.31	491
597	0.52		55.54	169.78	167	172	1.00	4.32	494
598	0.48		55.54	170.25	167	173	1.00	3.99	458
599	0.54		55.59	170.86	168	174	1.00	4.48	517
600	0.56		55.63	171.48	169	175	1.00	4.63	537
601	0.55		55.63	172.18	170	175	1.00	4.62	539
602	0.54		55.63	172.84	171	176	1.00	4.47	524
603	0.48		55.68	173.55	172	178	1.00	4.00	472
604	0.48		55.72	174.40	173	179	1.00	4.00	475
605	0.52		55.72	175.25	174	180	1.00	4.30	515
606	0.59		55.77	176.19	175	181	1.00	4.88	589
607	0.55		55.82	177.09	176	182	1.00	4.62	561
608	0.54		55.82	178.08	177	183	1.00	4.47	547
609	0.54		55.86	179.32	178	183	1.00	4.47	552
610	0.50		55.91	180.50	178	183	1.00	4.15	518
611	0.50		55.95	181.30	178	183	1.00	4.15	520
612	0.57		56.00	182.44	178	184	1.00	4.79	606
613	0.54		56.00	183.67	178	184	1.00	4.47	572
614	0.56		56.05	184.29	179	184	1.00	4.63	594
615	0.52		56.05	184.62	179	184	1.00	4.30	554
616	0.52		56.09	184.90	179	184	1.00	4.32	557
617	0.52		56.09	185.14	179	184	1.00	4.31	557
618	0.57		56.09	185.28	179	184	1.00	4.79	619
619	0.63		56.14	185.42	179	184	1.00	5.28	683
620	0.58		56.18	185.61	179	184	1.00	4.79	621
621	0.56		56.18	185.71	179	184	1.00	4.63	600
622	0.56		56.18	185.80	181	184	1.00	4.63	601
623	0.56		56.18	185.85	181	184	1.00	4.64	602

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
624	0.56		56.18	185.89	181	184	1.00	4.63	601
625	0.55		56.23	185.99	181	184	1.00	4.62	600
626	0.59		56.23	185.99	181	184	1.00	4.93	640
627	0.38		56.32	185.99	181	184	1.00	3.18	413
628	0.38		56.37	186.04	181	184	1.00	3.18	413
629	0.48		56.46	186.08	181	184	1.00	4.00	519
630	0.34		56.46	186.13	181	185	1.00	2.86	372
631	0.44		56.51	186.13	181	185	1.00	3.67	476
632	0.42		56.55	186.18	181	185	1.00	3.51	456
633	0.29		56.60	186.18	181	185	1.00	2.41	312
634	0.42		56.60	186.23	181	184	1.00	3.50	455
635	0.40		56.65	186.23	181	184	1.00	3.35	434
636	0.40		56.69	186.27	181	184	1.00	3.35	434
637	0.40		56.74	186.23	181	184	1.00	3.35	434
638	0.40		56.74	186.27	181	184	1.00	3.36	435
639	0.46		56.78	186.23	181	184	1.00	3.82	495
640	0.42		56.83	186.23	181	184	1.00	3.50	454
641	0.36		56.88	186.18	181	184	1.00	3.02	391
642	0.43		56.88	186.18	181	184	1.00	3.58	463
643	0.40		56.88	186.08	181	184	1.00	3.36	434
644	0.46		56.92	186.08	181	184	1.00	3.83	496
645	0.38		56.97	186.04	181	184	1.00	3.20	414
646	0.46		57.01	186.04	180	184	1.00	3.84	496
647	0.38		57.01	185.89	180	184	1.00	3.20	413
648	0.35		57.06	185.94	180	184	1.00	2.88	372
649	0.42		57.06	185.85	180	184	1.00	3.52	454
650	0.44		57.06	185.80	180	184	1.00	3.68	474
651	0.42		57.06	185.75	180	184	1.00	3.51	453
652	0.31		57.11	185.71	180	184	1.00	2.59	333
653	0.40		57.11	185.61	180	183	1.00	3.36	432
654	0.43		57.15	185.57	180	183	1.00	3.61	464
655	0.38		57.15	185.47	180	183	1.00	3.13	402
656	0.46		57.20	185.38	180	183	1.00	3.84	493
657	0.40		57.20	185.33	180	183	1.00	3.35	430
658	0.39		57.25	185.24	179	183	1.00	3.21	411
659	0.46		57.25	185.14	179	183	1.00	3.84	492
660	0.38		57.29	185.09	179	183	1.00	3.19	409
661	0.39		57.29	185.00	179	183	1.00	3.21	410
662	0.33		57.34	184.90	179	183	1.00	2.72	348
663	0.36		57.34	184.76	179	182	1.00	3.04	387
664	0.38		57.39	184.72	179	182	1.00	3.20	408
665	0.42		57.39	184.57	179	182	1.00	3.51	447
666	0.46		57.43	184.48	179	182	1.00	3.84	489
667	0.44		57.43	184.43	179	182	1.00	3.69	469
668	0.39		57.43	184.29	178	182	1.00	3.23	410
669	0.45		57.48	184.20	178	182	1.00	3.74	475
670	0.35		57.48	184.15	178	182	1.00	2.90	367
671	0.41		57.48	184.00	178	182	1.00	3.41	431

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
672	0.37		57.48	183.91	178	182	1.00	3.05	386
673	0.44		57.48	183.82	178	181	1.00	3.69	467
674	0.42		57.48	183.72	178	181	1.00	3.52	445
675	0.39		57.52	183.58	178	181	1.00	3.22	406
676	0.42		57.48	183.48	178	181	1.00	3.53	445
677	0.42		57.52	183.39	178	181	1.00	3.54	446
678	0.42		57.52	183.25	177	181	1.00	3.52	443
679	0.33		57.52	183.15	177	181	1.00	2.74	345
680	0.44		57.52	183.06	177	181	1.00	3.69	464
681	0.44		57.52	182.92	177	180	1.00	3.69	463
682	0.40		57.52	182.82	177	180	1.00	3.37	423
683	0.41		57.57	182.68	177	180	1.00	3.40	426
684	0.36		57.57	182.58	177	180	1.00	3.03	379
685	0.34		57.57	182.44	177	180	1.00	2.85	356
686	0.37		57.62	182.35	176	180	1.00	3.06	382
687	0.39		57.66	182.25	176	180	1.00	3.22	401
688	0.42		57.66	182.11	176	180	1.00	3.54	441
689	0.44		57.66	181.97	176	180	1.00	3.70	461
690	0.50		57.71	181.87	176	179	1.00	4.18	519
691	0.46		57.75	181.78	176	179	1.00	3.87	481
692	0.39		57.75	181.68	176	179	1.00	3.23	400
693	0.42		57.80	181.54	176	179	1.00	3.54	438
694	0.41		57.80	181.40	176	179	1.00	3.39	419
695	0.37		57.85	181.26	175	179	1.00	3.07	379
696	0.45		57.85	181.16	175	179	1.00	3.71	458
697	0.44		57.89	181.02	175	179	1.00	3.70	456
698	0.42		57.89	180.93	175	178	1.00	3.49	430
699	0.48		57.94	180.78	175	178	1.00	4.01	493
700	0.45		57.94	180.64	175	178	1.00	3.78	464
701	0.35		57.94	180.55	175	178	1.00	2.91	358
702	0.39		57.94	180.40	175	178	1.00	3.23	395
703	0.37		57.98	180.26	174	178	1.00	3.08	377
704	0.35		57.98	180.12	174	178	1.00	2.91	356
705	0.45		57.98	180.03	174	178	1.00	3.71	453
706	0.35		57.98	179.88	173	177	1.00	2.92	357
707	0.37		58.03	179.79	174	177	1.00	3.08	375
708	0.43		58.03	179.65	174	177	1.00	3.55	433
709	0.35		58.03	179.50	173	177	1.00	2.92	355
710	0.39		58.08	179.36	173	177	1.00	3.24	394
711	0.37		58.08	179.27	173	177	1.00	3.09	375
712	0.35		58.08	179.13	172	177	1.00	2.94	356
713	0.41		58.12	178.98	172	177	1.00	3.42	414
714	0.39		58.12	178.84	172	176	1.00	3.24	392
715	0.41		58.17	178.65	172	176	1.00	3.41	411
716	0.39		58.17	178.51	172	176	1.00	3.24	391
717	0.41		58.17	178.37	172	176	1.00	3.41	410
718	0.51		58.22	178.23	172	176	1.00	4.22	507
719	0.47		58.22	178.13	172	176	1.00	3.88	466

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
720	0.32		58.22	177.99	171	175	1.00	2.63	315
721	0.43		58.22	177.85	171	175	1.00	3.57	428
722	0.43		58.22	177.70	171	175	1.00	3.57	427
723	0.45		58.22	177.56	171	175	1.00	3.73	446
724	0.45		58.22	177.47	171	175	1.00	3.73	446
725	0.35		58.22	177.33	171	175	1.00	2.94	350
726	0.39		58.17	177.18	171	175	1.00	3.27	390
727	0.36		58.17	177.04	171	174	1.00	2.98	355
728	0.43		58.17	176.90	171	174	1.00	3.56	423
729	0.39		58.12	176.80	171	174	1.00	3.27	389
730	0.41		58.12	176.66	171	174	1.00	3.41	405
731	0.39		58.12	176.52	171	174	1.00	3.26	386
732	0.41		58.08	176.38	171	174	1.00	3.41	404
733	0.45		58.08	176.24	170	174	1.00	3.75	444
734	0.43		58.03	176.10	170	173	1.00	3.59	424
735	0.45		58.03	176.00	170	173	1.00	3.74	442
736	0.32		57.98	175.81	170	173	1.00	2.63	311
737	0.43		57.98	175.72	170	173	1.00	3.58	422
738	0.41		57.98	175.58	170	173	1.00	3.43	404
739	0.47		57.98	175.43	170	173	1.00	3.90	458
740	0.35		57.94	175.29	170	173	1.00	2.95	347
741	0.39		57.94	175.15	169	172	1.00	3.27	384
742	0.45		57.94	175.06	169	172	1.00	3.74	439
743	0.36		57.94	174.92	169	172	1.00	2.97	348
744	0.48		57.94	174.77	169	172	1.00	3.99	467
745	0.43		57.89	174.63	169	172	1.00	3.57	417
746	0.35		57.89	174.49	169	172	1.00	2.95	345
747	0.33		57.89	174.35	169	172	1.00	2.79	325
748	0.47		57.89	174.26	169	171	1.00	3.92	457
749	0.47		57.89	174.12	168	171	1.00	3.91	455
750	0.37		57.89	173.97	168	171	1.00	3.12	362
751	0.47		57.85	173.83	168	171	1.00	3.91	454
752	0.47		57.85	173.69	168	171	1.00	3.91	454
753	0.47		57.85	173.55	168	171	1.00	3.91	453
754	0.53		57.80	173.45	168	171	1.00	4.40	509
755	0.39		57.80	173.27	168	171	1.00	3.28	380
756	0.41		57.75	173.17	167	170	1.00	3.43	396
757	0.41		57.75	173.03	167	170	1.00	3.45	398
758	0.41		57.71	172.89	167	170	1.00	3.44	397
759	0.45		57.71	172.75	167	170	1.00	3.73	429
760	0.40		57.66	172.61	167	170	1.00	3.37	388
761	0.39		57.66	172.47	167	170	1.00	3.28	377
762	0.41		57.66	172.32	167	170	1.00	3.44	395
763	0.41		57.62	172.18	167	169	1.00	3.45	395
764	0.41		57.62	172.04	166	169	1.00	3.44	394
765	0.39		57.62	171.90	166	169	1.00	3.29	377
766	0.39		57.62	171.76	166	169	1.00	3.28	375
767	0.45		57.62	171.62	166	169	1.00	3.78	431

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
768	0.38		57.62	171.48	166	169	1.00	3.13	356
769	0.41		57.62	171.33	166	169	1.00	3.45	392
770	0.39		57.57	171.19	166	168	1.00	3.29	374
771	0.43		57.57	171.05	166	168	1.00	3.60	409
772	0.45		57.57	170.91	165	168	1.00	3.78	428
773	0.35		57.57	170.77	165	168	1.00	2.89	327
774	0.45		57.57	170.63	165	168	1.00	3.78	428
775	0.44		57.57	170.53	165	168	1.00	3.63	410
776	0.47		57.57	170.35	165	168	1.00	3.88	438
777	0.45		57.57	170.25	165	168	1.00	3.78	427
778	0.41		57.57	170.11	165	167	1.00	3.46	389
779	0.41		57.57	169.92	164	167	1.00	3.46	389
780	0.49		57.57	169.83	164	167	1.00	4.10	461
781	0.38		57.57	169.64	164	167	1.00	3.13	351
782	0.42		57.57	169.50	164	167	1.00	3.46	388
783	0.45		57.57	169.40	164	167	1.00	3.78	423
784	0.45		57.57	169.26	164	167	1.00	3.78	423
785	0.47		57.57	169.12	163	167	1.00	3.94	440
786	0.44		57.57	168.98	163	166	1.00	3.63	405
787	0.41		57.57	168.84	163	166	1.00	3.46	385
788	0.45		57.62	168.74	163	166	1.00	3.79	422
789	0.41		57.62	168.60	163	166	1.00	3.45	383
790	0.43		57.66	168.56	163	166	1.00	3.62	402
791	0.42		57.66	168.46	163	166	1.00	3.51	390
792	0.42		57.71	168.32	163	166	1.00	3.47	384
793	0.40		57.71	168.18	163	167	1.00	3.30	365
794	0.44		57.75	168.08	163	167	1.00	3.63	401
795	0.43		57.75	168.04	164	167	1.00	3.62	400
796	0.40		57.80	168.04	165	168	1.00	3.30	364
797	0.43		57.80	168.08	165	169	1.00	3.62	400
798	0.43		57.80	168.13	166	169	1.00	3.62	400
799	0.49		57.80	168.37	166	170	1.00	4.11	455
800	0.45		57.85	168.70	167	171	1.00	3.78	420
801	0.51		57.85	169.17	168	172	1.00	4.27	476
802	0.43		57.85	169.73	169	173	1.00	3.61	404
803	0.44		57.89	170.39	170	174	1.00	3.63	409
804	0.40		57.89	171.10	171	175	1.00	3.30	374
805	0.43		57.89	171.81	172	176	1.00	3.59	410
806	0.43		57.89	172.70	173	177	1.00	3.59	412
807	0.43		57.89	173.64	174	178	1.00	3.59	416
808	0.47		57.94	174.63	175	179	1.00	3.89	454
809	0.44		57.98	175.58	177	181	1.00	3.63	427
810	0.41		57.98	176.57	178	181	1.00	3.46	410
811	0.42		58.03	177.61	178	183	1.00	3.46	415
812	0.43		58.03	178.80	180	183	1.00	3.62	438
813	0.47		58.08	179.93	180	184	1.00	3.95	482
814	0.38		58.12	181.12	180	184	1.00	3.14	387
815	0.41		58.17	182.30	180	184	1.00	3.46	429

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
816	0.36		58.17	183.48	180	184	1.00	2.98	374
817	0.38		58.22	184.34	181	185	1.00	3.13	396
818	0.41		58.22	185.00	181	185	1.00	3.46	439
819	0.38		58.26	185.33	181	185	1.00	3.13	399
820	0.45		58.31	185.71	181	185	1.00	3.78	483
821	0.43		58.35	185.89	182	185	1.00	3.60	460
822	0.43		58.35	186.13	181	185	1.00	3.62	463
823	0.44		58.40	186.41	182	185	1.00	3.68	472
824	0.32		58.40	186.56	182	185	1.00	2.68	343
825	0.43		58.45	186.79	182	185	1.00	3.61	464
826	0.43		58.45	186.88	182	186	1.00	3.62	465
827	0.45		58.45	186.98	182	186	1.00	3.78	486
828	0.45		58.49	187.07	182	186	1.00	3.78	487
829	0.40		58.49	187.17	182	186	1.00	3.30	425
830	0.39		58.49	187.26	182	186	1.00	3.29	424
831	0.45		58.49	187.31	182	186	1.00	3.78	488
832	0.38		58.49	187.36	182	186	1.00	3.13	404
833	0.47		58.49	187.40	181	186	1.00	3.95	509
834	0.43		58.49	187.40	182	186	1.00	3.62	467
835	0.36		58.49	187.45	182	185	1.00	2.98	385
836	0.40		58.54	187.45	182	185	1.00	3.30	426
837	0.49		58.54	187.45	182	185	1.00	4.10	529
838	0.34		58.54	187.45	182	185	1.00	2.81	363
839	0.42		58.58	187.45	182	185	1.00	3.50	451
840	0.34		58.58	187.45	182	185	1.00	2.82	364
841	0.41		58.63	187.45	182	185	1.00	3.45	446
842	0.41		58.63	187.40	182	185	1.00	3.45	445
843	0.43		58.68	187.36	182	185	1.00	3.61	465
844	0.47		58.68	187.36	182	185	1.00	3.95	509
845	0.38		58.72	187.31	182	185	1.00	3.13	404
846	0.41		58.72	187.26	182	185	1.00	3.45	444
847	0.38		58.77	187.21	182	185	1.00	3.14	404
848	0.47		58.77	187.21	181	185	1.00	3.94	507
849	0.40		58.77	187.12	181	185	1.00	3.30	424
850	0.38		58.81	187.07	181	185	1.00	3.14	404
851	0.36		58.81	187.03	181	185	1.00	2.97	381
852	0.36		58.81	186.98	181	184	1.00	3.04	390
853	0.36		58.77	186.88	181	184	1.00	3.03	388
854	0.39		58.77	186.84	181	184	1.00	3.29	422
855	0.45		58.77	186.74	181	184	1.00	3.77	483
856	0.43		58.72	186.70	181	184	1.00	3.61	463
857	0.32		58.72	186.60	181	184	1.00	2.65	339
858	0.51		58.72	186.51	181	184	1.00	4.26	545
859	0.30		58.68	186.41	181	184	1.00	2.50	320
860	0.39		58.63	186.37	180	184	1.00	3.29	421
861	0.47		58.63	186.27	180	184	1.00	3.94	503
862	0.43		58.58	186.18	180	183	1.00	3.61	461
863	0.38		58.58	186.04	180	183	1.00	3.13	400

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
864	0.45		58.58	185.94	180	183	1.00	3.77	480
865	0.38		58.58	185.89	180	183	1.00	3.13	399
866	0.42		58.54	185.75	180	183	1.00	3.47	442
867	0.43		58.54	185.66	180	183	1.00	3.59	457
868	0.46		58.49	185.57	180	183	1.00	3.82	487
869	0.33		58.45	185.47	180	183	1.00	2.78	354
870	0.43		58.45	185.38	179	183	1.00	3.62	460
871	0.41		58.40	185.24	179	182	1.00	3.45	439
872	0.39		58.35	185.14	179	182	1.00	3.28	417
873	0.45		58.31	185.00	179	182	1.00	3.78	479
874	0.43		58.31	184.95	179	182	1.00	3.60	457
875	0.41		58.26	184.86	179	182	1.00	3.46	438
876	0.39		58.26	184.67	179	182	1.00	3.29	417
877	0.41		58.22	184.57	179	182	1.00	3.45	436
878	0.45		58.17	184.48	179	182	1.00	3.78	477
879	0.43		58.17	184.38	178	182	1.00	3.61	456
880	0.32		58.12	184.24	178	181	1.00	2.66	336
881	0.36		58.12	184.15	178	181	1.00	2.99	377
882	0.38		58.08	184.00	178	181	1.00	3.16	398
883	0.41		58.08	183.91	178	181	1.00	3.46	435
884	0.43		58.08	183.77	178	181	1.00	3.55	447
885	0.47		58.08	183.63	178	181	1.00	3.94	495
886	0.43		58.08	183.53	178	181	1.00	3.61	454
887	0.36		58.08	183.44	178	181	1.00	2.96	372
888	0.41		58.08	183.30	177	180	1.00	3.46	433
889	0.39		58.08	183.15	177	180	1.00	3.29	412
890	0.36		58.08	183.06	177	180	1.00	2.97	372
891	0.41		58.12	182.92	177	180	1.00	3.45	431
892	0.45		58.17	182.77	177	180	1.00	3.78	471
893	0.41		58.17	182.68	177	180	1.00	3.46	431
894	0.43		58.17	182.54	177	180	1.00	3.59	447
895	0.36		58.17	182.40	177	179	1.00	3.00	373
896	0.47		58.22	182.30	176	179	1.00	3.90	484
897	0.34		58.22	182.16	176	179	1.00	2.84	352
898	0.43		58.22	182.02	176	179	1.00	3.59	446
899	0.41		58.22	181.87	176	179	1.00	3.45	427
900	0.36		58.22	181.73	176	179	1.00	2.97	367
901	0.36		58.22	181.64	176	179	1.00	2.96	366
902	0.41		58.22	181.50	176	179	1.00	3.46	426
903	0.41		58.26	181.35	175	178	1.00	3.45	425
904	0.45		58.26	181.21	175	178	1.00	3.76	463
905	0.36		58.26	181.07	175	178	1.00	2.97	365
906	0.41		58.26	180.93	175	178	1.00	3.44	422
907	0.39		58.31	180.83	175	178	1.00	3.29	404
908	0.39		58.31	180.69	175	178	1.00	3.28	402
909	0.37		58.35	180.55	175	178	1.00	3.09	378
910	0.39		58.35	180.40	175	178	1.00	3.27	400
911	0.48		58.40	180.26	174	177	1.00	4.02	491

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
912	0.47		58.40	180.12	174	177	1.00	3.92	478
913	0.36		58.40	179.98	174	177	1.00	2.97	362
914	0.34		58.40	179.88	174	177	1.00	2.81	341
915	0.45		58.40	179.74	174	177	1.00	3.76	457
916	0.41		58.40	179.60	174	177	1.00	3.45	418
917	0.38		58.35	179.50	174	177	1.00	3.13	379
918	0.39		58.35	179.36	173	176	1.00	3.27	397
919	0.41		58.35	179.22	173	176	1.00	3.45	417
920	0.47		58.35	179.08	173	176	1.00	3.91	473
921	0.49		58.35	178.94	172	176	1.00	4.08	492
922	0.38		58.35	178.75	173	176	1.00	3.13	377
923	0.41		58.35	178.65	173	176	1.00	3.43	413
924	0.33		58.35	178.51	173	176	1.00	2.78	335
925	0.44		58.35	178.37	172	176	1.00	3.69	444
926	0.37		58.40	178.23	172	175	1.00	3.12	374
927	0.30		58.40	178.08	172	175	1.00	2.49	299
928	0.32		58.40	177.94	172	175	1.00	2.66	318
929	0.45		58.45	177.80	172	175	1.00	3.76	449
930	0.39		58.45	177.66	172	175	1.00	3.28	392
931	0.41		58.45	177.52	171	175	1.00	3.44	410
932	0.36		58.45	177.37	171	175	1.00	2.97	354
933	0.43		58.45	177.23	171	175	1.00	3.60	428
934	0.47		58.45	177.09	171	174	1.00	3.91	465
935	0.43		58.45	176.95	171	174	1.00	3.61	428
936	0.39		58.45	176.80	171	174	1.00	3.29	390
937	0.45		58.45	176.66	171	174	1.00	3.74	443
938	0.43		58.45	176.52	170	174	1.00	3.60	426
939	0.50		58.45	176.38	170	174	1.00	4.16	491
940	0.36		58.45	176.24	170	174	1.00	2.97	350
941	0.37		58.45	176.10	170	173	1.00	3.12	367
942	0.41		58.45	175.95	170	173	1.00	3.44	405
943	0.38		58.40	175.86	170	173	1.00	3.13	368
944	0.47		58.40	175.72	170	173	1.00	3.92	461
945	0.51		58.35	175.58	170	173	1.00	4.24	498
946	0.41		58.35	175.43	170	173	1.00	3.44	403
947	0.49		58.31	175.29	169	173	1.00	4.09	479
948	0.39		58.31	175.15	169	172	1.00	3.28	384
949	0.45		58.26	175.01	169	172	1.00	3.75	438
950	0.38		58.22	174.92	169	172	1.00	3.14	367
951	0.43		58.17	174.77	169	172	1.00	3.57	417
952	0.37		58.12	174.63	169	172	1.00	3.12	364
953	0.45		58.12	174.49	169	172	1.00	3.76	438
954	0.41		58.12	174.35	169	172	1.00	3.43	399
955	0.45		58.12	174.21	168	171	1.00	3.77	438
956	0.38		58.12	174.07	168	171	1.00	3.13	363
957	0.36		58.12	173.93	168	171	1.00	2.96	344
958	0.41		58.12	173.83	168	171	1.00	3.44	398
959	0.41		58.12	173.64	168	171	1.00	3.45	399

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
960	0.37		58.12	173.55	168	171	1.00	3.12	360
961	0.41		58.12	173.36	168	171	1.00	3.44	397
962	0.45		58.12	173.27	167	170	1.00	3.77	434
963	0.36		58.12	173.08	167	170	1.00	2.96	341
964	0.42		58.12	172.99	167	170	1.00	3.53	406
965	0.34		58.17	172.84	167	170	1.00	2.81	322
966	0.47		58.17	172.70	167	170	1.00	3.92	450
967	0.28		58.17	172.56	167	170	1.00	2.34	268
968	0.39		58.17	172.42	167	170	1.00	3.28	376
969	0.49		58.17	172.28	167	169	1.00	4.09	467
970	0.39		58.17	172.14	166	169	1.00	3.28	375
971	0.37		58.17	171.99	166	169	1.00	3.12	355
972	0.43		58.17	171.85	166	169	1.00	3.59	409
973	0.49		58.17	171.67	166	169	1.00	4.08	463
974	0.45		58.12	171.57	166	169	1.00	3.77	428
975	0.38		58.12	171.38	166	169	1.00	3.14	355
976	0.39		58.12	171.29	166	168	1.00	3.29	373
977	0.43		58.12	171.15	165	168	1.00	3.59	406
978	0.38		58.12	171.01	165	168	1.00	3.15	356
979	0.39		58.12	170.86	165	168	1.00	3.28	371
980	0.47		58.12	170.72	165	168	1.00	3.93	443
981	0.41		58.12	170.58	165	168	1.00	3.45	388
982	0.47		58.12	170.44	165	168	1.00	3.92	441
983	0.43		58.17	170.25	165	167	1.00	3.59	403
984	0.38		58.17	170.11	164	167	1.00	3.13	350
985	0.39		58.22	169.97	164	167	1.00	3.28	367
986	0.43		58.22	169.83	164	167	1.00	3.60	403
987	0.47		58.22	169.69	164	167	1.00	3.92	438
988	0.36		58.22	169.59	164	167	1.00	2.96	330
989	0.41		58.22	169.40	164	167	1.00	3.45	384
990	0.32		58.26	169.26	164	167	1.00	2.66	295
991	0.49		58.26	169.12	164	166	1.00	4.07	452
992	0.39		58.26	168.98	163	166	1.00	3.29	365
993	0.43		58.26	168.84	163	166	1.00	3.55	393
994	0.43		58.31	168.74	163	166	1.00	3.61	399
995	0.45		58.31	168.60	163	166	1.00	3.77	416
996	0.39		58.31	168.46	163	166	1.00	3.28	362
997	0.39		58.35	168.37	163	167	1.00	3.29	362
998	0.49		58.35	168.27	164	167	1.00	4.10	451
999	0.41		58.35	168.23	164	167	1.00	3.45	379
1000	0.38		58.35	168.18	164	168	1.00	3.13	345
1001	0.41		58.40	168.23	165	168	1.00	3.45	379
1002	0.43		58.40	168.32	165	169	1.00	3.61	397
1003	0.41		58.40	168.46	166	169	1.00	3.45	380
1004	0.38		58.40	168.65	167	170	1.00	3.13	345
1005	0.40		58.40	168.93	167	171	1.00	3.31	366
1006	0.38		58.40	169.31	168	172	1.00	3.20	355
1007	0.43		58.40	169.83	169	173	1.00	3.61	403

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
1008	0.47		58.40	170.53	170	173	1.00	3.93	441
1009	0.43		58.40	171.10	171	175	1.00	3.61	407
1010	0.47		58.40	171.99	172	175	1.00	3.92	446
1011	0.39		58.40	172.65	173	176	1.00	3.28	375
1012	0.45		58.45	173.41	174	177	1.00	3.78	434
1013	0.39		58.45	174.26	175	178	1.00	3.28	381
1014	0.34		58.45	175.11	176	179	1.00	2.81	329
1015	0.41		58.49	176.05	177	180	1.00	3.45	406
1016	0.37		58.49	177.09	178	182	1.00	3.12	370
1017	0.43		58.49	178.08	179	182	1.00	3.61	432
1018	0.43		58.54	179.03	179	183	1.00	3.60	435
1019	0.39		58.54	180.12	180	183	1.00	3.29	401
1020	0.36		58.58	181.12	180	183	1.00	2.99	366
1021	0.44		58.63	182.49	180	184	1.00	3.70	459
1022	0.39		58.68	183.34	180	184	1.00	3.26	407
1023	0.41		58.68	184.05	180	184	1.00	3.45	434
1024	0.41		58.72	184.62	180	184	1.00	3.45	434
1025	0.43		58.72	185.00	181	184	1.00	3.60	455
1026	0.43		58.77	185.19	181	184	1.00	3.60	456
1027	0.32		58.77	185.42	181	184	1.00	2.65	336
1028	0.43		58.77	185.52	181	184	1.00	3.61	458
1029	0.43		58.77	185.71	181	184	1.00	3.60	458
1030	0.34		58.72	185.85	181	184	1.00	2.81	357
1031	0.49		58.72	185.99	181	184	1.00	4.09	521
1032	0.39		58.72	186.08	181	185	1.00	3.28	419
1033	0.43		58.72	186.18	181	185	1.00	3.60	460
1034	0.43		58.68	186.27	181	185	1.00	3.61	461
1035	0.38		58.68	186.37	181	185	1.00	3.14	402
1036	0.49		58.68	186.37	181	185	1.00	4.06	519
1037	0.39		58.63	186.41	181	185	1.00	3.27	419
1038	0.41		58.63	186.46	181	185	1.00	3.45	441
1039	0.43		58.63	186.46	181	185	1.00	3.60	461
1040	0.35		58.63	186.51	181	185	1.00	2.95	378
1041	0.39		58.63	186.51	181	184	1.00	3.28	420
1042	0.45		58.63	186.51	181	184	1.00	3.76	481
1043	0.39		58.63	186.56	181	184	1.00	3.28	420
1044	0.41		58.63	186.51	181	184	1.00	3.44	440
1045	0.43		58.63	186.51	181	184	1.00	3.60	461
1046	0.30		58.63	186.46	181	184	1.00	2.49	319
1047	0.41		58.63	186.41	181	184	1.00	3.43	439
1048	0.45		58.63	186.41	181	184	1.00	3.77	482
1049	0.36		58.63	186.37	181	184	1.00	2.98	381
1050	0.48		58.63	186.37	181	184	1.00	3.96	507
1051	0.47		58.63	186.27	181	184	1.00	3.92	501
1052	0.39		58.63	186.23	181	184	1.00	3.28	419
1053	0.43		58.58	186.18	181	184	1.00	3.60	460
1054	0.43		58.58	186.13	181	184	1.00	3.61	461
1055	0.41		58.54	186.04	180	184	1.00	3.44	439

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
1056	0.49		58.49	185.99	180	184	1.00	4.08	521
1057	0.41		58.45	185.89	180	183	1.00	3.45	440
1058	0.45		58.40	185.85	180	183	1.00	3.76	480
1059	0.39		58.40	185.80	180	183	1.00	3.27	418
1060	0.41		58.35	185.66	180	183	1.00	3.44	438
1061	0.39		58.31	185.61	180	183	1.00	3.27	417
1062	0.36		58.31	185.52	180	183	1.00	2.96	377
1063	0.41		58.31	185.42	180	183	1.00	3.45	439
1064	0.36		58.26	185.33	180	183	1.00	3.00	381
1065	0.42		58.26	185.24	179	183	1.00	3.50	446
1066	0.32		58.26	185.14	179	183	1.00	2.67	339
1067	0.39		58.22	185.05	179	182	1.00	3.29	418
1068	0.39		58.22	184.95	179	182	1.00	3.28	417
1069	0.43		58.22	184.86	179	182	1.00	3.60	457
1070	0.37		58.22	184.76	179	182	1.00	3.12	395
1071	0.45		58.22	184.62	179	182	1.00	3.77	477
1072	0.45		58.22	184.53	179	182	1.00	3.76	475
1073	0.45		58.17	184.43	179	182	1.00	3.76	475
1074	0.43		58.17	184.34	179	182	1.00	3.60	455
1075	0.47		58.17	184.20	178	182	1.00	3.91	494
1076	0.36		58.17	184.10	178	181	1.00	2.97	375
1077	0.32		58.17	184.00	178	181	1.00	2.68	337
1078	0.40		58.17	183.86	178	181	1.00	3.30	415
1079	0.46		58.22	183.77	178	181	1.00	3.80	478
1080	0.38		58.22	183.63	178	181	1.00	3.17	398
1081	0.41		58.26	183.53	178	181	1.00	3.45	432
1082	0.43		58.26	183.39	178	181	1.00	3.59	450
1083	0.43		58.31	183.25	177	181	1.00	3.61	452
1084	0.37		58.35	183.15	177	180	1.00	3.12	390
1085	0.43		58.35	183.01	177	180	1.00	3.61	451
1086	0.43		58.40	182.92	177	180	1.00	3.60	449
1087	0.45		58.40	182.77	177	180	1.00	3.76	468
1088	0.39		58.40	182.63	177	180	1.00	3.28	408
1089	0.43		58.45	182.54	177	180	1.00	3.59	447
1090	0.38		58.45	182.40	177	180	1.00	3.13	388
1091	0.45		58.45	182.25	176	180	1.00	3.77	467
1092	0.40		58.45	182.16	176	179	1.00	3.32	411
1093	0.46		58.45	181.97	176	179	1.00	3.82	472
1094	0.40		58.45	181.87	176	179	1.00	3.34	413
1095	0.43		58.40	181.73	176	179	1.00	3.60	445
1096	0.39		58.40	181.59	176	179	1.00	3.28	405
1097	0.39		58.40	181.50	176	179	1.00	3.29	406
1098	0.36		58.40	181.35	176	179	1.00	2.97	366
1099	0.37		58.40	181.21	175	178	1.00	3.12	383
1100	0.45		58.40	181.07	175	178	1.00	3.78	464
1101	0.41		58.40	180.93	175	178	1.00	3.44	422
1102	0.37		58.40	180.83	175	178	1.00	3.12	382
1103	0.45		58.45	180.69	175	178	1.00	3.78	462

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
1104	0.35		58.49	180.55	175	178	1.00	2.95	361
1105	0.45		58.49	180.40	175	178	1.00	3.78	462
1106	0.41		58.54	180.26	174	178	1.00	3.45	420
1107	0.39		58.54	180.17	174	177	1.00	3.27	399
1108	0.39		58.58	180.03	174	177	1.00	3.29	400
1109	0.31		58.58	179.84	174	177	1.00	2.59	314
1110	0.36		58.63	179.74	174	177	1.00	2.96	359
1111	0.51		58.63	179.60	174	177	1.00	4.24	514
1112	0.36		58.63	179.46	174	177	1.00	2.97	359
1113	0.45		58.68	179.32	176	177	1.00	3.77	455
1114	0.39		64.94	178.23	177	177	1.00	3.28	372
1115	0.34		59.14	178.37	177	177	1.00	2.81	336
1116	0.42		59.00	178.23	174	177	1.00	3.50	418
1117	0.39		58.95	178.13	173	176	1.00	3.23	386
1118	0.50		59.00	178.04	173	176	1.00	4.14	494
1119	0.39		59.05	177.90	173	176	1.00	3.28	391
1120	0.43		59.09	177.75	173	176	1.00	3.60	428
1121	0.38		59.14	177.66	173	176	1.00	3.13	371
1122	0.49		59.14	177.52	173	176	1.00	4.09	484
1123	0.43		59.14	177.42	173	176	1.00	3.59	426
1124	0.45		59.14	177.28	172	175	1.00	3.75	444
1125	0.37		59.14	177.14	172	175	1.00	3.12	368
1126	0.41		59.14	177.00	172	175	1.00	3.44	406
1127	0.43		59.14	176.80	172	175	1.00	3.59	423
1128	0.45		59.14	176.66	172	175	1.00	3.76	442
1129	0.45		59.09	176.57	172	175	1.00	3.75	441
1130	0.37		59.09	176.43	172	175	1.00	3.12	366
1131	0.37		59.00	176.24	171	175	1.00	3.04	357
1132	0.38		59.00	176.10	171	174	1.00	3.19	374
1133	0.39		58.95	175.95	171	174	1.00	3.27	383
1134	0.32		58.91	175.81	171	174	1.00	2.64	309
1135	0.37		58.86	175.67	171	174	1.00	3.10	363
1136	0.43		58.81	175.58	171	174	1.00	3.59	420
1137	0.47		58.81	175.39	171	174	1.00	3.91	457
1138	0.45		58.77	175.25	171	174	1.00	3.76	438
1139	0.41		58.72	175.11	170	173	1.00	3.43	400
1140	0.37		58.68	174.96	170	173	1.00	3.10	361
1141	0.49		58.68	174.82	170	173	1.00	4.07	473
1142	0.37		58.63	174.68	170	173	1.00	3.10	360
1143	0.43		58.63	174.54	170	173	1.00	3.59	417
1144	0.37		58.63	174.40	170	173	1.00	3.10	360
1145	0.38		58.63	174.26	170	173	1.00	3.13	362
1146	0.40		58.63	174.12	169	172	1.00	3.31	382
1147	0.47		58.63	173.97	169	172	1.00	3.92	453
1148	0.42		58.63	173.83	169	172	1.00	3.50	403
1149	0.45		58.63	173.69	169	172	1.00	3.75	432
1150	0.35		58.63	173.50	169	172	1.00	2.95	340
1151	0.45		58.63	173.36	169	172	1.00	3.75	431

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
1152	0.39		58.63	173.22	169	171	1.00	3.27	375
1153	0.39		58.58	173.08	168	171	1.00	3.27	375
1154	0.47		58.58	172.94	168	171	1.00	3.91	448
1155	0.41		58.58	172.75	168	171	1.00	3.44	393
1156	0.39		58.54	172.65	168	171	1.00	3.27	374
1157	0.32		58.54	172.51	168	171	1.00	2.65	302
1158	0.37		58.54	172.37	168	171	1.00	3.12	355
1159	0.41		58.54	172.18	168	171	1.00	3.43	390
1160	0.41		58.49	172.04	167	170	1.00	3.44	391
1161	0.37		58.49	171.90	167	170	1.00	3.10	352
1162	0.42		58.45	171.81	167	170	1.00	3.46	393
1163	0.47		58.45	171.67	167	170	1.00	3.90	442
1164	0.32		58.45	171.48	167	170	1.00	2.63	297
1165	0.41		58.45	171.33	167	170	1.00	3.43	388
1166	0.41		58.45	171.19	167	169	1.00	3.45	389
1167	0.39		58.40	171.05	166	169	1.00	3.27	369
1168	0.43		58.40	170.91	166	169	1.00	3.60	406
1169	0.37		58.35	170.77	166	169	1.00	3.12	351
1170	0.47		58.35	170.63	166	169	1.00	3.93	442
1171	0.43		58.35	170.44	166	169	1.00	3.60	404
1172	0.43		58.31	170.30	166	169	1.00	3.59	403
1173	0.36		58.31	170.16	166	168	1.00	2.97	333
1174	0.45		58.26	170.01	165	168	1.00	3.76	421
1175	0.41		58.26	169.87	165	168	1.00	3.45	385
1176	0.39		58.22	169.73	165	168	1.00	3.29	367
1177	0.38		58.22	169.59	165	168	1.00	3.14	350
1178	0.40		58.17	169.45	165	168	1.00	3.36	375
1179	0.41		58.17	169.31	165	168	1.00	3.38	376
1180	0.45		58.12	169.12	165	167	1.00	3.76	418
1181	0.43		58.08	168.98	164	167	1.00	3.59	399
1182	0.38		58.08	168.84	164	167	1.00	3.13	347
1183	0.39		58.03	168.70	164	167	1.00	3.27	363
1184	0.39		58.03	168.56	164	167	1.00	3.29	364
1185	0.41		57.98	168.41	164	167	1.00	3.43	379
1186	0.47		57.98	168.27	164	167	1.00	3.92	433
1187	0.41		57.94	168.13	163	167	1.00	3.45	380
1188	0.43		57.94	167.99	163	166	1.00	3.59	396
1189	0.49		57.94	167.85	163	166	1.00	4.09	450
1190	0.39		57.89	167.71	163	166	1.00	3.28	361
1191	0.39		57.89	167.57	163	166	1.00	3.29	361
1192	0.38		57.89	167.42	163	166	1.00	3.14	344
1193	0.38		57.85	167.28	163	166	1.00	3.17	347
1194	0.43		57.85	167.24	162	166	1.00	3.62	396
1195	0.48		57.85	167.14	162	165	1.00	4.00	437
1196	0.37		57.85	167.14	162	165	1.00	3.07	336
1197	0.41		57.80	167.19	162	165	1.00	3.45	378
1198	0.34		57.80	167.38	162	165	1.00	2.81	308
1199	0.45		57.75	167.52	162	166	1.00	3.77	414

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
1200	0.43		57.75	167.80	163	166	1.00	3.60	397
1201	0.47		57.71	168.27	163	166	1.00	3.93	435
1202	0.45		57.71	168.65	163	167	1.00	3.77	418
1203	0.30		57.66	169.36	164	167	1.00	2.49	278
1204	0.41		57.66	169.87	164	168	1.00	3.45	387
1205	0.41		57.66	170.44	165	168	1.00	3.44	388
1206	0.41		57.62	171.15	165	169	1.00	3.45	392
1207	0.39		57.62	171.85	166	170	1.00	3.28	375
1208	0.38		57.57	172.70	167	170	1.00	3.16	364
1209	0.49		57.57	173.55	168	171	1.00	4.05	471
1210	0.45		57.57	174.30	168	172	1.00	3.73	436
1211	0.41		57.57	175.34	169	173	1.00	3.44	405
1212	0.43		57.57	176.24	170	174	1.00	3.60	428
1213	0.36		57.57	177.28	171	175	1.00	2.97	356
1214	0.41		57.57	178.27	172	176	1.00	3.45	417
1215	0.39		57.52	179.27	173	177	1.00	3.29	401
1216	0.47		57.52	180.17	174	178	1.00	3.91	481
1217	0.43		57.52	181.16	175	179	1.00	3.61	447
1218	0.39		57.52	182.16	176	180	1.00	3.29	411
1219	0.36		57.57	183.25	177	181	1.00	2.97	374
1220	0.41		57.57	184.00	178	182	1.00	3.45	436
1221	0.38		57.57	184.67	179	182	1.00	3.13	398
1222	0.38		57.57	184.86	179	183	1.00	3.13	399
1223	0.41		57.57	185.14	180	183	1.00	3.43	438
1224	0.39		57.57	185.33	180	183	1.00	3.29	421
1225	0.39		57.57	185.47	180	184	1.00	3.29	421
1226	0.41		57.57	185.61	180	184	1.00	3.43	440
1227	0.38		57.57	185.80	180	184	1.00	3.15	405
1228	0.42		57.57	185.94	180	184	1.00	3.51	451
1229	0.43		57.57	186.08	181	184	1.00	3.60	464
1230	0.37		57.57	186.18	181	184	1.00	3.12	402
1231	0.41		57.57	186.27	181	184	1.00	3.45	444
1232	0.45		57.57	186.27	181	184	1.00	3.76	484
1233	0.45		57.57	186.37	181	185	1.00	3.78	487
1234	0.49		57.57	186.41	181	185	1.00	4.09	527
1235	0.30		57.57	186.41	181	185	1.00	2.50	323
1236	0.39		57.57	186.46	181	185	1.00	3.29	425
1237	0.36		57.57	186.51	181	185	1.00	2.96	382
1238	0.45		57.57	186.51	181	185	1.00	3.77	486
1239	0.43		57.57	186.51	181	185	1.00	3.60	465
1240	0.38		57.57	186.51	181	185	1.00	3.13	404
1241	0.43		57.57	186.51	181	185	1.00	3.59	464
1242	0.39		57.57	186.46	181	185	1.00	3.29	425
1243	0.38		57.57	186.46	181	185	1.00	3.13	404
1244	0.41		57.57	186.46	181	185	1.00	3.45	445
1245	0.36		57.57	186.41	181	185	1.00	2.98	384
1246	0.47		57.57	186.41	181	185	1.00	3.93	507
1247	0.38		57.57	186.32	181	185	1.00	3.13	403

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
1248	0.38		57.57	186.37	181	185	1.00	3.14	404
1249	0.43		57.57	186.27	181	185	1.00	3.61	465
1250	0.41		57.57	186.23	181	184	1.00	3.46	445
1251	0.43		57.57	186.18	181	184	1.00	3.61	465
1252	0.42		57.57	186.13	181	184	1.00	3.46	446
1253	0.38		57.57	186.08	181	184	1.00	3.14	403
1254	0.38		57.57	185.99	181	184	1.00	3.14	403
1255	0.45		57.57	185.94	181	184	1.00	3.78	486
1256	0.39		57.57	185.85	181	184	1.00	3.29	423
1257	0.38		57.57	185.80	181	184	1.00	3.13	401
1258	0.38		57.57	185.71	181	184	1.00	3.19	410
1259	0.43		57.57	185.66	181	184	1.00	3.55	455
1260	0.42		57.57	185.57	180	184	1.00	3.48	446
1261	0.43		57.57	185.47	180	184	1.00	3.61	462
1262	0.41		57.52	185.38	180	184	1.00	3.46	442
1263	0.39		57.52	185.28	180	184	1.00	3.29	421
1264	0.43		57.52	185.19	180	183	1.00	3.62	463
1265	0.43		57.52	185.14	180	183	1.00	3.60	460
1266	0.42		57.52	185.05	180	183	1.00	3.46	442
1267	0.47		57.52	184.90	180	183	1.00	3.94	502
1268	0.34		57.52	184.81	180	183	1.00	2.82	359
1269	0.41		57.52	184.72	180	183	1.00	3.46	440
1270	0.36		57.48	184.62	180	183	1.00	2.98	379
1271	0.43		57.48	184.48	179	183	1.00	3.62	460
1272	0.42		57.48	184.38	179	183	1.00	3.48	442
1273	0.48		57.48	184.29	179	183	1.00	3.99	506
1274	0.40		57.48	184.20	179	182	1.00	3.32	421
1275	0.45		57.43	184.10	179	182	1.00	3.78	480
1276	0.42		57.43	183.96	179	182	1.00	3.46	439
1277	0.38		57.43	183.86	179	182	1.00	3.14	397
1278	0.42		57.43	183.77	179	182	1.00	3.46	438
1279	0.40		57.48	183.67	179	182	1.00	3.30	417
1280	0.42		57.43	183.53	179	182	1.00	3.46	437
1281	0.38		57.43	183.39	178	182	1.00	3.14	396
1282	0.40		57.43	183.30	178	182	1.00	3.30	416
1283	0.38		57.43	183.15	178	181	1.00	3.15	397
1284	0.38		57.43	183.06	178	181	1.00	3.14	395
1285	0.40		57.39	182.96	178	181	1.00	3.32	417
1286	0.37		57.39	182.82	178	181	1.00	3.11	391
1287	0.39		57.39	182.68	178	181	1.00	3.25	408
1288	0.37		57.39	182.58	178	181	1.00	3.06	384
1289	0.47		57.39	182.44	177	181	1.00	3.88	486
1290	0.38		57.39	182.35	177	181	1.00	3.14	393
1291	0.41		57.39	182.20	177	180	1.00	3.46	432
1292	0.38		57.39	182.11	177	180	1.00	3.15	394
1293	0.42		57.34	181.97	177	180	1.00	3.46	432
1294	0.43		57.34	181.83	177	180	1.00	3.62	451
1295	0.42		57.34	181.68	177	180	1.00	3.46	431

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
1296	0.43		57.34	181.59	177	180	1.00	3.62	450
1297	0.44		57.34	181.45	176	180	1.00	3.63	451
1298	0.45		57.34	181.30	176	180	1.00	3.78	470
1299	0.34		57.34	181.16	176	179	1.00	2.82	350
1300	0.47		57.34	181.07	176	179	1.00	3.95	489
1301	0.47		57.34	180.93	176	179	1.00	3.94	487
1302	0.43		57.34	180.83	176	179	1.00	3.62	448
1303	0.37		57.34	180.69	176	179	1.00	3.12	385
1304	0.38		57.34	180.55	176	179	1.00	3.15	389
1305	0.40		57.34	180.40	175	179	1.00	3.31	408
1306	0.43		57.34	180.26	175	179	1.00	3.62	445
1307	0.44		57.34	180.17	175	178	1.00	3.63	446
1308	0.38		57.34	180.03	175	178	1.00	3.15	387
1309	0.43		57.34	179.88	175	178	1.00	3.62	444
1310	0.43		57.34	179.74	175	178	1.00	3.62	444
1311	0.38		57.34	179.65	175	178	1.00	3.14	385
1312	0.38		57.34	179.46	175	178	1.00	3.14	384
1313	0.36		57.34	179.36	174	178	1.00	2.99	365
1314	0.36		57.34	179.22	174	178	1.00	2.98	364
1315	0.40		57.39	179.08	174	177	1.00	3.32	404
1316	0.40		57.39	178.94	174	177	1.00	3.31	403
1317	0.42		57.39	178.80	174	177	1.00	3.46	421
1318	0.42		57.34	178.65	174	177	1.00	3.53	429
1319	0.40		57.39	178.56	174	177	1.00	3.36	407
1320	0.45		57.39	178.37	174	177	1.00	3.73	451
1321	0.42		57.34	178.27	173	177	1.00	3.47	420
1322	0.45		57.34	178.13	173	176	1.00	3.79	459
1323	0.44		57.39	177.99	173	176	1.00	3.64	439
1324	0.42		57.39	177.90	173	176	1.00	3.47	419
1325	0.36		57.39	177.70	173	176	1.00	2.99	360
1326	0.47		57.39	177.61	173	176	1.00	3.96	476
1327	0.38		57.39	177.47	173	176	1.00	3.15	379
1328	0.45		57.43	177.33	172	176	1.00	3.78	453
1329	0.44		57.43	177.18	172	175	1.00	3.63	435
1330	0.45		57.43	177.04	172	175	1.00	3.78	453
1331	0.38		57.43	176.90	172	175	1.00	3.14	375
1332	0.43		57.43	176.76	172	175	1.00	3.59	429
1333	0.34		57.43	176.66	172	175	1.00	2.81	335
1334	0.37		57.48	176.52	172	175	1.00	3.11	371
1335	0.39		57.48	176.38	172	175	1.00	3.23	385
1336	0.42		57.48	176.24	171	174	1.00	3.46	412
1337	0.43		57.48	176.10	171	174	1.00	3.62	430
1338	0.39		57.48	175.95	171	174	1.00	3.29	390
1339	0.38		57.48	175.81	171	174	1.00	3.14	371
1340	0.38		57.48	175.67	171	174	1.00	3.14	371
1341	0.38		57.48	175.53	171	174	1.00	3.14	372
1342	0.40		57.48	175.43	171	174	1.00	3.30	390
1343	0.36		57.48	175.29	171	174	1.00	2.97	350

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
1344	0.45		57.48	175.15	170	173	1.00	3.78	446
1345	0.39		57.43	175.01	170	173	1.00	3.29	387
1346	0.45		57.43	174.87	170	173	1.00	3.77	443
1347	0.40		57.43	174.73	170	173	1.00	3.33	391
1348	0.40		57.43	174.59	170	173	1.00	3.37	395
1349	0.39		57.43	174.44	170	173	1.00	3.29	386
1350	0.34		57.39	174.30	170	173	1.00	2.82	330
1351	0.36		57.39	174.16	169	172	1.00	2.98	348
1352	0.41		57.39	174.02	169	172	1.00	3.46	403
1353	0.47		57.39	173.88	169	172	1.00	3.93	459
1354	0.43		57.39	173.74	169	172	1.00	3.62	422
1355	0.38		57.39	173.60	169	172	1.00	3.14	365
1356	0.45		57.39	173.45	169	172	1.00	3.77	438
1357	0.43		57.39	173.31	169	172	1.00	3.61	419
1358	0.41		57.43	173.17	168	171	1.00	3.46	400
1359	0.43		57.43	173.03	168	171	1.00	3.62	419
1360	0.43		57.39	172.89	168	171	1.00	3.56	412
1361	0.40		57.39	172.75	168	171	1.00	3.33	385
1362	0.44		57.39	172.61	168	171	1.00	3.64	420
1363	0.32		57.39	172.47	168	171	1.00	2.66	306
1364	0.47		57.39	172.32	168	171	1.00	3.92	451
1365	0.36		57.39	172.18	167	170	1.00	2.98	342
1366	0.37		57.39	172.04	167	170	1.00	3.12	358
1367	0.41		57.39	171.90	167	170	1.00	3.46	396
1368	0.47		57.34	171.76	167	170	1.00	3.93	450
1369	0.40		57.34	171.57	167	170	1.00	3.30	377
1370	0.43		57.34	171.48	167	170	1.00	3.61	413
1371	0.49		57.29	171.33	167	170	1.00	4.10	468
1372	0.39		57.29	171.19	167	169	1.00	3.29	375
1373	0.28		57.29	171.05	166	169	1.00	2.36	268
1374	0.45		57.29	170.91	166	169	1.00	3.78	429
1375	0.34		57.29	170.77	166	169	1.00	2.84	323
1376	0.34		57.34	170.63	166	169	1.00	2.85	323
1377	0.38		57.34	170.44	166	169	1.00	3.13	354
1378	0.47		57.34	170.30	166	169	1.00	3.92	444
1379	0.32		57.34	170.16	166	168	1.00	2.64	299
1380	0.38		57.34	170.06	165	168	1.00	3.13	353
1381	0.34		57.34	169.92	165	168	1.00	2.81	316
1382	0.39		57.34	169.73	165	168	1.00	3.28	369
1383	0.41		57.34	169.59	165	168	1.00	3.44	386
1384	0.43		57.34	169.45	165	168	1.00	3.61	405
1385	0.43		57.34	169.31	165	168	1.00	3.61	405
1386	0.47		57.29	169.17	165	167	1.00	3.93	440
1387	0.41		57.29	169.03	164	167	1.00	3.45	386
1388	0.39		57.29	168.88	164	167	1.00	3.28	367
1389	0.45		57.25	168.74	164	167	1.00	3.77	421
1390	0.43		57.25	168.65	164	167	1.00	3.60	402
1391	0.40		57.25	168.56	164	167	1.00	3.33	371

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
1392	0.38		57.20	168.41	164	167	1.00	3.17	353
1393	0.41		57.20	168.32	164	167	1.00	3.45	384
1394	0.39		57.25	168.23	164	166	1.00	3.23	358
1395	0.36		57.20	168.13	163	166	1.00	2.97	330
1396	0.36		57.20	168.04	163	166	1.00	2.97	330
1397	0.45		57.20	167.99	163	166	1.00	3.76	417
1398	0.36		57.20	168.04	163	166	1.00	2.97	330
1399	0.38		57.20	168.08	163	166	1.00	3.13	347
1400	0.37		57.20	168.23	163	166	1.00	3.12	347
1401	0.39		57.20	168.51	163	166	1.00	3.29	367
1402	0.34		57.20	168.88	163	167	1.00	2.80	313
1403	0.41		57.20	169.36	164	167	1.00	3.46	388

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
Average	0	#DIV/0!	57	178	172	177	1	4	495
								TOTAL:	**693993**

LAB SAMPLE DATA - ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 2

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/14/2020

	Sample ID	Tare, mg	Total, mg	Final, mg	Catch, mg
Train A Filters - First Hour	3669	121.0	121.0	121.0	0.0
Train A Filters - Remainder	3670	116.8	239.6	246.4	6.8
	3671	122.8			
Train A Probe	2A	116239.8	116239.8	116240.0	0.2
Train A O-Rings	2A	3553.0	3553.0	3553.2	0.2
Train B Filters	3672	117.8	235.5	240.7	5.2
	3673	117.7			
Train B Probe	2B	116328.3	116328.3	116328.7	0.4
Train B O-Rings	2B	3571.8	3571.8	3573.0	1.2
Background Filter	3674	124.4	124.4	126.6	2.2

Placed in Dessicator on:	1/17/2020

Train A Filters - First Hour	121.1	1/21 14:43	121.0	1/22 8:23				
Train A Filters - Remainder	246.5	1/21 14:43	246.4	1/22 8:23				
Train A Probe	116239.9	1/21 14:32	116240.0	1/22 8:14				
Train A O-Rings	3553.3	1/21 14:36	3553.2	1/22 8:19				
Train B Filters	240.7	1/21 14:43	240.7	1/22 8:23				
Train B Probe	116328.7	1/21 14:33	116328.7	1/22 8:14				
Train B O-Rings	3573.0	1/21 14:37	3573.0	1/22 8:20				
Background Filter	126.7	1/21 14:43	126.6	1/22 8:28				

1st hour Sub-Total, mg:	0.0
Remainder Sub-Total, mg:	7.2
Train 1 Aggregate, mg:	**7.2**
Train 2 Aggregate, mg:	**6.8**
Ambient Aggregate, mg:	2.2

ASTM E2618 Hydronic Heater Run Sheets

Client: Greentech Job Number: 19-551 Tracking #: 47
Model: RS7300E Run Number: 2 Test Date: 1/14/2020

Wood Heater Run Notes

Pre-Test Notes
Pre-Test Start Time: 00:11
Target Load (BTU/hr): 27,500

Time	Notes
0 min	Began preburn
60 min	End PB

Test Notes
Test Burn Start Time: 1:11
Target Load (BTU/hr): 27,500 (Category 1)

Time	Notes
0 min	Loaded test fuel within 60 seconds, door closed immediately
60 min	Changed 1st hour filter
1403 min	End of Test

Test Burn End Time: 1/15 00:34

Flue Gas Concentration Measurement

Calibration Gas Values: Span Gas CO_2 (%): 15.30 CO (%): 4.98

Calibration Results:

	Pre Test			Post Test		
	Zero		Span	Zero		Span
Time	21:09		21:11	00:45		00:47
CO_2	0.06		15.42	0.021		15.60
CO	0.018		5.002	0.037		4.999

Flue Gas Probe Leak Check: Initial: No Leakage Final: No Leakage

Technician Signature: Date: 1/15/2020

HYDRONIC HEATER TEST DATA PACKET
ASTM E2618/E2515

Run 3 Data Summary

Client:	Greentech
Model:	Pristine 7300E
Job #:	19-551
Tracking #:	0047
Test Date:	1/15/2020

Techician Signature

5/13/2022
Date

TEST RESULTS - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

Particulate Data

	Ambient Sample	Sample Train A	Sample Train B	1st Hour Filter
Total Sample Volume (ft^3)	90.901	77.673	80.792	9.120
Average Gas Velocity in Dilution Tunnel (ft/sec)	12.6			
Average Gas Flow Rate in Dilution Tunnel (dscf/hr)	33248.0			
Average Gas Meter Temperature (°F)	65.8	83.0	86.8	68.5
Total Sample Volume (dscf)	87.999	72.597	75.864	8.757
Average Tunnel Temperature (°F)	78.0			
Total Time of Test (min)	503			
Total Particulate Catch (mg)	1.0	6.7	6.5	0.2
Particulate Concentration, dry-standard (g/dscf)	0.0000114	0.0000923	0.0000857	0.0000228
Total PM Emissions (g)	3.17	22.56	20.71	0.38
Particulate Emission Rate (g/hr)	0.38	2.69	2.47	0.38
Emissions Factor (g/kg)	-	0.46	0.42	-
Difference from Average Total Particulate Emissions (%)	-	4.3%	4.3%	-
Difference from Average Emissions Factor (g/kg)	-	0.02	0.02	-

Boiler/ HEX Data

Appliance Average Start Temperature (F)	157.5	
Appliance Average Final Temperature (F)	161.0	**First Hour**
Heat Output (BTU)	734,141	98,093
Heat Output Rate (BTU/hr)	87,572	
Heat Input - HHV (BTU)	937,299	169,841
Heat Input - LHV (BTU)	870,599	

Emissions Rates and Factors

Total Particulate Emissions (g)	21.6	0.4
Emissions Factor (g/MJ)	0.0279	
Emissions Factor (g/kg)	0.4367	
Emissions Rate (g/hr)	2.58	
Emissions Rate (lb/mmbtu output)	0.065	0.009
HHV Delivered Efficiency (%)	78.3%	57.8%
LHV Delivered Efficiency (%)	84.3%	
HHV SLM Efficiency (%)	79.5%	
LHV SLM Efficiency (%)	85.1%	
CO Emissions (g/min)	4.15	

Quality Checks	Requirement	Observed	Result
Dual Train Precision	Each train within 7.5% of average emissions (in grams), or emission factors within 0.5 g/kg	See Above	OK
Filter Temps	<90 °F	77.0	OK
Face Velocity	< 30 ft/min	8.9	OK
Leakage Rate	Less than 4% of average sample rate	0 cfm	OK
Ambient Temp	55-90 °F	Min: 63 / Max: 70	OK
Negative Probe Weight Evaluation	<5% of Total Catch	Probe Catch Not Negative	OK
Pro-Rate Variation	90% of readings between 90-110%; none greater than 120% or less than 80%	See Data Tabs	OK
Return Temp > 120°F	>120°F	151.0	OK

B415.1 Efficiency Results

Manufacturer: Greentech
Model: Pristine 7300E
Date: 01/15/20
Run: 3
Control #: 19-551
Test Duration: 503
Output Category: 3

Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
Overall Efficiency	79.5%	85.1%
Combustion Efficiency	97.5%	97.5%
Heat Transfer Efficiency	81.5%	87.3%

Output Rate (kJ/h)	92,048	87,317	**(Btu/h)**
Burn Rate (kg/h)	5.89	12.98	**(lb/h)**
Input (kJ/h)	115,793	109,842	**(Btu/h)**

Test Load Weight (dry kg)	49.38	108.82	**dry lb**
MC wet (%)	18.05		
MC dry (%)	22.03		
Particulate (g)	21.64		
CO (g)	2,086		
Test Duration (h)	8.38		

Emissions	Particulate	CO
g/MJ Output	0.03	2.70
g/kg Dry Fuel	0.44	42.24
g/h	2.58	248.81
g/min	0.04	4.15
lb/MM Btu Output	0.07	6.28

Air/Fuel Ratio (A/F)	31.67

VERSION: **2.2** **12/14/2009**

BOILER CORDWOOD FUEL DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

Firebox Volume (ft^3):	12.83	Minimun Piece Weight (lbs):	6.60
Target Load Weight (lbs):	133.50	Maximun Piece Weight (lbs):	22.00
Number of Fuel Pieces Allowed:	8 - 15	80% of piece of weight range (lbs):	8.8 to 19.8

Pretest Fuel Information

Length (in)	Weight (lbs)	MC (%DB)	Length (in)	Weight (lbs)	MC (%DB)
20.00	136.00	22.0			
20.00		21.0			
20.00		18.0			
20.00		27.0			
20.00		24.0			
20.00		24.0			
20.00		24.0			
20.00		26.0			
20.00		20.0			
20.00		18.0			
20.00		18.0			
20.00		20.0			

Total Preburn Weight (lbs): 136.00
Averge Preburn Moisture (% DB): 21.83

Test Fuel Information

Length (in)	Weight (lbs)	Moisture Content (%DB)					Avg MC (%DB)	Dry Weight (lbs)
20.00	9.00	20.0	19.0	20.0	18.0	17.0	18.80	7.58
20.00	10.30	23.0	23.0	19.0	24.0	20.0	21.80	8.46
20.00	9.60	22.0	22.0	20.0	19.0	19.0	20.40	7.97
20.00	8.80	19.0	20.0	21.0	20.0	19.0	19.80	7.35
20.00	9.00	21.0	22.0	22.0	23.0	23.0	22.20	7.36
20.00	9.00	21.0	22.0	26.0	22.0	21.0	22.40	7.35
20.00	8.20	19.0	22.0	20.0	22.0	20.0	20.60	6.80
20.00	13.30	23.0	22.0	19.0	21.0	22.0	21.40	10.96
20.00	9.80	22.0	24.0	21.0	22.0	21.0	22.00	8.03
20.00	9.90	26.0	28.0	25.0	28.0	28.0	27.00	7.80
20.00	9.20	24.0	25.0	25.0	26.0	27.0	25.40	7.34
20.00	9.00	19.0	20.0	22.0	20.0	23.0	20.80	7.45
20.00	7.60	22.0	23.0	21.0	23.0	21.0	22.00	6.23
20.00	10.30	21.0	23.0	25.0	24.0	26.0	23.80	8.32
Total (lbs):	133.00						Total Dry Weight (lbs):	108.99

Allowable Coal Bed Range (10-20%): 13.3 - 26.6

Quality checks

Individual Piece Weights:	OK
80% Piece weight range:	OK
Piece Count:	OK

DILUTION TUNNEL & MISC. DATA - ASTM E2618 / E2515

Client:	Greentech	Job #:	19-551
Model:	Pristine 7300E	Tracking #:	0047
Run #:	3	Technician:	AK
Test Start Time:	11:37	Date:	1/15/2020
Manufacturer's Rated Output (BTU/hr):	210,000		

503

Total Sampling Time (min):	503
Recording Interval (min):	1

Meter Box γ Factor:	0.992	(A)
Meter Box γ Factor:	1.002	(B)
Meter Box γ Factor:	0.996	(Ambient)

	Pre-Test	Post Test	Avg.
Barometric Pressure (in. Hg)	28.88	29.06	28.97
Relative Humidity (%)	32.0	40.0	
Room Air Velocity (ft/min)	0	0	
Scale Audit (lbs)	10.0	10.0	
Ambient Sample Volume:		90.901	ft^3

Induced Draft Check (in. H_2O):	0
Smoke Capture Check (%):	100%
Date Flue Pipe Last Cleaned:	1/7/2020
Boiler Dry Weight (lbs):	2559
Supply Side Water Weight (lbs):	1951

Sample Train Post-Test Leak Checks

(A)	0.000	cfm @	-10	in. Hg
(B)	0.000	cfm @	-10	in. Hg
(Ambient)	0.000	cfm @	-15	in. Hg

DILUTION TUNNEL FLOW

Traverse Data

Point	dP (in H_2O)	Temp (°F)
1	0.028	65
2	0.038	65
3	0.040	65
4	0.040	65
5	0.036	65
6	0.025	65
7	0.025	65
8	0.033	65
9	0.038	65
10	0.041	65
11	0.038	65
12	0.029	65
Center	0.041	65

Static Pressure: -0.150 in. H_2O

Dilution Tunnel H_2O:	2.00	percent
Tunnel Diameter:	12	inches
Pitot Tube Cp:	0.99	[unitless]
Dilution Tunnel MW(dry):	29.00	lb/lb-mole
Dilution Tunnel MW(wet):	28.78	lb/lb-mole
Tunnel Area:	0.7854	ft^2
V_{strav}:	12.50	ft/sec
V_{scent}:	13.62	ft/sec
F_p:	0.917	[ratio]
Initial Tunnel Flow:	556.8	scf/min

TEST FUEL PROPERTIES

Default Fuel Values

Fuel Type:	D. Fir	Oak
HHV (kJ/kg)	19,810	19,887
%C	48.73	50
%H	6.87	6.9
%O	43.9	42.9
%Ash	0.5	0.5

Actual Fuel Used Properties

Fuel Type:	Maple
HHV (kJ/kg)	19,960
%C	50.64
%H	6.62
%O	41.74
%Ash	1.35
MC (%DB)	22.0%

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
0	0.000		0.041	1.00	62	-5.47		133.0		82	220	67	64
1	0.138	0.138	0.041	0.39	62	-5.47	93	132.5	-0.5	84	226	68	66
2	0.278	0.140	0.041	0.38	62	-5.47	95	132.0	-0.5	84	230	68	65
3	0.427	0.149	0.041	0.37	62	-5.47	101	131.0	-1	84	234	68	64
4	0.575	0.148	0.041	0.30	63	-5.47	100	130.1	-0.9	84	238	68	65
5	0.724	0.149	0.041	0.46	63	-5.47	101	129.9	-0.2	85	242	69	65
6	0.873	0.149	0.041	0.37	63	-5.47	101	128.9	-1	85	245	69	63
7	1.021	0.148	0.041	0.40	63	-5.47	100	128.1	-0.8	86	248	69	65
8	1.170	0.149	0.041	0.40	63	-5.47	101	127.0	-1.1	86	250	69	63
9	1.318	0.148	0.041	0.38	63	-5.47	100	126.3	-0.7	87	253	69	64
10	1.466	0.148	0.041	0.40	63	-5.47	100	126.1	-0.2	87	255	69	64
11	1.615	0.149	0.041	0.40	63	-5.47	101	125.0	-1.1	87	257	70	65
12	1.767	0.152	0.041	0.44	64	-5.47	103	124.0	-1	88	258	70	64
13	1.919	0.152	0.041	0.40	64	-5.47	103	123.2	-0.8	88	260	70	64
14	2.071	0.152	0.041	0.43	64	-5.47	103	123.0	-0.2	89	262	70	64
15	2.223	0.152	0.041	0.39	64	-5.47	103	122.1	-0.9	89	263	70	64
16	2.376	0.153	0.041	0.48	64	-5.47	104	121.0	-1.1	89	264	70	64
17	2.528	0.152	0.041	0.41	65	-5.47	103	121.0	0	89	266	71	64
18	2.681	0.153	0.041	0.40	65	-5.47	104	119.0	-2	89	267	71	64
19	2.832	0.151	0.041	0.48	65	-5.47	102	118.0	-1	89	267	71	64
20	2.983	0.151	0.041	0.42	65	-5.47	102	118.3	0.3	89	268	71	65
21	3.134	0.151	0.041	0.40	66	-5.47	102	116.9	-1.4	90	268	71	64
22	3.287	0.153	0.041	0.39	66	-5.47	103	116.0	-0.9	90	269	71	64
23	3.440	0.153	0.041	0.38	66	-5.47	103	115.0	-1	90	270	71	64
24	3.593	0.153	0.041	0.42	67	-5.47	103	115.0	0	90	270	71	65
25	3.743	0.150	0.041	0.42	67	-5.47	101	114.0	-1	90	271	71	65
26	3.895	0.152	0.041	0.43	67	-5.47	103	113.0	-1	90	272	71	65
27	4.047	0.152	0.041	0.41	67	-5.47	103	112.9	-0.1	90	273	71	64
28	4.200	0.153	0.041	0.44	68	-5.47	103	112.0	-0.9	90	274	71	65
29	4.352	0.152	0.041	0.45	68	-5.47	102	110.6	-1.4	91	274	71	66
30	4.507	0.155	0.041	0.39	68	-5.47	104	110.0	-0.6	91	275	71	65
31	4.657	0.150	0.041	0.42	69	-5.47	101	109.0	-1	91	276	72	66

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
32	4.808	0.151	0.041	0.42	69	-5.47	102	109.0	0	91	277	72	65
33	4.961	0.153	0.041	0.36	69	-5.47	101	109.0	0	73	265	71	67
34	5.114	0.153	0.041	0.38	69	-5.47	101	109.9	0.9	71	252	71	65
35	5.267	0.153	0.041	0.44	70	-5.47	101	108.0	-1.9	69	241	70	66
36	5.421	0.154	0.041	0.40	70	-5.47	101	108.0	0	69	233	70	65
37	5.574	0.153	0.041	0.41	70	-5.47	101	107.9	-0.1	68	225	70	66
38	5.727	0.153	0.041	0.41	71	-5.47	100	108.1	0.2	68	219	70	66
39	5.881	0.154	0.041	0.41	71	-5.47	101	108.1	0	68	213	70	66
40	6.035	0.154	0.041	0.41	71	-5.47	101	107.9	-0.2	68	208	69	66
41	6.191	0.156	0.041	0.42	71	-5.47	102	107.8	-0.1	68	204	70	65
42	6.345	0.154	0.041	0.48	72	-5.47	101	108.1	0.3	68	199	70	66
43	6.500	0.155	0.041	0.43	72	-5.47	101	108.0	-0.1	67	196	70	66
44	6.652	0.152	0.041	0.46	72	-5.47	99	108.1	0.1	67	192	70	65
45	6.808	0.156	0.041	0.43	73	-5.47	102	108.1	0	68	189	70	66
46	6.963	0.155	0.041	0.41	73	-5.47	101	108.0	-0.1	67	185	70	66
47	7.116	0.153	0.041	0.40	73	-5.47	100	107.8	-0.2	67	182	69	66
48	7.269	0.153	0.041	0.39	73	-5.47	100	108.1	0.3	67	180	69	66
49	7.423	0.154	0.041	0.38	74	-5.47	100	108.0	-0.1	67	177	69	66
50	7.579	0.156	0.041	0.38	74	-5.47	102	108.0	0	67	175	69	66
51	7.733	0.154	0.041	0.43	74	-5.47	100	108.1	0.1	67	172	69	66
52	7.885	0.152	0.041	0.46	74	-5.47	99	108.0	-0.1	67	170	69	66
53	8.040	0.155	0.041	0.38	75	-5.47	101	108.9	0.9	67	168	69	67
54	8.198	0.158	0.041	0.37	75	-5.47	103	109.0	0.1	67	166	69	68
55	8.351	0.153	0.041	0.41	75	-5.47	100	109.0	0	67	164	69	68
56	8.503	0.152	0.041	0.38	75	-5.47	99	108.9	-0.1	68	162	69	67
57	8.658	0.155	0.041	0.39	76	-5.47	101	109.0	0.1	68	160	69	67
58	8.814	0.156	0.041	0.39	76	-5.47	101	109.1	0.1	68	158	69	67
59	8.967	0.153	0.041	0.44	76	-5.47	99	108.9	-0.2	68	156	69	67
60	9.120	0.153	0.041	0.40	76	-5.47	99	108.9	0	67	155	69	67
61	9.276	0.156	0.041	0.39	76	-5.47	101	109.1	0.2	68	153	69	67
62	9.431	0.155	0.041	0.41	77	-5.47	101	108.9	-0.2	68	151	69	67
63	9.584	0.153	0.041	0.43	77	-5.47	99	109.0	0.1	68	150	69	67

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
64	9.741	0.157	0.041	0.45	77	-5.47	102	109.0	0	68	148	69	67
65	9.897	0.156	0.041	0.39	77	-5.47	101	109.0	0	68	147	69	66
66	10.051	0.154	0.041	0.36	77	-5.47	100	109.0	0	68	145	69	67
67	10.206	0.155	0.041	0.43	78	-5.47	100	109.1	0.1	68	144	69	67
68	10.362	0.156	0.041	0.38	78	-5.47	101	108.9	-0.2	68	142	69	66
69	10.518	0.156	0.041	0.45	78	-5.47	101	108.9	0	68	141	69	67
70	10.671	0.153	0.041	0.38	78	-5.47	99	109.1	0.2	68	140	69	66
71	10.826	0.155	0.041	0.37	78	-5.47	100	109.0	-0.1	67	138	69	66
72	10.982	0.156	0.041	0.43	79	-5.47	101	108.9	-0.1	67	137	69	66
73	11.137	0.155	0.041	0.41	79	-5.47	100	110.1	1.2	68	136	69	66
74	11.292	0.155	0.041	0.40	79	-5.47	100	109.0	-1.1	67	134	69	66
75	11.449	0.157	0.041	0.42	79	-5.47	101	108.9	-0.1	67	133	69	66
76	11.605	0.156	0.041	0.48	79	-5.47	101	110.0	1.1	68	132	69	66
77	11.759	0.154	0.041	0.44	80	-5.47	100	110.0	0	78	158	69	66
78	11.912	0.153	0.041	0.42	80	-5.47	100	108.9	-1.1	80	190	69	67
79	12.067	0.155	0.041	0.44	80	-5.47	101	109.0	0.1	82	202	69	67
80	12.223	0.156	0.041	0.41	80	-5.47	102	108.6	-0.4	83	210	69	67
81	12.376	0.153	0.041	0.40	80	-5.47	100	107.9	-0.7	84	216	70	66
82	12.531	0.155	0.041	0.45	80	-5.47	102	107.9	0	85	223	70	66
83	12.686	0.155	0.041	0.44	80	-5.47	102	107.1	-0.8	86	228	70	66
84	12.841	0.155	0.041	0.42	81	-5.47	102	106.0	-1.1	87	232	71	66
85	12.993	0.152	0.041	0.42	81	-5.47	100	105.9	-0.1	87	236	71	66
86	13.148	0.155	0.041	0.45	81	-5.47	102	105.2	-0.7	88	239	71	66
87	13.303	0.155	0.041	0.42	81	-5.47	102	104.0	-1.2	88	242	71	67
88	13.458	0.155	0.041	0.42	81	-5.47	102	103.9	-0.1	89	245	71	67
89	13.612	0.154	0.041	0.40	81	-5.47	101	103.1	-0.8	89	247	71	66
90	13.767	0.155	0.041	0.41	81	-5.47	102	102.0	-1.1	90	249	71	67
91	13.924	0.157	0.041	0.43	82	-5.47	103	101.9	-0.1	90	251	71	66
92	14.077	0.153	0.041	0.39	82	-5.47	100	101.1	-0.8	90	252	71	67
93	14.232	0.155	0.041	0.39	82	-5.47	102	100.0	-1.1	90	253	71	67
94	14.387	0.155	0.041	0.43	82	-5.47	102	99.9	-0.1	90	254	71	66
95	14.542	0.155	0.041	0.43	82	-5.47	102	98.9	-1	90	255	72	67

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
96	14.695	0.153	0.041	0.40	82	-5.47	100	98.0	-0.9	91	256	72	66
97	14.848	0.153	0.041	0.45	82	-5.47	100	97.9	-0.1	91	257	72	67
98	15.003	0.155	0.041	0.38	82	-5.47	102	97.0	-0.9	91	258	72	67
99	15.157	0.154	0.041	0.39	82	-5.47	101	96.0	-1	92	259	72	67
100	15.311	0.154	0.041	0.40	83	-5.47	101	95.0	-1	92	260	72	67
101	15.466	0.155	0.041	0.39	83	-5.47	102	94.9	-0.1	92	261	72	67
102	15.621	0.155	0.041	0.41	83	-5.47	102	94.0	-0.9	92	261	72	67
103	15.776	0.155	0.041	0.30	83	-5.47	102	93.0	-1	92	262	72	67
104	15.930	0.154	0.041	0.39	83	-5.47	101	93.0	0	92	262	72	67
105	16.083	0.153	0.041	0.39	83	-5.47	100	92.1	-0.9	93	263	72	67
106	16.239	0.156	0.041	0.39	83	-5.47	102	91.0	-1.1	93	263	72	67
107	16.393	0.154	0.041	0.38	83	-5.47	101	90.9	-0.1	93	264	72	67
108	16.546	0.153	0.041	0.42	83	-5.47	100	89.0	-1.9	93	264	72	67
109	16.700	0.154	0.041	0.38	83	-5.47	101	89.0	0	93	265	72	67
110	16.856	0.156	0.041	0.38	84	-5.47	102	87.9	-1.1	93	265	72	67
111	17.011	0.155	0.041	0.41	84	-5.47	102	87.7	-0.2	93	266	73	67
112	17.163	0.152	0.041	0.43	84	-5.47	100	86.9	-0.8	93	267	73	68
113	17.317	0.154	0.041	0.37	84	-5.47	101	85.9	-1	93	268	73	67
114	17.471	0.154	0.041	0.41	84	-5.47	101	85.6	-0.3	94	268	73	67
115	17.628	0.157	0.041	0.40	84	-5.47	101	84.9	-0.7	75	256	72	68
116	17.781	0.153	0.041	0.38	84	-5.47	98	84.9	0	73	244	72	67
117	17.937	0.156	0.041	0.44	84	-5.47	100	84.0	-0.9	71	234	71	67
118	18.093	0.156	0.041	0.38	84	-5.47	100	84.0	0	70	226	71	68
119	18.248	0.155	0.041	0.38	84	-5.47	99	84.0	0	70	219	71	68
120	18.402	0.154	0.041	0.42	84	-5.47	99	84.0	0	70	213	71	67
121	18.557	0.155	0.041	0.41	85	-5.47	99	84.0	0	70	208	71	67
122	18.713	0.156	0.041	0.43	85	-5.47	100	84.0	0	69	203	70	67
123	18.867	0.154	0.041	0.41	85	-5.47	99	84.0	0	69	199	70	67
124	19.022	0.155	0.041	0.40	85	-5.47	99	83.7	-0.3	69	195	70	67
125	19.179	0.157	0.041	0.40	85	-5.47	100	83.9	0.2	69	191	70	67
126	19.334	0.155	0.041	0.42	85	-5.47	99	84.2	0.3	69	188	70	66
127	19.489	0.155	0.041	0.44	85	-5.47	99	84.9	0.7	69	185	70	67

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
128	19.645	0.156	0.041	0.37	85	-5.47	100	85.1	0.2	69	182	70	66
129	19.801	0.156	0.041	0.45	85	-5.47	100	85.0	-0.1	69	179	70	67
130	19.954	0.153	0.041	0.47	85	-5.47	98	85.1	0.1	69	176	70	67
131	20.111	0.157	0.041	0.44	85	-5.47	100	85.0	-0.1	69	174	69	66
132	20.266	0.155	0.041	0.39	85	-5.47	99	85.0	0	69	171	69	66
133	20.421	0.155	0.041	0.40	85	-5.47	99	85.0	0	69	169	69	67
134	20.577	0.156	0.041	0.42	85	-5.47	100	85.0	0	69	167	69	67
135	20.733	0.156	0.041	0.38	85	-5.47	100	84.9	-0.1	69	165	69	67
136	20.889	0.156	0.041	0.39	85	-5.47	100	85.0	0.1	69	163	69	67
137	21.043	0.154	0.041	0.38	86	-5.47	98	85.0	0	69	161	69	67
138	21.201	0.158	0.041	0.40	86	-5.47	101	85.0	0	69	159	68	67
139	21.357	0.156	0.041	0.32	86	-5.47	100	85.0	0	69	158	68	67
140	21.512	0.155	0.041	0.40	86	-5.47	99	85.0	0	69	156	68	67
141	21.668	0.156	0.041	0.43	86	-5.47	100	84.9	-0.1	69	154	68	68
142	21.825	0.157	0.041	0.41	86	-5.47	100	85.0	0.1	69	153	68	67
143	21.981	0.156	0.041	0.38	86	-5.47	100	85.0	0	69	151	68	67
144	22.135	0.154	0.041	0.39	86	-5.47	98	84.9	-0.1	69	150	68	67
145	22.292	0.157	0.041	0.43	86	-5.47	100	85.0	0.1	69	148	68	67
146	22.448	0.156	0.041	0.42	86	-5.47	100	85.0	0	69	147	68	68
147	22.603	0.155	0.041	0.41	86	-5.47	99	85.0	0	69	145	68	68
148	22.757	0.154	0.041	0.45	86	-5.47	98	85.0	0	69	144	68	68
149	22.913	0.156	0.041	0.38	86	-5.47	100	86.1	1.1	69	143	68	67
150	23.069	0.156	0.041	0.42	86	-5.47	100	86.0	-0.1	69	141	68	67
151	23.223	0.154	0.041	0.42	86	-5.47	98	86.0	0	69	140	68	68
152	23.378	0.155	0.041	0.39	86	-5.47	99	86.0	0	69	139	68	68
153	23.534	0.156	0.041	0.40	86	-5.47	100	86.0	0	69	138	68	69
154	23.688	0.154	0.041	0.38	86	-5.47	98	85.9	-0.1	69	136	69	68
155	23.844	0.156	0.041	0.39	86	-5.47	100	86.0	0.1	69	135	69	68
156	24.000	0.156	0.041	0.43	86	-5.47	100	86.0	0	69	134	69	67
157	24.156	0.156	0.041	0.44	86	-5.47	100	85.7	-0.3	69	133	69	68
158	24.308	0.152	0.041	0.38	86	-5.47	97	86.0	0.3	69	132	69	67
159	24.462	0.154	0.041	0.42	87	-5.47	100	86.0	0	85	176	70	67

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
160	24.617	0.155	0.041	0.41	87	-5.47	100	84.9	-1.1	82	193	69	68
161	24.772	0.155	0.041	0.40	87	-5.47	100	85.0	0.1	84	201	69	67
162	24.926	0.154	0.041	0.38	87	-5.47	100	85.0	0	86	206	70	68
163	25.082	0.156	0.041	0.41	87	-5.47	101	84.0	-1	87	210	70	68
164	25.239	0.157	0.041	0.38	87	-5.47	102	84.3	0.3	87	214	70	68
165	25.394	0.155	0.041	0.40	87	-5.47	101	84.0	-0.3	88	217	70	68
166	25.549	0.155	0.041	0.39	87	-5.47	101	84.0	0	89	220	71	68
167	25.705	0.156	0.041	0.37	87	-5.47	101	83.0	-1	89	222	71	68
168	25.860	0.155	0.041	0.41	87	-5.47	101	83.1	0.1	89	225	71	68
169	26.013	0.153	0.041	0.42	87	-5.47	99	82.0	-1.1	89	227	71	68
170	26.169	0.156	0.041	0.35	87	-5.47	101	82.0	0	90	230	71	68
171	26.326	0.157	0.041	0.38	87	-5.47	102	81.0	-1	90	232	71	68
172	26.480	0.154	0.041	0.42	87	-5.47	100	81.0	0	90	234	71	68
173	26.636	0.156	0.041	0.42	87	-5.47	101	80.0	-1	90	237	71	68
174	26.792	0.156	0.041	0.43	87	-5.47	101	79.0	-1	90	239	71	68
175	26.947	0.155	0.041	0.38	87	-5.47	101	78.9	-0.1	90	241	71	68
176	27.102	0.155	0.041	0.35	87	-5.47	101	78.1	-0.8	91	243	71	68
177	27.259	0.157	0.041	0.42	87	-5.47	102	77.0	-1.1	91	245	71	68
178	27.415	0.156	0.041	0.42	87	-5.47	101	76.0	-1	91	246	72	68
179	27.568	0.153	0.041	0.39	87	-5.47	100	75.9	-0.1	91	248	72	68
180	27.724	0.156	0.041	0.40	87	-5.47	102	75.0	-0.9	92	249	72	68
181	27.880	0.156	0.041	0.40	87	-5.47	102	74.0	-1	92	251	72	68
182	28.034	0.154	0.041	0.42	87	-5.47	100	73.9	-0.1	92	252	72	68
183	28.187	0.153	0.041	0.38	87	-5.47	100	73.0	-0.9	92	254	72	69
184	28.343	0.156	0.041	0.42	87	-5.47	102	72.0	-1	92	255	72	69
185	28.499	0.156	0.041	0.40	87	-5.47	102	70.7	-1.3	92	257	72	68
186	28.652	0.153	0.041	0.43	87	-5.47	100	70.1	-0.6	92	258	72	69
187	28.806	0.154	0.041	0.42	87	-5.47	100	70.0	-0.1	93	259	72	69
188	28.962	0.156	0.041	0.38	87	-5.47	102	69.0	-1	93	260	73	70
189	29.117	0.155	0.041	0.42	87	-5.47	101	68.0	-1	93	261	73	68
190	29.271	0.154	0.041	0.41	87	-5.47	100	68.0	0	93	262	73	69
191	29.427	0.156	0.041	0.42	88	-5.47	102	67.0	-1	94	262	73	68

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
192	29.570	0.143	0.041	0.42	88	-5.47	93	66.0	-1	94	262	73	68
193	29.737	0.167	0.041	0.39	88	-5.47	109	65.0	-1	94	264	73	69
194	29.891	0.154	0.041	0.45	88	-5.47	100	65.1	0.1	94	264	73	69
195	30.046	0.155	0.041	0.43	88	-5.47	101	64.0	-1.1	94	265	73	69
196	30.202	0.156	0.041	0.43	88	-5.47	102	64.0	0	94	266	73	69
197	30.356	0.154	0.041	0.44	88	-5.47	100	63.0	-1	94	266	73	68
198	30.511	0.155	0.041	0.40	88	-5.47	101	62.0	-1	95	267	73	68
199	30.666	0.155	0.041	0.43	88	-5.47	101	62.0	0	95	268	73	68
200	30.821	0.155	0.041	0.43	88	-5.47	100	61.0	-1	80	261	72	69
201	30.976	0.155	0.041	0.41	88	-5.47	99	63.0	2	75	249	72	69
202	31.132	0.156	0.041	0.41	88	-5.47	100	60.0	-3	73	238	72	69
203	31.289	0.157	0.041	0.40	88	-5.47	100	59.9	-0.1	73	229	71	69
204	31.445	0.156	0.041	0.42	88	-5.47	100	60.0	0.1	72	222	71	69
205	31.599	0.154	0.041	0.40	88	-5.47	98	60.0	0	72	216	71	68
206	31.756	0.157	0.041	0.43	88	-5.47	100	60.0	0	71	211	71	68
207	31.913	0.157	0.041	0.43	88	-5.47	100	60.0	0	71	206	71	68
208	32.067	0.154	0.041	0.45	88	-5.47	98	60.0	0	71	201	70	69
209	32.223	0.156	0.041	0.43	88	-5.47	99	60.0	0	71	197	70	69
210	32.379	0.156	0.041	0.39	88	-5.47	99	60.0	0	71	194	70	69
211	32.534	0.155	0.041	0.39	88	-5.47	99	60.0	0	71	190	70	66
212	32.689	0.155	0.041	0.38	88	-5.47	99	60.0	0	71	187	70	66
213	32.844	0.155	0.041	0.45	88	-5.47	99	60.0	0	70	184	70	67
214	33.001	0.157	0.041	0.42	88	-5.47	100	60.0	0	70	181	70	67
215	33.154	0.153	0.041	0.43	88	-5.47	97	60.0	0	70	178	70	67
216	33.311	0.157	0.041	0.41	88	-5.47	100	60.0	0	70	176	69	67
217	33.468	0.157	0.041	0.37	88	-5.47	100	60.0	0	70	173	69	66
218	33.622	0.154	0.041	0.36	88	-5.47	98	60.0	0	70	171	69	67
219	33.777	0.155	0.041	0.43	88	-5.47	99	60.0	0	69	169	69	66
220	33.935	0.158	0.041	0.44	88	-5.47	101	60.0	0	69	167	69	67
221	34.090	0.155	0.041	0.42	88	-5.47	99	60.0	0	69	165	69	67
222	34.243	0.153	0.041	0.41	88	-5.47	97	60.0	0	69	163	69	67
223	34.399	0.156	0.041	0.41	88	-5.47	99	60.0	0	69	161	69	67

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
224	34.554	0.155	0.041	0.43	88	-5.47	99	60.0	0	69	159	68	66
225	34.708	0.154	0.041	0.37	88	-5.47	98	60.0	0	68	157	68	67
226	34.862	0.154	0.041	0.38	88	-5.47	98	60.0	0	68	156	68	66
227	35.018	0.156	0.041	0.44	88	-5.47	99	60.0	0	68	154	68	66
228	35.172	0.154	0.041	0.41	88	-5.47	98	60.0	0	68	152	68	66
229	35.324	0.152	0.041	0.44	88	-5.47	97	60.0	0	68	151	68	66
230	35.481	0.157	0.041	0.41	88	-5.47	100	60.0	0	68	149	68	66
231	35.637	0.156	0.041	0.43	88	-5.47	99	60.3	0.3	68	148	68	66
232	35.791	0.154	0.041	0.43	88	-5.47	98	60.9	0.6	68	146	68	65
233	35.946	0.155	0.041	0.37	88	-5.47	99	61.0	0.1	68	145	67	66
234	36.103	0.157	0.041	0.39	88	-5.47	100	60.0	-1	68	144	67	66
235	36.257	0.154	0.041	0.39	88	-5.47	98	60.9	0.9	68	142	67	65
236	36.409	0.152	0.041	0.44	88	-5.47	97	61.0	0.1	68	141	67	66
237	36.564	0.155	0.041	0.44	87	-5.47	99	60.1	-0.9	68	140	67	66
238	36.719	0.155	0.041	0.41	87	-5.47	99	61.0	0.9	68	138	67	65
239	36.873	0.154	0.041	0.38	87	-5.47	98	61.0	0	68	137	67	66
240	37.027	0.154	0.041	0.40	87	-5.47	98	61.0	0	68	136	67	66
241	37.183	0.156	0.041	0.41	87	-5.47	99	60.9	-0.1	68	135	67	66
242	37.339	0.156	0.041	0.36	87	-5.47	99	60.9	0	68	133	67	66
243	37.493	0.154	0.041	0.41	87	-5.47	98	61.0	0.1	67	132	67	66
244	37.648	0.155	0.041	0.41	87	-5.47	99	60.9	-0.1	67	131	67	66
245	37.804	0.156	0.041	0.43	87	-5.47	101	61.0	0.1	85	172	68	65
246	37.958	0.154	0.041	0.42	87	-5.47	99	61.0	0	81	190	68	65
247	38.112	0.154	0.041	0.43	87	-5.47	99	60.0	-1	82	199	67	66
248	38.267	0.155	0.041	0.39	87	-5.47	100	60.0	0	84	205	67	66
249	38.424	0.157	0.041	0.40	87	-5.47	102	60.0	0	85	210	67	66
250	38.579	0.155	0.041	0.40	87	-5.47	100	59.0	-1	85	214	68	66
251	38.735	0.156	0.041	0.43	87	-5.47	101	58.9	-0.1	86	218	68	65
252	38.890	0.155	0.041	0.44	87	-5.47	100	57.7	-1.2	86	221	68	65
253	39.045	0.155	0.041	0.37	87	-5.47	100	58.0	0.3	87	224	68	65
254	39.199	0.154	0.041	0.39	87	-5.47	100	58.0	0	87	227	68	65
255	39.355	0.156	0.041	0.40	87	-5.47	101	56.9	-1.1	88	230	68	65

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
256	39.510	0.155	0.041	0.40	87	-5.47	101	56.9	0	88	233	68	66
257	39.663	0.153	0.041	0.40	87	-5.47	99	55.9	-1	88	236	68	66
258	39.818	0.155	0.041	0.43	87	-5.47	101	56.0	0.1	88	238	68	66
259	39.973	0.155	0.041	0.45	87	-5.47	101	55.0	-1	88	241	68	65
260	40.125	0.152	0.041	0.39	87	-5.47	99	53.9	-1.1	89	243	68	65
261	40.280	0.155	0.041	0.38	86	-5.47	101	54.0	0.1	89	245	69	66
262	40.436	0.156	0.041	0.39	86	-5.47	101	53.0	-1	89	247	69	65
263	40.592	0.156	0.041	0.41	86	-5.47	101	51.9	-1.1	89	249	69	65
264	40.745	0.153	0.041	0.45	86	-5.47	100	51.9	0	89	250	69	65
265	40.900	0.155	0.041	0.38	86	-5.47	101	51.0	-0.9	90	252	69	65
266	41.056	0.156	0.041	0.45	86	-5.47	102	50.9	-0.1	90	253	69	65
267	41.211	0.155	0.041	0.40	86	-5.47	101	49.9	-1	90	254	69	65
268	41.365	0.154	0.041	0.43	86	-5.47	100	48.9	-1	90	255	69	66
269	41.521	0.156	0.041	0.44	86	-5.47	102	48.9	0	90	256	69	66
270	41.678	0.157	0.041	0.39	86	-5.47	102	47.8	-1.1	90	257	69	65
271	41.832	0.154	0.041	0.42	86	-5.47	100	46.9	-0.9	90	258	69	65
272	41.987	0.155	0.041	0.42	86	-5.47	101	46.9	0	91	259	69	66
273	42.142	0.155	0.041	0.40	86	-5.47	101	45.8	-1.1	91	259	69	65
274	42.297	0.155	0.041	0.37	86	-5.47	101	45.8	0	91	260	69	65
275	42.452	0.155	0.041	0.41	86	-5.47	101	44.9	-0.9	91	261	69	65
276	42.607	0.155	0.041	0.45	86	-5.47	101	44.9	0	91	261	70	65
277	42.762	0.155	0.041	0.41	86	-5.47	101	43.8	-1.1	91	262	70	65
278	42.916	0.154	0.041	0.48	86	-5.47	100	42.9	-0.9	91	263	70	66
279	43.069	0.153	0.041	0.39	86	-5.47	100	42.8	-0.1	91	263	70	66
280	43.225	0.156	0.041	0.40	86	-5.47	102	42.1	-0.7	91	264	70	66
281	43.379	0.154	0.041	0.38	86	-5.47	100	41.9	-0.2	92	265	70	65
282	43.533	0.154	0.041	0.43	86	-5.47	100	40.8	-1.1	92	265	70	66
283	43.686	0.153	0.041	0.37	86	-5.47	100	39.7	-1.1	92	266	70	65
284	43.840	0.154	0.041	0.41	86	-5.47	100	39.6	-0.1	92	266	70	65
285	43.996	0.156	0.041	0.40	86	-5.47	100	39.8	0.2	74	252	69	65
286	44.149	0.153	0.041	0.37	86	-5.47	98	38.8	-1	71	241	69	65
287	44.304	0.155	0.041	0.45	86	-5.47	99	38.8	0	70	231	69	66

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
288	44.460	0.156	0.041	0.42	86	-5.47	100	38.8	0	70	223	69	65
289	44.615	0.155	0.041	0.36	86	-5.47	99	37.8	-1	69	216	68	65
290	44.769	0.154	0.041	0.39	86	-5.47	98	37.8	0	69	211	68	66
291	44.926	0.157	0.041	0.41	86	-5.47	100	37.8	0	69	205	68	66
292	45.083	0.157	0.041	0.43	86	-5.47	100	37.8	0	68	201	68	66
293	45.237	0.154	0.041	0.37	86	-5.47	98	37.8	0	68	197	68	65
294	45.391	0.154	0.041	0.43	85	-5.47	98	37.9	0.1	68	193	67	65
295	45.546	0.155	0.041	0.41	85	-5.47	99	37.8	-0.1	68	189	67	65
296	45.702	0.156	0.041	0.41	85	-5.47	100	41.5	3.7	68	186	67	65
297	45.855	0.153	0.041	0.42	85	-5.47	98	37.8	-3.7	68	183	67	65
298	46.010	0.155	0.041	0.39	85	-5.47	99	38.8	1	68	180	67	65
299	46.165	0.155	0.041	0.44	85	-5.47	99	38.8	0	68	177	67	66
300	46.321	0.156	0.041	0.45	85	-5.47	100	38.8	0	68	175	67	65
301	46.474	0.153	0.041	0.44	85	-5.47	98	38.8	0	68	172	67	65
302	46.631	0.157	0.041	0.38	85	-5.47	100	38.8	0	68	170	66	65
303	46.786	0.155	0.041	0.41	85	-5.47	99	38.8	0	68	167	66	65
304	46.941	0.155	0.041	0.40	85	-5.47	99	38.8	0	68	165	66	65
305	47.096	0.155	0.041	0.40	85	-5.47	99	38.8	0	68	163	66	65
306	47.251	0.155	0.041	0.40	85	-5.47	99	38.8	0	68	161	66	65
307	47.406	0.155	0.041	0.41	85	-5.47	99	38.8	0	68	159	66	66
308	47.560	0.154	0.041	0.37	85	-5.47	98	37.6	-1.2	68	158	66	65
309	47.714	0.154	0.041	0.42	85	-5.47	98	38.8	1.2	67	156	66	65
310	47.869	0.155	0.041	0.36	85	-5.47	99	38.8	0	67	154	66	65
311	48.024	0.155	0.041	0.40	85	-5.47	99	38.8	0	67	153	66	65
312	48.179	0.155	0.041	0.43	85	-5.47	99	38.8	0	67	151	66	66
313	48.332	0.153	0.041	0.43	85	-5.47	98	38.8	0	67	150	66	66
314	48.487	0.155	0.041	0.41	85	-5.47	99	39.8	1	67	148	66	65
315	48.642	0.155	0.041	0.40	85	-5.47	99	38.7	-1.1	67	147	66	65
316	48.795	0.153	0.041	0.37	85	-5.47	98	39.8	1.1	67	145	66	65
317	48.949	0.154	0.041	0.36	85	-5.47	98	39.7	-0.1	67	144	66	65
318	49.102	0.153	0.041	0.42	85	-5.47	98	39.7	0	67	142	66	65
319	49.256	0.154	0.041	0.40	85	-5.47	98	39.7	0	67	141	66	66

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
320	49.410	0.154	0.041	0.42	85	-5.47	98	39.8	0.1	67	140	66	66
321	49.564	0.154	0.041	0.46	85	-5.47	98	39.8	0	67	139	66	65
322	49.718	0.154	0.041	0.43	85	-5.47	98	39.8	0	67	137	66	65
323	49.873	0.155	0.041	0.38	85	-5.47	99	39.5	-0.3	67	136	66	66
324	50.026	0.153	0.041	0.44	85	-5.47	98	39.8	0.3	67	135	66	66
325	50.178	0.152	0.041	0.45	85	-5.47	97	39.8	0	67	134	66	66
326	50.332	0.154	0.041	0.42	85	-5.47	98	39.8	0	67	132	66	66
327	50.486	0.154	0.041	0.38	85	-5.47	98	39.8	0	67	131	66	66
328	50.640	0.154	0.041	0.39	85	-5.47	98	39.9	0.1	67	130	66	66
329	50.792	0.152	0.041	0.43	85	-5.47	98	39.8	-0.1	81	179	67	65
330	50.946	0.154	0.041	0.37	85	-5.47	100	39.8	0	80	194	66	66
331	51.101	0.155	0.041	0.31	85	-5.47	100	38.8	-1	82	201	67	65
332	51.256	0.155	0.041	0.42	85	-5.47	101	38.8	0	84	207	67	66
333	51.410	0.154	0.041	0.38	85	-5.47	100	38.8	0	85	211	67	65
334	51.565	0.155	0.041	0.43	85	-5.47	101	38.8	0	86	215	67	65
335	51.721	0.156	0.041	0.38	85	-5.47	101	37.8	-1	86	218	68	65
336	51.873	0.152	0.041	0.42	85	-5.47	99	37.1	-0.7	87	221	68	65
337	52.029	0.156	0.041	0.40	85	-5.47	101	37.8	0.7	87	224	68	66
338	52.186	0.157	0.041	0.41	85	-5.47	102	36.8	-1	88	226	68	65
339	52.341	0.155	0.041	0.44	85	-5.47	101	36.8	0	88	228	68	65
340	52.494	0.153	0.041	0.42	85	-5.47	100	35.8	-1	87	231	68	65
341	52.648	0.154	0.041	0.38	85	-5.47	100	35.8	0	87	233	68	65
342	52.803	0.155	0.041	0.41	85	-5.47	101	34.6	-1.2	87	235	68	65
343	52.958	0.155	0.041	0.41	85	-5.47	101	34.7	0.1	88	237	68	65
344	53.112	0.154	0.041	0.41	85	-5.47	100	33.8	-0.9	88	240	68	65
345	53.267	0.155	0.041	0.41	85	-5.47	101	33.7	-0.1	88	242	69	65
346	53.422	0.155	0.041	0.43	85	-5.47	101	32.7	-1	88	244	69	65
347	53.576	0.154	0.041	0.39	85	-5.47	100	32.8	0.1	89	245	69	66
348	53.730	0.154	0.041	0.38	85	-5.47	100	31.8	-1	89	247	69	65
349	53.885	0.155	0.041	0.39	85	-5.47	101	30.7	-1.1	89	248	69	65
350	54.040	0.155	0.041	0.42	85	-5.47	101	30.7	0	89	249	69	64
351	54.191	0.151	0.041	0.42	85	-5.47	98	29.8	-0.9	89	250	69	65

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
352	54.347	0.156	0.041	0.40	85	-5.47	102	29.7	-0.1	89	251	69	65
353	54.503	0.156	0.041	0.43	85	-5.47	102	28.8	-0.9	89	252	69	65
354	54.658	0.155	0.041	0.43	85	-5.47	101	27.7	-1.1	90	253	69	65
355	54.810	0.152	0.041	0.37	85	-5.47	99	28.3	0.6	90	254	69	65
356	54.964	0.154	0.041	0.36	85	-5.47	100	26.8	-1.5	90	255	69	65
357	55.120	0.156	0.041	0.43	85	-5.47	102	26.8	0	90	256	69	65
358	55.274	0.154	0.041	0.38	85	-5.47	101	25.8	-1	91	257	69	65
359	55.428	0.154	0.041	0.41	85	-5.47	101	25.8	0	91	258	69	65
360	55.583	0.155	0.041	0.43	85	-5.47	101	24.8	-1	91	258	69	65
361	55.740	0.157	0.041	0.43	85	-5.47	103	23.8	-1	91	259	69	65
362	55.894	0.154	0.041	0.44	85	-5.47	101	23.8	0	91	260	69	65
363	56.047	0.153	0.041	0.41	85	-5.47	100	23.2	-0.6	91	260	69	65
364	56.202	0.155	0.041	0.41	85	-5.47	101	21.9	-1.3	91	261	69	65
365	56.356	0.154	0.041	0.42	85	-5.47	101	21.8	-0.1	91	261	69	65
366	56.509	0.153	0.041	0.45	85	-5.47	100	20.9	-0.9	91	262	69	65
367	56.663	0.154	0.041	0.41	85	-5.47	101	20.8	-0.1	91	263	69	65
368	56.818	0.155	0.041	0.43	85	-5.47	101	19.8	-1	92	264	69	65
369	56.972	0.154	0.041	0.42	85	-5.47	100	19.8	0	86	261	69	65
370	57.127	0.155	0.041	0.44	85	-5.47	100	18.9	-0.9	73	248	69	65
371	57.280	0.153	0.041	0.40	85	-5.47	98	18.9	0	71	237	68	65
372	57.434	0.154	0.041	0.44	85	-5.47	99	17.9	-1	70	228	68	64
373	57.590	0.156	0.041	0.38	85	-5.47	100	17.9	0	70	220	68	65
374	57.745	0.155	0.041	0.40	85	-5.47	99	17.9	0	69	214	68	65
375	57.898	0.153	0.041	0.39	85	-5.47	98	17.9	0	69	208	67	65
376	58.054	0.156	0.041	0.34	85	-5.47	100	16.9	-1	69	204	67	65
377	58.210	0.156	0.041	0.40	85	-5.47	100	16.9	0	68	199	67	65
378	58.363	0.153	0.041	0.44	85	-5.47	98	16.9	0	68	195	67	65
379	58.517	0.154	0.041	0.38	85	-5.47	98	16.9	0	68	191	67	65
380	58.673	0.156	0.041	0.40	85	-5.47	100	16.7	-0.2	68	188	66	65
381	58.828	0.155	0.041	0.38	85	-5.47	99	16.9	0.2	68	184	66	65
382	58.981	0.153	0.041	0.44	85	-5.47	98	16.9	0	68	181	66	65
383	59.135	0.154	0.041	0.42	85	-5.47	98	16.6	-0.3	68	178	66	65

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
384	59.290	0.155	0.041	0.35	85	-5.47	99	16.9	0.3	68	176	66	65
385	59.445	0.155	0.041	0.46	85	-5.47	99	17.9	1	68	173	66	65
386	59.600	0.155	0.041	0.39	85	-5.47	99	17.9	0	68	171	66	65
387	59.754	0.154	0.041	0.42	85	-5.47	98	17.9	0	68	169	66	65
388	59.910	0.156	0.041	0.40	85	-5.47	100	17.9	0	68	166	66	65
389	60.064	0.154	0.041	0.39	85	-5.47	98	17.9	0	68	164	66	65
390	60.218	0.154	0.041	0.42	85	-5.47	98	17.9	0	68	162	66	65
391	60.373	0.155	0.041	0.43	85	-5.47	99	17.9	0	68	160	66	65
392	60.528	0.155	0.041	0.45	85	-5.47	99	17.9	0	68	158	66	65
393	60.682	0.154	0.041	0.42	85	-5.47	98	17.9	0	68	157	66	65
394	60.835	0.153	0.041	0.39	85	-5.47	98	17.9	0	68	155	66	65
395	60.990	0.155	0.041	0.44	85	-5.47	99	17.9	0	68	153	66	64
396	61.145	0.155	0.041	0.43	85	-5.47	99	17.9	0	67	152	66	65
397	61.297	0.152	0.041	0.41	85	-5.47	97	17.6	-0.3	67	150	65	64
398	61.451	0.154	0.041	0.39	85	-5.47	98	17.9	0.3	67	149	65	64
399	61.606	0.155	0.041	0.41	85	-5.47	99	17.9	0	67	147	65	64
400	61.761	0.155	0.041	0.42	85	-5.47	99	17.9	0	67	146	65	64
401	61.914	0.153	0.041	0.38	85	-5.47	98	17.9	0	67	144	65	65
402	62.069	0.155	0.041	0.42	85	-5.47	99	18.9	1	67	143	65	65
403	62.225	0.156	0.041	0.47	85	-5.47	100	18.9	0	67	142	65	65
404	62.380	0.155	0.041	0.44	84	-5.47	99	18.9	0	67	140	65	65
405	62.532	0.152	0.041	0.41	85	-5.47	97	18.9	0	67	139	65	65
406	62.686	0.154	0.041	0.39	84	-5.47	99	18.9	0	67	138	65	65
407	62.843	0.157	0.041	0.39	84	-5.47	100	18.9	0	67	136	65	65
408	62.998	0.155	0.041	0.42	85	-5.47	99	18.9	0	67	135	65	65
409	63.150	0.152	0.041	0.40	84	-5.47	97	18.9	0	67	134	65	64
410	63.306	0.156	0.041	0.45	84	-5.47	100	18.9	0	67	133	65	65
411	63.461	0.155	0.041	0.41	84	-5.47	99	18.9	0	67	132	65	64
412	63.616	0.155	0.041	0.40	85	-5.47	99	18.9	0	67	131	65	65
413	63.771	0.155	0.041	0.41	84	-5.47	99	18.9	0	67	130	65	64
414	63.925	0.154	0.041	0.38	84	-5.47	100	18.9	0	80	180	66	64
415	64.081	0.156	0.041	0.45	84	-5.47	101	18.9	0	80	194	66	65

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
416	64.236	0.155	0.041	0.36	84	-5.47	101	18.9	0	83	202	66	65
417	64.390	0.154	0.041	0.46	84	-5.47	100	18.9	0	84	207	66	65
418	64.546	0.156	0.041	0.42	84	-5.47	101	17.9	-1	85	212	66	65
419	64.701	0.155	0.041	0.44	84	-5.47	101	17.9	0	86	215	67	65
420	64.854	0.153	0.041	0.39	84	-5.47	100	17.9	0	86	218	67	65
421	65.008	0.154	0.041	0.41	84	-5.47	100	16.9	-1	86	220	67	65
422	65.165	0.157	0.041	0.41	84	-5.47	102	16.9	0	87	223	67	65
423	65.318	0.153	0.041	0.39	84	-5.47	100	16.9	0	87	225	67	65
424	65.472	0.154	0.041	0.38	84	-5.47	100	16.0	-0.9	87	228	67	64
425	65.628	0.156	0.041	0.44	84	-5.47	102	15.9	-0.1	87	231	67	65
426	65.784	0.156	0.041	0.38	84	-5.47	102	14.9	-1	87	233	67	65
427	65.937	0.153	0.041	0.40	84	-5.47	100	14.9	0	87	235	67	65
428	66.092	0.155	0.041	0.44	84	-5.47	101	13.9	-1	87	238	68	65
429	66.246	0.154	0.041	0.41	84	-5.47	100	14.0	0.1	88	241	68	65
430	66.402	0.156	0.041	0.42	84	-5.47	102	13.0	-1	88	244	68	64
431	66.554	0.152	0.041	0.38	84	-5.47	99	12.9	-0.1	88	246	68	65
432	66.708	0.154	0.041	0.38	84	-5.47	100	12.0	-0.9	88	248	68	65
433	66.863	0.155	0.041	0.38	84	-5.47	101	12.0	0	88	249	68	64
434	67.017	0.154	0.041	0.42	84	-5.47	100	11.0	-1	88	250	68	64
435	67.171	0.154	0.041	0.37	84	-5.47	101	10.0	-1	89	252	68	64
436	67.325	0.154	0.041	0.37	84	-5.47	101	10.0	0	89	253	68	65
437	67.482	0.157	0.041	0.39	84	-5.47	103	9.0	-1	89	254	68	65
438	67.636	0.154	0.041	0.39	84	-5.47	101	9.0	0	89	255	68	65
439	67.787	0.151	0.041	0.44	84	-5.47	99	8.0	-1	89	256	68	64
440	67.942	0.155	0.041	0.43	84	-5.47	101	8.0	0	90	257	68	64
441	68.098	0.156	0.041	0.42	84	-5.47	102	7.1	-0.9	90	258	68	65
442	68.253	0.155	0.041	0.40	84	-5.47	101	7.0	-0.1	90	259	68	65
443	68.406	0.153	0.041	0.38	84	-5.47	100	6.0	-1	90	260	68	65
444	68.561	0.155	0.041	0.38	84	-5.47	101	6.0	0	90	261	68	65
445	68.716	0.155	0.041	0.38	84	-5.47	101	5.0	-1	91	262	68	65
446	68.870	0.154	0.041	0.40	84	-5.47	101	5.0	0	91	262	68	64
447	69.022	0.152	0.041	0.43	84	-5.47	99	5.0	0	91	262	68	64

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
448	69.177	0.155	0.041	0.40	84	-5.47	101	4.0	-1	91	263	68	64
449	69.333	0.156	0.041	0.37	84	-5.47	102	3.0	-1	91	263	68	64
450	69.487	0.154	0.041	0.46	84	-5.47	100	3.0	0	86	261	68	64
451	69.641	0.154	0.041	0.39	84	-5.47	99	3.0	0	73	248	68	64
452	69.796	0.155	0.041	0.43	84	-5.47	100	2.6	-0.4	71	237	67	64
453	69.952	0.156	0.041	0.42	84	-5.47	100	2.0	-0.6	70	227	67	64
454	70.105	0.153	0.041	0.43	84	-5.47	98	2.1	0.1	69	220	67	64
455	70.259	0.154	0.041	0.41	84	-5.47	99	2.0	-0.1	69	213	67	64
456	70.415	0.156	0.041	0.41	84	-5.47	100	2.0	0	68	208	66	64
457	70.570	0.155	0.041	0.38	84	-5.47	99	2.0	0	68	203	66	64
458	70.723	0.153	0.041	0.39	84	-5.47	98	2.1	0.1	68	198	66	65
459	70.877	0.154	0.041	0.42	84	-5.47	99	2.0	-0.1	68	194	66	64
460	71.033	0.156	0.041	0.38	84	-5.47	100	2.0	0	68	190	66	64
461	71.188	0.155	0.041	0.44	84	-5.47	99	2.0	0	68	187	66	64
462	71.341	0.153	0.041	0.44	84	-5.47	98	2.0	0	68	184	66	64
463	71.496	0.155	0.041	0.41	84	-5.47	99	2.0	0	68	181	66	65
464	71.651	0.155	0.041	0.38	84	-5.47	99	2.0	0	68	178	65	65
465	71.806	0.155	0.041	0.35	84	-5.47	99	3.0	1	68	175	65	65
466	71.961	0.155	0.041	0.39	84	-5.47	99	1.4	-1.6	67	173	65	64
467	72.117	0.156	0.041	0.41	84	-5.47	100	2.0	0.6	67	170	65	65
468	72.272	0.155	0.041	0.41	84	-5.47	99	2.0	0	67	168	65	64
469	72.427	0.155	0.041	0.38	84	-5.47	99	2.0	0	67	166	65	65
470	72.580	0.153	0.041	0.44	84	-5.47	98	2.0	0	67	163	65	64
471	72.736	0.156	0.041	0.42	84	-5.47	100	2.0	0	67	161	65	65
472	72.890	0.154	0.041	0.42	84	-5.47	99	2.0	0	67	160	65	65
473	73.045	0.155	0.041	0.35	84	-5.47	99	2.0	0	67	158	65	64
474	73.198	0.153	0.041	0.42	84	-5.47	98	2.0	0	67	156	65	64
475	73.353	0.155	0.041	0.44	84	-5.47	99	2.0	0	67	154	65	64
476	73.508	0.155	0.041	0.38	84	-5.47	99	2.0	0	67	153	65	64
477	73.662	0.154	0.041	0.41	84	-5.47	99	3.0	1	67	151	65	65
478	73.816	0.154	0.041	0.40	84	-5.47	99	2.0	-1	67	149	65	64
479	73.971	0.155	0.041	0.41	84	-5.47	99	3.0	1	67	148	65	64

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
480	74.126	0.155	0.041	0.46	84	-5.47	99	3.0	0	67	146	65	64
481	74.279	0.153	0.041	0.46	84	-5.47	98	3.0	0	67	145	65	64
482	74.433	0.154	0.041	0.47	84	-5.47	99	3.0	0	67	144	65	64
483	74.587	0.154	0.041	0.38	84	-5.47	99	3.0	0	67	142	65	64
484	74.742	0.155	0.041	0.38	84	-5.47	99	3.0	0	67	141	65	64
485	74.894	0.152	0.041	0.42	84	-5.47	97	3.0	0	67	140	65	65
486	75.049	0.155	0.041	0.42	84	-5.47	99	3.0	0	67	138	65	64
487	75.204	0.155	0.041	0.40	84	-5.47	99	2.9	-0.1	67	137	65	64
488	75.359	0.155	0.041	0.38	84	-5.47	99	3.0	0.1	67	136	65	64
489	75.511	0.152	0.041	0.43	84	-5.47	97	3.0	0	67	135	64	64
490	75.665	0.154	0.041	0.39	84	-5.47	99	3.0	0	67	133	64	64
491	75.820	0.155	0.041	0.40	84	-5.47	99	3.0	0	67	132	64	64
492	75.975	0.155	0.041	0.39	84	-5.47	99	3.1	0.1	67	131	64	64
493	76.128	0.153	0.041	0.38	84	-5.47	98	3.0	-0.1	67	130	64	64
494	76.282	0.154	0.041	0.43	84	-5.47	100	3.0	0	78	175	65	64
495	76.438	0.156	0.041	0.43	84	-5.47	101	3.1	0.1	79	193	65	64
496	76.593	0.155	0.041	0.39	84	-5.47	100	3.0	-0.1	81	203	65	64
497	76.746	0.153	0.041	0.41	84	-5.47	99	3.0	0	82	211	65	64
498	76.901	0.155	0.041	0.46	84	-5.47	101	2.0	-1	83	217	65	64
499	77.057	0.156	0.041	0.43	84	-5.47	101	1.9	-0.1	84	222	66	64
500	77.210	0.153	0.041	0.41	84	-5.47	99	2.1	0.2	84	226	66	64
501	77.364	0.154	0.041	0.42	84	-5.47	100	0.9	-1.2	85	229	66	64
502	77.518	0.154	0.041	0.40	84	-5.47	100	1.0	0.1	85	233	66	64
503	77.673	0.155	0.041	0.42	84	-5.47	101	0.0	-1	86	235	66	64

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
0	0.000		0.00	64	-1		72	2.000	5.98	0.23
1	0.136	0.136	1.13	64	-1.07	89	72	2.230	8.07	0.08
2	0.297	0.161	1.15	64	-2.4	105	72	2.250	10.88	0.04
3	0.457	0.160	1.25	64	0.78	105	72	2.240	10.73	0.00
4	0.615	0.158	1.03	64	-3.83	103	73	2.230	10.19	0.01
5	0.772	0.157	1.09	64	-0.55	103	73	2.240	10.34	0.03
6	0.931	0.159	0.78	65	-3.08	104	73	2.240	9.71	0.01
7	1.088	0.157	1.10	65	-3.24	103	73	2.240	9.90	0.10
8	1.245	0.157	1.07	65	-3	103	73	2.240	9.95	0.06
9	1.399	0.154	1.05	65	-2.8	101	74	2.240	10.05	0.03
10	1.556	0.157	1.06	65	-0.98	103	74	2.240	10.05	0.01
11	1.715	0.159	1.06	65	-1.1	104	74	2.240	10.01	0.05
12	1.875	0.160	1.01	66	-0.7	105	74	2.240	9.79	0.04
13	2.033	0.158	1.10	66	-0.93	103	74	2.240	10.10	0.05
14	2.196	0.163	1.08	66	-0.72	107	74	2.240	10.42	0.04
15	2.357	0.161	0.79	66	-0.92	105	74	2.250	10.96	0.01
16	2.515	0.158	1.09	67	-0.61	103	75	2.240	11.07	(0.04)
17	2.677	0.162	1.09	67	-2.61	106	75	2.240	10.89	0.03
18	2.837	0.160	1.15	67	-1.45	104	75	2.240	10.56	0.03
19	2.994	0.157	1.11	67	-1.3	102	75	2.230	10.47	0.04
20	3.155	0.161	1.13	68	-1.15	105	75	2.250	10.30	0.07
21	3.315	0.160	1.07	68	-1	104	75	2.240	10.22	0.10
22	3.475	0.160	1.15	68	-2.09	104	75	2.240	10.22	0.10
23	3.634	0.159	1.06	68	-2.55	104	75	2.220	9.91	0.04
24	3.793	0.159	1.04	69	-1.26	103	75	2.210	9.83	0.07
25	3.951	0.158	1.10	69	-0.96	103	75	2.230	9.83	0.04
26	4.105	0.154	1.10	69	-2.61	100	75	2.250	9.76	0.06
27	4.264	0.159	1.09	70	-1.2	103	75	2.240	9.52	0.05
28	4.423	0.159	1.08	70	-1.09	103	75	2.270	9.30	0.02
29	4.582	0.159	1.13	70	-2.46	103	75	2.260	9.38	0.00
30	4.740	0.158	1.05	71	-1.36	103	75	2.240	9.25	0.02
31	4.904	0.164	1.01	71	-0.87	106	75	2.230	9.34	0.06

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
32	5.064	0.160	1.11	71	-1.13	104	75	2.240	9.27	0.06
33	5.222	0.158	1.11	72	-1.17	101	75	2.260	7.97	(0.01)
34	5.382	0.160	1.06	72	-1.15	102	74	2.180	0.81	(0.03)
35	5.545	0.163	1.01	72	-1.06	103	74	2.240	0.48	0.03
36	5.704	0.159	1.06	72	-1.03	101	74	2.240	0.32	0.03
37	5.866	0.162	1.07	73	-1.15	103	74	2.240	0.24	0.00
38	6.026	0.160	1.09	73	-1.18	101	73	2.220	0.24	0.00
39	6.184	0.158	0.81	73	-1.18	100	73	2.220	0.17	(0.02)
40	6.345	0.161	1.07	74	-1.16	102	73	2.230	0.14	0.00
41	6.504	0.159	1.10	74	-1.07	100	73	2.240	0.09	(0.05)
42	6.661	0.157	1.01	74	-1.09	99	73	2.240	0.12	(0.01)
43	6.821	0.160	1.11	75	-1.18	101	73	2.240	0.04	(0.11)
44	6.982	0.161	1.11	75	-1.09	101	73	2.240	0.06	(0.01)
45	7.142	0.160	1.07	75	-1.13	101	73	2.250	0.07	(0.01)
46	7.300	0.158	1.44	76	-1.03	99	73	2.240	0.03	(0.03)
47	7.463	0.163	1.10	76	-1.19	102	73	2.260	0.08	(0.07)
48	7.622	0.159	1.06	76	-1.2	100	73	2.230	0.06	(0.08)
49	7.779	0.157	1.07	76	-1.03	99	73	2.230	0.11	0.22
50	7.939	0.160	1.08	77	-1.06	100	73	2.240	0.09	0.00
51	8.101	0.162	1.06	77	-1.08	102	73	2.230	0.08	(0.04)
52	8.261	0.160	1.03	77	-0.97	100	73	2.230	0.02	(0.02)
53	8.421	0.160	1.08	77	-1.18	100	73	2.240	0.05	(0.01)
54	8.581	0.160	1.12	78	-1.18	100	73	2.250	0.04	0.01
55	8.737	0.156	1.06	78	-1.15	98	73	2.240	0.05	(0.05)
56	8.899	0.162	1.10	78	-1.18	102	73	2.260	0.00	(0.05)
57	9.058	0.159	1.05	79	-1.1	99	73	2.230	(0.04)	(0.02)
58	9.216	0.158	1.08	79	-1.09	99	73	2.240	0.03	(0.07)
59	9.377	0.161	1.09	79	-1.04	101	73	2.250	0.02	(0.03)
60	9.536	0.159	1.09	79	-1.15	99	73	2.240	(0.02)	(0.03)
61	9.697	0.161	1.13	79	-1.17	101	73	2.240	0.08	(0.04)
62	9.856	0.159	1.05	80	-1.07	99	73	2.240	(0.07)	0.00
63	10.019	0.163	1.06	80	-1.21	102	73	2.230	0.00	(0.03)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
64	10.178	0.159	1.04	80	-1.16	99	73	2.240	(0.03)	(0.01)
65	10.338	0.160	1.14	80	-1.12	100	73	2.180	0.07	(0.04)
66	10.498	0.160	1.12	81	-1.07	100	73	2.240	0.03	(0.03)
67	10.659	0.161	0.76	81	-1.11	100	73	2.240	0.03	(0.02)
68	10.818	0.159	1.11	81	-1.03	99	73	2.240	0.07	(0.03)
69	10.978	0.160	1.07	81	-1.2	100	73	2.240	(0.02)	(0.08)
70	11.138	0.160	1.18	81	-1.04	100	73	2.240	0.03	(0.09)
71	11.297	0.159	0.78	82	-1.04	99	73	2.230	0.06	0.08
72	11.456	0.159	1.07	82	-1.17	99	73	2.260	0.00	(0.03)
73	11.616	0.160	1.16	82	-1.14	100	73	2.230	0.01	(0.01)
74	11.775	0.159	1.08	82	-1.02	99	73	2.250	0.01	(0.01)
75	11.934	0.159	1.06	82	-1.55	99	73	2.280	0.06	0.00
76	12.096	0.162	1.02	83	-1.39	101	73	2.250	(0.04)	(0.05)
77	12.254	0.158	1.12	83	-1.6	99	73	2.230	(0.01)	0.01
78	12.415	0.161	1.03	83	-1.37	101	73	2.290	1.30	0.17
79	12.577	0.162	1.05	83	-1.34	102	74	2.240	2.50	0.41
80	12.735	0.158	1.08	83	-1.17	100	74	2.240	3.82	0.40
81	12.897	0.162	1.07	83	-1.29	102	74	2.240	5.76	0.30
82	13.059	0.162	1.08	84	-1.03	102	74	2.280	6.78	0.37
83	13.217	0.158	1.08	84	-1.18	100	74	2.250	7.51	0.22
84	13.376	0.159	1.07	84	-1.19	100	74	2.230	7.95	0.17
85	13.538	0.162	1.09	84	-1.19	102	74	2.240	7.68	0.29
86	13.697	0.159	1.10	84	-1.03	100	74	2.250	8.14	0.15
87	13.856	0.159	1.07	84	-1.2	100	74	2.200	8.30	0.17
88	14.016	0.160	1.04	85	-1.06	101	75	2.240	8.24	0.34
89	14.177	0.161	1.07	85	-1.2	102	75	2.280	8.49	0.42
90	14.336	0.159	1.04	85	-1.12	100	75	2.240	7.65	0.79
91	14.497	0.161	1.06	85	-1.04	102	75	2.260	7.74	0.72
92	14.656	0.159	1.06	85	-1.04	100	75	2.160	7.80	0.64
93	14.815	0.159	1.10	85	-1.03	100	75	2.250	7.76	0.64
94	14.975	0.160	1.08	85	-1.05	101	75	2.240	7.67	0.49
95	15.138	0.163	1.10	85	-1.15	103	75	2.260	7.64	0.54

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
96	15.293	0.155	1.04	86	-1.06	98	76	2.230	7.70	0.46
97	15.454	0.161	1.07	86	-1.06	102	76	2.240	7.69	0.47
98	15.614	0.160	1.07	86	-1.18	101	76	2.230	7.63	0.47
99	15.773	0.159	1.06	86	-1.03	100	76	2.230	7.58	0.47
100	15.933	0.160	1.08	86	-1.03	101	76	2.250	7.46	0.51
101	16.095	0.162	1.12	86	-1.14	102	76	2.240	7.82	0.52
102	16.255	0.160	1.05	86	-1.03	101	76	2.250	7.77	0.53
103	16.415	0.160	1.06	86	-1.12	101	76	2.230	7.62	0.48
104	16.574	0.159	1.12	86	-1.2	100	76	2.250	7.59	0.60
105	16.734	0.160	1.07	87	-1.19	101	76	2.240	7.68	0.59
106	16.894	0.160	1.05	87	-1.04	101	76	2.230	7.46	0.62
107	17.054	0.160	1.09	87	-1.06	101	76	2.230	7.51	0.51
108	17.213	0.159	1.10	87	-1.18	100	76	2.240	7.45	0.50
109	17.370	0.157	1.32	87	-1.06	99	76	2.230	7.39	0.53
110	17.532	0.162	1.11	87	-1.14	102	77	2.240	7.32	0.45
111	17.690	0.158	1.07	87	-1.06	100	76	2.240	7.65	0.47
112	17.850	0.160	1.06	87	-1.07	101	76	2.230	7.79	0.37
113	18.011	0.161	1.05	87	-1.04	102	76	2.240	7.49	0.40
114	18.172	0.161	1.02	87	-1.1	102	77	2.240	7.75	0.36
115	18.330	0.158	1.05	88	-1.06	98	76	2.220	5.90	0.15
116	18.489	0.159	1.08	88	-1.07	98	76	2.250	0.66	(0.03)
117	18.651	0.162	1.07	88	-1.19	100	76	2.240	0.46	0.06
118	18.809	0.158	1.11	88	-1.1	97	75	2.240	0.44	(0.05)
119	18.968	0.159	1.09	88	-1.05	98	75	2.250	0.20	(0.02)
120	19.128	0.160	1.08	88	-1.18	99	75	2.230	0.20	(0.04)
121	19.288	0.160	1.08	88	-1.14	99	75	2.220	0.12	0.01
122	19.448	0.160	1.07	88	-1.06	99	75	2.240	0.08	(0.02)
123	19.610	0.162	1.07	88	-1.04	100	75	2.230	0.16	0.02
124	19.770	0.160	1.08	88	-1.19	99	74	2.240	0.04	0.02
125	19.931	0.161	1.09	88	-1.19	99	74	2.240	(0.01)	0.04
126	20.092	0.161	1.15	88	-1.07	99	74	2.250	0.09	(0.01)
127	20.250	0.158	1.07	88	-1.19	97	74	2.230	0.08	(0.03)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
128	20.409	0.159	1.10	89	-1.07	98	74	2.240	0.08	0.01
129	20.570	0.161	1.06	89	-1.15	99	74	2.230	(0.01)	(0.02)
130	20.726	0.156	1.02	89	-1.15	96	75	2.210	0.01	0.05
131	20.886	0.160	1.07	89	-1.2	98	75	2.230	(0.01)	0.00
132	21.046	0.160	1.09	89	-1.17	98	75	2.230	0.09	(0.02)
133	21.205	0.159	1.07	89	-1.18	98	75	2.240	0.02	(0.02)
134	21.365	0.160	1.04	89	-1.06	98	75	2.260	0.01	0.00
135	21.525	0.160	1.05	89	-1.12	98	75	2.240	0.04	(0.04)
136	21.683	0.158	1.10	89	-1.19	97	76	2.240	(0.35)	0.00
137	21.844	0.161	1.07	89	-1.11	99	75	2.210	0.16	(0.05)
138	22.004	0.160	1.08	89	-1.09	98	75	2.250	0.07	(0.02)
139	22.162	0.158	1.07	89	-1.17	97	74	2.240	0.14	(0.02)
140	22.322	0.160	1.07	89	-1.05	98	74	2.250	0.06	(0.03)
141	22.482	0.160	1.14	89	-1.18	98	74	2.240	0.19	0.00
142	22.642	0.160	1.09	89	-1.09	98	73	2.240	0.29	(0.06)
143	22.806	0.164	1.12	90	-1.19	101	73	2.230	0.08	(0.07)
144	22.966	0.160	1.04	90	-1.03	98	73	2.240	0.06	(0.01)
145	23.123	0.157	1.09	90	-1.2	96	73	2.230	(0.08)	(0.08)
146	23.284	0.161	1.05	90	-1.12	99	73	2.250	0.07	(0.06)
147	23.443	0.159	1.08	90	-1.11	98	73	2.240	(0.02)	(0.02)
148	23.604	0.161	1.01	90	-1.1	99	73	2.250	0.02	0.02
149	23.765	0.161	0.92	90	-1.18	99	73	2.240	0.07	(0.02)
150	23.923	0.158	1.08	90	-1.12	97	73	2.240	0.04	(0.01)
151	24.082	0.159	1.10	90	-1.14	98	73	2.240	0.00	0.09
152	24.243	0.161	1.05	90	-1.03	99	73	2.180	0.06	(0.05)
153	24.404	0.161	1.10	90	-1.2	99	73	2.240	0.10	(0.03)
154	24.563	0.159	1.14	90	-1.04	98	74	2.240	0.12	(0.06)
155	24.723	0.160	1.10	90	-1.19	98	74	2.240	0.02	(0.05)
156	24.883	0.160	1.00	90	-1.19	98	74	2.240	0.02	(0.06)
157	25.042	0.159	0.94	90	-1.04	98	74	2.240	0.20	(0.03)
158	25.203	0.161	1.12	90	-1.09	99	74	2.250	0.04	(0.04)
159	25.363	0.160	1.09	90	-1.19	100	75	2.270	7.36	1.02

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
160	25.522	0.159	1.12	90	-1.15	99	75	2.260	0.99	0.09
161	25.684	0.162	1.08	90	-1.07	101	75	2.240	1.78	0.24
162	25.845	0.161	1.07	90	-1.04	100	76	2.240	2.58	0.27
163	26.006	0.161	1.09	90	-1.03	100	76	2.240	3.19	0.34
164	26.165	0.159	1.10	90	-1.04	99	76	2.240	3.78	0.33
165	26.325	0.160	1.10	90	-1.13	100	76	2.240	4.15	0.33
166	26.486	0.161	1.06	90	-1.15	101	76	2.310	4.83	0.34
167	26.646	0.160	1.10	90	-1.04	100	76	2.240	5.38	0.40
168	26.806	0.160	1.09	91	-1.07	100	77	2.230	5.55	0.39
169	26.965	0.159	0.97	91	-1.09	99	77	2.240	6.07	0.45
170	27.130	0.165	1.15	91	-1.05	103	77	2.190	6.72	0.41
171	27.289	0.159	1.34	91	-1.03	99	77	2.230	7.21	0.34
172	27.452	0.163	1.11	91	-1.05	102	77	2.150	7.73	0.34
173	27.614	0.162	0.90	91	-1.2	101	77	2.240	7.91	0.35
174	27.774	0.160	1.12	91	-1.09	100	77	2.330	8.03	0.37
175	27.933	0.159	1.07	91	-1.09	99	77	2.240	8.18	0.30
176	28.094	0.161	1.13	91	-1.05	101	77	2.250	8.24	0.38
177	28.254	0.160	1.09	91	-1.05	100	77	2.240	8.31	0.39
178	28.418	0.164	1.11	91	-1.07	103	77	2.250	8.29	0.34
179	28.579	0.161	1.14	91	-1.03	101	77	2.280	8.41	0.30
180	28.738	0.159	1.06	91	-1.04	100	77	2.230	8.58	0.20
181	28.897	0.159	1.08	91	-1.13	100	77	2.240	8.90	0.09
182	29.058	0.161	1.09	91	-1.14	101	77	2.220	9.87	0.02
183	29.220	0.162	1.05	91	-1.03	101	77	2.230	9.77	0.07
184	29.383	0.163	1.07	91	-1.03	102	77	2.220	9.39	0.04
185	29.544	0.161	1.07	91	-1.06	101	77	2.230	9.19	0.03
186	29.704	0.160	1.02	91	-1.18	100	77	2.240	8.94	0.07
187	29.861	0.157	1.07	91	-1.07	98	77	2.230	8.83	0.17
188	30.021	0.160	1.10	91	-1.11	100	77	2.230	8.80	0.15
189	30.181	0.160	1.24	91	-1.04	100	77	2.240	8.50	0.25
190	30.341	0.160	1.03	91	-1.03	100	77	2.230	8.27	0.30
191	30.502	0.161	1.00	91	-1.03	101	77	2.230	7.97	0.38

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
192	30.657	0.155	1.00	91	-1.03	97	77	2.230	8.41	0.38
193	30.821	0.164	1.06	91	-1.18	103	77	2.310	8.83	0.15
194	30.981	0.160	0.95	91	-1.04	100	77	2.270	8.73	0.14
195	31.140	0.159	1.15	91	-1.11	100	77	2.220	8.73	0.18
196	31.298	0.158	1.03	91	-1.1	99	77	2.240	8.83	0.15
197	31.460	0.162	1.06	91	-1.2	102	77	2.240	8.40	0.17
198	31.618	0.158	1.09	91	-1.05	99	77	2.230	8.47	0.19
199	31.779	0.161	1.07	91	-1.18	101	77	2.250	8.39	0.18
200	31.941	0.162	1.08	91	-1.04	100	77	2.250	8.22	0.12
201	32.103	0.162	1.07	91	-1.16	100	76	2.240	1.21	(0.01)
202	32.261	0.158	1.15	91	-1.06	97	76	2.220	0.63	(0.01)
203	32.424	0.163	1.01	91	-1.16	100	76	2.230	0.38	(0.01)
204	32.586	0.162	1.03	91	-1.18	100	75	2.240	0.37	0.01
205	32.744	0.158	1.05	92	-1.18	97	75	2.230	0.34	0.00
206	32.904	0.160	1.18	92	-1.13	98	74	2.240	0.25	0.02
207	33.065	0.161	1.08	92	-1.03	99	74	2.240	0.24	(0.03)
208	33.225	0.160	1.09	92	-1.05	98	74	2.250	0.19	0.02
209	33.387	0.162	1.06	92	-1.05	99	74	2.240	0.17	(0.02)
210	33.548	0.161	1.09	92	-1.15	99	74	2.240	0.23	(0.11)
211	33.707	0.159	1.04	92	-1.03	97	74	2.230	0.11	(0.02)
212	33.867	0.160	1.08	92	-1.05	98	74	2.220	0.12	(0.10)
213	34.025	0.158	1.06	92	-1.12	97	73	2.240	0.19	0.02
214	34.186	0.161	0.36	92	-1.11	99	73	2.240	0.07	0.00
215	34.348	0.162	1.06	92	-1.19	99	73	2.240	0.06	(0.06)
216	34.508	0.160	1.09	92	-1.21	98	73	2.240	0.15	(0.04)
217	34.666	0.158	1.09	92	-1.03	97	73	2.240	0.12	(0.04)
218	34.827	0.161	1.07	92	-1.16	99	73	2.240	(0.01)	(0.01)
219	34.987	0.160	1.08	92	-1.16	98	73	2.240	0.04	(0.08)
220	35.147	0.160	1.06	92	-1.12	98	73	2.240	0.03	(0.06)
221	35.307	0.160	1.00	92	-1.03	98	73	2.250	0.03	0.01
222	35.467	0.160	1.43	92	-1.06	98	73	2.250	0.06	0.03
223	35.625	0.158	1.02	92	-1.13	97	73	2.230	0.06	(0.03)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
224	35.787	0.162	1.06	92	-1.06	99	73	2.240	0.04	(0.03)
225	35.947	0.160	1.08	92	-1.18	98	73	2.240	(0.35)	0.02
226	36.104	0.157	0.99	92	-1.2	96	73	2.240	0.09	(0.06)
227	36.266	0.162	1.03	92	-1.02	99	73	2.240	0.05	(0.03)
228	36.428	0.162	1.08	92	-1.18	99	72	2.250	0.00	(0.03)
229	36.587	0.159	0.99	92	-1.13	97	72	2.240	0.02	(0.03)
230	36.748	0.161	1.05	92	-1.07	98	72	2.240	0.11	(0.06)
231	36.908	0.160	1.06	92	-1.2	98	72	2.230	0.02	(0.01)
232	37.065	0.157	1.04	92	-1.18	96	72	2.240	0.06	(0.03)
233	37.227	0.162	1.07	91	-1.06	99	72	2.230	0.07	(0.03)
234	37.390	0.163	1.08	91	-1.07	100	72	2.240	0.11	(0.02)
235	37.551	0.161	1.10	91	-1.03	99	72	2.250	0.08	(0.03)
236	37.710	0.159	1.10	91	-1.2	97	71	2.240	0.02	0.00
237	37.871	0.161	0.73	91	-1.04	99	71	2.250	0.06	(0.03)
238	38.030	0.159	1.05	91	-1.2	97	71	2.240	0.03	0.08
239	38.189	0.159	1.11	91	-1.04	97	71	2.240	0.13	(0.05)
240	38.349	0.160	1.10	91	-1.12	98	71	2.240	(0.04)	(0.03)
241	38.507	0.158	1.06	91	-1.04	97	71	2.230	(0.07)	(0.06)
242	38.671	0.164	1.03	91	-1.03	100	71	2.240	0.04	(0.06)
243	38.832	0.161	1.06	91	-1.19	98	71	2.240	0.07	(0.03)
244	38.992	0.160	1.11	91	-1.05	98	71	2.250	0.04	(0.03)
245	39.152	0.160	1.05	91	-1.14	99	72	2.120	12.53	2.90
246	39.313	0.161	1.09	91	-1.19	100	71	2.240	1.40	0.27
247	39.473	0.160	1.06	91	-1.05	99	71	2.230	2.35	0.35
248	39.637	0.164	1.07	91	-1.19	102	71	2.230	3.20	0.42
249	39.799	0.162	1.06	91	-1.13	101	72	2.240	4.31	0.41
250	39.958	0.159	1.07	91	-1.2	99	72	2.230	4.68	0.45
251	40.120	0.162	1.08	91	-1.06	101	71	2.230	5.09	0.47
252	40.281	0.161	1.08	91	-1.03	100	71	2.240	5.64	0.54
253	40.442	0.161	1.09	91	-1.03	100	71	2.240	6.03	0.45
254	40.602	0.160	1.07	91	-1.07	100	71	2.240	6.32	0.46
255	40.761	0.159	1.05	91	-1.11	99	71	2.240	6.87	0.38

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
256	40.922	0.161	1.05	91	-1.16	100	71	2.240	7.52	0.39
257	41.084	0.162	1.05	91	-1.05	101	72	2.240	7.68	0.23
258	41.242	0.158	1.30	91	-1.19	99	72	2.240	8.14	0.26
259	41.404	0.162	1.11	90	-1.03	101	72	2.240	8.72	0.17
260	41.567	0.163	1.07	90	-1.05	102	72	2.240	8.74	0.11
261	41.726	0.159	0.96	90	-1.04	99	72	2.240	8.72	0.12
262	41.889	0.163	1.12	90	-1.16	102	72	2.240	8.87	0.09
263	42.051	0.162	1.04	90	-1.1	101	72	2.180	8.91	0.08
264	42.210	0.159	1.10	90	-1.04	99	72	2.210	8.79	0.12
265	42.373	0.163	1.08	90	-1.16	102	72	2.230	8.16	0.16
266	42.535	0.162	1.06	90	-1.15	101	72	2.250	8.34	0.12
267	42.695	0.160	1.04	90	-1.19	100	72	2.230	8.26	0.06
268	42.856	0.161	1.05	90	-1.16	101	72	2.240	8.38	0.17
269	43.017	0.161	1.07	90	-1.04	101	72	2.240	8.40	0.14
270	43.175	0.158	1.09	90	-1.15	99	72	2.240	8.37	0.15
271	43.336	0.161	1.10	90	-1.05	101	72	2.250	8.17	0.14
272	43.499	0.163	1.09	90	-1.14	102	72	2.240	8.11	0.16
273	43.660	0.161	1.22	90	-1.02	101	73	2.230	8.00	0.13
274	43.820	0.160	1.10	90	-1.03	100	73	2.240	7.75	0.22
275	43.982	0.162	1.08	90	-1.04	101	73	2.230	7.86	0.17
276	44.140	0.158	1.10	90	-1.19	99	73	2.240	7.61	0.19
277	44.303	0.163	1.07	90	-1.17	102	73	2.230	7.80	0.16
278	44.464	0.161	1.06	90	-1.12	101	73	2.250	7.61	0.20
279	44.624	0.160	1.07	90	-1.15	100	73	2.320	7.68	0.22
280	44.788	0.164	1.06	90	-1.03	103	73	2.230	7.59	0.20
281	44.948	0.160	1.11	90	-1.03	100	73	2.240	7.52	0.25
282	45.106	0.158	1.12	90	-1.05	99	73	2.250	7.26	0.32
283	45.268	0.162	1.07	90	-1.04	102	73	2.240	7.17	0.31
284	45.430	0.162	1.10	90	-1.03	102	73	2.200	6.87	0.32
285	45.587	0.157	1.07	90	-1.03	97	73	2.240	3.99	0.14
286	45.748	0.161	1.08	90	-1.13	99	73	2.220	0.58	(0.03)
287	45.910	0.162	1.09	90	-1.14	100	72	2.240	0.30	0.00

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
288	46.067	0.157	1.11	90	-1.04	96	72	2.250	0.24	0.07
289	46.229	0.162	1.07	90	-1.16	99	72	2.240	0.12	(0.04)
290	46.392	0.163	1.06	90	-1.08	100	72	2.240	0.03	(0.02)
291	46.553	0.161	1.04	90	-1.2	99	72	2.240	0.07	0.01
292	46.714	0.161	1.07	90	-1.1	99	71	2.250	0.08	(0.01)
293	46.876	0.162	1.02	90	-1.03	99	71	2.230	0.06	0.00
294	47.036	0.160	1.09	90	-1.12	98	71	2.250	0.07	(0.02)
295	47.199	0.163	1.07	90	-1.05	100	71	2.240	0.08	0.01
296	47.358	0.159	1.23	90	-1.05	97	70	2.230	0.04	(0.01)
297	47.516	0.158	1.07	90	-1.03	97	70	2.260	0.03	0.00
298	47.680	0.164	1.09	90	-1.21	101	70	2.240	0.00	0.00
299	47.841	0.161	1.09	90	-1.07	99	70	2.240	(0.02)	(0.01)
300	47.999	0.158	1.05	90	-1.18	97	70	2.240	0.05	(0.04)
301	48.162	0.163	1.08	89	-1.04	100	70	2.230	0.01	(0.03)
302	48.322	0.160	1.08	89	-1.17	98	70	2.230	0.04	(0.01)
303	48.480	0.158	1.06	89	-1.03	97	70	2.230	0.03	(0.01)
304	48.643	0.163	1.06	89	-1.03	100	70	2.240	0.08	(0.03)
305	48.804	0.161	1.07	89	-1.2	99	70	2.250	0.07	(0.03)
306	48.961	0.157	1.07	89	-1.04	96	69	2.240	0.09	(0.06)
307	49.124	0.163	1.09	89	-1.05	100	69	2.240	0.06	(0.04)
308	49.284	0.160	1.06	89	-1.19	98	69	2.290	0.11	(0.05)
309	49.443	0.159	1.13	89	-1.06	98	69	2.230	0.18	(0.01)
310	49.605	0.162	1.10	89	-1.04	99	69	2.230	0.15	(0.02)
311	49.764	0.159	1.07	89	-1.19	98	69	2.240	0.08	(0.02)
312	49.923	0.159	1.09	89	-1.16	98	69	2.240	0.11	(0.02)
313	50.086	0.163	1.05	89	-1.04	100	69	2.220	0.09	(0.03)
314	50.247	0.161	1.07	89	-1.13	99	69	2.230	0.07	(0.04)
315	50.408	0.161	1.05	89	-1.03	99	69	2.220	0.01	0.01
316	50.569	0.161	1.09	89	-1.07	99	69	2.220	0.06	(0.03)
317	50.730	0.161	1.07	89	-1.04	99	69	2.250	(0.10)	(0.01)
318	50.888	0.158	1.06	89	-1.04	97	69	2.240	0.05	(0.01)
319	51.050	0.162	1.18	89	-1.07	99	69	2.230	0.02	(0.01)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
320	51.212	0.162	1.05	89	-1.05	99	69	2.240	0.00	0.00
321	51.370	0.158	1.01	89	-1.18	97	69	2.280	(0.01)	(0.02)
322	51.531	0.161	1.08	89	-1.14	99	69	2.240	(0.03)	0.00
323	51.691	0.160	0.37	89	-1.06	98	70	2.240	0.08	(0.02)
324	51.851	0.160	1.03	89	-1.04	98	70	2.240	(0.15)	(0.01)
325	52.015	0.164	1.05	89	-1.19	101	70	2.240	0.07	0.11
326	52.177	0.162	1.07	89	-1.07	99	70	2.240	(0.07)	0.00
327	52.335	0.158	1.06	89	-1.18	97	70	2.240	(0.01)	(0.05)
328	52.497	0.162	1.03	89	-1.14	99	70	2.240	0.04	(0.01)
329	52.656	0.159	1.06	89	-1.07	99	71	2.240	5.05	1.08
330	52.817	0.161	1.08	89	-1.06	100	70	2.240	1.98	0.23
331	52.978	0.161	1.25	89	-1.05	100	70	2.270	2.63	0.33
332	53.140	0.162	1.08	89	-1.09	101	71	2.240	3.08	0.46
333	53.299	0.159	1.11	89	-1.2	99	71	2.230	3.55	0.49
334	53.463	0.164	1.08	89	-1.07	102	71	2.240	4.11	0.43
335	53.623	0.160	1.08	89	-1.07	100	71	2.230	4.55	0.42
336	53.786	0.163	1.07	89	-1.19	102	71	2.240	4.84	0.43
337	53.948	0.162	1.08	89	-1.07	101	71	2.240	5.02	0.35
338	54.107	0.159	1.10	89	-1.05	100	72	2.250	5.28	0.46
339	54.269	0.162	1.12	89	-1.04	101	72	2.240	7.03	0.36
340	54.432	0.163	1.13	89	-1.03	102	72	2.250	8.15	0.25
341	54.591	0.159	1.08	89	-1.14	99	72	2.240	8.15	0.21
342	54.750	0.159	1.03	89	-1.14	99	72	2.230	7.80	0.26
343	54.912	0.162	1.13	89	-1.13	101	72	2.240	7.97	0.27
344	55.072	0.160	1.13	89	-1.06	100	72	2.240	8.35	0.35
345	55.236	0.164	1.18	89	-1.19	103	72	2.240	8.33	0.36
346	55.396	0.160	0.96	89	-1.03	100	72	2.240	8.33	0.31
347	55.554	0.158	1.06	89	-1.04	99	72	2.240	8.22	0.26
348	55.718	0.164	1.17	89	-1.19	103	72	2.250	8.37	0.27
349	55.877	0.159	1.12	89	-1.09	100	72	2.250	8.22	0.48
350	56.037	0.160	1.13	89	-1.2	100	72	2.240	8.20	0.35
351	56.198	0.161	1.11	89	-1.09	101	72	2.240	8.22	0.32

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
352	56.359	0.161	1.07	89	-1.14	101	72	2.240	8.10	0.38
353	56.521	0.162	1.06	89	-1.03	101	73	2.250	7.97	0.46
354	56.683	0.162	1.20	89	-1.09	102	73	2.240	7.84	0.55
355	56.842	0.159	1.06	89	-1.11	100	72	2.200	7.95	0.44
356	57.006	0.164	1.15	89	-1.18	103	72	2.230	7.90	0.47
357	57.171	0.165	1.09	89	-1.04	103	72	2.240	7.80	0.58
358	57.331	0.160	1.11	89	-1.03	100	72	2.240	7.72	0.52
359	57.492	0.161	1.15	89	-1.04	101	72	2.250	7.60	0.51
360	57.655	0.163	1.07	89	-1.05	102	72	2.210	7.86	0.53
361	57.815	0.160	1.11	89	-1.12	100	72	2.240	7.80	0.51
362	57.976	0.161	1.09	89	-1.05	101	72	2.260	7.79	0.53
363	58.138	0.162	1.12	89	-1.09	102	72	2.230	7.95	0.46
364	58.296	0.158	1.11	89	-1.12	99	72	2.240	7.76	0.46
365	58.459	0.163	1.08	89	-1.07	102	72	2.240	7.83	0.39
366	58.619	0.160	1.08	89	-1.2	100	72	2.260	7.99	0.34
367	58.778	0.159	1.07	89	-1.03	100	72	2.230	7.79	0.33
368	58.941	0.163	1.32	89	-1.03	102	72	2.240	7.83	0.34
369	59.102	0.161	1.07	89	-1.17	101	72	2.240	7.76	0.36
370	59.264	0.162	1.09	89	-1.2	100	72	2.230	3.55	0.10
371	59.426	0.162	1.09	89	-1.19	100	71	2.200	0.38	(0.02)
372	59.588	0.162	1.19	89	-1.07	100	71	2.240	0.20	0.02
373	59.750	0.162	1.09	89	-1.14	100	71	2.220	0.19	0.01
374	59.913	0.163	1.04	89	-1.05	100	71	2.240	0.15	0.00
375	60.070	0.157	1.06	89	-1.19	97	70	2.240	0.12	0.00
376	60.231	0.161	0.97	89	-1.03	99	70	2.250	0.03	0.03
377	60.395	0.164	0.80	89	-1.11	101	70	2.250	0.04	0.00
378	60.553	0.158	1.10	89	-1.11	97	70	2.240	0.11	(0.06)
379	60.717	0.164	1.07	89	-1.15	101	70	2.250	0.12	(0.03)
380	60.879	0.162	1.08	89	-1.18	100	70	2.180	0.02	0.00
381	61.038	0.159	1.11	89	-1.15	98	70	2.240	0.00	(0.03)
382	61.200	0.162	1.07	89	-1.2	100	70	2.230	0.02	(0.06)
383	61.361	0.161	1.14	89	-1.07	99	70	2.240	0.02	(0.01)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
384	61.520	0.159	1.14	89	-1.07	98	70	2.230	0.06	(0.01)
385	61.681	0.161	1.07	89	-1.17	99	69	2.240	0.08	0.01
386	61.843	0.162	1.11	89	-1.03	100	70	2.250	0.05	(0.08)
387	62.004	0.161	1.08	89	-1.06	99	70	2.240	0.04	(0.05)
388	62.168	0.164	1.05	89	-1.19	101	70	2.240	0.06	(0.03)
389	62.329	0.161	1.06	89	-1.14	99	70	2.250	0.09	(0.01)
390	62.493	0.164	1.12	89	-1.05	101	70	2.250	(0.09)	0.00
391	62.655	0.162	0.66	89	-1.08	100	70	2.240	(0.01)	(0.04)
392	62.817	0.162	1.08	89	-1.12	100	69	2.240	(0.07)	0.05
393	62.980	0.163	1.06	89	-1.04	100	69	2.220	0.07	(0.03)
394	63.143	0.163	1.11	89	-1.08	100	69	2.240	0.05	(0.02)
395	63.305	0.162	1.08	89	-1.18	100	69	2.240	(0.08)	0.00
396	63.467	0.162	0.93	89	-1.09	99	69	2.240	0.30	0.00
397	63.627	0.160	1.11	89	-1.2	98	69	2.230	0.07	(0.05)
398	63.790	0.163	1.10	89	-1.16	100	69	2.240	0.09	(0.01)
399	63.950	0.160	1.11	89	-1.05	98	69	2.240	0.02	(0.08)
400	64.109	0.159	1.07	89	-1.03	98	69	2.240	0.09	(0.02)
401	64.272	0.163	1.06	89	-1.16	100	69	2.230	0.01	(0.03)
402	64.434	0.162	1.16	89	-1.09	99	70	2.220	0.04	(0.09)
403	64.597	0.163	1.09	89	-1.05	100	70	2.250	0.04	(0.04)
404	64.758	0.161	1.38	89	-1.17	99	69	2.240	(0.02)	(0.01)
405	64.922	0.164	1.09	89	-1.21	101	70	2.250	(0.01)	0.00
406	65.085	0.163	1.09	89	-1.1	100	70	2.240	0.04	(0.04)
407	65.248	0.163	1.13	89	-1.07	100	69	2.250	(0.05)	(0.02)
408	65.409	0.161	1.09	89	-1.04	99	69	2.240	(0.05)	0.00
409	65.571	0.162	1.13	89	-1.06	99	69	2.330	0.03	(0.01)
410	65.732	0.161	1.08	89	-1.14	99	69	2.250	0.10	0.12
411	65.898	0.166	0.95	89	-1.19	102	69	2.240	(0.02)	0.01
412	66.059	0.161	1.15	89	-1.12	99	69	2.250	0.06	0.00
413	66.218	0.159	1.05	89	-1.05	98	69	2.320	0.09	0.00
414	66.380	0.162	1.07	89	-1.15	101	70	2.260	4.42	1.07
415	66.540	0.160	1.09	89	-1.18	99	69	2.240	2.02	0.34

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
416	66.701	0.161	1.12	89	-1.08	100	70	2.240	2.39	0.40
417	66.864	0.163	1.09	89	-1.09	102	70	2.240	2.77	0.47
418	67.024	0.160	1.15	89	-1.15	100	70	2.260	3.19	0.42
419	67.187	0.163	1.08	89	-1.19	102	70	2.240	3.97	0.52
420	67.349	0.162	1.08	89	-1.03	101	70	2.240	4.31	0.56
421	67.510	0.161	1.11	89	-1.12	101	70	2.220	5.02	0.55
422	67.672	0.162	1.09	89	-1.04	101	70	2.240	5.43	0.63
423	67.833	0.161	1.09	89	-1.04	101	70	2.240	6.31	0.46
424	67.996	0.163	1.06	89	-1.07	102	70	2.240	6.87	0.40
425	68.158	0.162	1.09	89	-1.19	101	70	2.240	7.18	0.33
426	68.319	0.161	1.10	89	-1.07	101	70	2.250	8.45	0.22
427	68.482	0.163	1.11	89	-1.08	102	70	2.200	8.50	0.21
428	68.645	0.163	0.89	89	-1.2	102	70	2.230	8.82	0.20
429	68.807	0.162	1.10	89	-1.03	101	70	2.260	8.74	0.17
430	68.970	0.163	0.95	89	-1.18	102	70	2.230	9.24	0.11
431	69.130	0.160	1.14	89	-1.08	100	70	2.240	9.11	0.16
432	69.295	0.165	1.10	89	-1.17	103	71	2.240	9.50	0.10
433	69.458	0.163	1.09	89	-1.19	102	71	2.230	9.24	0.09
434	69.618	0.160	1.12	89	-1.18	100	70	2.240	8.79	0.15
435	69.781	0.163	1.10	89	-1.03	102	70	2.230	8.33	0.16
436	69.944	0.163	1.08	89	-1.03	102	70	2.140	8.48	0.21
437	70.106	0.162	1.14	89	-1.09	101	70	2.240	8.57	0.17
438	70.269	0.163	1.12	89	-1.04	102	70	2.290	8.37	0.20
439	70.431	0.162	1.08	89	-1.19	101	70	2.240	8.36	0.25
440	70.593	0.162	1.11	89	-1.05	102	70	2.250	8.21	0.20
441	70.752	0.159	1.08	89	-1.07	100	70	2.240	8.08	0.19
442	70.911	0.159	1.14	89	-1.18	100	70	2.240	7.95	0.20
443	71.075	0.164	1.13	89	-1.18	103	70	2.240	7.78	0.24
444	71.234	0.159	1.12	89	-1.05	100	71	2.260	8.54	0.26
445	71.398	0.164	1.07	89	-1.03	103	71	2.240	8.29	0.28
446	71.563	0.165	1.12	89	-1.17	104	71	2.240	7.95	0.38
447	71.723	0.160	0.96	89	-1.19	100	71	2.240	7.55	0.45

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
448	71.884	0.161	1.08	89	-1.05	101	71	2.230	7.20	0.43
449	72.045	0.161	1.19	89	-1.19	101	71	2.240	7.66	0.31
450	72.205	0.160	1.92	89	-1.05	100	71	2.260	7.71	0.22
451	72.367	0.162	1.11	89	-1.04	100	71	2.240	4.05	0.10
452	72.529	0.162	1.07	89	-1.2	100	71	2.230	0.50	0.01
453	72.692	0.163	1.10	89	-1.19	100	71	2.340	0.24	(0.03)
454	72.855	0.163	1.09	89	-1.11	100	71	2.240	0.16	0.00
455	73.016	0.161	1.08	89	-1.09	99	70	2.240	0.06	(0.11)
456	73.181	0.165	1.10	89	-1.03	101	70	2.240	0.12	0.02
457	73.340	0.159	1.12	89	-1.16	98	70	2.260	0.13	(0.01)
458	73.501	0.161	1.06	89	-1.08	99	70	2.280	0.05	(0.03)
459	73.662	0.161	0.99	89	-1.18	99	70	2.250	(0.01)	(0.01)
460	73.823	0.161	1.12	89	-1.18	99	70	2.240	(0.03)	0.01
461	73.988	0.165	1.10	89	-1.04	101	71	2.240	0.00	0.00
462	74.151	0.163	1.12	89	-1.2	100	70	2.240	0.02	(0.02)
463	74.313	0.162	0.99	89	-1.19	100	70	2.230	(0.05)	(0.03)
464	74.477	0.164	1.10	89	-1.04	101	70	2.240	0.04	(0.03)
465	74.637	0.160	1.12	89	-1.04	98	70	2.300	0.08	0.01
466	74.799	0.162	1.08	89	-1.17	99	69	2.230	0.03	(0.02)
467	74.959	0.160	1.15	89	-1.12	98	69	2.240	0.08	(0.05)
468	75.121	0.162	1.08	89	-1.03	99	69	2.240	0.05	0.00
469	75.282	0.161	1.10	89	-1.19	99	69	2.240	0.03	0.02
470	75.442	0.160	0.92	89	-1.18	98	69	2.240	0.09	(0.03)
471	75.603	0.161	1.11	89	-1.19	99	69	2.200	0.02	0.01
472	75.764	0.161	1.13	89	-1.06	99	68	2.240	0.00	0.01
473	75.926	0.162	1.11	89	-1.05	99	68	2.240	0.08	(0.04)
474	76.089	0.163	1.08	89	-1.19	100	68	2.230	0.04	0.00
475	76.252	0.163	1.11	89	-1.12	100	68	2.240	0.01	(0.02)
476	76.414	0.162	1.10	89	-1.03	99	68	2.260	0.08	(0.05)
477	76.577	0.163	1.20	89	-1.16	100	68	2.250	0.04	(0.06)
478	76.739	0.162	1.12	89	-1.06	99	68	2.240	0.01	0.00
479	76.900	0.161	1.10	89	-1.19	99	68	2.240	0.05	0.03

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
480	77.062	0.162	1.09	89	-1.04	99	68	2.240	(0.07)	0.00
481	77.223	0.161	1.05	89	-1.16	99	68	2.250	(0.10)	(0.02)
482	77.387	0.164	1.09	89	-1.19	101	68	2.240	0.01	(0.04)
483	77.549	0.162	1.12	89	-1.04	99	68	2.230	0.00	(0.03)
484	77.711	0.162	1.11	89	-1.15	99	68	2.240	0.02	0.00
485	77.875	0.164	0.96	89	-1.12	101	68	2.250	(0.06)	0.05
486	78.035	0.160	1.19	89	-1.04	98	68	2.240	(0.07)	0.02
487	78.199	0.164	1.13	89	-1.04	101	68	2.180	(0.01)	(0.02)
488	78.361	0.162	1.14	89	-1.17	99	68	2.240	0.06	(0.02)
489	78.521	0.160	1.08	89	-1.18	98	68	2.260	0.00	(0.01)
490	78.683	0.162	1.11	89	-1.19	99	67	2.240	0.05	(0.06)
491	78.846	0.163	0.99	89	-1.06	100	68	2.250	(0.06)	(0.01)
492	79.007	0.161	1.12	89	-1.07	99	67	2.240	0.08	(0.01)
493	79.171	0.164	1.08	89	-1.05	101	67	2.300	(0.02)	0.00
494	79.333	0.162	1.08	89	-1.06	100	68	2.240	10.56	2.38
495	79.495	0.162	1.01	89	-1.19	101	68	2.240	4.04	0.73
496	79.658	0.163	1.09	89	-1.14	101	68	2.240	5.97	0.37
497	79.819	0.161	1.03	89	-1.12	100	68	2.240	7.27	0.33
498	79.980	0.161	1.10	89	-1.13	100	69	2.200	7.15	0.40
499	80.145	0.165	0.96	89	-1.2	103	69	2.250	7.64	0.39
500	80.306	0.161	1.09	89	-1.03	100	69	2.320	7.41	0.46
501	80.468	0.162	1.08	89	-1.03	101	69	2.240	7.76	0.56
502	80.631	0.163	1.12	89	-1.03	102	69	2.230	7.91	0.37
503	80.792	0.161	1.07	89	-1.17	101	69	2.240	7.97	0.48

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
0	1.61		47.55	165.73	164	151	1.00	13.39	
1	1.67		47.42	165.87	164	151	1.00	13.92	1651
2	1.73		47.51	166.06	164	151	1.00	14.43	1712
3	1.71		47.65	166.25	164	151	1.00	14.27	1694
4	1.60		47.69	166.53	165	151	1.00	13.31	1584
5	1.65		47.69	166.72	165	152	1.00	13.73	1636
6	1.61		47.69	167.19	165	152	1.00	13.39	1602
7	1.61		47.69	167.47	166	152	1.00	13.39	1606
8	1.65		47.69	167.75	166	152	1.00	13.73	1651
9	1.69		47.65	168.23	166	153	1.00	14.07	1699
10	1.63		47.69	168.65	167	153	1.00	13.57	1644
11	1.67		47.74	169.07	167	154	1.00	13.91	1690
12	1.67		47.65	169.50	167	154	1.00	13.94	1700
13	1.71		47.74	170.01	168	154	1.00	14.25	1744
14	1.69		47.83	170.53	169	155	1.00	14.08	1730
15	1.52		47.78	171.05	169	155	1.00	12.68	1565
16	1.71		47.83	171.71	170	156	1.00	14.26	1768
17	1.67		47.69	172.18	171	156	1.00	13.90	1733
18	1.62		47.69	172.75	171	157	1.00	13.55	1697
19	1.62		47.74	173.27	171	157	1.00	13.55	1703
20	1.73		47.60	173.88	172	158	1.00	14.41	1822
21	1.69		47.74	174.59	173	158	1.00	14.08	1788
22	1.65		47.88	175.11	173	159	1.00	13.73	1749
23	1.69		47.88	175.81	174	160	1.00	14.07	1802
24	1.58		47.78	176.38	174	160	1.00	13.21	1700
25	1.67		47.74	176.85	175	160	1.00	13.96	1805
26	1.65		47.83	177.52	176	161	1.00	13.73	1783
27	1.64		47.88	178.13	176	162	1.00	13.72	1790
28	1.65		47.74	178.75	177	162	1.00	13.73	1801
29	1.64		47.65	179.36	178	163	1.00	13.71	1808
30	1.60		47.78	180.07	178	163	1.00	13.38	1772
31	1.69		47.92	180.64	179	164	1.00	14.07	1870
32	1.64		47.92	181.21	179	164	1.00	13.71	1830
33	1.67		47.88	181.68	180	165	1.00	13.89	1861
34	1.73		47.74	181.87	180	165	1.00	14.43	1937
35	1.60		47.69	181.87	180	165	1.00	13.37	1796
36	1.45		47.92	181.73	180	166	1.00	12.14	1626
37	1.43		47.92	181.73	179	167	1.00	11.97	1603
38	1.37		47.78	181.64	179	167	1.00	11.43	1532
39	1.35		47.92	181.45	179	167	1.00	11.30	1511
40	1.41		48.01	181.26	179	167	1.00	11.78	1572
41	1.33		47.97	181.02	179	167	1.00	11.09	1477
42	1.27		47.97	180.74	178	166	1.00	10.56	1404
43	1.36		47.97	180.45	178	166	1.00	11.36	1507
44	1.31		48.01	180.26	178	166	1.00	10.91	1444
45	1.37		48.06	179.88	178	166	1.00	11.43	1509
46	1.39		48.06	179.60	177	166	1.00	11.60	1528
47	1.41		48.11	179.27	177	165	1.00	11.78	1547

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
48	1.34		48.11	178.94	177	165	1.00	11.18	1465
49	1.39		48.15	178.65	176	165	1.00	11.63	1520
50	1.37		48.15	178.27	176	164	1.00	11.43	1490
51	1.39		48.15	177.90	176	164	1.00	11.60	1507
52	1.41		48.20	177.52	175	164	1.00	11.78	1525
53	1.33		48.20	177.18	175	163	1.00	11.08	1431
54	1.41		48.25	176.80	174	163	1.00	11.75	1513
55	1.39		48.29	176.43	174	163	1.00	11.60	1489
56	1.35		48.34	176.10	174	162	1.00	11.25	1439
57	1.39		48.34	175.72	173	162	1.00	11.61	1481
58	1.39		48.39	175.25	173	162	1.00	11.60	1474
59	1.33		48.43	174.82	172	161	1.00	11.08	1402
60	1.31		48.43	174.49	172	161	1.00	10.89	1374
61	1.36		48.48	174.12	172	161	1.00	11.32	1424
62	1.41		48.52	173.74	171	160	1.00	11.77	1476
63	1.45		48.52	173.31	171	160	1.00	12.11	1513
64	1.43		48.57	172.94	171	160	1.00	11.94	1487
65	1.39		48.57	172.51	170	159	1.00	11.60	1440
66	1.40		48.62	172.09	170	159	1.00	11.65	1440
67	1.33		48.62	171.76	169	159	1.00	11.07	1365
68	1.31		48.62	171.33	169	158	1.00	10.89	1338
69	1.37		48.62	170.91	169	158	1.00	11.42	1398
70	1.35		48.66	170.53	168	158	1.00	11.23	1370
71	1.35		48.62	170.16	168	157	1.00	11.24	1367
72	1.39		48.62	169.73	167	157	1.00	11.58	1405
73	1.39		48.66	169.36	167	156	1.00	11.58	1400
74	1.39		48.62	168.88	167	156	1.00	11.58	1395
75	1.37		48.66	168.51	166	156	1.00	11.42	1370
76	1.36		48.62	168.08	166	155	1.00	11.34	1357
77	1.35		48.62	167.66	165	155	1.00	11.24	1339
78	1.31		48.62	167.24	165	154	1.00	10.89	1293
79	1.30		48.62	166.91	165	154	1.00	10.88	1289
80	1.37		48.66	166.72	165	154	1.00	11.41	1348
81	1.37		48.62	166.58	164	154	1.00	11.41	1347
82	1.34		48.66	166.53	164	154	1.00	11.18	1320
83	1.35		48.66	166.53	164	154	1.00	11.23	1325
84	1.37		48.62	166.67	165	154	1.00	11.40	1347
85	1.29		48.62	167.00	165	154	1.00	10.72	1271
86	1.31		48.62	167.24	165	154	1.00	10.89	1293
87	1.31		48.62	167.71	166	155	1.00	10.93	1304
88	1.39		48.62	168.04	166	155	1.00	11.58	1384
89	1.41		48.57	168.46	167	155	1.00	11.75	1411
90	1.35		48.57	168.93	167	156	1.00	11.24	1354
91	1.35		48.57	169.31	167	156	1.00	11.23	1357
92	1.39		48.52	169.78	168	157	1.00	11.58	1406
93	1.31		48.52	170.35	168	157	1.00	10.89	1328
94	1.35		48.48	170.96	169	158	1.00	11.26	1381
95	1.32		48.48	171.38	170	158	1.00	11.01	1355

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
96	1.33		48.43	172.14	170	159	1.00	11.09	1374
97	1.40		48.43	172.56	171	159	1.00	11.71	1455
98	1.49		48.39	172.99	171	159	1.00	12.46	1554
99	1.30		48.39	173.64	172	160	1.00	10.87	1363
100	1.41		48.39	174.21	173	161	1.00	11.75	1481
101	1.39		48.39	174.82	173	161	1.00	11.56	1463
102	1.37		48.34	175.29	173	162	1.00	11.45	1456
103	1.35		48.34	175.95	174	162	1.00	11.26	1438
104	1.32		48.34	176.47	175	163	1.00	11.05	1418
105	1.41		48.34	177.04	175	163	1.00	11.75	1515
106	1.37		48.39	177.66	176	164	1.00	11.40	1475
107	1.41		48.39	178.18	176	164	1.00	11.74	1525
108	1.42		48.39	178.70	177	165	1.00	11.84	1545
109	1.32		48.43	179.32	177	165	1.00	11.04	1447
110	1.32		48.43	179.84	178	166	1.00	11.05	1454
111	1.37		48.52	180.31	178	166	1.00	11.41	1505
112	1.43		48.52	180.88	179	167	1.00	11.92	1580
113	1.37		48.62	181.30	179	167	1.00	11.41	1515
114	1.34		48.62	181.97	180	167	1.00	11.22	1498
115	1.28		48.66	182.40	180	168	1.00	10.70	1433
116	1.37		48.71	182.54	180	168	1.00	11.40	1527
117	1.32		48.75	182.54	180	168	1.00	11.05	1480
118	1.28		48.75	182.40	180	168	1.00	10.70	1432
119	1.34		48.80	182.40	180	168	1.00	11.22	1501
120	1.35		48.85	182.16	180	168	1.00	11.24	1500
121	1.42		48.85	182.02	180	168	1.00	11.89	1585
122	1.44		48.89	181.83	180	168	1.00	12.04	1602
123	1.37		48.89	181.73	179	167	1.00	11.45	1523
124	1.39		48.89	181.40	179	167	1.00	11.57	1535
125	1.38		48.89	181.07	179	167	1.00	11.53	1526
126	1.43		48.89	180.83	178	167	1.00	11.92	1575
127	1.37		48.89	180.50	178	167	1.00	11.39	1501
128	1.36		48.89	180.22	178	166	1.00	11.38	1496
129	1.33		48.89	179.88	178	166	1.00	11.11	1457
130	1.37		48.89	179.55	177	166	1.00	11.41	1492
131	1.37		48.89	179.22	177	165	1.00	11.39	1486
132	1.41		48.85	178.89	177	165	1.00	11.74	1528
133	1.39		48.85	178.56	176	165	1.00	11.58	1503
134	1.35		48.85	178.18	176	164	1.00	11.23	1454
135	1.37		48.80	177.75	175	164	1.00	11.40	1471
136	1.34		48.80	177.37	175	164	1.00	11.22	1444
137	1.41		48.85	177.00	175	163	1.00	11.73	1505
138	1.41		48.85	176.57	174	163	1.00	11.75	1503
139	1.32		48.85	176.24	174	163	1.00	11.04	1408
140	1.32		48.85	175.81	173	162	1.00	11.04	1403
141	1.43		48.85	175.43	173	162	1.00	11.90	1509
142	1.33		48.85	175.01	173	162	1.00	11.11	1404
143	1.41		48.89	174.63	172	161	1.00	11.74	1477

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
144	1.34		48.89	174.21	172	161	1.00	11.22	1408
145	1.41		48.89	173.83	172	160	1.00	11.74	1468
146	1.37		48.85	173.41	171	160	1.00	11.41	1422
147	1.40		48.85	172.99	171	160	1.00	11.65	1448
148	1.37		48.85	172.56	170	159	1.00	11.39	1411
149	1.41		48.80	172.14	170	159	1.00	11.75	1451
150	1.37		48.80	171.67	169	159	1.00	11.39	1401
151	1.39		48.80	171.29	169	158	1.00	11.57	1419
152	1.39		48.80	170.86	169	158	1.00	11.57	1414
153	1.37		48.80	170.49	168	157	1.00	11.40	1389
154	1.41		48.80	170.01	168	157	1.00	11.74	1425
155	1.39		48.85	169.59	167	157	1.00	11.56	1397
156	1.43		48.85	169.17	167	156	1.00	11.91	1435
157	1.39		48.85	168.74	166	156	1.00	11.56	1387
158	1.37		48.85	168.37	166	156	1.00	11.40	1364
159	1.30		48.85	167.89	166	155	1.00	10.87	1296
160	1.32		48.85	167.42	165	155	1.00	11.05	1312
161	1.41		48.85	167.09	165	154	1.00	11.74	1390
162	1.37		48.80	166.76	165	154	1.00	11.40	1346
163	1.32		48.80	166.62	164	154	1.00	11.03	1301
164	1.41		48.75	166.39	164	154	1.00	11.74	1382
165	1.41		48.75	166.20	164	154	1.00	11.74	1381
166	1.32		48.75	166.15	164	153	1.00	11.05	1299
167	1.37		48.71	166.06	164	153	1.00	11.39	1338
168	1.38		48.71	166.06	164	153	1.00	11.50	1352
169	1.37		48.71	166.11	164	153	1.00	11.39	1339
170	1.37		48.75	166.06	164	153	1.00	11.40	1339
171	1.32		48.75	166.39	164	154	1.00	11.03	1299
172	1.37		48.75	166.58	165	154	1.00	11.39	1344
173	1.39		48.80	166.76	165	154	1.00	11.57	1366
174	1.32		48.80	167.00	165	154	1.00	11.01	1302
175	1.34		48.80	167.47	166	155	1.00	11.21	1332
176	1.39		48.75	167.85	166	155	1.00	11.57	1379
177	1.34		48.75	168.32	166	155	1.00	11.22	1343
178	1.32		48.71	168.84	167	156	1.00	11.03	1327
179	1.32		48.75	169.26	168	156	1.00	11.04	1332
180	1.35		48.75	169.69	168	156	1.00	11.23	1360
181	1.43		48.75	170.20	169	157	1.00	11.97	1455
182	1.32		48.75	170.72	169	157	1.00	11.04	1348
183	1.41		48.80	171.38	170	158	1.00	11.73	1439
184	1.32		48.80	171.85	170	159	1.00	11.04	1360
185	1.39		48.80	172.51	171	159	1.00	11.56	1432
186	1.30		48.80	173.17	171	160	1.00	10.85	1352
187	1.34		48.75	173.74	172	160	1.00	11.21	1403
188	1.36		48.75	174.26	173	161	1.00	11.38	1430
189	1.32		48.71	175.01	173	161	1.00	11.03	1395
190	1.36		48.66	175.62	174	162	1.00	11.37	1445
191	1.44		48.66	176.19	175	163	1.00	12.02	1535

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
192	1.43		48.66	176.80	176	164	1.00	11.90	1526
193	1.41		48.62	177.47	176	164	1.00	11.74	1514
194	1.34		48.66	178.23	177	165	1.00	11.21	1454
195	1.41		48.62	178.75	178	165	1.00	11.73	1528
196	1.36		48.62	179.36	178	166	1.00	11.37	1488
197	1.40		48.66	179.93	179	166	1.00	11.72	1540
198	1.34		48.66	180.64	180	167	1.00	11.20	1480
199	1.36		48.66	181.26	180	168	1.00	11.38	1511
200	1.30		48.66	181.83	180	168	1.00	10.86	1448
201	1.34		48.71	182.49	180	168	1.00	11.22	1503
202	1.30		48.71	182.49	180	168	1.00	10.85	1454
203	1.36		48.71	182.49	180	168	1.00	11.37	1523
204	1.41		48.71	182.40	180	168	1.00	11.73	1570
205	1.36		48.75	182.35	180	168	1.00	11.37	1521
206	1.34		48.75	182.20	180	168	1.00	11.20	1497
207	1.39		48.75	182.11	180	168	1.00	11.56	1543
208	1.36		48.80	181.83	179	167	1.00	11.37	1514
209	1.28		48.80	181.59	179	167	1.00	10.68	1421
210	1.34		48.80	181.35	179	167	1.00	11.18	1484
211	1.30		48.75	181.12	179	167	1.00	10.88	1442
212	1.36		48.71	180.83	178	167	1.00	11.38	1505
213	1.32		48.71	180.50	178	166	1.00	11.03	1456
214	1.36		48.62	180.22	178	166	1.00	11.37	1498
215	1.36		48.62	179.88	177	166	1.00	11.38	1496
216	1.34		48.57	179.65	177	165	1.00	11.20	1470
217	1.26		48.57	179.27	177	165	1.00	10.49	1373
218	1.41		48.57	178.89	176	165	1.00	11.74	1531
219	1.43		48.57	178.51	176	164	1.00	11.90	1548
220	1.32		48.57	178.18	176	164	1.00	11.02	1431
221	1.38		48.57	177.85	175	164	1.00	11.53	1493
222	1.30		48.57	177.42	175	163	1.00	10.85	1400
223	1.36		48.57	177.09	175	163	1.00	11.38	1464
224	1.30		48.57	176.71	174	163	1.00	10.85	1393
225	1.34		48.57	176.33	174	162	1.00	11.20	1433
226	1.32		48.57	175.95	173	162	1.00	11.03	1407
227	1.34		48.62	175.53	173	162	1.00	11.20	1423
228	1.39		48.62	175.15	173	161	1.00	11.58	1468
229	1.38		48.62	174.73	172	161	1.00	11.54	1457
230	1.37		48.62	174.35	172	161	1.00	11.47	1444
231	1.34		48.62	173.93	171	160	1.00	11.17	1401
232	1.32		48.66	173.45	171	160	1.00	11.04	1380
233	1.32		48.66	173.13	170	160	1.00	11.03	1375
234	1.32		48.66	172.70	170	159	1.00	11.03	1370
235	1.32		48.66	172.28	170	159	1.00	11.04	1367
236	1.39		48.71	171.85	169	158	1.00	11.56	1425
237	1.34		48.66	171.43	169	158	1.00	11.22	1379
238	1.28		48.66	171.10	168	158	1.00	10.68	1310
239	1.39		48.66	170.63	168	157	1.00	11.57	1412

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
240	1.43		48.66	170.25	168	157	1.00	11.92	1451
241	1.32		48.66	169.78	167	156	1.00	11.04	1339
242	1.37		48.66	169.40	167	156	1.00	11.40	1378
243	1.35		48.66	168.93	166	156	1.00	11.23	1352
244	1.28		48.66	168.56	166	155	1.00	10.69	1284
245	1.35		48.66	168.13	165	155	1.00	11.23	1343
246	1.41		48.62	167.61	165	154	1.00	11.74	1399
247	1.37		48.62	167.28	165	154	1.00	11.40	1354
248	1.37		48.62	167.00	165	154	1.00	11.42	1353
249	1.32		48.57	166.86	165	154	1.00	11.05	1309
250	1.30		48.57	166.58	164	154	1.00	10.88	1286
251	1.35		48.57	166.53	164	154	1.00	11.23	1326
252	1.39		48.57	166.39	164	154	1.00	11.57	1364
253	1.37		48.52	166.43	164	154	1.00	11.41	1347
254	1.35		48.52	166.48	165	154	1.00	11.23	1326
255	1.33		48.57	166.76	165	154	1.00	11.07	1310
256	1.31		48.57	166.86	165	154	1.00	10.89	1290
257	1.33		48.57	167.09	166	155	1.00	11.06	1312
258	1.39		48.62	167.33	166	155	1.00	11.58	1377
259	1.39		48.62	167.75	166	155	1.00	11.58	1382
260	1.37		48.62	168.18	167	156	1.00	11.42	1368
261	1.33		48.62	168.60	167	156	1.00	11.06	1328
262	1.35		48.62	169.03	168	157	1.00	11.24	1355
263	1.41		48.66	169.45	168	157	1.00	11.77	1424
264	1.37		48.62	170.06	169	157	1.00	11.42	1388
265	1.37		48.66	170.53	170	158	1.00	11.42	1394
266	1.33		48.66	171.05	170	159	1.00	11.13	1364
267	1.31		48.66	171.81	171	159	1.00	10.89	1343
268	1.35		48.66	172.32	171	160	1.00	11.24	1391
269	1.35		48.66	172.84	172	160	1.00	11.25	1398
270	1.33		48.66	173.45	173	161	1.00	11.08	1384
271	1.33		48.66	174.16	173	161	1.00	11.07	1391
272	1.41		48.66	174.68	174	162	1.00	11.77	1485
273	1.41		48.66	175.39	174	162	1.00	11.77	1494
274	1.37		48.66	175.95	175	163	1.00	11.43	1457
275	1.37		48.66	176.52	176	163	1.00	11.42	1462
276	1.33		48.66	177.18	176	164	1.00	11.08	1425
277	1.35		48.66	177.70	177	165	1.00	11.23	1451
278	1.35		48.66	178.37	177	165	1.00	11.25	1462
279	1.33		48.66	178.89	178	166	1.00	11.09	1445
280	1.35		48.66	179.46	178	166	1.00	11.25	1473
281	1.41		48.66	180.03	179	167	1.00	11.77	1548
282	1.43		48.66	180.64	180	167	1.00	11.96	1580
283	1.33		48.62	181.26	180	168	1.00	11.07	1470
284	1.35		48.62	181.78	181	168	1.00	11.25	1501
285	1.37		48.66	182.35	180	168	1.00	11.42	1528
286	1.37		48.66	182.63	181	168	1.00	11.44	1535
287	1.30		48.66	182.54	180	168	1.00	10.81	1449

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
288	1.30		48.66	182.54	180	168	1.00	10.86	1456
289	1.33		48.66	182.40	180	168	1.00	11.08	1483
290	1.31		48.66	182.25	180	168	1.00	10.91	1459
291	1.33		48.66	182.02	180	168	1.00	11.09	1480
292	1.33		48.66	181.83	179	167	1.00	11.08	1477
293	1.35		48.66	181.59	179	167	1.00	11.25	1498
294	1.41		48.66	181.26	179	167	1.00	11.78	1564
295	1.39		48.62	181.02	179	167	1.00	11.61	1539
296	1.35		48.62	180.74	178	167	1.00	11.25	1489
297	1.37		48.62	180.40	178	166	1.00	11.43	1508
298	1.37		48.62	180.07	177	166	1.00	11.43	1505
299	1.39		48.57	179.74	177	166	1.00	11.60	1524
300	1.37		48.57	179.41	177	165	1.00	11.41	1494
301	1.31		48.57	179.08	177	165	1.00	10.92	1426
302	1.33		48.57	178.75	176	165	1.00	11.08	1444
303	1.29		48.57	178.42	176	164	1.00	10.73	1395
304	1.37		48.57	178.08	175	164	1.00	11.44	1484
305	1.31		48.52	177.66	175	164	1.00	10.90	1409
306	1.31		48.52	177.33	175	163	1.00	10.91	1407
307	1.33		48.52	176.90	174	163	1.00	11.09	1426
308	1.39		48.52	176.57	174	163	1.00	11.62	1490
309	1.31		48.52	176.10	174	162	1.00	10.92	1394
310	1.37		48.57	175.72	173	162	1.00	11.44	1457
311	1.37		48.57	175.34	173	162	1.00	11.44	1452
312	1.35		48.52	175.01	172	161	1.00	11.26	1427
313	1.33		48.57	174.59	172	161	1.00	11.09	1399
314	1.31		48.57	174.16	171	161	1.00	10.91	1372
315	1.33		48.57	173.79	171	160	1.00	11.10	1392
316	1.31		48.57	173.36	171	160	1.00	10.91	1363
317	1.37		48.57	172.94	170	159	1.00	11.44	1425
318	1.40		48.57	172.56	170	159	1.00	11.71	1454
319	1.36		48.57	172.14	169	159	1.00	11.34	1404
320	1.31		48.57	171.76	169	158	1.00	10.92	1346
321	1.27		48.57	171.33	169	158	1.00	10.57	1299
322	1.37		48.57	170.91	168	158	1.00	11.44	1402
323	1.31		48.57	170.49	168	157	1.00	10.92	1333
324	1.33		48.57	170.06	167	157	1.00	11.10	1351
325	1.35		48.52	169.69	167	157	1.00	11.26	1367
326	1.33		48.52	169.26	167	156	1.00	11.09	1341
327	1.33		48.57	168.79	166	156	1.00	11.09	1335
328	1.27		48.52	168.37	166	155	1.00	10.56	1267
329	1.39		48.52	167.99	165	155	1.00	11.62	1390
330	1.37		48.52	167.52	165	155	1.00	11.44	1363
331	1.41		48.52	167.19	165	154	1.00	11.79	1401
332	1.39		48.52	166.95	165	154	1.00	11.61	1377
333	1.37		48.52	166.72	165	154	1.00	11.45	1355
334	1.33		48.57	166.58	164	154	1.00	11.11	1313
335	1.32		48.57	166.48	164	154	1.00	11.03	1302

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
336	1.27		48.57	166.48	164	154	1.00	10.61	1253
337	1.37		48.57	166.67	164	154	1.00	11.44	1353
338	1.39		48.57	166.58	165	154	1.00	11.63	1374
339	1.27		48.57	166.58	165	154	1.00	10.56	1248
340	1.31		48.57	166.72	165	154	1.00	10.93	1292
341	1.29		48.57	167.00	166	155	1.00	10.76	1275
342	1.39		48.57	167.28	166	155	1.00	11.62	1381
343	1.35		48.57	167.66	166	155	1.00	11.27	1344
344	1.33		48.57	167.99	167	156	1.00	11.09	1325
345	1.37		48.57	168.51	167	156	1.00	11.44	1374
346	1.33		48.57	168.88	168	156	1.00	11.10	1338
347	1.33		48.57	169.31	168	157	1.00	11.10	1342
348	1.35		48.57	169.78	169	158	1.00	11.26	1367
349	1.39		48.57	170.35	169	158	1.00	11.62	1417
350	1.37		48.57	170.91	170	158	1.00	11.41	1397
351	1.38		48.57	171.43	170	159	1.00	11.50	1414
352	1.41		48.57	171.95	171	159	1.00	11.80	1457
353	1.30		48.57	172.61	172	160	1.00	10.88	1351
354	1.33		48.57	173.13	172	160	1.00	11.09	1383
355	1.41		48.57	173.74	173	161	1.00	11.79	1477
356	1.39		48.57	174.30	173	161	1.00	11.62	1463
357	1.29		48.57	174.87	174	162	1.00	10.74	1358
358	1.37		48.57	175.53	175	163	1.00	11.44	1454
359	1.39		48.57	176.05	175	163	1.00	11.63	1484
360	1.43		48.57	176.71	176	163	1.00	11.97	1535
361	1.31		48.57	177.28	176	164	1.00	10.93	1408
362	1.41		48.57	177.90	177	165	1.00	11.79	1527
363	1.37		48.57	178.42	177	165	1.00	11.43	1486
364	1.37		48.57	179.08	178	166	1.00	11.44	1495
365	1.35		48.62	179.65	179	166	1.00	11.27	1479
366	1.37		48.62	180.31	179	167	1.00	11.44	1509
367	1.41		48.62	180.83	180	167	1.00	11.79	1561
368	1.31		48.62	181.59	180	168	1.00	10.92	1453
369	1.37		48.62	182.06	181	169	1.00	11.43	1527
370	1.31		48.62	182.63	181	169	1.00	10.92	1465
371	1.33		48.62	182.73	181	169	1.00	11.09	1490
372	1.33		48.62	182.87	181	169	1.00	11.10	1492
373	1.37		48.62	182.77	180	168	1.00	11.42	1533
374	1.39		48.62	182.63	180	168	1.00	11.61	1558
375	1.29		48.62	182.54	180	168	1.00	10.75	1441
376	1.33		48.62	182.35	180	168	1.00	11.09	1484
377	1.37		48.62	182.11	180	168	1.00	11.44	1529
378	1.35		48.62	181.87	179	168	1.00	11.27	1504
379	1.35		48.62	181.64	179	167	1.00	11.26	1500
380	1.33		48.57	181.35	179	167	1.00	11.09	1475
381	1.31		48.62	181.07	179	167	1.00	10.93	1449
382	1.35		48.62	180.69	178	167	1.00	11.27	1491
383	1.29		48.62	180.45	178	166	1.00	10.75	1419

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
384	1.27		48.57	180.12	178	166	1.00	10.57	1392
385	1.33		48.57	179.79	177	166	1.00	11.10	1459
386	1.35		48.57	179.41	177	165	1.00	11.26	1476
387	1.41		48.57	179.08	176	165	1.00	11.80	1542
388	1.33		48.57	178.75	176	165	1.00	11.09	1446
389	1.41		48.57	178.32	176	164	1.00	11.80	1533
390	1.35		48.57	177.99	175	164	1.00	11.28	1462
391	1.31		48.57	177.61	175	164	1.00	10.92	1410
392	1.33		48.57	177.23	174	163	1.00	11.13	1434
393	1.31		48.57	176.80	174	163	1.00	10.94	1405
394	1.29		48.57	176.43	174	163	1.00	10.75	1376
395	1.33		48.57	176.05	173	162	1.00	11.10	1417
396	1.29		48.57	175.58	173	162	1.00	10.76	1368
397	1.35		48.57	175.20	172	162	1.00	11.27	1429
398	1.37		48.57	174.82	172	161	1.00	11.45	1447
399	1.35		48.57	174.40	172	161	1.00	11.28	1421
400	1.29		48.57	174.02	171	161	1.00	10.75	1350
401	1.27		48.57	173.60	171	160	1.00	10.57	1323
402	1.37		48.57	173.13	170	160	1.00	11.45	1428
403	1.29		48.57	172.80	170	159	1.00	10.76	1338
404	1.37		48.52	172.32	170	159	1.00	11.45	1419
405	1.31		48.57	171.90	169	159	1.00	10.92	1348
406	1.31		48.57	171.52	169	158	1.00	10.93	1346
407	1.29		48.57	171.10	168	158	1.00	10.76	1320
408	1.31		48.52	170.68	168	158	1.00	10.93	1336
409	1.31		48.52	170.25	168	157	1.00	10.93	1333
410	1.33		48.52	169.83	167	157	1.00	11.11	1350
411	1.37		48.52	169.50	167	156	1.00	11.44	1386
412	1.40		48.52	169.03	166	156	1.00	11.64	1404
413	1.29		48.57	168.60	166	155	1.00	10.77	1294
414	1.37		48.57	168.18	165	155	1.00	11.46	1372
415	1.35		48.52	167.75	165	155	1.00	11.29	1348
416	1.37		48.52	167.47	165	155	1.00	11.43	1362
417	1.32		48.52	167.24	165	154	1.00	11.02	1310
418	1.35		48.52	167.09	165	154	1.00	11.28	1339
419	1.31		48.52	166.95	165	154	1.00	10.93	1297
420	1.37		48.52	166.81	165	154	1.00	11.46	1357
421	1.33		48.52	166.76	165	154	1.00	11.10	1315
422	1.42		48.52	166.76	165	154	1.00	11.81	1398
423	1.33		48.57	166.72	165	154	1.00	11.11	1315
424	1.37		48.57	166.86	165	154	1.00	11.45	1356
425	1.40		48.52	167.14	166	155	1.00	11.64	1382
426	1.33		48.57	167.42	166	155	1.00	11.12	1323
427	1.33		48.57	167.75	166	156	1.00	11.11	1326
428	1.29		48.52	168.08	167	156	1.00	10.77	1289
429	1.29		48.52	168.46	167	156	1.00	10.75	1291
430	1.33		48.52	168.93	168	157	1.00	11.10	1339
431	1.40		48.52	169.59	169	157	1.00	11.64	1411

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
432	1.44		48.52	170.20	169	158	1.00	11.98	1459
433	1.33		48.52	170.86	170	159	1.00	11.11	1361
434	1.33		48.52	171.48	171	159	1.00	11.10	1367
435	1.35		48.48	172.23	171	160	1.00	11.28	1398
436	1.27		48.52	172.84	172	160	1.00	10.58	1317
437	1.33		48.48	173.60	172	161	1.00	11.09	1390
438	1.37		48.48	174.12	173	162	1.00	11.45	1440
439	1.33		48.52	174.82	174	162	1.00	11.11	1405
440	1.37		48.52	175.48	175	163	1.00	11.44	1454
441	1.33		48.52	176.14	175	163	1.00	11.13	1422
442	1.34		48.52	176.85	176	164	1.00	11.14	1431
443	1.43		48.52	177.47	177	164	1.00	11.91	1537
444	1.41		48.52	178.08	177	165	1.00	11.73	1521
445	1.36		48.52	178.70	178	165	1.00	11.36	1481
446	1.31		48.48	179.36	178	166	1.00	10.93	1433
447	1.29		48.48	179.98	179	167	1.00	10.77	1417
448	1.35		48.48	180.69	180	167	1.00	11.28	1493
449	1.40		48.48	181.30	180	168	1.00	11.64	1548
450	1.31		48.48	181.83	181	168	1.00	10.93	1460
451	1.31		48.48	182.49	180	168	1.00	10.93	1467
452	1.35		48.48	182.54	181	168	1.00	11.30	1517
453	1.42		48.48	182.58	180	168	1.00	11.81	1585
454	1.40		48.48	182.44	180	168	1.00	11.64	1561
455	1.31		48.48	182.40	180	168	1.00	10.94	1467
456	1.37		48.48	182.25	180	168	1.00	11.45	1534
457	1.33		48.48	182.11	180	168	1.00	11.11	1487
458	1.33		48.48	181.83	179	168	1.00	11.12	1485
459	1.35		48.43	181.54	179	167	1.00	11.27	1502
460	1.31		48.43	181.30	179	167	1.00	10.94	1456
461	1.37		48.43	181.02	179	167	1.00	11.47	1523
462	1.35		48.43	180.74	178	167	1.00	11.28	1495
463	1.29		48.43	180.40	178	166	1.00	10.77	1424
464	1.34		48.43	180.07	177	166	1.00	11.14	1468
465	1.31		48.43	179.70	177	166	1.00	10.93	1437
466	1.37		48.43	179.36	177	165	1.00	11.46	1502
467	1.31		48.43	179.03	176	165	1.00	10.92	1427
468	1.32		48.43	178.70	176	165	1.00	11.03	1439
469	1.35		48.43	178.27	176	164	1.00	11.29	1468
470	1.37		48.43	177.90	175	164	1.00	11.45	1484
471	1.31		48.39	177.56	175	164	1.00	10.94	1415
472	1.35		48.39	177.14	175	163	1.00	11.29	1455
473	1.29		48.43	176.76	174	163	1.00	10.77	1383
474	1.40		48.39	176.43	174	163	1.00	11.64	1492
475	1.33		48.39	176.00	173	162	1.00	11.12	1421
476	1.29		48.39	175.62	173	162	1.00	10.77	1371
477	1.27		48.43	175.20	172	162	1.00	10.60	1345
478	1.37		48.39	174.82	172	161	1.00	11.46	1451
479	1.42		48.39	174.35	172	161	1.00	11.82	1490

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
480	1.31		48.39	173.97	171	160	1.00	10.94	1376
481	1.37		48.39	173.60	171	160	1.00	11.46	1437
482	1.35		48.39	173.17	170	160	1.00	11.29	1411
483	1.33		48.39	172.70	170	159	1.00	11.12	1384
484	1.31		48.39	172.32	170	159	1.00	10.94	1358
485	1.31		48.39	171.95	169	159	1.00	10.95	1355
486	1.33		48.39	171.52	169	158	1.00	11.12	1371
487	1.40		48.39	171.15	168	158	1.00	11.65	1432
488	1.31		48.39	170.68	168	157	1.00	10.95	1341
489	1.33		48.39	170.30	168	157	1.00	11.12	1358
490	1.35		48.39	169.87	167	157	1.00	11.24	1367
491	1.35		48.34	169.40	167	156	1.00	11.27	1366
492	1.34		48.34	168.98	166	156	1.00	11.18	1351
493	1.37		48.39	168.56	166	155	1.00	11.47	1380
494	1.33		48.34	168.23	166	155	1.00	11.12	1335
495	1.38		48.34	167.75	165	155	1.00	11.48	1372
496	1.31		48.34	167.47	165	155	1.00	10.94	1305
497	1.33		48.34	167.28	165	155	1.00	11.11	1323
498	1.40		48.34	167.19	165	155	1.00	11.66	1387
499	1.33		48.34	167.19	165	155	1.00	11.12	1323
500	1.33		48.34	167.28	166	155	1.00	11.11	1323
501	1.27		48.34	167.47	166	155	1.00	10.60	1264
502	1.38		48.34	167.80	166	156	1.00	11.48	1373
503	1.40		48.34	168.13	166	156	1.00	11.64	1396
Average	1	#DIV/0!	49	174	172	161	1	11	1444
								TOTAL:	**726411**

LAB SAMPLE DATA - ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 3

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Sample ID	Tare, mg	Total, mg	Final, mg	Catch, mg
Train A Filters - First Hour	3675	122.6	122.6	122.8	0.2
Train A Filters - Remainder	3676	115.2	233.1	239.0	5.9
	3677	117.9			
Train A Probe	3A	116074.3	116074.3	116074.4	0.1
Train A O-Rings	3A	3580.2	3580.2	3580.7	0.5
Train B Filters	3678	124.7	243.5	249.9	6.4
	3679	118.8			
Train B Probe	3B	116339.0	116339.0	116339.1	0.1
Train B O-Rings	3B	3568.5	3568.5	3568.5	0.0
Background Filter	3680	118.5	118.5	119.5	1.0

Placed in Dessicator on:	1/17/2020

Train A Filters - First Hour	122.8	1/21 14:44	122.8	1/22 8:24				
Train A Filters - Remainder	239.0	1/21 14:44	239.0	1/22 8:24				
Train A Probe	116074.4	1/21 14:33	116074.4	1/22 8:15				
Train A O-Rings	3580.7	1/21 14:37	3580.7	1/22 8:19				
Train B Filters	249.8	1/21 14:44	249.9	1/22 8:24				
Train B Probe	116339.1	1/21 14:34	116339.1	1/22 8:16				
Train B O-Rings	3568.5	1/21 14:38	3568.5	1/22 8:19				
Background Filter	119.4	1/21 14:45	119.5	1/22 8:28				

1st hour Sub-Total, mg:	0.2
Remainder Sub-Total, mg:	6.5
Train 1 Aggregate, mg:	**6.7**
Train 2 Aggregate, mg:	**6.5**
Ambient Aggregate, mg:	1.0

ASTM E2618 Hydronic Heater Run Sheets

Client: Greentech Job Number: 19-551 Tracking #: 47
Model: RS7300E Run Number: 3 Test Date: 1/15/2020

Wood Heater Run Notes

Pre-Test Notes
Pre-Test Start Time: 10:37
Target Load (BTU/hr): 73,500

Time	Notes
0 min	Began preburn
60 min	End PB

Test Notes
Test Burn Start Time: 11:37
Target Load (BTU/hr): 73,500 (Category 3)

Time	Notes
0 min	Loaded test fuel within 60 seconds, door closed immediately
60 min	Changed 1st hour filter
503 min	End of Test

Test Burn End Time: 20:00

Flue Gas Concentration Measurement

Calibration Gas Values: Span Gas CO_2 (%): 15.30 CO (%): 4.98

Calibration Results:

	Pre Test			Post Test		
	Zero		Span	Zero		Span
Time	00:45		00:47	20:13		20:18
CO_2	0.21		15.60	0.19		15.29
CO	0.037		4.999	0.046		5.021

Flue Gas Probe Leak Check: Initial: No Leakage Final: No Leakage

Technician Signature: Date: 1/15/2020

HYDRONIC HEATER TEST DATA PACKET
ASTM E2618/E2515

Run 4 Data Summary

Client:	Greentech
Model:	Pristine 7300E
Job #:	19-551
Tracking #:	0047
Test Date:	1/15/2020

Techician Signature

5/13/2022
Date

TEST RESULTS - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

Particulate Data

	Ambient Sample	Sample Train A	Sample Train B	1st Hour Filter
Total Sample Volume (ft^3)	164.528	142.325	147.296	9.102
Average Gas Velocity in Dilution Tunnel (ft/sec)	12.5			
Average Gas Flow Rate in Dilution Tunnel (dscf/hr)	33660.1			
Average Gas Meter Temperature (°F)	63.8	83.7	86.8	71.8
Total Sample Volume (dscf)	161.650	134.305	139.857	8.781
Average Tunnel Temperature (°F)	70.7			
Total Time of Test (min)	907			
Total Particulate Catch (mg)	1.9	11.0	11.0	3.3
Particulate Concentration, dry-standard (g/dscf)	0.0000118	0.0000819	0.0000787	0.0003758
Total PM Emissions (g)	5.98	35.69	34.04	12.25
Particulate Emission Rate (g/hr)	0.40	2.36	2.25	12.25
Emissions Factor (g/kg)	-	0.73	0.69	-
Difference from Average Total Particulate Emissions (%)	-	2.4%	2.4%	-
Difference from Average Emissions Factor (g/kg)	-	0.02	0.02	-

Boiler/ HEX Data

Appliance Average Start Temperature (F)	163.5	
Appliance Average Final Temperature (F)	168.0	**First Hour**
Heat Output (BTU)	653,516	42,041
Heat Output Rate (BTU/hr)	43,231	
Heat Input - HHV (BTU)	929,925	132,747
Heat Input - LHV (BTU)	863,749	

Emissions Rates and Factors

Total Particulate Emissions (g)	34.9	12.3
Emissions Factor (g/MJ)	0.0506	
Emissions Factor (g/kg)	0.7094	
Emissions Rate (g/hr)	2.31	
Emissions Rate (lb/mmbtu output)	0.118	0.643
HHV Delivered Efficiency (%)	70.3%	31.7%
LHV Delivered Efficiency (%)	75.7%	
HHV SLM Efficiency (%)	66.2%	
LHV SLM Efficiency (%)	70.9%	
CO Emissions (g/min)	3.05	

Quality Checks	Requirement	Observed	Result
Dual Train Precision	Each train within 7.5% of average emissions (in grams), or emission factors within 0.5 g/kg	See Above	OK
Filter Temps	<90 °F	79.0	OK
Face Velocity	< 30 ft/min	9.0	OK
Leakage Rate	Less than 4% of average sample rate	0 cfm	OK
Ambient Temp	55-90 °F	Min: 61 / Max: 70	OK
Negative Probe Weight Evaluation	<5% of Total Catch	Probe Catch Not Negative	OK
Pro-Rate Variation	90% of readings between 90-110%; none greater than 120% or less than 80%	See Data Tabs	OK
Return Temp > 120°F	>120°F	160.0	OK

B415.1 Efficiency Results

Manufacturer: Greentech
Model: Pristine 7300E
Date: 01/15/20
Run: 4
Control #: 19-551
Test Duration: 907
Output Category: 2

Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
Overall Efficiency	66.2%	70.9%
Combustion Efficiency	98.1%	98.1%
Heat Transfer Efficiency	67.6%	72.3%

Output Rate (kJ/h)	42,915	40,709	**(Btu/h)**
Burn Rate (kg/h)	3.25	7.15	**(lb/h)**
Input (kJ/h)	64,780	61,451	**(Btu/h)**

Test Load Weight (dry kg)	49.06	108.13	**dry lb**
MC wet (%)	18.76		
MC dry (%)	23.09		
Particulate (g)	34.87		
CO (g)	2,763		
Test Duration (h)	15.12		

Emissions	Particulate	CO
g/MJ Output	0.05	4.26
g/kg Dry Fuel	0.71	56.33
g/h	2.31	182.81
g/min	0.04	3.05
lb/MM Btu Output	0.12	9.90

Air/Fuel Ratio (A/F)	57.83

VERSION: **2.2** **12/14/2009**

BOILER CORDWOOD FUEL DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

Firebox Volume (ft^3): 12.83
Target Load Weight (lbs): 133.50
Number of Fuel Pieces Allowed: 8 - 15

Minimun Piece Weight (lbs): 6.60
Maximun Piece Weight (lbs): 22.00
80% of piece of weight range (lbs): 8.8 to 19.8

Pretest Fuel Information

Length (in)	Weight (lbs)	MC (%DB)	Length (in)	Weight (lbs)	MC (%DB)
20.00	129.00	26.0			
20.00		25.0			
20.00		25.0			
20.00		24.0			
20.00		26.0			
20.00		19.0			
20.00		25.0			
20.00		23.0			
20.00		28.0			
20.00		23.0			
20.00		19.0			
20.00		19.0			

Total Preburn Weight (lbs): 129.00
Averge Preburn Moisture (% DB): 23.50

Test Fuel Information

Length (in)	Weight (lbs)	Moisture Content (%DB)					Avg MC (%DB)	Dry Weight (lbs)
20.00	10.00	23.0	23.0	19.0	21.0	22.0	21.60	8.22
20.00	9.20	23.0	21.0	21.0	21.0	19.0	21.00	7.60
20.00	12.30	24.0	25.0	25.0	24.0	27.0	25.00	9.84
20.00	9.30	23.0	25.0	25.0	25.0	24.0	24.40	7.48
20.00	7.40	19.0	20.0	19.0	19.0	18.0	19.00	6.22
20.00	9.40	27.0	26.0	22.0	25.0	24.0	24.80	7.53
20.00	10.00	25.0	28.0	19.0	25.0	23.0	24.00	8.06
20.00	8.80	24.0	21.0	21.0	24.0	21.0	22.20	7.20
20.00	9.30	22.0	23.0	24.0	25.0	23.0	23.40	7.54
20.00	9.40	22.0	24.0	21.0	22.0	24.0	22.60	7.67
20.00	9.10	28.0	24.0	25.0	24.0	25.0	25.20	7.27
20.00	12.50	24.0	26.0	22.0	22.0	24.0	23.60	10.11
20.00	7.20	19.0	24.0	20.0	21.0	23.0	21.40	5.93
20.00	9.20	18.0	24.0	26.0	24.0	25.0	23.40	7.46
Total (lbs):	133.10						Total Dry Weight (lbs):	108.13

Allowable Coal Bed Range (10-20%): 13.3 - 26.6

Quality checks

Individual Piece Weights:	OK
80% Piece weight range:	OK
Piece Count:	OK

DILUTION TUNNEL & MISC. DATA - ASTM E2618 / E2515

Client:	Greentech	Job #:	19-551
Model:	Pristine 7300E	Tracking #:	0047
Run #:	4	Technician:	AK
Test Start Time:	22:02	Date:	1/15/2020
Manufacturer's Rated Output (BTU/hr):	210,000		

Total Sampling Time (min):	907	
Recording Interval (min):	1	
Meter Box γ Factor:	0.992	(A)
Meter Box γ Factor:	1.002	(B)
Meter Box γ Factor:	0.996	(Ambient)
Induced Draft Check (in. H_2O):	0	
Smoke Capture Check (%):	100%	
Date Flue Pipe Last Cleaned:	1/7/2020	
Boiler Dry Weight (lbs):	2559	
Supply Side Water Weight (lbs):	1951	

907

	Pre-Test	Post Test	Avg.
Barometric Pressure (in. Hg)	29.14	29.44	29.29
Relative Humidity (%)	40.0	24.2	
Room Air Velocity (ft/min)	0	0	
Scale Audit (lbs)	10.0	10.0	
Ambient Sample Volume:		164.528	ft^3

Sample Train Post-Test Leak Checks

(A)	0.000	cfm @	-10	in. Hg
(B)	0.000	cfm @	-10	in. Hg
(Ambient)	0.000	cfm @	-15	in. Hg

DILUTION TUNNEL FLOW

Traverse Data

Point	dP (in H_2O)	Temp (°F)
1	0.028	65
2	0.038	65
3	0.040	65
4	0.040	65
5	0.036	65
6	0.025	65
7	0.025	65
8	0.033	65
9	0.038	65
10	0.041	65
11	0.038	65
12	0.029	65
Center	0.041	65

Static Pressure: -0.150 in. H_2O

Dilution Tunnel H_2O:	2.00	percent
Tunnel Diameter:	12	inches
Pitot Tube Cp:	0.99	[unitless]
Dilution Tunnel MW(dry):	29.00	lb/lb-mole
Dilution Tunnel MW(wet):	28.78	lb/lb-mole
Tunnel Area:	0.7854	ft^2
V_{strav}:	12.44	ft/sec
V_{scent}:	13.56	ft/sec
F_p:	0.917	[ratio]
Initial Tunnel Flow:	559.8	scf/min

TEST FUEL PROPERTIES

Default Fuel Values

Fuel Type:	D. Fir	Oak
HHV (kJ/kg)	19,810	19,887
%C	48.73	50
%H	6.87	6.9
%O	43.9	42.9
%Ash	0.5	0.5

Actual Fuel Used Properties

Fuel Type:	Maple
HHV (kJ/kg)	19,960
%C	50.64
%H	6.02
%O	41.74
%Ash	1.35
MC (%DB)	23.1%

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
0	0.001		0.041	0.04	69	-5.47		133.1		80	208	64	61
1	0.145	0.144	0.041	0.46	68	-5.47	96	132.6	-0.5	83	218	65	63
2	0.298	0.153	0.041	0.43	68	-5.47	102	131.8	-0.8	83	224	65	62
3	0.452	0.154	0.041	0.42	68	-5.47	102	131.1	-0.7	84	228	66	62
4	0.605	0.153	0.041	0.41	68	-5.47	102	131.0	-0.1	84	233	66	62
5	0.759	0.154	0.041	0.40	68	-5.47	102	130.0	-1	85	236	66	62
6	0.910	0.151	0.041	0.40	68	-5.47	100	129.0	-1	85	239	66	62
7	1.064	0.154	0.041	0.43	68	-5.47	103	128.9	-0.1	86	242	66	62
8	1.217	0.153	0.041	0.39	68	-5.47	102	127.9	-1	86	245	66	62
9	1.370	0.153	0.041	0.40	68	-5.47	102	128.1	0.2	87	247	67	62
10	1.522	0.152	0.041	0.40	68	-5.47	101	126.9	-1.2	87	249	67	62
11	1.673	0.151	0.041	0.39	68	-5.47	101	126.0	-0.9	87	251	67	62
12	1.824	0.151	0.041	0.37	68	-5.47	101	126.0	0	87	253	67	62
13	1.976	0.152	0.041	0.39	68	-5.47	101	125.0	-1	88	255	67	62
14	2.128	0.152	0.041	0.42	69	-5.47	101	124.0	-1	89	255	67	63
15	2.279	0.151	0.041	0.40	69	-5.47	101	123.4	-0.6	89	256	67	62
16	2.431	0.152	0.041	0.40	69	-5.47	101	123.1	-0.3	90	256	67	63
17	2.582	0.151	0.041	0.39	69	-5.47	101	121.9	-1.2	90	256	68	63
18	2.732	0.150	0.041	0.38	69	-5.47	100	121.0	-0.9	90	255	68	63
19	2.882	0.150	0.041	0.37	69	-5.47	100	121.1	0.1	90	255	68	63
20	3.033	0.151	0.041	0.43	69	-5.47	101	119.8	-1.3	91	254	68	63
21	3.185	0.152	0.041	0.42	70	-5.47	101	119.0	-0.8	91	254	68	63
22	3.335	0.150	0.041	0.40	70	-5.47	100	118.1	-0.9	91	254	68	63
23	3.488	0.153	0.041	0.38	70	-5.47	102	117.9	-0.2	91	254	68	63
24	3.638	0.150	0.041	0.39	70	-5.47	100	116.9	-1	91	255	68	63
25	3.790	0.152	0.041	0.43	70	-5.47	101	116.0	-0.9	91	256	69	63
26	3.940	0.150	0.041	0.41	71	-5.47	100	115.0	-1	91	258	69	63
27	4.088	0.148	0.041	0.41	71	-5.47	97	113.9	-1.1	75	249	68	63
28	4.243	0.155	0.041	0.41	71	-5.47	101	114.0	0.1	71	237	70	63
29	4.395	0.152	0.041	0.42	71	-5.47	99	113.0	-1	70	227	69	63
30	4.547	0.152	0.041	0.39	71	-5.47	99	112.8	-0.2	69	219	69	63
31	4.699	0.152	0.041	0.40	72	-5.47	99	113.1	0.3	68	212	68	63

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
32	4.852	0.153	0.041	0.37	72	-5.47	99	113.0	-0.1	68	206	68	64
33	5.002	0.150	0.041	0.43	72	-5.47	97	113.0	0	68	201	68	64
34	5.155	0.153	0.041	0.39	72	-5.47	99	112.9	-0.1	68	196	67	64
35	5.307	0.152	0.041	0.43	72	-5.47	99	113.0	0.1	68	192	67	64
36	5.461	0.154	0.041	0.40	73	-5.47	100	113.5	0.5	68	188	67	64
37	5.611	0.150	0.041	0.42	73	-5.47	97	113.0	-0.5	68	185	67	64
38	5.764	0.153	0.041	0.43	73	-5.47	99	113.0	0	67	181	67	64
39	5.914	0.150	0.041	0.37	73	-5.47	97	113.0	0	67	178	66	64
40	6.065	0.151	0.041	0.43	73	-5.47	98	113.0	0	67	175	66	66
41	6.218	0.153	0.041	0.38	74	-5.47	99	114.1	1.1	68	173	66	66
42	6.370	0.152	0.041	0.40	74	-5.47	98	114.0	-0.1	68	170	67	66
43	6.521	0.151	0.041	0.43	74	-5.47	98	114.0	0	68	168	67	66
44	6.674	0.153	0.041	0.43	74	-5.47	99	114.0	0	68	166	67	67
45	6.824	0.150	0.041	0.37	75	-5.47	97	113.9	-0.1	68	164	67	67
46	6.976	0.152	0.041	0.43	75	-5.47	98	113.9	0	68	162	67	68
47	7.128	0.152	0.041	0.43	75	-5.47	98	114.1	0.2	68	160	67	67
48	7.280	0.152	0.041	0.38	75	-5.47	98	114.0	-0.1	68	158	67	68
49	7.431	0.151	0.041	0.42	75	-5.47	98	113.6	-0.4	68	156	67	67
50	7.583	0.152	0.041	0.43	76	-5.47	98	114.1	0.5	68	154	67	67
51	7.735	0.152	0.041	0.43	76	-5.47	98	114.0	-0.1	68	153	67	68
52	7.886	0.151	0.041	0.38	76	-5.47	97	114.0	0	69	151	67	68
53	8.037	0.151	0.041	0.42	76	-5.47	97	114.2	0.2	69	150	67	68
54	8.190	0.153	0.041	0.36	76	-5.47	99	114.0	-0.2	69	148	68	68
55	8.344	0.154	0.041	0.40	77	-5.47	99	113.9	-0.1	69	147	68	68
56	8.497	0.153	0.041	0.39	77	-5.47	99	114.1	0.2	69	145	68	68
57	8.649	0.152	0.041	0.40	77	-5.47	98	114.0	-0.1	69	143	68	68
58	8.801	0.152	0.041	0.37	77	-5.47	98	114.1	0.1	69	142	68	68
59	8.952	0.151	0.041	0.37	77	-5.47	97	114.0	-0.1	69	141	68	67
60	9.103	0.151	0.041	0.40	78	-5.47	97	114.1	0.1	69	140	68	69
61	9.256	0.153	0.041	0.38	78	-5.47	98	114.4	0.3	69	138	68	69
62	9.408	0.152	0.041	0.36	78	-5.47	98	114.9	0.5	69	137	68	69
63	9.561	0.153	0.041	0.43	78	-5.47	98	115.0	0.1	69	136	68	68

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
64	9.712	0.151	0.041	0.39	78	-5.47	97	115.0	0	69	135	68	69
65	9.863	0.151	0.041	0.38	79	-5.47	97	114.9	-0.1	69	133	68	69
66	10.015	0.152	0.041	0.45	79	-5.47	98	115.1	0.2	69	132	68	68
67	10.167	0.152	0.041	0.44	79	-5.47	98	115.0	-0.1	69	131	68	69
68	10.319	0.152	0.041	0.36	79	-5.47	98	115.0	0	69	130	68	69
69	10.475	0.156	0.041	0.40	79	-5.47	100	115.0	0	69	129	68	68
70	10.631	0.156	0.041	0.41	80	-5.47	100	115.0	0	69	128	68	68
71	10.790	0.159	0.041	0.44	80	-5.47	102	114.9	-0.1	69	127	68	68
72	10.947	0.157	0.041	0.44	80	-5.47	101	115.0	0.1	69	126	68	68
73	11.103	0.156	0.041	0.38	80	-5.47	100	115.0	0	69	125	68	68
74	11.262	0.159	0.041	0.40	80	-5.47	102	115.0	0	69	125	68	69
75	11.416	0.154	0.041	0.45	80	-5.47	99	115.0	0	69	124	68	69
76	11.574	0.158	0.041	0.44	81	-5.47	101	115.0	0	69	123	68	68
77	11.732	0.158	0.041	0.40	81	-5.47	101	114.9	-0.1	69	121	68	68
78	11.887	0.155	0.041	0.44	81	-5.47	99	115.2	0.3	69	121	69	68
79	12.046	0.159	0.041	0.43	81	-5.47	102	115.2	0	69	120	69	68
80	12.203	0.157	0.041	0.42	81	-5.47	100	114.9	-0.3	69	119	69	68
81	12.360	0.157	0.041	0.40	81	-5.47	100	115.1	0.2	69	118	69	68
82	12.519	0.159	0.041	0.43	81	-5.47	102	115.0	-0.1	69	117	69	67
83	12.676	0.157	0.041	0.56	82	-5.47	100	114.9	-0.1	69	117	69	67
84	12.834	0.158	0.041	0.46	82	-5.47	101	115.1	0.2	69	116	68	67
85	12.993	0.159	0.041	0.41	82	-5.47	101	115.0	-0.1	69	116	68	67
86	13.150	0.157	0.041	0.40	82	-5.47	100	115.0	0	69	115	68	67
87	13.308	0.158	0.041	0.42	82	-5.47	101	114.5	-0.5	69	114	68	67
88	13.464	0.156	0.041	0.44	82	-5.47	100	115.0	0.5	69	113	68	67
89	13.624	0.160	0.041	0.43	82	-5.47	102	115.0	0	69	113	68	68
90	13.782	0.158	0.041	0.45	83	-5.47	101	114.9	-0.1	69	112	68	68
91	13.939	0.157	0.041	0.39	83	-5.47	100	115.0	0.1	69	112	68	68
92	14.097	0.158	0.041	0.42	83	-5.47	101	115.0	0	69	111	68	68
93	14.253	0.156	0.041	0.40	83	-5.47	99	114.9	-0.1	69	111	68	68
94	14.412	0.159	0.041	0.42	83	-5.47	101	115.1	0.2	69	110	68	68
95	14.570	0.158	0.041	0.39	83	-5.47	101	115.0	-0.1	69	109	68	68

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
96	14.726	0.156	0.041	0.44	83	-5.47	99	114.9	-0.1	69	109	68	68
97	14.887	0.161	0.041	0.44	83	-5.47	103	115.0	0.1	69	108	68	67
98	15.044	0.157	0.041	0.45	83	-5.47	100	115.1	0.1	69	108	68	68
99	15.203	0.159	0.041	0.42	84	-5.47	101	114.9	-0.2	69	107	68	68
100	15.361	0.158	0.041	0.42	84	-5.47	100	115.8	0.9	69	106	68	69
101	15.518	0.157	0.041	0.46	84	-5.47	100	115.2	-0.6	69	106	68	68
102	15.678	0.160	0.041	0.38	84	-5.47	102	114.8	-0.4	69	105	68	68
103	15.835	0.157	0.041	0.37	84	-5.47	100	115.0	0.2	69	105	68	68
104	15.996	0.161	0.041	0.46	84	-5.47	102	115.0	0	69	105	68	68
105	16.152	0.156	0.041	0.45	84	-5.47	99	115.0	0	69	104	68	70
106	16.310	0.158	0.041	0.43	84	-5.47	100	115.0	0	69	104	68	68
107	16.470	0.160	0.041	0.44	84	-5.47	102	115.0	0	69	103	68	69
108	16.625	0.155	0.041	0.45	84	-5.47	99	115.7	0.7	69	103	68	69
109	16.785	0.160	0.041	0.43	85	-5.47	102	114.9	-0.8	69	102	68	69
110	16.942	0.157	0.041	0.46	85	-5.47	100	115.1	0.2	69	102	68	69
111	17.101	0.159	0.041	0.44	85	-5.47	101	115.0	-0.1	69	102	68	69
112	17.260	0.159	0.041	0.43	85	-5.47	101	114.9	-0.1	69	101	68	69
113	17.419	0.159	0.041	0.42	85	-5.47	101	115.0	0.1	69	101	68	69
114	17.578	0.159	0.041	0.38	85	-5.47	101	115.0	0	69	100	68	69
115	17.736	0.158	0.041	0.41	85	-5.47	100	114.9	-0.1	69	100	68	69
116	17.895	0.159	0.041	0.42	85	-5.47	101	115.0	0.1	69	100	68	69
117	18.052	0.157	0.041	0.44	85	-5.47	100	115.0	0	69	99	68	69
118	18.210	0.158	0.041	0.45	85	-5.47	100	116.0	1	69	99	68	69
119	18.368	0.158	0.041	0.41	85	-5.47	101	116.1	0.1	81	157	69	68
120	18.525	0.157	0.041	0.40	85	-5.47	101	115.0	-1.1	80	178	69	68
121	18.684	0.159	0.041	0.42	85	-5.47	102	114.9	-0.1	82	187	69	68
122	18.841	0.157	0.041	0.43	85	-5.47	101	114.5	-0.4	84	193	69	68
123	18.999	0.158	0.041	0.40	85	-5.47	102	115.0	0.5	84	200	69	68
124	19.157	0.158	0.041	0.43	85	-5.47	102	114.0	-1	85	207	70	69
125	19.313	0.156	0.041	0.45	86	-5.47	100	113.0	-1	85	213	70	69
126	19.472	0.159	0.041	0.38	86	-5.47	102	113.0	0	86	218	70	69
127	19.630	0.158	0.041	0.43	86	-5.47	102	112.0	-1	87	225	70	69

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
128	19.787	0.157	0.041	0.39	86	-5.47	101	110.9	-1.1	87	230	70	69
129	19.945	0.158	0.041	0.41	86	-5.47	102	110.1	-0.8	88	235	70	68
130	20.102	0.157	0.041	0.43	86	-5.47	101	109.4	-0.7	89	239	71	69
131	20.260	0.158	0.041	0.46	86	-5.47	102	108.9	-0.5	89	243	71	68
132	20.416	0.156	0.041	0.40	86	-5.47	101	108.0	-0.9	89	246	71	69
133	20.574	0.158	0.041	0.40	86	-5.47	102	107.3	-0.7	90	249	71	69
134	20.733	0.159	0.041	0.40	86	-5.47	103	106.9	-0.4	90	251	71	69
135	20.889	0.156	0.041	0.43	86	-5.47	101	106.2	-0.7	91	253	71	69
136	21.047	0.158	0.041	0.40	86	-5.47	102	105.0	-1.2	91	256	71	69
137	21.204	0.157	0.041	0.40	86	-5.47	102	103.9	-1.1	91	258	71	69
138	21.360	0.156	0.041	0.40	86	-5.47	101	103.0	-0.9	92	259	72	68
139	21.518	0.158	0.041	0.41	86	-5.47	102	102.2	-0.8	92	261	72	69
140	21.674	0.156	0.041	0.40	86	-5.47	101	101.9	-0.3	92	263	72	68
141	21.832	0.158	0.041	0.42	86	-5.47	102	101.0	-0.9	93	265	72	69
142	21.990	0.158	0.041	0.46	86	-5.47	102	99.0	-2	93	267	72	68
143	22.146	0.156	0.041	0.42	86	-5.47	101	99.0	0	93	269	72	65
144	22.303	0.157	0.041	0.38	86	-5.47	102	97.9	-1.1	92	271	72	64
145	22.461	0.158	0.041	0.45	86	-5.47	102	96.1	-1.8	92	272	71	64
146	22.617	0.156	0.041	0.46	86	-5.47	99	94.9	-1.2	74	257	70	64
147	22.776	0.159	0.041	0.48	86	-5.47	101	95.0	0.1	72	244	70	64
148	22.932	0.156	0.041	0.44	86	-5.47	99	95.0	0	70	233	69	64
149	23.093	0.161	0.041	0.40	86	-5.47	102	95.0	0	70	223	69	63
150	23.249	0.156	0.041	0.42	86	-5.47	99	94.2	-0.8	69	216	68	64
151	23.408	0.159	0.041	0.42	86	-5.47	101	93.7	-0.5	69	210	68	64
152	23.568	0.160	0.041	0.40	86	-5.47	101	94.0	0.3	68	204	68	64
153	23.726	0.158	0.041	0.40	86	-5.47	100	93.7	-0.3	68	199	68	64
154	23.886	0.160	0.041	0.43	86	-5.47	101	94.0	0.3	68	195	67	64
155	24.043	0.157	0.041	0.39	86	-5.47	99	94.0	0	68	191	67	64
156	24.202	0.159	0.041	0.42	86	-5.47	101	93.9	-0.1	68	187	67	64
157	24.358	0.156	0.041	0.43	86	-5.47	99	93.8	-0.1	68	184	67	65
158	24.519	0.161	0.041	0.42	86	-5.47	102	95.0	1.2	68	180	67	65
159	24.676	0.157	0.041	0.40	86	-5.47	99	95.0	0	68	177	67	66

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
160	24.835	0.159	0.041	0.43	86	-5.47	101	94.8	-0.2	68	175	67	66
161	24.993	0.158	0.041	0.46	86	-5.47	100	95.1	0.3	68	172	67	66
162	25.152	0.159	0.041	0.45	86	-5.47	101	94.9	-0.2	68	170	67	66
163	25.311	0.159	0.041	0.43	86	-5.47	101	95.0	0.1	69	167	67	66
164	25.468	0.157	0.041	0.42	86	-5.47	99	95.1	0.1	69	165	67	67
165	25.628	0.160	0.041	0.41	86	-5.47	101	95.0	-0.1	69	163	67	67
166	25.786	0.158	0.041	0.45	86	-5.47	100	94.9	-0.1	69	161	67	68
167	25.946	0.160	0.041	0.42	86	-5.47	101	95.1	0.2	69	159	67	67
168	26.105	0.159	0.041	0.42	86	-5.47	101	94.9	-0.2	69	157	67	67
169	26.264	0.159	0.041	0.39	86	-5.47	101	95.0	0.1	69	155	67	67
170	26.425	0.161	0.041	0.42	86	-5.47	102	96.0	1	69	154	67	68
171	26.582	0.157	0.041	0.42	86	-5.47	99	96.0	0	69	152	67	67
172	26.742	0.160	0.041	0.43	86	-5.47	101	95.9	-0.1	69	151	67	67
173	26.899	0.157	0.041	0.45	86	-5.47	99	96.0	0.1	69	149	67	68
174	27.059	0.160	0.041	0.41	86	-5.47	101	95.0	-1	69	147	67	67
175	27.215	0.156	0.041	0.41	86	-5.47	99	94.9	-0.1	69	146	67	67
176	27.374	0.159	0.041	0.53	86	-5.47	101	96.0	1.1	69	145	67	67
177	27.534	0.160	0.041	0.46	86	-5.47	101	95.0	-1	69	143	68	67
178	27.693	0.159	0.041	0.41	86	-5.47	101	94.9	-0.1	69	142	67	67
179	27.851	0.158	0.041	0.40	86	-5.47	100	96.0	1.1	69	140	67	68
180	28.009	0.158	0.041	0.41	86	-5.47	100	96.0	0	69	139	67	68
181	28.167	0.158	0.041	0.47	86	-5.47	100	96.0	0	69	138	68	68
182	28.327	0.160	0.041	0.46	86	-5.47	101	96.0	0	69	137	68	67
183	28.484	0.157	0.041	0.42	86	-5.47	99	96.1	0.1	69	135	68	67
184	28.643	0.159	0.041	0.44	86	-5.47	101	96.0	-0.1	68	134	68	68
185	28.800	0.157	0.041	0.43	87	-5.47	99	95.9	-0.1	69	133	68	67
186	28.960	0.160	0.041	0.41	87	-5.47	101	96.0	0.1	69	132	68	68
187	29.117	0.157	0.041	0.50	87	-5.47	99	96.0	0	68	131	68	68
188	29.275	0.158	0.041	0.40	87	-5.47	100	95.9	-0.1	69	130	68	68
189	29.435	0.160	0.041	0.46	87	-5.47	101	96.0	0.1	69	129	68	68
190	29.591	0.156	0.041	0.44	87	-5.47	99	96.0	0	69	128	68	68
191	29.751	0.160	0.041	0.44	87	-5.47	101	96.0	0	69	127	68	68

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
192	29.908	0.157	0.041	0.41	87	-5.47	99	96.0	0	69	126	68	68
193	30.066	0.158	0.041	0.44	87	-5.47	100	95.9	-0.1	68	125	68	68
194	30.224	0.158	0.041	0.41	87	-5.47	100	95.9	0	68	124	68	68
195	30.382	0.158	0.041	0.40	87	-5.47	100	96.0	0.1	68	123	68	68
196	30.541	0.159	0.041	0.40	87	-5.47	100	96.1	0.1	68	122	68	68
197	30.698	0.157	0.041	0.41	87	-5.47	99	95.9	-0.2	68	122	68	68
198	30.857	0.159	0.041	0.42	87	-5.47	100	96.0	0.1	68	121	68	68
199	31.014	0.157	0.041	0.42	87	-5.47	99	96.0	0	68	120	68	68
200	31.172	0.158	0.041	0.40	87	-5.47	100	95.7	-0.3	68	119	68	67
201	31.330	0.158	0.041	0.43	87	-5.47	100	95.9	0.2	68	118	68	68
202	31.486	0.156	0.041	0.36	87	-5.47	99	96.0	0.1	68	118	68	67
203	31.645	0.159	0.041	0.40	87	-5.47	100	96.0	0	68	117	68	67
204	31.802	0.157	0.041	0.39	87	-5.47	99	96.0	0	68	116	68	67
205	31.960	0.158	0.041	0.41	87	-5.47	100	96.0	0	68	116	68	67
206	32.120	0.160	0.041	0.42	87	-5.47	101	96.0	0	68	115	68	67
207	32.278	0.158	0.041	0.44	87	-5.47	100	95.9	-0.1	68	114	68	67
208	32.438	0.160	0.041	0.41	87	-5.47	101	96.1	0.2	68	114	68	68
209	32.594	0.156	0.041	0.42	87	-5.47	99	96.0	-0.1	68	113	68	68
210	32.754	0.160	0.041	0.47	87	-5.47	101	95.9	-0.1	68	112	68	68
211	32.911	0.157	0.041	0.38	87	-5.47	99	96.0	0.1	68	112	68	68
212	33.071	0.160	0.041	0.41	87	-5.47	101	96.0	0	68	111	68	68
213	33.229	0.158	0.041	0.45	87	-5.47	100	96.9	0.9	68	111	68	68
214	33.386	0.157	0.041	0.41	87	-5.47	99	96.0	-0.9	68	110	68	68
215	33.545	0.159	0.041	0.44	87	-5.47	100	96.0	0	68	110	68	69
216	33.702	0.157	0.041	0.44	87	-5.47	99	95.9	-0.1	68	109	68	69
217	33.860	0.158	0.041	0.45	87	-5.47	100	96.0	0.1	68	109	68	68
218	34.018	0.158	0.041	0.42	87	-5.47	100	97.1	1.1	68	108	67	68
219	34.176	0.158	0.041	0.35	87	-5.47	100	96.0	-1.1	68	108	67	68
220	34.335	0.159	0.041	0.45	87	-5.47	100	97.0	1	68	107	67	68
221	34.494	0.159	0.041	0.39	87	-5.47	100	95.7	-1.3	68	106	67	68
222	34.652	0.158	0.041	0.45	87	-5.47	100	97.0	1.3	68	106	67	68
223	34.809	0.157	0.041	0.46	87	-5.47	99	97.0	0	68	106	67	68

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
224	34.968	0.159	0.041	0.37	87	-5.47	100	97.0	0	68	105	67	68
225	35.127	0.159	0.041	0.41	87	-5.47	100	97.0	0	68	105	67	67
226	35.284	0.157	0.041	0.39	87	-5.47	99	97.0	0	68	104	67	67
227	35.443	0.159	0.041	0.43	87	-5.47	100	97.1	0.1	68	104	67	66
228	35.600	0.157	0.041	0.42	87	-5.47	99	97.0	-0.1	68	104	67	66
229	35.759	0.159	0.041	0.39	87	-5.47	100	96.9	-0.1	68	103	67	67
230	35.915	0.156	0.041	0.43	87	-5.47	99	97.0	0.1	68	103	67	68
231	36.074	0.159	0.041	0.45	87	-5.47	100	97.1	0.1	68	102	67	68
232	36.233	0.159	0.041	0.40	87	-5.47	100	97.0	-0.1	68	101	67	68
233	36.391	0.158	0.041	0.39	87	-5.47	100	97.0	0	68	101	67	68
234	36.551	0.160	0.041	0.44	87	-5.47	101	97.0	0	68	101	67	68
235	36.709	0.158	0.041	0.45	87	-5.47	100	96.9	-0.1	68	101	67	68
236	36.867	0.158	0.041	0.42	87	-5.47	100	97.1	0.2	68	101	67	68
237	37.026	0.159	0.041	0.40	87	-5.47	100	97.0	-0.1	68	100	67	68
238	37.184	0.158	0.041	0.45	87	-5.47	100	97.0	0	68	99	67	68
239	37.345	0.161	0.041	0.44	87	-5.47	102	97.0	0	68	99	67	68
240	37.502	0.157	0.041	0.46	87	-5.47	99	97.1	0.1	68	99	67	68
241	37.660	0.158	0.041	0.46	87	-5.47	100	96.9	-0.2	68	99	67	68
242	37.816	0.156	0.041	0.38	87	-5.47	99	97.0	0.1	68	98	67	68
243	37.974	0.158	0.041	0.41	87	-5.47	100	97.1	0.1	68	98	68	68
244	38.134	0.160	0.041	0.40	87	-5.47	101	97.2	0.1	68	98	68	68
245	38.290	0.156	0.041	0.42	87	-5.47	99	97.7	0.5	68	98	67	68
246	38.450	0.160	0.041	0.41	87	-5.47	101	97.0	-0.7	68	97	67	68
247	38.607	0.157	0.041	0.41	87	-5.47	101	96.7	-0.3	83	159	69	68
248	38.765	0.158	0.041	0.41	87	-5.47	101	96.0	-0.7	80	175	68	68
249	38.922	0.157	0.041	0.46	87	-5.47	100	96.0	0	81	185	68	67
250	39.080	0.158	0.041	0.41	87	-5.47	101	95.3	-0.7	82	193	69	67
251	39.238	0.158	0.041	0.44	87	-5.47	101	95.0	-0.3	84	199	69	67
252	39.395	0.157	0.041	0.45	87	-5.47	101	94.0	-1	85	206	69	68
253	39.553	0.158	0.041	0.40	87	-5.47	101	94.0	0	85	213	69	67
254	39.709	0.156	0.041	0.43	87	-5.47	100	92.8	-1.2	86	219	69	67
255	39.868	0.159	0.041	0.41	87	-5.47	102	92.0	-0.8	87	224	69	67

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
256	40.026	0.158	0.041	0.54	87	-5.47	102	91.2	-0.8	88	229	69	67
257	40.182	0.156	0.041	0.43	87	-5.47	100	90.9	-0.3	88	234	70	67
258	40.340	0.158	0.041	0.40	87	-5.47	102	90.8	-0.1	89	238	70	67
259	40.496	0.156	0.041	0.39	87	-5.47	101	89.0	-1.8	90	242	70	68
260	40.653	0.157	0.041	0.46	87	-5.47	101	88.0	-1	90	246	70	68
261	40.812	0.159	0.041	0.44	87	-5.47	103	87.0	-1	90	249	70	68
262	40.968	0.156	0.041	0.39	87	-5.47	101	85.9	-1.1	91	251	70	67
263	41.126	0.158	0.041	0.41	87	-5.47	102	85.0	-0.9	91	254	70	68
264	41.285	0.159	0.041	0.44	87	-5.47	103	84.0	-1	91	256	70	68
265	41.440	0.155	0.041	0.44	87	-5.47	100	84.0	0	92	258	71	68
266	41.597	0.157	0.041	0.46	87	-5.47	101	83.0	-1	92	260	71	67
267	41.753	0.156	0.041	0.43	87	-5.47	101	82.0	-1	92	262	71	67
268	41.912	0.159	0.041	0.39	87	-5.47	103	81.0	-1	92	264	71	68
269	42.070	0.158	0.041	0.41	87	-5.47	102	78.9	-2.1	93	265	71	68
270	42.225	0.155	0.041	0.38	87	-5.47	100	79.0	0.1	92	265	71	67
271	42.383	0.158	0.041	0.39	87	-5.47	102	78.0	-1	92	265	71	63
272	42.539	0.156	0.041	0.42	87	-5.47	101	77.0	-1	92	267	71	63
273	42.695	0.156	0.041	0.44	87	-5.47	101	75.7	-1.3	91	268	71	63
274	42.853	0.158	0.041	0.44	87	-5.47	102	75.0	-0.7	92	270	71	65
275	43.009	0.156	0.041	0.46	87	-5.47	100	74.0	-1	82	267	70	66
276	43.167	0.158	0.041	0.42	87	-5.47	100	73.2	-0.8	73	252	70	66
277	43.327	0.160	0.041	0.40	87	-5.47	101	72.0	-1.2	71	239	69	66
278	43.485	0.158	0.041	0.43	87	-5.47	100	72.0	0	71	229	69	67
279	43.645	0.160	0.041	0.41	87	-5.47	101	72.0	0	70	221	69	63
280	43.801	0.156	0.041	0.42	87	-5.47	99	71.2	-0.8	69	214	68	62
281	43.962	0.161	0.041	0.41	87	-5.47	102	72.0	0.8	69	208	68	63
282	44.119	0.157	0.041	0.40	87	-5.47	99	71.0	-1	68	203	68	63
283	44.279	0.160	0.041	0.42	87	-5.47	101	71.0	0	68	198	67	63
284	44.435	0.156	0.041	0.43	87	-5.47	99	71.0	0	68	194	67	63
285	44.594	0.159	0.041	0.39	87	-5.47	100	71.0	0	68	190	67	63
286	44.752	0.158	0.041	0.44	87	-5.47	100	71.0	0	68	186	67	63
287	44.910	0.158	0.041	0.44	87	-5.47	100	71.0	0	68	183	66	63

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
288	45.070	0.160	0.041	0.50	87	-5.47	101	71.0	0	68	180	66	63
289	45.227	0.157	0.041	0.42	87	-5.47	99	71.0	0	67	177	66	63
290	45.389	0.162	0.041	0.41	87	-5.47	102	71.0	0	67	174	66	63
291	45.547	0.158	0.041	0.41	87	-5.47	100	71.0	0	67	172	65	63
292	45.706	0.159	0.041	0.38	87	-5.47	100	71.0	0	67	169	65	63
293	45.864	0.158	0.041	0.47	87	-5.47	100	71.0	0	67	167	65	63
294	46.023	0.159	0.041	0.42	87	-5.47	100	71.0	0	67	165	65	63
295	46.182	0.159	0.041	0.44	87	-5.47	100	71.1	0.1	67	163	65	63
296	46.342	0.160	0.041	0.44	87	-5.47	101	71.0	-0.1	67	161	65	63
297	46.503	0.161	0.041	0.41	87	-5.47	102	71.0	0	67	159	65	63
298	46.661	0.158	0.041	0.47	86	-5.47	100	71.0	0	67	157	64	63
299	46.821	0.160	0.041	0.35	86	-5.47	101	71.0	0	67	155	64	62
300	46.979	0.158	0.041	0.42	86	-5.47	100	70.9	-0.1	67	154	64	64
301	47.140	0.161	0.041	0.43	86	-5.47	102	71.0	0.1	67	152	64	65
302	47.297	0.157	0.041	0.46	86	-5.47	99	71.5	0.5	67	150	64	64
303	47.456	0.159	0.041	0.44	86	-5.47	101	71.1	-0.4	67	149	64	64
304	47.614	0.158	0.041	0.45	86	-5.47	100	71.0	-0.1	67	147	64	65
305	47.773	0.159	0.041	0.43	86	-5.47	101	71.0	0	67	146	64	65
306	47.930	0.157	0.041	0.41	86	-5.47	99	71.2	0.2	67	144	64	65
307	48.088	0.158	0.041	0.44	86	-5.47	100	71.0	-0.2	67	143	64	64
308	48.247	0.159	0.041	0.45	86	-5.47	101	71.9	0.9	67	142	65	65
309	48.405	0.158	0.041	0.40	86	-5.47	100	72.0	0.1	67	140	65	65
310	48.565	0.160	0.041	0.44	86	-5.47	101	72.0	0	67	139	65	65
311	48.722	0.157	0.041	0.40	86	-5.47	99	72.0	0	67	138	65	65
312	48.881	0.159	0.041	0.44	86	-5.47	101	72.0	0	67	136	65	65
313	49.037	0.156	0.041	0.45	86	-5.47	99	72.0	0	67	135	65	65
314	49.196	0.159	0.041	0.42	86	-5.47	101	71.6	-0.4	68	134	65	64
315	49.356	0.160	0.041	0.46	86	-5.47	101	72.0	0.4	68	133	65	64
316	49.512	0.156	0.041	0.41	86	-5.47	99	72.0	0	68	132	65	64
317	49.671	0.159	0.041	0.43	86	-5.47	101	72.0	0	68	131	65	64
318	49.828	0.157	0.041	0.43	86	-5.47	99	71.9	-0.1	68	130	65	64
319	49.988	0.160	0.041	0.45	86	-5.47	101	72.0	0.1	68	129	65	64

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
320	50.146	0.158	0.041	0.39	86	-5.47	100	72.0	0	68	127	65	64
321	50.304	0.158	0.041	0.42	86	-5.47	100	72.0	0	68	127	65	64
322	50.463	0.159	0.041	0.43	86	-5.47	101	72.0	0	68	125	65	64
323	50.621	0.158	0.041	0.46	86	-5.47	100	71.9	-0.1	68	125	65	64
324	50.781	0.160	0.041	0.46	86	-5.47	101	72.0	0.1	68	124	65	64
325	50.937	0.156	0.041	0.44	86	-5.47	99	72.1	0.1	68	123	65	64
326	51.096	0.159	0.041	0.41	86	-5.47	101	72.0	-0.1	68	122	65	64
327	51.253	0.157	0.041	0.41	86	-5.47	99	71.9	-0.1	68	121	65	64
328	51.413	0.160	0.041	0.40	86	-5.47	101	72.0	0.1	68	120	65	64
329	51.570	0.157	0.041	0.45	86	-5.47	99	72.0	0	68	119	65	64
330	51.729	0.159	0.041	0.44	86	-5.47	101	72.0	0	68	119	65	64
331	51.888	0.159	0.041	0.41	86	-5.47	101	72.0	0	68	118	65	64
332	52.047	0.159	0.041	0.39	86	-5.47	101	72.0	0	68	117	65	64
333	52.207	0.160	0.041	0.45	86	-5.47	101	71.9	-0.1	68	116	66	64
334	52.364	0.157	0.041	0.44	86	-5.47	99	72.0	0.1	68	116	65	64
335	52.524	0.160	0.041	0.45	86	-5.47	101	73.0	1	68	115	66	64
336	52.680	0.156	0.041	0.40	86	-5.47	99	73.0	0	68	114	66	64
337	52.839	0.159	0.041	0.40	86	-5.47	101	73.1	0.1	68	114	66	64
338	52.997	0.158	0.041	0.40	86	-5.47	100	73.0	-0.1	68	113	66	64
339	53.154	0.157	0.041	0.44	86	-5.47	99	73.0	0	68	113	66	63
340	53.313	0.159	0.041	0.46	86	-5.47	101	73.0	0	68	112	66	64
341	53.469	0.156	0.041	0.39	86	-5.47	99	73.1	0.1	68	111	66	64
342	53.628	0.159	0.041	0.47	86	-5.47	101	73.0	-0.1	68	111	66	64
343	53.786	0.158	0.041	0.43	85	-5.47	100	72.9	-0.1	68	110	66	64
344	53.945	0.159	0.041	0.44	86	-5.47	101	73.0	0.1	68	109	66	64
345	54.103	0.158	0.041	0.44	86	-5.47	100	72.4	-0.6	67	109	66	64
346	54.260	0.157	0.041	0.43	85	-5.47	100	73.0	0.6	68	108	66	64
347	54.419	0.159	0.041	0.45	85	-5.47	101	73.0	0	67	108	66	64
348	54.576	0.157	0.041	0.43	85	-5.47	99	73.0	0	67	108	66	64
349	54.735	0.159	0.041	0.46	85	-5.47	101	73.0	0	67	107	66	64
350	54.892	0.157	0.041	0.42	85	-5.47	99	73.0	0	67	106	66	63
351	55.050	0.158	0.041	0.45	85	-5.47	100	73.0	0	67	106	66	63

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
352	55.209	0.159	0.041	0.42	85	-5.47	101	73.0	0	67	106	65	63
353	55.365	0.156	0.041	0.45	85	-5.47	99	73.1	0.1	67	105	65	64
354	55.525	0.160	0.041	0.39	85	-5.47	101	73.1	0	67	105	66	64
355	55.682	0.157	0.041	0.44	85	-5.47	99	73.0	-0.1	67	104	66	64
356	55.842	0.160	0.041	0.46	85	-5.47	101	73.1	0.1	67	104	66	64
357	55.998	0.156	0.041	0.43	85	-5.47	99	73.0	-0.1	67	104	66	64
358	56.156	0.158	0.041	0.43	85	-5.47	100	73.0	0	67	103	66	63
359	56.316	0.160	0.041	0.37	85	-5.47	101	73.0	0	67	103	66	63
360	56.474	0.158	0.041	0.39	85	-5.47	100	73.1	0.1	67	102	66	63
361	56.633	0.159	0.041	0.43	85	-5.47	101	73.0	-0.1	67	102	66	64
362	56.789	0.156	0.041	0.43	85	-5.47	99	72.9	-0.1	67	102	66	64
363	56.949	0.160	0.041	0.45	85	-5.47	101	73.0	0.1	67	101	66	64
364	57.106	0.157	0.041	0.41	85	-5.47	99	73.0	0	67	101	66	63
365	57.265	0.159	0.041	0.43	85	-5.47	101	73.0	0	67	101	65	64
366	57.424	0.159	0.041	0.42	85	-5.47	101	73.0	0	67	100	65	64
367	57.581	0.157	0.041	0.41	85	-5.47	99	73.0	0	67	100	66	64
368	57.740	0.159	0.041	0.43	85	-5.47	101	73.0	0	67	99	65	64
369	57.897	0.157	0.041	0.44	85	-5.47	99	73.0	0	67	99	65	63
370	58.056	0.159	0.041	0.43	85	-5.47	101	73.0	0	67	98	65	63
371	58.213	0.157	0.041	0.42	85	-5.47	99	72.7	-0.3	67	98	65	63
372	58.371	0.158	0.041	0.43	85	-5.47	100	73.0	0.3	67	98	65	64
373	58.530	0.159	0.041	0.42	85	-5.47	101	73.0	0	67	97	65	64
374	58.687	0.157	0.041	0.39	85	-5.47	99	73.0	0	67	98	65	64
375	58.847	0.160	0.041	0.40	85	-5.47	101	73.0	0	67	97	65	63
376	59.003	0.156	0.041	0.37	85	-5.47	99	73.0	0	67	97	65	64
377	59.161	0.158	0.041	0.44	85	-5.47	100	73.0	0	67	97	65	64
378	59.317	0.156	0.041	0.43	85	-5.47	100	72.8	-0.2	83	156	67	64
379	59.474	0.157	0.041	0.41	85	-5.47	101	73.0	0.2	79	173	67	64
380	59.632	0.158	0.041	0.44	85	-5.47	101	72.0	-1	79	184	66	64
381	59.788	0.156	0.041	0.40	85	-5.47	100	72.0	0	81	193	66	65
382	59.947	0.159	0.041	0.41	85	-5.47	102	70.9	-1.1	82	201	67	64
383	60.104	0.157	0.041	0.42	85	-5.47	101	71.0	0.1	83	208	67	64

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
384	60.263	0.159	0.041	0.45	85	-5.47	102	70.0	-1	84	215	67	64
385	60.421	0.158	0.041	0.45	85	-5.47	102	70.0	0	85	221	67	64
386	60.577	0.156	0.041	0.43	85	-5.47	101	69.0	-1	86	227	67	63
387	60.735	0.158	0.041	0.42	85	-5.47	102	67.9	-1.1	87	232	68	64
388	60.891	0.156	0.041	0.43	85	-5.47	101	67.0	-0.9	87	237	68	64
389	61.048	0.157	0.041	0.44	85	-5.47	101	65.7	-1.3	88	241	68	64
390	61.208	0.160	0.041	0.39	85	-5.47	103	64.9	-0.8	88	245	68	64
391	61.362	0.154	0.041	0.42	85	-5.47	100	64.0	-0.9	89	248	68	64
392	61.520	0.158	0.041	0.40	85	-5.47	102	64.0	0	89	252	68	64
393	61.677	0.157	0.041	0.42	85	-5.47	102	62.9	-1.1	90	255	68	64
394	61.835	0.158	0.041	0.39	85	-5.47	102	62.2	-0.7	90	257	68	64
395	61.993	0.158	0.041	0.48	85	-5.47	102	61.1	-1.1	90	260	69	64
396	62.149	0.156	0.041	0.44	85	-5.47	101	59.7	-1.4	91	263	69	64
397	62.307	0.158	0.041	0.46	85	-5.47	102	59.0	-0.7	91	266	69	64
398	62.463	0.156	0.041	0.43	85	-5.47	101	58.3	-0.7	91	268	69	64
399	62.619	0.156	0.041	0.41	85	-5.47	101	57.0	-1.3	91	270	69	65
400	62.778	0.159	0.041	0.40	85	-5.47	103	55.9	-1.1	91	272	69	64
401	62.933	0.155	0.041	0.42	85	-5.47	101	54.1	-1.8	92	274	69	64
402	63.089	0.156	0.041	0.42	85	-5.47	101	54.0	-0.1	92	275	69	64
403	63.247	0.158	0.041	0.43	85	-5.47	101	52.9	-1.1	78	265	69	64
404	63.404	0.157	0.041	0.47	85	-5.47	100	51.9	-1	72	251	68	64
405	63.562	0.158	0.041	0.40	85	-5.47	100	50.9	-1	71	238	68	64
406	63.720	0.158	0.041	0.41	85	-5.47	100	52.1	1.2	70	228	68	64
407	63.879	0.159	0.041	0.40	85	-5.47	101	50.0	-2.1	70	220	68	64
408	64.036	0.157	0.041	0.36	85	-5.47	100	49.9	-0.1	69	213	67	64
409	64.194	0.158	0.041	0.42	85	-5.47	100	49.9	0	69	207	67	64
410	64.354	0.160	0.041	0.42	85	-5.47	102	49.9	0	69	201	67	64
411	64.510	0.156	0.041	0.40	85	-5.47	99	50.5	0.6	69	197	67	64
412	64.670	0.160	0.041	0.47	85	-5.47	102	49.9	-0.6	69	193	67	64
413	64.826	0.156	0.041	0.45	85	-5.47	99	49.7	-0.2	69	189	67	64
414	64.985	0.159	0.041	0.44	85	-5.47	101	49.9	0.2	68	185	67	64
415	65.142	0.157	0.041	0.39	85	-5.47	100	49.9	0	68	182	67	64

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
416	65.299	0.157	0.041	0.39	85	-5.47	100	48.9	-1	68	179	66	64
417	65.458	0.159	0.041	0.40	85	-5.47	101	49.9	1	68	176	66	63
418	65.614	0.156	0.041	0.44	85	-5.47	99	49.9	0	68	173	66	63
419	65.775	0.161	0.041	0.46	85	-5.47	102	50.3	0.4	68	171	66	63
420	65.932	0.157	0.041	0.46	85	-5.47	100	49.9	-0.4	68	168	66	63
421	66.091	0.159	0.041	0.46	85	-5.47	101	48.9	-1	68	166	66	64
422	66.247	0.156	0.041	0.41	85	-5.47	99	49.9	1	68	164	66	64
423	66.406	0.159	0.041	0.42	85	-5.47	101	49.9	0	68	162	66	64
424	66.565	0.159	0.041	0.42	85	-5.47	101	49.9	0	68	160	66	64
425	66.723	0.158	0.041	0.45	85	-5.47	100	49.7	-0.2	68	158	66	64
426	66.881	0.158	0.041	0.39	85	-5.47	100	49.9	0.2	68	156	66	64
427	67.038	0.157	0.041	0.43	85	-5.47	100	50.9	1	68	154	66	64
428	67.197	0.159	0.041	0.41	85	-5.47	101	49.9	-1	68	153	66	64
429	67.354	0.157	0.041	0.41	85	-5.47	100	49.9	0	68	151	66	64
430	67.513	0.159	0.041	0.44	85	-5.47	101	49.9	0	68	150	66	64
431	67.671	0.158	0.041	0.44	85	-5.47	100	49.9	0	68	148	66	64
432	67.829	0.158	0.041	0.44	85	-5.47	100	49.9	0	68	146	66	64
433	67.988	0.159	0.041	0.54	85	-5.47	101	49.9	0	68	145	66	64
434	68.145	0.157	0.041	0.42	85	-5.47	100	49.9	0	68	143	66	64
435	68.303	0.158	0.041	0.44	85	-5.47	100	49.9	0	68	142	65	64
436	68.460	0.157	0.041	0.45	85	-5.47	100	49.9	0	68	141	65	64
437	68.617	0.157	0.041	0.46	85	-5.47	100	49.9	0	68	140	65	63
438	68.776	0.159	0.041	0.48	85	-5.47	101	49.9	0	68	138	65	64
439	68.933	0.157	0.041	0.40	85	-5.47	100	49.9	0	68	137	65	64
440	69.092	0.159	0.041	0.40	85	-5.47	101	49.9	0	68	136	65	64
441	69.249	0.157	0.041	0.45	85	-5.47	100	49.9	0	68	135	65	63
442	69.408	0.159	0.041	0.43	85	-5.47	101	49.9	0	68	133	65	64
443	69.565	0.157	0.041	0.41	85	-5.47	100	49.9	0	68	132	65	63
444	69.723	0.158	0.041	0.43	85	-5.47	100	49.9	0	68	131	65	63
445	69.882	0.159	0.041	0.40	85	-5.47	101	49.9	0	68	131	65	63
446	70.040	0.158	0.041	0.40	85	-5.47	100	49.9	0	68	129	65	63
447	70.199	0.159	0.041	0.44	85	-5.47	101	49.9	0	68	128	65	63

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
448	70.356	0.157	0.041	0.42	85	-5.47	99	49.9	0	67	127	65	63
449	70.515	0.159	0.041	0.40	85	-5.47	101	51.1	1.2	67	126	65	63
450	70.671	0.156	0.041	0.45	85	-5.47	99	50.8	-0.3	67	125	65	63
451	70.829	0.158	0.041	0.40	85	-5.47	100	50.9	0.1	67	124	65	63
452	70.988	0.159	0.041	0.39	85	-5.47	101	50.9	0	67	123	65	63
453	71.144	0.156	0.041	0.46	85	-5.47	99	50.9	0	67	123	65	63
454	71.304	0.160	0.041	0.40	85	-5.47	101	50.9	0	67	122	65	63
455	71.461	0.157	0.041	0.43	85	-5.47	99	50.9	0	67	121	65	63
456	71.621	0.160	0.041	0.39	85	-5.47	101	50.9	0	67	120	65	63
457	71.778	0.157	0.041	0.39	85	-5.47	99	50.9	0	67	119	65	63
458	71.937	0.159	0.041	0.46	85	-5.47	101	51.0	0.1	67	119	65	63
459	72.097	0.160	0.041	0.47	85	-5.47	101	50.9	-0.1	67	118	65	63
460	72.252	0.155	0.041	0.43	85	-5.47	98	50.9	0	67	117	65	63
461	72.411	0.159	0.041	0.41	85	-5.47	101	50.9	0	67	117	65	63
462	72.568	0.157	0.041	0.45	85	-5.47	99	50.9	0	67	116	65	63
463	72.726	0.158	0.041	0.46	85	-5.47	100	50.9	0	67	115	65	63
464	72.884	0.158	0.041	0.44	85	-5.47	100	51.0	0.1	67	114	65	63
465	73.040	0.156	0.041	0.45	85	-5.47	99	50.9	-0.1	67	114	65	63
466	73.200	0.160	0.041	0.44	85	-5.47	101	50.9	0	67	113	65	63
467	73.356	0.156	0.041	0.45	85	-5.47	99	50.9	0	67	112	65	63
468	73.513	0.157	0.041	0.48	85	-5.47	99	50.9	0	67	112	65	63
469	73.671	0.158	0.041	0.40	85	-5.47	100	50.6	-0.3	67	111	65	63
470	73.829	0.158	0.041	0.39	85	-5.47	100	50.9	0.3	67	111	65	63
471	73.988	0.159	0.041	0.42	85	-5.47	101	50.8	-0.1	67	110	65	63
472	74.145	0.157	0.041	0.43	85	-5.47	99	50.9	0.1	67	109	65	63
473	74.304	0.159	0.041	0.42	85	-5.47	101	50.9	0	67	109	65	63
474	74.461	0.157	0.041	0.42	85	-5.47	99	50.9	0	67	108	65	63
475	74.619	0.158	0.041	0.44	85	-5.47	100	50.6	-0.3	67	108	65	63
476	74.776	0.157	0.041	0.43	85	-5.47	99	50.9	0.3	67	108	65	63
477	74.932	0.156	0.041	0.54	85	-5.47	99	51.0	0.1	67	107	65	63
478	75.091	0.159	0.041	0.43	85	-5.47	101	50.9	-0.1	67	106	65	63
479	75.247	0.156	0.041	0.45	85	-5.47	99	50.9	0	67	106	65	63

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
480	75.405	0.158	0.041	0.39	85	-5.47	100	51.1	0.2	67	106	65	63
481	75.562	0.157	0.041	0.44	85	-5.47	99	51.1	0	67	105	64	63
482	75.718	0.156	0.041	0.43	85	-5.47	99	50.9	-0.2	67	104	64	63
483	75.877	0.159	0.041	0.47	85	-5.47	101	51.8	0.9	67	104	64	63
484	76.032	0.155	0.041	0.40	85	-5.47	98	50.9	-0.9	67	104	64	62
485	76.190	0.158	0.041	0.46	85	-5.47	100	50.9	0	67	103	64	63
486	76.347	0.157	0.041	0.44	85	-5.47	99	51.9	1	67	103	64	62
487	76.503	0.156	0.041	0.40	85	-5.47	99	51.9	0	67	103	64	63
488	76.662	0.159	0.041	0.42	85	-5.47	101	51.9	0	67	102	64	62
489	76.818	0.156	0.041	0.42	85	-5.47	99	51.9	0	67	102	64	63
490	76.976	0.158	0.041	0.40	85	-5.47	100	52.0	0.1	67	101	64	63
491	77.133	0.157	0.041	0.39	85	-5.47	99	51.9	-0.1	67	101	64	63
492	77.290	0.157	0.041	0.44	85	-5.47	99	51.9	0	67	100	64	63
493	77.448	0.158	0.041	0.34	85	-5.47	100	52.0	0.1	66	100	64	63
494	77.604	0.156	0.041	0.43	85	-5.47	99	51.9	-0.1	67	100	64	63
495	77.762	0.158	0.041	0.44	85	-5.47	100	51.9	0	66	100	64	63
496	77.920	0.158	0.041	0.44	84	-5.47	100	51.9	0	66	100	64	62
497	78.077	0.157	0.041	0.41	84	-5.47	100	51.9	0	66	100	64	62
498	78.236	0.159	0.041	0.40	84	-5.47	101	52.1	0.2	66	99	64	61
499	78.390	0.154	0.041	0.45	84	-5.47	98	51.9	-0.2	66	98	64	62
500	78.547	0.157	0.041	0.49	84	-5.47	100	51.9	0	66	98	64	62
501	78.705	0.158	0.041	0.42	84	-5.47	100	51.9	0	66	98	64	62
502	78.860	0.155	0.041	0.39	84	-5.47	98	51.9	0	66	97	64	61
503	79.018	0.158	0.041	0.42	84	-5.47	100	51.9	0	66	97	63	62
504	79.174	0.156	0.041	0.46	84	-5.47	99	51.9	0	66	96	63	62
505	79.330	0.156	0.041	0.39	84	-5.47	99	51.9	0	66	97	63	61
506	79.488	0.158	0.041	0.40	84	-5.47	100	51.9	0	66	96	63	62
507	79.644	0.156	0.041	0.43	84	-5.47	99	51.9	0	66	96	63	61
508	79.801	0.157	0.041	0.44	84	-5.47	100	51.9	0	66	95	63	61
509	79.959	0.158	0.041	0.47	84	-5.47	102	52.0	0.1	81	156	65	61
510	80.115	0.156	0.041	0.47	84	-5.47	100	51.9	-0.1	77	174	64	61
511	80.273	0.158	0.041	0.40	84	-5.47	101	50.9	-1	79	183	63	62

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
512	80.430	0.157	0.041	0.41	84	-5.47	101	51.0	0.1	81	189	64	61
513	80.588	0.158	0.041	0.41	84	-5.47	102	50.9	-0.1	82	195	64	61
514	80.746	0.158	0.041	0.40	84	-5.47	102	49.9	-1	83	202	64	61
515	80.902	0.156	0.041	0.41	84	-5.47	101	49.9	0	83	208	64	62
516	81.061	0.159	0.041	0.42	84	-5.47	103	48.9	-1	84	214	65	62
517	81.217	0.156	0.041	0.47	84	-5.47	101	48.9	0	85	219	65	61
518	81.376	0.159	0.041	0.41	84	-5.47	103	47.9	-1	85	224	65	61
519	81.532	0.156	0.041	0.45	84	-5.47	101	46.9	-1	86	229	65	62
520	81.689	0.157	0.041	0.44	84	-5.47	101	46.9	0	86	234	65	62
521	81.847	0.158	0.041	0.46	84	-5.47	102	45.9	-1	87	239	65	62
522	82.002	0.155	0.041	0.44	84	-5.47	100	44.9	-1	87	243	65	62
523	82.161	0.159	0.041	0.44	84	-5.47	103	43.8	-1.1	87	247	66	61
524	82.317	0.156	0.041	0.45	84	-5.47	101	43.9	0.1	87	249	66	61
525	82.473	0.156	0.041	0.47	84	-5.47	101	42.9	-1	87	251	66	62
526	82.631	0.158	0.041	0.50	84	-5.47	102	41.8	-1.1	88	254	66	62
527	82.786	0.155	0.041	0.39	84	-5.47	100	40.8	-1	88	256	66	62
528	82.944	0.158	0.041	0.44	84	-5.47	102	40.9	0.1	88	258	66	63
529	83.102	0.158	0.041	0.40	84	-5.47	102	39.8	-1.1	88	260	66	62
530	83.257	0.155	0.041	0.42	84	-5.47	100	38.8	-1	89	262	66	62
531	83.416	0.159	0.041	0.42	84	-5.47	103	37.8	-1	89	263	66	62
532	83.573	0.157	0.041	0.45	84	-5.47	102	36.6	-1.2	89	265	66	62
533	83.730	0.157	0.041	0.41	84	-5.47	102	36.8	0.2	89	266	66	63
534	83.889	0.159	0.041	0.40	84	-5.47	103	35.7	-1.1	89	268	66	62
535	84.044	0.155	0.041	0.45	84	-5.47	100	34.8	-0.9	89	269	66	62
536	84.202	0.158	0.041	0.46	84	-5.47	101	33.7	-1.1	72	254	66	62
537	84.360	0.158	0.041	0.40	84	-5.47	101	33.8	0.1	70	240	65	62
538	84.517	0.157	0.041	0.45	84	-5.47	100	32.7	-1.1	68	229	65	61
539	84.676	0.159	0.041	0.41	84	-5.47	101	32.7	0	68	220	65	62
540	84.832	0.156	0.041	0.42	84	-5.47	99	31.8	-0.9	67	213	64	62
541	84.992	0.160	0.041	0.42	84	-5.47	102	31.9	0.1	67	207	64	62
542	85.149	0.157	0.041	0.45	84	-5.47	100	31.7	-0.2	67	201	64	62
543	85.308	0.159	0.041	0.45	84	-5.47	101	31.8	0.1	67	196	64	62

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
544	85.467	0.159	0.041	0.40	84	-5.47	101	31.7	-0.1	66	192	64	62
545	85.624	0.157	0.041	0.49	84	-5.47	100	31.7	0	66	188	64	62
546	85.783	0.159	0.041	0.44	84	-5.47	101	30.7	-1	66	184	63	62
547	85.939	0.156	0.041	0.41	84	-5.47	99	30.8	0.1	66	181	63	62
548	86.098	0.159	0.041	0.43	84	-5.47	101	30.7	-0.1	66	178	63	62
549	86.256	0.158	0.041	0.41	84	-5.47	100	30.7	0	66	175	63	62
550	86.412	0.156	0.041	0.42	84	-5.47	99	30.7	0	66	172	63	62
551	86.571	0.159	0.041	0.40	84	-5.47	101	30.7	0	66	169	63	62
552	86.728	0.157	0.041	0.42	84	-5.47	100	30.7	0	66	167	63	62
553	86.888	0.160	0.041	0.43	84	-5.47	101	30.6	-0.1	66	165	63	63
554	87.046	0.158	0.041	0.40	84	-5.47	100	30.7	0.1	66	163	63	64
555	87.203	0.157	0.041	0.45	84	-5.47	100	30.7	0	66	160	63	63
556	87.361	0.158	0.041	0.40	84	-5.47	100	30.7	0	66	158	63	63
557	87.517	0.156	0.041	0.41	84	-5.47	99	30.7	0	66	157	63	63
558	87.676	0.159	0.041	0.45	84	-5.47	101	30.7	0	66	155	63	63
559	87.834	0.158	0.041	0.46	84	-5.47	100	30.7	0	66	153	63	63
560	87.990	0.156	0.041	0.47	84	-5.47	99	30.7	0	66	151	63	63
561	88.149	0.159	0.041	0.45	84	-5.47	101	30.7	0	66	150	64	63
562	88.306	0.157	0.041	0.38	84	-5.47	100	30.7	0	66	148	64	63
563	88.464	0.158	0.041	0.45	84	-5.47	100	30.7	0	66	147	64	63
564	88.622	0.158	0.041	0.42	84	-5.47	100	30.7	0	66	145	64	63
565	88.779	0.157	0.041	0.38	84	-5.47	100	30.7	0	66	144	64	63
566	88.937	0.158	0.041	0.43	84	-5.47	100	29.8	-0.9	66	142	64	63
567	89.093	0.156	0.041	0.42	84	-5.47	99	30.7	0.9	66	141	64	63
568	89.251	0.158	0.041	0.57	84	-5.47	100	30.8	0.1	66	139	64	63
569	89.410	0.159	0.041	0.45	84	-5.47	101	30.8	0	66	138	64	63
570	89.566	0.156	0.041	0.41	84	-5.47	99	30.7	-0.1	66	137	64	63
571	89.724	0.158	0.041	0.40	84	-5.47	100	30.7	0	66	136	64	63
572	89.880	0.156	0.041	0.41	84	-5.47	99	30.7	0	66	134	64	63
573	90.036	0.156	0.041	0.44	84	-5.47	99	30.7	0	66	133	64	63
574	90.193	0.157	0.041	0.42	84	-5.47	100	30.7	0	66	132	64	63
575	90.348	0.155	0.041	0.43	84	-5.47	98	30.8	0.1	66	131	64	63

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
576	90.505	0.157	0.041	0.40	84	-5.47	100	30.8	0	66	130	64	63
577	90.661	0.156	0.041	0.46	84	-5.47	99	30.8	0	66	129	64	63
578	90.817	0.156	0.041	0.42	84	-5.47	99	30.7	-0.1	66	128	64	63
579	90.973	0.156	0.041	0.42	84	-5.47	99	31.8	1.1	66	127	65	63
580	91.130	0.157	0.041	0.44	84	-5.47	100	31.7	-0.1	66	126	65	63
581	91.285	0.155	0.041	0.43	84	-5.47	98	31.7	0	66	125	65	63
582	91.443	0.158	0.041	0.43	84	-5.47	100	31.8	0.1	66	123	65	63
583	91.600	0.157	0.041	0.40	84	-5.47	100	31.4	-0.4	66	123	65	63
584	91.755	0.155	0.041	0.42	84	-5.47	98	31.8	0.4	66	121	65	63
585	91.911	0.156	0.041	0.41	84	-5.47	99	31.8	0	66	121	64	63
586	92.067	0.156	0.041	0.39	84	-5.47	99	31.7	-0.1	66	120	64	63
587	92.223	0.156	0.041	0.44	84	-5.47	99	31.8	0.1	65	119	64	63
588	92.381	0.158	0.041	0.37	84	-5.47	100	31.8	0	65	118	64	63
589	92.536	0.155	0.041	0.41	84	-5.47	98	31.8	0	65	117	64	62
590	92.692	0.156	0.041	0.45	84	-5.47	99	31.5	-0.3	65	117	64	62
591	92.849	0.157	0.041	0.43	84	-5.47	99	31.9	0.4	65	116	64	62
592	93.004	0.155	0.041	0.42	84	-5.47	98	31.8	-0.1	65	115	64	62
593	93.162	0.158	0.041	0.43	84	-5.47	100	31.7	-0.1	65	114	64	62
594	93.320	0.158	0.041	0.42	84	-5.47	100	31.9	0.2	65	114	64	62
595	93.475	0.155	0.041	0.44	84	-5.47	98	31.8	-0.1	65	113	64	62
596	93.632	0.157	0.041	0.39	84	-5.47	99	31.7	-0.1	64	112	64	62
597	93.790	0.158	0.041	0.43	84	-5.47	100	31.9	0.2	64	112	64	61
598	93.946	0.156	0.041	0.42	84	-5.47	99	31.8	-0.1	64	111	64	62
599	94.103	0.157	0.041	0.41	84	-5.47	99	31.7	-0.1	64	110	64	62
600	94.260	0.157	0.041	0.42	84	-5.47	99	31.8	0.1	64	110	64	62
601	94.416	0.156	0.041	0.46	84	-5.47	99	31.7	-0.1	64	109	63	61
602	94.575	0.159	0.041	0.44	84	-5.47	101	31.7	0	64	109	63	61
603	94.731	0.156	0.041	0.42	84	-5.47	99	31.8	0.1	64	108	63	61
604	94.886	0.155	0.041	0.41	84	-5.47	98	31.8	0	64	107	63	61
605	95.044	0.158	0.041	0.42	84	-5.47	100	31.7	-0.1	64	107	63	62
606	95.199	0.155	0.041	0.39	84	-5.47	98	31.7	0	64	106	63	62
607	95.355	0.156	0.041	0.43	84	-5.47	99	31.8	0.1	64	105	63	61

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
608	95.512	0.157	0.041	0.42	84	-5.47	99	31.7	-0.1	64	105	63	62
609	95.668	0.156	0.041	0.42	84	-5.47	99	31.8	0.1	64	105	63	62
610	95.824	0.156	0.041	0.43	84	-5.47	99	31.8	0	64	104	63	62
611	95.981	0.157	0.041	0.39	84	-5.47	99	31.8	0	64	103	63	61
612	96.135	0.154	0.041	0.43	84	-5.47	97	31.8	0	64	103	62	62
613	96.292	0.157	0.041	0.37	84	-5.47	99	31.8	0	64	103	62	61
614	96.450	0.158	0.041	0.44	84	-5.47	100	31.8	0	65	102	62	62
615	96.603	0.153	0.041	0.43	84	-5.47	97	32.8	1	65	102	62	62
616	96.760	0.157	0.041	0.37	84	-5.47	99	32.8	0	65	101	62	62
617	96.917	0.157	0.041	0.40	84	-5.47	99	32.6	-0.2	65	101	62	61
618	97.071	0.154	0.041	0.41	84	-5.47	98	33.4	0.8	65	100	62	62
619	97.227	0.156	0.041	0.40	84	-5.47	99	32.8	-0.6	65	100	62	61
620	97.384	0.157	0.041	0.44	84	-5.47	99	31.7	-1.1	65	99	62	62
621	97.538	0.154	0.041	0.38	84	-5.47	98	31.7	0	65	99	62	62
622	97.694	0.156	0.041	0.45	84	-5.47	99	31.7	0	65	99	62	61
623	97.849	0.155	0.041	0.42	84	-5.47	98	32.7	1	65	98	62	62
624	98.004	0.155	0.041	0.44	84	-5.47	98	32.7	0	65	98	62	62
625	98.160	0.156	0.041	0.43	84	-5.47	99	31.9	-0.8	65	97	62	61
626	98.317	0.157	0.041	0.46	84	-5.47	99	32.8	0.9	65	97	62	62
627	98.470	0.153	0.041	0.40	84	-5.47	97	32.7	-0.1	65	97	62	62
628	98.625	0.155	0.041	0.40	84	-5.47	98	32.7	0	65	97	62	62
629	98.783	0.158	0.041	0.42	84	-5.47	100	32.8	0.1	65	97	62	62
630	98.937	0.154	0.041	0.43	84	-5.47	98	32.7	-0.1	65	96	62	62
631	99.093	0.156	0.041	0.39	84	-5.47	99	32.8	0.1	65	96	62	61
632	99.249	0.156	0.041	0.45	84	-5.47	99	32.8	0	65	96	62	61
633	99.403	0.154	0.041	0.38	84	-5.47	98	32.8	0	65	95	62	61
634	99.559	0.156	0.041	0.43	84	-5.47	99	32.7	-0.1	65	95	62	61
635	99.714	0.155	0.041	0.47	84	-5.47	98	32.8	0.1	65	95	62	61
636	99.870	0.156	0.041	0.41	84	-5.47	100	32.8	0	78	158	64	62
637	100.026	0.156	0.041	0.43	84	-5.47	100	32.5	-0.3	76	178	62	62
638	100.183	0.157	0.041	0.40	84	-5.47	101	31.8	-0.7	78	188	63	62
639	100.340	0.157	0.041	0.42	84	-5.47	101	31.8	0	79	196	63	62

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
640	100.498	0.158	0.041	0.44	84	-5.47	102	31.7	-0.1	80	202	63	62
641	100.656	0.158	0.041	0.41	84	-5.47	102	30.7	-1	81	207	64	62
642	100.811	0.155	0.041	0.30	84	-5.47	100	30.8	0.1	82	212	64	62
643	100.969	0.158	0.041	0.45	84	-5.47	102	30.6	-0.2	83	216	64	63
644	101.124	0.155	0.041	0.40	84	-5.47	100	29.5	-1.1	83	219	64	63
645	101.281	0.157	0.041	0.40	84	-5.47	101	29.8	0.3	84	223	65	63
646	101.440	0.159	0.041	0.40	84	-5.47	103	28.7	-1.1	84	226	65	63
647	101.596	0.156	0.041	0.43	84	-5.47	101	28.7	0	85	230	65	63
648	101.755	0.159	0.041	0.42	84	-5.47	103	27.8	-0.9	86	234	65	63
649	101.911	0.156	0.041	0.41	84	-5.47	101	27.8	0	86	237	66	63
650	102.067	0.156	0.041	0.44	84	-5.47	101	26.7	-1.1	87	240	66	63
651	102.226	0.159	0.041	0.40	84	-5.47	103	25.8	-0.9	88	243	66	63
652	102.381	0.155	0.041	0.42	84	-5.47	100	25.8	0	88	245	66	63
653	102.539	0.158	0.041	0.40	84	-5.47	102	24.8	-1	88	248	66	63
654	102.696	0.157	0.041	0.44	84	-5.47	102	23.8	-1	88	251	67	63
655	102.852	0.156	0.041	0.43	84	-5.47	101	23.7	-0.1	89	253	67	63
656	103.008	0.156	0.041	0.43	84	-5.47	101	22.8	-0.9	89	255	67	62
657	103.165	0.157	0.041	0.41	84	-5.47	102	21.8	-1	89	257	67	62
658	103.322	0.157	0.041	0.42	84	-5.47	102	20.9	-0.9	89	259	67	62
659	103.479	0.157	0.041	0.42	84	-5.47	102	20.0	-0.9	89	261	67	62
660	103.636	0.157	0.041	0.52	84	-5.47	102	19.8	-0.2	89	263	67	63
661	103.791	0.155	0.041	0.41	84	-5.47	100	18.5	-1.3	89	265	67	62
662	103.948	0.157	0.041	0.43	84	-5.47	102	17.9	-0.6	89	267	67	62
663	104.103	0.155	0.041	0.42	84	-5.47	99	17.0	-0.9	71	250	67	62
664	104.261	0.158	0.041	0.40	84	-5.47	100	16.9	-0.1	69	237	66	63
665	104.420	0.159	0.041	0.43	84	-5.47	101	15.9	-1	67	226	66	62
666	104.575	0.155	0.041	0.46	84	-5.47	98	15.9	0	67	217	66	62
667	104.733	0.158	0.041	0.48	84	-5.47	100	15.9	0	66	210	66	63
668	104.892	0.159	0.041	0.41	84	-5.47	101	15.9	0	66	204	65	62
669	105.048	0.156	0.041	0.40	84	-5.47	99	15.9	0	65	199	65	62
670	105.206	0.158	0.041	0.40	84	-5.47	100	14.8	-1.1	65	194	65	62
671	105.361	0.155	0.041	0.39	84	-5.47	98	14.9	0.1	65	190	65	62

BOX A TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
672	105.518	0.157	0.041	0.46	84	-5.47	99	14.9	0	65	186	65	62
673	105.675	0.157	0.041	0.40	84	-5.47	99	14.9	0	65	182	64	62
674	105.832	0.157	0.041	0.42	84	-5.47	99	14.9	0	64	179	64	62
675	105.990	0.158	0.041	0.42	84	-5.47	100	15.0	0.1	64	176	64	62
676	106.148	0.158	0.041	0.40	84	-5.47	100	15.0	0	64	173	64	62
677	106.305	0.157	0.041	0.46	84	-5.47	99	15.0	0	64	170	64	62
678	106.463	0.158	0.041	0.44	84	-5.47	100	14.9	-0.1	64	167	64	62
679	106.619	0.156	0.041	0.41	84	-5.47	99	14.9	0	64	165	64	62
680	106.777	0.158	0.041	0.44	84	-5.47	100	15.0	0.1	64	163	63	62
681	106.936	0.159	0.041	0.40	84	-5.47	101	14.9	-0.1	64	160	63	62
682	107.091	0.155	0.041	0.44	84	-5.47	98	14.8	-0.1	64	158	63	62
683	107.250	0.159	0.041	0.43	84	-5.47	101	14.9	0.1	64	156	63	62
684	107.406	0.156	0.041	0.41	84	-5.47	99	14.9	0	64	155	63	62
685	107.564	0.158	0.041	0.50	84	-5.47	100	14.9	0	64	153	63	63
686	107.722	0.158	0.041	0.40	84	-5.47	100	15.0	0.1	64	151	63	62
687	107.878	0.156	0.041	0.42	84	-5.47	99	14.9	-0.1	64	149	63	62
688	108.036	0.158	0.041	0.44	84	-5.47	100	14.9	0	64	148	63	62
689	108.192	0.156	0.041	0.45	84	-5.47	99	15.0	0.1	64	146	63	62

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
0	0.000		0.00	71	-1		66	2.000	6.54	0.24
1	0.141	0.141	0.85	71	-1.14	90	68	2.260	7.78	0.18
2	0.302	0.161	1.09	71	-1.05	103	68	2.230	8.50	0.07
3	0.460	0.158	1.07	71	-1.21	101	68	2.230	8.03	0.06
4	0.616	0.156	1.04	71	-1.02	100	68	2.240	7.83	0.09
5	0.769	0.153	1.13	71	-1.07	98	69	2.240	7.79	0.08
6	0.931	0.162	1.16	71	-1.13	104	69	2.240	7.77	0.08
7	1.094	0.163	1.09	71	-1.04	105	69	2.230	7.66	0.14
8	1.254	0.160	1.02	71	-1.05	103	69	2.240	7.67	0.18
9	1.416	0.162	1.09	71	-1.03	104	69	2.250	7.96	0.16
10	1.575	0.159	1.10	71	-1.17	102	69	2.230	8.24	0.13
11	1.736	0.161	1.11	71	-1.2	104	69	2.240	8.17	0.20
12	1.898	0.162	1.09	71	-1.04	104	69	2.260	8.02	0.26
13	2.056	0.158	1.10	71	-1.02	102	69	2.240	8.18	0.09
14	2.217	0.161	1.13	71	-1.14	104	69	2.240	5.77	1.26
15	2.380	0.163	1.11	71	-1.03	105	70	2.240	5.53	1.45
16	2.538	0.158	0.81	71	-1.14	102	70	2.240	5.54	1.44
17	2.699	0.161	1.32	72	-1.05	104	70	2.240	5.32	1.32
18	2.860	0.161	1.08	72	-1.07	104	70	2.230	5.37	1.34
19	3.017	0.157	1.08	72	-1.05	101	70	2.230	5.53	1.46
20	3.177	0.160	1.00	72	-1.03	103	70	2.220	5.68	1.49
21	3.336	0.159	1.05	72	-1.09	103	70	2.240	5.70	1.63
22	3.497	0.161	1.13	73	-1.04	104	70	2.240	6.02	1.66
23	3.655	0.158	1.08	73	-1.13	102	70	2.250	5.93	1.69
24	3.813	0.158	1.04	73	-1.03	102	70	2.240	6.25	1.49
25	3.973	0.160	1.04	73	-1.03	103	71	2.240	6.92	1.36
26	4.128	0.155	1.06	73	-1.04	100	71	2.240	8.71	0.75
27	4.287	0.159	1.11	74	-1.14	101	71	2.240	8.60	0.65
28	4.447	0.160	1.03	74	-1.21	101	70	2.240	1.13	0.07
29	4.604	0.157	1.07	74	-1.2	99	70	2.240	0.35	0.03
30	4.761	0.157	1.06	74	-1.06	99	70	2.240	0.21	0.05
31	4.919	0.158	1.05	74	-1.03	99	70	2.230	0.36	(0.04)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
32	5.079	0.160	1.06	75	-1.06	100	70	2.240	0.52	0.00
33	5.238	0.159	1.05	75	-1.02	100	70	2.240	0.09	0.01
34	5.395	0.157	1.07	75	-1.08	99	69	2.240	0.15	0.00
35	5.552	0.157	1.05	75	-1.18	99	69	2.240	(0.10)	(0.01)
36	5.710	0.158	1.11	76	-1.2	99	69	2.240	(0.03)	0.01
37	5.868	0.158	1.08	76	-1.06	99	69	2.240	(0.01)	(0.01)
38	6.023	0.155	1.03	76	-1.13	97	69	2.240	0.04	0.01
39	6.180	0.157	1.07	76	-1.12	98	69	2.240	(0.03)	(0.05)
40	6.339	0.159	1.04	76	-1.19	100	69	2.240	0.01	0.00
41	6.497	0.158	1.06	77	-1.04	99	69	2.230	0.00	0.01
42	6.654	0.157	1.07	77	-1.06	98	69	2.240	0.09	(0.01)
43	6.811	0.157	1.07	77	-1.03	98	70	2.250	0.00	0.02
44	6.968	0.157	1.06	77	-1.19	98	69	2.240	0.05	0.05
45	7.127	0.159	1.08	78	-1.03	99	70	2.240	0.05	0.01
46	7.283	0.156	1.07	78	-1.04	97	70	2.280	(0.01)	0.00
47	7.443	0.160	1.05	78	-1.18	100	70	2.240	(0.08)	(0.08)
48	7.598	0.155	1.07	78	-1.17	97	70	2.230	0.05	(0.02)
49	7.756	0.158	1.01	78	-1.03	99	70	2.240	0.02	0.00
50	7.915	0.159	1.10	79	-1.14	99	70	2.250	(0.02)	(0.03)
51	8.070	0.155	1.06	79	-1.08	97	70	2.230	0.00	0.00
52	8.226	0.156	1.07	79	-1.17	97	70	2.300	0.04	(0.10)
53	8.384	0.158	1.07	79	-1.05	99	70	2.230	0.00	0.00
54	8.543	0.159	1.70	80	-1.03	99	70	2.240	0.35	0.00
55	8.700	0.157	1.02	80	-1.15	98	71	2.250	(0.03)	0.01
56	8.856	0.156	0.83	80	-1.15	97	71	2.240	(0.01)	0.01
57	9.013	0.157	1.04	80	-1.07	98	71	2.230	(0.04)	0.01
58	9.170	0.157	1.07	80	-1.05	98	71	2.230	0.04	(0.01)
59	9.329	0.159	1.03	81	-1.19	99	71	2.330	0.00	0.00
60	9.485	0.156	1.10	81	-1.12	97	71	2.280	(0.06)	0.02
61	9.643	0.158	1.04	81	-1.02	98	71	2.280	0.00	(0.02)
62	9.800	0.157	1.06	81	-1.02	98	71	2.250	0.01	(0.01)
63	9.956	0.156	1.07	81	-1.19	97	71	2.240	(0.01)	(0.01)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
64	10.113	0.157	1.00	82	-1.06	97	71	2.240	0.09	(0.03)
65	10.270	0.157	1.03	82	-1.05	97	71	2.240	(0.02)	(0.01)
66	10.429	0.159	1.06	82	-1.18	99	71	2.260	0.04	0.00
67	10.588	0.159	1.04	82	-1.2	99	71	2.250	0.02	0.00
68	10.744	0.156	1.02	82	-1.2	97	71	2.230	0.03	(0.04)
69	10.902	0.158	1.09	83	-1.1	98	71	2.240	0.08	(0.06)
70	11.064	0.162	1.12	83	-1.04	100	71	2.230	0.06	(0.03)
71	11.226	0.162	0.89	83	-1.18	100	71	2.240	(0.26)	(0.03)
72	11.386	0.160	1.08	83	-1.18	99	71	2.240	0.08	0.05
73	11.547	0.161	1.10	83	-1.09	100	71	2.240	0.09	0.01
74	11.709	0.162	1.08	83	-1.02	100	71	2.230	0.05	0.01
75	11.867	0.158	1.08	84	-1.05	98	72	2.230	(0.04)	0.02
76	12.028	0.161	1.07	84	-1.04	99	72	2.240	(0.03)	0.05
77	12.190	0.162	1.08	84	-1.18	100	72	2.240	(0.04)	(0.02)
78	12.348	0.158	1.06	84	-1.16	98	72	2.250	(0.03)	0.01
79	12.507	0.159	1.11	84	-1.03	98	72	2.240	0.03	(0.05)
80	12.667	0.160	1.37	84	-1.03	99	72	2.240	0.09	0.00
81	12.825	0.158	1.04	85	-1.14	97	72	2.230	0.03	0.00
82	12.990	0.165	0.88	85	-1.07	102	72	2.240	(0.08)	0.00
83	13.151	0.161	1.10	85	-1.04	99	72	2.240	(0.03)	(0.03)
84	13.308	0.157	1.14	85	-1.2	97	72	2.280	0.06	0.06
85	13.470	0.162	1.07	85	-1.2	100	72	2.230	0.03	(0.04)
86	13.631	0.161	1.27	85	-1.06	99	72	2.230	0.07	(0.06)
87	13.790	0.159	1.10	85	-1.14	98	72	2.230	0.05	0.02
88	13.952	0.162	2.07	86	-1.1	100	72	2.230	(0.03)	0.01
89	14.111	0.159	1.08	86	-1.06	98	72	2.280	0.05	(0.04)
90	14.270	0.159	1.37	86	-1.03	98	72	2.240	(0.05)	(0.07)
91	14.434	0.164	1.11	86	-1.02	101	72	2.250	(0.02)	(0.03)
92	14.593	0.159	1.09	86	-1.17	98	72	2.240	(0.07)	(0.02)
93	14.755	0.162	1.11	86	-1.03	100	73	2.240	(0.04)	0.00
94	14.917	0.162	1.18	86	-1.05	100	72	2.240	0.11	0.02
95	15.076	0.159	1.10	86	-1.06	98	72	2.240	0.05	0.05

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
96	15.238	0.162	1.12	87	-1.13	100	72	2.210	0.00	(0.02)
97	15.397	0.159	1.09	87	-1.16	98	72	2.240	(0.06)	(0.04)
98	15.555	0.158	1.10	87	-1.03	97	72	2.310	(0.01)	(0.02)
99	15.717	0.162	1.17	87	-1.04	100	72	2.240	0.02	(0.02)
100	15.877	0.160	1.21	87	-1.04	98	72	2.240	0.00	(0.03)
101	16.036	0.159	1.14	87	-1.19	98	72	2.190	0.04	0.04
102	16.197	0.161	1.10	87	-1.02	99	72	2.230	0.02	(0.03)
103	16.358	0.161	1.08	87	-1.18	99	72	2.230	(0.02)	(0.05)
104	16.518	0.160	0.96	87	-1.06	98	72	2.240	0.06	(0.04)
105	16.678	0.160	1.10	87	-1.15	98	72	2.250	0.00	(0.02)
106	16.837	0.159	0.99	88	-1.16	98	72	2.240	0.10	(0.05)
107	16.999	0.162	1.00	88	-1.05	99	72	2.250	(0.07)	0.00
108	17.159	0.160	1.09	88	-1.05	98	72	2.290	(0.03)	0.02
109	17.318	0.159	1.07	88	-1.2	98	72	2.250	(0.28)	(0.04)
110	17.480	0.162	1.08	88	-1.04	99	72	2.240	0.05	(0.01)
111	17.643	0.163	1.11	88	-1.12	100	72	2.240	0.01	(0.02)
112	17.804	0.161	1.06	88	-1.04	99	72	2.230	0.04	(0.03)
113	17.966	0.162	0.90	88	-1.05	99	72	2.240	0.13	0.03
114	18.126	0.160	1.06	88	-1.17	98	72	2.240	(0.02)	(0.06)
115	18.286	0.160	1.08	88	-1.07	98	72	2.260	(0.04)	(0.02)
116	18.447	0.161	1.07	88	-1.04	99	72	2.230	0.26	(0.05)
117	18.607	0.160	1.13	88	-1.18	98	72	2.250	(0.01)	(0.06)
118	18.770	0.163	1.08	88	-1.02	100	72	2.240	0.02	(0.04)
119	18.935	0.165	0.90	88	-1.09	102	73	2.240	5.27	0.79
120	19.096	0.161	1.10	88	-1.03	100	73	2.240	0.49	0.12
121	19.258	0.162	1.11	88	-1.13	101	73	2.250	1.20	0.25
122	19.419	0.161	1.12	89	-1.03	100	73	2.270	2.50	0.65
123	19.579	0.160	1.09	89	-1.11	99	73	2.240	5.84	0.82
124	19.741	0.162	1.14	89	-1.06	101	73	2.180	9.07	0.21
125	19.899	0.158	1.09	89	-1.11	98	73	2.230	9.30	0.19
126	20.061	0.162	1.11	89	-1.15	101	74	2.230	8.83	0.45
127	20.222	0.161	1.10	89	-1.13	100	74	2.240	9.80	0.18

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
128	20.380	0.158	1.07	89	-1.03	98	74	2.230	10.68	0.07
129	20.543	0.163	1.09	89	-1.04	102	74	2.230	10.60	0.09
130	20.703	0.160	1.12	89	-1.16	100	74	2.240	10.09	0.16
131	20.863	0.160	1.46	89	-1.04	100	74	2.240	10.31	0.12
132	21.024	0.161	1.15	89	-1.19	100	75	2.250	9.84	0.11
133	21.184	0.160	1.12	89	-1.2	100	75	2.240	10.08	0.12
134	21.346	0.162	1.10	89	-1.19	101	75	2.230	9.85	0.20
135	21.508	0.162	1.09	89	-1.2	101	75	2.270	9.33	0.45
136	21.668	0.160	1.07	89	-1.04	100	75	2.240	10.19	0.18
137	21.828	0.160	0.97	89	-1.19	100	75	2.240	10.13	0.16
138	21.990	0.162	1.57	89	-1.18	101	75	2.240	9.91	0.27
139	22.147	0.157	1.13	89	-1.06	98	75	2.240	10.00	0.23
140	22.311	0.164	1.12	89	-1.06	103	75	2.240	9.53	0.34
141	22.472	0.161	1.17	89	-1.07	101	75	2.230	13.23	0.07
142	22.630	0.158	1.07	89	-1.21	99	75	2.230	12.43	0.13
143	22.791	0.161	1.07	89	-1.03	101	75	2.240	12.08	0.04
144	22.951	0.160	1.08	89	-1.18	100	75	2.240	11.64	0.07
145	23.112	0.161	1.11	89	-1.12	101	74	2.240	11.14	0.14
146	23.276	0.164	1.10	89	-1.04	101	73	2.250	10.16	0.12
147	23.436	0.160	1.13	89	-1.19	98	72	2.240	0.96	(0.04)
148	23.598	0.162	1.06	89	-1.2	99	72	2.240	0.36	0.00
149	23.763	0.165	1.15	89	-1.09	101	71	2.250	0.29	(0.07)
150	23.924	0.161	1.42	89	-1.09	99	71	2.230	0.21	(0.05)
151	24.088	0.164	1.13	89	-1.12	100	71	2.230	0.13	(0.03)
152	24.248	0.160	1.28	89	-1.03	98	71	2.230	0.12	(0.02)
153	24.411	0.163	1.12	89	-1.06	100	71	2.250	0.09	(0.07)
154	24.570	0.159	1.05	89	-1.19	97	71	2.240	0.02	(0.05)
155	24.732	0.162	1.13	89	-1.03	99	71	2.240	0.08	(0.08)
156	24.895	0.163	1.09	89	-1.18	100	71	2.240	0.02	(0.04)
157	25.057	0.162	1.18	89	-1.2	99	71	2.230	0.05	(0.01)
158	25.221	0.164	1.11	89	-1.1	100	71	2.240	0.09	(0.03)
159	25.381	0.160	1.14	89	-1.18	98	71	2.240	0.08	(0.10)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
160	25.544	0.163	1.10	89	-1.19	100	71	2.230	(0.03)	(0.04)
161	25.707	0.163	1.09	89	-1.03	100	71	2.240	(0.02)	0.03
162	25.868	0.161	1.12	89	-1.06	98	70	2.240	0.07	(0.04)
163	26.031	0.163	1.12	89	-1.08	100	70	2.250	(0.04)	(0.03)
164	26.191	0.160	1.09	89	-1.09	98	70	2.230	0.04	(0.02)
165	26.355	0.164	1.12	89	-1.03	100	70	2.240	(0.03)	(0.02)
166	26.517	0.162	1.10	89	-1.19	99	70	2.240	0.06	(0.02)
167	26.679	0.162	1.07	89	-1.19	99	70	2.230	0.06	(0.03)
168	26.844	0.165	1.14	89	-1.03	101	70	2.250	0.01	(0.04)
169	27.004	0.160	1.05	89	-1.05	98	70	2.240	0.06	(0.06)
170	27.168	0.164	0.91	89	-1.17	100	70	2.240	0.05	(0.03)
171	27.330	0.162	1.12	89	-1.14	99	70	2.230	(0.09)	(0.03)
172	27.493	0.163	1.07	89	-1.2	100	70	2.260	0.06	0.00
173	27.657	0.164	1.10	90	-1.2	100	70	2.240	(0.19)	(0.03)
174	27.815	0.158	1.10	90	-1.03	97	70	2.230	(0.02)	0.01
175	27.977	0.162	1.08	90	-1.18	99	70	2.240	0.02	(0.01)
176	28.138	0.161	0.88	90	-1.09	98	70	2.190	0.00	(0.03)
177	28.299	0.161	1.09	90	-1.06	98	70	2.280	0.01	(0.05)
178	28.463	0.164	1.16	90	-1.03	100	70	2.240	0.04	(0.03)
179	28.622	0.159	1.10	90	-1.06	97	70	2.240	0.04	(0.07)
180	28.785	0.163	1.08	90	-1.04	100	70	2.240	0.00	0.01
181	28.949	0.164	1.08	90	-1.08	100	70	2.230	0.08	(0.18)
182	29.111	0.162	0.97	90	-1.06	99	70	2.240	(0.05)	(0.04)
183	29.273	0.162	1.09	90	-1.03	99	70	2.240	0.03	0.07
184	29.433	0.160	1.10	90	-1.2	98	70	2.240	0.05	(0.02)
185	29.598	0.165	1.03	90	-1.06	101	70	2.250	0.06	(0.01)
186	29.758	0.160	1.13	90	-1.15	98	70	2.240	0.06	(0.05)
187	29.919	0.161	1.07	90	-1.19	98	70	2.240	(0.09)	(0.03)
188	30.082	0.163	1.10	90	-1.03	100	70	2.210	0.10	(0.05)
189	30.243	0.161	1.08	90	-1.18	98	70	2.270	(0.05)	(0.02)
190	30.406	0.163	1.11	90	-1.15	100	70	2.240	(0.05)	0.00
191	30.567	0.161	1.11	90	-1.07	98	70	2.240	(0.03)	(0.05)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
192	30.729	0.162	1.21	90	-1.03	99	70	2.240	0.10	(0.11)
193	30.893	0.164	1.07	90	-1.03	100	70	2.300	0.04	(0.02)
194	31.053	0.160	1.08	90	-1.04	98	70	2.200	0.03	(0.04)
195	31.219	0.166	0.75	90	-1.03	101	70	2.240	0.05	(0.02)
196	31.381	0.162	1.11	90	-1.19	99	70	2.230	(0.21)	(0.05)
197	31.542	0.161	0.93	90	-1.18	98	70	2.250	0.02	0.00
198	31.706	0.164	1.13	90	-1.17	100	70	2.250	0.06	(0.37)
199	31.867	0.161	1.10	90	-1.06	98	70	2.260	0.03	(0.04)
200	32.031	0.164	0.66	90	-1.05	100	70	2.230	(0.02)	(0.04)
201	32.196	0.165	1.11	90	-1.11	101	70	2.240	0.06	(0.07)
202	32.356	0.160	1.12	90	-1.12	98	70	2.240	(0.06)	(0.01)
203	32.519	0.163	1.10	90	-1.06	100	71	2.240	(0.02)	(0.01)
204	32.679	0.160	1.56	90	-1.12	98	70	2.230	0.08	(0.03)
205	32.844	0.165	1.10	90	-1.06	101	70	2.250	0.03	(0.01)
206	33.003	0.159	1.16	90	-1.19	97	70	2.230	(0.02)	(0.04)
207	33.165	0.162	1.05	90	-1.03	99	70	2.240	(0.01)	(0.01)
208	33.327	0.162	1.10	90	-1.19	99	70	2.090	(0.01)	(0.01)
209	33.488	0.161	1.12	90	-1.11	98	70	2.260	0.05	(0.05)
210	33.652	0.164	1.08	91	-1.14	100	70	2.230	0.01	(0.03)
211	33.813	0.161	1.11	91	-1.04	98	70	2.240	0.03	(0.04)
212	33.974	0.161	1.08	91	-1.06	98	70	2.240	0.04	(0.03)
213	34.136	0.162	1.14	91	-1.1	99	70	2.250	0.04	(0.01)
214	34.297	0.161	1.06	91	-1.2	98	70	2.240	0.08	0.00
215	34.461	0.164	1.43	91	-1.03	100	70	2.240	0.03	0.00
216	34.621	0.160	1.10	91	-1.18	98	70	2.240	0.00	(0.03)
217	34.782	0.161	1.11	91	-1.04	98	70	2.250	(0.06)	(0.05)
218	34.944	0.162	1.14	91	-1.18	99	70	2.240	(0.01)	(0.03)
219	35.102	0.158	1.15	91	-1.19	96	70	2.240	(0.06)	(0.01)
220	35.263	0.161	1.11	91	-1.19	98	70	2.160	0.01	(0.04)
221	35.422	0.159	1.30	91	-1.15	97	70	2.240	0.06	(0.06)
222	35.587	0.165	1.09	91	-1.15	101	70	2.240	(0.06)	(0.02)
223	35.750	0.163	1.08	91	-1.15	99	70	2.230	0.00	0.00

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
224	35.911	0.161	1.10	91	-1.17	98	70	2.240	0.04	(0.01)
225	36.076	0.165	1.13	91	-1.04	101	70	2.230	0.11	(0.05)
226	36.235	0.159	1.12	91	-1.06	97	70	2.250	0.05	(0.03)
227	36.400	0.165	1.10	91	-1.2	101	70	2.240	(0.03)	(0.02)
228	36.564	0.164	1.07	91	-1.19	100	70	2.230	0.00	(0.03)
229	36.725	0.161	1.13	91	-1.03	98	70	2.210	0.08	(0.06)
230	36.888	0.163	1.09	91	-1.16	99	70	2.190	0.00	0.00
231	37.049	0.161	1.12	91	-1.16	98	70	2.240	(0.01)	(0.01)
232	37.214	0.165	1.09	91	-1.09	101	70	2.250	(0.05)	(0.02)
233	37.376	0.162	1.12	91	-1.03	99	70	2.240	0.11	0.00
234	37.539	0.163	1.02	91	-1.04	99	70	2.260	0.03	(0.19)
235	37.702	0.163	1.08	91	-1.2	99	70	2.240	(0.07)	(0.05)
236	37.863	0.161	1.06	91	-1.03	98	70	2.250	0.05	(0.05)
237	38.025	0.162	1.16	91	-1.18	99	70	2.230	(0.01)	(0.08)
238	38.186	0.161	1.10	91	-1.04	98	70	2.250	0.07	(0.01)
239	38.346	0.160	1.12	91	-1.18	98	70	2.250	(0.03)	(0.03)
240	38.510	0.164	1.12	91	-1.16	100	70	2.240	(0.09)	0.00
241	38.674	0.164	1.23	91	-1.21	100	70	2.240	(0.03)	0.00
242	38.838	0.164	1.12	91	-1.21	100	70	2.220	0.05	(0.07)
243	38.998	0.160	1.11	91	-1.2	98	70	2.240	(0.04)	(0.09)
244	39.164	0.166	1.18	91	-1.15	101	70	2.240	(0.03)	(0.02)
245	39.328	0.164	1.13	91	-1.04	100	70	2.240	0.03	(0.06)
246	39.493	0.165	1.16	91	-1.04	101	70	2.240	0.00	(0.04)
247	39.656	0.163	1.46	91	-1.13	101	72	2.240	1.74	0.19
248	39.817	0.161	1.38	91	-1.06	99	71	2.240	1.09	0.18
249	39.981	0.164	1.15	91	-1.15	101	72	2.240	2.33	0.48
250	40.141	0.160	1.11	91	-1.1	99	73	2.240	3.75	0.98
251	40.304	0.163	1.14	91	-1.04	101	73	2.240	4.69	1.01
252	40.467	0.163	0.82	90	-1.04	101	74	2.240	7.08	0.64
253	40.627	0.160	1.14	91	-1.12	99	74	2.240	8.55	0.30
254	40.790	0.163	1.08	91	-1.12	101	75	2.240	8.40	0.38
255	40.951	0.161	1.15	90	-1.09	100	75	2.260	8.60	0.36

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
256	41.114	0.163	1.10	90	-1.06	101	75	2.260	9.01	0.30
257	41.273	0.159	1.10	90	-1.06	99	75	2.260	9.50	0.15
258	41.437	0.164	1.13	90	-1.03	102	76	2.240	9.73	0.39
259	41.600	0.163	1.18	90	-1.04	102	76	2.230	8.97	0.93
260	41.759	0.159	1.08	90	-1.18	99	76	2.240	10.07	0.51
261	41.923	0.164	1.12	90	-1.15	102	75	2.240	10.64	0.27
262	42.084	0.161	1.11	90	-1.14	100	75	2.220	9.82	0.60
263	42.247	0.163	1.14	90	-1.17	102	76	2.220	8.53	0.73
264	42.409	0.162	1.12	90	-1.19	101	76	2.250	9.17	0.26
265	42.569	0.160	1.14	90	-1.1	100	76	2.240	9.26	0.15
266	42.735	0.166	1.12	90	-1.09	104	77	2.240	9.12	0.14
267	42.895	0.160	1.09	90	-1.03	100	77	2.240	8.87	0.18
268	43.057	0.162	1.11	90	-1.12	101	77	2.220	8.76	0.15
269	43.218	0.161	1.06	90	-1.03	101	77	2.240	8.47	0.32
270	43.379	0.161	1.10	90	-1.12	101	77	2.240	8.10	0.77
271	43.541	0.162	1.10	90	-1.13	101	76	2.230	12.42	0.08
272	43.704	0.163	1.14	90	-1.07	102	75	2.260	12.25	0.04
273	43.867	0.163	1.11	90	-1.07	102	75	2.240	12.36	0.01
274	44.028	0.161	1.12	90	-1.05	101	75	2.240	12.39	0.08
275	44.188	0.160	1.13	90	-1.05	99	75	2.250	12.37	0.12
276	44.353	0.165	1.10	90	-1.19	101	74	2.230	5.85	0.02
277	44.514	0.161	1.10	90	-1.07	99	73	2.240	0.73	(0.05)
278	44.679	0.165	0.79	90	-1.03	101	73	2.250	0.47	(0.05)
279	44.842	0.163	1.14	90	-1.05	100	72	2.240	0.31	(0.04)
280	45.005	0.163	0.92	90	-1.12	100	72	2.240	0.04	(0.01)
281	45.168	0.163	1.08	90	-1.06	100	71	2.240	0.07	(0.01)
282	45.330	0.162	1.08	90	-1.19	99	70	2.240	0.18	0.07
283	45.493	0.163	1.16	90	-1.2	100	70	2.240	0.09	(0.06)
284	45.654	0.161	1.10	90	-1.03	98	70	2.250	0.05	(0.05)
285	45.819	0.165	1.17	90	-1.14	101	70	2.220	(0.02)	(0.02)
286	45.982	0.163	1.09	90	-1.13	100	70	2.240	0.07	(0.06)
287	46.144	0.162	1.10	90	-1.13	99	70	2.240	(0.33)	(0.14)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
288	46.309	0.165	1.11	90	-1.15	101	69	2.240	(0.02)	(0.02)
289	46.468	0.159	1.15	90	-1.07	97	69	2.240	0.05	(0.05)
290	46.632	0.164	1.12	90	-1.04	100	69	2.240	(0.09)	0.02
291	46.794	0.162	1.11	90	-1.03	99	68	2.170	0.06	(0.05)
292	46.956	0.162	1.12	90	-1.03	99	68	2.260	0.03	0.04
293	47.120	0.164	1.05	90	-1.07	100	68	2.230	(0.03)	(0.05)
294	47.281	0.161	1.13	90	-1.18	98	68	2.190	0.07	(0.05)
295	47.444	0.163	1.10	90	-1.04	99	67	2.230	0.03	(0.01)
296	47.606	0.162	1.11	90	-1.07	99	67	2.230	(0.02)	0.00
297	47.771	0.165	1.11	90	-1.13	101	67	2.200	(0.05)	(0.02)
298	47.933	0.162	1.14	90	-1.18	99	67	2.250	0.06	(0.07)
299	48.097	0.164	1.11	90	-1.07	100	67	2.240	0.09	(0.05)
300	48.263	0.166	1.13	90	-1.09	101	67	2.240	0.04	(0.06)
301	48.421	0.158	1.10	90	-1.05	96	68	2.240	(0.04)	(0.02)
302	48.588	0.167	1.09	90	-1.04	102	68	2.240	(0.03)	0.01
303	48.748	0.160	1.06	89	-1.06	98	69	2.230	(0.06)	(0.02)
304	48.911	0.163	1.10	89	-1.2	100	69	2.240	0.00	(0.01)
305	49.073	0.162	1.13	89	-1.04	99	69	2.240	0.06	(0.15)
306	49.234	0.161	1.09	89	-1.03	98	69	2.270	0.05	(0.06)
307	49.401	0.167	1.14	89	-1.06	102	70	2.210	0.02	(0.04)
308	49.560	0.159	1.16	89	-1.04	97	70	2.230	0.08	(0.07)
309	49.722	0.162	1.12	89	-1.11	99	70	2.270	0.03	(0.07)
310	49.884	0.162	1.10	89	-1.04	99	71	2.240	(0.02)	(0.03)
311	50.048	0.164	1.10	89	-1.04	100	71	2.240	(0.04)	0.00
312	50.211	0.163	1.31	89	-1.18	100	71	2.240	0.00	(0.01)
313	50.372	0.161	1.08	89	-1.04	98	71	2.230	(0.05)	0.01
314	50.538	0.166	1.08	89	-1.18	102	72	2.240	0.01	(0.01)
315	50.699	0.161	1.14	89	-1.04	98	73	2.240	(0.02)	(0.07)
316	50.863	0.164	1.13	89	-1.03	100	73	2.240	0.00	0.01
317	51.029	0.166	1.13	89	-1.03	102	74	2.240	(0.04)	(0.02)
318	51.192	0.163	1.08	89	-1.17	100	74	2.270	0.05	(0.04)
319	51.356	0.164	1.12	89	-1.14	100	74	2.240	(0.02)	(0.02)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
320	51.517	0.161	1.13	89	-1.03	98	75	2.220	0.02	0.00
321	51.681	0.164	1.07	89	-1.06	100	75	2.240	(0.01)	(0.02)
322	51.844	0.163	1.12	89	-1.18	100	75	2.250	0.00	(0.02)
323	52.007	0.163	1.11	89	-1.05	100	75	2.250	0.04	(0.01)
324	52.171	0.164	1.18	89	-1.03	100	75	2.240	0.00	(0.01)
325	52.334	0.163	1.14	89	-1.19	100	76	2.240	(0.03)	0.00
326	52.497	0.163	1.11	89	-1.2	100	76	2.240	(0.03)	(0.04)
327	52.660	0.163	1.13	89	-1.19	100	76	2.230	0.02	(0.05)
328	52.823	0.163	1.15	89	-1.03	100	76	2.250	0.04	(0.05)
329	52.989	0.166	0.88	89	-1.05	102	76	2.240	(0.09)	(0.05)
330	53.150	0.161	1.11	89	-1.18	98	76	2.240	0.08	(0.04)
331	53.316	0.166	1.10	89	-1.05	102	76	2.240	0.08	(0.03)
332	53.477	0.161	1.08	89	-1.03	98	76	2.240	0.16	(0.03)
333	53.641	0.164	1.10	89	-1.21	100	76	2.230	(0.08)	(0.01)
334	53.805	0.164	1.13	89	-1.12	100	77	2.250	(0.01)	(0.03)
335	53.966	0.161	1.12	89	-1.16	98	77	2.260	0.04	(0.04)
336	54.129	0.163	1.11	89	-1.07	100	77	2.240	(0.05)	0.03
337	54.292	0.163	1.18	89	-1.04	100	77	2.180	(0.01)	(0.09)
338	54.455	0.163	1.20	89	-1.06	100	77	2.240	0.00	(0.04)
339	54.618	0.163	1.07	89	-1.08	100	77	2.230	(0.13)	0.05
340	54.780	0.162	1.07	89	-1.09	99	77	2.220	(0.09)	0.00
341	54.946	0.166	1.11	89	-1.05	102	77	2.240	0.02	(0.04)
342	55.106	0.160	1.11	89	-1.21	98	77	2.240	(0.05)	(0.03)
343	55.270	0.164	1.09	89	-1.14	100	77	2.210	0.02	0.02
344	55.431	0.161	1.38	89	-1.21	98	77	2.240	(0.10)	(0.05)
345	55.593	0.162	1.14	88	-1.03	99	77	2.270	(0.03)	(0.01)
346	55.757	0.164	1.09	88	-1.04	100	77	2.230	0.03	(0.03)
347	55.918	0.161	1.08	88	-1.13	99	77	2.240	(0.07)	(0.11)
348	56.081	0.163	1.12	88	-1.09	100	77	2.240	0.00	(0.01)
349	56.241	0.160	1.07	88	-1.05	98	77	2.240	(0.13)	(0.01)
350	56.403	0.162	1.10	88	-1.1	99	77	2.230	(0.01)	(0.03)
351	56.566	0.163	1.11	88	-1.16	100	77	2.230	(0.01)	(0.04)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
352	56.727	0.161	0.93	88	-1.03	99	77	2.250	(0.02)	(0.01)
353	56.891	0.164	1.10	88	-1.06	100	77	2.250	0.04	(0.05)
354	57.054	0.163	1.13	88	-1.18	100	77	2.200	(0.04)	(0.08)
355	57.218	0.164	1.12	88	-1.11	100	77	2.250	0.16	(0.04)
356	57.381	0.163	1.11	88	-1.08	100	77	2.240	(0.08)	(0.04)
357	57.545	0.164	0.97	88	-1.04	100	77	2.240	(0.07)	0.00
358	57.709	0.164	1.13	88	-1.15	100	77	2.240	(0.02)	(0.04)
359	57.871	0.162	1.10	88	-1.08	99	77	2.230	0.01	(0.02)
360	58.035	0.164	1.13	88	-1.2	100	77	2.320	0.02	(0.02)
361	58.198	0.163	1.15	88	-1.11	100	77	2.240	(0.03)	(0.02)
362	58.361	0.163	1.09	88	-1.17	100	77	2.250	(0.02)	0.04
363	58.524	0.163	1.14	88	-1.15	100	77	2.250	(0.06)	0.03
364	58.685	0.161	1.08	88	-1.17	99	77	2.240	0.02	0.00
365	58.850	0.165	1.08	88	-1.21	101	77	2.240	(0.07)	(0.06)
366	59.011	0.161	1.12	88	-1.2	99	77	2.230	0.03	(0.04)
367	59.176	0.165	1.12	88	-1.04	101	77	2.250	0.08	(0.06)
368	59.340	0.164	1.19	88	-1.11	100	77	2.240	0.00	(0.06)
369	59.504	0.164	1.13	88	-1.21	100	77	2.240	0.05	(0.02)
370	59.669	0.165	1.02	88	-1.18	101	77	2.240	(0.09)	(0.01)
371	59.831	0.162	1.07	88	-1.09	99	77	2.290	0.01	(0.03)
372	59.995	0.164	1.13	88	-1.04	100	77	2.240	0.00	(0.11)
373	60.156	0.161	1.11	88	-1.03	99	77	2.240	0.01	(0.04)
374	60.320	0.164	1.07	88	-1.05	100	77	2.230	(0.01)	(0.08)
375	60.485	0.165	0.91	88	-1.2	101	77	2.240	0.04	(0.04)
376	60.646	0.161	1.12	88	-1.08	99	77	2.240	(0.09)	(0.07)
377	60.810	0.164	1.13	88	-1.04	100	77	2.220	0.06	(0.03)
378	60.973	0.163	1.09	88	-1.06	101	78	2.230	4.35	0.98
379	61.136	0.163	1.07	88	-1.15	101	77	2.240	0.96	0.12
380	61.299	0.163	1.13	88	-1.18	101	77	2.240	2.45	0.39
381	61.458	0.159	1.09	88	-1.03	99	77	2.240	5.45	0.71
382	61.623	0.165	1.09	88	-1.13	102	77	2.190	6.54	0.46
383	61.785	0.162	1.01	88	-1.06	101	76	2.270	7.48	0.29

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
384	61.948	0.163	1.11	88	-1.04	101	76	2.240	8.08	0.22
385	62.110	0.162	1.09	88	-1.15	101	76	2.240	8.64	0.23
386	62.269	0.159	1.38	88	-1.08	99	77	2.280	9.48	0.16
387	62.436	0.167	1.05	88	-1.05	104	77	2.230	9.97	0.12
388	62.600	0.164	1.08	88	-1.04	102	77	2.240	10.45	0.10
389	62.764	0.164	1.05	88	-1.14	102	77	2.240	10.88	0.01
390	62.927	0.163	1.65	88	-1.08	102	77	2.240	11.42	(0.02)
391	63.087	0.160	1.08	88	-1.15	100	77	2.230	11.29	0.09
392	63.251	0.164	1.00	88	-1.03	102	77	2.220	11.55	0.09
393	63.411	0.160	1.16	88	-1.05	100	78	2.210	11.82	0.09
394	63.574	0.163	1.12	88	-1.07	102	78	2.220	11.91	0.11
395	63.739	0.165	1.13	88	-1.03	103	78	2.060	12.14	0.08
396	63.900	0.161	0.53	88	-1.1	101	78	2.240	12.49	0.06
397	64.064	0.164	1.08	88	-1.16	103	78	2.250	12.63	0.12
398	64.228	0.164	1.12	88	-1.09	103	78	2.250	12.05	0.08
399	64.391	0.163	1.13	88	-1.02	102	78	2.240	11.68	0.07
400	64.554	0.163	1.12	87	-1.1	102	78	2.240	11.37	0.06
401	64.715	0.161	1.08	88	-1.1	101	78	2.240	11.52	0.15
402	64.881	0.166	1.06	87	-1.04	104	79	2.240	12.06	0.10
403	65.043	0.162	1.19	87	-1.04	100	78	2.240	11.87	0.07
404	65.203	0.160	1.02	87	-1.16	99	78	2.250	2.98	0.01
405	65.367	0.164	1.09	87	-1.21	101	78	2.240	0.56	0.00
406	65.528	0.161	1.14	87	-1.2	99	77	2.240	0.45	(0.02)
407	65.690	0.162	1.10	87	-1.09	100	77	2.240	0.37	0.02
408	65.851	0.161	1.11	87	-1.11	99	77	2.240	0.20	0.02
409	66.013	0.162	1.08	87	-1.05	100	77	2.230	0.16	0.00
410	66.177	0.164	1.18	87	-1.07	101	77	2.260	0.13	(0.04)
411	66.337	0.160	1.10	87	-1.09	98	77	2.170	0.15	(0.07)
412	66.501	0.164	1.06	87	-1.2	101	77	2.320	0.01	0.02
413	66.661	0.160	1.06	87	-1.19	98	77	2.300	0.04	(0.03)
414	66.824	0.163	1.16	87	-1.21	100	77	2.230	0.07	(0.02)
415	66.988	0.164	1.09	87	-1.18	101	77	2.230	0.01	(0.03)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
416	67.149	0.161	1.23	87	-1.18	99	77	2.230	0.05	(0.01)
417	67.312	0.163	1.13	87	-1.2	100	77	2.230	0.08	(0.02)
418	67.474	0.162	1.14	87	-1.18	99	77	2.250	(0.03)	(0.01)
419	67.638	0.164	1.08	87	-1.14	101	76	2.230	0.03	(0.03)
420	67.802	0.164	1.12	87	-1.14	101	76	2.240	(0.01)	0.02
421	67.964	0.162	1.10	87	-1.21	99	76	2.250	0.03	0.02
422	68.128	0.164	1.14	87	-1.15	101	76	2.240	0.01	(0.02)
423	68.287	0.159	1.11	87	-1.07	98	76	2.240	0.03	(0.01)
424	68.452	0.165	1.14	87	-1.03	101	76	2.200	(0.04)	(0.02)
425	68.614	0.162	1.13	87	-1.12	99	76	2.250	(0.04)	(0.02)
426	68.776	0.162	1.09	87	-1.18	99	76	2.220	0.20	(0.05)
427	68.941	0.165	1.14	87	-1.1	101	76	2.220	0.04	(0.05)
428	69.102	0.161	1.13	87	-1.1	99	76	2.230	0.08	(0.02)
429	69.266	0.164	1.10	87	-1.04	101	76	2.290	(0.01)	(0.01)
430	69.428	0.162	1.01	87	-1.04	99	76	2.230	0.06	(0.03)
431	69.593	0.165	1.05	87	-1.16	101	76	2.240	(0.07)	0.01
432	69.755	0.162	1.08	88	-1.18	99	76	2.230	(0.04)	(0.01)
433	69.918	0.163	1.05	87	-1.09	100	76	2.230	0.18	(0.03)
434	70.082	0.164	1.12	87	-1.03	101	76	2.240	(0.11)	0.07
435	70.244	0.162	1.02	87	-1.15	99	76	2.240	(0.05)	0.05
436	70.407	0.163	1.00	88	-1.18	100	76	2.240	0.03	(0.01)
437	70.572	0.165	1.15	88	-1.16	101	76	2.250	(0.01)	(0.04)
438	70.735	0.163	1.14	87	-1.21	100	76	2.220	0.03	(0.03)
439	70.900	0.165	1.10	88	-1.07	101	76	2.240	0.00	0.02
440	71.061	0.161	1.11	88	-1.03	99	76	2.240	0.03	(0.02)
441	71.222	0.161	1.08	87	-1.11	99	76	2.230	0.00	0.04
442	71.386	0.164	1.13	88	-1.13	100	76	2.240	0.08	0.00
443	71.547	0.161	1.06	88	-1.2	99	76	2.230	0.03	(0.01)
444	71.712	0.165	1.09	88	-1.05	101	76	2.230	0.01	(0.03)
445	71.872	0.160	1.11	88	-1.09	98	75	2.240	0.03	0.00
446	72.036	0.164	1.11	88	-1.2	100	75	2.230	0.09	(0.03)
447	72.201	0.165	1.11	88	-1.18	101	75	2.240	0.05	0.00

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
448	72.361	0.160	1.08	88	-1.17	98	75	2.230	0.02	0.01
449	72.525	0.164	0.75	88	-1.06	100	75	2.270	(0.06)	(0.04)
450	72.685	0.160	1.38	88	-1.05	98	75	2.210	0.06	0.01
451	72.850	0.165	1.16	88	-1.03	101	75	2.240	(0.01)	(0.03)
452	73.011	0.161	1.08	88	-1.04	99	75	2.240	0.05	(0.04)
453	73.175	0.164	1.09	88	-1.2	100	75	2.230	(0.01)	(0.01)
454	73.339	0.164	1.13	88	-1.03	100	75	2.230	0.04	(0.02)
455	73.499	0.160	0.91	88	-1.04	98	75	2.190	0.10	(0.04)
456	73.663	0.164	1.07	88	-1.19	100	75	2.240	0.00	0.03
457	73.826	0.163	1.17	88	-1.21	100	75	2.240	(0.08)	0.00
458	73.986	0.160	1.04	88	-1.12	98	75	2.240	(0.01)	(0.01)
459	74.150	0.164	1.07	88	-1.18	100	75	2.250	(0.06)	0.00
460	74.311	0.161	1.19	88	-1.18	99	75	2.240	0.02	(0.02)
461	74.476	0.165	1.10	87	-1.07	101	75	2.220	0.10	(0.04)
462	74.638	0.162	1.11	87	-1.06	99	75	2.230	0.01	(0.01)
463	74.801	0.163	1.08	87	-1.14	100	75	2.240	0.01	(0.02)
464	74.964	0.163	1.13	87	-1.19	100	75	2.240	(0.11)	0.01
465	75.125	0.161	1.05	87	-1.17	99	75	2.290	0.04	(0.01)
466	75.290	0.165	1.08	87	-1.03	101	75	2.280	0.01	0.00
467	75.452	0.162	1.14	87	-1.18	99	75	2.250	0.02	(0.02)
468	75.614	0.162	1.23	87	-1.08	99	75	2.220	(0.01)	(0.03)
469	75.779	0.165	1.11	87	-1.17	101	75	2.240	(0.09)	0.01
470	75.941	0.162	1.10	87	-1.16	99	75	2.240	0.00	(0.03)
471	76.103	0.162	1.16	87	-1.18	99	75	2.240	0.14	(0.05)
472	76.265	0.162	1.10	87	-1.1	99	75	2.250	0.02	0.00
473	76.425	0.160	1.12	87	-1.19	98	75	2.250	(0.02)	0.01
474	76.591	0.166	1.16	87	-1.17	102	75	2.240	(0.12)	(0.02)
475	76.752	0.161	1.12	87	-1.08	99	75	2.240	0.01	(0.05)
476	76.915	0.163	1.09	87	-1.03	100	75	2.240	0.08	(0.02)
477	77.077	0.162	1.88	87	-1.09	99	75	2.240	0.19	(0.08)
478	77.240	0.163	0.96	87	-1.04	100	75	2.180	(0.01)	0.02
479	77.407	0.167	1.39	87	-1.11	102	75	2.190	0.04	0.04

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
480	77.570	0.163	1.32	87	-1.03	100	75	2.240	0.03	(0.01)
481	77.732	0.162	0.92	87	-1.13	99	74	2.220	(0.27)	0.05
482	77.897	0.165	1.03	87	-1.03	101	74	2.240	(0.09)	0.02
483	78.058	0.161	1.04	87	-1.04	99	74	2.250	(0.04)	0.01
484	78.225	0.167	1.10	87	-1.07	102	74	2.240	0.03	(0.08)
485	78.386	0.161	1.16	87	-1.18	99	74	2.230	0.04	(0.01)
486	78.549	0.163	0.87	87	-1.05	100	74	2.230	0.11	(0.05)
487	78.711	0.162	0.94	87	-1.06	99	74	2.230	(0.03)	(0.07)
488	78.870	0.159	1.11	87	-1.17	98	74	2.240	(0.25)	0.00
489	79.034	0.164	1.15	87	-1.03	101	74	2.230	0.01	(0.07)
490	79.196	0.162	1.09	87	-1.18	99	74	2.240	0.00	0.04
491	79.358	0.162	0.82	87	-1.2	99	74	2.240	(0.02)	0.02
492	79.520	0.162	0.98	87	-1.04	99	74	2.240	(0.01)	(0.01)
493	79.681	0.161	1.14	87	-1.05	99	74	2.250	0.04	(0.02)
494	79.844	0.163	1.14	87	-1.21	100	74	2.240	0.15	(0.02)
495	80.010	0.166	1.07	87	-1.16	102	74	2.230	0.04	(0.01)
496	80.170	0.160	1.10	87	-1.09	98	74	2.240	0.10	(0.04)
497	80.335	0.165	1.10	87	-1.04	101	74	2.240	0.00	(0.01)
498	80.500	0.165	1.05	87	-1.17	101	74	2.230	(0.04)	(0.03)
499	80.666	0.166	1.11	87	-1.18	102	73	2.240	0.02	(0.02)
500	80.831	0.165	1.10	87	-1.08	101	73	2.250	0.05	(0.01)
501	80.991	0.160	1.07	87	-1.16	98	73	2.240	(0.08)	0.01
502	81.156	0.165	1.13	87	-1.17	101	72	2.240	0.07	(0.01)
503	81.318	0.162	1.09	87	-1.08	99	72	2.230	(0.02)	(0.07)
504	81.484	0.166	1.27	87	-1.11	102	72	2.250	(0.19)	(0.01)
505	81.646	0.162	0.91	87	-1.18	99	72	2.220	0.00	0.05
506	81.814	0.168	0.63	87	-1.2	103	72	2.240	(0.02)	(0.01)
507	81.977	0.163	1.13	87	-1.05	100	73	2.240	0.11	0.04
508	82.140	0.163	1.15	87	-1.08	100	73	2.240	0.04	(0.01)
509	82.305	0.165	1.10	87	-1.1	103	73	2.240	4.53	1.15
510	82.468	0.163	0.17	87	-1.18	101	73	2.240	0.81	0.14
511	82.632	0.164	1.16	87	-1.04	102	73	2.240	1.31	0.23

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
512	82.794	0.162	1.13	87	-1.13	101	73	2.240	2.30	0.34
513	82.956	0.162	1.12	87	-1.12	101	74	2.240	4.37	0.46
514	83.120	0.164	1.13	87	-1.07	102	74	2.230	5.15	0.45
515	83.282	0.162	1.54	87	-1.04	101	73	2.240	6.37	0.33
516	83.447	0.165	1.11	87	-1.03	103	73	2.240	7.59	0.39
517	83.607	0.160	1.13	87	-1.1	100	73	2.250	9.00	0.26
518	83.769	0.162	1.18	87	-1.04	101	73	2.240	9.85	0.14
519	83.934	0.165	1.07	87	-1.12	103	73	2.230	10.24	0.09
520	84.097	0.163	1.10	87	-1.07	102	73	2.250	10.50	0.15
521	84.261	0.164	1.10	87	-1.03	102	73	2.240	10.81	0.13
522	84.421	0.160	1.16	87	-1.08	100	73	2.240	10.95	0.11
523	84.584	0.163	1.14	87	-1.06	102	73	2.240	11.18	0.09
524	84.746	0.162	1.11	87	-1.19	101	73	2.240	10.69	0.15
525	84.907	0.161	1.04	87	-1.18	101	73	2.230	10.21	0.16
526	85.073	0.166	1.17	87	-1.14	104	73	2.240	9.90	0.27
527	85.234	0.161	1.11	87	-1.16	101	73	2.240	9.98	0.28
528	85.396	0.162	1.08	87	-1.12	101	73	2.240	10.58	0.16
529	85.558	0.162	1.04	87	-1.08	101	73	2.240	10.58	0.10
530	85.724	0.166	1.16	87	-1.19	104	73	2.230	10.53	0.08
531	85.889	0.165	1.13	87	-1.03	103	73	2.240	10.34	0.13
532	86.051	0.162	1.12	87	-1.2	101	73	2.240	10.44	0.12
533	86.217	0.166	1.07	87	-1.15	104	73	2.260	10.54	0.17
534	86.377	0.160	1.16	87	-1.12	100	73	2.240	10.54	0.13
535	86.542	0.165	1.38	87	-1.06	103	73	2.230	10.54	0.18
536	86.708	0.166	1.09	87	-1.17	102	72	2.420	9.31	0.14
537	86.870	0.162	1.00	87	-1.18	100	72	2.300	1.13	(0.01)
538	87.035	0.165	1.05	87	-1.2	101	71	2.200	0.49	0.01
539	87.199	0.164	1.16	87	-1.16	101	71	2.240	0.30	0.00
540	87.364	0.165	1.12	87	-1.09	101	71	2.250	0.29	0.01
541	87.525	0.161	1.10	87	-1.12	99	71	2.240	0.19	0.06
542	87.692	0.167	1.10	87	-1.08	102	70	2.240	(0.01)	(0.01)
543	87.855	0.163	1.10	87	-1.07	100	70	2.240	(0.06)	(0.02)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
544	88.017	0.162	1.09	87	-1.21	99	70	2.230	0.11	0.02
545	88.183	0.166	1.14	87	-1.21	102	70	2.250	0.06	0.02
546	88.346	0.163	1.10	87	-1.04	100	70	2.240	0.12	0.04
547	88.510	0.164	0.56	87	-1.09	100	70	2.250	0.07	0.03
548	88.672	0.162	1.19	87	-1.11	99	70	2.240	(0.01)	(0.01)
549	88.835	0.163	1.13	87	-1.21	100	70	2.230	0.24	0.00
550	89.000	0.165	1.14	87	-1.1	101	70	2.240	0.11	(0.04)
551	89.165	0.165	1.12	87	-1.07	101	70	2.240	0.11	(0.04)
552	89.332	0.167	1.11	87	-1.1	102	70	2.240	0.01	(0.02)
553	89.493	0.161	1.14	87	-1.18	99	70	2.280	0.11	0.00
554	89.656	0.163	1.07	87	-1.12	100	70	2.250	0.05	(0.01)
555	89.818	0.162	1.08	87	-1.15	99	69	2.210	(0.04)	0.00
556	89.983	0.165	1.06	87	-1.17	101	69	2.240	0.14	(0.01)
557	90.144	0.161	1.11	87	-1.17	99	69	2.230	0.04	0.00
558	90.308	0.164	1.13	87	-1.16	100	70	2.250	(0.14)	0.04
559	90.472	0.164	0.94	87	-1.05	100	70	2.240	0.01	0.04
560	90.635	0.163	1.12	87	-1.02	100	71	2.260	0.01	(0.08)
561	90.799	0.164	1.12	87	-1.04	100	71	2.220	(0.03)	0.04
562	90.961	0.162	1.18	87	-1.03	99	71	2.250	0.07	(0.01)
563	91.127	0.166	1.02	87	-1.16	102	71	2.240	0.09	0.01
564	91.289	0.162	1.06	87	-1.2	99	72	2.240	0.00	0.00
565	91.450	0.161	0.80	87	-1.19	99	72	2.240	0.04	(0.08)
566	91.612	0.162	1.09	87	-1.12	99	72	2.230	(0.04)	0.04
567	91.774	0.162	1.08	87	-1.2	99	72	2.240	0.01	(0.03)
568	91.939	0.165	1.11	87	-1.2	101	73	2.250	(0.02)	0.02
569	92.100	0.161	1.13	87	-1.19	99	73	2.270	0.05	(0.02)
570	92.263	0.163	1.11	87	-1.06	100	73	2.230	0.13	0.02
571	92.427	0.164	1.11	87	-1.21	100	72	2.240	0.00	0.04
572	92.588	0.161	1.13	87	-1.21	99	72	2.240	0.04	(0.03)
573	92.751	0.163	1.15	87	-1.17	100	72	2.240	0.03	0.00
574	92.914	0.163	1.07	87	-1.14	100	72	2.230	0.06	(0.02)
575	93.078	0.164	1.11	87	-1.19	100	72	2.290	(0.01)	0.02

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
576	93.239	0.161	1.11	87	-1.07	99	72	2.230	0.04	(0.02)
577	93.400	0.161	1.05	87	-1.05	99	73	2.230	0.13	(0.13)
578	93.565	0.165	1.08	87	-1.16	101	73	2.240	0.01	0.01
579	93.727	0.162	1.13	87	-1.21	99	73	2.240	0.20	(0.02)
580	93.894	0.167	1.27	87	-1.04	102	73	2.230	0.12	0.01
581	94.055	0.161	1.13	87	-1.03	99	73	2.260	0.01	0.01
582	94.216	0.161	1.08	87	-1.12	99	73	2.240	0.03	0.03
583	94.382	0.166	1.10	87	-1.04	102	73	2.250	0.06	0.01
584	94.542	0.160	1.12	87	-1.08	98	73	2.240	(0.04)	0.00
585	94.707	0.165	1.15	87	-1.04	101	72	2.240	0.09	(0.03)
586	94.866	0.159	1.13	87	-1.09	97	72	2.250	(0.04)	0.02
587	95.030	0.164	1.12	87	-1.1	100	71	2.240	0.06	(0.02)
588	95.192	0.162	1.11	87	-1.2	99	71	2.250	0.01	0.00
589	95.351	0.159	1.06	87	-1.18	97	71	2.240	0.10	(0.04)
590	95.516	0.165	1.25	87	-1.06	101	70	2.240	(0.01)	0.03
591	95.679	0.163	1.11	87	-1.2	100	70	2.240	(0.09)	0.02
592	95.846	0.167	1.15	87	-1.2	102	70	2.120	0.00	0.08
593	96.011	0.165	1.10	87	-1.03	101	70	2.240	0.20	0.02
594	96.173	0.162	1.94	87	-1.05	99	70	2.240	(0.04)	(0.04)
595	96.335	0.162	1.43	87	-1.03	99	69	2.240	0.05	(0.01)
596	96.496	0.161	1.13	87	-1.03	98	69	2.240	0.09	0.07
597	96.662	0.166	1.11	87	-1.04	102	69	2.230	(0.01)	0.07
598	96.824	0.162	1.13	87	-1.07	99	70	2.250	(0.04)	0.03
599	96.986	0.162	1.10	87	-1.05	99	70	2.240	0.04	0.03
600	97.150	0.164	1.18	87	-1.14	100	69	2.240	0.08	(0.04)
601	97.313	0.163	1.19	87	-1.14	100	68	2.240	0.07	(0.03)
602	97.479	0.166	1.10	87	-1.2	102	68	2.280	0.01	(0.01)
603	97.642	0.163	1.14	87	-1.13	100	67	2.240	(0.02)	0.07
604	97.806	0.164	1.13	87	-1.12	100	67	2.240	(0.30)	(0.02)
605	97.968	0.162	1.11	87	-1.19	99	66	2.240	0.08	(0.02)
606	98.130	0.162	1.11	87	-1.16	99	66	2.240	0.02	(0.01)
607	98.293	0.163	1.08	87	-1.04	100	66	2.220	0.06	(0.04)

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
608	98.455	0.162	1.10	87	-1.04	99	66	2.240	0.09	(0.03)
609	98.619	0.164	1.18	87	-1.03	100	65	2.230	(0.16)	0.04
610	98.781	0.162	1.10	87	-1.05	99	65	2.240	(0.01)	0.02
611	98.944	0.163	1.11	87	-1.06	100	65	2.230	0.08	(0.03)
612	99.110	0.166	1.21	87	-1.13	102	65	2.260	0.04	(0.01)
613	99.272	0.162	1.11	87	-1.03	99	65	2.230	0.06	0.03
614	99.438	0.166	1.14	87	-1.14	102	65	2.240	(0.06)	0.03
615	99.600	0.162	1.09	87	-1.03	99	64	2.230	0.15	0.03
616	99.766	0.166	1.14	87	-1.1	102	64	2.240	0.08	0.01
617	99.927	0.161	1.13	87	-1.18	99	64	2.260	0.00	(0.06)
618	100.091	0.164	1.13	87	-1.17	100	64	2.240	(0.04)	0.02
619	100.254	0.163	1.22	87	-1.2	100	64	2.240	0.03	(0.02)
620	100.418	0.164	1.09	87	-1.09	100	64	2.240	(0.04)	0.04
621	100.582	0.164	1.14	87	-1.08	100	64	2.240	0.00	0.01
622	100.745	0.163	1.09	87	-1.04	100	64	2.240	0.01	0.01
623	100.909	0.164	1.14	87	-1.05	100	64	2.240	(0.08)	0.01
624	101.072	0.163	1.08	87	-1.18	100	64	2.230	(0.16)	(0.02)
625	101.234	0.162	1.80	87	-1.09	99	63	2.240	0.04	(0.03)
626	101.402	0.168	1.05	87	-1.05	103	63	2.240	0.01	0.03
627	101.564	0.162	1.12	87	-1.03	99	63	2.240	0.06	(0.01)
628	101.729	0.165	1.10	87	-1.16	101	63	2.230	(0.01)	0.01
629	101.893	0.164	1.04	87	-1.04	100	63	2.240	0.01	(0.03)
630	102.057	0.164	1.12	87	-1.07	100	63	2.180	0.00	0.02
631	102.221	0.164	1.11	87	-1.12	100	63	2.230	0.05	(0.01)
632	102.384	0.163	1.16	87	-1.04	100	63	2.220	(0.03)	0.03
633	102.550	0.166	1.10	87	-1.16	102	63	2.260	0.03	0.01
634	102.713	0.163	1.05	87	-1.04	100	63	2.250	0.00	0.01
635	102.876	0.163	1.17	87	-1.19	100	63	2.250	(0.09)	0.02
636	103.040	0.164	1.09	87	-1.03	102	64	2.230	7.03	2.13
637	103.203	0.163	1.13	87	-1.02	101	63	2.240	1.85	0.46
638	103.369	0.166	1.13	87	-1.19	103	64	2.230	3.06	0.73
639	103.531	0.162	1.12	87	-1.12	100	64	2.230	4.92	0.55

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
640	103.698	0.167	1.13	87	-1.21	104	64	2.210	5.07	0.48
641	103.859	0.161	1.13	87	-1.18	100	64	2.240	5.98	0.45
642	104.024	0.165	1.08	87	-1.05	103	65	2.230	5.98	0.37
643	104.188	0.164	1.14	87	-1.16	102	65	2.250	6.23	0.27
644	104.351	0.163	1.10	87	-1.18	101	65	2.240	6.47	0.27
645	104.517	0.166	1.11	87	-1.14	103	65	2.240	6.51	0.25
646	104.678	0.161	1.12	87	-1.2	100	65	2.210	6.98	0.28
647	104.844	0.166	1.15	87	-1.04	104	66	2.240	7.64	0.50
648	105.006	0.162	1.10	87	-1.07	101	66	2.400	7.54	0.41
649	105.172	0.166	1.13	87	-1.21	104	66	2.240	8.04	0.40
650	105.334	0.162	1.12	87	-1.15	101	66	2.240	8.52	0.35
651	105.498	0.164	1.13	87	-1.14	103	67	2.230	9.02	0.34
652	105.661	0.163	1.09	87	-1.05	102	67	2.240	9.46	0.30
653	105.824	0.163	1.14	87	-1.2	102	67	2.240	9.61	0.34
654	105.988	0.164	1.13	87	-1.03	103	67	2.240	9.88	0.26
655	106.149	0.161	1.12	87	-1.09	101	67	2.340	10.21	0.25
656	106.312	0.163	1.09	87	-1.06	102	67	2.200	10.34	0.25
657	106.474	0.162	1.11	87	-1.2	101	67	2.240	10.62	0.27
658	106.638	0.164	1.13	87	-1.04	103	68	2.270	10.46	0.23
659	106.803	0.165	1.08	87	-1.04	103	68	2.230	10.54	0.27
660	106.965	0.162	1.07	87	-1.05	101	68	2.230	10.68	0.22
661	107.132	0.167	1.11	87	-1.03	105	68	2.230	10.52	0.24
662	107.293	0.161	1.07	87	-1.2	101	68	2.240	10.40	0.33
663	107.460	0.167	1.16	87	-1.04	103	67	2.240	7.94	0.27
664	107.624	0.164	1.07	87	-1.17	101	67	2.240	0.86	0.03
665	107.786	0.162	1.11	87	-1.2	99	67	2.240	0.47	(0.01)
666	107.952	0.166	1.14	87	-1.04	102	67	2.250	0.43	0.01
667	108.113	0.161	1.12	87	-1.04	99	66	2.240	0.16	(0.01)
668	108.276	0.163	1.14	87	-1.15	100	66	2.240	0.14	0.06
669	108.438	0.162	1.12	87	-1.05	99	66	2.290	0.13	(0.05)
670	108.605	0.167	1.10	87	-1.03	102	66	2.240	0.09	0.03
671	108.768	0.163	1.12	87	-1.12	100	66	2.240	0.13	0.00

BOX B TEST DATA - ASTM E2618 / ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
672	108.930	0.162	1.09	87	-1.12	99	65	2.240	0.04	0.02
673	109.093	0.163	1.13	87	-1.18	100	65	2.240	0.09	0.01
674	109.255	0.162	1.11	87	-1.04	99	65	2.240	0.13	(0.04)
675	109.420	0.165	0.93	87	-1.06	101	65	2.250	0.07	0.02
676	109.583	0.163	1.11	87	-1.04	100	65	2.230	0.30	0.01
677	109.749	0.166	1.11	87	-1.2	102	65	2.240	0.01	0.03
678	109.914	0.165	1.12	87	-1.05	101	65	2.240	0.01	0.02
679	110.076	0.162	1.08	87	-1.2	99	64	2.240	0.09	(0.04)
680	110.242	0.166	1.11	87	-1.06	102	64	2.240	0.10	(0.01)
681	110.405	0.163	1.14	87	-1.2	100	64	2.240	0.03	0.02
682	110.572	0.167	1.10	87	-1.04	102	64	2.240	0.06	0.02
683	110.734	0.162	1.07	87	-1.03	99	64	2.240	0.03	0.01
684	110.901	0.167	1.11	87	-1.05	102	64	2.230	0.04	0.01
685	111.064	0.163	1.14	87	-1.15	100	64	2.230	(0.05)	0.01
686	111.229	0.165	1.18	87	-1.16	101	64	2.250	0.05	0.02
687	111.394	0.165	1.11	87	-1.06	101	64	2.240	0.12	0.01
688	111.556	0.162	1.10	87	-1.05	99	64	2.180	0.03	(0.01)
689	111.719	0.163	1.12	87	-1.07	100	64	2.240	(0.04)	0.03

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
0	0.65		51.66	168.27	166	161	1.00	5.45	
1	0.58		51.71	168.51	167	161	1.00	4.80	561
2	0.63		51.71	168.84	167	162	1.00	5.21	611
3	0.64		51.75	169.26	167	162	1.00	5.35	629
4	0.69		51.80	169.78	168	163	1.00	5.78	683
5	0.67		51.85	170.25	168	163	1.00	5.62	666
6	0.75		51.89	170.72	169	163	1.00	6.27	746
7	0.65		51.94	171.29	169	164	1.00	5.45	652
8	0.70		51.99	171.71	170	164	1.00	5.80	695
9	0.69		51.99	172.23	170	165	1.00	5.79	697
10	0.67		52.03	172.80	171	165	1.00	5.62	680
11	0.67		52.08	173.41	172	166	1.00	5.61	682
12	0.69		52.08	174.02	172	166	1.00	5.79	707
13	0.61		52.12	174.68	173	167	1.00	5.12	628
14	0.60		52.12	175.29	174	168	1.00	5.03	620
15	0.67		52.12	175.95	174	168	1.00	5.55	688
16	0.65		52.12	176.52	175	169	1.00	5.41	674
17	0.70		52.12	177.09	175	169	1.00	5.80	725
18	0.62		52.12	177.75	176	170	1.00	5.14	646
19	0.64		52.12	178.32	176	171	1.00	5.30	669
20	0.58		52.12	178.84	177	171	1.00	4.80	608
21	0.65		52.12	179.46	178	172	1.00	5.45	695
22	0.68		52.12	180.03	178	172	1.00	5.63	721
23	0.56		52.12	180.60	179	173	1.00	4.64	598
24	0.66		52.12	181.12	179	173	1.00	5.46	705
25	0.59		52.12	181.68	180	174	1.00	4.95	643
26	0.63		52.12	182.25	180	174	1.00	5.29	689
27	0.69		52.12	182.82	181	175	1.00	5.79	757
28	0.66		52.12	183.30	181	175	1.00	5.54	727
29	0.62		52.12	183.39	181	175	1.00	5.13	674
30	0.67		52.12	183.53	182	176	1.00	5.62	740
31	0.67		52.12	183.63	182	176	1.00	5.61	739
32	0.71		52.12	183.67	182	176	1.00	5.95	783
33	0.71		52.12	183.72	182	176	1.00	5.95	785
34	0.67		52.12	183.72	182	176	1.00	5.62	741
35	0.66		52.12	183.72	182	176	1.00	5.46	720
36	0.69		52.12	183.67	182	176	1.00	5.79	762
37	0.70		52.12	183.67	182	176	1.00	5.80	763
38	0.66		52.08	183.58	182	176	1.00	5.48	721
39	0.68		52.08	183.53	181	176	1.00	5.66	745
40	0.59		52.12	183.44	181	176	1.00	4.89	643
41	0.65		52.12	183.34	181	175	1.00	5.45	717
42	0.77		52.17	183.30	181	175	1.00	6.45	847
43	0.69		52.22	183.20	181	175	1.00	5.79	759
44	0.71		52.26	183.10	181	175	1.00	5.95	779
45	0.66		52.26	182.96	181	175	1.00	5.46	715
46	0.67		52.35	182.87	181	175	1.00	5.60	732
47	0.56		52.40	182.73	181	175	1.00	4.69	613

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
48	0.61		52.45	182.58	180	175	1.00	5.07	661
49	0.73		52.49	182.49	180	175	1.00	6.10	794
50	0.73		52.54	182.35	180	175	1.00	6.12	796
51	0.62		52.58	182.16	180	174	1.00	5.13	665
52	0.59		52.63	182.02	180	174	1.00	4.95	642
53	0.60		52.68	181.87	180	174	1.00	4.97	643
54	0.67		52.72	181.78	180	174	1.00	5.62	726
55	0.69		52.77	181.59	179	174	1.00	5.79	746
56	0.73		52.77	181.40	179	174	1.00	6.11	787
57	0.67		52.77	181.26	179	174	1.00	5.61	722
58	0.70		52.82	181.07	179	173	1.00	5.80	745
59	0.63		52.82	180.93	179	173	1.00	5.29	678
60	0.62		52.86	180.78	179	173	1.00	5.13	657
61	0.70		52.86	180.60	178	173	1.00	5.83	745
62	0.61		52.91	180.40	178	173	1.00	5.11	652
63	0.73		52.91	180.26	178	173	1.00	6.10	777
64	0.69		52.91	180.07	178	172	1.00	5.77	735
65	0.63		52.91	179.93	178	172	1.00	5.29	672
66	0.73		52.91	179.74	178	172	1.00	6.10	775
67	0.61		52.91	179.55	177	172	1.00	5.11	648
68	0.63		52.91	179.36	177	172	1.00	5.28	668
69	0.69		52.91	179.17	177	172	1.00	5.76	728
70	0.57		52.95	178.98	177	171	1.00	4.79	604
71	0.63		52.95	178.80	177	171	1.00	5.26	663
72	0.72		52.95	178.56	176	171	1.00	6.04	759
73	0.68		52.95	178.42	176	171	1.00	5.70	715
74	0.71		52.95	178.23	176	171	1.00	5.93	744
75	0.63		52.95	177.99	176	171	1.00	5.27	660
76	0.63		52.95	177.85	176	170	1.00	5.25	657
77	0.67		52.95	177.66	175	170	1.00	5.59	698
78	0.65		52.95	177.47	175	170	1.00	5.42	676
79	0.71		52.95	177.28	175	170	1.00	5.93	738
80	0.57		52.95	177.09	175	170	1.00	4.77	593
81	0.63		53.00	176.85	175	169	1.00	5.26	652
82	0.61		53.00	176.66	174	169	1.00	5.09	631
83	0.65		53.00	176.52	174	169	1.00	5.41	669
84	0.71		53.00	176.28	174	169	1.00	5.90	728
85	0.64		53.00	176.10	174	169	1.00	5.36	661
86	0.61		53.00	175.86	174	168	1.00	5.10	628
87	0.67		53.00	175.72	173	168	1.00	5.60	687
88	0.67		53.00	175.48	173	168	1.00	5.59	685
89	0.63		53.00	175.29	173	168	1.00	5.25	643
90	0.67		53.05	175.06	173	168	1.00	5.58	681
91	0.73		53.05	174.87	173	167	1.00	6.08	741
92	0.67		53.05	174.68	172	167	1.00	5.59	680
93	0.61		53.05	174.49	172	167	1.00	5.09	618
94	0.57		53.05	174.30	172	167	1.00	4.75	577
95	0.67		53.00	174.07	172	167	1.00	5.61	680

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
96	0.76		53.05	173.83	172	166	1.00	6.35	767
97	0.77		53.00	173.64	171	166	1.00	6.40	774
98	0.67		53.00	173.45	171	166	1.00	5.58	673
99	0.71		53.05	173.22	171	166	1.00	5.91	711
100	0.69		53.05	173.03	171	166	1.00	5.75	690
101	0.65		53.00	172.80	171	165	1.00	5.40	648
102	0.59		53.05	172.61	170	165	1.00	4.92	589
103	0.59		53.00	172.37	170	165	1.00	4.92	588
104	0.65		53.00	172.18	170	165	1.00	5.41	646
105	0.63		53.05	171.95	170	165	1.00	5.24	624
106	0.75		53.00	171.76	170	164	1.00	6.21	739
107	0.69		52.95	171.57	169	164	1.00	5.76	684
108	0.65		52.95	171.33	169	164	1.00	5.42	642
109	0.68		52.95	171.10	169	164	1.00	5.69	673
110	0.61		52.95	170.91	169	164	1.00	5.07	599
111	0.53		52.95	170.72	169	164	1.00	4.42	521
112	0.67		52.95	170.49	168	163	1.00	5.57	656
113	0.57		52.95	170.25	168	163	1.00	4.74	557
114	0.63		52.95	170.06	168	163	1.00	5.24	614
115	0.69		52.95	169.87	168	163	1.00	5.74	672
116	0.69		52.91	169.59	167	162	1.00	5.74	670
117	0.57		52.91	169.40	167	162	1.00	4.74	553
118	0.63		52.86	169.17	167	162	1.00	5.24	611
119	0.64		52.86	168.98	167	162	1.00	5.37	624
120	0.62		52.82	168.74	167	161	1.00	5.13	595
121	0.65		52.82	168.60	167	161	1.00	5.40	625
122	0.63		52.77	168.56	166	161	1.00	5.24	607
123	0.63		52.77	168.46	167	161	1.00	5.24	607
124	0.65		52.72	168.46	166	161	1.00	5.40	625
125	0.59		52.72	168.60	167	161	1.00	4.91	570
126	0.79		52.72	168.79	167	162	1.00	6.55	762
127	0.63		52.68	168.93	167	162	1.00	5.24	610
128	0.67		52.68	169.21	167	162	1.00	5.56	649
129	0.61		52.63	169.64	168	162	1.00	5.07	594
130	0.51		52.63	170.06	168	163	1.00	4.26	501
131	0.69		52.63	170.63	169	163	1.00	5.74	678
132	0.63		52.58	171.15	170	164	1.00	5.27	626
133	0.63		52.58	171.90	170	164	1.00	5.25	627
134	0.57		52.54	172.42	171	165	1.00	4.74	570
135	0.63		52.54	173.22	172	166	1.00	5.24	633
136	0.67		52.54	173.88	172	166	1.00	5.55	675
137	0.61		52.49	174.73	173	167	1.00	5.08	622
138	0.63		52.49	175.53	174	168	1.00	5.23	644
139	0.65		52.49	176.24	175	169	1.00	5.40	668
140	0.57		52.49	177.04	175	169	1.00	4.74	592
141	0.57		52.49	177.85	176	170	1.00	4.74	596
142	0.76		52.49	178.84	177	171	1.00	6.37	806
143	0.72		52.49	179.74	178	172	1.00	6.04	769

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
144	0.56		52.45	180.78	179	173	1.00	4.68	601
145	0.53		52.40	181.73	180	174	1.00	4.45	577
146	0.61		52.40	182.82	181	175	1.00	5.07	662
147	0.63		52.35	183.39	181	175	1.00	5.24	687
148	0.61		52.31	183.72	182	176	1.00	5.06	666
149	0.77		52.26	183.96	182	176	1.00	6.38	841
150	0.65		52.22	184.15	182	176	1.00	5.40	713
151	0.61		52.17	184.24	182	176	1.00	5.08	672
152	0.67		52.12	184.43	182	176	1.00	5.56	737
153	0.71		52.08	184.48	182	176	1.00	5.89	780
154	0.59		52.03	184.53	182	177	1.00	4.91	652
155	0.67		52.03	184.57	183	177	1.00	5.56	738
156	0.65		51.99	184.57	183	177	1.00	5.41	718
157	0.66		51.99	184.57	182	177	1.00	5.51	732
158	0.73		51.94	184.57	182	177	1.00	6.07	806
159	0.67		51.94	184.53	182	176	1.00	5.57	740
160	0.57		51.99	184.48	182	177	1.00	4.75	629
161	0.69		51.99	184.43	182	176	1.00	5.73	760
162	0.67		52.03	184.34	182	176	1.00	5.58	739
163	0.71		52.08	184.24	182	176	1.00	5.90	781
164	0.57		52.12	184.20	182	176	1.00	4.75	629
165	0.69		52.22	184.10	182	176	1.00	5.74	758
166	0.65		52.22	184.00	182	176	1.00	5.42	715
167	0.71		52.26	183.86	182	176	1.00	5.92	780
168	0.74		52.26	183.77	182	176	1.00	6.17	813
169	0.62		52.31	183.63	181	176	1.00	5.15	676
170	0.58		52.31	183.48	181	176	1.00	4.83	634
171	0.63		52.35	183.44	181	176	1.00	5.25	688
172	0.55		52.35	183.25	181	175	1.00	4.59	602
173	0.57		52.40	183.15	181	175	1.00	4.76	623
174	0.59		52.40	182.96	181	175	1.00	4.92	643
175	0.73		52.40	182.82	181	175	1.00	6.07	793
176	0.67		52.40	182.73	180	175	1.00	5.59	729
177	0.51		52.40	182.58	180	175	1.00	4.27	556
178	0.57		52.40	182.44	180	175	1.00	4.76	620
179	0.73		52.40	182.30	180	175	1.00	6.07	790
180	0.71		52.40	182.11	180	174	1.00	5.88	763
181	0.63		52.40	181.97	180	174	1.00	5.27	684
182	0.70		52.35	181.78	180	174	1.00	5.84	756
183	0.67		52.35	181.59	179	174	1.00	5.56	720
184	0.59		52.35	181.45	179	174	1.00	4.93	637
185	0.55		52.35	181.30	179	174	1.00	4.59	593
186	0.57		52.35	181.12	179	173	1.00	4.76	614
187	0.67		52.35	180.93	179	173	1.00	5.58	718
188	0.61		52.35	180.78	179	173	1.00	5.08	653
189	0.75		52.35	180.60	178	173	1.00	6.24	801
190	0.57		52.35	180.40	178	173	1.00	4.75	609
191	0.67		52.35	180.22	178	173	1.00	5.56	712

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
192	0.71		52.35	180.03	178	172	1.00	5.91	756
193	0.69		52.31	179.84	178	172	1.00	5.75	735
194	0.62		52.31	179.70	177	172	1.00	5.20	664
195	0.67		52.31	179.46	177	172	1.00	5.60	712
196	0.53		52.26	179.32	177	172	1.00	4.43	563
197	0.69		52.26	179.13	177	172	1.00	5.75	730
198	0.53		52.26	178.94	177	171	1.00	4.42	561
199	0.69		52.26	178.75	177	171	1.00	5.75	728
200	0.61		52.26	178.56	176	171	1.00	5.08	642
201	0.71		52.26	178.37	176	171	1.00	5.90	744
202	0.71		52.26	178.18	176	171	1.00	5.90	744
203	0.69		52.22	177.99	176	170	1.00	5.75	724
204	0.71		52.22	177.80	176	170	1.00	5.90	741
205	0.63		52.17	177.61	175	170	1.00	5.25	659
206	0.67		52.17	177.42	175	170	1.00	5.58	700
207	0.69		52.17	177.18	175	170	1.00	5.72	716
208	0.65		52.12	177.00	175	169	1.00	5.41	677
209	0.69		52.17	176.80	175	169	1.00	5.73	715
210	0.73		52.17	176.62	174	169	1.00	6.07	756
211	0.63		52.17	176.43	174	169	1.00	5.25	653
212	0.61		52.17	176.19	174	169	1.00	5.08	631
213	0.67		52.12	176.00	174	168	1.00	5.56	690
214	0.69		52.12	175.81	174	168	1.00	5.75	712
215	0.63		52.12	175.58	173	168	1.00	5.24	647
216	0.67		52.12	175.39	173	168	1.00	5.56	687
217	0.67		52.08	175.20	173	168	1.00	5.56	686
218	0.67		52.08	175.01	173	168	1.00	5.55	683
219	0.61		52.08	174.82	173	167	1.00	5.12	629
220	0.69		52.08	174.59	172	167	1.00	5.74	704
221	0.65		52.08	174.40	172	167	1.00	5.40	662
222	0.61		52.08	174.16	172	167	1.00	5.07	620
223	0.55		52.03	173.97	172	167	1.00	4.58	559
224	0.71		52.03	173.79	172	166	1.00	5.90	720
225	0.61		52.08	173.55	171	166	1.00	5.08	618
226	0.65		52.03	173.36	171	166	1.00	5.40	655
227	0.65		52.03	173.17	171	166	1.00	5.41	656
228	0.63		51.99	172.94	171	166	1.00	5.25	635
229	0.69		51.99	172.75	170	165	1.00	5.74	694
230	0.69		51.94	172.51	170	165	1.00	5.71	690
231	0.66		51.94	172.32	170	165	1.00	5.53	666
232	0.65		51.89	172.09	170	165	1.00	5.40	650
233	0.65		51.94	171.90	170	165	1.00	5.40	649
234	0.65		51.94	171.67	169	164	1.00	5.40	647
235	0.67		51.94	171.43	169	164	1.00	5.57	666
236	0.71		51.94	171.24	169	164	1.00	5.90	704
237	0.67		51.94	171.05	169	164	1.00	5.57	664
238	0.61		51.89	170.82	169	164	1.00	5.07	604
239	0.65		51.89	170.63	168	163	1.00	5.40	642

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
240	0.63		51.89	170.39	168	163	1.00	5.24	621
241	0.68		51.89	170.20	168	163	1.00	5.70	676
242	0.69		51.89	169.97	168	163	1.00	5.74	678
243	0.73		51.89	169.78	168	163	1.00	6.06	716
244	0.59		51.89	169.55	167	162	1.00	4.88	575
245	0.65		51.89	169.36	167	162	1.00	5.41	637
246	0.71		51.89	169.12	167	162	1.00	5.90	692
247	0.65		51.89	168.88	167	162	1.00	5.40	633
248	0.55		51.89	168.60	166	161	1.00	4.58	535
249	0.63		51.89	168.37	166	161	1.00	5.25	612
250	0.63		51.89	168.23	166	161	1.00	5.25	611
251	0.71		51.89	168.08	166	161	1.00	5.90	686
252	0.69		51.85	168.08	166	161	1.00	5.72	666
253	0.59		51.85	168.08	166	161	1.00	4.91	572
254	0.67		51.85	168.18	166	161	1.00	5.57	649
255	0.67		51.85	168.32	166	161	1.00	5.56	649
256	0.58		51.89	168.60	167	161	1.00	4.85	566
257	0.65		51.89	168.98	167	162	1.00	5.45	638
258	0.71		51.89	169.36	168	162	1.00	5.90	694
259	0.59		51.89	169.92	168	163	1.00	4.91	580
260	0.63		51.89	170.39	169	163	1.00	5.24	621
261	0.67		51.89	171.01	170	164	1.00	5.56	663
262	0.63		51.89	171.76	170	164	1.00	5.25	630
263	0.67		51.89	172.37	171	165	1.00	5.58	673
264	0.65		51.94	173.17	172	166	1.00	5.40	656
265	0.67		51.94	173.93	172	166	1.00	5.56	679
266	0.65		51.94	174.73	173	167	1.00	5.41	665
267	0.67		51.94	175.48	174	168	1.00	5.55	686
268	0.69		51.94	176.33	175	169	1.00	5.75	717
269	0.63		51.94	177.09	176	170	1.00	5.23	655
270	0.60		51.94	177.99	176	170	1.00	4.96	626
271	0.73		51.99	178.80	177	171	1.00	6.06	770
272	0.65		51.94	179.65	178	172	1.00	5.41	692
273	0.57		51.94	180.50	179	173	1.00	4.75	611
274	0.61		51.89	181.35	180	174	1.00	5.07	657
275	0.69		51.85	182.30	181	175	1.00	5.75	750
276	0.69		51.80	183.25	182	176	1.00	5.74	755
277	0.57		51.80	183.72	182	176	1.00	4.75	627
278	0.65		51.75	184.00	182	176	1.00	5.41	717
279	0.63		51.80	184.15	182	176	1.00	5.25	696
280	0.55		51.80	184.48	182	176	1.00	4.60	612
281	0.74		51.75	184.62	183	177	1.00	6.20	824
282	0.61		51.75	184.72	183	177	1.00	5.05	673
283	0.61		51.71	184.76	183	177	1.00	5.11	681
284	0.59		51.66	184.81	183	177	1.00	4.90	654
285	0.69		51.61	184.86	183	177	1.00	5.74	765
286	0.69		51.57	184.81	183	177	1.00	5.75	768
287	0.73		51.57	184.86	183	177	1.00	6.07	810

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
288	0.73		51.57	184.81	183	177	1.00	6.07	810
289	0.61		51.52	184.76	183	177	1.00	5.09	679
290	0.59		51.52	184.76	183	177	1.00	4.94	659
291	0.65		51.52	184.72	183	177	1.00	5.43	724
292	0.65		51.52	184.62	182	177	1.00	5.44	725
293	0.66		51.52	184.62	182	177	1.00	5.54	738
294	0.66		51.52	184.48	182	177	1.00	5.51	734
295	0.61		51.48	184.38	182	176	1.00	5.10	678
296	0.67		51.48	184.29	182	176	1.00	5.59	743
297	0.71		51.48	184.24	182	176	1.00	5.92	787
298	0.73		51.48	184.05	182	176	1.00	6.10	809
299	0.61		51.43	184.00	182	176	1.00	5.10	676
300	0.65		51.48	183.91	182	176	1.00	5.43	720
301	0.65		51.48	183.77	182	176	1.00	5.43	719
302	0.57		51.48	183.67	181	176	1.00	4.78	632
303	0.69		51.48	183.53	181	176	1.00	5.75	761
304	0.61		51.48	183.39	181	176	1.00	5.12	676
305	0.61		51.48	183.30	181	175	1.00	5.10	673
306	0.60		51.48	183.10	181	175	1.00	5.01	661
307	0.63		51.52	182.96	181	175	1.00	5.28	695
308	0.63		51.52	182.82	181	175	1.00	5.27	693
309	0.61		51.57	182.68	180	175	1.00	5.10	670
310	0.57		51.57	182.54	180	175	1.00	4.79	628
311	0.79		51.57	182.35	180	175	1.00	6.60	864
312	0.73		51.57	182.20	180	174	1.00	6.10	797
313	0.57		51.61	182.02	180	174	1.00	4.78	624
314	0.71		51.61	181.83	180	174	1.00	5.95	775
315	0.65		51.61	181.68	179	174	1.00	5.44	708
316	0.59		51.61	181.54	179	174	1.00	4.95	643
317	0.58		51.66	181.40	179	174	1.00	4.82	626
318	0.58		51.66	181.21	179	173	1.00	4.82	625
319	0.67		51.66	181.02	179	173	1.00	5.60	726
320	0.61		51.66	180.88	179	173	1.00	5.11	661
321	0.63		51.66	180.74	178	173	1.00	5.29	683
322	0.63		51.66	180.50	178	173	1.00	5.28	681
323	0.67		51.66	180.31	178	173	1.00	5.60	722
324	0.65		51.66	180.12	178	172	1.00	5.45	701
325	0.65		51.66	179.93	178	172	1.00	5.45	699
326	0.67		51.66	179.74	177	172	1.00	5.60	719
327	0.63		51.66	179.55	177	172	1.00	5.29	677
328	0.65		51.66	179.36	177	172	1.00	5.45	696
329	0.61		51.66	179.22	177	171	1.00	5.11	653
330	0.58		51.66	179.03	177	171	1.00	4.80	612
331	0.67		51.66	178.84	177	171	1.00	5.60	714
332	0.64		51.66	178.65	176	171	1.00	5.35	680
333	0.62		51.66	178.42	176	171	1.00	5.20	660
334	0.63		51.66	178.23	176	171	1.00	5.25	666
335	0.61		51.66	178.04	176	170	1.00	5.12	648

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
336	0.69		51.66	177.85	176	170	1.00	5.78	730
337	0.55		51.61	177.61	175	170	1.00	4.62	583
338	0.59		51.61	177.42	175	170	1.00	4.95	623
339	0.71		51.61	177.23	175	170	1.00	5.95	748
340	0.71		51.61	177.04	175	169	1.00	5.94	746
341	0.63		51.61	176.85	175	169	1.00	5.28	662
342	0.63		51.61	176.66	174	169	1.00	5.28	661
343	0.73		51.61	176.47	174	169	1.00	6.10	763
344	0.60		51.61	176.28	174	169	1.00	4.96	619
345	0.61		51.61	176.05	174	169	1.00	5.11	637
346	0.63		51.61	175.86	174	168	1.00	5.28	657
347	0.67		51.61	175.67	173	168	1.00	5.56	691
348	0.68		51.61	175.48	173	168	1.00	5.65	700
349	0.61		51.61	175.25	173	168	1.00	5.11	633
350	0.69		51.61	175.06	173	168	1.00	5.77	713
351	0.65		51.61	174.87	173	167	1.00	5.45	672
352	0.65		51.57	174.63	172	167	1.00	5.45	671
353	0.67		51.57	174.40	172	167	1.00	5.60	689
354	0.67		51.61	174.21	172	167	1.00	5.61	689
355	0.67		51.57	174.02	172	166	1.00	5.61	688
356	0.65		51.57	173.79	172	166	1.00	5.44	665
357	0.60		51.57	173.55	171	166	1.00	4.97	607
358	0.71		51.57	173.36	171	166	1.00	5.94	724
359	0.69		51.57	173.13	171	166	1.00	5.78	703
360	0.71		51.57	172.94	171	165	1.00	5.94	722
361	0.71		51.52	172.75	171	165	1.00	5.94	721
362	0.63		51.52	172.51	170	165	1.00	5.28	639
363	0.67		51.52	172.28	170	165	1.00	5.61	679
364	0.65		51.52	172.09	170	165	1.00	5.45	657
365	0.62		51.52	171.85	170	164	1.00	5.13	618
366	0.73		51.52	171.67	169	164	1.00	6.11	735
367	0.57		51.52	171.48	169	164	1.00	4.79	575
368	0.63		51.52	171.24	169	164	1.00	5.29	634
369	0.67		51.52	171.01	169	164	1.00	5.61	671
370	0.69		51.52	170.82	169	163	1.00	5.77	689
371	0.71		51.52	170.58	168	163	1.00	5.93	707
372	0.59		51.52	170.39	168	163	1.00	4.91	585
373	0.62		51.48	170.16	168	163	1.00	5.20	617
374	0.67		51.48	169.92	168	163	1.00	5.61	666
375	0.65		51.48	169.73	168	162	1.00	5.45	645
376	0.65		51.48	169.50	167	162	1.00	5.45	644
377	0.67		51.48	169.26	167	162	1.00	5.61	662
378	0.67		51.48	169.07	167	162	1.00	5.60	660
379	0.69		51.48	168.84	167	161	1.00	5.79	680
380	0.67		51.52	168.60	166	161	1.00	5.61	658
381	0.67		51.52	168.41	166	161	1.00	5.61	657
382	0.67		51.52	168.32	166	161	1.00	5.61	656
383	0.59		51.57	168.32	166	161	1.00	4.95	579

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
384	0.73		51.57	168.37	166	161	1.00	6.10	713
385	0.66		51.61	168.51	167	161	1.00	5.50	643
386	0.67		51.61	168.65	167	161	1.00	5.59	655
387	0.67		51.66	168.98	167	162	1.00	5.61	659
388	0.57		51.71	169.45	168	162	1.00	4.79	564
389	0.58		51.71	169.97	168	163	1.00	4.80	568
390	0.65		51.75	170.49	169	163	1.00	5.45	648
391	0.73		51.80	171.15	169	164	1.00	6.10	729
392	0.69		51.80	171.81	170	164	1.00	5.76	692
393	0.62		51.80	172.56	171	165	1.00	5.13	620
394	0.67		51.85	173.36	172	166	1.00	5.61	683
395	0.65		51.89	174.12	173	167	1.00	5.45	666
396	0.64		51.89	175.06	174	167	1.00	5.30	653
397	0.62		51.94	176.10	175	168	1.00	5.13	638
398	0.69		51.94	177.04	176	169	1.00	5.76	722
399	0.58		51.99	178.13	177	170	1.00	4.85	612
400	0.66		51.99	179.08	178	171	1.00	5.51	701
401	0.65		52.03	180.26	179	172	1.00	5.45	699
402	0.69		52.08	181.30	180	173	1.00	5.78	748
403	0.65		52.08	182.40	181	175	1.00	5.45	711
404	0.71		52.08	183.44	182	175	1.00	5.95	783
405	0.73		52.08	183.86	182	176	1.00	6.10	805
406	0.71		52.12	184.24	182	176	1.00	5.95	787
407	0.69		52.12	184.43	183	176	1.00	5.77	764
408	0.67		52.12	184.76	183	177	1.00	5.62	746
409	0.63		52.17	184.90	183	177	1.00	5.28	702
410	0.63		52.17	185.00	183	177	1.00	5.28	702
411	0.60		52.17	185.05	183	177	1.00	5.00	666
412	0.74		52.17	185.09	183	177	1.00	6.16	820
413	0.69		52.17	185.19	183	177	1.00	5.77	769
414	0.65		52.17	185.24	183	177	1.00	5.45	727
415	0.63		52.17	185.24	183	177	1.00	5.29	704
416	0.65		52.17	185.19	183	177	1.00	5.45	726
417	0.64		52.12	185.19	183	177	1.00	5.30	706
418	0.69		52.12	185.19	183	177	1.00	5.78	770
419	0.67		52.08	185.14	183	177	1.00	5.60	747
420	0.77		52.08	185.09	183	177	1.00	6.43	856
421	0.60		52.03	185.05	183	177	1.00	4.96	661
422	0.69		51.99	184.95	183	177	1.00	5.78	769
423	0.77		51.94	184.86	183	177	1.00	6.42	855
424	0.70		51.89	184.81	183	177	1.00	5.81	774
425	0.71		51.85	184.72	182	177	1.00	5.93	789
426	0.71		51.85	184.62	182	176	1.00	5.95	790
427	0.77		51.80	184.53	182	176	1.00	6.45	857
428	0.67		51.75	184.43	182	176	1.00	5.62	747
429	0.71		51.75	184.29	182	176	1.00	5.95	789
430	0.56		51.71	184.20	182	176	1.00	4.64	615
431	0.67		51.71	184.10	182	176	1.00	5.62	745

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
432	0.67		51.71	183.96	182	176	1.00	5.61	743
433	0.64		51.71	183.82	182	176	1.00	5.30	700
434	0.67		51.71	183.67	181	176	1.00	5.62	743
435	0.67		51.71	183.53	181	175	1.00	5.61	741
436	0.69		51.71	183.39	181	175	1.00	5.79	763
437	0.68		51.66	183.25	181	175	1.00	5.69	749
438	0.65		51.66	183.10	181	175	1.00	5.45	717
439	0.60		51.66	182.92	181	175	1.00	4.96	652
440	0.60		51.66	182.77	180	175	1.00	4.96	651
441	0.69		51.66	182.63	180	175	1.00	5.78	758
442	0.77		51.66	182.49	180	174	1.00	6.45	846
443	0.77		51.66	182.30	180	174	1.00	6.45	844
444	0.62		51.66	182.11	180	174	1.00	5.13	670
445	0.75		51.66	181.97	180	174	1.00	6.27	818
446	0.71		51.66	181.83	180	174	1.00	5.95	776
447	0.60		51.66	181.64	179	174	1.00	4.97	647
448	0.77		51.66	181.45	179	173	1.00	6.42	834
449	0.79		51.66	181.26	179	173	1.00	6.57	853
450	0.61		51.66	181.12	179	173	1.00	5.10	660
451	0.61		51.66	180.93	179	173	1.00	5.09	658
452	0.66		51.71	180.74	178	173	1.00	5.47	707
453	0.58		51.71	180.55	178	172	1.00	4.80	620
454	0.64		51.66	180.40	178	172	1.00	5.30	683
455	0.63		51.66	180.17	178	172	1.00	5.29	680
456	0.68		51.66	180.03	178	172	1.00	5.64	725
457	0.62		51.66	179.84	178	172	1.00	5.14	659
458	0.62		51.66	179.65	177	172	1.00	5.14	658
459	0.71		51.66	179.46	177	171	1.00	5.95	761
460	0.71		51.66	179.27	177	171	1.00	5.95	761
461	0.69		51.66	179.08	177	171	1.00	5.79	738
462	0.68		51.61	178.89	177	171	1.00	5.68	724
463	0.69		51.61	178.70	176	171	1.00	5.77	734
464	0.62		51.57	178.46	176	170	1.00	5.14	653
465	0.70		51.57	178.27	176	170	1.00	5.80	735
466	0.67		51.57	178.08	176	170	1.00	5.62	712
467	0.66		51.52	177.90	176	170	1.00	5.47	692
468	0.60		51.52	177.70	175	170	1.00	4.97	628
469	0.70		51.52	177.47	175	170	1.00	5.80	731
470	0.67		51.48	177.33	175	169	1.00	5.62	708
471	0.68		51.48	177.14	175	169	1.00	5.64	709
472	0.73		51.43	176.90	175	169	1.00	6.12	769
473	0.66		51.43	176.71	174	169	1.00	5.47	686
474	0.62		51.43	176.52	174	169	1.00	5.15	646
475	0.64		51.43	176.33	174	168	1.00	5.33	666
476	0.69		51.38	176.10	174	168	1.00	5.79	723
477	0.58		51.38	175.86	174	168	1.00	4.82	601
478	0.70		51.38	175.67	173	168	1.00	5.80	721
479	0.74		51.38	175.48	173	168	1.00	6.13	762

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
480	0.60		51.38	175.25	173	167	1.00	4.98	617
481	0.64		51.38	175.06	173	167	1.00	5.30	657
482	0.73		51.38	174.87	173	167	1.00	6.12	757
483	0.74		51.38	174.63	172	167	1.00	6.14	757
484	0.72		51.38	174.44	172	167	1.00	5.96	735
485	0.66		51.34	174.26	172	166	1.00	5.47	673
486	0.64		51.34	174.02	172	166	1.00	5.32	654
487	0.66		51.29	173.79	171	166	1.00	5.50	675
488	0.64		51.29	173.55	171	166	1.00	5.31	650
489	0.65		51.25	173.36	171	166	1.00	5.40	661
490	0.74		51.20	173.13	171	165	1.00	6.14	749
491	0.72		51.15	172.94	171	165	1.00	5.97	728
492	0.64		51.15	172.70	170	165	1.00	5.30	646
493	0.60		51.11	172.47	170	165	1.00	4.97	604
494	0.68		51.06	172.23	170	164	1.00	5.64	684
495	0.74		51.06	172.04	170	164	1.00	6.14	744
496	0.74		51.02	171.81	170	164	1.00	6.13	741
497	0.70		51.02	171.57	169	164	1.00	5.80	700
498	0.70		51.02	171.38	169	164	1.00	5.81	701
499	0.72		51.02	171.15	169	163	1.00	5.96	717
500	0.68		51.02	170.91	169	163	1.00	5.69	683
501	0.62		51.02	170.72	168	163	1.00	5.15	618
502	0.66		51.02	170.49	168	163	1.00	5.48	655
503	0.60		51.06	170.25	168	163	1.00	4.98	594
504	0.66		51.06	170.06	168	162	1.00	5.47	652
505	0.72		51.06	169.83	168	162	1.00	5.97	710
506	0.64		51.06	169.59	167	162	1.00	5.32	631
507	0.64		51.06	169.40	167	162	1.00	5.31	629
508	0.74		51.06	169.17	167	162	1.00	6.13	725
509	0.72		51.06	168.93	167	161	1.00	5.96	704
510	0.66		51.06	168.70	166	161	1.00	5.50	647
511	0.72		51.06	168.46	166	161	1.00	5.97	702
512	0.64		51.06	168.32	166	161	1.00	5.36	630
513	0.62		51.06	168.18	166	160	1.00	5.15	603
514	0.60		51.02	168.13	166	161	1.00	4.99	585
515	0.70		50.97	168.08	166	160	1.00	5.81	682
516	0.80		50.97	168.18	166	161	1.00	6.63	778
517	0.72		50.97	168.32	166	161	1.00	5.98	703
518	0.70		50.92	168.56	167	161	1.00	5.81	685
519	0.74		50.92	168.84	167	161	1.00	6.14	725
520	0.64		50.88	169.26	168	162	1.00	5.31	630
521	0.76		50.88	169.78	168	162	1.00	6.31	752
522	0.62		50.88	170.35	169	163	1.00	5.15	617
523	0.67		50.83	170.96	169	163	1.00	5.60	673
524	0.73		50.83	171.81	170	164	1.00	6.05	732
525	0.67		50.83	172.61	171	165	1.00	5.58	680
526	0.72		50.78	173.31	172	166	1.00	5.99	735
527	0.54		50.78	174.21	173	166	1.00	4.50	557

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
528	0.70		50.78	175.15	174	167	1.00	5.81	724
529	0.72		50.78	176.10	175	168	1.00	5.97	749
530	0.70		50.78	176.95	176	169	1.00	5.82	735
531	0.70		50.78	177.94	177	170	1.00	5.82	741
532	0.68		50.83	178.94	177	171	1.00	5.65	725
533	0.70		50.83	179.88	178	172	1.00	5.81	751
534	0.58		50.88	180.78	179	173	1.00	4.84	629
535	0.74		50.88	181.73	180	174	1.00	6.15	805
536	0.68		50.88	182.73	181	175	1.00	5.66	748
537	0.68		50.92	183.48	182	175	1.00	5.66	752
538	0.66		50.92	183.91	182	176	1.00	5.49	731
539	0.66		50.97	184.20	182	176	1.00	5.50	733
540	0.70		50.97	184.38	182	176	1.00	5.83	779
541	0.64		50.97	184.53	183	176	1.00	5.33	713
542	0.66		51.02	184.72	183	176	1.00	5.48	734
543	0.72		51.02	184.86	183	176	1.00	5.99	802
544	0.72		51.02	184.95	183	176	1.00	5.99	803
545	0.80		51.02	184.90	183	176	1.00	6.65	891
546	0.60		51.02	184.95	183	177	1.00	5.00	671
547	0.68		51.06	184.90	183	177	1.00	5.65	758
548	0.66		51.06	184.95	183	176	1.00	5.52	740
549	0.60		51.06	184.90	183	177	1.00	5.02	673
550	0.60		51.02	184.90	183	177	1.00	5.04	675
551	0.76		51.02	184.81	183	176	1.00	6.36	852
552	0.66		51.02	184.81	183	176	1.00	5.50	737
553	0.68		51.02	184.76	183	176	1.00	5.66	758
554	0.72		51.02	184.67	182	176	1.00	5.99	801
555	0.70		51.02	184.62	182	176	1.00	5.82	779
556	0.66		51.02	184.48	182	176	1.00	5.50	736
557	0.68		51.02	184.43	182	176	1.00	5.66	756
558	0.68		51.02	184.34	182	176	1.00	5.66	756
559	0.68		51.02	184.20	182	176	1.00	5.65	754
560	0.72		51.02	184.10	182	176	1.00	5.98	797
561	0.70		51.02	184.00	182	176	1.00	5.81	774
562	0.70		50.97	183.86	182	176	1.00	5.81	773
563	0.65		50.97	183.72	181	175	1.00	5.41	719
564	0.69		50.97	183.58	181	175	1.00	5.74	762
565	0.60		50.97	183.44	181	175	1.00	5.00	664
566	0.70		50.97	183.30	181	175	1.00	5.82	771
567	0.70		50.97	183.15	181	175	1.00	5.82	770
568	0.74		50.97	183.01	181	175	1.00	6.16	814
569	0.64		51.02	182.82	181	175	1.00	5.33	703
570	0.66		51.02	182.73	180	174	1.00	5.49	724
571	0.60		51.02	182.54	180	174	1.00	5.00	659
572	0.66		51.02	182.40	180	174	1.00	5.49	722
573	0.74		51.02	182.25	180	174	1.00	6.15	808
574	0.74		51.02	182.06	180	174	1.00	6.16	808
575	0.66		51.02	181.87	180	174	1.00	5.47	717

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
576	0.66		51.02	181.73	179	174	1.00	5.53	724
577	0.66		51.02	181.54	179	173	1.00	5.50	718
578	0.68		51.02	181.35	179	173	1.00	5.65	738
579	0.76		51.02	181.16	179	173	1.00	6.31	822
580	0.70		51.06	181.02	179	173	1.00	5.81	756
581	0.66		51.06	180.83	179	173	1.00	5.49	713
582	0.72		51.06	180.64	178	172	1.00	5.97	775
583	0.70		51.06	180.45	178	172	1.00	5.81	753
584	0.72		51.06	180.26	178	172	1.00	5.98	774
585	0.76		51.06	180.12	178	172	1.00	6.31	815
586	0.62		51.06	179.88	178	172	1.00	5.15	665
587	0.72		51.06	179.74	177	172	1.00	5.97	769
588	0.63		51.06	179.50	177	171	1.00	5.27	678
589	0.67		51.06	179.32	177	171	1.00	5.57	715
590	0.70		51.06	179.13	177	171	1.00	5.81	745
591	0.62		51.11	178.94	177	171	1.00	5.15	659
592	0.60		51.11	178.75	176	171	1.00	4.99	637
593	0.70		51.11	178.56	176	170	1.00	5.80	741
594	0.76		51.11	178.37	176	170	1.00	6.30	802
595	0.68		51.11	178.13	176	170	1.00	5.65	718
596	0.66		51.11	177.94	176	170	1.00	5.48	696
597	0.72		51.11	177.75	175	170	1.00	5.96	756
598	0.66		51.11	177.52	175	170	1.00	5.47	692
599	0.72		51.11	177.33	175	169	1.00	5.97	755
600	0.75		51.06	177.14	175	169	1.00	6.29	794
601	0.71		51.06	176.90	175	169	1.00	5.89	742
602	0.64		51.06	176.71	174	169	1.00	5.35	674
603	0.65		51.06	176.47	174	169	1.00	5.41	680
604	0.78		51.06	176.28	174	168	1.00	6.46	810
605	0.60		51.06	176.05	174	168	1.00	4.99	624
606	0.62		51.06	175.86	174	168	1.00	5.15	643
607	0.73		51.06	175.67	173	168	1.00	6.12	764
608	0.66		51.06	175.43	173	167	1.00	5.47	681
609	0.70		51.06	175.25	173	167	1.00	5.81	723
610	0.70		51.11	175.01	173	167	1.00	5.80	719
611	0.72		51.11	174.77	172	167	1.00	5.96	738
612	0.74		51.11	174.59	172	167	1.00	6.14	759
613	0.70		51.11	174.35	172	166	1.00	5.81	717
614	0.68		51.11	174.12	172	166	1.00	5.66	697
615	0.74		51.15	173.93	172	166	1.00	6.16	758
616	0.67		51.11	173.69	171	166	1.00	5.55	681
617	0.70		51.15	173.45	171	166	1.00	5.81	712
618	0.76		51.15	173.22	171	165	1.00	6.31	771
619	0.70		51.11	173.03	171	165	1.00	5.80	709
620	0.64		51.11	172.80	171	165	1.00	5.31	647
621	0.66		51.11	172.56	170	165	1.00	5.49	667
622	0.66		51.06	172.37	170	164	1.00	5.49	667
623	0.70		51.06	172.14	170	164	1.00	5.80	704

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
624	0.66		51.02	171.95	170	164	1.00	5.50	665
625	0.76		51.02	171.71	169	164	1.00	6.31	762
626	0.81		50.97	171.52	169	164	1.00	6.79	819
627	0.73		50.97	171.29	169	163	1.00	6.11	735
628	0.75		50.92	171.05	169	163	1.00	6.21	747
629	0.74		50.92	170.86	169	163	1.00	6.20	744
630	0.70		50.88	170.68	168	163	1.00	5.82	698
631	0.70		50.88	170.44	168	163	1.00	5.82	697
632	0.70		50.83	170.25	168	162	1.00	5.81	695
633	0.68		50.83	170.01	168	162	1.00	5.65	675
634	0.68		50.83	169.83	168	162	1.00	5.66	675
635	0.68		50.83	169.64	167	162	1.00	5.66	674
636	0.68		50.83	169.40	167	161	1.00	5.65	671
637	0.70		50.83	169.17	167	161	1.00	5.83	691
638	0.70		50.83	169.03	167	161	1.00	5.83	690
639	0.66		50.83	168.93	167	161	1.00	5.50	651
640	0.68		50.83	168.93	167	161	1.00	5.67	671
641	0.72		50.83	168.88	167	161	1.00	6.00	709
642	0.66		50.83	168.98	167	161	1.00	5.49	649
643	0.62		50.88	169.12	167	162	1.00	5.17	612
644	0.68		50.88	169.36	167	162	1.00	5.67	673
645	0.68		50.88	169.59	168	162	1.00	5.66	673
646	0.72		50.88	169.83	168	162	1.00	5.99	713
647	0.70		50.92	170.16	168	162	1.00	5.83	696
648	0.68		50.92	170.53	169	163	1.00	5.67	679
649	0.68		50.97	170.96	169	163	1.00	5.66	680
650	0.68		50.97	171.48	170	164	1.00	5.66	683
651	0.64		50.97	172.04	170	164	1.00	5.34	647
652	0.72		51.02	172.65	171	165	1.00	5.98	728
653	0.76		51.02	173.27	172	165	1.00	6.37	780
654	0.74		51.02	174.02	173	166	1.00	6.18	761
655	0.68		51.02	174.87	174	167	1.00	5.66	702
656	0.78		51.02	175.81	174	168	1.00	6.50	812
657	0.66		51.06	176.95	176	169	1.00	5.50	694
658	0.66		51.06	177.94	176	170	1.00	5.50	699
659	0.68		51.06	178.89	178	171	1.00	5.67	726
660	0.62		51.06	179.93	179	172	1.00	5.18	668
661	0.66		51.06	180.97	180	173	1.00	5.50	715
662	0.70		51.02	182.25	181	174	1.00	5.84	767
663	0.64		51.02	183.34	182	175	1.00	5.34	707
664	0.76		51.02	184.05	182	176	1.00	6.32	842
665	0.67		51.02	184.53	183	176	1.00	5.55	743
666	0.69		51.02	184.76	183	176	1.00	5.75	771
667	0.74		51.02	185.00	183	176	1.00	6.16	826
668	0.74		50.97	185.14	183	177	1.00	6.16	828
669	0.72		50.97	185.28	183	177	1.00	6.00	806
670	0.76		50.97	185.42	183	177	1.00	6.34	853
671	0.76		50.92	185.47	183	177	1.00	6.33	853

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
672	0.68		50.88	185.52	183	177	1.00	5.66	763
673	0.68		50.83	185.52	183	177	1.00	5.68	766
674	0.74		50.83	185.52	183	177	1.00	6.16	831
675	0.66		50.78	185.52	183	177	1.00	5.50	741
676	0.78		50.78	185.47	183	177	1.00	6.50	876
677	0.76		50.74	185.42	183	177	1.00	6.32	853
678	0.70		50.69	185.38	183	177	1.00	5.81	784
679	0.70		50.69	185.28	183	177	1.00	5.83	786
680	0.71		50.65	185.24	183	177	1.00	5.91	797
681	0.62		50.65	185.14	183	177	1.00	5.13	691
682	0.74		50.60	185.05	183	176	1.00	6.16	830
683	0.74		50.55	184.90	183	176	1.00	6.16	829
684	0.72		50.60	184.81	183	176	1.00	6.01	808
685	0.76		50.55	184.72	182	176	1.00	6.34	852
686	0.70		50.55	184.57	182	176	1.00	5.84	783
687	0.72		50.55	184.43	182	176	1.00	6.00	804
688	0.78		50.60	184.29	182	176	1.00	6.51	871
689	0.76		50.60	184.15	182	176	1.00	6.34	848
690	0.74		50.60	184.00	182	176	1.00	6.16	823
691	0.72		50.60	183.86	182	175	1.00	6.02	803
692	0.66		50.60	183.72	181	175	1.00	5.54	738
693	0.72		50.60	183.53	181	175	1.00	6.03	803
694	0.73		50.60	183.39	181	175	1.00	6.10	811
695	0.64		50.60	183.25	181	175	1.00	5.35	711
696	0.78		50.60	183.06	181	175	1.00	6.51	864
697	0.74		50.60	182.92	181	175	1.00	6.18	819
698	0.68		50.60	182.73	180	174	1.00	5.68	751
699	0.72		50.55	182.54	180	174	1.00	6.01	795
700	0.76		50.55	182.40	180	174	1.00	6.35	838
701	0.74		50.55	182.16	180	174	1.00	6.18	814
702	0.62		50.55	181.97	180	174	1.00	5.19	683
703	0.70		50.55	181.83	179	173	1.00	5.85	769
704	0.70		50.51	181.59	179	173	1.00	5.84	766
705	0.72		50.51	181.40	179	173	1.00	6.01	788
706	0.63		50.46	181.21	179	173	1.00	5.22	684
707	0.76		50.46	181.02	179	173	1.00	6.35	830
708	0.76		50.46	180.83	179	173	1.00	6.34	827
709	0.72		50.46	180.64	178	172	1.00	6.01	784
710	0.70		50.42	180.45	178	172	1.00	5.86	762
711	0.72		50.42	180.26	178	172	1.00	6.02	783
712	0.58		50.42	180.07	178	172	1.00	4.85	630
713	0.64		50.37	179.88	178	172	1.00	5.36	695
714	0.64		50.37	179.70	177	171	1.00	5.36	694
715	0.72		50.37	179.46	177	171	1.00	6.01	777
716	0.76		50.32	179.27	177	171	1.00	6.35	820
717	0.70		50.32	179.03	177	171	1.00	5.86	756
718	0.62		50.32	178.80	176	171	1.00	5.20	668
719	0.75		50.28	178.65	176	170	1.00	6.21	799

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
720	0.76		50.28	178.42	176	170	1.00	6.36	815
721	0.73		50.28	178.18	176	170	1.00	6.08	779
722	0.74		50.28	177.99	176	170	1.00	6.19	791
723	0.82		50.23	177.80	175	170	1.00	6.84	874
724	0.62		50.23	177.56	175	169	1.00	5.20	664
725	0.64		50.23	177.33	175	169	1.00	5.35	681
726	0.78		50.23	177.09	175	169	1.00	6.52	828
727	0.72		50.23	176.90	175	169	1.00	6.02	764
728	0.68		50.23	176.66	174	169	1.00	5.69	720
729	0.78		50.23	176.43	174	168	1.00	6.53	825
730	0.68		50.23	176.24	174	168	1.00	5.70	719
731	0.72		50.23	175.95	174	168	1.00	6.02	758
732	0.72		50.23	175.76	173	168	1.00	6.03	758
733	0.61		50.23	175.53	173	167	1.00	5.06	635
734	0.64		50.23	175.29	173	167	1.00	5.36	672
735	0.70		50.23	175.11	173	167	1.00	5.86	733
736	0.68		50.19	174.87	173	167	1.00	5.70	711
737	0.68		50.19	174.63	172	167	1.00	5.70	710
738	0.76		50.19	174.40	172	166	1.00	6.36	790
739	0.65		50.19	174.16	172	166	1.00	5.38	668
740	0.74		50.19	173.97	172	166	1.00	6.20	768
741	0.78		50.14	173.74	171	166	1.00	6.52	807
742	0.67		50.14	173.50	171	166	1.00	5.55	685
743	0.72		50.19	173.27	171	165	1.00	6.04	744
744	0.70		50.14	173.08	171	165	1.00	5.86	722
745	0.67		50.19	172.84	170	165	1.00	5.55	681
746	0.68		50.19	172.61	170	165	1.00	5.71	699
747	0.67		50.19	172.37	170	164	1.00	5.55	679
748	0.74		50.19	172.14	170	164	1.00	6.20	757
749	0.73		50.19	171.90	170	164	1.00	6.05	737
750	0.68		50.19	171.67	169	164	1.00	5.71	694
751	0.66		50.19	171.48	169	164	1.00	5.54	673
752	0.74		50.19	171.19	169	163	1.00	6.20	751
753	0.69		50.19	171.01	169	163	1.00	5.71	691
754	0.66		50.19	170.77	168	163	1.00	5.54	669
755	0.76		50.19	170.53	168	163	1.00	6.36	767
756	0.76		50.19	170.35	168	162	1.00	6.37	767
757	0.63		50.19	170.11	168	162	1.00	5.21	626
758	0.68		50.19	169.87	167	162	1.00	5.71	684
759	0.69		50.19	169.64	167	162	1.00	5.71	683
760	0.67		50.19	169.45	167	162	1.00	5.55	662
761	0.73		50.19	169.21	167	161	1.00	6.08	725
762	0.69		50.19	168.98	167	161	1.00	5.77	686
763	0.70		50.19	168.84	167	161	1.00	5.85	695
764	0.74		50.19	168.74	167	161	1.00	6.21	737
765	0.70		50.19	168.70	167	161	1.00	5.87	697
766	0.67		50.14	168.74	167	161	1.00	5.55	659
767	0.67		50.14	168.79	167	161	1.00	5.55	659

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
768	0.66		50.14	168.93	167	161	1.00	5.54	659
769	0.74		50.09	169.12	167	161	1.00	6.21	740
770	0.69		50.09	169.36	167	162	1.00	5.71	682
771	0.68		50.09	169.69	168	162	1.00	5.70	682
772	0.63		50.09	170.06	168	162	1.00	5.22	627
773	0.69		50.09	170.49	169	163	1.00	5.71	689
774	0.76		50.09	170.96	169	163	1.00	6.36	770
775	0.61		50.09	171.52	170	164	1.00	5.12	623
776	0.84		50.09	172.18	171	164	1.00	6.97	852
777	0.72		50.05	173.08	171	165	1.00	6.04	744
778	0.69		50.05	173.93	172	166	1.00	5.71	709
779	0.69		50.05	174.73	173	167	1.00	5.71	713
780	0.70		50.05	175.72	175	168	1.00	5.87	739
781	0.82		50.05	176.90	176	169	1.00	6.86	872
782	0.65		50.05	177.90	177	170	1.00	5.38	689
783	0.78		50.05	179.03	178	171	1.00	6.53	843
784	0.67		50.09	180.12	179	172	1.00	5.56	723
785	0.63		50.09	181.21	180	173	1.00	5.21	684
786	0.76		50.09	182.44	181	174	1.00	6.36	842
787	0.67		50.14	183.44	182	175	1.00	5.56	741
788	0.74		50.14	184.38	183	176	1.00	6.19	832
789	0.69		50.14	184.90	183	176	1.00	5.76	778
790	0.77		50.14	185.14	183	177	1.00	6.44	870
791	0.77		50.14	185.38	183	177	1.00	6.40	866
792	0.65		50.14	185.52	184	177	1.00	5.39	730
793	0.69		50.14	185.71	184	177	1.00	5.71	776
794	0.61		50.14	185.80	184	177	1.00	5.05	685
795	0.76		50.14	185.89	184	177	1.00	6.37	866
796	0.76		50.14	185.99	184	177	1.00	6.37	867
797	0.66		50.14	185.99	184	177	1.00	5.53	752
798	0.65		50.14	185.99	184	177	1.00	5.39	733
799	0.78		50.19	185.99	184	177	1.00	6.53	888
800	0.67		50.19	185.99	184	177	1.00	5.55	754
801	0.67		50.19	185.94	184	177	1.00	5.55	754
802	0.59		50.23	185.94	184	177	1.00	4.88	663
803	0.80		50.23	185.85	184	177	1.00	6.66	905
804	0.65		50.23	185.80	184	177	1.00	5.38	730
805	0.76		50.28	185.71	183	177	1.00	6.36	863
806	0.65		50.28	185.66	183	177	1.00	5.38	729
807	0.72		50.28	185.52	183	177	1.00	6.04	818
808	0.73		50.32	185.47	183	177	1.00	6.05	818
809	0.69		50.32	185.33	183	177	1.00	5.71	772
810	0.68		50.37	185.24	183	177	1.00	5.71	770
811	0.69		50.37	185.14	183	177	1.00	5.71	771
812	0.71		50.37	184.95	183	177	1.00	5.88	792
813	0.72		50.37	184.86	183	176	1.00	6.03	812
814	0.78		50.37	184.72	182	176	1.00	6.54	880
815	0.80		50.42	184.57	182	176	1.00	6.69	898

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
816	0.72		50.42	184.43	182	176	1.00	6.02	808
817	0.60		50.42	184.24	182	176	1.00	4.98	667
818	0.63		50.42	184.10	182	176	1.00	5.29	708
819	0.76		50.42	183.96	182	176	1.00	6.37	852
820	0.78		50.42	183.77	181	175	1.00	6.53	872
821	0.69		50.42	183.63	181	175	1.00	5.71	762
822	0.70		50.37	183.44	181	175	1.00	5.87	782
823	0.72		50.37	183.30	181	175	1.00	6.03	803
824	0.65		50.37	183.10	181	175	1.00	5.39	716
825	0.72		50.37	182.96	181	175	1.00	6.04	802
826	0.68		50.37	182.73	180	174	1.00	5.71	756
827	0.63		50.37	182.58	180	174	1.00	5.21	690
828	0.73		50.37	182.40	180	174	1.00	6.05	799
829	0.72		50.37	182.20	180	174	1.00	6.01	794
830	0.71		50.37	182.11	180	174	1.00	5.90	778
831	0.69		50.42	181.87	179	173	1.00	5.74	755
832	0.73		50.46	181.64	179	173	1.00	6.12	804
833	0.80		50.46	181.45	179	173	1.00	6.70	878
834	0.62		50.51	181.26	179	173	1.00	5.20	681
835	0.64		50.55	181.07	179	173	1.00	5.37	702
836	0.76		50.55	180.83	179	173	1.00	6.37	831
837	0.68		50.60	180.64	178	172	1.00	5.71	743
838	0.72		50.65	180.45	178	172	1.00	6.03	784
839	0.74		50.65	180.22	178	172	1.00	6.21	805
840	0.68		50.69	180.07	178	172	1.00	5.70	739
841	0.74		50.69	179.84	178	172	1.00	6.19	800
842	0.71		50.74	179.65	177	171	1.00	5.88	759
843	0.72		50.74	179.46	177	171	1.00	6.04	778
844	0.72		50.74	179.27	177	171	1.00	6.01	773
845	0.70		50.74	179.03	177	171	1.00	5.85	751
846	0.72		50.78	178.84	177	171	1.00	6.01	771
847	0.70		50.78	178.60	176	170	1.00	5.87	751
848	0.60		50.78	178.42	176	170	1.00	5.04	644
849	0.70		50.74	178.23	176	170	1.00	5.86	748
850	0.78		50.74	177.99	176	170	1.00	6.53	832
851	0.68		50.69	177.80	175	170	1.00	5.70	726
852	0.70		50.69	177.56	175	169	1.00	5.86	745
853	0.80		50.69	177.37	175	169	1.00	6.69	848
854	0.62		50.69	177.14	175	169	1.00	5.20	659
855	0.60		50.69	176.95	175	169	1.00	5.04	637
856	0.72		50.69	176.71	174	169	1.00	6.04	762
857	0.71		50.69	176.52	174	168	1.00	5.89	742
858	0.76		50.69	176.28	174	168	1.00	6.32	795
859	0.62		50.65	176.10	174	168	1.00	5.20	654
860	0.78		50.65	175.86	174	168	1.00	6.51	817
861	0.76		50.60	175.62	173	168	1.00	6.36	797
862	0.76		50.60	175.43	173	167	1.00	6.36	794
863	0.68		50.55	175.20	173	167	1.00	5.69	710

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
864	0.60		50.55	174.96	173	167	1.00	5.04	628
865	0.70		50.55	174.73	173	167	1.00	5.86	729
866	0.70		50.51	174.54	172	167	1.00	5.86	727
867	0.68		50.46	174.30	172	166	1.00	5.70	706
868	0.70		50.46	174.07	172	166	1.00	5.86	726
869	0.78		50.46	173.83	172	166	1.00	6.49	802
870	0.68		50.46	173.60	171	166	1.00	5.70	702
871	0.66		50.46	173.41	171	165	1.00	5.50	677
872	0.66		50.46	173.17	171	165	1.00	5.53	679
873	0.74		50.46	172.94	171	165	1.00	6.19	759
874	0.72		50.46	172.70	170	165	1.00	6.01	736
875	0.80		50.46	172.47	170	165	1.00	6.69	817
876	0.58		50.42	172.23	170	164	1.00	4.86	593
877	0.66		50.42	172.04	170	164	1.00	5.52	672
878	0.64		50.42	171.81	170	164	1.00	5.36	652
879	0.64		50.42	171.57	169	164	1.00	5.35	650
880	0.74		50.42	171.33	169	163	1.00	6.18	748
881	0.68		50.42	171.10	169	163	1.00	5.70	688
882	0.62		50.42	170.86	169	163	1.00	5.20	628
883	0.76		50.42	170.68	168	163	1.00	6.34	763
884	0.73		50.46	170.39	168	163	1.00	6.05	726
885	0.63		50.46	170.20	168	162	1.00	5.24	628
886	0.72		50.46	169.97	168	162	1.00	5.97	715
887	0.67		50.51	169.73	167	162	1.00	5.55	662
888	0.72		50.51	169.50	167	162	1.00	6.01	716
889	0.78		50.55	169.26	167	162	1.00	6.51	774
890	0.70		50.60	169.07	167	161	1.00	5.85	694
891	0.64		50.60	168.84	167	161	1.00	5.35	633
892	0.78		50.65	168.65	166	161	1.00	6.51	770
893	0.80		50.69	168.56	166	161	1.00	6.66	786
894	0.66		50.69	168.41	166	161	1.00	5.51	650
895	0.72		50.69	168.41	166	161	1.00	6.01	709
896	0.70		50.74	168.41	166	161	1.00	5.85	689
897	0.62		50.74	168.51	167	161	1.00	5.19	612
898	0.68		50.74	168.60	167	161	1.00	5.68	670
899	0.70		50.74	168.79	167	161	1.00	5.82	688
900	0.71		50.74	169.07	167	162	1.00	5.92	702
901	0.66		50.74	169.36	168	162	1.00	5.51	655
902	0.68		50.78	169.69	168	162	1.00	5.68	676
903	0.70		50.78	170.06	168	162	1.00	5.84	697
904	0.60		50.78	170.68	169	163	1.00	5.03	604
905	0.72		50.74	171.24	170	164	1.00	6.00	724
906	0.64		50.69	171.76	170	164	1.00	5.35	648
907	0.74		50.69	172.42	171	165	1.00	6.18	753

WATER FLOW AND TEMPERATURE DATA - ASTM E2618

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Flow (GPM)		Temperature Data (°F)						
Elapsed Time (min)	Load Side Flow	Appliance Flow (optional)	HEX Load In	HEX Load Out	HEX Supply In	HEX Supply Out	Specific Heat of Inlet Water (BTU/lb-°F)	Mass Flow Rate of Inlet Water (lb/min)	Heat Output (Btu)
Average	1	#DIV/0!	51	177	175	170	1	6	710
								TOTAL:	**643578**

LAB SAMPLE DATA - ASTM E2515

Client: Greentech
Model: Pristine 7300E
Run #: 4

Job #: 19-551
Tracking #: 0047
Technician: AK
Date: 1/15/2020

	Sample ID	Tare, mg	Total, mg	Final, mg	Catch, mg
Train A Filters - First Hour	3681	119.0	119.0	122.3	3.3
Train A Filters - Remainder	3682	118.6	237.5	244.5	7.0
	3683	118.9			
Train A Probe	4A	116182.7	116182.7	116183.0	0.3
Train A O-Rings	4A	3623.8	3623.8	3624.2	0.4
Train B Filters	3684	119.0	359.6	369.8	10.2
	3721	120.7			
	3723	119.9			
Train B Probe	4B	116366.3	116366.3	116366.8	0.5
Train B O-Rings	4B	3580.7	3580.7	3581.0	0.3
Background Filter	3722	120.7	120.7	122.6	1.9

Placed in Dessicator on:	1/17/2020

Train A Filters - First Hour	122.4	1/21 14:47	122.3	1/22 8:25				
Train A Filters - Remainder	244.5	1/21 14:47	244.5	1/22 8:26				
Train A Probe	116183.0	1/21 14:34	116183.0	1/22 8:16				
Train A O-Rings	3624.2	1/21 14:38	3624.2	1/22 8:18				
Train B Filters	370.0	1/21 14:48	369.8	1/22 8:26				
Train B Probe	116366.7	1/21 14:35	116366.8	1/22 8:16				
Train B O-Rings	3581.0	1/21 14:39	3581.0	1/22 8:18				
Background Filter	122.7	1/21 14:48	122.6	1/22 8:27				

1st hour Sub-Total, mg:	3.3
Remainder Sub-Total, mg:	7.7
Train 1 Aggregate, mg:	**11.0**
Train 2 Aggregate, mg:	**11.0**
Ambient Aggregate, mg:	1.9

ASTM E2618 Hydronic Heater Run Sheets

Client: Greentech Job Number: 19-551 Tracking #: 47
Model: RS7300E Run Number: 4 Test Date: 1/15/2020

Wood Heater Run Notes

Pre-Test Notes
Pre-Test Start Time: 21:02
Target Load (BTU/hr): 42,000

Time	Notes
0 min	Began preburn
60 min	End PB

Test Notes
Test Burn Start Time: 22:02
Target Load (BTU/hr): 42,000 (Category 2)

Time	Notes
0 min	Loaded test fuel within 60 seconds, door closed immediately
60 min	Changed 1st hour filter
907 min	End of Test

Test Burn End Time: 1/16 13:09

Flue Gas Concentration Measurement

Calibration Gas Values: Span Gas CO_2 (%): 15.30 CO (%): 4.98

Calibration Results:

	Pre Test			Post Test		
	Zero		Span	Zero		Span
Time	20:13		20:18	1/16 13:22		1/16 13:24
CO_2	0.19		15.29	0.29		15.33
CO	0.046		5.021	0.015		4.909

Flue Gas Probe Leak Check: Initial: No Leakage Final: No Leakage

Technician Signature: Date: 1/16/2020

United States Environmental Protection Agency

OMB Control No. 2060-0161
Approval expires 03/31/2019

OMB Control No. 2060-0693
Approval expires 03/31/2019

30-DAY NOTIFICATION

2015 CLEAN AIR ACT (CAA) STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD HEATERS, NEW RESIDENTIAL HYDRONIC HEATERS AND FORCED-AIR FURNACES 40 CFR PART 60 SUBPARTS AAA AND QQQQ

The public reporting and recordkeeping burden for this collection of information is estimated to average 2 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Regulatory Support Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Disclaimer: The statutory provisions and the EPA regulations described in this document contain legally binding requirements. This document is not a substitute for those provisions or regulations, nor is it a regulation itself. In the event of a discrepancy, please refer to 40 CFR PART 60 Subparts AAA AND QQQQ, sections 60.537 and 60.5479. If you have additional questions, please contact Rafael Sanchez at 202-564-7028 or via email at sanchez.rafael@epa.gov.

Instructions: The manufacturer of an affected wood/pellet heater/central heater model line must notify the Administrator of the date that certification testing is scheduled to begin by email to WoodHeaterReports@epa.gov. This notice must be received by the EPA at least 30 days before the start of testing.

GENERAL INFORMATION						
Manufacturer's Name: Greentech Manufacturing Inc. dba Crown Royal Stoves						
Heater Type (Circle One):	☐Adjustable Burn Rate Wood Heater	☐Pellet Stove	☐Single Burn Rate Heater	☒Hydronic Heater	☐Forced Air Furnace	☐Other:
Hydronic Heater Type (Check one):	☐Full Storage	☐Partial Storage	☐Indoor	☒Outdoor	☐Other:	
Forced-Air Furnace Type (Check one):	☐Small (less than 65,000 BTU/hr heat output)		☐Large (greater than 65,000 BTU/hr heat output)			
Fuel Tested (Check one):	☐Crib	☐Pellet	☒Cordwood	☐Wood Chips	☐Other:	
Model Name(s) (as will appear on test report): Pristine						
Model Number(s) (as will appear on test report): RS7300E						
Equipped with a catalytic combustor? ☐**Yes** ☒**No**						
Mailing Address: 2716 Crescent Dr International Falls, MN 56649						

United States Environmental Protection Agency

OMB Control No. 2060-0161
Approval expires 03/31/2019

OMB Control No. 2060-0693
Approval expires 03/31/2019

30-DAY NOTIFICATION

2015 CLEAN AIR ACT (CAA) STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD HEATERS, NEW RESIDENTIAL HYDRONIC HEATERS AND FORCED-AIR FURNACES 40 CFR PART 60 SUBPARTS AAA AND QQQQ

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Street Address: 2716 Crescent Dr		
City: International Falls	**State:** MN	**ZIP Code:** 56649
Phone: 218 283 3416	**Fax: NA**	**Web Site:** www.crownroyalstoves.com WWW.green-techmfg.com
Address of Manufacturer: SAME		
City:	**State**	**ZIP Code**
EPA APPROVED TEST LABORATORY		
Name and Title of Authorized Representative: Aaron Kravitz, Testing Supervisor		
Company: PFS TECO		
Phone: (503)650-0088	**E-mail: aaron.kravitz@pfsteco.com**	**Fax:**
City: Clackamas	**State: Oregon**	**ZIP Code: 97015**
EPA APPROVED THIRD-PARTY CERTIFIER		
Name and Title of Authorized Representative: John Steinert, General Manager-Portland Laboratory		

United States
Environmental Protection
Agency

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Company: PFS TECO		
Phone: (503)650-0088	**E-mail:** John.steinert@pfsteco.com	**Fax:**
City: Clackamas	**State: Oregon**	**ZIP Code: 97015**
COMPLIANCE TEST INFORMATION		
Test Method(s): ASTM E2618-13 Measurement of Particulate Emissions and Heating Efficiency for Solid Fuel-Fired hydronic Heating Appliances.		
Date(s) of Proposed Test: Week of January 13th 2019		
Testing Location: Greentech Manufacturing Inc. 2716 Crescent Dr International Falls, MN 56649		

United States Environmental Protection Agency

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Ryan Horne President
Print Name and Title of Authorized Official

Ryan Horne
Signature

12/11/19
Date

Telephone Number: 218-283-3416

Email Address: Ryan@green-techmfg.com

Remarks:

v1

ASTM E2515 - Glass Filters

Sample	Weight 1	Weight 2	Weigth 3	Weight 4	Initial	Project	Run
3649	118.0	118.2	-	-	AH	19-538	#3
3650	120.4	120.4	-	-	A		
3651	119.1	119.1	-	-	AH		
3652	118.5	118.6	-	-	AH		
3653	118.7	118.6	-	-	AH		#4
3654	119.6	119.6	-	-	AH		
3655	118.6	118.6	-	-	AH		
3656	118.7	118.7	-	-	AH		
3657	120.7	120.8	-	-	AH		
3658	120.6	120.6	-	-	AH		#5
3659	119.0	118.9	-	-	AH		
3660	118.3	118.4	-	-	AH		
3661	121.4	121.6	-	-	AH		
3662	120.4	120.5	-	-	AH		
3663	118.7	118.5	-	-	AH	19-551	#1
3664	118.2	118.2	-	-	AH		
3665	120.9	120.9	-	-	AH		
3666	119.8	119.9	-	-	AH		

Weight 1 Date/Time:
11/21 16:00
Weight 2 Date/Time:
11/26 10:00
Weight 3 Date/Time:
Weight 4 Date/Time:

Sample	Weight 1	Weight 2	Weigth 3	Weight 4	Initial	Project	Run
3667	118.8	119.0	-	-	AH	19-551	#1
3668	119.0	119.0	-	-	AH		
3669	120.9	121.0	-	-	AH		#2
3670	116.7	116.8	-	-	AH		
3671	122.8	122.8	-	-	AH		
3672	117.6	117.8	-	-	AH		
3673	117.8	117.7	-	-	AH		
3674	124.5	124.4	-	-	AH		
3675	122.6	122.6	-	-	AH		#3
3676	115.2	115.2	-	-	AH		
3677	118.0	117.9	-	-	AH		
3678	124.7	124.7	-	-	AH		
3679	118.7	118.8	-	-	AH		
3680	118.5	118.5	-	-	AH		
3681	119.0	119.0	-	-	AH		#4
3682	118.7	118.6	-	-	AH		
3683	119.0	118.9	-	-	AH		
3684	119.0	119.0	-	-	AH		

Weight 1 Date/Time:
11/21 16:00
Weight 2 Date/Time:
11/26 10:00
Weight 3 Date/Time:
Weight 4 Date/Time:

ASTM E2515 - Glass Filters

Sample	Weight 1	Weight 2	Weigth 3	Weight 4	Initial	Project	Run
3721	120.9	120.7	–	–	JB	19-551	#4
3722	120.8	120.7	–	–	JB	↓	↓
3723	119.9	119.9	–	–	JB	↓	↓
3724	118.7	118.8	–	–	JB	—	—
3725	120.7	120.6	–	–	JB	20-568	#1
3726	120.5	120.6	–	–	JB	↓	↓
3727	119.4	119.5	–	–	JB	↓	↓
3728	118.4	118.6	–	–	JB	↓	↓
3729	123.0	122.8	–	–	JB	↓	↓
3730	121.7	121.5	–	–	JB	↓	↓
3731	119.8	119.8	–	–	JB		
3732	119.5	119.5	–	–	JB		
3733	119.0	118.9	–	–	JB		
3734	118.3	118.3	–	–	JB		
3735	119.4	119.2	–	–	JB		
3736	119.2	119.2	–	–	JB		
3737	117.7	117.5	–	–	JB		
3738	119.8	119.6	–	–	JB		

Weight 1 Date/Time:
12/5 9:00
Weight 2 Date/Time:
12/6 10:30
Weight 3 Date/Time:
Weight 4 Date/Time:

Sample	Weight 1	Weight 2	Weigth 3	Weight 4	Initial	Project	Run
3739	119.1	119.1	–	–	A		
3740	119.2	119.1	–	–	A		
3741	118.8	118.9	–	–	A		
3742	118.7	118.7	–	–	A		
3743	118.4	118.6	–	–	A		
3744	119.3	119.4	–	–	A		
3745	119.4	119.5	–	–	A		
3746	119.6	119.8	–	–	A		
3747	119.2	119.2	–	–	A		
3748	118.5	118.7	–	–	A		
3749	119.2	119.4	–	–	A		
3750	119.0	119.0	–	–	A		
3751	118.7	118.7	–	–	A		
3752	119.2	119.1	–	–	A		
3753	118.3	118.2	–	–	A		
3754	118.4	118.3	–	–	A		
3755	119.0	119.0	–	–	A		
3756	119.5	119.5	–	–	A		

Weight 1 Date/Time:
1/8/18 0845
Weight 2 Date/Time:
Weight 3 Date/Time:
Weight 4 Date/Time:

ASTM E2515 - Probes

Sample	Weight 1	Weight 2	Weigth 3	Weight 4	Initial	Project	Run
1A	115627.8	115627.6	–	–	A	19-551	1
1B	115900.9	115900.7	–	–	N		
2A	116239.9	116239.7	116239.8	–	A	19-551	2
2B	116328.6	116328.4	116328.2	116328.3	N		
3A	116074.6	116074.2	116074.3	–	A	19-551	3
3B	116339.7	116338.9	116339.0	–	N		
4A	116183.7	116182.5	116182.7	–	A	19-551	4
4B	116367.0	116366.1	116366.3	–	N		
5A	116766.9	116766.0	116766.2	–	A	19-529	#1
5B	116874.7	116874.0	116874.2	–	N		

Sample	Weight 1	Weight 2	Weigth 3	Weight 4	Initial	Project	Run
6A	116543.9	116543.7	–	–	SB	19-529	#2
6B	116118.0	116118.1	–	–	SB		
7A	116739.4	116739.4	–	–	SB	19-529	#3
7B	117286.9	117286.7	–	–	SB		
8A	116824.0	116824.1	–	–	SB	20-568	#1
8B	116826.6	116826.5	–	–	SB		
9A	–	116713.7					
9B	–	117919.3					
10A	–	116819.7					
10B	–	117903.4					

Sample	Weight 1	Weight 2	Weigth 3	Weight 4	Initial	Project	Run
11A							
11B							
12A							
12B							
13A							
13B							
14A							
14B							
15A							
15B							

Weight 1 Date/Time:
1/8/19 0830

Weight 2 Date/Time:
1/9/20 1400

Weight 3 Date/Time:
1/10/20 0900

Weight 4 Date/Time:

Weight 1 Date/Time:
2/3-10:00

Weight 2 Date/Time:
2/4-8:00

Weight 3 Date/Time:

Weight 4 Date/Time:

Weight 1 Date/Time:

Weight 2 Date/Time:

Weight 3 Date/Time:

Weight 4 Date/Time:

ASTM E2515 - O-Rings

Sample	Weight 1	Weight 2	Weigth 3	Weight 4	Initial	Project	Run
1A	3567.1	3567.1	-	-	[illegible]	19-551	1
1B	3555.5	3555.4	-	-	[illegible]		
2A	~~3580.7~~	3553.1	3553.0	-	[illegible]	19-551	2
2B	~~3~~ 4	3571.8	3571.8	-	[illegible]		
3A	3580.2	3580.2	-	-	[illegible]	19-551	3
3B	3568.5	3568.5	-	-	[illegible]		
4A	3623.7	3623.8	-	-	[illegible]	19-551	4
4B	3580.5	3580.7	-	-	[illegible]		
5A	3535.4	3535.5	-	-	[illegible]	19-529	#1
5B	3531.4	3531.5	-	-	[illegible]		

Weight 1 Date/Time: 1/8/20 0830

Weight 2 Date/Time: 1/9/20 1400

Weight 3 Date/Time:

Weight 4 Date/Time:

Sample	Weight 1	Weight 2	Weigth 3	Weight 4	Initial	Project	Run
6A	3615.9	3616.0	-	-	JB	19-529	#2
6B	3397.2	3397.3	-	-	JB		
7A	3573.2	3573.3	-	-	JB	19-529	#3
7B	3522.9	3522.8	-	-	JB		
8A	3552.1	3552.1	-	-	JB	20-568	#1
8B	3585.7	3585.8	-	-	JB		
9A	3581.7	3581.7	-	-	JB	—	
9B	3524.7	3524.6	-	-	JB		
10A	3431.9	3431.9	-	-	JB	—	
10B	3571.1	3571.2	-	-	JB		

Weight 1 Date/Time: 2/3-10:00

Weight 2 Date/Time: 2/4- 8:00

Weight 3 Date/Time:

Weight 4 Date/Time:

Sample	Weight 1	Weight 2	Weigth 3	Weight 4	Initial	Project	Run
11A							
11B							
12A							
12B							
13A							
13B							
14A							
14B							
15A							
15B							

Weight 1 Date/Time:

Weight 2 Date/Time:

Weight 3 Date/Time:

Weight 4 Date/Time:

Test Duration: 253 min

	HHV	LHV
EIT	83.10%	88.60%
Comb Eff	98.90%	98.90%
HT Eff	83.68%	89.93%
Output	196.753	kJ/h
Burn Rate	11.06	kg/h
Grate Cb	866	e
Input	236.771	kJ/h
MC wet	10.00	
MC ash	10.00	

Fuel Properties
Ultimate CO2 20.23 F-
Burn Rate: 26.14 lb/h 11.862 kg/h
Stack Temp: 398.6 Deg. F 131.9 Deg. C

Heat Output: 186.641 Btu/h 196.753 kJ/h
Heat Input: 224.603 Btu/h 236.771 kJ/h

Total Output (kJ): 626.641 786.976 (Btu)
Efficiency: 83.10%
Total CO (g): 854.65

Moisture Content Dry 20.19
Bulb 83.87.8 80.6/4

HHV 21.09
LHV 19.95

Load Weight Ind: 60.12
Fuel Heating
Value in kj/kg - CV:

Ambient Conditions
Elapsed Time | Weight Remaining [kg] | CO [V] | Boiler Efficiency | Total Heat Input | Calc. % O2 [g] | Flue Gas [°C] | Room Temp [°C] | Heat Transfer | Net Heat Transfer | Dry Mass Consumed | Dry Mass Burned | Carbon Content | Moisture Content | Oxygen Content | Calorific Value | Mass Moisture Fuel Burnt | Mass Balance [s] | [a] | [w] | Moles per kg of Dry Mixture [i] | [k] | [m] | [n] | [o] | [p] | [q] | [r] | [s] | [t] | [u] | [v] | [w] | [x] | [y] | [z] | [aa] | [ab] | [ac] | [ad] | [ae] | [af] | [ag] | [ah] | [ai] | [aj] | [ak] | [al] | [am] | [an] | [ao] | [ap] | [aq] | [ar] | [as] | [at] | [au] | [av] | [aw] | [ax] | [ay] | [az] | [ba] | [bb] | [bc] | [bd] | [be] | [bf] | [bg] | [bh] | [bi] | [bj] | [bk] | [bl] | [bm] | [bn] | [bo] | [bp] | [bq] | [br] | [bs] | [bt] | [bu] | [bv] | [bw] | [bx] | [by] | [bz] | [ca] | [cb] | [cc] | [cd] | [ce] | [cf] | [cg] | [ch] | [ci] | [cj] | [ck] | [cl] | [cm] | [cn] | [co] | [cp] | [cq] | [cr] | [cs] | [ct] | [cu] | [cv] | [cw] | [cx] | [cy] | [cz] | [da] | [db] | [dc] | [dd] | [de] | [df] | [dg] | [dh] | [di] | [dj] | [dk] | [dl] | [dm] | [dn] | [do] | [dp] | [dq] | [dr] | [ds] | [dt] | [du] | [dv] | [dw] | [dx] | [dy] | [dz] | [ea] | [eb] | [ec] | [ed] | [ee] | [ef] | [eg] | [eh] | [ei] | [ej] | [ek] | [el] | [em] | [en] | [eo] | [ep] | [eq] | [er] | [es] | [et] | [eu] | [ev] | [ew] | [ex] | [ey] | [ez] | [fa] | [fb] | [fc] | [fd] | [fe] | [ff] | [fg] | [fh] | [fi] | [fj] | [fk] | [fl] | [fm] | [fn] | [fo] | [fp] | [fq] | [fr] | [fs] | [ft] | [fu] | [fv] | [fw] | [fx] | [fy] | [fz] | [ga] | [gb] | [gc] | [gd] | [ge] | [gf] | [gg] | [gh] | [gi] | [gj] | [gk] | [gl] | [gm] | [gn] | [go] | [gp] | [gq] | [gr] | [gs] | [gt] | [gu] | [gv] | [gw] | [gx] | [gy] | [gz] | [ha] | [hb] | [hc] | [hd] | [he] | [hf] | [hg] | [hh] | [hi] | [hj] | [hk] | [hl] | [hm] | [hn] | [ho] | [hp] | [hq] | [hr] | [hs] | [ht] | [hu] | [hv] | [hw] | [hx] | [hy] | [hz] | [ia] | [ib] | [ic] | [id] | [ie] | [if] | [ig] | [ih] | [ii] | [ij] | [ik] | [il] | [im] | [in] | [io] | [ip] | [iq] | [ir] | [is] | [it] | [iu] | [iv] | [iw] | [ix] | [iy] | [iz] | [ja] | [jb] | [jc] | [jd] | [je] | [jf] | [jg] | [jh] | [ji] | [jj] | [jk] | [jl] | [jm] | [jn] | [jo] | [jp] | [jq] | [jr] | [js] | [jt] | [ju] | [jv] | [jw] | [jx] | [jy] | [jz] | [ka] | [kb] | [kc] | [kd] | [ke] | [kf] | [kg] | [kh] | [ki] | [kj] | [kk] | [kl] | [km] | [kn] | [ko] | [kp] | [kq] | [kr] | [ks] | [kt] | [ku] | [kv] | [kw] | [kx] | [ky] | [kz] | [la] | [lb] | [lc] | [ld] | [le] | [lf] | [lg] | [lh] | [li] | [lj] | [lk] | [ll] | [lm] | [ln] | [lo] | [lp] | [lq] | [lr] | [ls] | [lt] | [lu] | [lv] | [lw] | [lx] | [ly] | [lz] | [ma] | [mb] | [mc] | [md] | [me] | [mf] | [mg] | [mh] | [mi] | [mj] | [mk] | [ml] | [mm] | [mn] | [mo] | [mp] | [mq] | [mr] | [ms] | [mt] | [mu] | [mv] | [mw] | [mx] | [my] | [mz] | [na] | [nb] | [nc] | [nd] | [ne] | [nf] | [ng] | [nh] | [ni] | [nj] | [nk] | [nl] | [nm] | [nn] | [no] | [np] | [nq] | [nr] | [ns] | [nt] | [nu] | [nv] | [nw] | [nx] | [ny] | [nz] | [oa] | [ob] | [oc] | [od] | [oe] | [of] | [og] | [oh] | [oi] | [oj] | [ok] | [ol] | [om] | [on] | [oo] | [op] | [oq] | [or] | [os] | [ot] | [ou] | [ov] | [ow] | [ox] | [oy] | [oz] | [pa] | [pb] | [pc] | [pd] | [pe] | [pf] | [pg] | [ph] | [pi] | [pj] | [pk] | [pl] | [pm] | [pn] | [po] | [pp] | [pq] | [pr] | [ps] | [pt] | [pu] | [pv] | [pw] | [px] | [py] | [pz] | [qa] | [qb] | [qc] | [qd] | [qe] | [qf] | [qg] | [qh] | [qi] | [qj] | [qk] | [ql] | [qm] | [qn] | [qo] | [qp] | [qq] | [qr] | [qs] | [qt] | [qu] | [qv] | [qw] | [qx] | [qy] | [qz] | [ra] | [rb] | [rc] | [rd] | [re] | [rf] | [rg] | [rh] | [ri] | [rj] | [rk] | [rl] | [rm] | [rn] | [ro] | [rp] | [rq] | [rr] | [rs] | [rt] | [ru] | [rv] | [rw] | [rx] | [ry] | [rz] | [sa] | [sb] | [sc] | [sd] | [se] | [sf] | [sg] | [sh] | [si] | [sj] | [sk] | [sl] | [sm] | [sn] | [so] | [sp] | [sq] | [sr] | [ss] | [st] | [su] | [sv] | [sw] | [sx] | [sy] | [sz] | [ta] | [tb] | [tc] | [td] | [te] | [tf] | [tg] | [th] | [ti] | [tj] | [tk] | [tl] 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[blo] | [blp] | [blq] | [blr] | [bls] | [blt] | [blu] | [blv] | [blw] | [blx] | [bly] | [blz] | [bma] | [bmb] | [bmc] | [bmd] | [bme] | [bmf] | [bmg] | [bmh] | [bmi] | [bmj] | [bmk] | [bml] | [bmm] | [bmn] | [bmo] | [bmp] | [bmq] | [bmr] | [bms] | [bmt] | [bmu] | [bmv] | [bmw] | [bmx] | [bmy] | [bmz] | [bna] | [bnb] | [bnc] | [bnd] | [bne] | [bnf] | [bng] | [bnh] | [bni] | [bnj] | [bnk] | [bnl] | [bnm] | [bnn] | [bno] | [bnp] | [bnq] | [bnr] | [bns] | [bnt] | [bnu] | [bnv] | [bnw] | [bnx] | [bny] | [bnz] | [boa] | [bob] | [boc] | [bod] | [boe] | [bof] | [bog] | [boh] | [boi] | [boj] | [bok] | [bol] | [bom] | [bon] | [boo] | [bop] | [boq] | [bor] | [bos] | [bot] | [bou] | [bov] | [bow] | [box] | [boy] | [boz] | [bpa] | [bpb] | [bpc] | [bpd] | [bpe] | [bpf] | [bpg] | [bph] | [bpi] | [bpj] | [bpk] | [bpl] | [bpm] | [bpn] | [bpo] | [bpp] | [bpq] | [bpr] | [bps] | [bpt] | [bpu] | [bpv] | [bpw] | [bpx] | [bpy] | [bpz] | [bqa] | [bqb] | [bqc] | [bqd] | [bqe] | [bqf] | [bqg] | [bqh] | [bqi] | [bqj] | [bqk] | [bql] | [bqm] | [bqn] | [bqo] | [bqp] | [bqq] | [bqr] | [bqs] | [bqt] | [bqu] | [bqv] | [bqw] | [bqx] | [bqy] | [bqz] | [bra] | [brb] | [brc] | [brd] | [bre] | [brf] | [brg] | [brh] | [bri] | [brj] | [brk] | [brl] | [brm] | [brn] | [bro] | [brp] | [brq] | [brr] | [brs] | [brt] | [bru] | [brv] | [brw] | [brx] | [bry] | [brz] | [bsa] | [bsb] | [bsc] | [bsd] | [bse] | [bsf] | [bsg] | [bsh] | [bsi] | [bsj] | [bsk] | [bsl] | [bsm] | [bsn] | [bso] | [bsp] | [bsq] | [bsr] | [bss] | [bst] | [bsu] | [bsv] | [bsw] | [bsx] | [bsy] | [bsz] | [bta] | [btb] | [btc] | [btd] | [bte] | [btf] | [btg] | [bth] | [bti] | [btj] | [btk] | [btl] | [btm] | [btn] | [bto] | [btp] | [btq] | [btr] | [bts] | [btt] | [btu] | [btv] | [btw] | [btx] | [bty] | [btz] | [bua] | [bub] | [buc] | [bud] | [bue] | [buf] | [bug] | [buh] | [bui] | [buj] | [buk] | [bul] | [bum] | [bun] | [buo] | [bup] | [buq] | [bur] | [bus] | [but] | [buu] | [buv] | [buw] | [bux] | [buy] | [buz] | [bva] | [bvb] | [bvc] | [bvd] | [bve] | [bvf] | [bvg] | [bvh] | [bvi] | [bvj] | [bvk] | [bvl] | [bvm] | [bvn] | [bvo] | [bvp] | [bvq] | [bvr] | [bvs] | [bvt] | [bvu] | [bvv] | [bvw] | [bvx] | [bvy] | [bvz] | [bwa] | [bwb] | [bwc] | [bwd] | [bwe] | [bwf] | [bwg] | [bwh] | [bwi] | [bwj] | [bwk] | [bwl] | [bwm] | [bwn] | [bwo] | [bwp] | [bwq] | [bwr] | [bws] | [bwt] | [bwu] | [bwv] | [bww] | [bwx] | [bwy] | [bwz] | [bxa] | [bxb] | [bxc] | [bxd] | [bxe] | [bxf] | [bxg] | [bxh] | [bxi] | [bxj] | [bxk] | [bxl] | [bxm] | [bxn] | [bxo] | [bxp] | [bxq] | [bxr] | [bxs] | [bxt] | [bxu] | [bxv] | [bxw] | [bxx] | [bxy] | [bxz] | [bya] | [byb] | [byc] | [byd] | [bye] | [byf] | [byg] | [byh] | [byi] | [byj] | [byk] | [byl] | [bym] | [byn] | [byo] | [byp] | [byq] | [byr] | [bys] | [byt] | [byu] | [byv] | [byw] | [byx] | [byy] | [byz] | [bza] | [bzb] | [bzc] | [bzd] | [bze] | [bzf] | [bzg] | [bzh] | [bzi] | [bzj] | [bzk] | [bzl] | [bzm] | [bzn] | [bzo] | [bzp] | [bzq] | [bzr] | [bzs] | [bzt] | [bzu] | [bzv] | [bzw] | [bzx] | [bzy] | [bzz] | [caa] | [cab] | [cac] | [cad] | [cae] | [caf] | [cag] | [cah] | [cai] | [caj] | [cak] | [cal] | [cam] | [can] | [cao] | [cap] | [caq] | [car] | [cas] | [cat] | [cau] | [cav] | [caw] | [cax] | [cay] | [caz] | [cba] | [cbb] | [cbc] | [cbd] | [cbe] | [cbf] | [cbg] | [cbh] | [cbi] | [cbj] | [cbk] | [cbl] | [cbm] | [cbn] | [cbo] | [cbp] | [cbq] | [cbr] | [cbs] | [cbt] | [cbu] | [cbv] | [cbw] | [cbx] | [cby] | [cbz] | [cca] | [ccb] | [ccc] | [ccd] | [cce] | [ccf] | [ccg] | [cch] | [cci] | [ccj] | [cck] | [ccl] | [ccm] | [ccn] | [cco] | [ccp] | [ccq] | [ccr] | [ccs] | [cct] | [ccu] | [ccv] | [ccw] | [ccx] | [ccy] | [ccz] | [cda] | [cdb] | [cdc] | [cdd] | [cde] | [cdf] | [cdg] | [cdh] | [cdi] | [cdj] | [cdk] | [cdl] | [cdm] | [cdn] | [cdo] | [cdp] | [cdq] | [cdr] | [cds] | [cdt] | [cdu] | [cdv] | [cdw] | [cdx] | [cdy] | [cdz] | [cea] | [ceb] | [cec] | [ced] | [cee] | [cef] | [ceg] | [ceh] | [cei] | [cej] | [cek] | [cel] | [cem] | [cen] | [ceo] | [cep] | [ceq] | [cer] | [ces] | [cet] | [ceu] | [cev] | [cew] | [cex] | [cey] | [cez] | [cfa] | [cfb] | [cfc] | [cfd] | [cfe] | [cff] | [cfg] | [cfh] | [cfi] | [cfj] | [cfk] | [cfl] | [cfm] | [cfn] | [cfo] | [cfp] | [cfq] | [cfr] | [cfs] | [cft] | [cfu] | [cfv] | [cfw] | [cfx] | [cfy] | [cfz] | [cga] | [cgb] | [cgc] | [cgd] | [cge] | [cgf] | [cgg] | [cgh] | [cgi] | [cgj] | [cgk] | [cgl] | [cgm] | [cgn] | [cgo] | [cgp] | [cgq] | [cgr] | [cgs] | [cgt] | [cgu] | [cgv] | [cgw] | [cgx] | [cgy] | [cgz] | [cha] | [chb] | [chc] | [chd] | [che] | [chf] | [chg] | [chh] | [chi] | [chj] | [chk] | [chl] | [chm] | [chn] | [cho] | [chp] | [chq] | [chr] | [chs] | [cht] | [chu] | [chv] | [chw] | [chx] | [chy] | [chz] | [cia] | [cib] | [cic] | [cid] | [cie] | [cif] | [cig] | [cih] | [cii] | [cij] | [cik] | [cil] | [cim] | [cin] | [cio] | [cip] | [ciq] | [cir] | [cis] | [cit] | [ciu] | [civ] | [ciw] | [cix] | [ciy] | [ciz] | [cja] | [cjb] | [cjc] | [cjd] | [cje] | [cjf] | [cjg] | [cjh] | [cji] | [cjj] | [cjk] | [cjl] | [cjm] | [cjn] | [cjo] | [cjp] | [cjq] | [cjr] | [cjs] | [cjt] | [cju] | [cjv] | [cjw] | [cjx] | [cjy] | [cjz] | [cka] | [ckb] | [ckc] | [ckd] | [cke] | [ckf] | [ckg] | [ckh] | [cki] | [ckj] | [ckk] | [ckl] | [ckm] | [ckn] | [cko] | [ckp] | [ckq] | [ckr] | [cks] | [ckt] | [cku] | [ckv] | [ckw] | [ckx] | [cky] | [ckz] | [cla] | [clb] | [clc] | [cld] | [cle] | [clf] | [clg] | [clh] | [cli] | [clj] | [clk] | [cll] | [clm] | [cln] | [clo] | [clp] | [clq] | [clr] | [cls] | [clt] | [clu] | [clv] | [clw] | [clx] | [cly] | [clz] | [cma] | [cmb] | [cmc] | [cmd] | [cme] | [cmf] | [cmg] | [cmh] | [cmi] | [cmj] | [cmk] | [cml] | [cmm] | [cmn] | [cmo] | [cmp] | [cmq] | [cmr] | [cms] | [cmt] | [cmu] | [cmv] | [cmw] | [cmx] | [cmy] | [cmz] | [cna] | [cnb] | [cnc] | [cnd] | [cne] | [cnf] | [cng] | [cnh] | [cni] | [cnj] | [cnk] | [cnl] | [cnm] | [cnn] | [cno] | [cnp] | [cnq] | [cnr] | [cns] | [cnt] | [cnu] | [cnv] | [cnw] | [cnx] | [cny] | [cnz] | [coa] | [cob] | [coc] | [cod] | [coe] | [cof] | [cog] | [coh] | [coi] | [coj] | [cok] | [col] | [com] | [con] | [coo] | [cop] | [coq] | [cor] | [cos] | [cot] | [cou] | [cov] | [cow] | [cox] | [coy] | [coz] | [cpa] | [cpb] | [cpc] | [cpd] | [cpe] | [cpf] | [cpg] | [cph] | [cpi] | [cpj] | [cpk] | [cpl] | [cpm] | [cpn] | [cpo] | [cpp] | [cpq] | [cpr] | [cps] | [cpt] | [cpu] | [cpv] | [cpw] | [cpx] | [cpy] | [cpz] | [cqa] | [cqb] | [cqc] | [cqd] | [cqe] | [cqf] | [cqg] | [cqh] | [cqi] | [cqj] | [cqk] | [cql] | [cqm] | [cqn] | [cqo] | [cqp] | [cqq] | [cqr] | [cqs] | [cqt] | [cqu] | [cqv] | [cqw] | [cqx] | [cqy] | [cqz] | [cra] | [crb] | [crc] | [crd] | [cre] | [crf] | [crg] | [crh] | [cri] | [crj] | [crk] | [crl] | [crm] | [crn] | [cro] | [crp] | [crq] | [crr] | [crs] | [crt] | [cru] | [crv] | [crw] | [crx] | [cry] | [crz] | [csa] | [csb] | [csc] | [csd] | [cse] | [csf] | [csg] | [csh] | [csi] | [csj] | [csk] | [csl] | [csm] | [csn] | [cso] | [csp] | [csq] | [csr] | [css] | [cst] | [csu] | [csv] | [csw] | [csx] | [csy] | [csz] | [cta] | [ctb] | [ctc] | [ctd] | [cte] | [ctf] | [ctg] | [cth] | [cti] | [ctj] | [ctk] | [ctl] | [ctm] | [ctn] | [cto] | [ctp] | [ctq] | [ctr] | [cts] | [ctt] | [ctu] | [ctv] | [ctw] | [ctx] | [cty] | [ctz] | [cua] | [cub] | [cuc] | [cud] | [cue] | [cuf] | [cug] | [cuh] | [cui] | [cuj] | [cuk] | [cul] | [cum] | [cun] | [cuo] | [cup] | [cuq] | [cur] | [cus] | [cut] | [cuu] | [cuv] | [cuw] | [cux] | [cuy] | [cuz] | [cva] | [cvb] | [cvc] | [cvd] | [cve] | [cvf] | [cvg] | [cvh] | [cvi] | [cvj] | [cvk] | [cvl] | [cvm] | [cvn] | [cvo] | [cvp] | [cvq] | [cvr] | [cvs] | [cvt] | [cvu] | [cvv] | [cvw] | [cvx] | [cvy] | [cvz] | [cwa] | [cwb] | [cwc] | [cwd] | [cwe] | [cwf] | [cwg] | [cwh] | [cwi] | [cwj] | [cwk] | [cwl] | [cwm] | [cwn] | [cwo] | [cwp] | [cwq] | [cwr] | [cws] | [cwt] | [cwu] | [cwv] | [cww] | [cwx] | [cwy] | [cwz] | [cxa] | [cxb] | [cxc] | [cxd] | [cxe] | [cxf] | [cxg] | [cxh] | [cxi] | [cxj] | [cxk] | [cxl] | [cxm] | [cxn] | [cxo] | [cxp] | [cxq] | [cxr] | [cxs] | [cxt] | [cxu] | [cxv] | [cxw] | [cxx] | [cxy] | [cxz] | [cya] | [cyb] | [cyc] | [cyd] | [cye] | [cyf] | [cyg] | [cyh] | [cyi] | [cyj] | [cyk] | [cyl] | [cym] | [cyn] | [cyo] | [cyp] | [cyq] | [cyr] | [cys] | [cyt] | [cyu] | [cyv] | [cyw] | [cyx] | [cyy] | [cyz] | [cza] | [czb] | [czc] | [czd] | [cze] | [czf] | [czg] | [czh] | [czi] | [czj] | [czk] | [czl] | [czm] | [czn] | [czo] | [czp] | [czq] | [czr] | [czs] | [czt] | [czu] | [czv] | [czw] | [czx] | [czy] | [czz] | [daa] | [dab] | [dac] | [dad] | [dae] | [daf] | [dag] | [dah] | [dai] | [daj] | [dak] | [dal] | [dam] | [dan] | [dao] | [dap] | [daq] | [dar] | [das] | [dat] | [dau] | [dav] | [daw] | [dax] | [day] | [daz] | [dba] | [dbb] | [dbc] | [dbd] | [dbe] | [dbf] | [dbg] | [dbh] | [dbi] | [dbj] | [dbk] | [dbl] | [dbm] | [dbn] | [dbo] | [dbp] | [dbq] | [dbr] | [dbs] | [dbt] | [dbu] | [dbv] | [dbw] | [dbx] | [dby] | [dbz] | [dca] | [dcb] | [dcc] | [dcd] | [dce] | [dcf] | [dcg] | [dch] | [dci] | [dcj] | [dck] | [dcl] | [dcm] | [dcn] | [dco] | [dcp] | [dcq] | [dcr] | [dcs] | [dct] | [dcu] | [dcv] | [dcw] | [dcx] | [dcy] | [dcz] | [dda] | [ddb] | [ddc] | [ddd] | [dde] | [ddf] | [ddg] | [ddh] | [ddi] | [ddj] | [ddk] | [ddl] | [ddm] | [ddn] | [ddo] | [ddp] | [ddq] | [ddr] | [dds] | [ddt] | [ddu] | [ddv] | [ddw] | [ddx] | [ddy] | [ddz] | [dea] | [deb] | [dec] | [ded] | [dee] | [def] | [deg] | [deh] | [dei] | [dej] | [dek] | [del] | [dem] | [den] | [deo] | [dep] | [deq] | [der] | [des] | [det] | [deu] | [dev] | [dew] | [dex] | [dey] | [dez] | [dfa] | [dfb] | [dfc] | [dfd] | [dfe] | [dff] | [dfg] | [dfh] | [dfi] | [dfj] | [dfk] | [dfl] | [dfm] | [dfn] | [dfo] | [dfp] | [dfq] | [dfr] | [dfs] | [dft] | [dfu] | [dfv] | [dfw] | [dfx] | [dfy] | [dfz] | [dga] | [dgb] | [dgc] | [dgd] | [dge] | [dgf] | [dgg] | [dgh] | [dgi] | [dgj] | [dgk] | [dgl] | [dgm] | [dgn] | [dgo] | [dgp] | [dgq] |

CROWN ROYAL STOVES

PFS C US 21-696

MODEL 7200E, 7300E, 7400E
CENTRAL/SUPPLEMENTARY BOILER
LISTED TO ANSI/UL 2523-2018 AND CSA B366.1-11(R2015)

MODÈLES 7200E, 7300E, 7400E
CHAUDIÈRE CENTRALE/SUPPLÉMENTAIRE HOMOLOGUÉE
SELON LA NORME UL 2523 ET CSA B366.1

ELECTRICAL RATING: 115 V, 60 H, 15 AMPS
PUISSANCE ÉLECTRIQUE : 115 V, 60 H, 15 AMPÈRES

INSTALLATION: USE ONLY CHIMNEYS SUITABLE FOR SOLID FUEL. DO NOT CONNECT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE. PLACE ONLY ON NON-COMBUSTIBLE FLOORING WITH ADEQUATE SUPPORT. INDOOR OR OUTDOOR USE. MAINTAIN THE FOLLOWING CLEARANCES TO COMBUSTIBLES:
SIDES=36IN. FRONT=60IN. BACK=36IN. TOP=12IN. CHIM.CONN.=60IN.
THIS APPLIANCE MAY BE CONNECTED TO AN EXISTING BOILER SYSTEM. DO NOT RELOCATE OR BYPASS ANY OF THE SAFETY CONTROLS IN THE ORIGINAL BOILER INSTALLATION.
CAUTION: THIS EQUIPMENT MAY ONLY BE INSTALLED BY QUALIFIED PERSONNEL.
OPERATION: REFER TO OWNERS MANUAL SUPPLIED WITH THIS APPLIANCE. BURN APPROVED FUELS ONLY. LOAD FUEL CAREFULLY OR MAY RESULT IN DAMAGE. IN CASE OF A "RUN-AWAY" FIRE, DISCONNECT FROM ELECTRICAL SUPPLY AND BE SURE ALL DOORS ARE CLOSED TIGHTLY. DANGER- RISK OF FIRE OR EXPLOSION: DO NOT USE CHEMICAL FLUIDS TO START THE FIRE. DO NOT BURN GARBAGE, GASOLINE, NAPHTHA, ENGINE OIL, OR OTHER INAPPROPRIATE MATERIALS. DO NOT STORE FUEL WITHIN THE ABOVE CLEARANCES. DO NOT OPERATE WITH FUEL DOOR, ASH REMOVAL DOOR, OR CLEAN-OUT DOORS OPEN. DO NOT OPERATE THIS APPLIANCE DURING AN ELECTRICAL POWER FAILURE. DISCONNECT ELECTRICAL POWER BEFORE SERVICING. CLEAN SEASONED WOOD IS THE ONLY AUTHORIZED CONSUMABLE.
CAUTION- HOT SURFACES: KEEP CHILDREN AWAY. DO NOT TOUCH DURING OPERATION.
CAUTION- LOAD FUEL CAREFULLY OR DAMAGE MAY RESULT.
THE HEAT EXCHANGER, FLUE PIPE, AND CHIMNEY MUST BE CLEANED REGULARLY TO REMOVE ACCUMULATED CREOSOTE AND ASH. TO ENSURE THAT THE HEAT EXCHANGER, FLUE PIPE, DRAFT INDUCER, AND CHIMNEY ARE CLEANED AT THE END OF THE HEATING SEASON TO MINIMIZE CORROSION DURING THE SUMMER MONTHS. THE APPLIANCE, FLUE PIPE, AND CHIMNEY MUST BE IN GOOD CONDITION.
THIS APPLIANCE NEEDS PERIODIC INSPECTION AND REPAIR FOR PROPER OPERATION. CONSULT OWNER'S MANUAL FOR FURTHER INFORMATION. IT IS AGAINST FEDERAL REGULATIONS TO OPERATE THIS APPLIANCE IN A MANNER INCONSISTENT WITH OPERATING INSTRUCTIONS IN THE OWNER'S MANUAL.
U.S. ENVIRONMENTAL PROTECTION AGENCY CERTIFIED TO COMPLY WITH THE 2020 PARTICULATE STANDARDS USING CORD WOOD.
TESTED TO ASTM E2618-13
7200E: AVERAGE EMISSION RATE .08 LBS/MMBTU, MAXIMUM EMISSION RATE 0.12 LBS/MMBTU
7300E: AVERAGE EMISSION RATE .08 LBS/MMBTU, MAXIMUM EMISSION RATE 0.118 LBS/MMBTU
7400E: AVERAGE EMISSION RATE .06 LBS/MMBTU, MAXIMUM EMISSION RATE 0.069 LBS/MMBTU

INSTALLATION : UTILISER UNIQUEMENT DES CHEMINÉES ADAPTÉES AU COMBUSTIBLE SOLIDE. NE PAS RELIER À UN CONDUIT DE FUMÉE SERVANT UN AUTRE APPAREIL. PLACER UNIQUEMENT SUR UN PLANCHER NON-COMBUSTIBLE AVEC UN SOUTIEN ADÉQUAT. PEUR ÊTRE UTILISÉ À L'INTÉRIEUR OU À L'EXTÉRIEUR. ASSURER LES DÉGAGEMENTS SUIVANTS ENTRE LES MATIÈRES COMBUSTIBLES :
CÔTÉS : 91,4 CM AVANT : 152,4 CM ARRIÈRE : 91,4 CM DESSUS : 30,5 CM CONN. DE CHEMINÉE = 152,4 CM
CET APPAREIL PEUT ÊTRE RELIÉ À UN SYSTÈME DE CHAUDIÈRE EXISTANT. NE PAS DÉPLACER OU CONTOURNER L'UN OU L'AUTRE DES CONTRÔLES DE SÉCURITÉ DANS L'INSTALLATION D'ORIGINE DE LA CHAUDIÈRE.
MISE EN GARDE : CET ÉQUIPEMENT NE PEUT ÊTRE INSTALLÉ QUE PAR DES PERSONNES QUALIFIÉES.
FONCTIONNEMENT : SE REPORTER AU MANUEL D'UTILISATION FOURNI AVEC L'APPAREIL. NE BRÛLER QUE DES COMBUSTIBLES APPROUVÉS. CHARGER LE COMBUSTIBLE SOIGNEUSEMENT POUR ÉVITER TOUT DOMMAGE. EN CAS D'INCENDIE « INCONTRÔLÉ », DÉBRANCHER DE L'ALIMENTATION ÉLECTRIQUE ET CONFIRMER QUE TOUTES LES PORTES SONT FERMÉES HERMÉTIQUEMENT. DANGER- RISQUE D'INCENDIE OU D'EXPLOSION : NE PAS UTILISER DE FLUIDES CHIMIQUES POUR ALLUMER LE FEU. NE PAS BRÛLER DES DÉCHETS, DE L'ESSENCE, DE LA LIGROÏNE, DE L'HUILE À MOTEUR OU D'AUTRES MATIÈRES INAPPROPRIÉES. NE PAS RANGER LE COMBUSTIBLE À L'INTÉRIEUR DES DÉGAGEMENTS INDIQUÉS CI-DESSUS. NE PAS FAIRE FONCTIONNER LORSQUE LA PORTE DU COMBUSTIBLE, LA PORTE DE RETRAIT DES CENDRES OU LES PORTES DE RAMONAGE SONT OUVERTES. NE PAS FAIRE FONCTIONNER CET APPAREIL DURANT UNE PANNE D'ÉLECTRICITÉ. DÉBRANCHER L'ALIMENTATION ÉLECTRIQUE AVANT D'EFFECTUER TOUT SERVICE. LE BOIS DE CHAUFFAGE PROPRE ET ASSAISONNÉ EST LE SEUL CONSOMMABLE AUTORISÉ.
MISE EN GARDE- SURFACES CHAUDES : TENIR LES ENFANTS À L'ÉCART. NE PAS TOUCHER DURANT LE FONCTIONNEMENT.
MISE EN GARDE- CHARGER LE COMBUSTIBLE SOIGNEUSEMENT POUR ÉVITER TOUT DOMMAGE, L'ÉCHANGEUR DE CHALEUR, LE CARNEAU ET LA CHEMINÉE DOIVENT ÊTRE NETTOYÉS RÉGULIÈREMENT POUR ÉLIMINER TOUTE ACCUMULATION DE CRÉOSOTE ET DE CENDRE. VÉRIFIER QUE L'ÉCHANGEUR DE CHALEUR, LE CARNEAU, LE TIRAGE À INDUIT ET LA CHEMINÉE SONT NETTOYÉS À LA FIN DE LA SAISON DE CHAUFFAGE POUR MINIMISER LA CORROSION DURANT LES MOIS D'ÉTÉ. L'APPAREIL, LE CARNEAU ET LA CHEMINÉE DOIVENT ÊTRE EN BON ÉTAT. CET APPAREIL A BESOIN D'UNE INSPECTION PÉRIODIQUE ET D'UNE RÉPARATION POUR FONCTIONNER CORRECTEMENT. CONSULTER LE MANUEL DU PROPRIÉTAIRE POUR PLUS D'INFORMATIONS. IL EST CONTRE LES RÈGLEMENTS FÉDÉRAUX D'UTILISER CET APPAREIL D'UNE MANIÈRE INCOMPATIBLE AVEC LES INSTRUCTIONS D'UTILISATION DU MANUEL DU PROPRIÉTAIRE.
CERTIFIÉ PAR L'AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES ÉTATS-UNIS POUR SE CONFORMER AUX NORMES SUR LES PARTICULES DE 2020 EN UTILISANT DU BOIS DE CHAUFFAGE DE CORDON.
MODEL/ MODÈLES: 7200E ☐ 7300E ☐ 7400E ☐
DATE MANUFACTURED / DATE DE FABRICATION DE LA CHAUDIÈRE COMPLÉMENTAIRE:
JAN. / JAN. ☐ FEB. / FÉVR. ☐ MARCH / MARS ☐ APR. / AVR. ☐ MAY / MAI ☐ JUNE / JUIN ☐
JULY / JUIL ☐ AUG. / AOÛT ☐ SEP. / SEPT. ☐ OCT. / OCT. ☐ NOV. / NOV. ☐ DEC. / DÉC. ☐
YEAR / ANNÉE: 2023 ☐ 2024 ☐ 2025 ☐

MANUFACTURED BY GREENTECH MANUFACTURING INC. | PO BOX 1237/2716 CRESCENT DRIVE | INTERNATIONAL FALLS, MN 56649
FABRIQUÉ PAR GREENTECH MANUFACTURING INC. PO BOX 1237/2716 CRESCENT DRIVE INTERNATIONAL FALLS, MN 56649 É.-U.

THE MOST TRUSTED OUTDOOR STOVES

PRISTINE SERIES

OWNER'S MANUAL

SAVE THESE INSTRUCTIONS

INSTALLATION, OPERATION & MAINTENANCE

2020 EPA CERTIFIED

20 YEAR LIMITED WARRANTY

GTM GREENTECH manufacturing inc.

CROWN ROYAL STOVES

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INTRODUCTION

Greentech Manufacturing would like to thank you for your recent purchase of a Crown Royal Stove. We sincerely appreciate the trust you have placed in us and we look forward to continuing to serve you. We know that you will be pleased with our continued commitment to your satisfaction while you enjoy the benefits of heating with a Crown Royal Stove. Crown Royal Stoves are manufactured with quality workmanship and designed to offer you value now and for years to come. We are so confident in the quality of our furnace each Crown Royal Stove comes with a 20 year limited warranty.

To ensure maximum benefits from your furnace, read the complete manual prior to using or installing your furnace.

Always keep this manual for future references.

Crown Royal Stoves – EPA 2020 Step 2 Certified
U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with the 2020 particulate emission standards using cord wood.

7200E: Tested to ASTM E2618-13, average emission rate .08 lbs/mmbtu, maximum emission rate 0.120 lbs/mmbtu.
7300E: Tested to ASTM E2618-13, average emission rate .08 lbs/mmbtu, maximum emission rate 0.118 lbs/mmbtu.
7400E: Tested to ASTM E2618-13, average emission rate .06 lbs/mmbtu, maximum emission rate 0.069 lbs/mmbtu.

The outdoor series furnaces are designed to be located next to your firewood storage for convenience and is normally filled once or twice a day, depending on the temperature outside. Our outdoor series furnaces are often used to heat residential home, garages, shops, barns, businesses, greenhouses, swimming pools, spas, domestic hot water, radiant in-floor heat, and snow melt applications.

Model	7200E	7300E	7400E
Estimated Btu's*	125,000	221,000	325,000
Heating Capacity**	2,000-3,000 sq ft	4,000 – 5,000 sq ft	8,000-10,000 sq ft
Dimensions (L X W X H)	70" x 47" x 71-1/2" plus chimney length	76" x 49" x 80-1/2" plus chimney length	84" x 53" x 86-1/2" plus chimney length
Approx Weight	1950 lbs	2650 lbs	2950 lbs
Firebox Length	28"	32"	36"
Wood Load Capacity	26"	30"	34"
Chimney Size	6"	6"	8"
Firebox Door Size (L X H)	18" x 18"	20" x 24"	22" x 26"
Supply/Return Size	1-1/4" (1 Each)	1-1/4" (2 Each)	1-1/4" (2 Each)
Water Capacity	180 Gallons	235 Gallons	290 Gallons
Electrical Rating	115 VAC/60HZ/1 PH	115 VAC/60HZ/1 PH	115 VAC/60HZ/1 PH

*Btu's are estimated and will vary with the type of wood burned.
**Ensure to properly size unit to buildings thermal demands.

Crown Royal High Efficiency Wood Gasification Furnaces are designed to burn only clean, dry wood. Clean wood means wood that has no paint, stains, or other type of coatings. It also includes wood that has not been treated with preservatives, including but not limited to, copper chromium arsenate, creosote or pentachlorophenol. Wood must be cured between 6-9 months and dried to 20% moisture or less.

Warranty will be voided if the furnace is used to burn materials for which the unit is not certified by the EPA and void if not operated according to the owner's manual. Burning any other material other than "Clean, Dry Wood" will VOID warranty.

For Outdoor Use Only!

This wood heater needs periodic inspection and repair for proper operation. It is against federal regulations to operate this wood heater in a manner inconsistent with operating instructing in this manual.

BEST BURN PRACTICES

Learn how to get the best burn possible from your Crown Royal Stove.

Instructions – Read and follow all operating instructions supplied by Greentech Manufacturing, Inc.

Fuels – Only burn clean wood, which is the only approved fuel in your Crown Royal Stove. Burning materials not recommended play a major role in visible emissions. Never burn: trash, plastics, gasoline, rubber, naphtha, household garbage, material treated with petroleum products, particle board, railroad ties, pressure treated wood, leaves, paper products and cardboard.

Loading of Fuels – Burning wood creates visible emissions. In order to complete the combustion process, there is a minimum amount of space needed. For instance, if a person were to load a relatively small firebox completely and load a larger firebox with the same amount of fuel, with all of the other factors being the same, the larger firebox would burn cleaner. In the smaller firebox, the combustion process does not have enough room to expand heat up and mix before exiting the firebox (insufficient time, temperature and turbulence). Just because a firebox is large does not mean that is should be filled completely. This large volume is used in part for what happens after it is loaded. Fireboxes should be loaded based on outdoor temperatures, and anticipated heat load required to maintain sufficient levels to ensure the fire doesn't go out before next fill.

Starting – Always start fire with wood kindling to eliminate unnecessary smoke. Never use gasoline, lighter fluids, chemicals, or oils.

Furnace Sizing – The size of a furnace should be large enough to provide sufficient heat without constant reloading. Targeted burn times are around 12 hours; an adequately sized furnace will provide enough heat for 90% of all heating days. Inadequate size of furnace will lead to unattended fires that leave colder fireboxes and relighting will be dirtier because the flame quenching on the cool firebox walls. A good rule to follow is that if the furnace cannot stay within 20% of its set temperature under regular reloading, then the unit is undersized and larger furnace is needed.

Operation – Improper combustion air can be associated with several factors. The air inlet and chimney may be restricted by debris (creosote, ash, etc). The blower starts and stops properly and runs at proper speed. The door seal is in satisfactory condition.

Maintenance – Excessive creosote buildup can be a result of restricted air flow from combustion fan, flame baffle or chimney blockage.

Local and State Regulations – Always remember to comply with all applicable state and local codes.

DANGER!!! Do not start fire with chemicals, volatile fluids, rubber, plastics or garbage. Some processed wood contain resins and should be avoided. Only competent persons with a sound understanding of this heating method should operate this furnace. Improper firing could result in personal injury and/or damage to unit, and void warranty. Do not burn garbage, gasoline, drain oil, naphtha, engine oil, railroad ties, particle board, leaves, cardboard, or any other flammable liquids.

ADDITIONAL INSTALLATION AND OPERATIONAL CONSIDERATIONS

Installation

Person (s) operating a Crown Royal Stove must comply with all applicable laws or other requirements, such as state laws or regulations and local ordinances. Person (s) is/are also responsible for operation in a manner that does not create a public or private nuisance condition. The distance and stack height Greentech Manufacturing recommends and the requirements in any applicable laws or other requirements may not always be adequate to prevent nuisance conditions due to terrain or other factors.

The EPA offers tips on how to properly use a moisture meter to test firewood before using in a wood-burning stove or fireplace. Wet wood can create excessive smoke which is wasted fuel.

The EPA's Burnwise Program
http://www.epa.gov/burnwise

How to Use a Moisture Meter Video
http://www.youtube.com/watch?v=jM2WGgRcnm0

The EPA offers four simple steps to properly dry firewood before using in a wood-burning stove or fireplace. Wet wood can create excessive smoke which is wasted fuel. Burning dry, seasoned firewood with a moisture content of 20% or less can save money and help reduce harmful air pollution.

Split, Stack, Cover and Store Video
http://www.youtube.com/watch?v=yo1--Zrh11s

This tri-fold brochure provides colorful illustrations of the four easy steps to dry firewood.

Wet Wood is a Waste Brochure
http://www.epa.gov/burnwise/pdfs/wetwoodwastebrochure.pdf

GUIDE TO BURNING WOOD

The quality of the firewood you burn can have a big effect on the overall performance and efficiency of your furnace. The main factors that affect the burning characteristic of firewood are moisture, tree species, and size. It is important that you understand and follow our guidelines when choosing wood as a fuel source.

Fresh cut wood will have a moisture content between 35 and 50 percent by weight. If you try to burn wet wood, it will not only be difficult to ignite but will hiss and sizzle in the firebox. Burning wet wood consumes energy that will normally be used to efficiently complete the combustion process. Properly seasoned wood will ignite easily and burn efficiently. Hardwoods like oak and maple dry more slowly than softer woods like spruce and poplar. Properly seasoned wood would have a moisture content of less than 20%. Firewood dries slowly and may take a full year or more to season.

Ways to tell if firewood is dry enough to burn:

- Test wood with a moisture meter. Moisture meters can be purchased at a local hardware store for around $25.00.
- Wood darkens with aging, from white or cream in color to yellow or gray.
- There are cracks in the end grain.
- Banging two pieces together, dry wood sounds hollow. While wet wood sounds dull.
- Split a piece and if the fresh surface feels damp and cool, the wood is wet. If it feels dry and warm it is seasoned.
- When you burn it, if it hisses, it is too wet.

Types of Wood:

Wood can be classified as softwood or hardwood. Pines, spruces and firs are common softwoods and oaks, elms, birches, and maples are hardwoods. Softwoods burn rapidly and are more resinous than the hardwoods; therefore, they will cause a greater creosote build-up. Hardwoods produce a long-lasting fire with uniform heat. Hardwoods are the most desirable and are used by the majority of wood burners.

Proper Wood Storage:

1. Cut the wood to the desired length. It should easily fit in your firebox.
2. Split your wood before stacking it – Splitting the wood in advance of stacking it increases exposure to air, which improves drying time.
3. Check the moisture content – Place the moisture meter tip into the longest side of a piece of split wood. (Goal is 20% moisture content)
4. Stack your wood in alternate directions – Spacing is needed to provide better circulation and helps in the drying process.
5. Store your wood off the ground – Store wood six inches or more off the ground to prevent moisture.
6. Cover wood, but leave the sides exposed – Use a tarp or best option is to build a structure that has a roof. If using a tarp, make sure your sides are open, so moisture is not trapped.
7. Properly seasoned wood could take up to 12 months or more to dry.
8. Storage of your wood must be in a debris free, dry environment that is at least sixty (60) inches from the front of the stove and thirty-six (36) inches from the sides or back of the stove.

Purchasing Wood:

A cord of wood is a ranked stack of logs 4’ x 4’ x 8’. Usually when you purchase firewood, it is sold by the “face cord”. A face cord is a ranked stack of logs 4 feet high, 16 inches deep and 8 feet long. Wood is sometimes sold by the ton; a ton of dry hardwood is equivalent to approximately ½ full cord. Whenever possible it is best to burn hardwood that has been split and air dried for one year.

SAFETY INSTRUCTIONS & PRECAUTIONS

- All installation and operation must follow federal, provincial, state, and local codes for wire plumbing, and installing a chimney.
- All work must be performed by qualified personnel only.
- Read and understand all precautions before operating the furnace.
- The furnace is not to be used as a standalone unit. It is recommended that a backup system be in place.
- Retain this manual for as long as you own your Crown Royal Stove. Carefully read and follow these directions.
- Regularly read over this manual to keep you informed.

DANGER!!! Do not start fire with chemicals, volatile fluids, rubber, plastics or garbage. Some processed wood can contain resins and should be avoided. Only competent persons with a sound understanding of this heating method should operate this furnace. Improper firing could result in personal injury and/or damage to unit, and void warranty. Do not burn garbage, gasoline, drain oil, naphtha, engine oil, railroad ties, particle board, leaves, cardboard, or any other flammable liquids.

WARNINGS!!

- All installations and operations of your furnace must follow STATE, PROVINCIAL and LOCAL LAWS pertaining to operations, wiring, plumbing, and building codes. The installation must be performed by a qualified installer.
- Only burn wood in this unit. (Check with provincial, state and local regulations that obtain to banned fuels in designated locations.)
- Only use wood with 20% or less moisture content.
- Do not install this unit on a combustible surface.
- All models operate at atmospheric pressure. DO NOT obstruct, block or plug the overflow vent tube in any way, which is located on top of the furnace.
- This unit cannot be hooked to a chimney that is already serving another appliance. When installing a chimney that is higher than twelve feet, guidelines must be used.
- This unit must never be pressurized.
- Do not use an automatic stoker with this unit.
- Risk of fire: Do not operate with fuel loading heat exchanger door or secondary combustion door open.
- Do not store fuel or other combustible materials within marked installation clearances.
- Inspect, clean flues and chimney regularly.
- All cover plates, enclosures, and guards must be always maintained in place, except during maintenance and servicing.

CAUTIONS!!!

- Hot Surfaces: Keep children away. Do not touch during operation.
- Do not start or operate furnace without checking heating fluid.
- Check for buried cables and utility lines before digging trench.
- For safety and proper temperature control, keep fuel door closed tightly during operation.
- Do not fire up furnace until filled with water.
- Do not start the unit during a prolonged power failure
- Load fuel carefully to avoid injury to hands, fingers and other body parts that may come in contact with the unit's loading door opening.
- Cleaning of the heat exchanger, flue pipe, chimney and combustion motor if used, is especially important at the end of the heating season to minimize corrosion during the summer months caused by accumulated ash.
- Do not open secondary combustion door while in operation. Doing so will result in fire hazard and/or severe burns.
- Always check for adequate water levels.

PRECAUTIONARY LABELING

Please read and follow these precautionary labels that are also found on the outdoor furnace.

INSTALLATION

ALL INSTALLATIONS AND OPERATIONS MUST FOLLOW FEDERAL, PROVINCIAL, STATE, AND LOCAL CODES FOR WIRING, PLUMBING AND INSTALLING THE CHIMNEY. ALL WORK MUST BE PERFORMED BY QUALIFIED PERSONNEL ONLY.

Location

When choosing the location of your furnace you should consider: prevailing wind direction, distance from home for refueling and storage, and give consideration for any effect on your neighbors. Check with your homeowner's insurance company to ensure they will approve the location relative to the distance from building and combustibles. We recommend a minimum of 25 feet from any building.

Minimum Clearances to Combustibles

Sides	Front	Back	Top	Chimney Connections
36 Inches	60 Inches	36 Inches	12 Inches	60 Inches

Adhere to minimal clearances to combustibles stated in manual and accordance with local, state, provincial, and federal building, and fire codes.

Prior to installation, contact your insurance provider to ensure that installation is in compliance to regulations and all terms have been met.

Storage of your solid fuel must be in a debris free, dry environment that is at least sixty (60) inches from the front of the stove and thirty-six (36) inches from the sides or back of the stove.

WARNING!!! Do not store fuel or other combustible materials within marked installation clearances.

When installing a furnace in a building, outside combustion air is needed. To prevent negative pressure, ensure that there is an adequate source of fresh air to offset the demand of the furnace and other appliances that will draw air from the area they are located. Follow the steps below to prevent negative pressure:

1. Determine the volume of space in the area. This can be calculated by Length (FT) x Width (FT) x Hight (FT) = Volume (CF) *Include all open areas not closed off by doors.
2. Determine the air input needs for all servicing appliances then add them together and rounding result to the nearest 1000 BTU per hour.
3. Divide the total volume by the total air input requirements and determine if you have a "Confined" or "Unconfined" area with the following results:
    a. Results of equal to or greater then 50CF/1000 BTU per Hour: "Unconfined"
    b. Results of less than 50CF/1000 BTU per Hour "Confined"

With results of "Confined" space additional source of air is required. On some installations of "Unconfined" spaces where building has unusually tight construction it might be necessary for additional source of air to also be required

Ground Rod Installation

A properly installed ground rod safe guard electrical equipment and prevent electrolysis in your outdoor furnace. Electrolysis is the decomposition of water into oxygen and hydrogen gasses when an electric current passes through the water. Free oxygen in the water tank will promote rust and over time cause leaks and furnace failure.

Installing a ground rod and connecting to furnace:

1. Near the furnace leg, drive 8' grounding rod into the ground until it is close to the surface.
2. Install a grounding terminal on the closest stove leg to the grounding rod with self-tapping screws.
3. Secure a ground rod clamp to the grounding rod.
4. Run a ground wire between these two terminals and secure the wire.

Foundation: Blocks or Concrete Pad

Inspect the ground conditions that you intend to install your furnace on. If the area is unstable or has a history of staying wet, you may have to improve the soil with gravel as well as raising the elevation. A cement pad of 4" – 6" inches should then be used. The furnace in most cases can be placed on four cement blocks and they should not be less than 24 inches wide, 24 inches long, 3 inches thick. Obtain the footprint of the model of furnace you have purchased. Place your blocks so that the legs will be in the center of them.

For a pad, the width need not be greater than the outside width of furnace. The length of pad should be as long as the outside length dimension and an added length is desirable as a work area at the loading door. A four-foot extension is most commonly used.

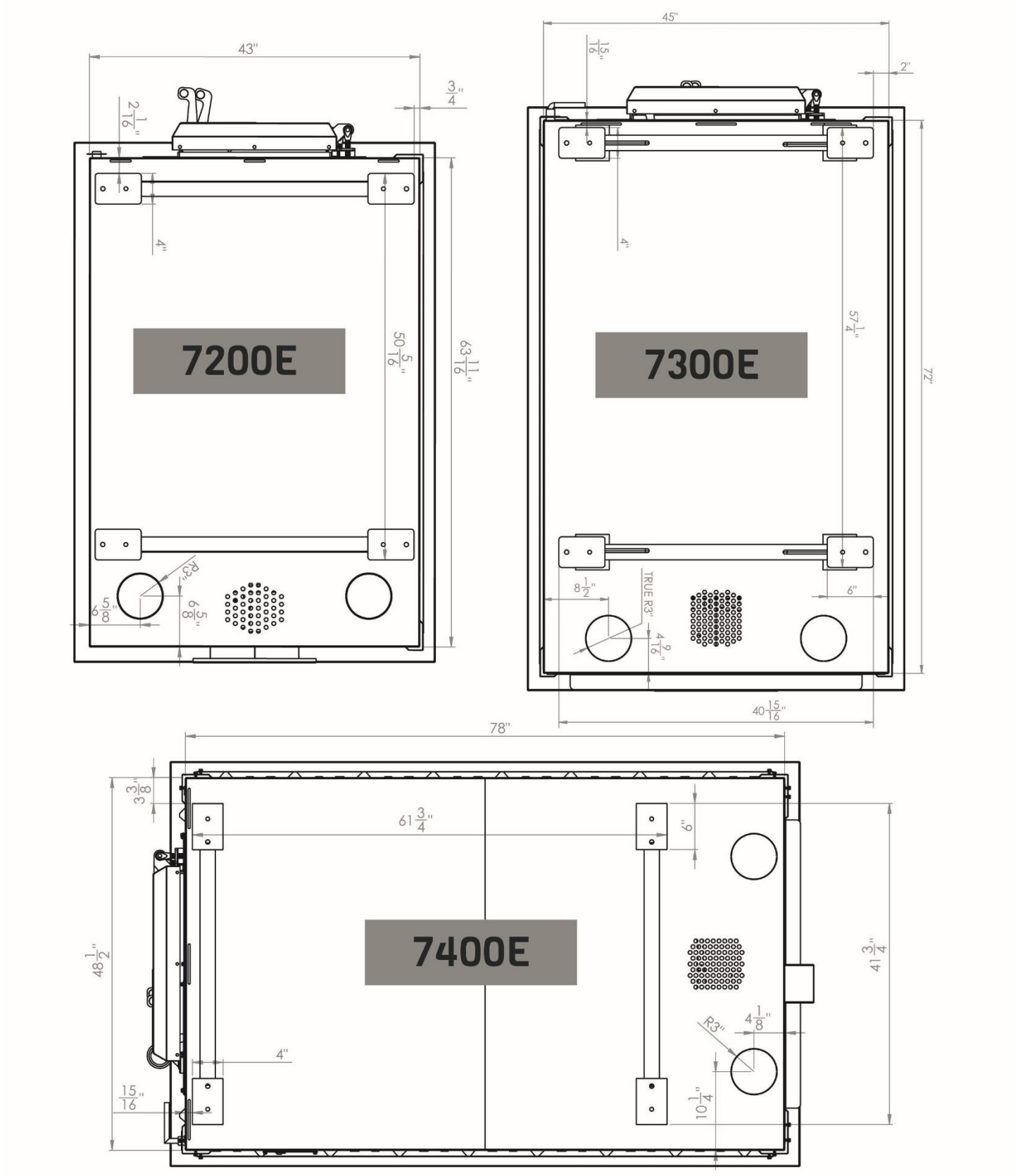
WARNING!!! Do not install this unit on a combustible surface.

MININUM CONCRETE PAD SIZE

Place rear stove legs 2" from the back edge of concreate this will allow a 12" overhang for your underground lines to come up.

Model	7200E	7300E	7400E
Length X Width	92" x 54"	100" X 61"	108" x 65"

FURNACE FLOOR PLANS



CHIMNEY REQUIREMENTS

ALL INSTALLATIONS AND OPERATIONS MUST FOLLOW FEDERAL, PROVINCIAL, STATE, AND LOCAL CODES FOR WIRING, PLUMBING AND INSTALLING THE CHIMNEY. ALL WORK MUST BE PERFORMED BY QUALIFIED PERSONNEL ONLY.

Chimneys

The size and height all depends on the unit you have purchased and where the unit will be located. Contact your local dealer or Greentech Manufacturing, Inc. for chimney purchase information.

- Adhere by local building codes and the National Fire Protection Association Rules No's 31,54 and 211.
- It is required to use Selkirk Chimney Systems; brand type is UT (Ultra Temp or Galva Temp)
- Selkirk Chimney Systems is a double insulated, stainless steel, Class A Chimney Systems that meets the requirements of UL103 and ULC-S629 and complies with the Chapter 11 of NFPA 211, Standard for Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances.
- Chimney termination caps are required; installation of spark arresters may be needed in high fire risk areas.
- Selkirk chimneys come in various lengths, spanning from eighteen (18) inches to forty-eight (48) inches. Install each section of piping by placing male and female sections together then twisting them to lock sections together. When installing your chimney piping, it is recommended by many chimney suppliers to brace every eight feet. Also recommended by the chimney manufacturer, that the height of the piping does not exceed a total of forty 40 ft.

WARNING!!! This unit cannot be hooked to a chimney already serving another appliance.

- When installing chimney, please refer to manufacturer's recommendations and requirements for adequate clearances.
- Furnaces come standard with the Selkirk brand anchor plate as well as an 12" chimney length.
- Additional Chimney components and lengths are available from your local dealer or can be purchased direct from Greentech Manufacturing Inc. (Toll Free 866-361-7355)
- Do not attempt to fabricate your own adapters.
- Do not mix Selkirk Chimney with other manufactured brands.
- Do not use existing chimney that already connects to another appliance.
- A major cause of chimney-related fires is failure to maintain required clearances (air spaces) to combustible material. It is of the utmost importance that the chimney be installed only in accordance with the manufacturers stated instructions. These instructions must be reviewed prior to installation of venting components.
- Inspections of chimneys need to be performed at least annually to ensure of any obstructions due to creosote buildup. When necessary, perform cleaning of chimney to prevent chimney fires.

WARNING!!! Risk of Fire: Do not operate with fuel loading door, heat exchanger door or secondary combustion door and/or ash removal doors open. Do not store fuel or other combustible materials within marked installation clearances. Inspect and clean flues and chimney regularly.

TRANSFER LINES

ALL INSTALLATIONS AND OPERATIONS MUST FOLLOW FEDERAL, PROVINCIAL, STATE, AND LOCAL CODES FOR WIRING, PLUMBING AND INSTALLING THE CHIMNEY. ALL WORK MUST BE PERFORMED BY QUALIFIED PERSONNEL ONLY.

Underground insulated pipe is a crucial part of your installation. It is designed to transfer hot water from your furnace to your home, garage or shop. Selecting the correct underground pipe depends on several factors such as climate and distance. Choosing a pipe with the least possible heat loss is the most effective way to ensure your furnaces efficiency.

- **Ridged Insulated Underground Tubing** - Ridged insulated pipe manufactured with the highest possible R value ratings.
- **Foam Filled Insulated Underground Tubing** – Designed to respond to intensive environments and climates. Insulated with high quality closed cell polyolfin or polyethylene foam and shelled in a virgin plastic corrugated tile.

Make sure your insulated underground tubing is equipped with at least one supply and one return pipe. This pipe should be at least one inch inside dimension; which is rated at 180 degrees F and 100 PSI continuous flow.

Insulated underground tubing must be without any splices, couplings and joints. Both tubing and piping inside should be one continuous run. Underground insulated tubing needs to be free of damages or punctures that would allow ground water or soil to come in contact with inside insulation and piping. Allowing such contact will cause moisture to seep through the insulated pipe and result in extreme heat loss. Insulated underground tubing must remain watertight or will be required to be replaced.

Installation Requirements:

- The trench must be 24” deep and 8”–12” wide. If possible, have a gradual slope in your trench to allow drainage away from lines and out of the trench bottom. Place electrical supply in bottom of trench and cover with 6” of gravel or dirt. At this point a water barrier is required. Several methods are possible, but the most important factor is; if ground water comes in contact with your heating lines, it will be the greatest heat loss to your system. A minimum of R10 insulation value is recommended, and a water-tight vapor barrier such as a continuous poly tube of plastic PVC pipe to encase your insulation is a must. NOTE: If you need to bury lines under an area where vehicles will cross, you should increase the depth of the trench to three feet or place planks over the trench in that area to spread the load and reduce the pressure generated on the lines.
- All wiring must conform to local codes. Use an electrical wire rated and approved for underground installations. This wiring can be placed in the same trench below the water lines. Use 12-2 UF wire with ground to provide power to the combustion blower, aquastat, night light, etc. at the furnace. This is satisfactory for most applications, but a state certified electrician must be consulted.
- The supply & return tubing and the power wire can be lowered in the trench, then brought through the buildings being heated, and extended a minimum of 36” out of the soil where the furnace is to be placed. Seal the openings around the tubing where it enters the building. Also Seal the tubing where it extends out of the ground at the location where the furnace is to be placed.
- Connections to the furnace are clearly marked. The installation of isolation valves at both ends of the pump is recommended as well as a valve at the return line. This will allow you to shut off the water supply for repair or if additional heating components are added to the system. It is recommended that piping used is able to withstand 100 PSI at 180 F, and is at least 1” (inch) in diameter. 1 ¼” (inch) piping is recommended for larger systems. A single junction box at the rear of the furnace is included for your power supply and should be connected by a qualified person.
- A hole large enough to accommodate two lines and insulation is required and attention to sealing this point of entry is very important. Be sure to bring pipes, insulation and vapor barrier completely through the wall and seal from both sides.

ALL INSTALLATIONS AND OPERATIONS MUST FOLLOW FEDERAL, PROVINCIAL, STATE, AND LOCAL CODES FOR WIRING, PLUMBING AND INSTALLING THE CHIMNEY. ALL WORK MUST BE PERFORMED BY QUALIFIED PERSONNEL ONLY.

Making Water and Electrical Connections at the Furnace

- After the furnace has been placed on the concrete or pads, remove the panel at the back of the stove.
- The return (cold water) pipe must be connected to the fitting at the upper position and the supply (hot water) at the fitting toward the bottom of the furnace. If multi-pole locations are to be heated, tees must be added on both the supply (hot) and return (cold). It is necessary to use **brass fittings** between the stainless and other metals.
- The furnace has been pre-wired at the factory; therefore, it is only necessary to connect the common from the wire from the trench to the common from the stove, neutral to neutral, ground to ground. Ensure that the connections are watertight.
- Return the panel to the back of the stove.

Piping Inside the Building

It is recommended that piping used is able to withstand 100 PSI at 180 F, and is at least 1" (inch) in diameter. 1 ¼" (inch) piping is recommended for larger systems.

- For each building, a circulation pump is needed. The pump can be located on the supply side (hot water).
- Before each pump, a filtering device must be installed. This filter will minimize the contaminants in the water and maximize the life of the circulation pump.
- If the central heating system in the building is a forced air furnace, it is important to select the appropriate water to air exchanger. Contact your heating contractor for proper size. The coil is to be installed in the furnace plenum. If there is an air conditioning evaporator coil in the plenum, install the water to air coil after the a/c coil.
- If the central heating system is a hot water boiler system, a water to water heat exchanger is needed. The water from an open system will contaminate the closed system if the waters are mixed together.
- It is advisable to install ball valves, isolation flanges, etc. to make the removal and the replacement components easier.

Wiring Inside the Building

- The electrical wiring must be done by a licensed electrician to ensure the system will operate as desired and is safe.
- It is recommended that the circulation pump or pumps run continuously.
- The existing forced air circulation blower needs to be wired through the circuit board to a 24 volt wall thermostat which is dedicated for this purpose. The other wall thermostat which is for the forced air (Oil, LP, NG or Electric) is left intact. The new 24 volt wall thermostat will cause the circulation blower to run without the burners coming on. A licensed electrician needs to perform the wiring.
- The electrical for a boiler system is more complicated because the existing boiler wall thermostat is used but the burners on the (Oil, LP, NG or Electric) boiler are not to operate when the water from the furnace is to provide heat. It is necessary to have a licensed electrician wire this configuration.
- If air conditioning is used, you must add a relay DPDT to prevent the condenser from turning on when the fan is energized.

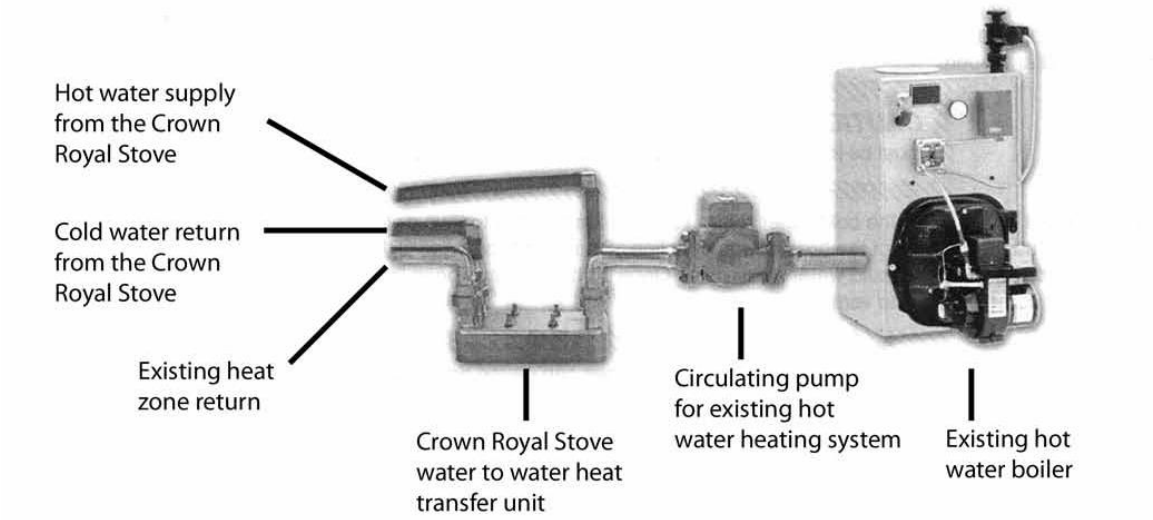
Electrical Requirements

Electrical Rating: 120 AV Volts, 6 AMPS, 60 Hz. Wire must be rated and approved for direct burial if it is to be buried in the same trench as the water lines. Boiler power connection box is located at rear of boiler inside back cover. Minimum supply 15 AMPS. Maximum device 15 or 20 AMPS. **USE COPPER CONDUCTORS ONLY.**

EXISTING HOT WATER HEAT - INSTALLATION

ALL INSTALLATIONS AND OPERATIONS MUST FOLLOW FEDERAL, PROVINCIAL, STATE, AND LOCAL CODES FOR WIRING, PLUMBING AND INSTALLING THE CHIMNEY. ALL WORK MUST BE PERFORMED BY QUALIFIED PERSONNEL ONLY.

It is recommended that piping used is able to withstand 100 PSI at 180 F, and is at least 1" (inch) in diameter. 1 ¼" (inch) piping is recommended for larger systems.



The Crown Royal Stove shall be installed without interfering with normal delivery of heated water from the original boiler.

The Crown Royal Stove shall be installed without affecting the operation of the electrical and mechanical safety controls of the original boiler.

The Crown Royal Stove shall provide a changeover from one fuel to the other without requiring manual adjustment of any controls or components other than the thermostats.

The Crown Royal Stove shall have provisions for preventing, of adequate water capacity within the boiler to prevent damage from loss of circulation due to electrical power failure.

The Crown Royal Stove shall be installed without changing the function of the controls or rewiring the original boiler. A wiring interconnection is permitted. The electrical system of both boilers shall be powered from a single branch circuit without exception.

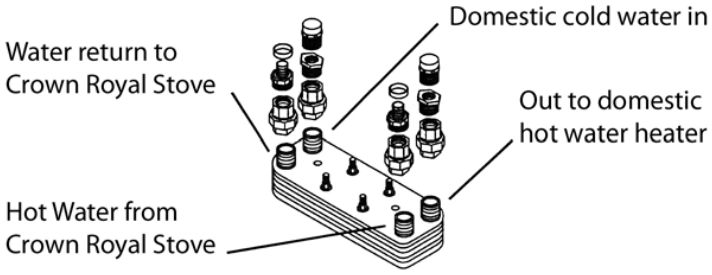
FOR UNITS USED IN CANADA THE FOLLOWING IS RECOMMENDED:

- Operate the existing boiler periodically to ensure that it will operate satisfactorily when needed.
- Do not relocate or bypass any of the safety controls in the existing boiler installation.
- The operation of the existing gas boiler must be verified for acceptable operation before and after installation of the Crown Royal Stove by a gas fitter who is recognized by the regulatory authority.
- Do not connect to any chimney or vent serving a gas appliance.
- Ensure the installation complies with the requirements of CAN/SCA-B365. Any changes to the installation should comply with CSA B139 (for oil-fire), C22.1 (for electric), or CAN/CGA-B149.1 or CAN/CGA-B149.2 (for gas-fired).

ALL INSTALLATIONS AND OPERATIONS MUST FOLLOW FEDERAL, PROVINCIAL, STATE, AND LOCAL CODES FOR WIRING, PLUMBING AND INSTALLING THE CHIMNEY. ALL WORK MUST BE PERFORMED BY QUALIFIED PERSONNEL ONLY.

DOMESTIC HOT WATER

The domestic hot water flat plate kit consists of a water to water heat transfer unit and the fittings needed to hook it up. The unit goes on top of the domestic hot water heater and is connected as shown below.



EXISTING FORCED AIR

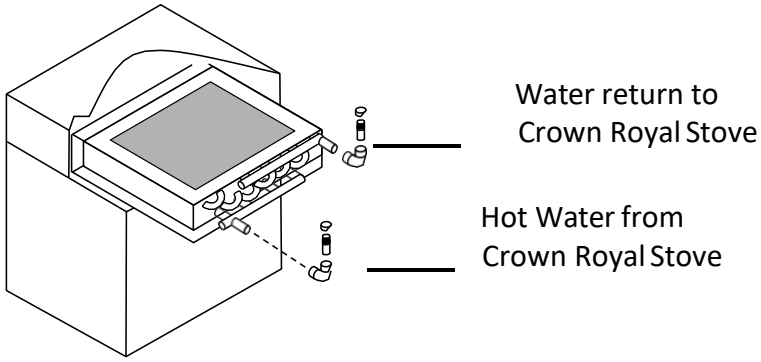
A water to air heat exchanger is inserted in the existing plenum. In most cases the heat exchanger is placed in a horizontal position, keeping all four sides level. The air must be forced through the finned area of the heat exchanger evenly. The hot water line coming from the hot-water tube enters the bottom fitting of the heat exchanger and exits the top fitting, which returns to the furnace. If the plenum is too large or too small, it must be altered to fit the heat exchanger properly.

After installation of the add-on water to air exchanger, the air flow may need to be increased.

Methods of doing so are:

BELT DRIVE SYSTEM: Blower pulleys and motor pulleys may be changed but the electric current flowing through the motor shall not exceed the nameplate rating. (A blower motor or larger power may be used.)

DIRECT DRIVE SYSTEM: The motor shall not be changed; however, the speed of the motor may be increased.



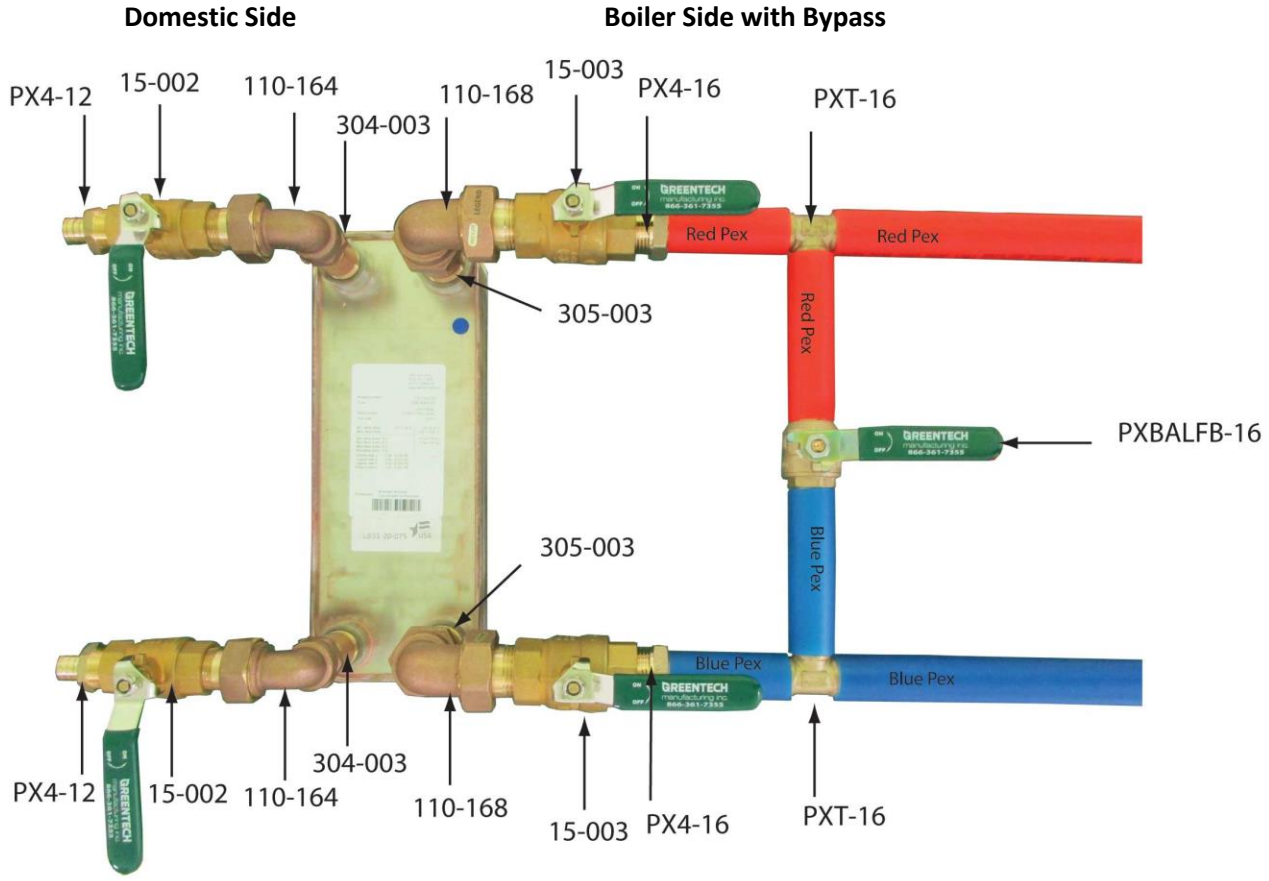
THE HEAT EXCHANGER: Air blows through the heat exchanger's grill taking the heat from the water heated grill and blowing it into your existing ductwork.

CAUTION!!! When installing heat exchangers do not tamper with existing controls. Wiring to existing blower can be done with a line voltage or low voltage thermostat.

NOTE: Wire thermostats according to directions provided by the manufacturer.

Brazed Plate Water to Water Exchanger

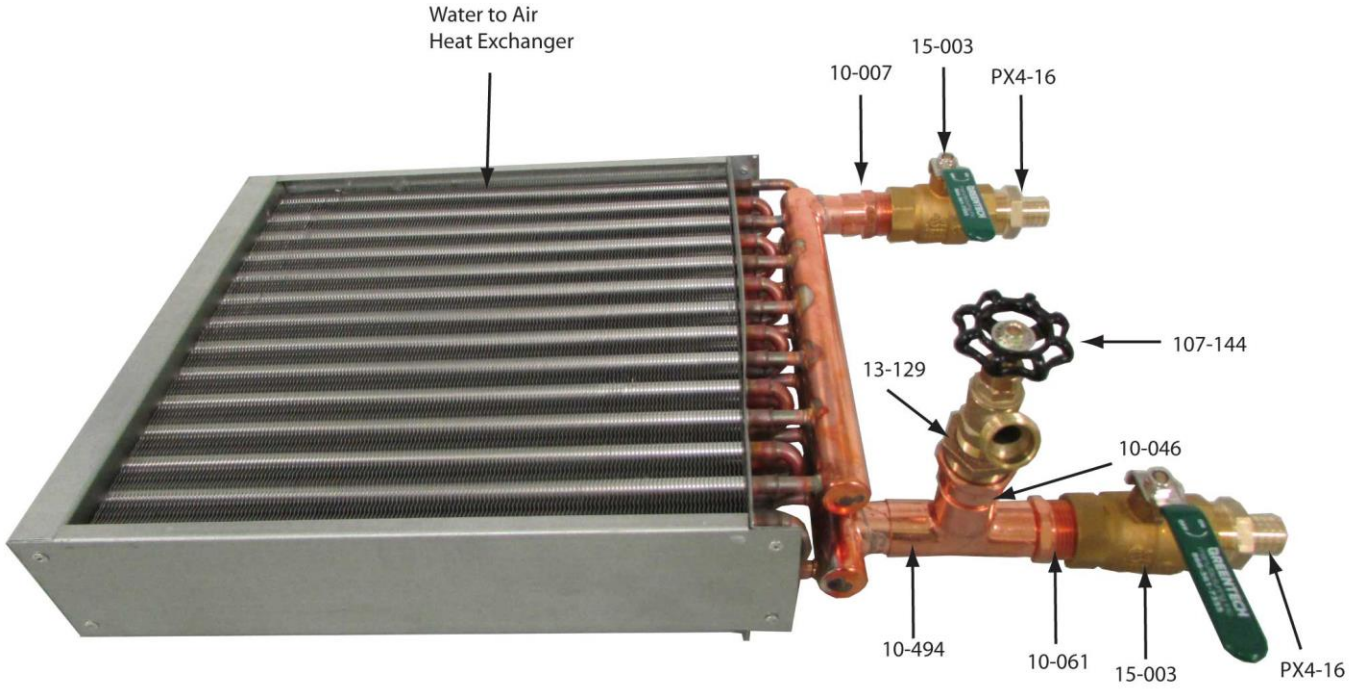
The brazed plate heat exchanger can be installed on either the cold side or the hot side of the hot water heater. If installed on the cold side, the hot water needs to be left on to maintain the temperature in the hot water heater. If installed on the hot side, the hot water heater needs to be turned off and the hot water heater is now a reservoir.



PART NUMBER	DESCRIPTION
PX4-12NL	¾” PEX X MALE ADAPTER (NO LEAD)
15-002	¾” BALL VALVE (NO LEAD) FIP X FIP
110-164	¾” UNION ELBOW IPS
304-003	¾” X 2-1/2” RED BRASS NIPPLE
110-168	1” UNION ELBOW IPS
305-003	1” X 2-1/2” RED BRASS NIPPLE
15-003	1” BALL VALVE (NO LEAD) FIP X FIP
PX4-16 NL	1” PEX X MALE ADAPTER (NO LEAD)
PXT-16 NL	1” PEX X 1” PEX X 1” PEX TEE (NO LEAD)
PXBAL-16 NL	1” PEX X 1” PEX BALL VALVE (NO LEAD)

WATER TO AIR SETUP - INSTALLATION

Water to Air Heat Exchangers are for use in your hot air plenum of your existing forced air furnace, to transfer heat into your existing forced air system.



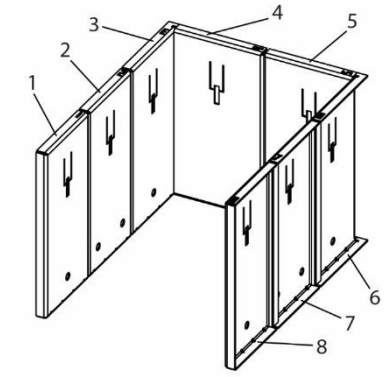
PART NUMBER	DESCRIPTION
10-007	1-1/4” COPPER ADAPTER C X FEMALE
15-003	1” BALL VALVE FIP X FIP
PX4-16	1” PEX X MALE ADAPTER
107-144	¾” MALE BOILER DRAIN MNPT
13-129	1” X ¾” BRASS HEX BUSHING
10-046	1” COPPER FITTING ADAPTER FTG X FEMALE
10-494	1” X 1” X 1” COPPER TEE
10-061	1” COPPER ADAPTER FTG X MALE
15-003	1” BALL VALVE FIP X FIP

STOVE COMPONENTS

A B C D E F G H I

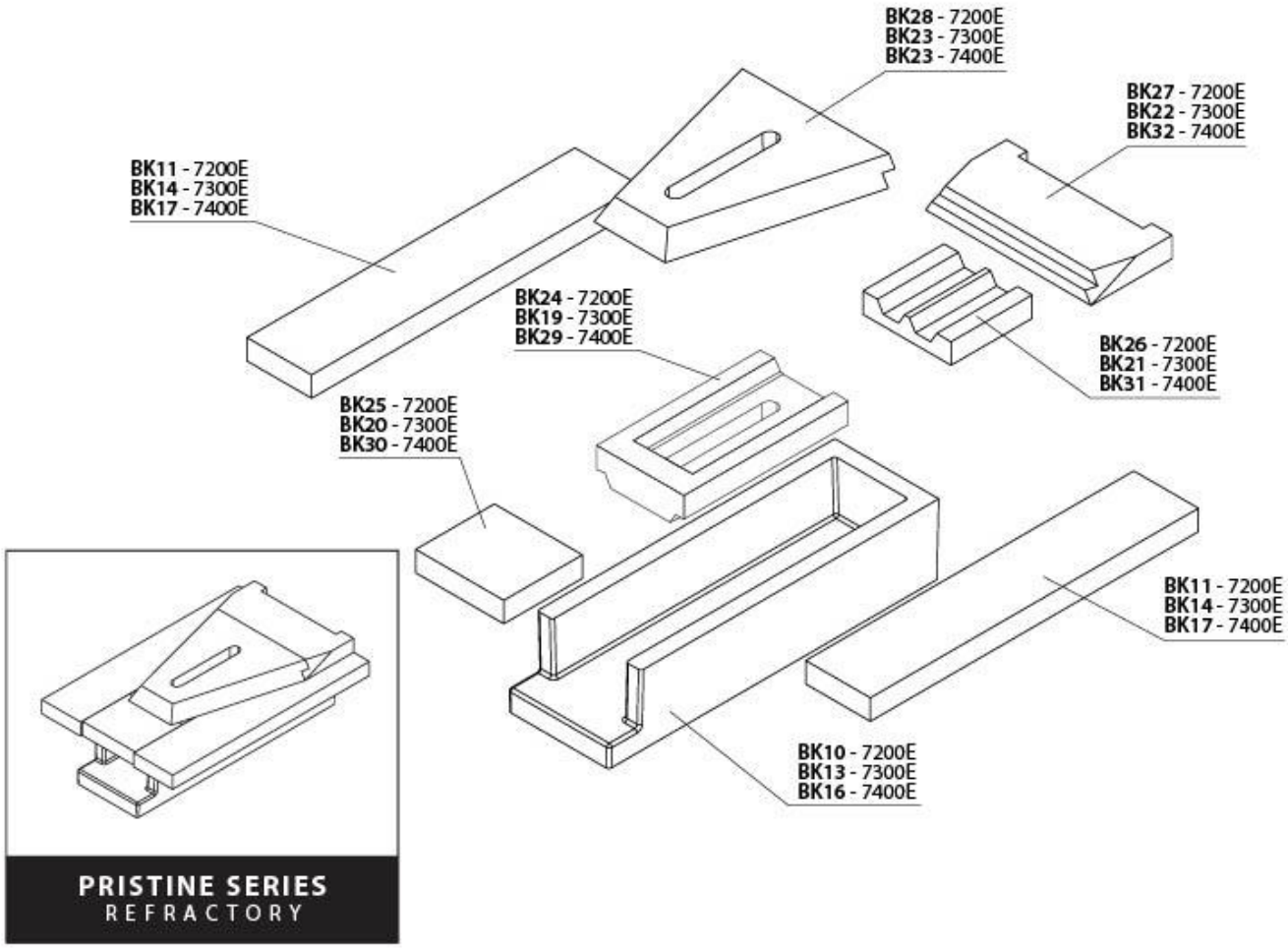
J K L M N O

	Description	Part Number
A	Auto Reset Snap Disk	50-035
B	Electronic Temperature Control	50-051
C	Solenoid	50-036
D	On-Off-On Switch	50-030
E	Thermowell	50-038
F	Fiberglass Silicone Door Rope – 1”	50-051
G	High Temp Silicone	50-050
H	Combustion Motor – 7300E & 7400E	50-020
I	Combustion Motor – 7200E	50-021
J	Ash Rake	60-007
K	Water Level Indicator	60-019
L	Red Push Button Switch	50-104
M	Encapsulated Timer Relay	50-105
N	Control Chemical & Test Bottles – 1 Gallon	Control Chemical



O	**Air Panels:**	**7200E**	**7300E**	**7400E**
#1	Front Side Left Air Panel	CRP1209	CRP1419	CRP1613
#2	Middle Side Left Air Panel	CRP1210	CRP1420	CRP1614
#3	Rear Side Left Air Panel	CRP1211	CRP1421	CRP1615
#4	Rear Left Air Panel	CRP1212	CRP1422	CRP1616
#5	Rear Right Air Panel	CRP1213	CRP1423	CRP1617
#6	Rear Side Right Air Panel	CRP1214	CRP1424	CRP1618
#7	Middle Side Right Air Panel	CRP1215	CRP1425	CRP1619
#8	Front Side Right Front Air Panel	CRP1216	CRP1426	CRP1620

Pristine Firebrick Refractory Part Numbers for All Models



CONTROL PANEL

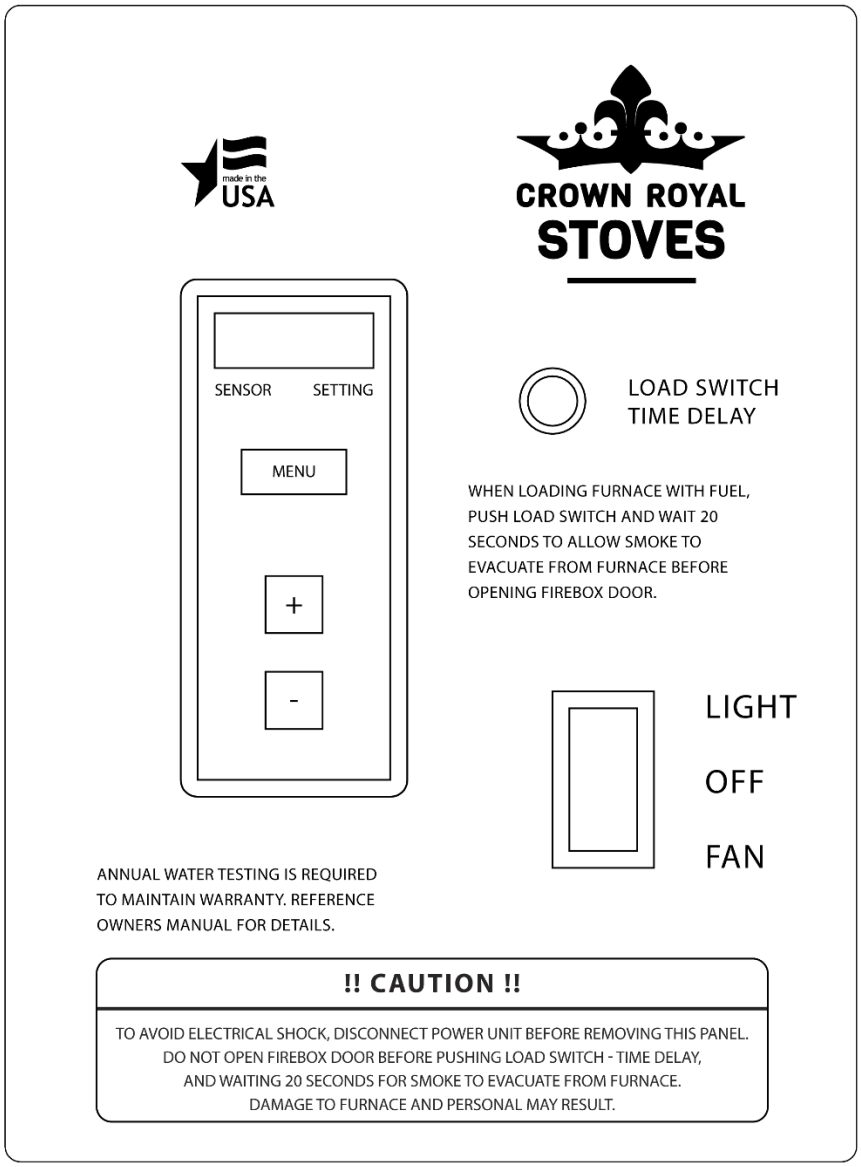
The aquastat powers the combustion blower to maintain the desired water temperature. The aquastat is set at 180°F at the factory, which means that combustion blower will run until the water in the jacket reaches 180°F. Only qualified personnel should be adjusting the temperature controls.

When filling the firebox place the fan/light switch to light off position and press the red load switch time delay button. Wait 20 seconds to allow the smoke to evacuate from the furnace before opening the firebox door. For night filling the fan/light switch can be in the light position while filling which will turn on the light above the firebox door.

Caution – Never open the firebox door before pushing load switch time delay and waiting 20 seconds for smoke to evacuate from furnace before opening firebox door. Damage to furnace and personal injury may result.

AQUASTAT

Controls the water temperature inside the water jacket. Factory set at 180°F with 10° differentials.



LOAD SWITCH

Turns the combustion blower on to allow smoke to evacuate from furnace for 100 seconds, then returns to normal operation.

FAN/LIGHT SWITCH

Controls both fan and light. Ensure switch is in the light position before opening fuel door. This shuts the fan off and turns on light. Always put the switch in the fan position after refueling.

FILLING THE WATER JACKET

Your outdoor furnace has a vent pipe that protrudes through the roof and is located in front of the lift hook. By placing a garden hose in this pipe you can fill your furnace to the proper water level. Because this furnace is an open-to –atmosphere system, it is normal that water will have to be added annually. Depending on circumstances, 5 or 10 gallons is not unusual. To make this procedure more convenient, a boiler drain valve (tap, faucet) can be installed into the return furnace line allowing you to connect a double female (automatic washing machine hose) between it and your domestic supply line.

On your initial filling of your furnace make sure to inspect all connections in your system for leaks. In your system a bleeder valve should have been installed at the highest point. This will allow you to remove any air from the system.

CAUTION, DO NOT FIRE FURNACE UNTIL IT IS FILLED WITH WATER. Allow furnace to run for two days and check water levels and fittings for leaks. If all is okay, you now should add the manufacturer's recommended water treatment.

FIRING THE FURNACE FOR THE FIRST TIME

Pristine Series furnaces are equipped with high temperature refractories. These refractories require curing upon first initial start-up. It is extremely important to heat the firebox up slowly to complete the curing process of the refractories or cracking will result.

Begin by building a fire with kindling-sized pieces of wood, kindling should be no larger than 2" in height by 2" in width by the length of the firebox in depth. Add small pieces of wood (no more than 5 pieces) to minimize temperature spikes. Keep the fire satisfied for the next 4-6 hours. The complete curing process requires attention, be sure to provide adequate time to allow refractories to properly cure.

After the 4-6 hours of kindling fire, add heavier fuel gradually until a suitable fire is achieved. The furnace will continue to feed an air supply to the fire until your aquastat shut off temperature is reached (180F). On this initial start up the water jacket will reach what is called the dew point. This creates sweat inside the firebox which may last a couple of days and is normal. Condensation will come out of all doors until the unit reaches operation temperature. Heating of the water will also cause it to come out of the fill pipe. All are normal occurrences.

Although everyone has different methods of firing, filling your furnace to capacity reduces the efficiency of the furnace. It is better to load twice a day with less wood than once a day filling to capacity. Smaller fuel loads burn hotter, cleaner and more thoroughly. By burning off more of the gases (smoke), which is wood broken down, you enhance the overall efficiency of your system by reducing creosote and increasing heat transfer to the water.

STARTING A WOOD FIRE WITHOUT A COAL BED

1. Check to see if both the rear clean-out doors and the secondary combustion door are closed and secure.
2. Before opening the firebox door, switch the light/fan switch to the fan position located on the control panel.
3. Open the firebox door and insert a few pieces of kindling over the nozzle in the firebox. Place crumpled paper on top of kindling and light. Do not use chemicals or fluids to start the fire.
4. When the kindling wood is well ignited, add larger pieces of wood. Let these pieces start to ignite.
5. Shut the firebox door.
6. When firing the stove, the first time of the season the water jacket will sweat as the fire warms the cold water. This could last for 48 hours and does not indicate the stove is leaking water.
7. Burning wood with a 20 % or higher moisture content will result with noticeable water in the firebox and secondary burn chamber.

DAILY FUELING & FIRING ROUTINE

Prior to opening fuel door, aggressively pull and push heat exchanger cleaning rod six to ten times which will ensure proper drafting. On the control panel located on the left side of the furnace remember to turn fan/light switch to either off or light position. Next press load switch time delay and wait 20 seconds to allow smoke to evacuate from the furnace. Open the fuel door slowly and stand behind the door ensuring the door is between you and the firebox. Failure to wait may cause an injury from a fire flare back.

Always check for adequate water using the water level indicator that is supplied with your stove. This indicator is placed in the fill tube and can be easily checked daily to ensure the proper water level. Based on the temperature of the stove, the water level will fluctuate.

Do not load the firebox more than seventy-five percent (75%) with wood. If additional fuel is added, you will not maintain a hot enough burn and your efficiency rate will deteriorate. Only add enough wood to provide heat until the next fueling time. Overfilling the firebox will cause the fire to smolder, which will create excessive creosote and result in more fuel being consumed.

PROPER DRAFTING

Maintaining a proper draft will ensure the complete process of gasification and will keep your furnace burning efficiently. Make sure all exhaust pathways are free and clear of debris. Remove any accumulated ash in the following areas: heat exchangers, secondary burn chamber, and chimney pipe. Regularly clean the fan wheel and finger guard located in the heat exchanger area. Make sure the fan wheel moves freely. Ensure that exhaust blower and solenoids are in good working order. Check the proper sealing of all furnace doors and replace door gaskets when necessary.

MAINTAINING COMBUSTION

A minimum of a 4” wood coal bed is required at all times to ensure good combustion at the lowest burn rate for which the furnace is warrantied.

SAFETY

Never open the firebox door without pressing the load switch time delay button, and waiting 20 seconds to allow the smoke to evacuate from the furnace. This button is located on the control panel. It is designed to turn on the combustion blower to evacuate all smoke from the unit. Failure to do so could result in damage to the furnace and cause personal injury.

Whenever the firebox door is to be opened, it should always be cracked slightly to allow oxygen to enter and burn off any combustion gases that are present before fully opening. Failure to do this could result in a sudden ignition of the unburned gases when the door is opened.

A stove should never be filled with excess wood so that the flue gas exit is blocked or impeded in any way. Burning wood generates carbon monoxide and if the flue gas exit is blocked the carbon monoxide can be forced into the area the stove is heating and have fatal consequences. If installed indoors a minimum of one carbon monoxide/smoke detector is required to be located in the room where the appliance is installed.

WARNING!!! Risk of Fire: Do not operate with fuel loading and / or secondary combustion doors open. Do not store fuel or other combustible materials within marked installation clearances. Inspect and clean flues and chimney regularly.

CAUTION!!! Hot Surfaces: Keep children away. Do not touch during operation.

STARTING DURING A PROLONGED POWER FAILURE

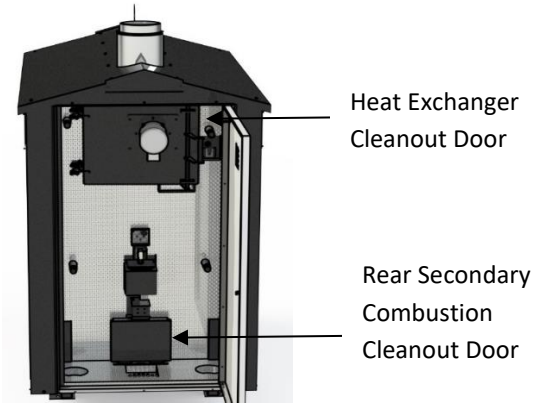
During a prolonged power failure, where no power is being sent to the furnace, do not load with new fuel or try to start a new fire. It is recommended that you contact your local dealer or Greentech Manufacturing, Inc. to find out what size of generator is needed to keep your furnace running. Once an approved generator is connected to the stove, the unit may be started normally.

CAUTION!!! Do not start the unit during a prolonged power failure.

WEEKLY MAINTENANCE

Weekly cleaning or the secondary combustion areas are extremely important for the complete process of gasification. **Use extreme CAUTION when opening and cleaning doors, these areas will still be hot and could cause personal injury.**

1. Fuel in firebox must be burned down to perform weekly maintenance.
2. Always check for adequate water using water level indicator that is supplied with your stove. This indicator is placed in the fill tube and can be easily checked daily to ensure proper water levels. Never fire the unit until adequate levels of water are satisfied. If unit is low fill immediately.
3. Always make sure light/fan switch on the control panel is in the off position before opening any access doors to perform weekly maintenance.
4. Heat exchanger door is equipped with a fan housing and wheel assembly; fan must be completely stopped before opening heat exchanger cleanout door.



HEAT EXCHANGER AREA CLEANING

Heat exchangers are in the back of the stove and run vertically which can be accessed from the back of the stove. Open the rear access door and open the top heat exchanger cleanout door. Weekly cleaning of the heat exchanger area will prevent the buildup of fly ash that can cause the stove to burn inefficiently. Clean off excess fly ash off the blades of the combustion fan. It is suggested you use an ash vac to ensure proper disposal of fly ash.

CAUTION!! Heat Exchanger door is equipped with a fan housing and wheel assembly. Never place hands or objects in blower assembly or personal injury may result.

WARNING!! Burning wood with a moisture content of 20% or higher will lead to excess creosote buildup on the Heat Exchangers.

SECONDARY BURN CHAMBER CLEANING

An ash rake will also be included with the stove; this will be used to clean the secondary burn chamber area. Stoves are equipped with a front and rear secondary combustion cleanout door. This area should be cleaned after cleaning the heat exchanger tubes. Simply use the rake (included) making a few sweeps through this area, it will prevent buildup of fine ashes. **Use extreme caution while cleaning firebrick.** Store all ash in a fire-retardant closed container that is placed on a non-combustible floor or ground, well away from all combustible materials until final disposal. Ashes should remain in fire-retardant closed container until completely cooled.

GENERAL MAINTENANCE

Usage of authorized Control chemical is required in all Crown Royal Stoves. To uphold your warranty annual water testing is necessary.

Do not allow moisture to come in contact with ashes the in the firebox. Do not rake coals into the secondary burn chamber. It is mandatory to have a rain cap on the termination of your chimney.

Frequently check for accumulated soot, creosote, and ash build-up until experience shows how often cleaning is necessary.

Check daily for creosote build-up until experience shows how often cleaning is necessary. Be aware that the hotter the fire, the less creosote is deposited. However if the firebox is building up with creosote, then the moisture content within the wood is too high. Weekly cleaning may be necessary in warmer weather, while monthly cleaning may be adequate in the coldest months. Have a clearly understood plan of how to handle a chimney fire. See (RUNAWAY CHIMNEY FIRE)

Daily Maintenance

- Check water level and add as necessary.
- Check for adequate fuel supply.
- Check for ash buildup in the firebox, secondary burn chamber and exchanger tubes. (Use a fire-retardant closed container to empty ashes into).
- Aggressively pull and push the heat exchanger cleaner six to seven times.

Weekly Maintenance

- Perform weekly maintenance to heat exchanger area, and secondary burn chamber areas to ensure proper draft.
- Check fan and solenoid to ensure proper air velocity is happening at ejection points.
- Remove any excess creosote from the firebox door and frame.

Monthly Maintenance

- Check the water level indicator and add water If low, until excess flows from the overflow pipe located in front of the chimney.
- Check chimney and connectors for creosote formation.

Annual Maintenance

- Lubricate solenoid shaft.
- Check combustion motor and solenoid to ensure proper air velocity is happening at ejection points.
- Check the door gasket and replace if needed.
- Clean out any ash buildup from firebox, heat exchanger area, and secondary burn areas.
- Check chimney: remove any creosote, soot or ash build-up that may have occurred.
- At the end of the season, thoroughly clean out all the ashes in the firebox, chimney, heat exchangers and secondary burn areas.
- Make sure chimney cap is in good condition to prevent rain from entering stove.

Remember: Your preventive maintenance program will give you years of trouble free service.

Off Season Maintenance

- At the end of the heating season, shut off the pump, clean the firebox, heat exchangers, and secondary burn chamber.
- Check the water level indicator and refill until the water is full, take a water sample to be sent in for testing, if the water treatment is needed turn on the circulation pump for at least four hours to mix the treatment thoroughly, check for leaks and then shut the pump off.

- Care for the exterior of your furnace is minimal. The unit may be washed using water and a mild non-abrasive cleaner suitable for painted surfaces. Avoid direct water pressure to electrical components and connections.

CAUTION!!! Make certain that all electrical power to the furnace and components are shut off before washing.

REPLACING DOOR ROPE GASKETS

To replace door rope gaskets, start with a 1" putty knife to scrap out old rope gasket; next clean out the gasket channel with wire brush, then fill cavity with high temp silicone 1" wide and ½" thick. Press new rope gasket in cavity making sure to embed rope into the silicone, fill in outside corners with silicone and troll flat with putty knife. Leave door the open for 24 hours.

AIR PANEL REPLACEMENT

Air panels are located inside your firebox. These panels are labeled for easy removal and replacement when needed. To remove apply force to the bottom of the air panel and lift off the hook. Air panels need to be removed in sequential order from front to rear. Air panels are labeled from left to right in numerical order from 1 to 8.

#1 – Side Front Left	#2 – Side Middle Left	#3 – Side Rear Left
#4 – Rear Left	#5 – Rear Right	
#6 – Side Rear Right	#7 – Side Middle Right	#8 – Side Front Right

ASH REMOVAL, ROTATION & DISPOSAL

CAUTION! Ashes should never be allowed to accumulate in secondary burn area and vertical heat exchangers. Ashes in contact with these areas act as an insulator, causing incomplete gasification. With an excessive ash buildup, primary combustion air is restricted, and the unit's output will be reduced. Damages will result to the unit if maintenance is not performed.

When cleaning the ash, place the ashes in a fire-retardant closed container, they then should be placed on a noncombustible floor or on the ground well away from all combustible materials until final disposal. Ashes should remain in the fire-retardant closed container until all cinders have cooled, in an area that is at least sixty (60) inches from the front of the stove and thirty-six (36) inches from the sides or back of the stove.

CAUTION: Hot coals can last for days. Disposing of them improperly or to soon can cause a fire.

WARNING!!! RISK OF FIRE

With the exception of the start-up and ash removal periods, the secondary combustion and loading doors should never be left open. This unit should never be left unattended with any of the doors left open.

CREOSOTE FORMATION & REMOVAL

When wood is burned organic vapors and tar combine with the expelled moisture forming creosote, which clings to the interiors of the stove. Creosote vapors condense in the relatively cool chimney of a slow burning fire; as a result, creosote accumulates on the flue lining. When creosote ignites it creates an extremely hot fire and can cause damage to the stove and /or persons. The chimney and its connectors should be inspected monthly, during the heating season to determine if a buildup is occurring. If creosote has accumulated it should be removed to reduce the risk of a chimney fire.

RUNAWAY CHIMNEY FIRE

To avoid a chimney fire; ensure that daily, weekly, month and annual maintenance techniques are being followed.

If a fire is to occur, close all doors including the firebox and heat exchanger doors, shut down the power to the unit. This will eliminate new oxygen from being introduced into the firing chamber, this will distinguish both chamber and chimney fires.

TROUBLESHOOTING

If the furnace fails to heat up:

1. Check fire.
2. Check combustion motor for operation.
3. Check solenoid damper is open to allow air velocity.
4. Check water level of furnace.
5. Check for creosote blockage at chimney and bypass trough.
6. Check temperature setting.
7. Check for power at furnace.
8. Check heat exchanger tubes and secondary combustion areas for blockage.
9. Check to make sure all doors are properly adjusted.

If furnace water is hot, but buildings do not have heat:

1. Check pumps and check for closed valves.
2. Check filter or Y-Strainer for flow blockage.
3. Check for air in system at exchanger by bleeding off.

If furnace boils:

1. Check that firebox door is closing properly and that the door gasket is completely sealed.
2. Check that the secondary combustion doors are properly closed and the gasket is completely sealed.
3. Check that the solenoid damper plate is opening and closing without hang-ups.
4. Check that the temperature settings and water levels are correct.

If furnace has shut down:

1. Check to ensure that the unit has power (does the outside light work).
2. Check the water temperature (furnace has a high temperature cut-out of 190 degrees ˚F). Furnace will need to drop 50 Degrees ˚F before it automatically resets.
3. If all the checks have not corrected the problem, have a qualified technician check the control panel.

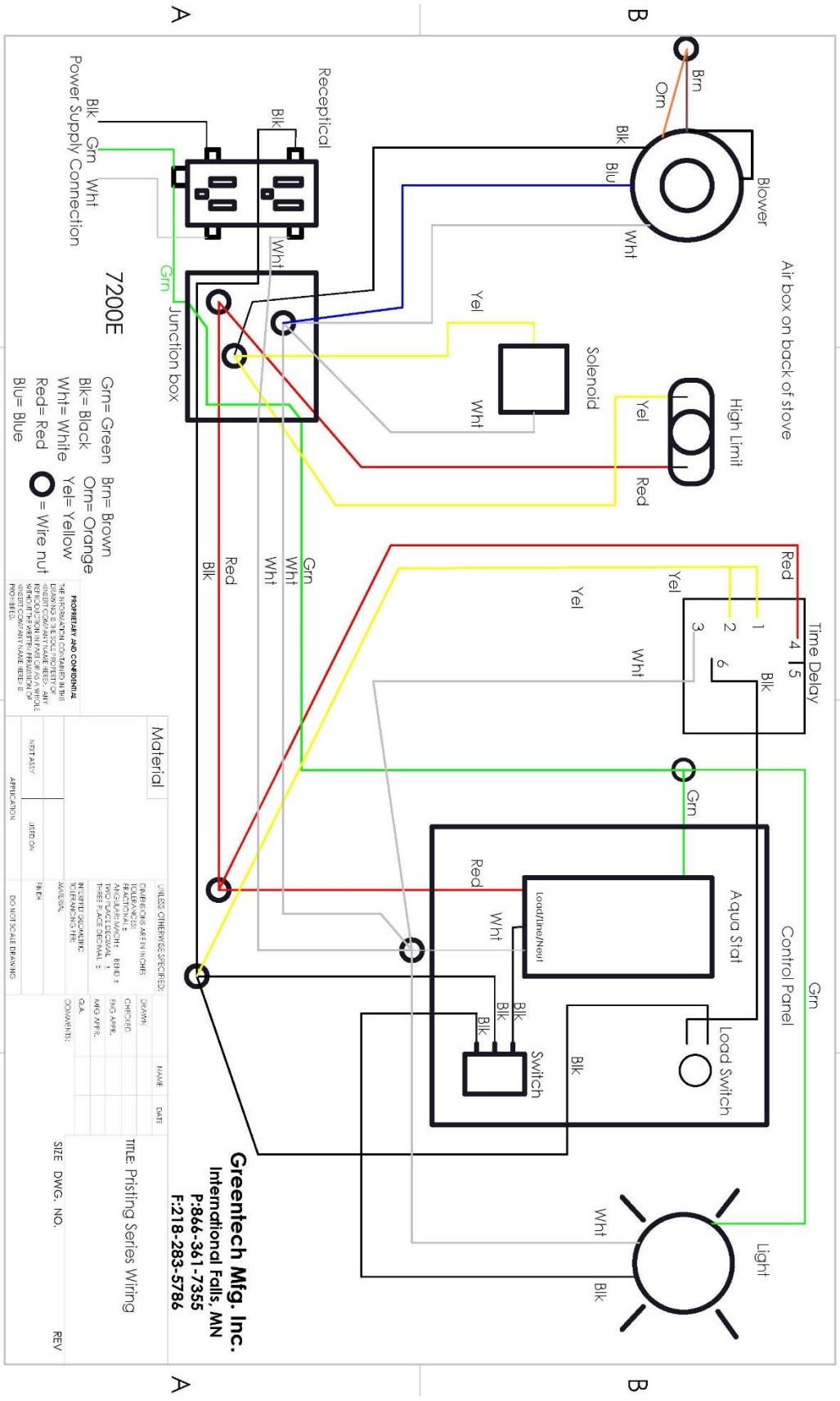
Blower will not come on:

1. Check to see if the high limit switches may be shut off because the water temperature is higher than aquastat setting.
2. Wait and allow water to cool down.

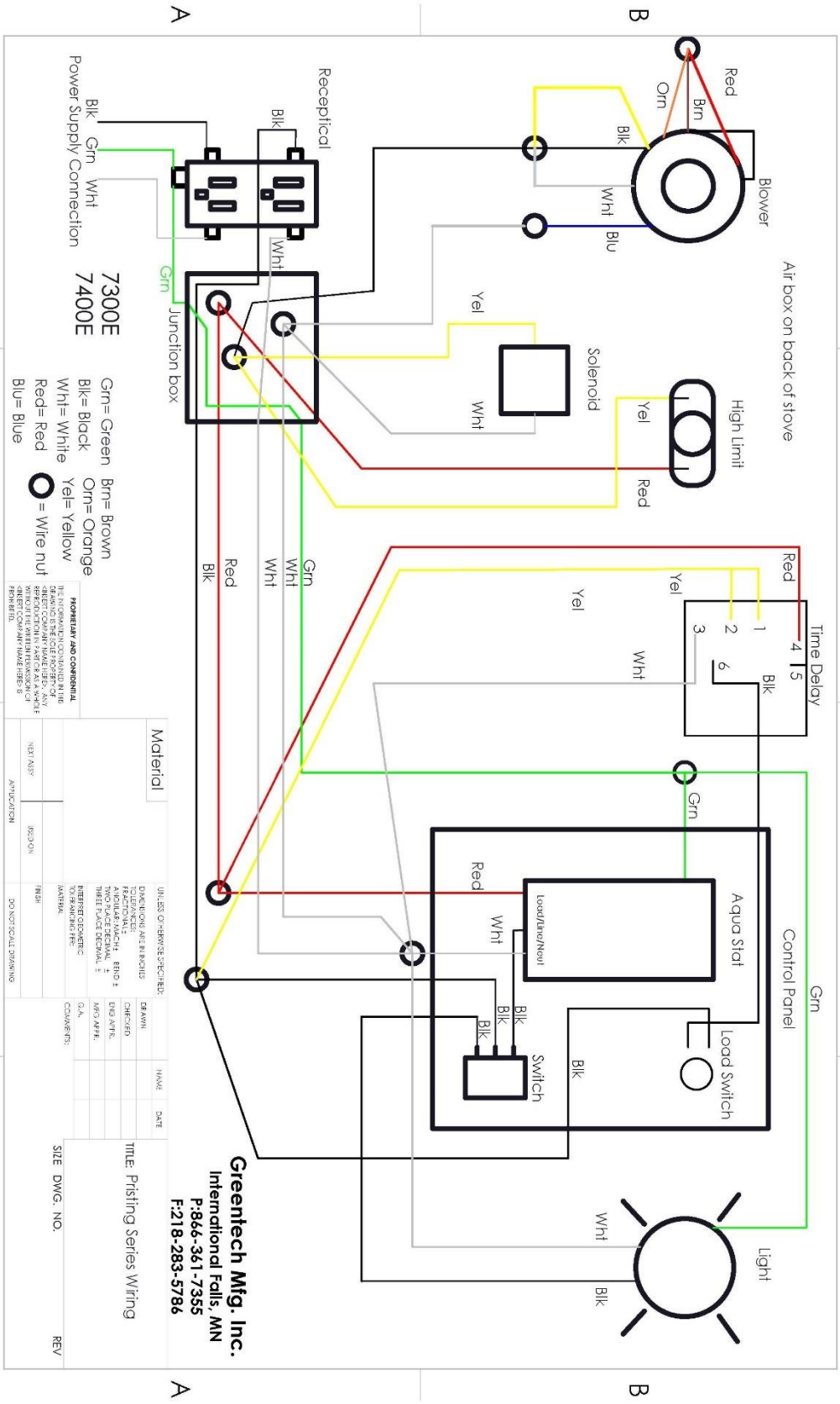
Abnormal creosote buildup in chimney and flue:

1. Check the moisture of your wood. Recommended moisture content is 20%.

7200E Electrical Wiring Diagram



7300E/7400E Electrical Wiring Diagram



April 2004

Smoke Troubleshooting Checklist For Outdoor Furnaces

I. Installation Issues (Improper Smoke Dispersal)
   A. Chimney height relative to nearest downwind neighbor
      1. If located 50 feet or less to any residence not served by the furnace, it is recommended that the stack be at least 2 feet higher than the eave line of that residence.
      2. If located more than 50 feet but no more than 100 feet to any residence, it is recommended that the stack be at least 75% of the height of the eave line of that residence, plus an additional 2 feet.
      3. If located more than 100 feet but no more than 150 feet to any residence, it is recommended that the stack be at least 50% of the eave line of that residence, plus an additional 2 feet.
      4. If located more than 150 feet but no more than 200 feet to any residence, it is recommended that the stack be at least 25% of the height of the eave line of that residence, plus an additional 2 feet.
   B. Furnace located in sheltered area; insufficient wind to disperse smoke.
   C. Furnace sizing. Similar to other heating appliances, furnace should be properly sized based on the estimated heat loss of the served structure.

II. Fueling Issues
   A. Burning less than optimal wood
      1. Moisture content: Optimal moisture content should be between 20% and 30% (seasoned wood)
      2. Species: Hardwoods generally tend to burn cleaner than softwoods
      3. Size: Larger pieces of wood tend to burn cleaner than smaller pieces
   B. Burning less than optimal fuel loads
      1. Loading: Firebox should be loaded based on outdoor temperature, anticipated heat load requirements and the manufacturer's instructions. Do not overload the chamber.
      2. Charging intervals: Firebox should be charged regularly at the intervals specified by the manufacturer's instructions. Optimally, the firebox will be charged "hot," i.e., the fire will not go out between chargings.
   C. Burning improper fuels
      1. Only burn fuels approved by the manufacturer
      2. Do not use volatile starters (such as lighter fuels, gasoline, chemicals) unless approved by the manufacturer
      3. Do not burn the following:
         a. Trash or household garbage
         b. Plastics

c. Gasoline
d. Rubber or tires
e. Naphtha
f. Material coated with petroleum products (e.g., particle board, railroad ties, pressure-treated wood)
g. Leaves
h. Paper products or cardboard

III. Operational Issues

A. Improper combustion air – Natural Draft Units (No Blower):

1. Air inlet not restricted by debris (creosote, ash, etc.)
2. Flame baffle/flue not restricted by debris
3. Chimney not restricted by debris
4. Door seal in satisfactory condition (provides air-tight seal when door is shut)
5. Air inlet (damper or flapper) operates properly (opens/shuts per manufacturer's instructions, provides air-tight seal when shut)
6. Door seal in satisfactory condition (provides air-tight seal when door is shut)

B. Improper combustion air – Forced Draft Units (Blower):

1. Verify combustion blower operates in accordance with the manufacturer's instructions
    a. Blower starts and stops properly
    b. Combustion blower wheel spins properly
    c. Blower runs at proper speed – verify voltage to blower motor
2. Combustion blower tube not restricted by debris (creosote, ash, etc.)
3. Flame baffle/flue not restricted by debris
4. Chimney not restricted by debris
5. Air inlet (damper or flapper) for blower operates properly (opens/shuts per manufacturer's instructions, provides air-tight seal when shut)
6. Door seal in satisfactory condition (provides air-tight seal when door is shut)

C. Verify controls operate in accordance with the manufacturer's instructions

1. Water temperature controls set properly
2. Draft controls set properly

IV. Maintenance Issues

A. Verify that the furnace is being maintained in accordance with the manufacturer's instructions. Specifically, inspect:

1. Excessive ash buildup
    a. Grates blocked, restricting air flow
    b. Combustion fan blocked, restricting air flow
2. Excessive creosote buildup
    a. Combustion fan blocked, restricting air flow
    b. Flame baffle blocked, restricting air flow
    c. Chimney blocked, restricting air flow

V. Discussion

Wood, like other fuels is made up of various amounts of carbon, hydrogen, and other elements. The burning of wood is a chemical reaction that depends on many factors. The essential factors to complete wood burning are time, temperature, and turbulence. Some other factors to take into consideration are: intake air; amount and placement, density and moisture content of the fuel, size of the firebox compared to the size of the wood load, and adequate room for the combustion process to take place.

The smoke that is seen coming out of a chimney is essentially a combination of unburned fuel (carbon and hydrogen) and moisture in the form of water vapor. The reason for the smoke is usually attributed to: (i) not enough time for complete combustion, (ii) not enough mixing (turbulence) to complete the chemical process, (iii) not enough temperature to get the fuel to that chemical conversion stage, or (iv) a combination of the above. In many cases, excessive smoke can be reduced by adopting practices that improve complete combustion, reducing visible emissions in the form of smoke.

A. Fuel

1. Moisture Content

Moisture content of the wood, either too high or too low, will affect the amount of visible smoke. Wood with a low moisture content (less than 10%) will burn relatively quicker, resulting in some of the fuel going up the chimney in the form of smoke, i.e., time was insufficient to complete the burn process. Wood with a moisture content too high (more than 35%) can quench the flame causing smoke, i.e., temperature was insufficient to burn completely.

Wood moisture in the 20% to 30% range can be the best of both scenarios. It is dry enough to burn without quenching the flame, yet the moisture is high enough to self-regulate the burn, giving it plenty of time to complete combustion.

2. Density

The density of wood plays a part in the combustion process in the same way as moisture content. Softwoods are by definition less dense and tend to burn more rapidly than hardwoods. Softwoods tend to create more smoke – due generally to insufficient time to complete the burn. Denser hardwoods will burn more slowly and evenly, allowing more time for the conversion of fuel to heat.

3. Size

The size of the wood can also be a factor in the amount of smoke produced. The surface area of a piece of wood is one of the factors that will affect burn rate. Larger diameter logs tend to burn slower than smaller logs, allowing for a more complete burn.

4. Improper Fuels

Burning materials not recommended by the manufacturer can play a major role in visible emissions. Materials such as plastics, garbage, rubber tires, and even wood products such as cardboard and paper that may be coated with petroleum products may emit excessive smoke. Fire starters such as gasoline, oil, and other chemicals can also make an ordinary wood fuel load seem very dirty once burned. If people who own outdoor furnaces start fires with some kindling and load with wood fuel as recommended above, they can eliminate a lot of the smoke that others see and the problems that go with it.

5. Loading

The amount of wood loaded into an outdoor furnace in relation to the firebox size also has an effect on visible emissions. For every size of wood load there is a minimum amount of space needed to complete the combustion process. For instance, if a person were to load a relatively small firebox completely and load a larger firebox with the same amount of wood, with all of the other factors being the same, the larger firebox would burn cleaner. In the smaller firebox, the combustion process does not have enough room to expand, heat up, and mix before exiting the firebox (insufficient time, temperature, and turbulence). Just because a firebox is large does not mean that it should be filled completely. This large volume is used in part for what happens AFTER it is loaded.

B. Furnace Size

The size of a furnace should be large enough to provide sufficient heat without constant reloading. If the target burn time is 12 hours, an adequately sized furnace will provide enough heat for 90% of all heating days. There will always be the extraordinarily cold days for which no one can plan. A small furnace that needs constant reloading will unavoidably be left unattended and will lose much of its available heat. In these situations, the firebox is left relatively cold and restarting will be dirtier because of flame quenching on the cool firebox walls. A good rule to follow is be that if the furnace cannot stay within 20% of its set point under regular reloading, then it is undersized and a larger furnace is needed.

C. Chimney Considerations

Although chimney height has little to do with overall emissions, it should be considered in ALL installations of outdoor furnaces. Installers and dealers should first take a look at the proposed location and take a few things into account. Location of nearby buildings, structures, and natural geography all affect the furnace's ability to draft. While higher is generally better, it is sometimes tough to convince the furnace owner to add length to the chimney because of the extra cost.

VI. Conclusions

The proper use of an outdoor furnace can significantly reduce the visible emissions that it produces. Simple fuel considerations with regard to moisture content, size, and amount help hinder the production of smoke and ultimately help improve efficiency. Other obvious ways to

help reduce smoke is to only burn fuels recommended by the manufacturer and to not overload the furnace. In addition, the furnace size should be properly matched to the heat load so that cold starts and overfilling are avoided. Chimney height should be in accordance with the state and local codes, as well as surroundings, including neighbors. These areas, along with the "Best Burn Practices for Outdoor Furnaces," can greatly help in providing clean, safe heat from all outdoor wood burning furnaces.

HPBA/JHGAdmin/102

AUTHORIZED FURNACE TREATMENT

Greentech Manufacturing, Inc. requires the usage of authorized furnace treatment to be used in all Crown Royal Stoves. Treatment is to be added to the furnace water upon initial startup and is required to remain at satisfactory levels throughout the life of the stove.

To ensure the maximum efficiency and longevity of your Crown Royal Stove, water treatment is crucial. Treating systems with authorized furnace treatment will prevent corrosion and scale buildup. Calcium and magnesium are commonly found in many water supplies. These impurities cause layers of scale that not only decrease heat transfer efficiency but cause pitting on the interior water jacket. Over time constant pitting will result in leaks. Once authorized treatment is added it creates the necessary barrier needed to prevent the breakdown of the metals. Premature corrosion is a result of not treating the water with correct corrosion resistant inhibitor or with the wrong dosage.

Water Treatment and Testing Required on all Crown Royal Stoves

All Crown Royal Stoves are required to be shipped with initial recommended gallon(s) of authorized treatment. Crown Royal Stoves are backed with a 20-year Limited Warranty. To retain warranty on Crown Royal Stoves it is required to use recommended treatment and submit annual samples for testing. Failure to maintain treatment at recommended levels and annual water testing will result in a voided warranty.

- Specifically designed for Crown Royal Stoves, closed-loop design.
- Helps protect system from scale, sludge and corrosion.
- Vapors help prevent corrosion throughout the furnace.
- Economical – one gallon/3.78 liters treats 300 gallons/1134 liters of system capacity.
- FREE Water Testing and sample bottles.

Sample Bottles

Two sample bottles and labels are found with each gallon of treatment. For additional bottles or labels please contact your local dealer or call 866-361-7355.

Warning

Read entire label located on treatment before opening or using this product. Keep out of the reach from children. Do not mix with any other chemicals. Contains Sodium Nitrate and Potassium Hydroxide. Avoid contact with skin, eyes and clothing. Undiluted product causes severe skin and eye irritations. Wash thoroughly after handling. Do not swallow. Swallowing may cause nausea, vomiting, weakness and lowered blood pressure. MADE IN U.S.A.

Storage

Keep fire-retardant closed container closed when not in use. When product is stored it may separate or thicken. This will not harm the performance. Before using, warm to room temperature and stir thoroughly. Keep from freezing.

Initial Start-up Procedure for Water Treatment

All Crown Royal Stove purchases are required to purchase authorized water treatment for initial start-up. With each gallon of treatment, you will be provided with two sample bottles and furnace information forms.

- Before adding treatment fill furnace with water and circulate for 48 hrs.
- Check for any leaks before adding treatment.
- Add initial dosages of treatment for the following model –
    - 7200E – Add 1 gallon
    - 7300E – Add 1 gallon
    - 7400E – Add 2 gallons
- Follow procedure for collecting water sample below.

Procedure for Collecting Water Sample

- Turn off furnace, and circulate for 24 hours to ensure complete mixture of water and treatment.
- Collection of sample can be done from drain line or other convenient location.
- Allow 30 seconds of drainage before collection of the sample.
- Use provided 4oz sample bottle to retrieve water sample.
- Fill out provided Furnace Information Form and attach to sample bottle.
- Mail water sample to designated testing facility found on provided Furnace Information Form.
- Testing facility analyzes the conductivity, PH and nitrate levels of water sample.
- Testing results are provided on all samples within 4-6 weeks.
- If testing results are unsatisfactory, recommendations of additional treatment will be given.
- These recommendations will need to be performed and a retest is required to maintain warranty.
    - Low levels – Additional treatment is to be added to system and a retest is required.
    - High levels – Water will need to be drained and replaced with fresh, untreated water and a retest is required.

When collecting water samples turn off the furnace and allow the water to reduce in temperature. When the water is reduced to a safe temperature, collect a sample.

WARNING!!! Hot water and surfaces may cause burns. Use extreme care with the collection of water sample.

Mailing Samples – Testing results are emailed to customers who provide emails on the Furnace Information form or mailed to the address give, within 4-6 weeks. It is owner's responsibility to ensure you receive testing results and follow recommendations. When mailing samples to testing facility, it is recommended to mail with tracking capabilities. If test results are not received within 4-6 weeks, please call 866-361-7355.

Additional Dosage Requirements

- If the system/furnace experiences a leak or requires water to be added, add treatment at the rate of ½ oz per gallon of water added.
- If the furnace system is drained for any reason, refer to initial startup procedure of Water Treatment.

IMPORTANT

Mandatory Yearly Maintenance Dosage and FREE Water Testing

It is required annually to add treatment and send a water sample to our authorized testing facility to retain warranty of furnace. Water testing is free to all Crown Royal Stove customers for the life of the stove. **Failure to maintain treatment recommendation levels and submit annual water samples will result in a voided warranty.**

- Annually add ¼ of the required amount of treatment, this will keep levels balanced.
- Follow directions for collecting of water sample and mail to facility for testing annually.

Purchasing Water Treatment

Water treatment is specially formulated for Crown Royal Stoves. To uphold warranty no other chemical may be substituted. We encourage customer to contact your local dealership or call 866-361-7355 to purchase additional water treatment when needed.

For additional free sample bottles and labels please contact your local dealer or call Greentech Mfg at 866-361-7355.

EMERGENCY FIRST AID PROCEDURES FOR FURNACE TREATMENT
EMERGENCY PHONE NUMBER
1-800-424-9300

INHALATION:

Remove from the area to fresh air. If not breathing, clear the airway and start mouth to mouth artificial respiration. GET IMMEDIATE MEDICAL ATTENTION.

EYE CONTACT:

Immediately rinse the eyes with water. Remove any contact lens and continue flushing for at least 15 minutes. Hold the eyelids apart to ensure rinsing of the entire surface of the eyes and lids with water.
GET IMMEDIATE MEDICAL ATTENTION

SKIN CONTACT:

Wash affected areas with large amounts of soap and water for 15 minutes. Remove contaminated clothing and shoes. GET IMMEDIATE MEDICAL ATTENTION.

INGESTION:

Give 3 to 4 glasses of water, but do not induce vomiting. If vomiting occurs, give fluids again. GET IMMEDIATE MEDICAL ATTENTION. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON.

NOTE TO PHYSICIAN:

Introduction into the body may lead to the formation of Methemoglobim which in sufficient concentration causes Cyanosis. Since reversion of the Methemoglobin to Hemoglobin occurs spontaneously after termination of exposure, moderate degrees of Cyanosis should be treated only by supportive measures such as bed rest and oxygen inhalation. Thorough cleansing of all contaminated areas of the body including scalp and nails is of utmost importance. If Cyanosis is severe, intravenous injection of Methylene blue, 1MG/KG of body weight may be of value. Cyanocobalamin (Vitamin B-12), 1 MG intramuscularly, will speed recovery. Intravenous fluids and blood transfusion may be indicated in very severe exposures.

20 YEAR LIMITED WARRANTY

Thank you for making the choice to purchase your new Crown Royal Stove. We are certain that you will find great satisfaction with your stove's ongoing reliability and performance.

Greentech Manufacturing, Inc. warrants this furnace, to the original owner, to be free of defects in material and workmanship for a period of twenty (20) years from the date of purchase.

One Year Warranty

- On Electrical Components - Parts Only— aquastats, thermostats, fans and pumps are guaranteed by the manufacturer for a period of one (1) year from the date of purchase. Parts will be replaced on an even exchange, excluding shipping charges and labor.
- The loading & heat exchanger door, ash pan, door gaskets and ceramic moldings are warranted for a period of one (1) year from date of purchase.

Five Year Warranty

- Shaker Grates - the cast iron rocker grates are warranted for five (5) years 100%. This warranty excludes any warping or deterioration from ash corrosion.

If there is a leak in the fire box, water jacket or heat exchanger on your Crown Royal Stove during the:

- First (1) year - Greentech Manufacturing, Inc. will replace the unit at no cost to the original owner. The owner is liable for the un-installation of the old unit and the installation of the replacement unit.
- Two to five (2 - 5) years—If the unit is unable to be repaired and must be replaced the customer shall pay the difference between the original purchase price of the old unit and the new purchase price of the replacement unit, plus freight and installation.
- Sixth (6) year— Greentech Manufacturing, Inc. will pay a percentage of the total repair cost of the fire box and outer drum. Our percentage paid is as follows: year 6 –70%, year 7 – 50%, years 8-9 – 30%, years 10-20 – 20%. After the twentieth (20) year, Greentech Manufacturing, Inc. will give 10% off the purchase of a new stove.

Not Warranted

- Greentech Manufacturing, Inc. does not warranty parts damaged by freezing, overheating, pressurization, warping and/or use of unauthorized fuels or abuse.
- Greentech Manufacturing, Inc. is not responsible for the cost of plumbing, replacement of antifreeze, shipping, labor or any other cost other than the replacement of the part or furnace.
- Greentech Manufacturing, Inc. is not liable for any damage or cost which may occur from or during the operation of the furnace, or damage incurred due to any heating system failure. These furnaces are not intended to be the only source of heat; therefore, it is recommended that a back-up system is in place to prevent damages caused by lack of heat.
- No unauthorized adjustments or repairs will be covered by warranty.
- Greentech Manufacturing, Inc. does not warrant exterior paint or finish, any damage caused by negligence and deterioration due to lack of proper ongoing maintenance, overheating, physical damage caused by abuse or freeze up, unauthorized work or modifications to the furnace, damage to the fire-box due to power surges or damage caused by burning unauthorized fuels.
- Ash corrosion on the inside fire drum in not warranted. To prevent ash corrosion, rotating or raking ashes forward must be done as described in the manual. The Crown Royal Stove is designed to be the least susceptible to corrosion; therefore, most corrosion is covered under this warranty.

The chimney must be covered when the unit is not in use. It is mandatory that a chimney cap be installed before operation of the unit. If an onsite repair is made, the customer is responsible for the transportation costs and labor. If the furnace needs to be repaired at the factory, it is the responsibility of the consumer to pay all shipping charges to and from the factory. Greentech Manufacturing, Inc. specifically disavows any other representation, warranty, or liability related to the condition or use of this product.

The purchaser assumes all responsibility for the care, maintenance and safe operation of the furnace including the monitoring and adding of an approved boiler treatment. All instructions must be followed in the operator's manual, Control Chemical utilized and water samples tested annually and the warranty registration must be on file at Greentech Manufacturing, Inc. Greentech Manufacturing, Inc. always has the right to decide if the stove will be repaired or replaced. To qualify & validate this warranty, registration must be completed within thirty (30) days of purchase date, dealer's invoice attached and mailed to:

Greentech Manufacturing, Inc. • P.O. Box 1237 • International Falls, MN 56649

Failure to use Control Chemical in your furnace and to send in annual water samples will void this warranty— NO EXCEPTIONS!

This Warranty is subject to change. For updated warranty information contact Greentech Mfg, Inc.

WARRANTY CLAIM FORM Date: _____

Distributor/Dealer Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Customer's Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Claim conditions apply and cannot exceed warranty statement and procedure policy!
Please send this form, bill of sale and pictures back to service@green-techmfg.com. Claim cannot be processed without pictures and/or video of leak. Pictures cannot be blurry. Take close-ups and farther away so we can tell where the leak is happening. Warranty work completed without prior authorization may be denied.

(Process from start to finish - When reviewing all information sent in by customer, we make sure the stove is registered in original owner name and verify that the mandatory chemical was added to the system and yearly test results were sent in and came back satisfactory. When approved you find a local welder to give an estimate to repair the stove, which we approve and tell you the percentage covered. This warranty is prorated so it will be covered by a percentage. After you pay the bill you submit a copy to us and a check is submitted back to you. Complete process usually takes 30 days. Under some circumstances, we may require furnace to be shipped back to our facility.)

Model: _____ S/N: _____

Purchase Date: _____ Install Date: _____

Description of Claim: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Have you turned in a warranty claim before? Yes or No
If yes, is the leak in the same place? Yes or No

Additional Notes or Comments:

_____

_____

_____

_____

_____

_____

Repair Required:

_____

_____

_____

_____

_____

_____

PLEASE ATTACH PHOTOS OF AREA NEEDED REPAIR

EMERSON
Climate Technologies

16E09-101

Universal Electronic Temperature Control

INSTALLATION AND OPERATION INSTRUCTIONS

Save these instructions for future use!

DESCRIPTION

The 16E09-101 is a single stage electronic temperature control, with a Nema 1 rated enclosure, and can be used for most applications within the temperature control range of -40° to 220°F, (-40° to 104°C). The control has an SPDT (Single Pole Double Throw) output load relay.

The control has user options to control differential, anti-short cycle delay, set back, offset, alarms and more. It includes an NTC (Negative Temperature Coefficient) thermistor temperature sensor, and can be used with certain other NTC or PTC (Positive Temperature Coefficient) thermistors that meet the specified resistance vs. temperature specifications. See the tables on page 7.

The control can fit many applications, which range from refrigeration to heating due to the wide temperature range of the control stated above. Typical applications include walk-in freezers, beverage coolers, supermarket display cases for flowers, produce, meats, convenience store refrigerated cases, food warmers, boiler control, and certain industrial applications.

PRECAUTIONS

⚠ WARNING

- **Failure to read and follow all instructions carefully before installing or operating this control could cause personal injury and/or property damage.**
- **To prevent electrical shock, personal injury and/or equipment damage, disconnect electric power to system at main fuse or circuit breaker box prior to installation or service.**
- **To prevent scald injury, do not use this control to heat water for bathing, washing, hot tub or similar applications.**
- **Where failure of this control may result in personal injury and/or property damage, additional alarms or limit controls must be installed.**
- **This control is a temperature control and is not to be used as a temperature limit control.**

CONTENTS

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Precautions 1
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Wiring 3
User Menu 4
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Specifications 7
Troubleshooting 8

16E09-101 Optional Accessories / Service Items:

Immerson Well F89-0286
Replacement 7.5' NTC Remote Sensor F136-0114
Well Heat Transfer Compound F145-0163

INSTALLATION

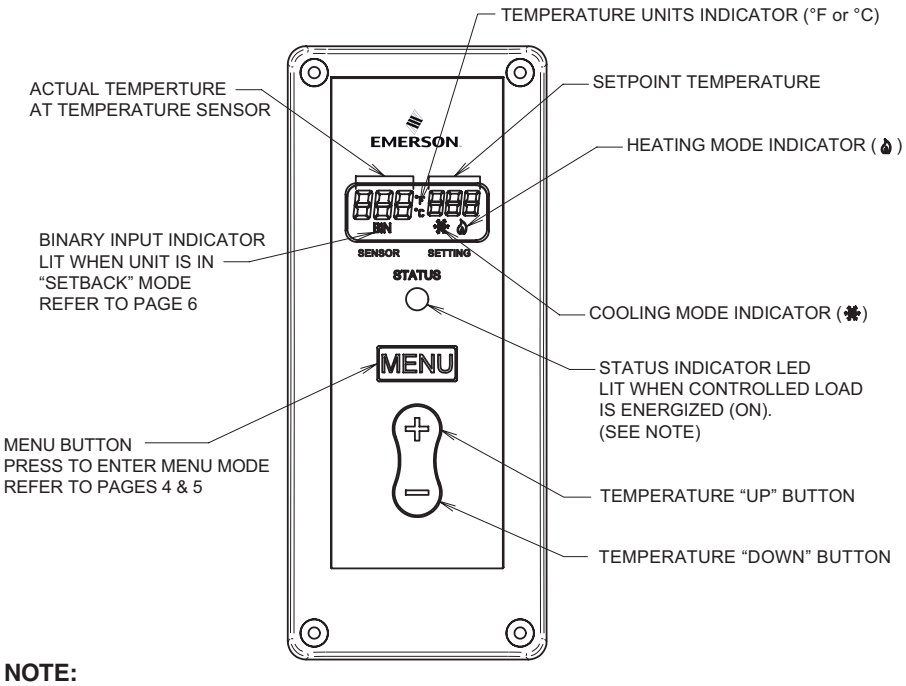
⚠ To prevent electrical shock and/or equipment damage, disconnect electric power to system at main fuse or circuit breaker box prior to installation or service.

⚠ Where failure of this control may result in personal injury and/or property damage, additional alarms or limit controls must be installed.

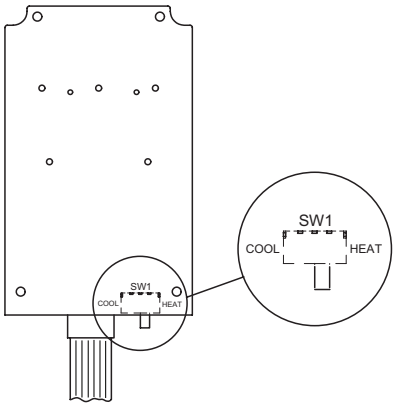
⚠ This control is a temperature control and is not to be used as a temperature limit control.

The control has a user selection for changing the setpoint to be either the Cut In or the Cut Out setting. The user must be careful to understand how this effects the “range” in which the control will operate when the differential value is entered. If entered values are incorrect, the control could operate outside the user’s intended settings due to set-up error. See section titled "Operation".

Fig. 1 Control Front View and Description



Circuit Board Inside Cover

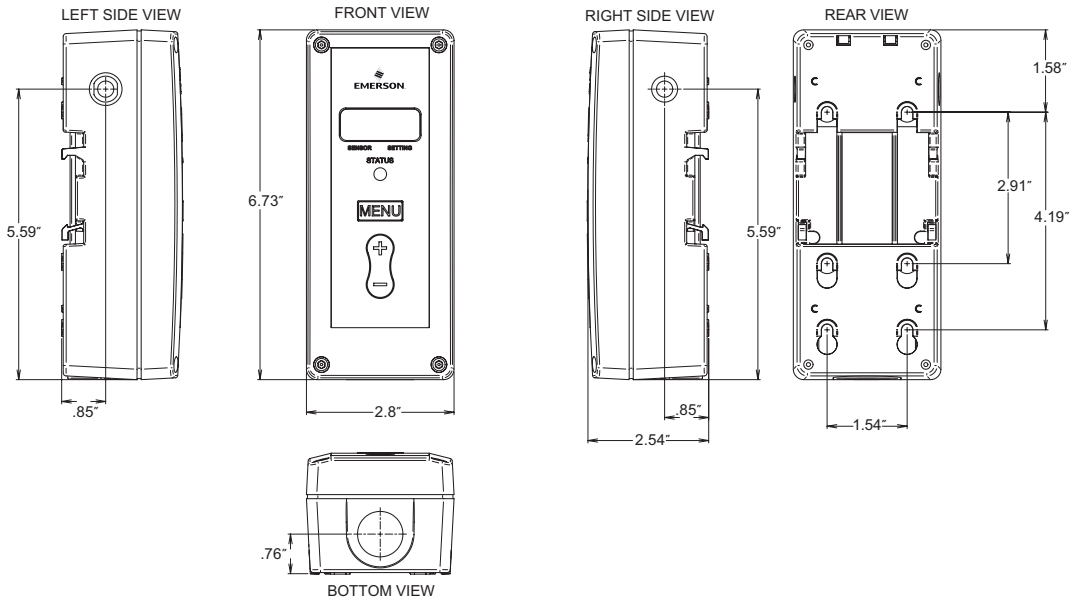


Switch SW1 must be set for system mode as shown:

	SW1
Refrigeration	Cool
Heating	Heat

NOTE:
Green Status Indicator LED and display backlight operation
It may be observed from time to time that the green status indicator LED and display back-light will briefly turn off during a call for heating or cooling. During this time, the control is performing a self-check lasting up to 15 seconds. This is normal operation of the control and the load power will be maintained

Fig. 2 Control Dimensions and Mounting Information



WIRING

Wiring Instruction Notes

Switch Settings
Switch SW2 must be set for applications as shown:

	SW2
Line Voltage (Power Stealing)	PS
Line Voltage (Non Power Stealing)	Non PS
24 VAC (Non Power Stealing)	Non PS

Power Stealing
Power Stealing is an electronic design within the control that can eliminate the need to connect a neutral line to power the control. The control receives power from the unit it is controlling. Power Stealing saves time and money by often eliminating the labor to run a neutral wire to the control for power. See compatibility chart below for certain limitations.

Power Stealing Compatibility Chart

Application	Power Stealing	Non-Power Stealing
Line Voltage, replacing existing control that has a common wire	Yes	Yes
Line Voltage, with load greater than 2.5 amps, without Defrost timer or other power interruption circuit, with or without alarm	Yes	Yes
Line Voltage, with load greater than 2.5 amps, with Defrost timer of other power interruption circuit, no alarm	See Note 1	Yes
Line Voltage with load greater than 2.5 amps, with Defrost timer or other power Interruption circuit, with alarm	No	Yes
Line Voltage with load less than 2.5 amps	No	Yes
24 VAC Application	No	Yes

NOTE 1: During defrost or time when load circuit is broke, display will be blank because power has been interrupted to the control. All menu settings and setpoint will be restored when power is returned.

Fig. 3 Line Voltage Application (Power Stealing)

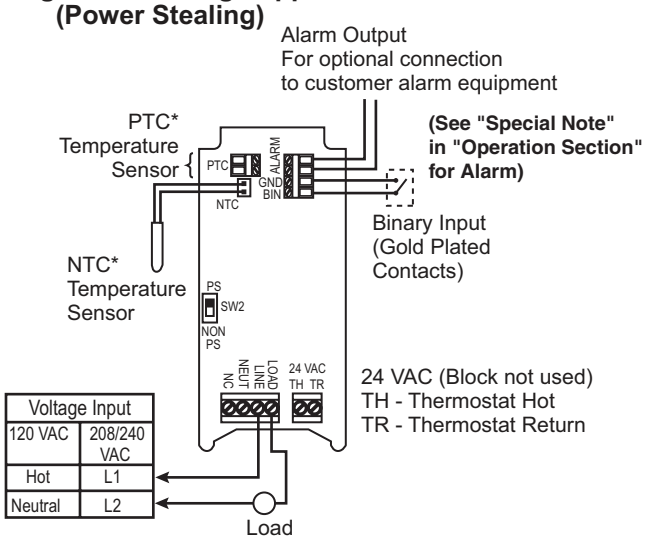


Fig. 4 Line Voltage Application (Non-Power Stealing)

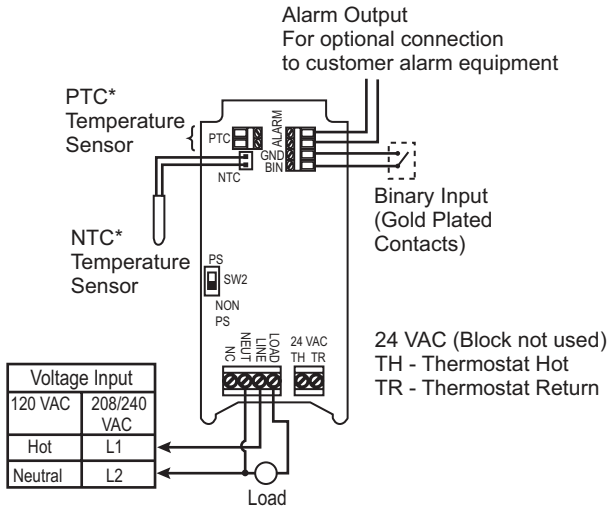
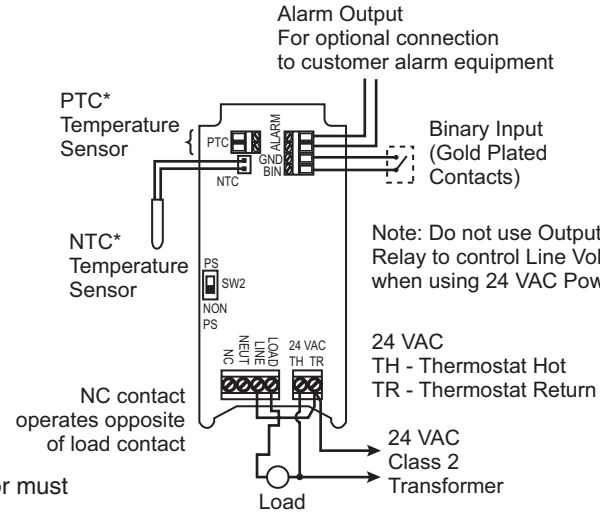


Fig. 5 24 VAC Applications (Non-Power Stealing)



* NTC – Negative Temperature Coefficient
PTC – Positive Temperature Coefficient

NOTE: Only one sensor (PTC or NTC) may be connected. Sensor must meet specific temperature vs. resistance specifications.

USER MENU

USER MENU OPERATION SETTINGS:
The control has user Menu settings that will determine how the control operates. The unit is shipped with factory default settings. The user must change any of the settings as required for the application. To reset all settings to factory defaults, press and hold all 3 buttons simultaneously (MENU, ✚, and ▭ buttons) for approximately 5 seconds.

To view Menu items, press and hold MENU for 5 seconds. The unit will display the first Menu item on the left side of the display. The right side of the display indicates the Menu item settings. To change the setting, momentarily press the ✚ or ▭ key.

A momentary press of the MENU key advances the display to the next Menu item, and continues, till the last menu item is displayed. Pressing the key one more time with the **last** menu item, (aL) displayed returns the control to the operating mode.

Each press of MENU results in forward movement to the next Menu item. If you need to change an item "passed", you must repeatedly press MENU, return to the operating mode, then press and hold MENU for 5 seconds to re-enter the Menu mode. Then repeatedly, momentarily press MENU until the desired Menu item is again displayed.

To store any changes made to any Menu items, the Menu must be exited by pressing MENU when the last item is displayed. If no buttons are pressed for ten minutes while in the menu, the control will return to operating mode and any changes that were made will be lost.

The following table shows the menu items, default settings and optional settings.

NOTE: The Heat/ Cool switch (SW1) MUST be in the proper position BEFORE setting options.

Menu Item	Description	Factory Default	Options Press ✚ or ▭ to select	Comments
CF	Temperature Scale	F	C or F	Selects temperature display in Fahrenheit or Celsius
dFF	Differential	5	1 to 30	Selects the range between Cut In and Cut Out.
SP	Set Point Mode Cool Heat	 CI CO	 CO or CI CI or CO	Selects how the set point temperature will operate the load terminal. CI indicates the setpoint temperature will be the Cut In temperature. CO indicates the temperature will be the Cut Out temperature. See Operation section.
SOF	Sensor Operation Failure Cool Heat	 1 0	 0 or 1 None	Cooling - Selects the operation of the Control Load relay in the event of a sensor failure in Cool mode. 1 (default) will cause the load contacts of the relay to close and remain closed if the sensor either opens or shorts. 0 causes the load contacts of the relay to open and remain open. Heating has no optional selection. Sensor failure in Heating will result in the relay contacts opening.
dL	Display Light	Off	On or Off	Selects the LCD display light Off or On. With this selected Off, the display light will illuminate any time a keypad button is pressed to provide better viewing in low lighting conditions, and go off after 10 seconds. If On is selected, the display light will be On continuously.
ASd	Anti Short-Cycle Delay	Cool 1 Heat 0	0 to 12	Selects the minimum time (in minutes) that the load contacts will remain open after a cycle before closing again. This will prevent the compressor or other load from being damaged by cycling too soon. A blinking Snowflake or Flame icon indicates that the control has a demand to energize the load, but is waiting for the delay time to elapse. A setting of 0 indicates no time and the feature is disabled. SW1 must be set to the proper position before checking this setting.
LP	Lock Front Panel Keypad	Off	On or Off	When selected Off, the keypad can be used as normal. When selected On, prevents unauthorized access to the control settings by locking out all keys. To unlock the control when it is locked, press and hold the Menu key for 5 seconds.
OFS	Ambient Temperature Offset	0	-4, -3, -2, -1, 0, 1, 2, 3, 4	This control is calibrated at the factory, but the "sensed" temperature may read different because of mounting/installation, or other factors. This item allows the displayed temperature to be shifted the number of degrees set to compensate for this difference

USER MENU

Menu Item	Description	Factory Default	Options Press ✚ or ▭ to select	Comments
bIn	Binary Input	Off	On or Off	The default setting of Off will have no affect on the operation of the thermostat. When set to On, it allows an external binary input (switch or relay) to start a temperature set back. See Set Back (Sb).
Sb	Set Back	0	0 to 50	Selects the number of degrees the thermostat will change the setpoint temperature when the external binary input signal is received. 0 will cause no temperature change to occur. See Binary Input (bin).
AL	Alarm	0	0 to 99	Selects the time delay (in minutes) before a Temperature Out of Range alarm output is sent. A setting of 0 disables the alarm relay.

OPERATION

⚠ **This control is a temperature control and is not to be used as a temperature limit control.**

⚠ **To prevent scald injury, do not use this control to heat water for bathing, washing, hot tub or similar applications.**

The factory default setpoint for this control is 45°F (7°C) for Cool and 120°F (49°C) for Heat. Setpoint temperature can be adjusted using the ✚ or ▭ keys. A power loss does not lose the settings. All menu item selections and setpoint setting are stored in a permanent memory.

The user determines the temperature operating range. To determine the temperature range, the user must select the Set Point (SP) as the Cut Out or Cut In temperature, Differential (dFF) and enter a set point temperature. Cut out is when the load is turned off and cut in is when the load is turned on.

NOTE: The Heat/ Cool switch (SW1) MUST be in the proper position BEFORE setting options.

COOL/REFRIGERATION

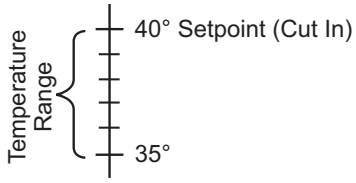
To use as a Cooling control, SW1 must be set to Cool. The snowflake (❄) icon will display.

If control is in Cool mode, and Set Point is selected as the Cut In:

Temperature Operating Range = Setpoint Temperature – (minus) Differential

Example:

SW1 = Cool
Set Point (SP) = Cut In
Differential = 5
Setpoint temperature = 40°

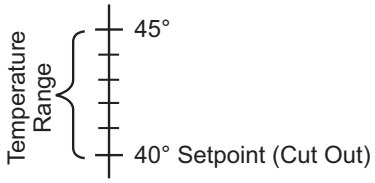


If control is in Cool mode, and Set Point is selected as the Cut Out:

Temperature Operating Range = Setpoint Temperature + (plus) Differential

Example:

SW1 = Cool
Set Point (SP) = Cut Out
Differential = 5
Setpoint temperature = 40°



HEAT

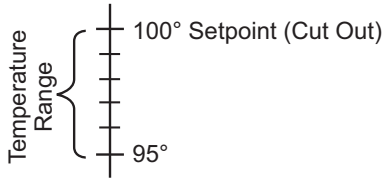
To use as a Heating control, SW1 must be set to Heat. The flame (🔥) icon will display.

If control is in Heat mode, and Set Point is selected as the Cut Out:

Temperature Operating Range = Setpoint Temperature – (minus) Differential

Example:

SW1 = Heat
Set Point (SP) = Cut Out
Differential = 5
Setpoint temperature = 100°

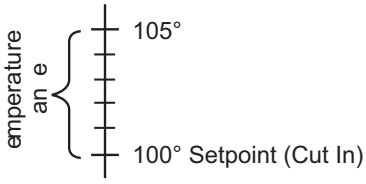


If control is in Heat mode, and Set Point is selected as the Cut In:

Temperature Operating Range = Setpoint Temperature + (plus) Differential

Example:

SW1 = Heat
Set Point (SP) = Cut In
Differential = 5
Setpoint temperature = 100°



OPERATION

Lock Panel (LP)

The keypad can be locked to prevent unwanted tampering with the control settings. In the User Menu, change the menu item LP selection to On. When the menu is exited and settings are stored, the ✣ or ▭, and MENU keys will be disabled from normal use.

To unlock the keypad, press and hold MENU for 5 seconds. The display will change to show LP On. Momentarily press ✣ or ▭ to change to Off and then momentarily press MENU. The control will return to normal operation and the keypad will be unlocked.

Binary Input (bIn) and Set Back (Sb)

Binary Input is an option to allow the setpoint temperature to set back to conserve energy or for other reasons as determined by the user. Set Back determines the number of degrees the setpoint temperature will be changed.

An external switch or N.O. relay can be connected to the BIN and GND terminals of the control. With bIn set to On, when the switch is closed, the control will change the setpoint temperature by the number of degrees set in Sb. In Heat mode, setpoint temperature will change lower or cooler. In Cool mode, setpoint temperature will change higher or warmer.

During the time that the switch is closed, bIn will appear in the lower left corner of the display. If an alarm is connected be sure that the alarm delay time is set long enough to allow for the temperature change to avoid a “false” alarm.

Alarm (AL)

SPECIAL NOTE

Using the Alarm Output and power stealing in combination – When using power stealing mode and the alarm output, it is important for the installer to review the wiring circuit of the installation to insure no device is present that could interrupt electrical power to the temperature control. Such a device could be a defrost timer, as one example, that may be used in some refrigeration applications.

If a device is in the system wiring that can periodically disrupt power to the load and the temperature control, the power stealing mode of the control cannot be used. A neutral wire must be connected to the control and select the non power stealing mode for the control. This keeps power to the control during power interruptions to the load and avoids a “false” alarm output.

This control has an alarm relay that will provide an output to alert of a malfunction. The alarm relay output must be connected to an external light, audible alarm or other device as needed by the user. If AL is set to 0, the alarm relay will not provide any alarm output. If AL is set to a value greater than 0, the alarm relay output provides indication of three error conditions: Temperature Out of Range, Power Loss and Sensor Operation Failure. Although AL must be set to a value greater than 0 for any alarm output to be provided, the value selected is the time delay, in minutes, before a Temperature Out of Range alarm is set. The alarm time delay does not apply to Power Loss or Sensor Operation Failure.

Temperature out of range – If the temperature is more than 5° from the setpoint, continuously for the length of time set in AL, the alarm relay output will close. The delay should be set to allow for conditions that will cause the temperature to vary, such as defrost cycle, opening door for stock removal or replacement or Set Back changes. When setting the AL time, consideration should be given to these events to prevent a false alarm.

If the control set back feature is used to change the setpoint, the delay period set in AL should consider the time it takes for the system to reach the set back temperature to avoid a false alarm.

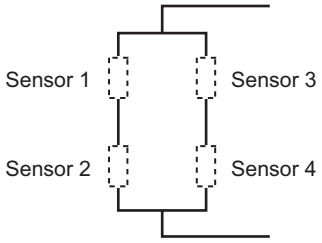
Power Loss – If the temperature control experiences an input power failure, the control will close the alarm relay before total power of the control is lost. The delay time is not used in this event, and the alarm relay will close within seconds of a power failure. In addition, the load relay contact change state per the Sensor Operation Failure (SOF) setting.

When power returns, the alarm contacts will open. The load relay will remain in the SOF position the length of time set in Anti Short-Cycle Delay (ASd) after power resumption. The display will blink the flame or snowflake icon for this time to indicate the load is “locked” out. This is to help protect the user’s equipment from damage by short cycle switching.

Sensor Operation Failure (SOF) – If in operation, the sensor wiring should become open or shorted, the temperature control will begin blinking SOF with SH for shorted or SO for sensor open. However, the control will wait approximately 1 minute before closing the alarm output relay - indicating sensor operation failure. If during the 1 minute, the sensor “resumes” normal operation, the time is reset and the control returns to normal display. The load relay will operate as selected in sensor operation failure (SOF).

Multiple Sensors

The 16E09 is normally operated with one sensor. If an average temperature of an area is required, 4 sensors may be used and wired in the method shown below. If 4 sensors are used, they must all be of the same model.



NOTE: When using multiple sensors, 4 sensors must be used. The control will not operate with 2 or 3 sensors.

SPECIFICATIONS

Load Output Relay:

	Ratings (Maximum): 120VAC	208VAC	240VAC
Full Load Amps NC & Load	16 A	9.2 A	8 A
Locked Rotor Amps NC & Load	96 A	55.2 A	48 A
Non-Inductive Amps NC & Load	16 A	16 A	16 A
Horsepower NC & Load	1 hp	1 hp	1 hp

24 VAC NC & Load 100 VA, 30 VAC Max (Class 2)
Pilot Duty NC & Load 125 VA, 24 to 240 VAC

- Minimum Load Rating: 1 Amp @ 24 VAC
- Note: the above minimum current/voltage is specified to assure proper operation.

NOTE: For use on single phase circuits only.

Alarm Relay Ratings (Maximum):
N.O. contact: 1 Amp, 5 to 24 V, AC or DC

Operating Ambient Ratings (Control Enclosure):
Operating Temperature: -29°F to 140°F (-34° to 60°C)

Storage Shipping Ambient Ratings:
Storage Temperature: -40°F to 185°F (-40° to 85°C)
Operating Humidity: 0 to 95% Relative Humidity, Non-Condensing
Maximum Dew Point: 85°F (29°C)

Temperature Set-Point Range:
Set-Point Range: -40° to 220°F (-40° to 104°C)
Differential Range: 1 to 30 (Degrees F or Degrees C)

Case:
NEMA 1 Enclosure, Flammability Rating: UL94VO

Temperature Probes:

NTC
The control is shipped with an NTC (Negative Temperature Coefficient) sensor, with a cable length of 7½ feet. Cable length can be extended up to 400 feet by appropriately splicing and adding additional cable (22 AWG or larger diameter) as needed – polarity is not important. When extending cable length, verify temperature accuracy and use the menu Ambient Temperature Offset (OFS) settings to compensate accordingly if required.

NTC TEMPERATURE VERSUS RESISTANCE TABLES

Temperature (°F)	(°C)	Resistance (KΩ)	Temperature (°F)	(°C)	Resistance (KΩ)	Temperature (°F)	(°C)	Resistance (KΩ)
-40	-40	328.29	50	10	19.82	140	60	2.49
-31	-35	236.83	59	15	15.67	149	65	2.09
-22	-30	172.90	68	20	12.48	158	70	1.76
-13	-25	127.65	77	25	10.00	167	75	1.48
-4	-20	95.23	86	30	8.07	176	80	1.26
5	-15	71.74	95	35	6.55	185	85	1.07
14	-10	54.56	104	40	5.34	194	90	0.92
23	-5	41.85	113	45	4.38	203	95	0.79
32	0	32.37	122	50	3.61	212	100	0.68
41	5	25.23	131	55	2.99	221	105	0.59

PTC
The control may be connected to an existing PTC (Positive Temperature Coefficient) sensor. Make sure the PTC sensor meets the specifications tables below. Failure to do so will result in temperature inaccuracies. The PTC input may not be extended more than 50 feet, and the wire gauge should be 18 AWG wire or larger diameter. Be sure the probe attached matches the resistance vs. temperature tables or temperature inaccuracies may occur.

PTC TEMPERATURE VERSUS RESISTANCE TABLES

Temperature (°F)	(°C)	Resistance (KΩ)	Temperature (°F)	(°C)	Resistance (KΩ)	Temperature (°F)	(°C)	Resistance (KΩ)
-40	-40	613	50	10	924	140	60	1323
-31	-35	640	59	15	960	149	65	1368
-22	-30	668	68	20	997	158	70	1413
-13	-25	697	77	25	1035	167	75	1459
-4	-20	727	86	30	1074	176	80	1506
5	-15	758	95	35	1113	185	85	1554
14	-10	789	104	40	1153	194	90	1602
23	-5	822	113	45	1194	203	95	1652
32	0	855	122	50	1236	212	100	1702
41	5	889	131	55	1279	221	105	1753

TROUBLESHOOTING

LCD display, display back-light and green status indicator LED turn off in Power Stealing mode:
This “off” condition is normal for the control in power stealing mode when wired with a defrost timer or other device that interrupts electrical power to the control.

No control settings will be lost during this time, however, the installer must ensure that applications requiring power stealing are suitable for the control to be off during these periods.

Please note: if the built-in alarm feature of the control is to be used on systems that may interrupt power to the control, the control must be wired with a neutral wire and set in non-power stealing mode. This will keep the control continuously powered unless there is an actual power interruption or loss. In this case, the control will be able to signal an alarm for system power loss.

Display indicates “CaL” on power up.
Control was not calibrated. Return control for replacement.

Unit does not turn on, (LCD does not display anything):
- Check that wiring is correct.
- Make sure power is turned on.
- Check that wiring is under terminal blocks correctly.
- Make sure both switches inside control are set to proper position.
- If in Power Steal mode,
  - Make sure the load draws a minimum of 2.5 amp AC. If not, wire per the Non-Power Stealing diagram.
  - Make sure nothing "breaks/opens the load line, such as a defrost timer or any other device, with the alarm feature enabled. This would cause a false alarm. If the alarm function is enabled, wire per the Non-Power Stealing diagram.

Temperature differential is wider than set:
- Temperature change of customer's unit is fast, and the Anti Short Cycle delay setting may be overriding the “call” to activate the heat or cool. Solution – lower Anti Short Cycle delay.

Installation and Power Up:
False alarm sounds, temperature has not yet reached setpoint setting. CUSTOMER must disable alarm (AL = 0), until setpoint temperature is reached, then set alarm delay time.
Customer Changes Setpoint Temperature:
False alarm sounds. CUSTOMER must disable alarm (AL = 0), while unit is adjusting to new temperature. CUSTOMER must then set the alarm delay time when temperature is reached.

Bin/Set Back
False alarm sounds. CUSTOMER must set the delay time with sufficient delay time to assure the Set Back temperature is reached before the alarm delay time has expired.

Note: If the Set Back temperature cannot be reached within 99 minutes (the maximum Alarm delay time), change the Set Back value to a lower number of degrees. If a lower set back can not be used, you may not be able to use the alarm feature.

Alarm Sounds, Reason Unknown:
CUSTOMER should make sure the Alarm (AL) delay time is great enough to cover other conditions when the unit temperature may not be able to stay within 5 degrees.
- Loading or unloading of stock and the doors are open. (Add sufficient delay time to the alarm delay).
- Power is lost to the control if the line is broken/open by a defrost timer or other device. (Wire control per the Non Power Stealing line voltage schematic and connect/add a neutral line connection).

TECH SUPPORT HELP LINE: 1-888-725-9797

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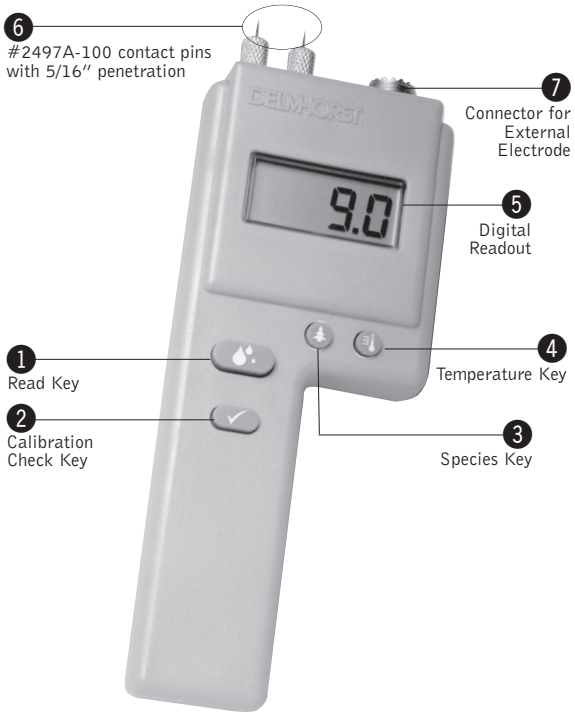

J-2000 FEATURES

- ▶ Resistance technology recognized worldwide as the most accurate method for measuring wood MC
- ▶ 6% to 40% MC wood (Douglas Fir ref)
- ▶ 6% to 60% MC wood (J-2000/X)
- ▶ Averages up to 100 accumulated readings
- ▶ User-selectable corrections for 48 species
- ▶ Built-in temperature compensation (F/C)
- ▶ Proven microcontroller circuit
- ▶ Easy one-hand operation
- ▶ Includes (1) 9-Volt Battery
- ▶ Includes sturdy carrying case
- ▶ One-year warranty

BEFORE YOU BEGIN

Key Functions

❶ READ KEY - Press to read the %MC.

❷ CALIBRATION CHECK KEY - This key, (when pressed with the read key) checks the meter calibration. It also displays the number of readings in memory (up to 100), the average, and the highest stored reading. It also clears the memory.

❸ SPECIES KEY - Press to select the species code for the wood you are testing. Species are numbered from 1 to 48 and are listed on the Species Code Chart on page 5. To scroll forward through the species codes keep the species key pressed. To scroll backward press the species key, release it and immediately press the temperature key.

❹ TEMPERATURE KEY - Press to set the wood temperature. Press and immediately press the Calibration Check the temperature key ❷ to toggle between (F and C). To increase the temperature setting keep the temperature key pressed. To decrease the temperature, press the temperature key, release it and immediately press the species key.

CHECK CALIBRATION ✓

Press the calibration check key ❷ and read key ❶ simultaneously. Meter is in calibration if it displays 12% (+ or - 0.2).

If you check the calibration and the meter does not display 12% it is likely an indication of a low battery. If this occurs, replace the battery immediately with a new EverReady or Duracell brand 9V. Continued use with a low battery may cause the meter to go out of calibration. If you have a fresh battery and the instrument still does not indicate a proper calibration, return it to DELMHORST for service. See **Service for your Meter** section.

When the battery is removed and then reconnected, the meter displays its software version for one second and then turns itself off. After replacing the battery, you must reset the meter as described in **Resetting the Meter** section.

A hard Reset is required if, after changing the battery, the display is frozen. This is sometimes caused by the interruption of contact between the battery and battery lead wire. Resolve this as follows: Disconnect the battery. Press and hold the Read key for 15 seconds. Release the Read key. Press and hold the Check key for 15 seconds. Release the Check key. Connect a fresh battery to the lead wire in a single action, making sure to align the poles properly and without interrupting contact. If the display remains frozen, repeat the procedure. If this procedure does not solve the problem, refer to the Service for Your Meter section.

Meter Default Settings

Species - Douglas Fir
Temperature - 70°F
Pin/Electrode - 4-pin (non-insulated)
Each of these parameters is programmed into the meter and is user-selectable. Proper setting of each will insure the most accurate readings.

SET SPECIES

The J-2000 defaults to Species Code #1 - Douglas Fir - the USDA standard and basis for all Delmhorst calibrations. Because the electrical characteristics of different species vary, all species read differently at the same moisture content. For this reason you need to adjust for species. If you are working with a species other than Douglas Fir, set the species code using the species key 3, and the meter will make the necessary corrections.

- **To change species** press the species key 3. The meter will display the current species code for one second. Refer to the Species Code Chart on page 5. Call our customer service team at 877-DELMHORST (335-6467) or e-mail info@delmhorst.com for assistance with any species or wood-based material that is not included in the chart. It is always helpful if you have the scientific name as well as any common names for the species.

- **To scroll forward** through the species list hold the species key ❸ while the current species code is displayed and scroll to the species number desired.
- **To scroll backward** through the species list, press and release the species key ❸. Within one second, press and hold the temperature key ❹. Continue to hold the temperature button ❹ and the species number will decrease.
- **When scrolling in either direction**, release the key to stop at your desired species.

Species Code Chart

CODE	SPECIES	CODE	SPECIES
1	Fir, Douglas	25	Magnolia
2	Pine, Southern	26	Mahogany, African (also Khaya)
3	SPF	27	Mahogany, Honduras
4	Alder	28	Mahogany, Philippine
5	Apitong	29	Maple, Hard/Soft
6	Aspen	30	Meranti, Dark Red
7	Ash, White	31	Oak, Red
8	Basswood	32	Oak, White
9	Birch	33	Pecan
10	Cedar, Eastern Red	34	Pine, Longleaf
11	Cedar, Incense	35	Pine, Ponderosa
12	Cherry	36	Pine, Shortleaf
13	Cottonwood	37	Pine, Sugar
14	Cypress	38	Pine, White
15	Elm, American	39	Poplar, Yellow
16	Fir, Red	40	Ramin
17	Fir, White	41	Radiata Pine
18	Gum, Black	42	Redwood
19	Gum, Red	43	Spruce, Sitka
20	Hemlock, Western	44	SPF, COFI*
21	Hackberry	45	Teak
22	Hickory	46	Virola
23	Keruing	47	Walnut, Black
24	Larch	48	Western Hemlock - COFI*

*Species and temperature correction data for both Western Hemlock-COFI (code #48) and SPF-COFI (code #44) were developed by COFI.

When comparing readings between the model RDM-2/COFI or the RDM-2S/COFI, used with type 26-E electrode with insulated pins, and the J-2000, be sure both meters are set to 2-pin electrode (insulated pins).

SET TEMPERATURE

The J-2000 defaults to a temperature of 70°F. As wood temperature increases, its electrical resistance decreases and indicated moisture content rises. Lower wood temperatures result in lower indicated moisture content. A correction is necessary if the wood temperature is outside the range of 50°F (10°C) to 90°F (32°C). Set the temperature accordingly and the meter will make the correction.

- **To change temperature** press and release the temperature key 4. The meter will display the current temperature for one second.
- **To scroll forward** through the temperature settings, press and hold the temperature key 4 while the current temperature is displayed.
- **To scroll backward** press and release the temperature key 4. Within one second, press and hold the species key 3. Continue to hold the species key 3 and the temperature will decrease.
- **When scrolling in either direction**, release the button to stop at the desired temperature.

Set Temperature Mode

- **To change between Fahrenheit and Celsius modes** press the temperature key 4.
- **Press the calibration check key** 2 within one second and release when you are in the desired mode.
- **The meter will display the current temperature setting** in the new mode and will wait one more second until shutting off so that you may change the temperature value as described above.

If the meter is in Fahrenheit mode, the letter "F" will display in the left-hand corner. If it is in Celsius mode, no letter will appear in the display.

In the Fahrenheit mode, the temperature will change in increments of 5°F. In Celsius, the temperature will change in increments of either 2°C or 3°C depending on its conversion from Fahrenheit.

In the Fahrenheit mode, the temperature value will display in whole numbers. In the Celsius mode, positive values will display in whole numbers; negative values will display with a decimal point and a "minus" sign in the left-hand corner. (i.e.: -17.0)

SET PIN CALIBRATION

The basic factory calibration of the J-2000 is for use with non-insulated pins. Insulated pins read lower than non-insulated ones. The difference is small below 10% MC but increases as the moisture content increases above 10%. When using an electrode with insulated pins, such as the 26-ES hammer electrode, you can change the calibration to compensate for this difference.

- **To change the pin setting**, press and release the species key 3, then press the calibration check key 2 within one second.
- **The meter will display** the current pin calibration as either 222 for insulated or 444 for non-insulated pins.
- **If you continue to hold the calibration check key 2**, the meter will toggle between 222 and 444.

TAKING A READING

- **Remove the protective cover** to expose the pins. Check that the contact pins 6 are firmly hand tightened.
- **To take a reading**, align the contact pins 6 parallel to the grain and push them to their full penetration into the wood, if possible. Insulated pins read only at the tip and can be driven to the desired depth.
- **Press the read key 1** and read the moisture content on the meter scale. The meter displays the %MC for two seconds.
- **To add a reading** to the sum of all the previously stored readings, release the read key 1 within 2 seconds.

The non-insulated contact pins on the top of the meter penetrate max 5/16in. and may be used on wood up to 1-1/2 to 2in. thick. Push the pins into the wood to their full penetration for best accuracy. For thicker wood and hardwoods over 4/4, use the 26-ES hammer electrode with insulated pins. These pins (no. 496), may be used on wood up to 5-6in. thick. Connect the electrode to the input connector on the top of the meter 7. Contact our customer service team for more information on other available pins for your application.
Insulated pins offer the advantage of taking measurements at various depths since the reading is made at the point in the wood where only the non-insulated tips of the pins make contact. This is especially useful when drying lumber since reliable shell and core readings are essential to producing high quality lumber.

See the FAQ section of our website for helpful application info. www.delmhorst.com

INFORMATION ABOUT YOUR READINGS

Readings below 6% will be displayed as a numeric value, (-##.#), but will not be added to the accumulated readings in memory. Readings below 6% due to temperature and species adjustments will be shown as a numeric value with no minus sign. These readings will be added to the accumulated total in memory and included in the statistical calculations.

Readings above 40% are always displayed as 999 and are not added to the memory.

The meter will accumulate up to 100 readings. After all 100 readings are stored it will not add new readings until the memory has been cleared. It will also continue to display the average of all 100 readings as a reminder that the memory is full.

When taking and storing readings for a specific wood species, be sure to clear the meter's memory before moving on to the next species if you do not want to group all of the readings together.

TO CHECK ACCUMULATED READINGS

This feature allows you to view the total number of all accumulated readings, the average of those readings, and the highest stored reading.

- **To view the readings** press and release the calibration check key (2). The meter displays the number of accumulated readings for one second, then the average of those readings for two seconds. Then it displays the highest stored reading for two seconds. The total cycle time is five seconds.
- **To clear the memory** press and hold the calibration check key (2) down for 5 seconds. All accumulated readings will be erased and the meter will display "0".

TO RESET METER

- **Press and release** the calibration check key (2).
- **Within one second** press the species key (3).
- **The meter will reset itself** and display "170" to indicate the meter is reset to default: Species #1 (Douglas Fir) at 70°F, followed by 444 (pin setting). All of the readings in memory will be cleared.

CARE OF YOUR METER

To keep your meter in good working order:

- Store your meter in a clean, dry place. The protective carrying case provided is an ideal storage place when the meter is not in use.
- Change the 9-Volt battery as needed. Use only EverReady or Duracell brand batteries. Continued use with a low battery may cause the meter to go out of calibration.
- Change contact pins as needed. Keep contact pins hand tightened.
- Clean the meter and contact pins with any biodegradable cleaner. Use the cleaner sparingly and on external parts only. Keep cleaner out of the external connector (7).
- Remove the battery if the meter will not be used for one month or longer.

SERVICE FOR YOUR METER

If your meter is not working properly, replace the battery with a new one and check the calibration. If this does not resolve the problem please send your meter back to Delmhorst for repair.
Go to HYPERLINK "http://www.delmhorst.com" www.delmhorst.com and click on Support and then download the Return Form.
If you require further assistance please call 877-DELMHORST (335-6467) or 973-334-2557.
E-mail HYPERLINK "mailto:info@delmhorst.com" info@delmhorst.com

WARRANTY

Delmhorst Instrument Co., referred to hereafter as Delmhorst, guarantees its J-2000 meter for one year from date of purchase and any optional electrodes against defects in material or workmanship for 90 days. If, within the warranty period, you find any defect in material or workmanship return the meter following the instructions in the **Service for Your Meter** section. This limited warranty does not cover abuse, alteration, misuse, damage during shipment, improper service, unauthorized or unreasonable use of the meter or electrodes. This warranty does not cover batteries or contact pins. If the meter or any optional electrodes have been tampered with, the warranty shall be void. At our option we may replace or repair the meter.

Delmhorst shall not be liable for incidental or consequential damages for the breach of any express or implied warranty with respect to this product or its calibration. With proper care and maintenance the meter should stay in calibration; follow the instructions in the **Care of Your Meter** section.

UNDER NO CIRCUMSTANCES SHALL DELMHORST BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES OF ANY TYPE WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS OR DOWNTIME ARISING OUT OF OR RELATED IN ANY RESPECT TO ITS METERS OR ELECTRODES AND NO OTHER WARRANTY, WRITTEN, ORAL OR IMPLIED APPLIES. DELMHORST SHALL IN NO EVENT BE LIABLE FOR ANY BREACH OF WARRANTY OR DEFECT IN THIS PRODUCT THAT EXCEEDS THE AMOUNT OF PURCHASE OF THIS PRODUCT.

The express warranty set forth above constitutes the entire warranty with respect to Delmhorst meters and electrodes and no other warranty, written, oral, or implied applies. This warranty is personal to the customer purchasing the product and is not transferable.

NOTES

For more than 65 years Delmhorst Instrument has been the leading manufacturer of high quality, US-made moisture meters and thermo-hygrometers. Today we offer a wide range of meters for applications including water damage restoration, construction, flooring, lumber/woodworking, paper, and agriculture.

DELMHORST®
INSTRUMENT CO.
WHEN ACCURACY IS THE POINT.™

51 Indian Lane East
Towaco, NJ 07082

(877)-DELMHORST
www.delmhorst.com
info@delmhorst.com

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510INS-0003 REV. 01/15

Established 1974

QUALITY CONTROL SERVICES

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ACCREDITED
CERTIFICATE #1550.01

PFS Teco
11785 SE Hwy 212 STE#305
Clackamas, OR 97015

Report Number: DIRI0182484A0912013i190610

A2LA ACCREDITED
CERTIFICATE OF CALIBRATION WITH DATA

INSTRUMENT INFORMATION

Item	Make	Model	Serial Number	Customer ID	Location
Scale	Digiweigh	DWP12i 400x.01	82484A0912013i	#050	Lab

Units	Readability	SOP	Cal Date	Last Cal Date	Cal Due Date
lbs	0.01	QC033	6/10/19	12/18/18	6/2020

FUNCTIONAL CHECKS

SHIFT TEST	LINEARITY	REPEATABILITY	ENVIRONMENTAL CONDITIONS
Test Wt: 50 Tol: 0.05	Test Wt: HB44 Tol: HB44	Test Wt: 50 Tol: 0.01	☐ Good ☑ Fair ☐ Poor
As-Found: Pass:☑ Fail:☐	As-Found: Pass:☑ Fail:☐	As-Found: Pass:☑ Fail:☐	
As-Left: Pass:☑ Fail:☐	As-Left: Pass:☑ Fail:☐	As-Left: Pass:☑ Fail:☐	Temperature: 20.7°C

CALIBRATION DATA

Standard	As-Found	As-Left	Expanded Uncertainty
400	399.96	399.96	0.058
300	299.98	299.98	0.058
200	199.98	199.98	0.058
100	99.98	99.98	0.012
50	50.00	50.00	0.012
20	20.00	20.00	0.012

CALIBRATION STANDARDS

Item	Make	Model	Serial Number	Cal Date	Cal Due Date	NIST ID
Avoirdupois Cast W	Rice Lake	25 and 50lb	PWO990-CA	11/24/17	11/2019	20172265

Permanent Information Concerning this Equipment:
12 month calibration cycle

Comments/Information Concerning this Calibration
6/19 RH = 47%.

Report prepared/reviewed by: ServiceTechJC **Date:** 6/11/19 **Technician:** J. Colacchio **Signature:**

THIS CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF QUALITY CONTROL SERVICES, INC.

The uncertainty is calculated according to the ISO Guide to the Expression of Uncertainty in Measurement and includes the uncertainty of standards used combined with the observed standard deviation of the unit under test. The uncertainty is expanded with a k factor of 2 for an approximate 95% level of confidence. Instruments listed above were calibrated using standards traceable to the National Institute of Standards and Technology (NIST). Calibration data reflect results at the time and location of calibration. Calibration data should be reviewed to insure that the instrument is performing to its required accuracy.

Dry Gas Meter Calibration

Meter Manufacturer:	Apex
Model:	XC-50-DIR
Lab ID #:	129
Serial #:	1906005
Calibration Date:	11/7/2019
Calibration Expiration:	5/7/2020
Barometric Pressure:	30.05 in. Hg

Reference Standard DGM	
Manufacturer:	Apex
Model:	SK25DA
Lab ID#:	47
Serial #:	1101001
Calibration Expiration Date:	3/13/2020
Calibration γ Factor:	0.998

Unit Under Test Previous Calibration	
Date	N/A
γ Factor:	0.998
Allowable Deviation (±5%):	0.0499
Actual Deviation:	0.01
Result:	PASS

Calibration Data	Run 1	Run 2	Run 3
Standard DGM Initial Volume (L)	0.000	0.000	0.000
Standard DGM Final Volume (L)	147.116	145.062	172.045
Standard DGM Temperature (°F)	73.0	74.0	78.0
Standard DGM Pressure (in H_2O)	0.00	0.00	0.0
DGM Initial Volume (ft^3)	0.000	0.000	0.000
DGM Final Volume (ft^3)	5.226	5.281	6.334
DGM Temperature (°F)	78.0	88.0	96.0
DGM Pressure (in H_2O)	2.00	1.00	0.5
Time (min)	22.0	34.0	66.0
Net Volume for Standard DGM (ft^3)	5.195	5.123	6.076
Net Volume for DGM (ft^3)	5.226	5.281	6.334

Dry Gas Meter γ Factor	0.997	0.991	0.988
γ Factor Deviation From Average	0.997	0.991	0.988

Average Gas Meter γ Factor: 0.992

Calculations:

1. Deviation = |Average value for all runs - current run value|
2. $\gamma = [V_{std} \times (\gamma_{Std}) \times (P_{bar}+P_{std}/13.6) \times (T_{DGM} + 460)] / [V_{DGM} \times (T_{std} + 460) \times (P_{bar} + P_{DGM}/ 13.6)]$

Standard Reference Meter is calibrated to NIST traceable standards. Uncertainty of measurement is ±0.5%.

 *Technician:*_____

Pressure Gauge Calibration Work Sheet

Gauge Manufacturer:	Apex
Maximum Range (inH_2O):	3
Instrument ID #:	129 (dH)
Calibration Date:	11/12/2019
Calibration Expiration:	11/12/2020
Barometric Pressure:	30.16 in. Hg

Reference Standard Gauge	
Manufacturer:	Dwyer
Model:	477AV-1
Instrument ID#:	136
Calibration Expiration Date:	9/27/2020

Calibration Point (inH_2O)	Reference Gauge Reading (inH2O)	Pressure Gauge Reading (inH2O)	Difference (Reference - UUT)	% Error of Full Range
0.0 - 0.6	0.51	0.57	0.06	2.0%
0.6 - 1.2	0.97	1.03	0.06	2.0%
1.2 - 1.8	1.41	1.46	0.05	1.7%
1.8 - 2.4	1.87	1.94	0.07	2.3%
2.4 - 3.0	2.75	2.80	0.05	1.7%

Acceptable tolerance is 4%

Technican Signature: _____ Date: 11/12/2019

Uncertainty is 0.4 inH_2O, based on minumum uncertainity ration of 4:1 between standard reference meter and unit under test.

Pressure Gauge Calibration Work Sheet

Gauge Manufacturer:	Apex
Maximum Range (inH_2O):	0.5
Instrument ID #:	129 (dP)
Calibration Date:	11/12/2019
Calibration Expiration:	11/12/2020
Barometric Pressure:	30.16 in. Hg

Reference Standard Gauge	
Manufacturer:	Dwyer
Model:	475
Instrument ID#:	76
Calibration Expiration Date:	3/14/2020

Calibration Point (inH_2O)	Reference Gauge Reading (inH2O)	Pressure Gauge Reading (inH2O)	Difference (Reference - UUT)	% Error of Full Range
0.0 - 0.1	0.032	0.033	0.001	0.2%
0.1 - 0.2	0.163	0.161	0.002	0.4%
0.2 - 0.3	0.210	0.206	0.004	0.8%
0.3 - 0.4	0.324	0.316	0.008	1.6%
0.4 - 0.5	0.456	0.439	0.017	3.4%

Acceptable tolerance is 4%

Technican Signature: _____ Date: 11/12/2019

Uncertainty is 0.4 inH_2O, based on minumum uncertainity ration of 4:1 between standard reference meter and unit under test.

Emissions Sampling System Thermocouple Calibration Check

Calibration based on NIST Monograph 175 per ASTM E2515-11
All thermocouples are type "K"

Date: 7/26/2019 Sampling System ID Numbers: 129/130

Performed By: S. Button Calibration Instrument ID Number: 039

Reference Temperature (F)	Acceptable Error (F)	Thermocouple Location						
		FB Left	FB Right	FB Back	FB Top	FB Bottom	Catalyst Exit	Flue
0	± 4.0	0	0	0	0	0	0	0
200	± 4.0	199	199	199	199	199	199	199
400	± 4.0	398	398	398	398	398	398	398
600	± 4.5	599	599	600	599	599	599	600
800	± 6.0	800	800	800	800	800	800	800

Reference Temperature (F)	Acceptable Error (F)	Thermocouple Location					
		Ambient	Filter A	Filter B	Meter A	Meter B	Dilution Tunnel
0	± 4.0	0	0	0	0	-1	0
200	± 4.0	198	199	198	199	198	199
400	± 4.0	398	398	398	398	398	398
600	± 4.5	599	599	599	600	599	600
800	± 6.0	800	800	800	800	800	800

Technician Signature: Date: 12/17/2018

Dry Gas Meter Calibration

Meter Manufacturer:	Apex
Model:	XC-50-DIR
Lab ID #:	130
Serial #:	1906006
Calibration Date:	11/7/2019
Calibration Expiration:	5/7/2020
Barometric Pressure:	30.05 in. Hg

Reference Standard DGM	
Manufacturer:	Apex
Model:	SK25DA
Lab ID#:	47
Serial #:	1101001
Calibration Expiration Date:	3/13/2020
Calibration γ Factor:	0.998

Unit Under Test Previous Calibration	
Date	N/A
γ Factor:	1.000
Allowable Deviation (±5%):	0.05
Actual Deviation:	0.00
Result:	PASS

Calibration Data	Run 1	Run 2	Run 3
Standard DGM Initial Volume (L)	0.000	0.000	0.000
Standard DGM Final Volume (L)	350.400	174.679	145.366
Standard DGM Temperature (°F)	78.0	78.0	75.0
Standard DGM Pressure (in H_2O)	0.00	0.00	0.0
DGM Initial Volume (ft^3)	0.000	0.000	0.000
DGM Final Volume (ft^3)	12.680	6.344	5.174
DGM Temperature (°F)	98.0	98.0	80.0
DGM Pressure (in H_2O)	2.00	1.10	0.5
Time (min)	55.0	40.0	78.0
Net Volume for Standard DGM (ft^3)	12.374	6.169	5.134
Net Volume for DGM (ft^3)	12.680	6.344	5.174

Dry Gas Meter γ Factor	1.005	1.004	0.998
γ Factor Deviation From Average	1.005	1.004	0.998

Average Gas Meter γ Factor: 1.002

Calculations:

1. Deviation = |Average value for all runs - current run value|
2. $\gamma = [V_{std} \times (\gamma_{Std}) \times (P_{bar}+P_{std}/13.6) \times (T_{DGM} + 460)] / [V_{DGM} \times (T_{std} + 460) \times (P_{bar} + P_{DGM}/ 13.6)]$

Standard Reference Meter is calibrated to NIST traceable standards. Uncertainty of measurement is ±0.5%.

 *Technician:*_____

Pressure Gauge Calibration Work Sheet

Gauge Manufacturer:	Apex
Maximum Range (inH_2O):	3
Instrument ID #:	130 (dH)
Calibration Date:	11/12/2019
Calibration Expiration:	11/12/2020
Barometric Pressure:	30.16 in. Hg

Reference Standard Gauge	
Manufacturer:	Dwyer
Model:	477AV-1
Instrument ID#:	136
Calibration Expiration Date:	9/27/2020

Calibration Point (inH_2O)	Reference Gauge Reading (inH2O)	Pressure Gauge Reading (inH2O)	Difference (Reference - UUT)	% Error of Full Range
0.0 - 0.6	0.49	0.48	0.01	0.3%
0.6 - 1.2	1.07	1.03	0.04	1.3%
1.2 - 1.8	1.35	1.31	0.04	1.3%
1.8 - 2.4	2.32	2.26	0.06	2.0%
2.4 - 3.0	2.69	2.76	0.07	2.3%

Acceptable tolerance is 4%

Technican Signature: _____ Date: 11/12/2019

Uncertainty is 0.4 inH_2O, based on minumum uncertainity ration of 4:1 between standard reference meter and unit under test.

Pressure Gauge Calibration Work Sheet

Gauge Manufacturer:	Apex
Maximum Range (inH_2O):	-1
Instrument ID #:	130 (dP)
Calibration Date:	11/12/2019
Calibration Expiration:	11/12/2020
Barometric Pressure:	30.16 in. Hg

Reference Standard Gauge	
Manufacturer:	Dwyer
Model:	475-000
Instrument ID#:	76
Calibration Expiration Date:	3/14/2020

Calibration Point (inH_2O)	Reference Gauge Reading (inH2O)	Pressure Gauge Reading (inH2O)	Difference (Reference - UUT)	% Error of Full Range
0.0 - -0.2	-0.15	-0.18	0.03	-3.0%
-0.2 - -0.4	-0.32	-0.34	0.02	-2.0%
-0.4 - -0.6	-0.56	-0.58	0.02	-2.0%
-0.6 - -0.8	-0.61	-0.64	0.03	-3.0%
-0.8 - -1.0	-0.90	-0.93	0.03	-3.0%

Acceptable tolerance is 4%

Technican Signature: _____ Date: 11/12/2019

Uncertainty is 0.4 inH_2O, based on minumum uncertainity ration of 4:1 between standard reference meter and unit under test.

Model 1430 Microtector® Electronic Point Gage

Installation and Operating Instructions

Model 1430 Microtector® Portable Electronic Point Gage combines modern, solid-state integrated circuit electronics with a time-proven point gage manometer to provide fast, accurate pressure measurements.

SPECIFICATIONS AND FEATURES

- Accurate and repeatable to ± .00025 inches water column
- Pressure range: 0 - 2″ w.c., positive, negative, or differential pressures
- Non-toxic and inexpensive gage fluid consists of distilled water mixed with a small amount of fluorescein green color concentrate
- Convenient, portable, lightweight and self-contained, the unit requires no external power connections and is operated by a 1.5 volt penlight cell
- A.C. detector current eliminates point plating, fouling and erosion
- Micrometers are manufactured in accordance with ASME B89.1.13-2001, and are traceable to a standard at the National Institute of Standards and Technology
- Three-point mounting, dual leveling adjustment, and circular level vial assure rapid setup
- Durablock® precision-machined acrylic plastic gage body
- Sensitive 0 - 50 microamp D.C. meter acts as a detector and also indicates battery and probe condition
- Heavy 2″ thick steel base plate provides steady mounting
- Top-quality glass epoxy circuit board and solid-state, integrated circuit electronics
- Electronic enclosure of tough, molded styrene acrylonitrile provides maximum protection to components yet allows easy access to battery compartment
- Rugged sheet steel cover and carrying case protects the entire unit when not in use
- Accessories included are (2) 3-foot lengths Tygon® tubing, (2) 1/8″ pipe thread adapters and 3/4 oz. bottle of fluorescein green color concentrate with wetting agent

Maximum pressure: 100 psig with optional pipe thread connections.

Tygon® is a registered trademark of Saint-Gobain Corporation

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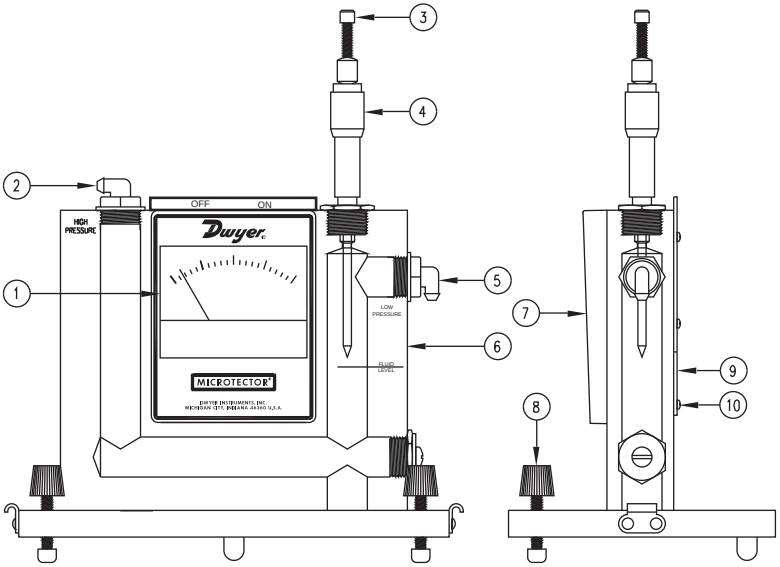

Microtector® Gage

Precision Pressure Measurement

The Microtector® Gage combines the time-proven principles of the Hook Gage type manometer and modern solid-state integrated circuit electronics. It provides an inexpensive means of achieving accuracy and repeatability within ± .00025 inches water column throughout its 0 to 2 inches w.c. range. It is truly a new standard in precision measuring devices.

Principles of Operation

A pressure to be measured is applied to the manometer fluid which is displaced in each leg of the manometer by an amount equal to 1/2 the applied pressure. A micrometer mounted point is then lowered until it contacts the manometer gage fluid. The instant of contact is detected by completion of a low-power A.C. circuit. Current for this circuit is supplied by a 1.5 volt penlight cell feeding two semiconductor amplifiers which act as a free-running multivibrator operating at a frequency of approximately two kilohertz. Completion of the A.C. circuit activates a bridge rectifier which provides the signal for indication on a sensitive (0 to 50 microamps) D.C. microammeter.

On indication of contact, the operator stops lowering the point and reads the micrometer which indicates one half the applied pressure. By interpolating eight divisions (each being .000125″ w.c.) between .001 micrometer graduations, a total accuracy of .00025 can easily be achieved. The micrometer complies with Federal Specification GGG-C-105A and is traceable to a master at the NIST.

Locating and Opening

Stand the Microtector® Gage and case on a firm flat level surface. Remove cover by releasing the latches and lifting it straight up. If it is necessary to move the gage without case, handle only the base plate or clear acrylic block. (**CAUTION:** Do not handle gage by grasping meter-electronic package housing Item 7 on drawing.)

Fluid Level

Level the gage by adjusting the two front leveling screws (Item 8 on drawing) until the bubble in the spirit level is centered in the small circle. After leveling the gage, open both rapid shut-off valve tube connectors (Items 2 and 5). Back off the micrometer (Item 4), if necessary, to make sure that the point is not immersed in the gage fluid. The fluid level in the gage should now coincide with the mark on the right hand bore (Item 6) plus or minus approximately 1/32 inch. If the level of fluid is too high, fluid can be removed with an eye dropper pipette or carefully poured out of the right connection (Item 5).

If the level is too low, remove the top left rapid shut-off valve tube connector (Item 2) and add distilled water pre-mixed with the proper amount of green concentrate. (See maintenance instructions for proportions. After correcting the fluid level, re-install the rapid shut-off connectors and, with these in the open position, re-level the Microtector® Gage. The gage is now ready to be zeroed.

Zeroing

Turn the Micrometer barrel (Item 4) until its lower end just coincides with the zero mark on the scale and the zero on the barrel scale coincides with the vertical line on the internal scale. Note that the internal scale is graduated every .025″ from 0 to 1.00 inch and the barrel scale is graduated in one thousandths from 0 to .025″. Turn the meter circuit switch at the top of gage to the “on” position. While holding the barrel at the zero position (and with gage level), raise or lower the point by turning the knurled knob (Item 3) until the point is above, but near, the fluid.

Check to be sure that the meter registers zero. Watch the meter, hold the barrel, and lower the point slowly by turning the top knurled knob. As the knob is turned, the point will contact the fluid and the meter pointer will move from zero to some upscale position.

After making contact, turn the point out of the fluid by turning the micrometer barrel counterclockwise to a reading of .010 or more. Again, watch the meter and, this time, lower the point by turning the micrometer barrel. The point position where the meter pointer begins to move up scale is the zero position. This position should correspond to the zero reading on the micrometer. Adjust the point in relation to the micrometer barrel by turning the top knob while holding the barrel steady. Repeat lowering the point, watching the meter for contact, and adjusting the point until the zero position and zero reading exactly coincide. The gage is now zeroed and should not be moved.

An alternative method of zeroing and reading can be used wherein, instead of zeroing the gage completely, a zero correction reading is taken and recorded, then subtracted from the final reading. Comparable results can be obtained with either method.

Positive Pressure Measurement

With the fluid at its proper level, a pressure of 2.0″ water column maximum can be measured. Positive pressure should be applied to the top left connection (Item 2) with the micrometer zeroed as described above. This will permit a simple direct reading to be taken.

After an unknown pressure has been applied at the top left connection, the fluid level will drop in the left bore and rise over the point in the right bore. Note that the indicating meter point has moved upscale because the point is immersed in the fluid. Turn the micrometer counter-clockwise until the point leaves the fluid as indicated by the meter pointer dropping to zero on its scale. Then slowly turn the micrometer down until its point just touches the fluid surface, causing movement of the meter pointer. Withdraw the point and repeat several times, noting each time the micrometer reading where the meter pointer begins. The average of these readings multiplied by two is the pressure applied to the gage. (Avg. reading x 2 = pressure applied in inches w.c. The degree of uncertainty for the operator is indicated by the difference in these readings.

When the readings are complete, the pressure should be removed and the zero setting of Microtector® Gage rechecked. Any change in the zero position will indicate inaccurate readings. Should this happen, the zero-set and pressure measurement procedure should be repeated.

Negative Pressure or Vacuum Measurement

Zero the gage. Connect the source of vacuum or negative pressure to the right-side gage connection (Item 5) and proceed as described under Positive Pressure Measurement section. Remember that the pressure measured in this way is negative.

Differential Pressure Measurement

Differential pressures may be measured by connecting the higher (more positive) pressure to the left connection (Item 2) and the lower pressure to the right connection (Item 5).

Storage

Turn meter circuit switch to "off" position and withdraw the point well clear of fluid (by turning micrometer clockwise) when gage is not in use. This will conserve the batteries and minimize build-up of oxides, etc., on the point. Keep the unit covered and in an area free of strong solvent fumes.

Maintenance

When the meter reading becomes reduced or the pointer movement gets sluggish (with the circuit on and the point in fluid), the following should be done:

(1) Remove the point (by unscrewing) and clean the tip lightly using fine crocus cloth. Wipe off all grit and dirt with a clean rag; reassemble and recheck meter operation.

(2) If the meter operation continues to be sluggish, replace the size AA, 1.5 volt battery. (Replace the battery at least once a year to avoid deterioration of battery and damage to gage. Leakproof alkaline battery is recommended.)

To replace the battery, remove center screw (Item 10) located in the back of the electronic enclosure. Cover (Item 9) will come off, exposing the battery. Pull the old battery out and push a new battery into the battery holder with the positive (center) terminal to the right (to the end marked with + on the holder).

If the fluid becomes contaminated and requires replacement: empty old fluid from gage; flush out with clear water and replace with distilled water and A-126 fluorescein green color concentrate mixed with 3/4 oz. concentrate to each quart of water.

CAUTION:

1. Do not substitute other gage fluids, as proper gage operation depends on use of the specified gage fluid to provide proper surface tension, wetting ability and electrolyte capability with unity specific gravity.

If the gage bore is very dirty, a mild soap solution may be used to aid in cleaning prior to flushing with clear water.

2. Do not clean with liquid soaps, special solvent, de-greasers, aromatic hydrocarbons, etc. Such cleaners and solvents may contain chlorine, fluorine, acetone and related compounds that will permanently damage the gage and prevent proper operation.

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DWYER INSTRUMENTS, INC.
P.O. BOX 373
MICHIGAN CITY, INDIANA 46361,U.S.A
Phone: 219/879-8000 **www.dwyer-inst.com**
Fax: 219/872-9057 **e-mail: info@dwyer-inst.com**

Established 1974

QUALITY CONTROL SERVICES

LABORATORY EQUIPMENT • SALES • SERVICE • CALIBRATION • REPAIRS

2340 SE 11TH Ave. Portland, Oregon 97214 • Box 14831 Portland, Oregon 97293

(503) 236-2712 • FAX (503) 235-2535 • www.qc-services.com

ACCREDITED

Calibration Services

Certificate Number: 1550.01

Laboratory code: 115953

Report of Calibration

Firm: Dirigo Laboratories
Address: 11785 SE Hwy 212, Ste 305
City/State/Zip: Clackamas, OR 97015

Test Completed: 03/21/17
Submitted By: John Steiner
Traceable Number: 20170468

Test Item: 200mg and 100mg Individual Weights
Serial No.: Listed in Table

Manufacturer: Troemner

Laboratory Environment at time of test

Temperature °C	Pressure mmHg	Humidity %RH
21.967	753.44	49.44

Conventional Mass Value

Nominal Value	As Found grams	As Found Correction* (mg)	Uncertainty (mg)	Tolerance (mg)
200mg SN 1000101395	0.2000061	0.0061	0.0026	0.01
100mg SN 1000126267	0.1000046	0.0046	0.0028	0.01

*Correction is the difference between the conventional mass value of a weight and its nominal value.

Comments: These weights were new from the manufacturer and were within ASTM Class 1 tolerances As Found. No adjustments or changes were made so As Found values should be considered to be As Left values.

Accredited by the American Association for Laboratory Accreditation (A2LA) under Calibration Laboratory Code 115953 and Certificate Number 1550.01. This laboratory meets the requirements of ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories.* This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements in the field of calibration.

Quality Control Services, Inc.
Metrology Laboratory Manager
E-mail dthompson@qc-services.com

Date: 03/21/17

Signature David S. Thompson

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A2LA ACCREDITED
CERTIFICATE #1550.01

PFS Teco
11785 SE Hwy 212 STE#305
Clackamas, OR 97015

Report Number: DIRI0134307497190610

A2LA ACCREDITED
CERTIFICATE OF CALIBRATION WITH DATA

INSTRUMENT INFORMATION

Item	Make	Model	Serial Number	Customer ID	Location
Balance	Sartorius	ENTRIS224-1S	34307497	#107	Lab
Units	**Readability**	**SOP**	**Cal Date**	**Last Cal Date**	**Cal Due Date**
g	0.0001	QC012	6/10/19	12/18/18	12/2019

FUNCTIONAL CHECKS

ECCENTRICITY
Test Wt: 100 Tol: 0.0003
As-Found: Pass: ☑ Fail: ☐
As-Left: Pass: ☑ Fail: ☐

LINEARITY
Test Wt: 50 x 4 Tol: 0.0002
As-Found: Pass: ☑ Fail: ☐
As-Left: Pass: ☑ Fail: ☐

STANDARD DEVIATION
Test Wt: 100 Tol: 0.0001

1. 99.9999	5. 100.0000	9. 100.0000
2. 99.9999	6. 100.0000	10. 100.0000
3. 99.9999	7. 99.9999	**Result**
4. 99.9999	8. 100.0000	0.00005

ENVIRONMENTAL CONDITIONS
☐ Good ☑ Fair ☐ Poor
Temperature: 20.4°C

A2LA ACCREDITED SECTION OF REPORT

Standard	As-Found	As-Left	Expanded Uncertainty
200	199.9986	200.0000	0.00015
100	99.9996	99.9999	0.00015
50	49.9998	50.0000	0.00015
20	19.9999	20.0000	0.00015
1	1.0000	1.0000	0.00015
0.1	0.1000	0.1000	0.00015

CALIBRATION STANDARDS

Item	Make	Model	Serial Number	Cal Date	Cal Due Date	NIST ID
Weight Set	R.L./Troemner	10kg to 1mg	G782	1/25/19	1/2020	20190189

Permanent Information Concerning this Equipment:
6 month calibration cycle.

Comments/Info Concerning this Calibration:
6/19 RH= 55%. Adjusted span.

Report prepared/reviewed by: ServiceTechJC **Date:** 6/11/19

Technician: R.Kauble Signed Jake Colacchio

Signature:

THIS CERTIFICATE SHALL NOT BE REPRODUCED WITHOUT THE APPROVAL OF QUALITY CONTROL SERVICES, INC.

The uncertainty is calculated according to the ISO Guide to the Expression of Uncertainty in Measurement and includes the uncertainty of standards used combined with the observed standard deviation and readability of the unit under test. The uncertainty is expanded with a k factor of 2 for an approximate 95% level of confidence. Instruments listed above were calibrated using standards traceable to the National Institute of Standards and Technology (NIST). Calibration data reflect results at the time and location of calibration. Calibration data should be reviewed to insure that the instrument is performing to its required accuracy. Calibrations comply with ISO/IEC 17025 and ANSI/Z540-1-1994 quality standards.

Established 1974

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ACCREDITED
Calibration Services
Certificate Number: 1550.01
Laboratory code: 115953

Report of Calibration

Firm: Dirigo Laboratories
Address: 11785 SE Hwy 212, Ste 305
City/State/Zip: Clackamas, OR 97015

Test Completed: 01/15/16
Purchase Order: 1001
Traceable Number: 20152489

Test Item: 20lb and 10lb Individual Grip Handle Weights
Serial No.: Listed in Table

Manufacturer: Unknown

Laboratory Environment at time of test

Temperature °C	Pressure mmHg	Humidity %RH
21.448	760.64	44.58

Conventional Mass Value

Nominal Value	As Found pounds	As Found Correction* (mg)	Uncertainty (mg)	Tolerance (mg)
20lb #098	19.9995450	-206.4	6.4	910
10lb #097	10.0006510	295.3	5.1	450
10lb #051	10.0003421	155.2	5.1	450

*Correction is the difference between the conventional mass value of a weight and its nominal value.

Comments: These weights were received in good condition and were within NIST Handbook 105-1 Class F tolerances As Found. No adjustments or changes were made so As Found values should be considered to be As Left values.

Accredited by the American Association for Laboratory Accreditation (A2LA) under Calibration Laboratory Code 115953 and Certificate Number 1550.01. This laboratory meets the requirements of ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories.* This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements in the field of calibration.

Quality Control Services, Inc.
Metrology Laboratory Manager
E-mail dthompson@qc-services.com

Date: 01/15/16

Signature David S. Thompson

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Member: National Conference of Standards Laboratories and Weights & Measures

Certificate of Calibration

Certificate Number: **712600**

JJ Calibrations, Inc.
7724 SE Aspen Summit Drive
Portland, OR 97266-9217
Phone 503.786.3005
FAX 503.786.2994

PFS TECO
11785 SE Hwy 212
Suite 305
Clackamas, OR 97015

0723.01
Calibration

PO: **john.steinest.PFSTECO.co**
Order Date: 11/06/2019
Authorized By: **N/A**

Property #: **064**
User: **N/A**
Department: **N/A**
Make: **Control Company**
Model: **4198**
Serial #: **80531676**
Description: **Digital Temp. / Barometer**
Procedure: **404323**
Accuracy: **±1°C ±0.2362Hg(±8mb)**

Calibrated on: 11/15/2019
*Recommended Due: 11/15/2020
Environment: **21** °C **48** % RH
* As Received: **Within Tolerance**
* As Returned: **Within Tolerance**
Action Taken: **Calibrated**
Technician: **146**

Remarks: * Many factors may cause the unit to drift out of calibration before the recommended due date. Any reported error is the absolute value between the reference and the unit. Uncertainties include the effects of the unit.

Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
644A	Thunder Scientific	1200	Two Pressure Humidity Generator	10/14/2020	710583
847A	Fluke	RPM4	Reference Pressure Monitor	11/21/2019	688957

Measurement Data

Parameter / Measurement Description	Range Unit	Reference	Min	Max	ᵏError	UUT	Uncertainty
Before/After							Accredited = ✓
Temperature							
	°C	20.00	19.0	21.0	0.1	20.1 °C	8.1E-02 ✓
	°C	30.00	29.0	31.0	0.8	29.2 °C	8.1E-02 ✓
	°C	40.00	39.0	41.0	0.2	39.8 °C	8.1E-02 ✓
Barometer							
	mbar	1010.70	1002.7	1018.7	0.7	1010.0 mbar	

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to either the SI or to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NCSL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by JCGM 106:2012. Unless otherwise stated, a test accuracy ration (TAR) of 4:1, if achievable, is maintained. The results reported herein apply only to the calibration of the item described above. This report may not be reproduced, except in full, without written approval of JJ Calibrations.

Reviewer

3 Issued 11/16/2019 Rev # 15

Inspector

Verification of Standardization

of

Tape Measure

by

Advanced Calibration Technologies
28111 S.E. Wally Road
Boring, OR 97009
1-800-259-5058

ACCREDITED
Calibration
Cert# 1342.01

Customer:	PFS Teco, Inc	Street:	11785 Southeast Highway 212 Suite 305
City:	Clackamas State: OR	Zip:	97015 Location: In House
Machine Manufacturer:	Stanley	Model:	26' Tape Measure
Capacity:	0.000 - 312.000 inches 0.125 Divisions	Serial #:	101
Calibration Cycle:	12 Months	Lab ID#:	#101
Previous Calibration Date:	January 2019	Calibration Procedure:	Ad-Tek SR
Equipment Used:	Gauge Blocks S/N: ADGB002	Action Recommended:	
If Other, Explain:			

Verification Data

Purpose:
This method provides instructions for checking the critical dimensions of the equipment.
Tolerance:
Equipment shall meet the dimensional tolerances specified in the applicable test method.
Procedure:
Verified using manufacturer's procedures.

Actual Dimensions (inches)	Unit Under Test As Found (inches)	Unit Under Test As Left (inches)	Difference (inches)
0.0000	0.000	0.000	0.000
0.1250	0.050	0.050	-0.075
0.2500	0.250	0.250	0.000
0.5000	0.500	0.500	0.000
0.7500	0.750	0.750	0.000
1.0000	1.000	1.000	0.000
3.0000	3.000	3.000	0.000
5.0000	5.000	5.000	0.000
7.0000	7.000	7.000	0.000
9.0000	9.000	9.000	0.000
12.0000	12.000	12.000	0.000

The overall condition of the device as found:	Within Specification
The overall condition of the device as left:	Within Specification
The measurement of uncertainty (MU) was calculated to be:	0.00060

File No: PFS-101666-0119D0120-AH-SR-101

Temperature: 72.1°F Humidity: 41.1%

The equipment used in the verification of this instrument has been calibrated and is NIST traceable.
The uncertainty of calibration was estimated at the 95% confidence level, coverage factor (k=2).

Remarks:

This certificate of verification is issued as a statement of fact that on the date of verification the above instrument had an accuracy as indicated and was calibrated to meet the requirements of the manufacturer's specifications. This certificate should not be construed or regarded as a guarantee or warranty of any kind that the instrument will retain the same percentage of accuracy as determined on the date when the verification was performed and reported. Ad-Tek, Inc. hereby expressly disclaims any and all liability for damage or loss by all parties arising or resulting from deterioration, obsolescence, malfunction, subsequent calibration performed by another agency or substandard performance of said instrument.

This report and certificate of verification shall not be reproduced except in full, without the written approval of Ad-Tek, Inc.

Service Technician: Alisa Houser Date of Service: January 16, 2019

Technical Manager: Nicole Ostrowski Date Next Due: January 2020

We sincerely appreciate your business and thank you for selecting Advanced Calibration Technologies, Inc. for servicing your equipment.
To reschedule, please call (800) 259-5058. Thank You.

Report and Certificate of Calibration

CAL-CERT CALIBRATION CERTIFICATION
6709 SE Lake Road
Milwaukie, OR 97222
1-800-356-4662
CL-108

www.Cal-Cert.com
"Measure The Difference"

14 Inverness Drive East, Ste B-128
Englewood, CO 80112
1-800-983-7832
CL-157

IAS ACCREDITED Calibration Laboratory

Report #:	2260-28782-66	**Customer PO#:**	
Customer Name:	PFS TECO		
Customer Address:	11785 Southeast Highway 212		
City:	Clackamas	**State:** OR	**Zip:** 97015
Contact:	John Steinert		
Service Address:	6709 Southeast Lake Road	Milwaukie, OR 97222	

Calibration Standards

10-RH/00192 Comark Thermohygrometer S/N: 6217150049 Cal Date: 11/17/17 Due Date: 11/30/18 Vendor: CC REPORT #: 1573-C-01
L-GB-0/00397 Mitutoyo 83 Piece Gage Block Set S/N: 0509020 Cal Date: 9/8/16 Due Date: 9/30/18 Vendor: American Gage REPORT#: 83181-2-354224

Instrument Data

Calibration Date:	January 23, 2018	**Reference:**	NAVAIR 17-20MD-07
Calibration Due Date:	January 23, 2019	**Cal-Cert Procedure:**	CP-008
Calibration Frequency:	12 Months	**Indicating System:**	Digital
Manufacturer:	Husky	**Temperature:**	71 °F
Type:	Digital Caliper	**Humidity:**	32% RH
Model Number:	Unknown	**Asset #:**	#102
Serial #:	#102	**Service Location:**	Cal-Cert Lab
Capacity:	6 Inches	**As Found:**	PASS
Resolution:	0.0005 Inches	**As Left:**	PASS

Instrument Range: 6 Inches **Range Resolution:** 0.0005 Inches

Outside Jaws / Linearity

Calibration Standard Inches	As Found Inches	As Left Reading 1 Inches	As Left Reading 2 Inches	Tolerance ± Inches
0.0000	0.0000	0.0000	0.0000	0.0000
0.0500	0.0500	0.0500	0.0500	0.0010
0.3000	0.3000	0.3000	0.3000	0.0010
0.6000	0.6000	0.6000	0.6000	0.0010
1.2000	1.2000	1.2000	1.2000	0.0010
2.4000	2.4000	2.4000	2.4000	0.0010
3.5000	3.5000	3.5000	3.5000	0.0010
5.0000	5.0000	5.0000	5.0000	0.0010
6.0000	6.0000	6.0000	6.0000	0.0010

Expanded Uncertainty ± 0.00058 Inches

Verifications (for information only)

	Target	Measured	Tolerance ±
Resolution Check	0.10050	0.10050	N/A
Depth	1.000	1.00000	N/A
Step	1.000	1.00000	N/A
Inside Jaws	1.000	1.00000	N/A

Inspections

Jaws Parallel	Acceptable

Remarks:

We sincerely thank you for your business. Please call us at 1-800-356-4662 for all your sales and calibration needs.
Cleaning and preventative maintenance were performed as part of this service.

Cal-Cert is accredited by the International Accreditation Service, Inc. (IAS) under Calibration Laboratory Code CL-108 & CL-157.
IAS is recognized under the ILAC mutual recognition agreement (MRA).

This certificate is hereby issued that the above instrument was tested for accuracy with calibrated standards traceable to the National Institute of Standards and Technology (NIST). The information provided on this form complies with the data gathering and reporting requirements of ISO/IEC 17025 and ANSI/NCSL Z540.3, and meets the requirements of all applicable references and Cal-Cert procedures listed above.

Any stated measurement uncertainty includes the uncertainty of the Calibration standards used, combined with the uncertainty of the measurement process using the RSS method with a k=2 for an approximate 95% level of confidence. The calibration process meets or exceeds a ratio of 4:1 unless otherwise stated.

All tolerances were derived from the applicable standards and pass/fail determination is based on those tolerances. The customer determined any recommended due dates indicated on the certificate.

This report shall not be reproduced except in full, without written approval from Cal-Cert.

Service Engineer:	NICOLAS ILLA	**Date:**	January 23, 2018
Technical Manager:	MARSHALL DOYLE	**Signature:**	

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DICK MUNNS COMPANY
LIQUID & GAS FLOW CALIBRATION

ISO 17025 IAS ACCREDITED
CL-122

CERTIFICATE OF CALIBRATION

CUSTOMER:	**PFS-TECO :** CLACKAMAS, OR
PO NUMBER:	N/A
INST. MANUFACTURER:	DWYER
INST. DESCRIPTION:	VELOMETER
MODEL NUMBER:	471
SERIAL NUMBER:	CP288559 (ID# 095)
RATED UNCERTAINTY:	SEE NOTES BELOW.
UNCERTAINTY GIVEN:	± .20% RD ; k=2

CALIBRATION DATE:	03/14/2019
CALIBRATION DUE:	03/14/2020
PROCEDURE:	T.O.33K6-4-1769-1
CALIBRATION FLUID:	AIR @ 14.7 PSIA 70°F
RECEIVED CONDITION:	WITHIN MFG. SPECS.
LEFT CONDITION:	WITHIN MFG. SPECS.
AMBIENT CONDITIONS:	762 mm HGA 43% RH 69°F
CERTIFICATE FILE #:	490265.2019

NOTES: ± 3% FS (0-500 / 0-1500) *** ± 4% F.S. (0-5000) ***± 5% F.S. (0-15000) *** ± 2 °F

NOTES CONT. : Q.MANUAL IM 1.5 REV 2017.1 DATED 7-18-2017

UUT INDICATED FT/MIN	DM.STD. ACTUAL FT/MIN	UUT INDICATED DEG. F	DM STD. ACTUAL DEG. F
64	65	0 TO 200°F	0 TO 200°F
110	112	43.4	43.5
206	210	69.0	68.9
498	509	99.4	99.2
503	505		
1049	1058		
1497	1514		
509	513		
3419	3460		
4992	5068		
5136	5235		
13928	14232		

STANDARDS USED:		
A220: 12" WIND TUNNEL 0 - 8000 FPM | CMC ± .203% RD | TRACE# 1520423238	DUE	05/23/2019
A24: HART SCIENTIFIC TEMP. STANDARD | ±.024 F | TRACE# 1520423238	DUE	03/07/2020

All instruments used in the performance of the shown calibration have traceability to the National Institute of Standards and Technology (NIST). The uncertainty ratio between the calibration standards (DM.STD.) used and the unit under test (UUT) is a minimum of 4:1, unless otherwise noted. Calibration has been performed per the shown procedure number, in accordance with ISO 10012:2003, ISO 17025:2005, ANSI/NCSL-Z-540.3, and/or MIL-STD-45662A. Test methods: API2530-92 & ASME MFC-3M-1989.

Dick Munns Company • 11133 Winners Circle • Los Alamitos, CA 90720
Phone (714) 827-1215 • Fax (714) 827-0823

This Calibration Certificate shall not be reproduced, except in full, without approval by DICK MUNNS COMPANY. The data shown applies only to the instrument being calibrated and under the stated conditions of calibration.

Date: 3/14/2019

Approved By:

Calibration Technician: D. C.

HORIBA
Model
MEXA-554JU
MFG No.
JU50173
Power AC
100~240V 50/60Hz 60VA
Date
May.2001
HORIBA,Ltd. KYOTO JAPAN Made in Korea
CO/HC ANALYZER
1 WARM-UP

ETC6-1
METTLER TOLEDO
6
PANTHER
5.0
→0← G NET PT T lb kg
1
2
→0←
→T←
C
M
STAND 6
Scale:
M: 100.42
B: -5.7558
BECHERINI
SCALE CENTER, INC.
Calibrated
Due
Tech
4/30/19
4/20
317 EAST SPRAGUE
SPOKANE, WA 99202
(509) 747-0181
n max.=10,000
Max
Capacity: 1000 lb X 0.1 lb

Certificate of Analysis

716 S. Oregon Ave.
Pasco WA, 99301
509-547-2494

SPECIALTY GAS DIVISION

Customer: Hearth & Home

Product: Spec Gas

Grade: Primary Standard

+/- 1%

Lot Number: 2170374

Serial #(s): EB0088221*

* Indicates Cylinder Analyzed For Batch

Component	Specification	Actual	Method
Carbon Monoxide	1%	1.00%	GOW MAC 580 TCD GC
Carbon Dioxide	10%	9.99%	GOW MAC 580 TCD GC
Nitrogen	Balance	Balance	GOW MAC 580 TCD GC

LDL - Lower Detection Limit

Authorized Signature: T. Ag/A **Date:** 2/8/2017

Analyst: Tim Agostinacci

This is to certify the equipment/cylinders referenced have been calibrated/tested, and verified to meet the defined specifications. This analysis was performed using gases and equipment that is traceable through National Institute of Standards and Technology (NIST) to the International System of Units (SI). The basis of compliance stated is a comparison of the measurement parameters to the specified or required calibration process. The expanded uncertainties use a coverage factor of k=2 to approximate the 95% confidence level of the measurement, unless otherwise noted. This certificate of analysis applies only to the item described and shall not be reproduced other than in full, without written approval from the calibration facility. If not included, the uncertainty of calibrations is available upon request and was taken into account when determining pass or fail as defined in our work instructions. Unless stated above the certification of gases expires 5 years from date of analysis. By request, OXARC, Inc. Specialty Gas Laboratory can provide ISO/IEC 17025:2005 accredited products.

Appendix F - Efficiency Measurement and Calculation Discussion

When hydronic heaters are tested to ASTM E2618, a discrepancy between efficiency results has been repeatedly observed.

Efficiency is calculated two ways. The first is delivered efficiency, which measures the flow rate and temperature of load water to determine energy output, and the weight, moisture content, and specific energy content of the fuel load to determine input.

The second is the stack loss method, which uses the same method to determine energy input. Output, however, is calculated by measuring energy lost up the flue rather than output energy directly.

Because the stack loss method (SLM) accounts only for energy lost in flue gasses, it does not account for energy lost through the jacket of the appliance or piping system. Delivered efficiency does account for these sources of loss, as it measures only the useful heat extracted from the heat exchanger. Therefore, if both methods are measured with perfect accuracy, SLM efficiency should always be higher than delivered efficiency. In testing, however, this is not always the case. In some instances, delivered efficiency has been measured as up to 5 percentage points higher than SLM.

This discrepancy is not well understood and may simply be due to the realities of measurement uncertainty and variability in testing. However, we have identified some issues with the test method that could contribute to systemic errors that may, alone or in combination, be the source of this discrepancy.

Moisture Content Readings

One possible cause of the issue is over-reporting of fuel moisture content. Fuel moisture measurement techniques are generally intended for use with dimensional lumber, and may not account for the more irregular properties of cordwood.

ASTM E2618 specifies that moisture meter electrode reading depth “shall be 1/4 the thickness of the fuel piece or 3/4 in. (19 mm), whichever is greater.” This language is pulled directly from EPA Method 28, a method that uses dimensional Douglas fir lumber. While this standard is appropriate for milled lumber with smooth, flat faces, it may not accurately account for moisture variation in the cross section of cordwood pieces, which, due to their irregular shape, can have a much higher ratio of surface area to volume.

Accurate moisture measurement for dimensional lumber has been studied extensively and is well understood. Research on measurement of cordwood pieces, however, is very limited. Therefore moisture measurement uncertainty cannot be definitively identified as the source of efficiency calculation discrepancy, but it cannot be ruled out. More study on this issue is recommended.

A brief explanation of why over-reported fuel moisture can cause a higher delivered efficiency result as compared for SLM efficiency:

Delivered efficiency calculation accounts for fuel moisture in determining total input. Higher fuel moisture readings mean lower dry fuel weight. Dry fuel weight is directly proportional to total BTU input. Therefore, any overstatement fuel moisture content will cause a proportional understatement of BTU input.

Fuel moisture is not used for determining output. Only heat exchanger load flow rate and temperature differential are used. Therefore total output is fixed with respect to fuel moisture content, and any error therein will not affect that side of the efficiency calculation. Lower input with a fixed output of course means higher efficiency result.

Stack loss method, conversely, accounts for fuel moisture on both sides of the efficiency equation. Input is calculated in the same way as in the delivered efficiency method. However, the output calculation uses that same fuel moisture data in its chemical balance to determine stack flow rate and energy content.

The two moisture terms do not fully cancel in the final efficiency calculation, but output will still scale with respect to moisture content, unlike with delivered efficiency. This dramatically reduces the effect of systemic error in moisture content readings.

Fuel Higher Heating Value

ASTM E2618 specifies that all fuel shall have an assumed BTU content of 8600 BTU/lb. While this may be an acceptable average value, actual BTU content can vary significantly.

Delivered efficiency results are directly proportional to the fuel HHV, so a 5% error in HHV value would translate to a 5% error in delivered efficiency result.

Like moisture content as described above, SLM calculations are significantly less sensitive to fuel HHV. For example, a 5% change to HHV results in less than 1% change in stack loss efficiency result

Appliance Heat Capacity

Another possible source of the discrepancy is assumptions made in calculating the energy stored in the appliance. ASTM E2618 specifies that the heat retained in the body of the appliance, for the purposes of efficiency calculation, is determined by multiplying the weight of the dry appliance, by the heat capacity of steel, by the average temperature of the input and output water.

This assumes that the entire appliance is constructed of steel and that its average temperature is equal to that of the water it contains. Both assumptions can cause an underreporting of delivered efficiency.

Modern appliances are not entirely steel- most notably, they can contain up to several hundred pounds of refractory material. Refractory material has a heat capacity approximately double that of steel. This means that the heat capacity of a given appliance may be substantially higher than the value used by the delivered efficiency calculation.

Compounding the issue is that refractory temperatures can be far, far higher than the temperature of the water. While water in a hydronic heater will not exceed 100C, when a modern downdraft heater is in an on-cycle, its refractory can exceed 800C.

Taken together, these factors mean that energy content stored in the body of the appliance can be substantially underreported. If the appliance is operating at a high temperature at the start of a run, this can cause delivered efficiency to be over-reported. This is because the large amount of “free,” un-accounted energy stored in the appliance will be transferred to the heat exchanger over the course of the run. Conversely, if the appliance starts the run at a low temperature and ends at a high temperature, this stored energy is not accounted for and delivered efficiency would therefore be under reported.

Stack Loss Method Interval Calculations

The stack loss method was not designed for cycling appliances. Its calculations make several assumptions that do not apply to hydronic heaters.

It should be noted that the efficiency discrepancy has been observed for maximum output runs, during which appliances do not cycle, so it is unlikely that these issues with the SLM account for the entirety of the issue. They are, however, a likely contributory factor. These include:

- That fuel moisture is constant until 43 minutes into the test run, and decays exponentially from there. This does not hold for a cycling appliance, for which test fuel moisture will only drop during on cycles. This means that actual fuel moisture (and therefore actual dry weight) will increasingly deviate from assumed moisture content over the course of the run, affecting mass balance and energy loss calculations.
- That combustion is continuous. Stack loss calculation requires a precise determination of stack flow, for which a mass balance based on weight loss and flue gas constituents are used. This breaks down, however, when an appliance is cycled off. SLM calculations are proportional to fuel mass loss for a given interval, so off-cycles are somewhat accounted for, but actual off cycles do not perfectly correspond with observed periods of zero weight loss. In fact, due to extreme changes in draft pressure, weight fluctuations (both up and down) unrelated to actual fuel combustion are frequently recorded during cycling behavior. These fluctuations do not simply “cancel out” as stack conditions would have to be held constant for all noise to be averaged out – when an appliance cycles, stack conditions of course change substantially.