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September 9, 2021

VIA ELECTRONIC MAIL
Rhonda Banks Thompson
Chief, Bureau of Air Quality
2600 Bull Street
Columbia, SC 29201
thompsrb@dhec.sc.gov

Re: New-Indy stack test and request for notification waiver

Dear Ms. Thompson:

This law firm represents New-Indy Catawba LLC. As you know, New-Indy performed a stack test at its facility in Catawba, South Carolina, during the period of June 21-27. The test was performed during the startup period under the construction permit issued by the DHEC for the conversion project, because it was required under the applicable emergency order.[1] However, this time period also coincided with work being performed by a contractor at the facility to demonstrate substantial completion of the conversion project. This meant that the stack testing was performed during a period when the operating conditions were abnormal resulting in very conservative (i.e., high) emissions numbers. Specifically, because of the construction work the mill was being operated at a low kappa, resulting in fibers being "cooked" for an extended period of time, the "cooking liquid" had higher-than-normal sulfidity, the boiler was not running at the normal firing rate, and the boiler was not being fed with the normal ratio of bark and other tree-derived fuel.

The end result is that the stack test performed showed higher emissions than would typically be seen under normal operating conditions after completion of startup.[2] By conducting a re-test with the mill operating in a manner consistent with the conditions on which the permit and proposed permit modification are based (kappa at a level consistent with typical unbleached pulp mills for production of linerboard, typical sulfidity, boiler firing at the typical rate and being fed with typical ratio of bark, etc.), the results will be far more representative of typical operating conditions. Testing under "normal process operating conditions" is what is envisioned for stack testing for compliance purposes. USEPA, Mem., *Issuance of the Clean Air Act National Stack*

---

[1] DHEC, *Order to Correct*, dated May 7, 2021, ¶5.
[2] Further, because the stack test results were artificially high and conservative, the air dispersion model submitted to DHEC on or about August 28, 2021, is similarly conservative.

OFFICES:

COLUMBIA | 930 RICHLAND STREET, COLUMBIA, SC 29201 | 803.252.3300   FAX 803.256.8062
CHARLESTON | 133 RIVER LANDING DRIVE, SUITE 200, CHARLESTON, SC 29492 | 843.619.4426   FAX 843.619.4490

Testing Guidance, dated April 27, 2009. Thus, New-Indy requests DHEC's participation and observation in an additional stack test.

New-Indy anticipates having the mill operating under "normal" conditions during the week of September 27, and respectfully requests that DHEC authorize a stack test to be conducted during the week of September 27 and waive the advance notification time requirement. New-Indy's test plan is attached for review and approval. New-Indy appreciates DHEC's consideration to observe the stack testing for that week.

Thank you for your time and consideration.

Very truly yours,

WILLOUGHBY & HOEFER, P.A.

Randolph R. Lowell

cc: Sara Martinez, Esquire
        James Cobery, Esquire
        Stephanie Blackman, Esquire

Proposal No. 143515

No. 1 and 2 Combination Boilers
Emission Test Plan
New Indy Catawba, LLC
Catawba, South Carolina

Prepared For

NEW INDY CATAWBA, LLC

5300 Cureton Ferry
Catawba, South Carolina 29704

_____
Wayne Roberts
Project Manager
Approved for Transmittal
334-466-5625

_____
Templeton Simpkins
Test Plan Review
Approved for Transmittal
334-466-5627

Prepared By

WESTON SOLUTIONS, INC.

1625 Pumphrey Ave.
Auburn, Alabama 36832-4303
Phone: 334-466-5600 Fax: 334-466-5660

8 September 2021

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Weston Solutions, Inc. (WESTON®) has been contracted by New Indy Catawba, LLC (NIC) to conduct emission testing on the No. 1 and 2 Combination Boilers at the NIC mill in Catawba, South Carolina. The purpose of the testing is to document the emissions from sources identified in Condition No. 5 (Order to Correct Undesirable Level of Air Contaminants) issued by the South Carolina Department of Health and Environmental Control (SC DHEC). Previous testing was conducted during June of 2021 at what was considered normal operating rates. This test program will be conducted with each of the boilers operating at a higher rate.

1.1 TESTING PROGRAM ORGANIZATION

The test program coordinator for NIC is:

> Mr. Dan Mallett
> New Indy Catawba, LLC
> P.O. Box 7
> Catawba, SC 29704
> Tel.: 803-981-8010, Cell: 207-951-6216
> E-mail: *Dan.Mallett@new-indycb.com*

The test program will be performed by Weston Solutions, Inc. (WESTON®). The Project Manager for WESTON is:

> Mr. Wayne Roberts
> Project Manager
> Weston Solutions, Inc.
> 1625 Pumphrey Avenue
> Auburn, Alabama 36832
> Tel.: 334-466-5625
> Fax: 334-466-5660
> E-mail: *Wayne.Roberts@westonsolutions.com*

1.2 SUMMARY OF TEST PROGRAM

Table 1-1 summarizes the testing program.

TABLE 1-1
SUMMARY OF EMISSIONS TESTING PROGRAM

Emission Source/ Sample Location	Parameter Measured	Test Method/ Data Source	Operating Scenarios/ Additional Information
No. 1 Combination Boiler (ID No. 2605) NCG and SOG gases	Stack Gas Oxygen/Carbon Dioxide	EPA Method 3A	NCG and SOG gases routed to the No. 1 Combination Boiler Target operating rate of 245,000 lb/hr
	Stack Gas Sulfur Dioxide (SO_2)	EPA Method 6C	
	Stack Gas Moisture and Temperature	EPA Method 4	
	Stack Gas Volumetric Flow	EPA Method 2	
No. 1 Combination Boiler (ID No. 2605) NCG gases only	Stack Gas Oxygen/Carbon Dioxide	EPA Method 3A	NCG gases only routed to the No. 1 Combination Boiler Target operating rate of 245,000 lb/hr
	Stack Gas Sulfur Dioxide (SO_2)	EPA Method 6C	
	Stack Gas Moisture and Temperature	EPA Method 4	
	Stack Gas Volumetric Flow	EPA Method 2	
No. 2 Combination Boiler (ID No. 3705) NCG and SOG gases	Stack Gas Oxygen/Carbon Dioxide	EPA Method 3A	NCG and SOG gases routed to the No. 2 Combination Boiler Target operating rate of 280,000 lb/hr
	Stack Gas Sulfur Dioxide (SO_2)	EPA Method 6C	
	Stack Gas Moisture and Temperature	EPA Method 4	
	Stack Gas Volumetric Flow	EPA Method 2	
No. 2 Combination Boiler (ID No. 3705) NCG gases	Stack Gas Oxygen/Carbon Dioxide	EPA Method 3A	NCG gases only routed to the No. 2 Combination Boiler Target operating rate of 280,000 lb/hr
	Stack Gas Sulfur Dioxide (SO_2)	EPA Method 6C	
	Stack Gas Moisture and Temperature	EPA Method 4	
	Stack Gas Volumetric Flow	EPA Method 2	

1.3 ANTICIPATED DATES

Table 1-2 presents the testing schedule.

TABLE 1-2
TESTING SCHEDULE

Date	Task
7 September 2021	Test Plan Submittal
28 September – 1 October 2021	Conduct testing on all sources listed in Table 1-1
25 October 2021	Submit Test Results to NIC

1.4 APPLICABLE TEST PARAMETERS

The sulfur dioxide (SO2) testing will consist of three one-hour test runs per condition.

TABLE 1-3
TEST PARAMETERS

Source	Test Parameters				
	SO$_2$	O$_2$/CO$_2$	Moisture	Temp.	VFR
No. 1 Combination Boiler – 2 Conditions	X	X	X	X	X
No. 2 Combination Boiler – 2 Conditions	X	X	X	X	X

1.5 TECHNICAL APPROACH

WESTON will provide professional services, equipment, instrumentation, laboratory services, supplies, and expenses to perform the scope of work outlined in Paragraph 1.2. The emission-testing program shall be conducted in accordance with the most current revision of the following EPA Reference Methods and Performance Specifications.

Parameter	Abbreviation	Test Method[a]	Notes/Remarks
Volumetric Flow Rate	VFR	1,2,4	
Gas Composition	O$_2$/CO$_2$	3A	Instrumental Analysis
Sulfur Dioxide	SO$_2$	6C	Instrumental Analysis

[a]Methods are EPA Reference Methods unless otherwise noted.

Section 2 describes the equipment to be tested. Section 3 describes the sampling location. Sections 4 and 5 describe the sampling and analytical methods and internal quality assurance/quality control activities. Section 6 includes example data sheets, and Section 7 includes a representative test report outline.

This section contains a brief description of the processes, typical process air flow schematics, and the process conditions and controls to be in force during the emissions testing.

2.1 NO. 1 COMBINATION BOILER

The No. 1 Combination Boiler is a multi-fuel boiler with a steam generation capacity of 275,000 pounds/hour. The steam is used to operate processes in the integrated pulp and paper mill as well as turbine generators, which supply approximately 100% of the electrical energy needed for the mill. The primary fuel is wood (biomass). The No. 1 Combination Boiler uses a multi-clone followed by a dry electrostatic precipitator (ESP) for control of particulate matter (PM) emissions and is equipped with a continuous opacity monitor (COMS). Figure 2-1 presents a schematic of the No. 1 Combination Boiler.
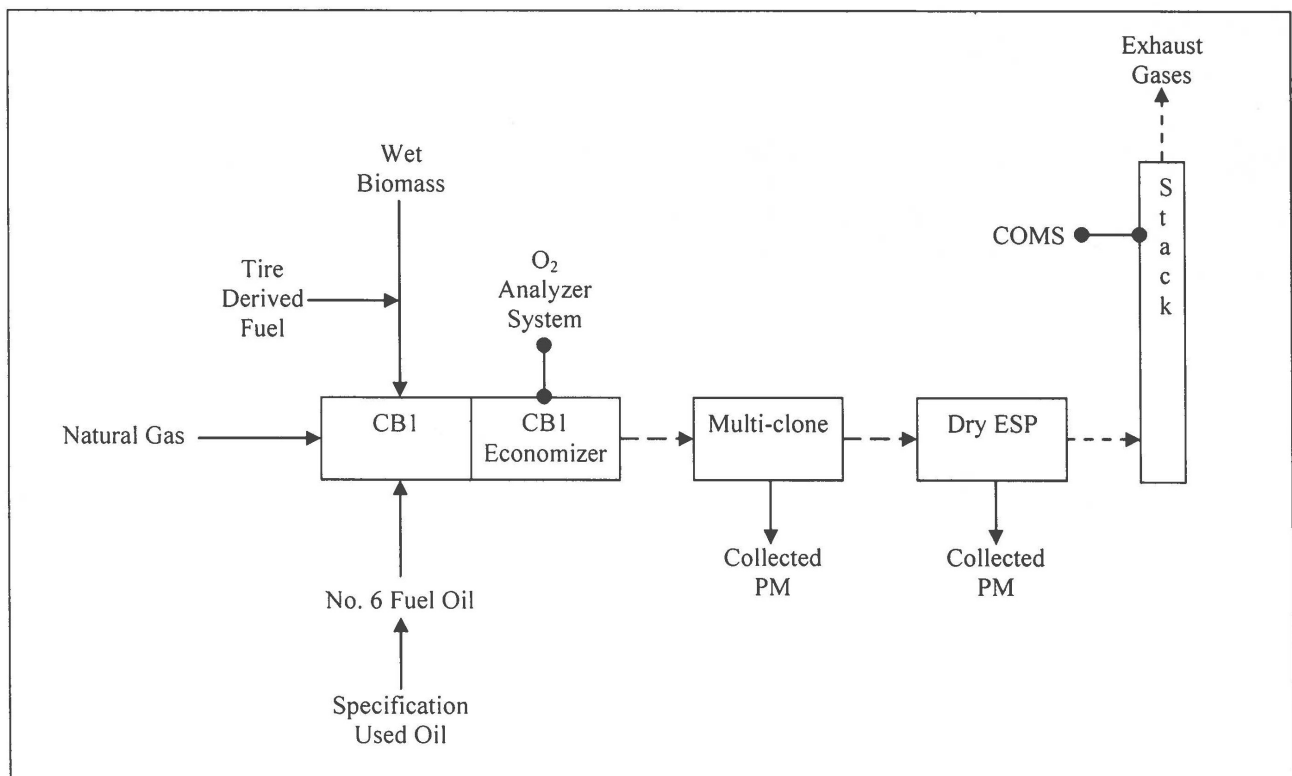
**FIGURE 2-1 PROCESS SCHEMATIC –
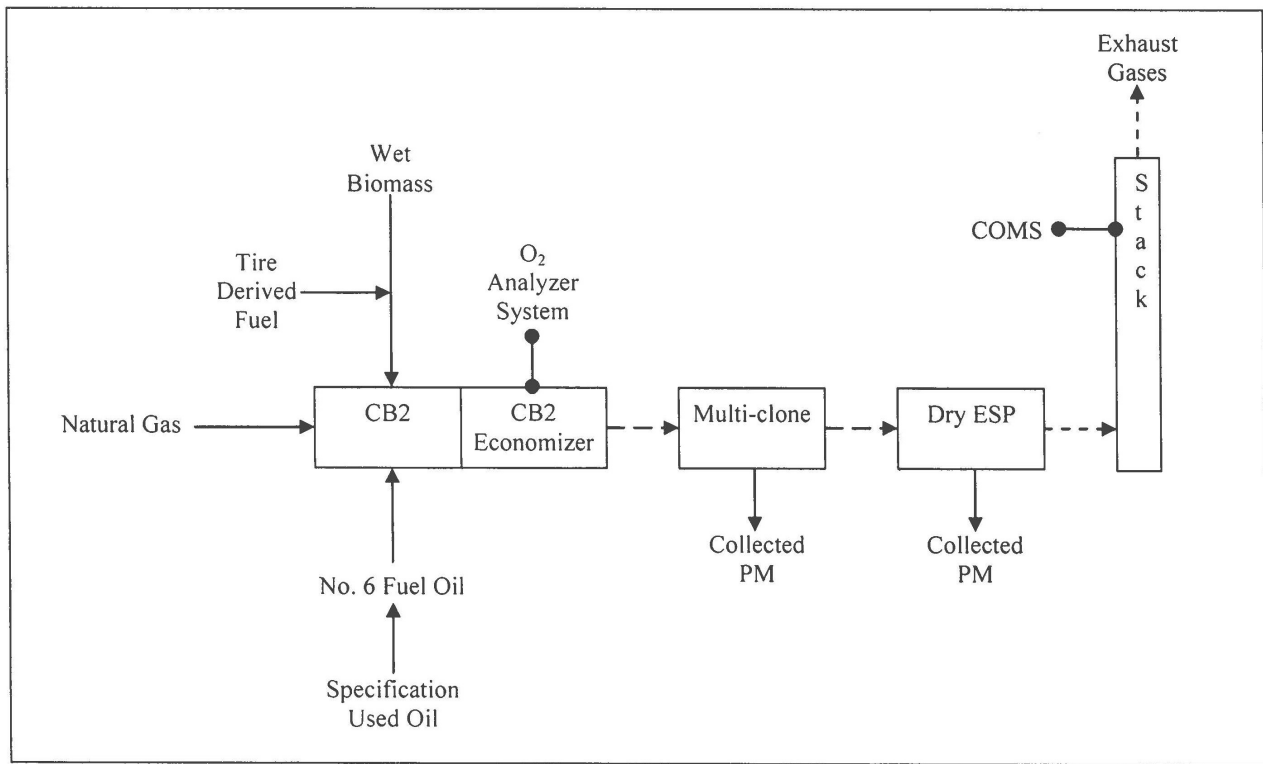NO. 1 COMBINATION BOILER**

2.2 NO. 2 COMBINATION BOILER

The No. 2 Combination Boiler is a multi-fuel boiler with a steam generation capacity of 500,000 pounds/hour. The steam is used to operate processes in the integrated pulp and paper mill as well as turbine generators, which supply approximately 100% of the electrical energy needed for the mill. The primary fuel is wood (biomass). The No. 2 Combination Boiler uses a multi-clone followed by a dry ESP for control of PM emissions and is equipped with a COMS. Figure 2-2 presents a schematic of the No. 2 Combination Boiler.

**FIGURE 2-2 PROCESS SCHEMATIC –
NO. 2 COMBINATION BOILER**

3.1 NO. 1 COMBINATION BOILER

Figure 3-1 is a diagram of the No. 1 Combination Boiler Stack. There are four, 4-inch test ports oriented at 90˚ to each other. The stack has a circular cross-section with an inside diameter of approximately 120 inches. The test ports are 3.2 diameters downstream and 4.5 diameters upstream of the nearest flow disturbances. A total of 16 traverse points will be sampled, four through each test port.

3.2 NO. 2 COMBINATION BOILER

Figure 3-2 is a diagram of the No. 2 Combination Boiler Stack. There are four, 4-inch test ports oriented at 90˚ to each other. The stack has a circular cross-section with an inside diameter of approximately 120 inches. The test ports are 3.2 diameters downstream and 4.5 diameters upstream of the nearest flow disturbances. A total of 16 traverse points will be sampled, four through each test port.

Stack ID = 120"

4.5 diameters

A total of 16 traverse points will be sampled 4 through each test port

4 Test Ports

3.2 diameters

Gas Flow

All dimensions will be verified prior to testing

Scrubber Separator
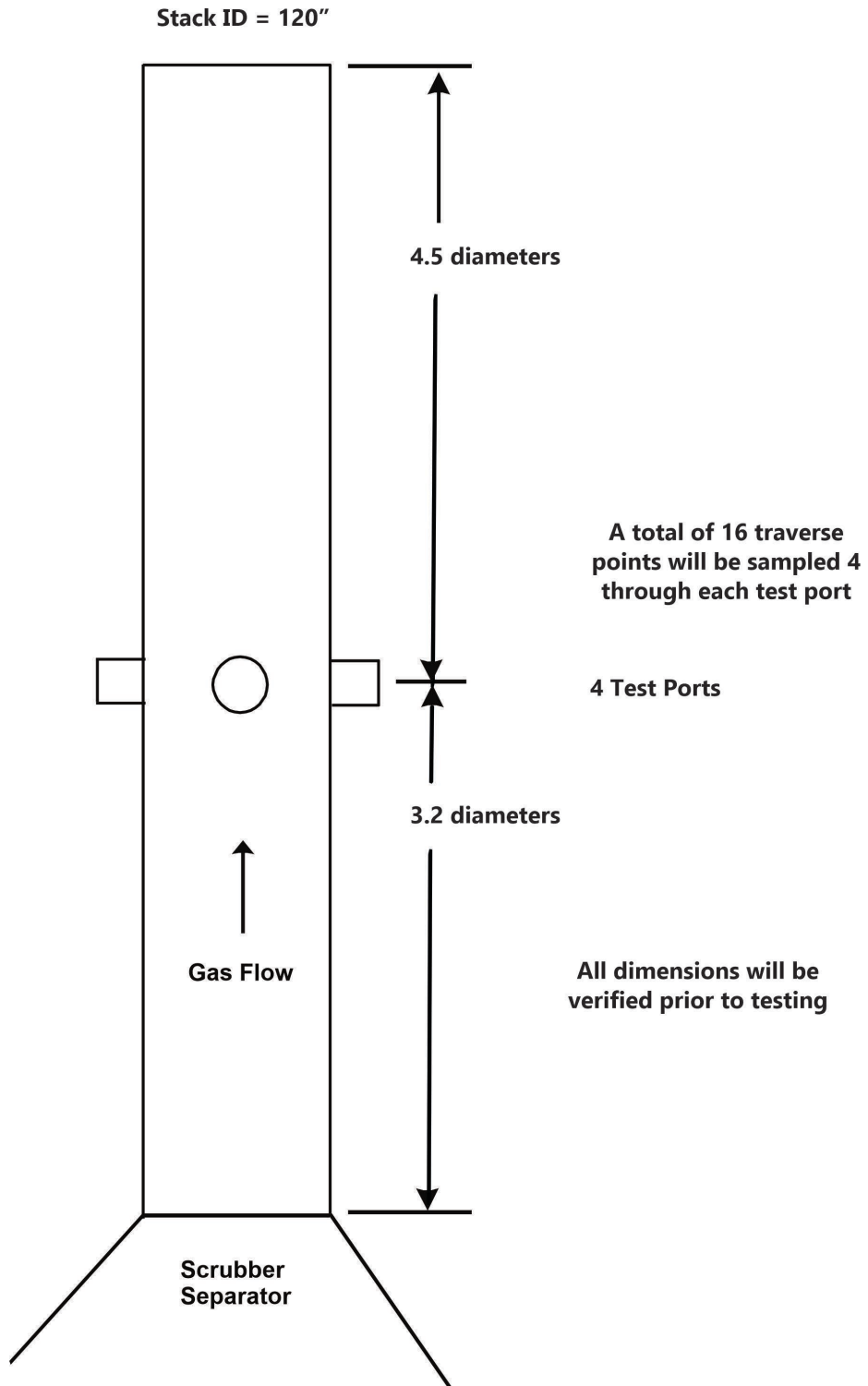
FIGURE 3-1 NO. 1 COMBINATION BOILER STACK

Stack ID = 120"

4.5 diameters

A total of 16 traverse
points will be sampled 4
through each test port

4 Test Ports

3.2 diameters

Gas Flow

All dimensions will be
verified prior to testing

Scrubber
Separator
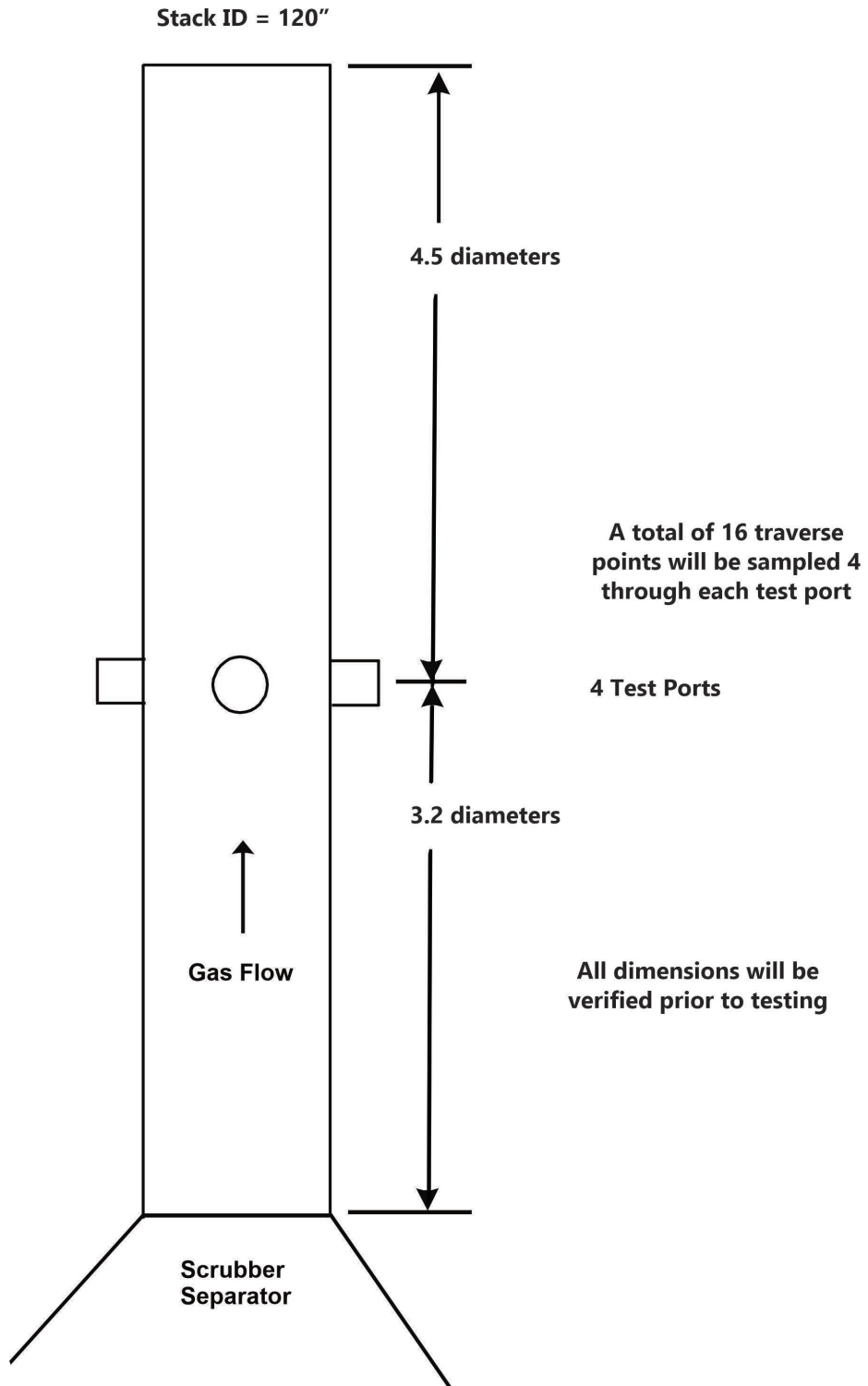
FIGURE 3-2 NO. 2 COMBINATION BOILER STACK

4.1 TEST METHODS

4.1.1 Volumetric Flow Rate

Mass emission rates are calculated by multiplying measured target analyte concentrations by calculated volumetric flow rates. Volumetric flow rates are determined using measurement data obtained by EPA Reference Methods 1-4.

The ductwork is measured at the sample location to the nearest 0.25 inch using a steel tape measure. Traverse points are selected in accordance with EPA Reference Method 1 on the basis of ductwork dimensions, geometry, and upstream and downstream disturbances. When a sample location does not meet EPA Reference Method 1 criteria, the maximum recommended number of traverse points are used.

Gas Velocity

The velocity of the gas stream is measured in accordance with EPA Reference Method 2 by reading the instantaneous velocity pressure at each traverse point using an "S" type pitot tube and a leveled, inclined manometer with a scale of 0 to 10 inches. In rare cases of highly negative pressure sources, a Magnahelic gauge with scales of 0 to 5 or 0 to 25 inches of water may be used in place of an inclined manometer. The stack pressure is calculated from the measured static pressure of the stack and the ambient barometric pressure corrected for elevation when applicable. The static pressure is measured by using the static side of the pitot tube, and the barometric pressure is measured using a calibrated aneroid barometer. The stack temperature is measured at each traverse point with a calibrated thermocouple and pyrometer.

Gas Composition and Moisture Content

The composition of the gas stream will be measured in accordance with EPA Reference Method 3 and/or 3A using an Orsat analyzer or Paramagnetic O_2 and Infrared CO_2 analyzers using Protcol-1 gases. Gas composition determinations are conducted using integrated sampling techniques.

Integrated samples are collected by withdrawing a sample from the M5 sampling train into a Tedlar sample bag.

The moisture content of the gas stream is determined according to EPA Reference Method 4, by collecting an integrated sample of source gas from a single point on the gas stream. At the conclusion of each run the volume of condensed moisture collected in the impingers of the sampling train is measured and used to evaluate the moisture content of the gas stream.

When sources are saturated or contain entrained water droplets, moisture content is also determined using the temperature measured at each traverse point and psychometric chart values corrected for stack pressure or by use of saturation vapor pressure tables. In these conditions, the lower moisture of the measured and saturation-based values is used for volumetric flow rate calculations.

The molecular weight of the gas stream is calculated using the determined moisture, oxygen, and carbon dioxide concentrations. The balance of the gas stream is assumed to be nitrogen. The volumetric flow is then calculated at stack and standard conditions using the calculated molecular weight, the measured stack temperature, and measured velocity, stack and barometric pressures. Standard conditions are 68 °F and 29.92 inches of mercury and 0% moisture.

Data Acquisition and Reporting

Data are recorded at the time of collection on preprinted data sheets. Calculations are performed (where possible) with preprogrammed calculators or spreadsheet software.

Quality Control

Quality control procedures for volumetric flow measurements involve leak checks of pitot tubes, pitot tube lines and manometers; calibration of gas metering systems; and periodic calibration checks of thermocouples and pyrometers. Magnahelics are verified against inclined manometers prior to each use.

Data transfers are minimized. Data sheets are checked for completeness and accuracy. Calculations are verified by a second person.

4.1.2 Gas Composition (Instrumental)

Oxygen (O_2) and carbon dioxide (CO_2) testing is conducted in accordance with EPA Reference Method 3A.

Sampling Equipment and Procedures

Figure 4-1 illustrates the sampling system. The sample is withdrawn continuously from the source through a heated probe, filter, and sample line to a sample conditioner which removes moisture from the gas stream. The sample is then transported to a Paramagnetic O_2 analyzer and an Infrared CO_2 analyzer.
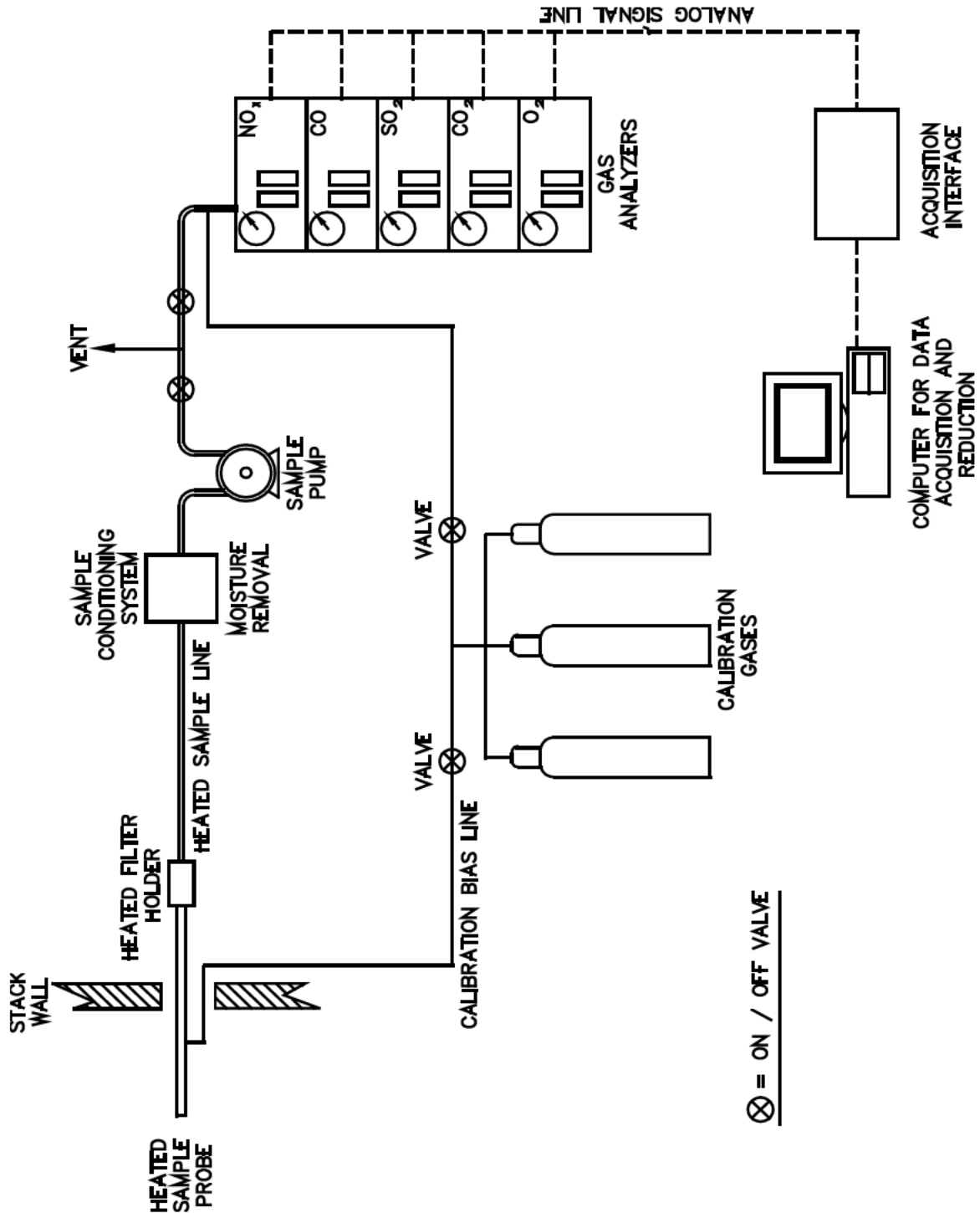
FIGURE 4-1 CONTINUOUS EMISSION MONITORING SYSTEM

Sample Analysis

The O_2 analyzer uses an electrochemical cell or paramagnetic detector, and the CO_2 analyzer uses a non-dispersive infra-red (NDIR) detector to produce an electrical signal which is linearly proportional to the O_2 and CO_2 concentration, respectively.

Data Acquisition and Reduction

Data are acquired electronically using a computer with software designed by WESTON for EPA Reference Method 3A analysis. This system generates a calibration curve, converts electronic signals into concentrations, and provides one-minute averages during the sample run and an average concentration over the duration of the sample run.

Quality Control

At the time of analysis, O_2 and CO_2 in nitrogen calibration gases certified according to EPA Protocol-1, are used to calibrate the analyzer and to determine a bias correction factor for the entire system bias in accordance with EPA Reference Method 3A. The calibration gases are introduced directly to the analyzer to generate the calibration curve. A zero gas and an upscale calibration gas are introduced at the probe and recovered through the sampling and analytical system. A bias correction factor is calculated using the ratio of the concentration measured from the sampling system and concentration measured directly at the analyzer. Sample run averages are corrected for system bias results.

4.1.3 Sulfur Dioxide (Instrumental)

Sulfur dioxide (SO_2) testing is conducted in accordance with EPA Reference Method 6C.

Sampling Equipment and Procedures

Figure 4-1 illustrates the sampling system. The sample is withdrawn from the source through a heated probe, heated filter, and heated sample line to a sample conditioner which removes moisture from the gas stream. The sample is then transported to the analyzer through a Teflon® line.

Sample Analysis

The analyzer measures, at two discrete wavelengths, the absorption of ultraviolet radiation by the gas sample. The concentration of the components absorbing the light are then determined from relationships developed through application of the ideal gas law in concert with the laws of Bouguer, Beer, and Lambert.

Data Acquisition and Reduction

Data are acquired electronically using a computer with software designed by WESTON for EPA Reference Method 6C analysis. This system generates a calibration curve, converts electronic signals into concentrations, and provides bias-corrected averages.

Quality Control

At the time of analysis, SO_2 in nitrogen calibration gases (certified according to EPA Protocol-1) are used to calibrate the analyzer and to determine a bias correction factor for the entire system in accordance with EPA Reference Method 6C.

Calibration gases are introduced directly to the analyzer to generate the calibration curve. Zero level and upscale calibration gases are introduced at the probe and recovered through the sampling and analytical system. A bias correction factor is then calculated using the ratio of the measured concentration of the bias gas introduced through the sampling system and the measured concentration of the bias gas introduced directly to the analyzer. Run averages are adjusted for this bias correction factor.

5.1 QA/QC PROCEDURES

The performance tests will incorporate the appropriate QA/QC procedures specified in EPA Methods 1, 2, 3A, 4, and 6C. The integrity of the sample collection will be verified through procedures as specified in the EPA test methods. Sample custody procedures will be followed as described in Section 6.5.

Throughout the entire project, a high level of quality control will be maintained. The WESTON test personnel are experienced in the use of the instrumentation, the procedures, and the quality control requirements. The following paragraphs briefly summarize the quality control measures associated with the project.

Quality assurance objectives for precision and accuracy are presented in Table 5-1.

TABLE 5-1
QA OBJECTIVE FOR PRECISION AND ACCURACY

Critical Measurement	Method	Detection Limit
Volumetric Flow Rate	EPA 1, 2	100 acfm
Oxygen/Carbon Dioxide	EPA 3A	0.1%
Moisture	EPA 4	0.1%
Sulfur Dioxide	EPA 6C	<2% of span

5.2 DATA QUALITY OBJECTIVES

Quality assurance procedures are designed to assess and document data accuracy, precision, and completeness. Accuracy is a measure of agreement between a measurement and a reference or standard value. Precision is a measure of mutual agreement of replicate measurements. Completeness is a measure of the amount of valid data collected compared to the amount that was expected under correct operating conditions. The pre-evaluation quality objectives are: completeness of 100%; accuracy and precision are described in Section 5.3 and Section 5.4.

Precision will be measured using the variation among replicate sample runs and analyses. Accuracy will be measured relative to the standard and permit requirements, control standards or audit samples, if available.

5.3 INTERNAL QA PROGRAM

QA Procedures for sampling and analysis will be conducted as required by method procedures. Test data precision will be measured using replicate sample runs and analysis. Three 1-hour test runs will be conducted for each pollutant.

Equipment will be calibrated prior to use at the site, and calibration will be checked again upon return to the Weston facility in Auburn, Alabama. The meter box calibration and calibration check data will be included in the test report.

The Type S pitot tubes used with the velocity probe at the stack locations will be calibrated prior to use in the emission testing program according to the procedures of EPA Method 2.

Leak checks of each sampling system and the pitot tube lines will be performed before and after each test run. Leak check results will be included in the test report.

All sampling system components that contact the samples and all equipment used in sampling and recovery operations will be cleaned according to the procedures described in EPA Methods. All sampling equipment, media, and reagents will be packaged and handled to prevent contamination during transit to the test sites and preparation for emission tests.

Following sample collection, all samples will be given a unique alphanumeric sample identification number. All samples will be recorded by number in the project sample log. Sample labels will be completed and affixed to the sample container.

5.4 SAMPLE IDENTIFICATION AND CHAIN OF CUSTODY

The technician managing the test is responsible to ensure that all samples are accounted for and that proper chain-of-custody procedures are followed. After collecting and recovering the samples, the stack testing lead contact will apply sample labels, maintain inventory records of all the samples taken, and ensure that chain of custody forms are completed if sample possession is changed.

FIGURE 6-1 METHOD 1

Determination of Stack Gas Velocity - Method 2

Client _____ Operator _____ Pitot Coeff (Cp) [____]

Location/Plant _____ Date _____ Stack Area, ft² (As) [____]

Source _____ W.O. Number _____ Pitot Tube/Thermo ID _____

				Leak Check good? Y / N		Leak Check good? Y / N		Leak Check good? Y / N	
Run Number									
Time									
Barometric Press, in Hg (Pb)									
Static Press, in H₂0 (Pstatic)									
Source Moisture, % (BWS)									
O₂, %									
CO₂, %									

Cyclonic Flow Determination		Traverse Location		Delta P	Source Temp, F° (Ts)	Delta P	Source Temp, F° (Ts)	Delta P	Source Temp, F° (Ts)
Delta P at 0°	Angle yeilding zero Delta P	Port	Point						

Avg Angle		Avg Delta P & Temp							
		Avg SqrtDelta P							
	Average gas stream velocity, ft/sec.								
	Vol. flow rate @ actual conditions, wacf/min								
	Vol. flow rate at standard conditions, dscf/min								

$MWd = (0.32 * O_2) + (0.44 * CO_2) + (0.28 * (100 - (CO_2 - O_2)))$

$MWs = (MWd * (1 - (BWS/100))) + (18 * (BWS/100))$

$Tsa = Ts + 460$

$Ps = Pb + (Pstatic/13.6)$

$Vs = 85.49 * Cp * avg \sqrt{DeltaP} * \sqrt{Tsa/(Ps * MWs)}$

$Qs(act) = 60 * Vs * As$

$Qs(std) = 17.64 * (1 - (BWS/100)) * (Ps/Tsa) * Qs(act)$

Barometric Press, in. Hg (Pb) at Port Elevation

Comments _____
Method 2.xls

where:
MWd = Dry molecular weight source gas, lb/lb-mole.
MWs = Wet molecular weight source gas, lb/lb-mole.
Tsa = Source Temperature, absolute(oR)
Ps = Absolute stack static pressure, inches Hg.
Vs = Average gas stream velocity, ft/sec.
Qs(act) = Volumetric flow rate of wet stack gas at actual, wacf/min
Qs(std) = Volumetric flow rate of dry stack gas at standard conditions, dscf/min

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FIGURE 6-2 METHOD 2

Determination of Moisture Content in Stack Gases - Method 4

Client _____
Location/Plant _____ Operator _____ Date _____
Source _____ Meter Box ID _____ Meter Box Y _____
W.O. Number _____ Temperature °C or °F [____] Sample Volume, ft³ or L [____]

Run Number		Sample Time (min)	Meter Volume, Vm	Meter Temp (or ambient temp for rotometer)		Meter Press, Delta H (in H₂O)	Impinger Volume, ml	Silica Gel Weight, g	Corrected Volume, Vm(std)	Leak Rate Check
				Inlet	Outlet					Initial
	End Test									Final
Baro Press., Pb (in Hg)	Start Test								Moisture Volume, Vw(std)	Percent Moisture (%), BWS
	Avg. or Total									

Run Number		Sample Time (min)	Meter Volume, Vm	Meter Temp (or ambient temp for rotometer)		Meter Press, Delta H (in H₂O)	Impinger Volume, ml	Silica Gel Weight, g	Corrected Volume, Vm(std)	Leak Rate Check
				Inlet	Outlet					Initial
	End Test									Final
Baro Press., Pb (in Hg)	Start Test								Moisture Volume, Vw(std)	Percent Moisture (%), BWS
	Avg. or Total									

Run Number		Sample Time (min)	Meter Volume, Vm	Meter Temp (or ambient temp for rotometer)		Meter Press, Delta H (in H₂O)	Impinger Volume, ml	Silica Gel Weight, g	Corrected Volume, Vm(std)	Leak Rate Check
				Inlet	Outlet					Initial
	End Test									Final
Baro Press., Pb (in Hg)	Start Test								Moisture Volume, Vw(std)	Percent Moisture (%), BWS
	Avg. or Total									

$$Vm(std) = \frac{17.64 * Y * Vm * (Pb + (deltaH/13.6))}{(Tm + 460)}$$

if Tm is C° than Tm = (Tmc * 1.8) + 32

if Vm is liters than Vm = Vml * 28.32

$$Vw(std) = (0.04707 * Vwc) + (0.04715 * Wwsg)$$

$$BWS = \left(\frac{Vw(std)}{Vw(std) + Vm(std)}\right) * 100$$

WHERE:
Vm(std)= Sample volume corrected to standard temp and pressure, scf or L

Vm= Actual sample volume, calculated, scf
Vml= Actual sample volume, calculated, Liters
Y= Dry gas meter calibration factor.
Pb= Barometric pressure, in. Hg
delta H= Meter pressure, in H2O
Tm= Average temperature of meter (DGM is used) or rotomter, degrees °F
Tmc= Average temperature of meter (DGM is used) or rotomter, degrees °C
Vw(std)= Volume of water vapor at standard conditions, scf or L
Vwc= Volume of water condensed, mL
Wwsg= Weight of Silica Gel, g
Bws= Water vapor in gas stream, percent

Use either ft³ or liters in calculations. DO NOT MIX CUBIC FEET AND LITERS IN ANY CALCULATION.
Barometric Press, in. Hg (Pb) at Port Elevation

Method 4

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FIGURE 6-3 METHOD 4 DATA SHEET

TABLE 7-1
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</table>

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