EMISSIONS TEST REPORT

For:

EtO Scrubber System Destruction Removal Efficiency Performance Test

BCP Ingredients
299 Extension
St Verona, MO 65769

Prepared For:
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Prepared By:

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April 6, 2026

LCH CONSULTING ASSOCIATES
CERTIFICATION OF ACCURACY AND COMPLETION

I, Mr. Christopher Heilner, as the representative of LCH Consulting Associates, believe that to the best of my knowledge the information contained herein is accurate, error-free, legible, complete, and representative of state and federal regulations applicable to this source to be tested. If the information herein is found to be inaccurate or incomplete by any participant, the protocol will be reviewed, and all reasonable measures will be taken to make necessary changes.

Signed: L. Christopher Heilner Date: April 6, 2026

Name: L. Christopher Heilner
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Contents

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SOURCE SUMMARY SHEET

BCP Ingredients, Verona, MO

Pollutant of Concern:	EtO (ethylene oxide)
Unit Tested:	EtO Scrubber System (two inlets, one outlet)
Control Methods:	Two acid/gas ethylene glycol scrubbers in series.
Test Purpose:	Initial test to determine the performance of complete scrubber system.
Test Summary:	Six sixty-minute test runs simultaneously at two inlets and one outlet of the Scrubber System to determine DRE% in terms of lbs/hr.
Test Conditions:	"Worst Case" operating conditions as determined by BCP will be ran for each test. "Worst Case" process events included tank venting (V25, V10, V8) and railcar unloading.
Applicable Regulation(s):	Missouri Department of Natural Resources Permit No. OP2019-25 40CFR63 Subpart A General Provisions
Reference Test Methods:	40CFR60 Appendix A: Method 1 – traverse point locations Method 2 – volumetric flow rate determination Method 3 – molecular weight determination OTM-47 – Measurement of Ethylene Oxide Emissions from Stationary Sources by Cavity Ring-Down Spectroscopy Method 18 – Determination of Ethylene Oxide by Gas Chromatography Method 205 – Gas Dilution Calibration
EtO Analytical Device:	Picarro Cavity Ring-Down Spectroscopy (CRDS) Gas Chromatography Flame Ionization Detection (GCFID) Gas Chromatography Photo Ionization Detection (GCPID)

Test Schedule:

DAY	DATE	Schedule
1	2/9/26	Safety, set up, preliminary testing
2	2/10/26	Set up, preliminary testing, ductwork modification to accommodate probes
3	2/11/26	Initial QA/QC Conduct 6 one-hour runs
4	2/12/26	Closeout meeting, final QA/QC, leave site

INTRODUCTION

BCP Ingredients (BCP) of Verona, Missouri contracted Picarro in conjunction with LCH Consulting to conduct performance testing on its recently modified scrubber system on February 11, 2026. BCP is a human nutrition and animal supplement manufacturer that makes choline and uses ethylene oxide (EtO) in its process.

The scrubber is designed to treat two distinct inlet streams. The first inlet stream is generated by plant processes that involve chemical reactions and wastewater tank vents. The second inlet stream is generated by processes that exclusively handle ethylene oxide (EtO), such as the EtO railcar unloading and EtO repackaging.

The test was performed as per the test plan dated November 17, 2025, and found in Attachment J. There were no deviations to the test plan. USEPA Method 18 was used at both scrubber inlet locations and OTM-47 was used at the scrubber outlet.

The procedures and operational conditions for testing are discussed below.

1.0 Ethylene Oxide Destruction Removal Testing

Ethylene oxide destruction removal efficiency was determined at the Scrubbers at BCP of Verona, Missouri. Ethylene oxide concentration and volumetric flow was determined at both inlets and the outlet of the scrubbers and reported in percentage ethylene oxide destroyed in terms of pounds per hour. EPA methods 1,2,3,18, 205 and OTM47 were used to determine pounds per hour of ethylene oxide introduced into each scrubber and pounds per hour emitted by each scrubber. Destruction removal efficiency was calculated by subtracting the outlet emissions from inlet. Emissions and dividing by the inlet emissions. The following equation was used,

$$(DRE\% = (Inlets\,\frac{lbs}{hr} - Outlet\,\frac{lbs}{hr})/Inlets\,\frac{lbs}{hr}$$

The operational processes during testing are found in Attachment D.[1]

The results of the test are summarized in table 1 found below.

[1] Six total runs were performed on February 11, 2026. Runs 3, 4 and 5 were selected as representative of Verona operations. The first two runs involved calibration, and the last run was completed after the EtO from the first inlet stream had already been mostly exhausted.

Table 1 – Summary of Results

BCP Ingredients, Verona, MO LCH Project No. Picarro-P2026 Scrubber Destruction Removal Efficiency Calculations					
SYMBOL	**DESCRIPTION**				
		3	4	5	**Avg.**
	Test date	2/11/26	2/11/26	2/11/26	-
	Test time start	2:40:00 PM	5:20:00 PM	7:30:00 PM	-
	Test time stop	3:40:00 PM	6:20:00 PM	8:30:00 PM	-
	Inlet 1				
Bws	Moisture content of the gas stream, %	3.5	2.2	2.2	**2.64**
Qsd	Stack gas flow, dscfm	89	79	97	**88.33**
ETO wet	ETO concentration, ppmv wet	39.6	1,441.6	44.7	**508.62**
ETO dry	ETO concentration, ppmv dry	41.0	1,474.5	45.7	**520.39**
Qs	ETO emission rate, lb/hr	0.0	0.8	0.0	**0.285**
	Inlet 2				
Bws	Moisture content of the gas stream, %	2.6	3.5	3.5	**3.18**
Qsd	Stack gas flow, dscfm	98	65	67	**76.67**
ETO wet	ETO concentration, ppmv wet	12,951.9	11,889.6	9,286.7	**11376.07**
ETO dry	ETO concentration, ppmv dry	13,303.1	12,314.5	9,618.5	**11745.37**
Qs	ETO emission rate, lb/hr	8.9	5.5	4.4	**6.285**
	Scrubber Outlet				
Bws	Moisture content of the gas stream, %	1.3	1.3	1.2	**1.26**
Qsd	Stack gas flow, dscfm	190	219	191	**200.00**
ETO wet	ETO concentration, ppmv wet	2.80	3.51	0.78	**2.36**
ETO dry	ETO concentration, ppmv dry	2.84	3.55	0.84	**2.410**
Qs	ETO emission rate, lb/hr	0.00	0.01	0.00	**0.003**
	ETO DRE				
DRE	Destruction removal efficiency, % by wt.	**99.96**	**99.92**	**99.98**	**99.95**

[2]

[2] Test runs 1 and 2 were used to calibrate the operational processes. Test Run 6 was performed after EtO was exhausted from the CBT process and thus not representative.

2.0 EPA Reference Test Methods

2.1 Method 1: Velocity Traverse Point Determination

Two sample ports exist at each sample location meeting the minimum requirements set forth in EPA Method 1. A maximum of 16 traverse points was used to determine average stack gas velocity. The traverse points were assigned as per USEPA Method 1 The absence of cyclonic flow will be determined using an S-type pitot prior to testing. An average Yaw angle of 20̊ or less was found and all three sources are considered non-cyclonic flow. This data is available in Attachment H.

2.2 Method 2: Stack gas Velocity and Volumetric Flow

Velocity (differential pressure and temperature) measurements were taken simultaneously to each pollutant run. A standard or S-type pitot and K-type thermocouple and an oil-filled inclined manometer of appropriate range was used for data collection during testing. An initial velocity traverse was performed, and the pitots were placed at a point that best represents the average pressure drop throughout the duct for continuous monitoring during each run. An instrument with data logging capabilities recorded pressure drop and temperature at 1-minute intervals throughout each outlet run. Outlet differential pressure and temperature is available in Attachment D. Inlet differential pressure and temperature readings are available in Attachment D. All flow calculations are available in Attachment G.

2.3 Method 3/3A: Molecular Weight Determination

Sample gas from the outlet was routed through a thermoelectric chiller and introduced to a paramagnetic oxygen analyzer and an infrared carbon dioxide analyzer. EPA Protocol 1 gases were used to perform the pretest calibration error test and the posttest drift and bias tests. Additionally, an integrated Tedlar bag was collected at the inlets of the scrubber system for subsequent analysis through the oxygen and carbon dioxide analyzers. The 3A calibration error data is available in Attachment B, the bias and drift data is available in Attachment C.

2.4 Method 4: Moisture Content

Due to high ethylene oxide concentrations and low flow of the inlets, an approximation method using stoichiometric calculations was utilized. Inlets were considered saturated and the moisture content was reported from the psychometric chart available in Attachment I.

Picarro CRDS real-time moisture measurements were reported for the outlet location. This information is available in Attachment D and G.

2.5 OTM47

Ethylene oxide outlet concentrations were determined using a Picarro Cavity Ring-Down Spectroscopy (CRDS) analyzer. Measurements were generated via CRDS analysis using specific wavelengths of interest in the infrared (IR) spectroscopic region. The analyzer and sample manifold was provided by Picarro. The quality assurance (QA) and quality control (QC) requirements of OTM-47 will ensure the data generated by this method is of known quality. The OTM-47 QA/QC data is available in Attachment F. Additionally, calibration error, bias and drift was calculated before and every run and is available in Attachments B and C. The raw CRDS data is available in attachment D.

2.5.1 Calibration Span and Gases

The calibration span upper limit will be set by the choice of high-level calibration gas. No valid run average concentration may exceed the calibration span. To the extent practical, the measured emissions will be between 20 to 100 percent of the selected calibration span.

The calibration gases should be the primary target analyte at a known concentration and produced and certified in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards," May 2012 or most recently updated. The tests for analyzer calibration error, drift, and system bias require the use of calibration prepared according to this protocol, if available. The following certified calibration gas standards are proposed.

Analyte	Balance Gas	Certified Concentration (ppm)	Analytical Uncertainty	Expiration Date
Ethylene Oxide	Nitrogen	1.19	10.0%	8/27/26
Ethylene Oxide	Nitrogen	2.4	10%	9/2/26
Ethylene Oxide	Nitrogen	4.9	10%	8/27/26
Ethylene Oxide	Nitrogen	5,500	2%	1/26/28
Ethylene Oxide	Nitrogen	25,000	2.0%	1/26/28

The manufacturer's certification of the calibration gases and consumable gases used in the testing are included in Attachment I.

2.5.2 Sample System

The CRDS analyzer sample delivery system consisted of a stainless steel ¼" diameter probe connected to a Teflon ¼" diameter sample line. The sample line was connected to the sample

manifold to deliver a consistent sample to the CRDS analyzer. All components of the sample system will be held above the dewpoint of the sample gas and heated to 250°F.

Prior to the start of testing a stratification test was performed. Three points along the diameter of the duct were sampled (located 16.7%, 50.0% and 83.3% of diameter) for a minimum of twice the system response time. The stratification data is available in Attachment H. All three sources were found to be non-stratified and single point sampling was employed.

The system response time (RT) was determined by observing the time required to achieve 95% stable readings for both low-level and upscale calibration gases. The longer interval of the two gas responses was the system response time. This data is available in Attachment H.

If each of the readings from the three sampling points agree to the mean concentration within 5% or ±10ppb$_v$ (whichever is less restrictive) the gas stream will be considered unstratified and a single sample point can be used. The sample point shall most closely represent the mean concentration of the stratification test. Should the sample location demonstrate stratification more than 5% or ±0.5ppm but less than 10% or ±1.0ppm (whichever is less restrictive), 3 traverse points will be used at 16.7%, 50.0% and 83.3% of the sample diameter for all subsequent testing. Should the sample location demonstrate stratification more than 10% or ±1.0ppm (whichever is less restrictive), 12 traverse points will be used in accordance with Table 1-1 or Table 1-2 of EPA Method 1 for all subsequent testing.

The sample system was purged with stack gas for at least two times the response time before any valid data was recorded. Each time the probe is removed from the stack and replaced the test must recondition the sampling system at least two times the system response time before any valid data is recorded.

The Picarro CRDS analyzer uses an external vacuum pump to maintain cavity pressure and provide a stable sample flow rate very precisely. The cavity pressure is recorded at every data point. For the analyzer data to be valid, the sample rate and cavity pressure will be maintained within 10% of the sample rate and cavity pressure established during the system response time check.

2.5.3 Calibration Error Test

Before the test, daily, and after any failed drift or bias tests, a 3-point calibration error test was performed. Low-level, mid-level and high-level calibration gases were introduced directly into the analyzer. The analyzer responses were recorded and compared against the certified concentration for measured value, absolute difference, and error. The tester may adjust the system to maintain the correct flow rate at the analyzer during the test, but the tester may not adjust for any other purpose. Analyzer Calibration Error (ACE) was calculated using equation 47-1 of section 12.2 of OTM-47 for each of the three gases. Each calibration gas must demonstrate ACE within ±2% of the calibration span or ±0.5ppm. (Whichever is less stringent) Low-, mid- and high-level direct checks and system checks must meet QA/QC requirements without any corrections or the direct calibration procedures must be repeated until satisfactory results are obtained. The calibration error data for the CRDS, GC FID, GC PID and O2/CO2 analyzer is available in Attachment B.

2.5.4 System Bias Test

Before and after every sample run, a system bias check was performed. The upscale calibration gas that best represents the approximate emissions will be used as bias gas. The bias gas will be introduced at the probe and upstream of all sample conditioning components. The final stable value was recorded. Zero gas will be introduced the same way. The final, stable value was recorded.

From these measurements, the system RT will be calculated as well as the initial system bias. Initial system bias will be calculated using equation 47-2. For the test run to be considered valid, every system bias check must be within ±5% of the calibration span or ±0.1ppmv of the expected concentration, whichever is less stringent.

The bias and drift data is available in Attachment C. All results were bias corrected as per method 7E and corrected to a dry basis for calculation of overall emission rates.

2.5.5 Analyzer Drift Assessment

After every sample run an analyzer drift assessment was calculated using equation 47-4. If the system bias drifts greater than 3% of the bias gas and zero gas concentrations, the results will be considered invalid.

The analyzer drift assessment is available in Attachment C.

2.5.6 Interference Test

The total interference response must not be greater than 2.5% of the calibration span for the analyzer evaluated. The sum of the interference responses shall consist of the larger of the absolute values obtained for the interferent evaluated, with and without the pollutant present. Alternatively, the results are acceptable if the sum of the responses does not exceed the 0.25ppmv for a calibration span of 5 to 10 ppmv, or 0.15ppmv for a calibration span <5ppmv, whichever is less stringent. This test has been performed by Picarro, and the data will be available in Attachment F.

2.5.7 Dynamic Spiking AKA Standard Addition Procedure

Prior to sampling, the appropriateness of the measurement approach was verified by completing a series of dynamic spikes. The standard addition (SA) testing was performed while the unit was in operation, with the probe located in the stack. Recoveries (R) must be within 100±20% or have an absolute difference between the measured and expected concentrations less than or equal to 0.05 ppmv, whichever is more restrictive. R will be calculated using equation 47-8. Meeting these criteria will satisfy the standard addition spiking procedure.

Each standard addition, also known as a dynamic spike, consisted of a native sample, and a spiked sample, sequentially. The spike gas (standard addition) was introduced so that the entire sampling system is challenged. The combined standard addition and native concentration did not exceed 100% of the instrument span. The instrument span is equal to the concentration of the high calibration gas standard. The volumetric flow rate of the addition of the spike gas was measured

by a calibrated mass flow meter and did not exceed 10% of the sampling system flow rate. The mid-level calibration gas was used as SA gas. The dilution factor (DF) is defined as the ratio of standard addition flow to total sample flow. The dilution factor can be determined by use of mass flow meters or tracer gas concentration. The dilution factor must be 10% or less. The DF is calculated using equation 47-6.

All measurements should agree within 5.0% of three times the Picarro CRDS limit of detection (LOD) to avoid bias. The LOD is defined as three times the standard deviation of the measurements of a minimum of seven consecutive measurements separated by twice the response time. The LOD details will be supplied in the final report.

First, a minimum of two unspiked sample measurements were collected for the pre-spike background. Two independent measurements of the native target analyte were collected. SA gas was introduced; flow rates and calibration reference values were documented. SA gas flow will be maintained for a minimum of 2 times the RT. Two independent spiked measurements of the target analyte were collected. The standard addition response (SAR) and Effective Spike Addition (ESA) were calculated, using equations 47-9 and 47-10 respectively, to evaluate the standard addition detection limit (SADL). The SADL should be equal to or greater than the LOD. If the ESA is greater than or equal to the LOD, the ESA will be used as the site-specific detection level.

The OTM-47 QA/QC standard addition data is available in Attachment F.

2.5.8 Moisture Correction

The Picarro CRDS analyzer measures ethylene oxide as a wet sample. All ethylene oxide concentrations measured by the Picarro CRDS were corrected to a dry basis.

2.5.9 Summary Table of OTM-47 QA/QC

Process	Specification	Criteria	Frequency	Corrective Action if Not Specification Not Met
Identify Data	--	Regulatory Agency or another primary end user of data	Pre-test	--
Analyzer Design	Resolution or sensitivity	<2.0% of the full-scale CRDS range or <1/2 of the applicable standard	Manufacturer design	Picarro meets this standard
Calibration Gases	Traceability Protocol (G1, G2)	Traceability Protocol (G1, G2)	Traceability Protocol (G1, G2)	Traceability Protocol (G1, G2)
	High-level Gas	Equal to calibration span. High-level gas concentration must exceed the average test run concentration	Each Test	Repeat calibration procedure with a higher high-level calibration gas
	Mid-level gas	40-60% of calibration span	Each Test	Repeat calibration procedure with appropriate gas
	Low-level gas	Zero air material	Each Test	Repeat calibration procedure with

				appropriate zero air material
Data Recorder (if applicable)	Resolution	<2.0% of full-scale CRDS range or <1/2 of applicable standard	Manufacturer design	Picarro meets this standard
	Frequency	</= 1-minute average	Each Test	Picarro meets this standard
Sample Extraction	Probe material	An appropriate material of sufficient length and physical integrity	Each Test	Repeat sampling with appropriate probe
	Probe, filter, and sample line temperature	Always keep sample above dew point (by heating or dilution)	Each Run	Repeat sampling with appropriately heated sample components
	Calibration valve material	Inert to target analyte and gas matrix	Each test	Repeat Calibration procedure with appropriate calibration valve
	Sample pump material	Inert to target analyte and gas matrix	Each test	Repeat Calibration procedure with appropriate sample pump material
	Manifold material	Inert to target analyte and gas matrix	Each test	Repeat Calibration procedure with appropriate manifold material
Particulate Removal (if applicable)	Filter Material	Pass system bias checks or pre- and post-test analyte spiking	Each test	Repeat Calibration procedure with appropriate filter material
Calibration Span	Set point	Upper limit of the expected highest measured concentration or 2.5 times emission limit (concentration equivalent)	Each test	Repeat with Use of appropriate calibration gases
Analyzer & Calibration Gas Performance	Analyzer calibration error (ACE)	Within ±2.0% of the calibration span of the analyzer for the low-, mid-, and high-level calibration gases or an absolute difference of </=0.05ppmv	Pre-test and after a failed system bias test, drift test, or dynamic spike	Repeat calibration procedure until specification is met
System Performance	System Bias	With ±5.0% of the analyzer calibration span for low-scale and upscale calibration gases. Alternatively, </=0.10 ppmv absolute difference	Before and after each run.	Invalidate run data and repeat test starting with ACE
	Standard Addition (SA)	Performed dynamically. Must be within ±20% of +/-0.05ppmv of expected concentration.	Once per source	Repeat procedure until specification met
	SADL Validation	Must be greater than or equal to instrument's LOD value.	Once per Source Type	Repeat procedure until specification met

	System Response Time	Determines minimum sampling time per point	Pre-test	NA
	Drift	</=3.0% of calibration span for low-level and mid- or high-level gases. Alternatively, </=0.15ppmv absolute difference. Calculate using Equation 47-4.	Before and after each run	Invalidate run data and repeat test starting with ACE
	Spike Dilution Factor	</=10% of system volumetric flow rate	Pre-test	Repeat procedure until specification met
	Targeted Spiking Level	As practical, 50 to 150% of applicable standard but above native target analyte value	Pre-test	Repeat procedure until specification met
	Purge Time	>/=2 times system response time	Before starting the first run and after any event where the probe is removed from the source	Extend sample time to adequately purge system
	Minimum Sample Time	Defined as two times the system response time	Each sample point	Extend sampling time to meet specification
	Stable sample flow rate or CRDS pressure	Within 10% of flow rate or CRDS pressure established during system response time check.	Each run	Invalidate run data and repeat test starting with ACE.
Sample Point Selection	Stratification Test	All points within ±5% of mean for 1-point sampling, ±10% of mean for 3-point sampling, alternatively, ±0.25ppmv of mean for 1-point sampling and ±0.50ppmv of mean for 3-point sampling.	Prior to sampling	Use of EPA Method 1 maximum sampling points
Data parameters	Average run concentration	Run average </= calibration span	Each run	Invalidate run data and repeat test starting with ACE.

2.6 Method 18 – Hydrocarbon Analysis by Gas Chromatography

USEPA Method 18 was used at both inlet sampling locations. Procedures outlined in 40 CFR 60 Methods 18 were used to determine ethylene oxide emission concentrations and are discussed as follows. The analysis used the direct interface technique, introducing the sample through a heated Teflon sample line directly into the onboard GC heated gas sampling valves by pulling a vacuum through the entire system. Sample flow rate was monitored and maintained continuously using a metering valve and a flow meter.

Samples were analyzed by gas chromatography using an SRI 8610C gas chromatograph with a flame ionization and photo ionization detector with heated sample loops, injectors, and a 3-meter packed Haysep D column. Gas in the sample loop was injected directly into the GC's analytical columns by the gas sampling valve. The GC was operated with carrier gas pressure of 18psi and column temperature of 150˚C. The carrier gas was ultra-high purity helium. Ultra-high purity hydrogen and air are used to maintain the FID. ETO will elute at 1-2 minutes. Chromatograms will be produced every three minutes for a total of twenty integrations per hour test.

2.6.1 Calibration Standards

Three cylinders of calibration standard, ETO in nitrogen, in appropriate concentrations were used to create a calibration curve to calculate ETO concentration in ppm given instrument response in millivolts. Calibration standards were analyzed in triplicate, and the average value of the samples were calculated. An analytical result is considered valid if its value is within 5% of the average value of the three analyses. Results of the calibration gas analyses were compared to the certified value of the calibration gas. This data is available in Attachment E.

A calibration curve was generated for each detector using Microsoft Excel chart function by constructing a linear XY-Scatter graph that solves the quadratic equation of the line Y=mX+b where "y" is the calculated concentration of EtO, "x" is the instrument response, "m" is the constant and "b" is the y-coordinate intercept. The option forcing the graph through zero will be enabled so "b" = zero. The least squares R^2 value and the equation of the line will be shown. An $R^{2\ value}$ of 95% is acceptable according to Method 18. The gas chromatograph exceeded 95% R^2 value. This data is available in Attachment E.

2.6.2 Chromatograms

The chromatogram log sheet is a Microsoft Excel spreadsheet that transposes run information in an easy-to-read format and provides the calculating capabilities to assess the QA/QC requirements of the method. The chromatograms are logged by the file path directory of the hard drive storage. This data is available in Attachment E.

2.6.3 QA/QC Measures

2.6.3.*1 Direct Interface Recovery Study*

Prior to testing, but after the initial calibration, mid-level calibration gas was introduced to the end of the sampling probe. The calibration gas was sampled for at least three integrations within 5% of their arithmetical means. The result of the recovery study was compared to the initial calibration. If the two values agree within 10%, the sample system will be considered leak-free and acceptable for testing. Should the values not agree within 10%, the system will be inspected for leaks or other issues and repeated until the results agree within 10%. This data is available in Attachment F.

2.6.3.2 *Calibration Drift Assessment*

The mid-range calibration standard was analyzed at the conclusion of each test run, and the results was compared to the initial analysis to determine if calibration drift has occurred. A 5% deviation between results is allowable. Should excessive calibration drift be observed all calibration standards be re-analyzed and a new calibration curve using all the pre-test and post-test data will be generated following the procedures of Method 18. The SRI gas chromatograph met the 5% criteria. This data is available in Attachment F.

2.7 Method 205 – Gas Dilution Calibration

A method 205 compliant gas dilution system was employed to create mid-level calibration standards appropriate for the inlet tests. It should be noted that although the GC FID and PID met the requirements for calibration as per method 18, the variance from the certified value for the mid-level gas produced exceeded the 2% method 205 allowable. This data is available in Attachment F.

3.0 EQUIPMENT CALIBRATIONS

All sampling equipment will be in good working order and properly calibrated as per their respective EPA reference methods. Copies of the calibrations of flow meters, Method 205 system, pitot tubes, thermocouples, and calibration standard certificates are available in Attachment I.

4.0 CALCULATIONS and NOMENCLATURE

Mass emissions of ETO during operations are calculated using the following equations:

4.1 Equation 1:

$$MassRate = \frac{(VolFlow)(MolWt)(ppmv\ ETO)}{(10^6 * MolVol)}$$

Where:

MassRate	=	ETO mass flow rate, pounds per minute
VolFlow	=	Corrected volumetric flow rate, dscfm
MolWt	=	44.05 pounds ETO per pound mole
ppmv ETO	=	ETO concentration, parts per million by volume
10^6	=	Conversion factor, ppm
MolVol	=	385.32 cubic feet per pound mole at 29.92-inch Hg and 68 deg ^{0} F

4.2 OTM-47 and PS19 Nomenclature:

ACE *= Analyzer calibration error, percent of calibration span.*
$\boldsymbol{B_{ws}}$ *= Moisture content of sample gas, percent/100*
$\boldsymbol{C_{Avg}}$ *= Average unadjusted gas concentration indicated by data recorder for the run, ppmv*
CC *= Confidence coefficient (ppbv)*
$\boldsymbol{C_D}$ *= Analyte concentration on a dry basis, ppmv.*
$\boldsymbol{C_{Dir}}$ *= Measured calibration gas concentration (low, mid, or high) as introduced in direct calibration mode, ppmv.*
$\boldsymbol{C_{Gas}}$ *= Average gas concentration adjusted for bias, ppmv.*
$\boldsymbol{C_M}$ *= Average of initial and final system calibration bias check responses for the upscale calibration gas, ppmv.*
$\boldsymbol{C_{MA}}$ *= Actual concentration of the upscale calibration gas, ppmv.*
$\boldsymbol{C_{Native}}$ *= Native target analyte concentration in the gas stream, ppmv.*
$\boldsymbol{C_O}$ *= Average of the initial and final system calibration bias check responses from the low-level (or zero) calibration gas, ppmv.*
$\boldsymbol{C_{OA}}$ *= Actual concentration of the low-level calibration gas, ppmv.*
$\boldsymbol{C_S}$ ***or*** $\boldsymbol{MC_i}$ *= Measured concentration of a calibration gas (zero, low, mid, or high) when introduced in system calibration mode, ppmv.*
$\boldsymbol{C_{Spike}}$ *= Measured concentration of target analyte in spiked sample, ppmv.*
C_{Exp} *= Expected concentration of target analyte in the spike gas diluted in the sample, ppmv.*
$\boldsymbol{C_V}$ ***or*** $\boldsymbol{C_i}$ *= Certified concentration of a calibration gas (low, mid, or high), ppmv.*
$\boldsymbol{C_W}$ *= Analyte concentration on a wet basis, ppmv.*

CS *= Calibration span, ppmv.*
D and CD *= Drift assessment, percent of calibration span.*
d_{avg} *=Mean Difference between CEMS response and the reference gas (ppbv)*
DF *= Dilution factor of dilution system or spike gas, dimensionless.*
d_i *=Difference between CEMS response and the RM value (ppbv or units of emission standard)*
I *= Total interference from major matrix stack gases (percent)*
ΔMC_{avg} *= average of the 3 absolute values of the difference between measured EtO calibration gas concentrations with and without interference from selected stack gases (ppbv)*
ME *= Measurement Error, percent of calibration span*
MN_{avg} *= Average concentration at all sampling points (ppbv)*
MNbi *= Measured native concentration bracketing each calibration check measurement (ppbv)*
MNi *= Measured native concentration for test or run 1 (ppbv)*
n *= Number of measurements in an average value*
Q_{Spike} *= Flow rate of spike gas introduced in system calibration mode, LPM.*
Q_{Total} *= Total sample flow rate during the spike test, LPM.*
R *= spike recovery, percent.*
RA *= Relative accuracy of CEMS compared to a RM (percent)*
RM_i *= RM concentration for test run I (ppbv or units of the emission standard)*
RM_{avg} *= Mean measured RM value (ppbv or units of the emission standard)*
S *= system measurement span*
S_d *= Standard deviation of the differences (ppmv)*
S_{ti} *= Stratification at point i (%)*
SADL *= Standard addition detection level (ppmv)*
SB *= System bias, percent of calibration span.*
SB_i *= Pre-run system bias, percent of calibration span.*
SB_{final} *= post-run system bias, percent of calibration span.*
$t_{0.975}$ *= One-sided t-value at the 97.5th percentile obtained from Table 4 in section 17.0 of PS19 for n-1 measurements*

Equation 47-1 Analyzer Calibration Error

$$ACE = \frac{C_{Dir} - C_V}{CS}\ x\ 100\%$$

Equation 47-2 System Bias

$$SB = \frac{C_S - C_{Dir}}{CS}\ x\ 100\%$$

Equation 47-4 Drift Assessment

$$D = \ | SB_{final} - SB_i \ |$$

PS19 Equation 3A ME and 3B Drift Assessment

$$ME = \ |\frac{C_i - M_i}{s}\ |$$

$$CD = \left|\frac{C_i - M_i}{s}\right|$$

Equation 47-5 Moisture Correction

$$C_D = \frac{C_W}{1 - B_{WS}}$$

Equation 47-6 (PS19 SA appendix equation A1) Dilution Factor

$$DF = \frac{Q_{Spike}}{Q_{Total}} < 20\%$$

Equation 47-7 Expected Spike Concentration

$$C_{Exp} = \left(C_{V_{spike}}\, x\, DF\right) + (1 - DF)(C_{Native})$$

Equation 47-8 Standard Addition % Recovery (R)

$$R = \frac{C_{Spike}}{C_{Exp}}, 0.80 \leq R \leq 1.20$$

Equation 47-9 (PS19 SA appendix equation A4) Standard Addition Response (SAR)

$$SAR = C_{Spike} - (1 - DF) * C_{Native}$$

Equation 47-10 (PS19 SA appendix equation A7) Effective Spike Addition (ESA)

$$ESA = DF * (C_{Spike} - C_{Native})$$

PS19 Equation 4 Average native concentration before and after each calibration check measurement

$$MN_{bi} = \frac{MN_i + MN_{i+1}}{2}$$

EQUATIONS FOR MOISTURE CONTENT AND FLOW RATE CALCULATIONS

(Based on Standard Conditions of 70ºF and 29.92"Hg)

1. $V_{w\,(std)} = 0.0473\ V_{wc}$

2. $$V_{m\,(std)} = 17.71\, V_m \frac{P_{bar} + (0.07355\,\Delta H)}{T_m + 460}\gamma$$

3. $$B_{wo} = \frac{V_{w\,(std)}}{V_{m\,(std)} + V_{w\,(std)}}$$

4. $B_{WS} = (B_{WO})\,(100)$

5. $M_d = 0.44\,(\%CO_2) = 0.28\,(\%CO) + 0.32\,(\%O_2) + 0.28\,(\%N_2)$

6. $M_S = M_d\,(1 - B_{wo}) + 18\,B_{wo}$

7. $$P_s = P_{bar} + \frac{P_A}{13.6}$$

8. $$V_s = (85.49)(60)(C_p)\,\sqrt{\Delta P}\,\sqrt{\frac{T_s + 460}{(P_s)\,(M_s)}}$$

9. $$A_s = \frac{(\pi)\,(D/2)^2}{144}$$

10. $Q_s = V_S\,A_S$

11. $$Q_{S\,(std)} = Q_S\,(1\text{-}B_{wo})\,17.71\,\frac{P_s}{T_s + 460}$$

NOMENCLATURE

A_s =	Area of stack, ft^2
B_{wo} =	Moisture content of gas stream, fractional value
B_{ws} =	Moisture content of gas stream, percent by volume
C_p =	Pitot correction factor, dimensionless
D =	Inside diameter of stack, in.
E =	Emission rate, lb/hr
H =	Orifice pressure drop, in. H_2O
M_d =	Dry molecular weight of stack gas, lb/lb-mole
M_s =	Molecular weight of stack gas, lb/lb-mole
P_A =	Stack static pressure, in. H_20
P_{bar} =	Barometric pressure, in. Hg
P_s =	Absolute stack pressure, in. Hg
$\sqrt{\Delta P}$ =	Average of square roots of pitot pressure differential, in. H_2O

Q_s =	Stack gas flow rate, acfm
$Q_{s(std)}$ =	Stack gas flow rate, dscfm
T_m =	Average dry gas meter temperature, ºF
T_s =	Average stack temperature, ºF
V_m =	Dry sample volume (meter conditions), cf
$V_{m(std)}$ =	Dry sample volume (standard conditions), dscf
V_s =	Stack gas velocity, ft/min
V_{wc} =	Volume of liquid collected in impingers and silica gel, ml
$V_{w(std)}$ =	Volume of liquid collected, cf
γ =	Meter box calibration factor, dimensionless

Attachment A – Summary of Results

BCP Ingredients, Verona, MO LCH Project No. Picarro-P2026 Scrubber Destruction Removal Efficiency Calculations					
SYMBOL	**DESCRIPTION**				
		3	4	5	**Avg.**
	Test date	2/11/26	2/11/26	2/11/26	**-**
	Test time start	2:40:00 PM	5:20:00 PM	7:30:00 PM	**-**
	Test time stop	3:40:00 PM	6:20:00 PM	8:30:00 PM	**-**
	Inlet 1				
Bws	Moisture content of the gas stream, %	3.5	2.2	2.2	**2.64**
Qsd	Stack gas flow, dscfm	89	79	97	**88.33**
ETO wet	ETO concentration, ppmv wet	39.6	1,441.6	44.7	**508.62**
ETO dry	ETO concentration, ppmv dry	41.0	1,474.5	45.7	**520.39**
Qs	ETO emission rate, lb/hr	0.0	0.8	0.0	**0.285**
	Inlet 2				
Bws	Moisture content of the gas stream, %	2.6	3.5	3.5	**3.18**
Qsd	Stack gas flow, dscfm	98	65	67	**76.67**
ETO wet	ETO concentration, ppmv wet	12,951.9	11,889.6	9,286.7	**11376.07**
ETO dry	ETO concentration, ppmv dry	13,303.1	12,314.5	9,618.5	**11745.37**
Qs	ETO emission rate, lb/hr	8.9	5.5	4.4	**6.285**
	Scrubber Outlet				
Bws	Moisture content of the gas stream, %	1.3	1.3	1.2	**1.26**
Qsd	Stack gas flow, dscfm	190	219	191	**200.00**
ETO wet	ETO concentration, ppmv wet	2.80	3.51	0.78	**2.36**
ETO dry	ETO concentration, ppmv dry	2.84	3.55	0.84	**2.410**
Qs	ETO emission rate, lb/hr	0.00	0.01	0.00	**0.003**
	ETO DRE				
DRE	Destruction removal efficiency, % by wt.	**99.96**	**99.92**	**99.98**	**99.950**

BCP Ingredients, Verona, MO
LCH Project No. Picarro-P2026
Scrubber Destruction Removal Efficiency Calculations

SYMBOL	DESCRIPTION	Run No.					
		1	2	3	4	5	6
	Test date	2/11/26	2/11/26	2/11/26	2/11/26	2/11/26	2/11/26
	Test time start	10:10:00 AM	12:10:00 PM	2:40:00 PM	5:20:00 PM	7:30:00 PM	10:00:00 PM
	Test time stop	11:10:00 AM	1:10:00 PM	3:40:00 PM	6:20:00 PM	8:30:00 PM	11:00:00 PM
	Inlet 1						
Bws	Moisture content of the gas stream, %	2.8	3.9	3.5	2.2	2.2	1.9
Qsd	Stack gas flow, dscfm	110	109	89	79	97	99
ETO wet	ETO concentration, ppmv wet	61.6	62.2	39.6	1,441.6	44.7	0.0
ETO dry	ETO concentration, ppmv dry	63.4	64.8	41.0	1,474.5	45.7	0.0
Qs	ETO emission rate, lb/hr	0.0	0.0	0.0	0.8	0.0	0.0
	Inlet 2						
Bws	Moisture content of the gas stream, %	1.4	2.1	2.6	3.5	3.5	5.7
Qsd	Stack gas flow, dscfm	102	104	98	65	67	65
ETO wet	ETO concentration, ppmv wet	9,266.7	10,390.4	12,951.9	11,889.6	9,286.7	12,002.2
ETO dry	ETO concentration, ppmv dry	9,398.3	10,611.1	13,303.1	12,314.5	9,618.5	12,727.7
Qs	ETO emission rate, lb/hr	6.6	7.6	8.9	5.5	4.4	5.7
	Scrubber Outlet						
Bws	Moisture content of the gas stream, %	1.3	1.3	1.3	1.3	1.2	1.3
Qsd	Stack gas flow, dscfm	193	201	190	219	191	185
ETO wet	ETO concentration, ppmv wet	4.90	4.70	2.80	3.51	0.78	5.62
ETO dry	ETO concentration, ppmv dry	4.96	4.77	2.84	3.55	0.84	5.70
Qs	ETO emission rate, lb/hr	0.01	0.01	0.00	0.01	0.00	0.01
	ETO DRE						
DRE	Destruction removal efficiency, % by wt.	**99.901**	**99.914**	**99.959**	**99.915**	**99.975**	**99.873**

Attachment B – Calibration Error Summary

Analyzer Calibration Error Check

Facility: BCP Ingredients **Runs: 1,2,3,4,5,6**
Process: Scrubber Outlet **Operator: LCH**
Date: 2/11/26

Analyzer Make and Model	(C_V) Span Gas Concentration (ppmv or %)	(CS) Analyzer Span (ppmv or %)	(C_{Dir}) Analyzer Calibration Response (ppmv or %)	Absolute Difference (ppmv or %)	(ACE) Calibration Error (% of Span)
CAI700 O_2		0.0			
Zero	0.00	to	-0.03	0.03	0.14
Mid	11.99	22.0	12.03	0.04	0.18
High	21.96	%	21.99	0.03	0.14
CAI700 CO_2		0.0			
Zero	0.00	to	-0.82	0.82	4.70
Mid	10.29	17.4	10.04	0.25	1.43
High	17.43	%	17.54	0.11	0.63
Picarro PI2910		0.0			
Zero	0.0	to	0.044	0.04	0.89
Low	1.190	4.9	1.274	0.08	1.71
Mid	2.400	ppm	2.398	0.00	0.04
High	4.9		4.968	0.07	1.39

Note:
1) Eq. 7E-1 for analyzer calibration error: $ACE = [(C_{Dir} - C_V) / CS] 100$
2) For all analyzers calibration gases are introduced directly to the analyzer and analyzer calibration error must be within ± 2% of calibration span.

Analyzer Calibration Error Check

Facility: BCP Ingredient **Runs: 1,2,3,4,5,6**
Process: Inlet 2 **Operator: LCH**
Date: 2/11/26

Analyzer Make and Model	(C_V) Span Gas Concentration (ppmv or %)	(CS) Analyzer Span (ppmv or %)	(C_{Dir}) Analyzer Calibration Response (ppmv or %)	Absolute Difference (ppmv or %)	(ACE) Calibration Error (% of Span)
SRI GC PID 8610C		0.0			
Zero	0.00	to	0.0000	0.00	0.00
Low	5500.00	25000.0	5491.7855	8.21	0.03
Mid	15000.00	ppm	14516.2741	483.73	1.93
High	25000.00		25279.5173	279.52	1.12

Note:
1) Eq. 7E-1 for analyzer calibration error: ACE = [(C_{Dir} - C_V) / CS] 100
2) For all analyzers calibration gases are introduced directly to the analyzer and analyzer calibration error must be within ± 2% of calibration span.

Analyzer Calibration Error Check

Facility: BCP Ingredients **Runs: 1,2,3,4,5,6**
Process: Inlet 1 **Operator: LCH**
Date: 8/20/25

Analyzer Make and Model	(C_V) Span Gas Concentration (ppmv or %)	(CS) Analyzer Span (ppmv or %)	(C_{Dir}) Analyzer Calibration Response (ppmv or %)	Absolute Difference (ppmv or %)	(ACE) Calibration Error (% of Span)
SRI GC FID 8610C		0.0			
Zero	0.00	to	0.0000	0.00	0.00
Low	5500.00	25000.0	6026.8632	526.86	2.11
Mid	15000.00	ppm	15422.0471	422.05	1.69
High	25000.00		24606.7351	393.26	1.57

Note:
1) Eq. 7E-1 for analyzer calibration error: ACE = [(C_{Dir} - C_V) / CS] 100
2) For all analyzers calibration gases are introduced directly to the analyzer and analyzer calibration error must be within ± 2% of calibration span.

Analyzer Calibration Error Check

Facility: BCP Ingredients **Runs: 1,2,3,4,5,6**
Process: Scrubber Inlets **Operator: LCH**
Date: 2/12/26

Analyzer Make and Model	(C_V) Span Gas Concentration (ppmv or %)	(CS) Analyzer Span (ppmv or %)	(C_{Dir}) Analyzer Calibration Response (ppmv or %)	Absolute Difference (ppmv or %)	(ACE) Calibration Error (% of Span)
CAI700 O_2		0.0			
Zero	0.00	to	0.12	0.12	0.55
Mid	11.99	22.0	11.95	0.04	0.18
High	21.96	%	21.92	0.04	0.18
CAI700 CO_2		0.0			
Zero	0.00	to	-0.11	0.11	0.63
Mid	10.29	17.4	10.21	0.08	0.46
High	17.43	%	17.44	0.01	0.06

Note:
1) Eq. 7E-1 for analyzer calibration error: ACE = [(C_{Dir} - C_V) / CS] 100
2) For all analyzers calibration gases are introduced directly to the analyzer and analyzer calibration error must be within ± 2% of calibration span.

Attachment C – Bias and Drift Summary

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredients
Process: Scrubber Outlet
Date: 2/11/26
Run No: One

Time Start: 10:10
Time Stop: NA
Time Restart: NA
Time End: 11:10

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
O_2	22.0 %											
Zero	-	0.00	-0.03	-0.05	-0.09	-0.03	0.00	0.09	-0.040	16.43	16.51	O2
Upscale	-	11.99	12.03	11.95	-0.36	11.90	-0.59	-0.23	11.925			
CO_2	17.4 %											
Zero	-	0.00	-0.82	-0.92	-0.57	-0.93	-0.63	-0.06	-0.925	-0.89	0.03	CO2
Upscale	-	10.29	10.04	9.77	-1.55	9.69	-2.01	-0.46	9.730			
ETO	4.9 ppm											
Zero	-	0.00	0.04	0.05	0.05	0.05	0.05	0.00	0.046	5.04038	4.8955	ETO
Upscale	-	2.400	2.40	2.54	2.84	2.45	1.10	-1.74	2.495			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredients
Process: Scrubber Outlet
Date: 2/11/26
Run No: Two

Time Start: 12:10
Time Stop: NA
Time Restart: NA
Time End: 13:10

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
O_2	22.0 %											
Zero	-	0.00	-0.03	-0.03	0.00	-0.04	-0.05	-0.05	-0.035	16.29	16.10	O2
Upscale	-	11.99	12.03	11.90	-0.59	12.35	1.46	2.05	12.125			
CO_2	17.4 %											
Zero	-	0.00	-0.82	-0.93	-0.63	-0.96	-0.80	-0.17	-0.945	-0.91	0.03	CO2
Upscale	-	10.29	10.04	9.69	-2.01	9.94	-0.57	1.43	9.815			
ETO	4.9 ppm											
Zero	-	0.00	0.04	0.05	0.05	0.03	-0.24	-0.29	0.039	4.7729	4.7039	ETO
Upscale	-	2.400	2.40	2.45	1.10	2.46	1.20	0.10	2.454			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredients
Process: Scrubber Outlet
Date: 2/11/26
Run No: Three

Time Start: 14:40
Time Stop: NA
Time Restart: NA
Time End: 15:40

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
O_2	22.0 %											
Zero	-	0.00	-0.03	-0.04	-0.05	0.00	0.14	0.18	-0.020	17.08	16.86	O2
Upscale	-	11.99	12.03	12.35	1.46	11.94	-0.41	-1.87	12.145			
CO_2	17.4 %											
Zero	-	0.00	-0.82	-0.96	-0.80	-0.91	-0.52	0.29	-0.935	-0.89	0.04	CO2
Upscale	-	10.29	10.04	9.94	-0.57	9.56	-2.75	-2.18	9.750			
ETO	4.9 ppm											
Zero	-	0.00	0.04	0.03	-0.24	0.01	-0.66	-0.41	0.022	2.8551	2.7982	ETO
Upscale	-	2.400	2.40	2.46	1.20	2.45	1.01	-0.20	2.452			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredients
Process: Scrubber Outlet
Date: 2/11/26
Run No: Four

Time Start: 17:20
Time Stop: NA
Time Restart: NA
Time End: 18:20

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
O_2	22.0 %											
Zero	-	0.00	-0.03	0.00	0.14	-0.02	0.05	-0.09	-0.010	16.77	16.88	O2
Upscale	-	11.99	12.03	11.94	-0.41	11.89	-0.64	-0.23	11.915			
CO_2	17.4 %											
Zero	-	0.00	-0.82	-0.91	-0.52	-0.83	-0.06	0.46	-0.870	-0.86	0.01	CO2
Upscale	-	10.29	10.04	9.56	-2.75	9.59	-2.58	0.17	9.575			
ETO	4.9 ppm											
Zero	-	0.00	0.04	0.01	-0.66	0.07	0.53	1.19	0.041	3.5837	3.5055	ETO
Upscale	-	2.400	2.40	2.45	1.01	2.49	1.79	0.79	2.466			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredients
Process: Scrubber Outlet
Date: 2/11/26
Run No: Five

Time Start: 19:30
Time Stop: NA
Time Restart: NA
Time End: 20:30

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
O_2	22.0 %											
Zero	-	0.00	-0.03	-0.02	0.05	0.00	0.14	0.09	-0.010	16.33	16.47	O2
Upscale	-	11.99	12.03	11.89	-0.64	11.88	-0.68	-0.05	11.885			
CO_2	17.4 %											
Zero	-	0.00	-0.82	-0.83	-0.06	-0.74	0.46	0.52	-0.785	-0.78	0.01	CO2
Upscale	-	10.29	10.04	9.59	-2.58	9.63	-2.35	0.23	9.610			
ETO	4.9 ppm											
Zero	-	0.00	0.04	0.07	0.53	0.02	-0.40	-0.93	0.047	0.8438	0.7800	ETO
Upscale	-	2.400	2.40	2.49	1.79	2.51	2.34	0.54	2.499			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredients
Process: Scrubber Outlet
Date: 2/11/26
Run No: Six

Time Start: 10:00
Time Stop: NA
Time Restart: NA
Time End: 11:00

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
O_2	22.0 %											
Zero	-	0.00	-0.03	0.00	0.14	-0.01	0.09	-0.05	-0.005	16.18	16.63	O2
Upscale	-	11.99	12.03	11.88	-0.68	11.45	-2.64	-1.96	11.665			
CO_2	17.4 %											
Zero	-	0.00	-0.82	-0.74	0.46	-0.85	-0.17	-0.63	-0.795	-0.74	0.05	CO2
Upscale	-	10.29	10.04	9.63	-2.35	9.85	-1.09	1.26	9.740			
ETO	4.9 ppm											
Zero	-	0.00	0.04	0.02	-0.40	0.07	0.62	1.02	0.049	5.8524	5.6241	ETO
Upscale	-	2.400	2.40	2.51	2.34	2.54	2.88	0.54	2.526			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: **BCP Ingredients** **Time Start:** **10:10**
Process: **Inlet 2** **Time Stop:** **NA**
Date: **2/11/26** **Time Restart:** **NA**
Run No: **One** **Time End:** **11:10**

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
ETO	25,000.0 ppm											
Zero	-	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.293	9134.7562	9266.7457	ETO
Upscale	-	5,500.000	5,491.79	5,447.49	-0.18	5396.07	-0.38	-0.21	5421.781			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredient
Process: Inlet 2
Date: 2/11/26
Run No: Two

Time Start: 12:10
Time Stop: NA
Time Restart: NA
Time End: 13:10

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
ETO	25,000.0 ppm											
Zero	-	0.00	0.00	0.00	0.00	2.10	0.01	0.01	1.048	10224.7405	10390.4361	ETO
Upscale	-	5,500.000	5,491.79	5,396.07	-0.38	5429.50	-0.25	0.13	5412.785			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredient
Process: Inlet 2
Date: 2/11/26
Run No: Three

Time Start: 14:40
Time Stop: NA
Time Restart: NA
Time End: 15:40

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
ETO	25,000.0 ppm											
Zero	-	0.00	0.00	2.10	0.01	0.00	0.00	-0.01	1.048	12951.9326	13146.1498	ETO
Upscale	-	5,500.000	5,491.79	5,429.50	-0.25	5409.20	-0.33	-0.08	5419.355			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredient
Process: Inlet 2
Date: 2/11/26
Run No: Four

Time Start: 17:20
Time Stop: NA
Time Restart: NA
Time End: 18:20

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
ETO	25,000.0 ppm											
Zero	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	11637.0932	11889.6117	ETO
Upscale	-	5,500.000	5,491.79	5,409.20	-0.33	5357.17	-0.54	-0.21	5383.188			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredient
Process: Inlet 2
Date: 2/11/26
Run No: Five

Time Start: 19:30
Time Stop: NA
Time Restart: NA
Time End: 20:30

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
ETO	25,000.0 ppm											
Zero	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	9286.6671	9578.8318	ETO
Upscale	-	5,500.000	5,491.79	5,357.17	-0.54	5307.32	-0.74	-0.20	5332.244			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredient
Process: Inlet 2
Date: 2/11/26
Run No: Six

Time Start: 22:00
Time Stop: NA
Time Restart: NA
Time End: 23:00

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
ETO	25,000.0 ppm											
Zero	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	11581.7232	12002.1984	ETO
Upscale	-	5,500.000	5,491.79	5,307.32	-0.74	5307.32	-0.74	0.00	5307.318			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredients
Process: Inlet 1
Date: 2/11/26
Run No: One

Time Start: 10:10
Time Stop: NA
Time Restart: NA
Time End: 11:10

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
ETO	25,000.0 ppm											
Zero	-	0.00	0.00	3.10	0.01	0.00	0.00	-0.01	1.548	69.7898	61.6397	ETO
Upscale	-	5,500.000	5,491.79	6,150.17	2.63	6031.09	2.16	-0.48	6090.630			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredients
Process: Scrubber Inlets
Date: 2/12/26
Run No: One

Time Start: 10:10
Time Stop: NA
Time Restart: NA
Time End: 11:10

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
										Inlet 1		
O_2	22.0 %											
Zero	-	0.00	0.12	0.05	-0.32	0.05	-0.32	0.00	0.050	8.90	8.93	O2
Upscale	-	11.99	11.95	11.95	0.00	11.92	-0.14	-0.14	11.935			
CO_2	17.4 %											
Zero	-	0.00	-0.11	-0.12	-0.06	-0.12	-0.06	0.00	-0.120	0.00	0.12	CO2
Upscale	-	10.29	10.21	10.11	-0.57	10.15	-0.34	0.23	10.130			
										Inlet 2		
O_2	22.0 %											
Zero	-	0.00	0.12	0.05	-0.32	0.05	-0.32	0.00	0.050	4.00	3.98	O2
Upscale	-	11.99	11.95	11.95	0.00	11.92	-0.14	-0.14	11.935			
CO_2	17.4 %											
Zero	-	0.00	-0.11	-0.12	-0.06	-0.12	-0.06	0.00	-0.120	0.00	0.12	CO2
Upscale	-	10.29	10.21	10.11	-0.57	10.11	-0.57	0.00	10.110			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredients
Process: Scrubber Inlets
Date: 2/12/26
Run No: Two

Time Start: 12:10
Time Stop: NA
Time Restart: NA
Time End: 13:10

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
										Inlet 1		
O_2	22.0 %											
Zero	-	0.00	0.12	0.05	-0.32	0.05	-0.32	0.00	0.050	3.70	3.68	O2
Upscale	-	11.99	11.95	11.95	0.00	11.92	-0.14	-0.14	11.935			
CO_2	17.4 %											
Zero	-	0.00	-0.11	-0.12	-0.06	-0.12	-0.06	0.00	-0.120	0.00	0.12	CO2
Upscale	-	10.29	10.21	10.11	-0.57	10.15	-0.34	0.23	10.130			
										Inlet 2		
O_2	22.0 %											
Zero	-	0.00	0.12	0.05	-0.32	0.05	-0.32	0.00	0.050	17.10	17.20	O2
Upscale	-	11.99	11.95	11.95	0.00	11.92	-0.14	-0.14	11.935			
CO_2	17.4 %											
Zero	-	0.00	-0.11	-0.12	-0.06	-0.12	-0.06	0.00	-0.120	0.00	0.12	CO2
Upscale	-	10.29	10.21	10.11	-0.57	10.11	-0.57	0.00	10.110			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredients
Process: Scrubber Inlets
Date: 2/12/26
Run No: Three

Time Start: 14:40
Time Stop: NA
Time Restart: NA
Time End: 15:40

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
										Inlet 1		
O_2	22.0 %											
Zero	-	0.00	0.12	0.05	-0.32	0.05	-0.32	0.00	0.050	5.90	5.90	O2
Upscale	-	11.99	11.95	11.95	0.00	11.92	-0.14	-0.14	11.935			
CO_2	17.4 %											
Zero	-	0.00	-0.11	-0.12	-0.06	-0.12	-0.06	0.00	-0.120	0.00	0.12	CO2
Upscale	-	10.29	10.21	10.11	-0.57	10.15	-0.34	0.23	10.130			
										Inlet 2		
O_2	22.0 %											
Zero	-	0.00	0.12	0.05	-0.32	0.05	-0.32	0.00	0.050	2.00	1.97	O2
Upscale	-	11.99	11.95	11.95	0.00	11.92	-0.14	-0.14	11.935			
CO_2	17.4 %											
Zero	-	0.00	-0.11	-0.12	-0.06	-0.12	-0.06	0.00	-0.120	0.00	0.12	CO2
Upscale	-	10.29	10.21	10.11	-0.57	10.11	-0.57	0.00	10.110			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredients
Process: Scrubber Inlets
Date: 2/12/26
Run No: Four

Time Start: 17:20
Time Stop: NA
Time Restart: NA
Time End: 18:20

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
										Inlet 1		
O_2	22.0 %											
Zero	-	0.00	0.12	0.05	-0.32	0.05	-0.32	0.00	0.050	19.00	19.12	O2
Upscale	-	11.99	11.95	11.95	0.00	11.92	-0.14	-0.14	11.935			
CO_2	17.4 %											
Zero	-	0.00	-0.11	-0.12	-0.06	-0.12	-0.06	0.00	-0.120	0.00	0.12	CO2
Upscale	-	10.29	10.21	10.11	-0.57	10.15	-0.34	0.23	10.130			
										Inlet 2		
O_2	22.0 %											
Zero	-	0.00	0.12	0.05	-0.32	0.05	-0.32	0.00	0.050	0.40	0.35	O2
Upscale	-	11.99	11.95	11.95	0.00	11.92	-0.14	-0.14	11.935			
CO_2	17.4 %											
Zero	-	0.00	-0.11	-0.12	-0.06	-0.12	-0.06	0.00	-0.120	0.00	0.12	CO2
Upscale	-	10.29	10.21	10.11	-0.57	10.11	-0.57	0.00	10.110			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredients
Process: Scrubber Inlets
Date: 2/12/26
Run No: Five

Time Start: 19:30
Time Stop: NA
Time Restart: NA
Time End: 20:30

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
										Inlet 1		
O_2	22.0 %											
Zero	-	0.00	0.12	0.05	-0.32	0.05	-0.32	0.00	0.050	19.00	19.12	O2
Upscale	-	11.99	11.95	11.95	0.00	11.92	-0.14	-0.14	11.935			
CO_2	17.4 %											
Zero	-	0.00	-0.11	-0.12	-0.06	-0.12	-0.06	0.00	-0.120	0.00	0.12	CO2
Upscale	-	10.29	10.21	10.11	-0.57	10.15	-0.34	0.23	10.130			
										Inlet 2		
O_2	22.0 %											
Zero	-	0.00	0.12	0.05	-0.32	0.05	-0.32	0.00	0.050	0.40	0.35	O2
Upscale	-	11.99	11.95	11.95	0.00	11.92	-0.14	-0.14	11.935			
CO_2	17.4 %											
Zero	-	0.00	-0.11	-0.12	-0.06	-0.12	-0.06	0.00	-0.120	0.00	0.12	CO2
Upscale	-	10.29	10.21	10.11	-0.57	10.11	-0.57	0.00	10.110			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredients
Process: Scrubber Inlets
Date: 2/12/26
Run No: Six

Time Start: 22:00
Time Stop: NA
Time Restart: NA
Time End: 23:00

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
										Inlet 1		
O_2	22.0 %											
Zero	-	0.00	0.12	0.05	-0.32	0.05	-0.32	0.00	0.050	19.00	19.12	O2
Upscale	-	11.99	11.95	11.95	0.00	11.92	-0.14	-0.14	11.935			
CO_2	17.4 %											
Zero	-	0.00	-0.11	-0.12	-0.06	-0.12	-0.06	0.00	-0.120	0.00	0.12	CO2
Upscale	-	10.29	10.21	10.11	-0.57	10.15	-0.34	0.23	10.130			
										Inlet 2		
O_2	22.0 %											
Zero	-	0.00	0.12	0.05	-0.32	0.05	-0.32	0.00	0.050	0.35	0.30	O2
Upscale	-	11.99	11.95	11.95	0.00	11.92	-0.14	-0.14	11.935			
CO_2	17.4 %											
Zero	-	0.00	-0.11	-0.12	-0.06	-0.12	-0.06	0.00	-0.120	0.00	0.12	CO2
Upscale	-	10.29	10.21	10.11	-0.57	10.11	-0.57	0.00	10.110			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredient
Process: Inlet 1
Date: 2/11/26
Run No: Two

Time Start: 12:10
Time Stop: NA
Time Restart: NA
Time End: 13:10

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
ETO	25,000.0 ppm											
Zero	-	0.00	0.00	0.00	0.00	1.66	0.01	0.01	0.832	69.2186	62.2236	ETO
Upscale	-	5,500.000	5,491.79	6,031.09	2.16	6060.05	2.27	0.12	6045.571			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredient
Process: Inlet 1
Date: 2/11/26
Run No: Three

Time Start: 14:40
Time Stop: NA
Time Restart: NA
Time End: 15:40

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
ETO	25,000.0 ppm											
Zero	-	0.00	0.00	1.66	0.01	0.00	0.00	-0.01	0.832	44.0907	39.5606	ETO
Upscale	-	5,500.000	5,491.79	6,060.05	2.27	5969.87	1.91	-0.36	6014.959			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredient
Process: Inlet 1
Date: 2/11/26
Run No: Four

Time Start: 17:20
Time Stop: NA
Time Restart: NA
Time End: 18:20

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
ETO	25,000.0 ppm											
Zero	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	1572.9122	1441.6340	ETO
Upscale	-	5,500.000	5,491.79	5,969.87	1.91	6031.81	2.16	0.25	6000.841			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredient
Process: Inlet 1
Date: 2/11/26
Run No: Five

Time Start: 19:30
Time Stop: NA
Time Restart: NA
Time End: 20:30

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
ETO	25,000.0 ppm											
Zero	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	48.3515	44.6634	ETO
Upscale	-	5,500.000	5,491.79	6,031.81	2.16	5876.52	1.54	-0.62	5954.167			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Analyzer Bias and Drift Check and
Emission Concentration Determinations

Facility: BCP Ingredient
Process: Inlet 1
Date: 2/11/26
Run No: Six

Time Start: 22:00
Time Stop: NA
Time Restart: NA
Time End: 23:00

Analyzer	Analyzer Span (ppm or %)	(Cma) Bias Gas Concentration (ppm or %)	Analyzer Calibration Response (ppm or %)	Initial Bias Sys. Cal. Response (ppm or %)	Initial Bias Sys. Cal. Bias (% of Span)	Final Bias Sys. Cal. Response (ppm or %)	Final Bias Sys. Cal. Bias (% of span)	Drift (% of span)	(Cm & Co) Average Sys Cal Response (ppm or %)	(C) Average Test Run Response (ppm or %)	(Cgas) Average Emission Concentration (ppm or %)	
ETO	25,000.0 ppm											
Zero	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.0000	0.0000	ETO
Upscale	-	5,500.000	5,491.79	5,876.52	1.54	5874.26	1.53	-0.01	5875.392			

Note: 1) Eq. 7E-2 for system bias: $SB = [(C_S - C_{Dir}) / CS] 100$

2) Eq. 7E-4 for analyzer drift: $D = [(SB_{final} - SB_i) / CS] 100$

3) Eq. 7E-5 for average effluent gas concentration adjusted for bias: $C_{Gas} = (C_{Avg} - C_O) [C_{MA} / (C_M - C_O)]$

4) Initial and final system bias (SB) must be within ± 5% of calibration span (CS)

5) Zero and upscale analyzer drift (D) must be ≤ 3% of calibration span (CS)

Attachment D – Raw Data/Field Data Sheets

BCP Ingredients, Inc. - Verona, Missouri

Operational Processes Summary during 02/11/2026 EtO Scrubber System Destruction Removal Efficiency Performance Test

Test		V25	EO Railcar Unloading (liquid)	EO Railcar Unloading (vapor)	V10	V8
1	Start Time	1011	1034	1036	1010	1010
	Stop Time	1018	1036	1038	1110	1110
	Initial Pressure (psi)	50	60	58	2.5	34.5
	Final Pressure (psi)	47	0	0	2	34.2
	Comments	vent 3lbs				
2	Start Time	1210	1230	1233	1210	1210
	Stop Time	1214	1232	1234	1310	1310
	Initial Pressure (psi)	52	67	59	2.25	35.2
	Final Pressure (psi)	44	0	0	2.17	34.8
	Comments	vent 8lbs				
3	Start Time	1440	1510	1512	1440	1440
	Stop Time	1502	1511	1514	1540	1540
	Initial Pressure (psi)	50	65	54	2.21	34.8
	Final Pressure (psi)	48	0	0	2.24	35
	Comments	start 1/4 open to take longer to vent				
4	Start Time	1720	1749	1749	1720	1720
	Stop Time	1740	1752	1752	1820	1820
	Initial Pressure (psi)	49	66	55	2.44	34.3
	Final Pressure (psi)	47	0	0	2.42	34.6
	Comments	1/4 open				
5	Start Time	1930	2000	2002	1930	1930
	Stop Time	1950	2001	2003	2030	2030
	Initial Pressure (psi)	53	63	59	2.42	34.9
	Final Pressure (psi)	52	0	0	2.39	34.9
	Comments	1/4 open				
6	Start Time	2200	2223	2226	2200	2200
	Stop Time	2220	2225	2228	2300	2300
	Initial Pressure (psi)	50	4	7	2.39	34.25
	Final Pressure (psi)	48	0	0	2.36	34.5
	Comments					

EO Railcar Unloading – EO Scrubber Test Tracking Form

Vent line pressure when instructed over radio. DO NOT VENT LIQUID, line should be blown clear prior to venting.

Testing on 2/10

1 EO Railcar Unloading - EO Scrubber Test Tracking
2 Liquid Line — open 105 + manual 165
3 Test Cycle 1:
4 Start Time: 18:03 Finish Time (venting stopped): 18:04
5 Initial Pressure: 61 Final Pressure (after venting): -0.1
6 Notes/Comments (abnormal events):

7 Vapor Line — open 110 + manual 165
8 Test Cycle 1:
9 Start Time: 18:07 Finish Time (venting stopped): 52
10 Initial Pressure: 45 Final Pressure (after venting): 0.2
11 Notes/Comments (abnormal events):

12 Liquid Line
13 Test Cycle #: #2
14 Start Time: to 1034 Finish Time (venting stopped): 1036
15 Initial Pressure: 60 Final Pressure (after venting): 0
16 Notes/Comments (abnormal events):

EO Railcar Unloading – EO Scrubber Test Tracking Form

Vent line pressure when instructed over radio. DO NOT VENT LIQUID, line should be blown clear prior to venting.

1 EO Railcar Unloading - EO Scrubber Test Tracking
2 Vapor Line
3 Test Cycle #1
4 Start Time: 1036 Finish Time (venting stopped): 1038
5 Initial Pressure: 58 Final Pressure (after venting): 0
6 Notes/Comments (abnormal events):

7 Liquid Line
8 Test Cycle #2
9 Start Time: 1230 Finish Time (venting stopped): 1232
10 Initial Pressure: 67 Final Pressure (after venting): 0
11 Notes/Comments (abnormal events):

12 Vapor Line
13 Test Cycle #2
14 Start Time: 1233 Finish Time (venting stopped): 1234
15 Initial Pressure: 59 Final Pressure (after venting): 0
16 Notes/Comments (abnormal events):

EO unloading

~~V8 Aqueous~~ – *EO Scrubber Test Tracking Form*

Record if any events occur during the test. Don't need to record every time the EO header vents.

1 ~~V8 Aqueous~~ – EO Scrubber Test Tracking
2 Liquid Line
3 Test Cycle #: 3
4 Start Time: 1510 Finish Time (venting stopped): 1511
5 Initial Pressure: 65 Final Pressure (after venting): 0
6 Notes/Comments (abnormal events):

7 Vapor Line
8 Test Cycle #: 3
9 Start Time: 1512 Finish Time (venting stopped): 1514
10 Initial Pressure: 54 Final Pressure (after venting): 0
11 Notes/Comments (abnormal events):

12 Liquid Line
13 Test Cycle #: #4
14 Start Time: 1749 Finish Time (venting stopped): 1752
15 Initial Pressure: 66 Final Pressure (after venting): 0
16 Notes/Comments (abnormal events):

167789

EO Unloading

~~V8 Aqueous~~ – *EO Scrubber Test Tracking Form*

Record if any events occur during the test. Don't need to record every time the EO header vents.

1 ~~V8 Aqueous~~ - EO Scrubber Test Tracking
2 Vaporizer
3 Test Cycle: #4
4 Start Time: 1749 Finish Time (venting stopped): 1752
5 Initial Pressure: 55 Final Pressure (after venting): 0
6 Notes/Comments (abnormal events):

7
8 Test Cycle 2: #5 Liquid Line
9 Start Time: 2000 Finish Time (venting stopped): 2001
10 Initial Pressure: 63 Final Pressure (after venting): 0
11 Notes/Comments (abnormal events):

12
13 Test Cycle 3: #5 Vapor Line
14 Start Time: 2002 Finish Time (venting stopped): 2003
15 Initial Pressure: 59 Final Pressure (after venting): 0
16 Notes/Comments (abnormal events):

EO unloading

~~V8 Aqueous~~ – *EO Scrubber Test Tracking Form*

Record if any events occur during the test. Don't need to record every time the EO header vents.

1 V8 Aqueous – EO Scrubber Test Tracking
2 Liquid Line
3 Test Cycle #6
4 Start Time: 2223 Finish Time (venting stopped): 2225
5 Initial Pressure: 4 Final Pressure (after venting): 0
6 Notes/Comments (abnormal events):
_____
7 Vapor Line
8 Test Cycle #6
9 Start Time: 2226 Finish Time (venting stopped): 2228
10 Initial Pressure: 7 Final Pressure (after venting): 0
11 Notes/Comments (abnormal events):
_____
12
13 Test Cycle 3:
14 Start Time: _____ Finish Time (venting stopped): _____
15 Initial Pressure: _____ Final Pressure (after venting): _____
16 Notes/Comments (abnormal events):
_____

V-8

SS 25 01
10 FEB 2026
V-10

V8 Aqueous – EO Scrubber Test Tracking Form

Record if any events occur during the test. Don't need to record every time the EO header vents.

1 V8 Aqueous - EO Scrubber Test Tracking
2
3 Test Cycle 1:
4 Start Time: 10:10 am Finish Time (venting stopped): 11:10 am
5 Initial Pressure: 34.5 Final Pressure (after EO Header venting): 34.2
6 Notes/Comments (abnormal events):
_____
7
8 Test Cycle 2:
9 Start Time: 12:10 pm Finish Time (venting stopped): 13:10 pm
10 Initial Pressure: 35.2 Final Pressure (after venting): 34.8
11 Notes/Comments (abnormal events):
_____
12
13 Test Cycle 3:
14 Start Time: 14:40 Finish Time (venting stopped): 1540
15 Initial Pressure: 34.8 Final Pressure (after venting): 35.0
16 Notes/Comments (abnormal events): N/A
_____

Test Cycle #4:
1720 - 1820
34.3 - 34.6

Test Cycle #5: 1930 - 2030
34.9 - 34.9

Test Cycle #6: 2200 - 2300
34.25 - 34.5

~~V-8~~ V-10
SS-2501

V10 CBT – EO Scrubber Test Tracking Form

Start venting SS2501 when contacted on the radio. Ensure this venting continues throughout the testing.

V10 CBT – EO Scrubber Test Tracking

Test Cycle 1:
Start Time: 10:10 am Finish Time (venting stopped): 11:10 am
Initial Pressure: 2.5 Final Pressure (after venting): 2.2
Notes/Comments (abnormal events):

Test Cycle 2:
Start Time: 12:10 pm Finish Time (venting stopped): 13:10 pm
Initial Pressure: 2.25 Final Pressure (after venting): 2.17
Notes/Comments (abnormal events):

Test Cycle 3:
Start Time: 1440 Finish Time (venting stopped): 1540
Initial Pressure: 2.21 Final Pressure (after venting): 2.24
Notes/Comments (abnormal events):

Test Cycle #4: 1745 - 1820
2.44 psi & 2.42 psi

Test Cycle #5: 1930 - 2030
2.42 - 2.39

Test Cycle #6: 2200 - 2300
2.39 - 2.36

V25 EO Filling – EO Scrubber Test Tracking Form

Vent high pressure tank/south tank pressure when instructed over the radio

1 V25 EO Filling - EO Scrubber Test Tracking
2
3 Test Cycle 1:
4 Start Time: 1011 Finish Time (venting stopped): 1018
5 Initial Pressure: 50 Final Pressure (after venting): 47
6 Notes/Comments (abnormal events):
Vent 3lbs off.
7
8 Test Cycle 2:
9 Start Time: 1210 Finish Time (venting stopped): 1217
10 Initial Pressure: 52 Final Pressure (after venting): 49
11 Notes/Comments (abnormal events):

12
13 Test Cycle 3:
14 Start Time: 1440 Finish Time (venting stopped): 1502
15 Initial Pressure: 50 Final Pressure (after venting): 48
16 Notes/Comments (abnormal events):
Start ¼ open to take longer to vent.

V25 EO Filling – EO Scrubber Test Tracking Form

Vent high pressure tank/south tank pressure when instructed over the radio

• Will need to add pressure after the first test.
• Open valve fully

1 V25 EO Filling - EO Scrubber Test Tracking
2
3 Test Cycle 1:
4 Start Time: 1745 Finish Time (venting stopped): 1755
5 Initial Pressure: 50 psi Final Pressure (after venting): 47
6 Notes/Comments (abnormal events):
open valve all the way.
7
8 Test Cycle 2:
9 Start Time: 1720 Finish Time (venting stopped): 1740
10 Initial Pressure: 49 Final Pressure (after venting): 47
11 Notes/Comments (abnormal events):
OPEN 1/4 WAY
12
13 Test Cycle 3:
14 Start Time: 1930 Finish Time (venting stopped): 1950
15 Initial Pressure: 53 Final Pressure (after venting): 52
16 Notes/Comments (abnormal events):
Open 1/4

10 Feb 2026 #1

11 Feb 2026 #4

#5

start: 22:00 finish: 22:20

#6

start psi 50
End psi 48

Date	Time	Sample	Old Scrubber				Date	Time	Sample	New Scrubber		
			pH	% Sulfuric	% Glycol					pH	% Sulfuric	% Glycol
2/11/2026	10:11	Run O1-1	0.60	5.30%	35.70%		2/11/2026	10:10	Run N1-1	0.40	7.90%	2.70%
2/11/2026	10:26	Run O1-2	0.60	5.00%	28.50%		2/11/2026	10:25	Run N1-2	0.40	7.80%	2.30%
2/11/2026	10:41	Run O1-3	0.60	5.00%	34.40%		2/11/2026	10:40	Run N1-3	0.45	7.90%	2.00%
2/11/2026	10:56	Run O1-4	0.60	4.97%	33.90%		2/11/2026	10:55	Run N1-4	0.55	8.00%	1.90%
2/11/2026	11:11	Run O1-5	0.56	5.00%			2/11/2026	11:10	Run N1-5	0.45	7.70%	
2/11/2026	12:11	Run O2-1	0.50	5.13%			2/11/2026	12:10	Run N2-1	0.40	7.50%	
2/11/2026	12:26	Run O2-2	0.44	5.13%			2/11/2026	12:25	Run N2-2	0.40	7.10%	
2/11/2026	12:41	Run O2-3	0.46	5.00%			2/11/2026	12:40	Run N2-3	0.40	7.60%	
2/11/2026	12:56	Run O2-4	0.43	5.00%			2/11/2026	12:55	Run N2-4	0.40	7.70%	
2/11/2026	13:11	Run O2-5	0.44	5.00%			2/11/2026	13:10	Run N2-5	0.40	7.90%	
2/11/2026	14:41	Run O3-1	0.44	4.90%			2/11/2026	14:40	Run N3-1	0.40	7.60%	
2/11/2026	14:56	Run O3-2	0.44	5.00%			2/11/2026	14:55	Run N3-2	0.40	7.90%	
2/11/2026	15:11	Run O3-3	0.44	4.90%			2/11/2026	15:10	Run N3-3	0.40	7.80%	
2/11/2026	15:26	Run O3-4	0.44	5.20%			2/11/2026	15:25	Run N3-4	0.40	7.70%	
2/11/2026	15:41	Run O3-5	0.44	4.90%			2/11/2026	15:40	Run N3-5	0.40	7.60%	
2/11/2026	17:23	Run O4-1	0.43	5.00%			2/11/2026	17:22	Run N4-1	0.41	8.20%	
2/11/2026	17:38	Run O4-2	0.43	5.00%			2/11/2026	17:37	Run N4-2	0.41	7.70%	
2/11/2026	17:53	Run O4-3	0.43	5.10%			2/11/2026	17:52	Run N4-3	0.41	7.70%	
2/11/2026	18:08	Run O4-4	0.43	5.00%			2/11/2026	18:07	Run N4-4	0.41	7.90%	
2/11/2026	18:23	Run O4-5	0.43	4.90%			2/11/2026	18:22	Run N4-5	0.41	7.80%	
2/11/2026	19:26	Run O5-1	0.67	5.00%			2/11/2026	19:25	Run N5-1	0.41	7.71%	
2/11/2026	19:41	Run O5-2	0.66	4.90%			2/11/2026	19:40	Run N5-2	0.40	7.60%	
2/11/2026	19:56	Run O5-3	0.66	5.00%			2/11/2026	19:55	Run N5-3	0.40	7.60%	
2/11/2026	20:11	Run O5-4	0.65	5.00%			2/11/2026	20:10	Run N5-4	0.40	8.00%	
2/11/2026	20:26	Run O5-5	0.64	5.13%			2/11/2026	20:25	Run N5-5	0.40	7.82%	
2/11/2026	Initial	Run O6-1	0.54	5.00%			2/11/2026	Initial	Run N6-1	0.45	7.80%	
2/11/2026	15	Run O6-2	0.53	5.10%			2/11/2026	15	Run N6-2	0.45	7.70%	
2/11/2026	30	Run O6-3	0.46	5.00%			2/11/2026	30	Run N6-3	0.46	7.87%	
2/11/2026	45	Run O6-4	0.56	5.00%			2/11/2026	45	Run N6-4	0.46	7.70%	
2/11/2026	60	Run O6-5	0.51	5.00%			2/11/2026	60	Run N6-5	0.46	7.70%	

Ch	CH001	CH002	CH003	CH004
Tag	O2	CO2	OUTLET TEMP	OUTLET FLOW
Unit	%	%	−C	IN H2O
Type	Meas	Meas	Meas	Meas
Kind	Inst	Inst	Inst	Inst
Sampling Data				

Date/Time	ETO (ppb)	H2O
Feb 11, 6:00 AM	0.2224005	0.6538643
Feb 11, 6:01 AM	0.1916071	0.5726742
Feb 11, 6:02 AM	0.0664928	0.5630553
Feb 11, 6:03 AM	0.2838869	0.5628083
Feb 11, 6:04 AM	0.443559	0.5604223
Feb 11, 6:05 AM	0.1920447	0.5563962
Feb 11, 6:06 AM	0.101751	0.5520151
Feb 11, 6:07 AM	0.2802638	0.5521635
Feb 11, 6:08 AM	0.3968466	0.5526153
Feb 11, 6:09 AM	0.1176074	0.5478432
Feb 11, 6:10 AM	0.08171432	0.5442337
Feb 11, 6:11 AM	0.2049877	0.5441134
Feb 11, 6:12 AM	0.1564112	0.5463581
Feb 11, 6:13 AM	0.3039831	0.5451061
Feb 11, 6:14 AM	0.2038596	0.5449494
Feb 11, 6:15 AM	0.1314439	0.5396001
Feb 11, 6:16 AM	0.1564747	0.5380543
Feb 11, 6:17 AM	0.5229356	0.5388854
Feb 11, 6:18 AM	0.4838217	0.5355991
Feb 11, 6:19 AM	0.3156421	0.5354519
Feb 11, 6:20 AM	0.2178299	0.5350578
Feb 11, 6:21 AM	0.2492663	0.5317934
Feb 11, 6:22 AM	0.3075561	0.5333316
Feb 11, 6:23 AM	0.1460134	0.5340513
Feb 11, 6:24 AM	0.414768	0.5355192
Feb 11, 6:25 AM	0.1585567	0.5343591
Feb 11, 6:26 AM	0.2165715	0.5334595
Feb 11, 6:27 AM	0.1620211	0.5302397
Feb 11, 6:28 AM	0.1675912	0.5283154
Feb 11, 6:29 AM	0.2744374	0.527371
Feb 11, 6:30 AM	0.2668107	0.5284916
Feb 11, 6:31 AM	0.345573	0.5290806
Feb 11, 6:32 AM	0.1216587	0.525911
Feb 11, 6:33 AM	0.09953395	0.5260286
Feb 11, 6:34 AM	0.1257398	0.5268205
Feb 11, 6:35 AM	0.1613777	0.5257108
Feb 11, 6:36 AM	0.08926849	0.5245562
Feb 11, 6:37 AM	0.1448145	0.5231478
Feb 11, 6:38 AM	0.1368938	0.5223068
Feb 11, 6:39 AM	0.1402535	0.5196444
Feb 11, 6:40 AM	0.104016	0.5193945
Feb 11, 6:41 AM	0.1055282	0.5173833
Feb 11, 6:42 AM	0.257306	0.5159568
Feb 11, 6:43 AM	0.07083462	0.5125232
Feb 11, 6:44 AM	0.09608342	0.5107135
Feb 11, 6:45 AM	0.2224708	0.5082759
Feb 11, 6:46 AM	0.2393945	0.5076175
Feb 11, 6:47 AM	0.2434334	0.5077775
Feb 11, 6:48 AM	0.1829858	0.5043271
Feb 11, 6:49 AM	0.1659491	0.5002014
Feb 11, 6:50 AM	0.1193552	0.4990797
Feb 11, 6:51 AM	0.1768458	0.5037085
Feb 11, 6:52 AM	0.3134259	0.5027909
Feb 11, 6:53 AM	0.08153266	0.4974634
Feb 11, 6:54 AM	0.2206831	0.5004085
Feb 11, 6:55 AM	0.1370538	0.5002008
Feb 11, 6:56 AM	0.2409447	0.5022746
Feb 11, 6:57 AM	0.1342996	0.5000856
Feb 11, 6:58 AM	0.136681	0.4984978
Feb 11, 6:59 AM	0.1393209	0.4974442
Feb 11, 7:00 AM	0.1814565	0.4983949
Feb 11, 7:01 AM	0.2304236	0.4997536
Feb 11, 7:02 AM	0.2341266	0.4999116
Feb 11, 7:03 AM	0.05185556	0.4985479
Feb 11, 7:04 AM	0.1333737	0.4972587
Feb 11, 7:05 AM	0.1792713	0.4965717
Feb 11, 7:06 AM	0.1752601	0.4971265
Feb 11, 7:07 AM	0.1722497	0.4995148
Feb 11, 7:08 AM	0.1165596	0.4973987
Feb 11, 7:09 AM	0.2442651	0.4971211
Feb 11, 7:10 AM	0.1188261	0.4986537
Feb 11, 7:11 AM	0.3931502	0.4993556
Feb 11, 7:12 AM	0.08501719	0.4974979
Feb 11, 7:13 AM	0.2040659	0.4968459
Feb 11, 7:14 AM	0.1724467	0.4981494
Feb 11, 7:15 AM	0.2842081	0.4970175
Feb 11, 7:16 AM	0.1262945	0.4949232
Feb 11, 7:17 AM	0.1185325	0.4957153
Feb 11, 7:18 AM	0.1845851	0.4935432

Feb 11, 7:19 AM	0.2534826	0.4980033
Feb 11, 7:20 AM	0.08391687	0.4973812
Feb 11, 7:21 AM	0.20795	0.4980855
Feb 11, 7:22 AM	0.2204219	0.4961103
Feb 11, 7:23 AM	0.1636574	0.4954316
Feb 11, 7:24 AM	0.3112105	0.4962995
Feb 11, 7:25 AM	0.4201862	0.4985907
Feb 11, 7:26 AM	0.2365385	0.4983862
Feb 11, 7:27 AM	0.1419189	0.4963997
Feb 11, 7:28 AM	0.2039541	0.4952973
Feb 11, 7:29 AM	0.2186248	0.4970174
Feb 11, 7:30 AM	0.2502987	0.4996082
Feb 11, 7:31 AM	0.2278161	0.5004901
Feb 11, 7:32 AM	0.4222939	0.5008048
Feb 11, 7:33 AM	0.1899519	0.4999885
Feb 11, 7:34 AM	0.2021239	0.4999611
Feb 11, 7:35 AM	0.2564991	0.5013465
Feb 11, 7:36 AM	0.2349266	0.5023898
Feb 11, 7:37 AM	0.1328662	0.5015171
Feb 11, 7:38 AM	0.1294768	0.5010656
Feb 11, 7:39 AM	0.1230977	0.5011933
Feb 11, 7:40 AM	0.1444149	0.5036172
Feb 11, 7:41 AM	0.1380651	0.505892
Feb 11, 7:42 AM	0.07901938	0.5058442
Feb 11, 7:43 AM	0.1281171	0.5073006
Feb 11, 7:44 AM	0.1708696	0.5070464
Feb 11, 7:45 AM	0.2037642	0.5102214
Feb 11, 7:46 AM	0.1513336	0.5083196
Feb 11, 7:47 AM	0.2087829	0.5094666
Feb 11, 7:48 AM	0.2567684	0.5106685
Feb 11, 7:49 AM	0.1059215	0.5159337
Feb 11, 7:50 AM	34.41658	0.5148514
Feb 11, 7:51 AM	98.23456	0.5150421
Feb 11, 7:52 AM	98.23849	0.5128577
Feb 11, 7:53 AM	98.3312	0.5162763
Feb 11, 7:54 AM	65.1285	0.5142014
Feb 11, 7:55 AM	12.01745	0.5174248
Feb 11, 7:56 AM	1.42035	0.5187815
Feb 11, 7:57 AM	0.3579212	0.5225898
Feb 11, 7:58 AM	0.334257	0.5249989
Feb 11, 7:59 AM	0.1625059	0.5230342
Feb 11, 8:00 AM	0.4567031	0.5235098
Feb 11, 8:01 AM	0.2075845	0.5255447
Feb 11, 8:02 AM	0.2927204	0.5269742
Feb 11, 8:03 AM	0.2224676	0.5279551
Feb 11, 8:04 AM	0.2044553	0.5258458
Feb 11, 8:05 AM	0.3927104	0.5317633
Feb 11, 8:06 AM	0.2336361	0.5296438
Feb 11, 8:07 AM	0.1918946	0.5255606
Feb 11, 8:08 AM	0.1470796	0.5304992
Feb 11, 8:09 AM	0.1048987	0.5239792
Feb 11, 8:10 AM	0.27833	0.5284461
Feb 11, 8:11 AM	0.1203511	0.5234299
Feb 11, 8:12 AM	43331.38	2.347709
Feb 11, 8:13 AM	12891.67	1.392388
Feb 11, 8:14 AM	4968.152	0.5429811
Feb 11, 8:15 AM	3295.915	0.3966629
Feb 11, 8:16 AM	2407.74258	0.5615843
Feb 11, 8:17 AM	2397.8191	0.1762149
Feb 11, 8:18 AM	1873.1321	0.1810667
Feb 11, 8:19 AM	1273.5498	0.050932
Feb 11, 8:20 AM	378.4398	0.0409996
Feb 11, 8:21 AM	341.8067	0.0307612
Feb 11, 8:22 AM	223.551	0.0189964
Feb 11, 8:23 AM	203.0453	0.0158738
Feb 11, 8:24 AM	191.1962	0.014088
Feb 11, 8:25 AM	180.7655	0.0126578
Feb 11, 8:26 AM	172.0581	0.0115326
Feb 11, 8:27 AM	165.5782	0.0108413
Feb 11, 8:28 AM	158.5922	0.0103247
Feb 11, 8:29 AM	151.8316	0.0098888
Feb 11, 8:30 AM	146.5925	0.0092886
Feb 11, 8:31 AM	141.9563	0.008773
Feb 11, 8:32 AM	136.9006	0.0083053
Feb 11, 8:33 AM	131.954	0.0079438
Feb 11, 8:34 AM	128.3164	0.0077959
Feb 11, 8:35 AM	125.2302	0.0074926
Feb 11, 8:36 AM	121.77	0.0072124
Feb 11, 8:37 AM	119.429	0.0069194
Feb 11, 8:38 AM	113.5638	0.006584
Feb 11, 8:39 AM	110.6251	0.006229
Feb 11, 8:40 AM	108.6784	0.0062757
Feb 11, 8:41 AM	106.016	0.0060423
Feb 11, 8:42 AM	2162.268	0.3391563
Feb 11, 8:43 AM	2486.393	0.5543684

2026/02/11 09:24:00_000	21.99	17.49	8.7	0.002
2026/02/11 09:25:00_000	21.99	17.51	8.9	0.006
2026/02/11 09:26:00_000	21.99	17.54	8.9	0.002
2026/02/11 09:27:00_000	21.99	17.54	8.1	0.004
2026/02/11 09:28:00_000	12.19	10.19	8.9	0.010
2026/02/11 09:29:00_000	12.03	10.04	8.8	0.057
2026/02/11 09:30:00_000	12.01	10	8.9	0.004
2026/02/11 09:31:00_000	12.01	9.98	9	0.116
2026/02/11 09:32:00_000	12	9.96	9	0.024
2026/02/11 09:33:00_000	0.05	-0.69	9.1	0.003
2026/02/11 09:34:00_000	-0.01	-0.78	9.1	0.003
2026/02/11 09:35:00_000	-0.03	-0.82	9.2	0.003
2026/02/11 09:36:00_000	-0.04	-0.85	9.4	0.003
2026/02/11 09:37:00_000	-0.04	-0.87	9.7	0.003
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2026/02/11 09:39:00_000	-0.04	-0.88	9.4	0.007
2026/02/11 09:40:00_000	-0.04	-0.89	9.4	0.005
2026/02/11 09:41:00_000	-0.04	-0.89	9.4	0.005
2026/02/11 09:42:00_000	-0.05	-0.9	9.5	0.005
2026/02/11 09:43:00_000	-0.04	-0.91	9.5	0.004
2026/02/11 09:44:00_000	-0.05	-0.91	9.5	0.004
2026/02/11 09:45:00_000	11.59	-0.79	9.4	0.005
2026/02/11 09:46:00_000	-0.02	-0.91	9.7	0.032
2026/02/11 09:47:00_000	-0.04	-0.91	9.8	0.005
2026/02/11 09:48:00_000	-0.04	-0.91	9.7	0.005
2026/02/11 09:49:00_000	17.13	-0.88	9.9	0.005
2026/02/11 09:50:00_000	0.04	-0.91	10.1	0.005
2026/02/11 09:51:00_000	-0.03	-0.91	9.8	0.005
2026/02/11 09:52:00_000	17.5	-0.88	9.8	0.004
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2026/02/11 09:54:00_000	-0.02	-0.91	10	0.005
2026/02/11 09:55:00_000	-0.04	-0.92	10.1	0.003
2026/02/11 09:56:00_000	-0.04	-0.92	10.1	0.003
2026/02/11 09:57:00_000	-0.05	-0.92	10.1	0.008
2026/02/11 09:58:00_000	-0.05	-0.92	10.3	0.003
2026/02/11 09:59:00_000	11.58	9.17	10.1	0.005
2026/02/11 10:00:00_000	11.95	9.77	10.1	0.004
2026/02/11 10:01:00_000	17.87	-0.75	10.1	0.005
2026/02/11 10:02:00_000	17.89	-0.82	10.1	0.005
2026/02/11 10:03:00_000	17.87	-0.83	10.2	0.005
2026/02/11 10:04:00_000	17.88	-0.85	10.1	0.004
2026/02/11 10:05:00_000	17.88	-0.85	10.2	0.022
2026/02/11 10:06:00_000	17.94	-0.86	10.1	0.005
2026/02/11 10:07:00_000	17.91	-0.86	9.8	0.006
2026/02/11 10:08:00_000	17.93	-0.87	10.3	0.005

Feb 11, 8:44 AM	125.8719	0.0280043
Feb 11, 8:45 AM	110.596	0.0146953
Feb 11, 8:46 AM	102.9531	0.0109329
Feb 11, 8:47 AM	97.19784	0.0093555
Feb 11, 8:48 AM	91.29794	0.00799
Feb 11, 8:49 AM	86.85358	0.007059
Feb 11, 8:50 AM	84.1813	0.0066587
Feb 11, 8:51 AM	82.46217	0.0061933
Feb 11, 8:52 AM	80.20052	0.0061194
Feb 11, 8:53 AM	78.26467	0.005796
Feb 11, 8:54 AM	75.65827	0.0053847
Feb 11, 8:55 AM	72.51058	0.0051861
Feb 11, 8:56 AM	69.80627	0.0052626
Feb 11, 8:57 AM	67.62228	0.0050054
Feb 11, 8:58 AM	65.73557	0.0044353
Feb 11, 8:59 AM	63.7655	0.0043334
Feb 11, 9:00 AM	61.59163	0.0045187
Feb 11, 9:01 AM	59.80371	0.0042771
Feb 11, 9:02 AM	58.50859	0.0041184
Feb 11, 9:03 AM	56.42336	0.0040792
Feb 11, 9:04 AM	55.15258	0.0037574
Feb 11, 9:05 AM	53.63104	0.0036572
Feb 11, 9:06 AM	52.60557	0.0037956
Feb 11, 9:07 AM	51.56376	0.003524
Feb 11, 9:08 AM	50.13268	0.0036335
Feb 11, 9:09 AM	49.27241	0.0035241
Feb 11, 9:10 AM	48.37432	0.0032916
Feb 11, 9:11 AM	47.40332	0.0033033
Feb 11, 9:12 AM	46.50529	0.0035358
Feb 11, 9:13 AM	45.769	0.0032194
Feb 11, 9:14 AM	44.73469	0.003371
Feb 11, 9:15 AM	43.69774	0.0028773
Feb 11, 9:16 AM	4309.827	0.204188
Feb 11, 9:17 AM	406.4777	0.0023341
Feb 11, 9:18 AM	277.9428	0.0023257
Feb 11, 9:19 AM	185.3177	0.0046783
Feb 11, 9:20 AM	215.1286	0.0062298
Feb 11, 9:21 AM	197.4379	0.0080152
Feb 11, 9:22 AM	185.9244	0.0090299
Feb 11, 9:23 AM	176.7974	0.009775
Feb 11, 9:24 AM	181.5568	0.010541
Feb 11, 9:25 AM	204.7173	0.0102288
Feb 11, 9:26 AM	135.4743	0.0106631
Feb 11, 9:27 AM	3736.71	0.0959036
Feb 11, 9:28 AM	301.4576	0.0144948
Feb 11, 9:29 AM	228.5276	0.0111276
Feb 11, 9:30 AM	237.4656	0.0103108
Feb 11, 9:31 AM	194.4556	0.0091144
Feb 11, 9:32 AM	138.663	0.0075983
Feb 11, 9:33 AM	53.00821	0.0037682
Feb 11, 9:34 AM	49.18164	0.0035754
Feb 11, 9:35 AM	46.35179	0.0032668
Feb 11, 9:36 AM	43.87416	0.0029422
Feb 11, 9:37 AM	5145.962	0.134231
Feb 11, 9:38 AM	6813.244	0.3025163
Feb 11, 9:39 AM	5462.092	0.2721958
Feb 11, 9:40 AM	5214.82	0.2325641
Feb 11, 9:41 AM	5119.432	0.2129897
Feb 11, 9:42 AM	5061.915	0.1997602
Feb 11, 9:43 AM	5036.313	0.2093793
Feb 11, 9:44 AM	2338.19	0.5514643
Feb 11, 9:45 AM	3535.525	0.3572579
Feb 11, 9:46 AM	2537.146	0.1025342
Feb 11, 9:47 AM	2374.141	0.1029589
Feb 11, 9:48 AM	2100.742	0.1685916
Feb 11, 9:49 AM	1234.051	0.6034896
Feb 11, 9:50 AM	1292.816	0.0722323
Feb 11, 9:51 AM	1020.839	0.1878033
Feb 11, 9:52 AM	1819.391	0.7745157
Feb 11, 9:53 AM	2317.928	0.1224842
Feb 11, 9:54 AM	2304.474	0.1075163
Feb 11, 9:55 AM	563.6086	0.0301092
Feb 11, 9:56 AM	55.63224	0.0089554
Feb 11, 9:57 AM	46.26897	0.00751
Feb 11, 9:58 AM	654.3146	0.0765139
Feb 11, 9:59 AM	231.3226	0.0258231
Feb 11, 10:00 AM	161.4001	0.398513
Feb 11, 10:01 AM	109.2039	0.9267831
Feb 11, 10:02 AM	102.4222	0.9541792
Feb 11, 10:03 AM	101.3433	0.9484926
Feb 11, 10:04 AM	122.6425	0.9642408
Feb 11, 10:05 AM	121.1698	0.9634058
Feb 11, 10:06 AM	118.5193	0.9709343
Feb 11, 10:07 AM	139.8688	0.9752676
Feb 11, 10:08 AM	136.6738	0.9810959

2026/02/11 10:09:00_000	17.65	-0.88	9.8	0.005	Feb 11, 10:09 AM	144.7262	0.9864354
2026/02/11 10:10:00_000	16.56	-0.88	10.5	0.005	Feb 11, 10:10 AM	131.3541	0.9886765
2026/02/11 10:11:00_000	16.54	-0.88	9.9	0.005	Feb 11, 10:11 AM	134.4006	0.9858277
2026/02/11 10:12:00_000	15.3	-0.88	10.7	0.007	Feb 11, 10:12 AM	204.8627	0.9977944
2026/02/11 10:13:00_000	14.98	-0.88	10.9	0.005	Feb 11, 10:13 AM	2627.243	1.151508
2026/02/11 10:14:00_000	15.34	-0.88	11.1	0.005	Feb 11, 10:14 AM	16679.12	1.939245
2026/02/11 10:15:00_000	15.31	-0.88	11.3	0.005	Feb 11, 10:15 AM	27442.49	2.274634
2026/02/11 10:16:00_000	15.16	-0.88	11.3	0.005	Feb 11, 10:16 AM	35652.09	2.515338
2026/02/11 10:17:00_000	14.99	-0.88	11.3	0.005	Feb 11, 10:17 AM	37873.88	2.692054
2026/02/11 10:18:00_000	15.29	-0.89	12.3	0.005	Feb 11, 10:18 AM	39923.93	2.849823
2026/02/11 10:19:00_000	15.01	-0.88	11.6	0.005	Feb 11, 10:19 AM	34693.17	2.552207
2026/02/11 10:20:00_000	16.4	-0.88	11.3	0.005	Feb 11, 10:20 AM	29833.26	2.470307
2026/02/11 10:21:00_000	16.5	-0.88	11.5	0.005	Feb 11, 10:21 AM	23937.01	2.100881
2026/02/11 10:22:00_000	16.61	-0.89	11.4	0.005	Feb 11, 10:22 AM	15090.96	1.937736
2026/02/11 10:23:00_000	16.7	-0.88	11.5	0.007	Feb 11, 10:23 AM	9586.479	1.678141
2026/02/11 10:24:00_000	16.65	-0.88	11.4	0.005	Feb 11, 10:24 AM	6156.401	1.459658
2026/02/11 10:25:00_000	16.78	-0.88	11.3	0.005	Feb 11, 10:25 AM	3948.234	1.305617
2026/02/11 10:26:00_000	16.83	-0.88	11.4	0.005	Feb 11, 10:26 AM	2602.283	1.195923
2026/02/11 10:27:00_000	16.62	-0.88	11.3	0.005	Feb 11, 10:27 AM	1738.904	1.132069
2026/02/11 10:28:00_000	16.71	-0.88	11.5	0.005	Feb 11, 10:28 AM	1219.335	1.096448
2026/02/11 10:29:00_000	16.75	-0.89	11.6	0.005	Feb 11, 10:29 AM	859.1729	1.075776
2026/02/11 10:30:00_000	16.77	-0.89	11.5	0.005	Feb 11, 10:30 AM	649.8688	1.063265
2026/02/11 10:31:00_000	16.53	-0.88	11.6	0.005	Feb 11, 10:31 AM	710.3447	1.062258
2026/02/11 10:32:00_000	16.49	-0.89	11.7	0.005	Feb 11, 10:32 AM	646.6653	1.056006
2026/02/11 10:33:00_000	16.89	-0.89	11.7	0.005	Feb 11, 10:33 AM	469.8718	1.038289
2026/02/11 10:34:00_000	16.51	-0.89	11.9	0.005	Feb 11, 10:34 AM	355.3093	1.027571
2026/02/11 10:35:00_000	16.47	-0.89	11.9	0.005	Feb 11, 10:35 AM	279.9657	1.026985
2026/02/11 10:36:00_000	16.25	-0.89	11.9	0.005	Feb 11, 10:36 AM	213.8808	1.026433
2026/02/11 10:37:00_000	16.68	-0.89	11.9	0.008	Feb 11, 10:37 AM	293.1591	1.034646
2026/02/11 10:38:00_000	16.53	-0.89	12.2	0.005	Feb 11, 10:38 AM	729.309	1.067145
2026/02/11 10:39:00_000	16.69	-0.89	12	0.005	Feb 11, 10:39 AM	905.3917	1.074039
2026/02/11 10:40:00_000	16.63	-0.89	11.9	0.005	Feb 11, 10:40 AM	1291.333	1.10654
2026/02/11 10:41:00_000	16.6	-0.89	11.9	0.013	Feb 11, 10:41 AM	1103.338	1.103837
2026/02/11 10:42:00_000	16.56	-0.89	11.9	0.004	Feb 11, 10:42 AM	803.5949	1.081707
2026/02/11 10:43:00_000	16.62	-0.89	11.9	0.005	Feb 11, 10:43 AM	599.233	1.068172
2026/02/11 10:44:00_000	16.78	-0.9	11.9	0.005	Feb 11, 10:44 AM	537.7955	1.068306
2026/02/11 10:45:00_000	16.66	-0.89	12	0.005	Feb 11, 10:45 AM	425.54	1.05483
2026/02/11 10:46:00_000	16.76	-0.89	11.9	0.005	Feb 11, 10:46 AM	305.1433	1.048608
2026/02/11 10:47:00_000	16.67	-0.89	12	0.005	Feb 11, 10:47 AM	235.486	1.050972
2026/02/11 10:48:00_000	16.61	-0.89	12	0.005	Feb 11, 10:48 AM	178.6794	1.049535
2026/02/11 10:49:00_000	16.61	-0.89	12	0.004	Feb 11, 10:49 AM	156.2872	1.050022
2026/02/11 10:50:00_000	16.67	-0.89	12.2	0.005	Feb 11, 10:50 AM	214.873	1.057799
2026/02/11 10:51:00_000	16.48	-0.89	12.2	0.005	Feb 11, 10:51 AM	191.0686	1.055808
2026/02/11 10:52:00_000	16.56	-0.89	12.1	0.005	Feb 11, 10:52 AM	157.0251	1.040836
2026/02/11 10:53:00_000	16.72	-0.89	12.2	0.005	Feb 11, 10:53 AM	229.7175	1.052327
2026/02/11 10:54:00_000	16.59	-0.9	12.3	0.005	Feb 11, 10:54 AM	221.4	1.056479
2026/02/11 10:55:00_000	16.62	-0.89	12.3	0.005	Feb 11, 10:55 AM	178.4432	1.059071
2026/02/11 10:56:00_000	16.63	-0.9	12.2	0.006	Feb 11, 10:56 AM	144.0427	1.053832
2026/02/11 10:57:00_000	16.56	-0.9	12.4	0.005	Feb 11, 10:57 AM	115.0498	1.05082
2026/02/11 10:58:00_000	16.74	-0.9	12.4	0.004	Feb 11, 10:58 AM	99.68822	1.043107
2026/02/11 10:59:00_000	16.67	-0.9	12.5	0.004	Feb 11, 10:59 AM	114.7401	1.046588
2026/02/11 11:00:00_000	16.52	-0.9	12.2	0.004	Feb 11, 11:00 AM	100.3209	1.051099
2026/02/11 11:01:00_000	16.56	-0.89	12.5	0.005	Feb 11, 11:01 AM	144.3371	1.061088
2026/02/11 11:02:00_000	16.76	-0.9	12.5	0.005	Feb 11, 11:02 AM	201.9255	1.065449
2026/02/11 11:03:00_000	16.59	-0.9	12.6	0.005	Feb 11, 11:03 AM	166.0138	1.06874
2026/02/11 11:04:00_000	16.58	-0.9	12.6	0.005	Feb 11, 11:04 AM	133.0836	1.052914
2026/02/11 11:05:00_000	16.62	-0.91	12.7	0.010	Feb 11, 11:05 AM	111.1133	1.053448
2026/02/11 11:06:00_000	16.64	-0.9	12.7	0.004	Feb 11, 11:06 AM	106.1288	1.058922
2026/02/11 11:07:00_000	16.51	-0.9	12.9	0.019	Feb 11, 11:07 AM	172.1892	1.077991
2026/02/11 11:08:00_000	16.73	-0.9	12.8	0.005	Feb 11, 11:08 AM	155.9024	1.080645
2026/02/11 11:09:00_000	16.56	-0.9	12.8	0.009	Feb 11, 11:09 AM	124.3505	1.075754
2026/02/11 11:10:00_000	16.72	-0.89	12.9	0.005	Feb 11, 11:10 AM	3156.715	1.233172
averages	**16.43229508**	**-0.889672131**	**11.88196721**	**0.005453552**		**5040.37548**	**1.2779462**
2026/02/11 11:11:00_000	0.39	-0.89	13	0.004	Feb 11, 11:11 AM	150.4024	0.968049
2026/02/11 11:12:00_000	0.02	-0.92	13	0.055	Feb 11, 11:12 AM	89.95383	0.6367887
2026/02/11 11:13:00_000	-0.02	-0.93	13.1	0.004	Feb 11, 11:13 AM	73.70301	0.2613975
2026/02/11 11:14:00_000	-0.03	-0.93	13.1	0.003	Feb 11, 11:14 AM	63.43034	0.1705899
2026/02/11 11:15:00_000	-0.04	-0.93	13.1	0.003	Feb 11, 11:15 AM	55.90385	0.0825193
2026/02/11 11:16:00_000	-0.05	-0.93	13.2	0.003	Feb 11, 11:16 AM	50.231	0.0421154
2026/02/11 11:17:00_000	-0.05	-0.94	13.3	0.004	Feb 11, 11:17 AM	46.08936	0.0303978
2026/02/11 11:18:00_000	-0.06	-0.94	13.3	0.004	Feb 11, 11:18 AM	755.209	0.1099026
2026/02/11 11:19:00_000	11.73	9.41	13.3	0.005	Feb 11, 11:19 AM	180.1977	0.0387175
2026/02/11 11:20:00_000	11.9	9.69	13.3	0.005	Feb 11, 11:20 AM	149.821	0.0292925
2026/02/11 11:21:00_000	5.39	1.76	13.3	0.005	Feb 11, 11:21 AM	8360.655	0.3463124
2026/02/11 11:22:00_000	0	-0.83	13.5	0.004	Feb 11, 11:22 AM	2451.956	0.1193128
2026/02/11 11:23:00_000	-0.03	-0.87	13.4	0.015	Feb 11, 11:23 AM	2367.891	0.1136411
2026/02/11 11:24:00_000	-0.04	-0.89	13.5	0.005	Feb 11, 11:24 AM	1338.49	0.4057277
2026/02/11 11:25:00_000	17.6	-0.87	13.3	0.005	Feb 11, 11:25 AM	110.9314	0.9754028
2026/02/11 11:26:00_000	17.69	-0.88	13.4	0.005	Feb 11, 11:26 AM	88.70081	1.001313
2026/02/11 11:27:00_000	17.81	-0.88	13.5	0.005	Feb 11, 11:27 AM	123.7079	1.01154
2026/02/11 11:28:00_000	17.74	-0.88	13.5	0.018	Feb 11, 11:28 AM	141.6609	1.016016
2026/02/11 11:29:00_000	17.76	-0.89	13.6	0.004	Feb 11, 11:29 AM	118.0519	1.013765
2026/02/11 11:30:00_000	17.77	-0.89	13.6	0.006	Feb 11, 11:30 AM	94.89248	1.011285
2026/02/11 11:31:00_000	17.75	-0.89	13.5	0.043	Feb 11, 11:31 AM	81.35696	1.014242
2026/02/11 11:32:00_000	17.7	-0.9	13.5	0.038	Feb 11, 11:32 AM	112.3042	1.01817

2026/02/11 11:33:00_000	17.78	-0.9	13.6	0.005	Feb 11, 11:33 AM	163.2738	1.021808
2026/02/11 11:34:00_000	17.73	-0.9	13.6	0.005	Feb 11, 11:34 AM	131.4995	1.02935
2026/02/11 11:35:00_000	17.77	-0.9	13.6	0.005	Feb 11, 11:35 AM	117.086	1.004836
2026/02/11 11:36:00_000	17.74	-0.9	13.6	0.005	Feb 11, 11:36 AM	176.0278	1.012969
2026/02/11 11:37:00_000	17.69	-0.9	13.6	0.004	Feb 11, 11:37 AM	172.9024	1.015153
2026/02/11 11:38:00_000	17.76	-0.9	13.6	0.005	Feb 11, 11:38 AM	156.8983	1.009275
2026/02/11 11:39:00_000	17.82	-0.9	13.6	0.005	Feb 11, 11:39 AM	173.6107	1.012809
2026/02/11 11:40:00_000	17.76	-0.9	13.6	0.040	Feb 11, 11:40 AM	204.2068	1.003144
2026/02/11 11:41:00_000	17.75	-0.91	13.6	0.005	Feb 11, 11:41 AM	180.112	1.005573
2026/02/11 11:42:00_000	17.83	-0.9	13.7	0.005	Feb 11, 11:42 AM	147.3496	1.016416
2026/02/11 11:43:00_000	17.72	-0.9	13.8	0.005	Feb 11, 11:43 AM	122.4379	1.011619
2026/02/11 11:44:00_000	17.73	-0.9	13.9	0.020	Feb 11, 11:44 AM	97.54922	1.020558
2026/02/11 11:45:00_000	17.89	-0.9	13.8	0.066	Feb 11, 11:45 AM	159.2639	1.014035
2026/02/11 11:46:00_000	17.84	-0.9	14	0.004	Feb 11, 11:46 AM	139.3421	1.003259
2026/02/11 11:47:00_000	17.81	-0.9	14.3	0.021	Feb 11, 11:47 AM	116.1767	1.004176
2026/02/11 11:48:00_000	17.83	-0.9	14	0.085	Feb 11, 11:48 AM	184.4254	1.00481
2026/02/11 11:49:00_000	17.76	-0.9	14	0.005	Feb 11, 11:49 AM	192.9091	1.024337
2026/02/11 11:50:00_000	17.88	-0.9	15.2	0.005	Feb 11, 11:50 AM	155.5984	1.013176
2026/02/11 11:51:00_000	17.8	-0.9	14.1	0.005	Feb 11, 11:51 AM	121.4062	1.002331
2026/02/11 11:52:00_000	17.83	-0.9	14	0.005	Feb 11, 11:52 AM	102.7422	1.002379
2026/02/11 11:53:00_000	17.72	-0.9	14.3	0.005	Feb 11, 11:53 AM	167.5618	1.008226
2026/02/11 11:54:00_000	17.84	-0.91	14.3	0.005	Feb 11, 11:54 AM	151.4899	0.9954017
2026/02/11 11:55:00_000	17.77	-0.91	14	0.005	Feb 11, 11:55 AM	130.4941	1.004311
2026/02/11 11:56:00_000	17.78	-0.91	15.2	0.003	Feb 11, 11:56 AM	106.102	1.001541
2026/02/11 11:57:00_000	17.85	-0.91	14.2	0.004	Feb 11, 11:57 AM	100.0356	0.9964327
2026/02/11 11:58:00_000	17.79	-0.91	14.1	0.005	Feb 11, 11:58 AM	185.2094	1.017972
2026/02/11 11:59:00_000	17.76	-0.91	14.3	0.016	Feb 11, 11:59 AM	165.7944	1.013132
2026/02/11 12:00:00_000	17.8	-0.91	13.6	0.004	Feb 11, 12:00 PM	135.972	1.002531
2026/02/11 12:01:00_000	17.75	-0.91	14.6	0.018	Feb 11, 12:01 PM	176.0404	1.004475
2026/02/11 12:02:00_000	17.84	-0.91	14.6	0.015	Feb 11, 12:02 PM	210.3595	0.9955463
2026/02/11 12:03:00_000	17.82	-0.91	14.6	0.005	Feb 11, 12:03 PM	158.2142	0.9948341
2026/02/11 12:04:00_000	17.8	-0.9	14.7	0.005	Feb 11, 12:04 PM	132.312	1.006234
2026/02/11 12:05:00_000	17.82	-0.91	14.7	0.005	Feb 11, 12:05 PM	98.59663	0.9929329
2026/02/11 12:06:00_000	17.79	-0.91	14.7	0.005	Feb 11, 12:06 PM	109.1184	1.003225
2026/02/11 12:07:00_000	17.77	-0.91	14.7	0.005	Feb 11, 12:07 PM	174.3683	1.005424
2026/02/11 12:08:00_000	17.72	-0.91	14	0.004	Feb 11, 12:08 PM	154.5367	1.013941
2026/02/11 12:09:00_000	17.63	-0.91	14.9	0.020	Feb 11, 12:09 PM	136.6409	1.03428
2026/02/11 12:10:00_000	17.3	-0.91	15.1	0.004	Feb 11, 12:10 PM	165.9039	1.041227
2026/02/11 12:11:00_000	16.61	-0.91	15.3	0.005	Feb 11, 12:11 PM	174.8352	1.072257
2026/02/11 12:12:00_000	15.35	-0.91	15.4	0.004	Feb 11, 12:12 PM	305.8567	1.17731
2026/02/11 12:13:00_000	15.09	-0.91	15.7	0.005	Feb 11, 12:13 PM	4189.239	1.426764
2026/02/11 12:14:00_000	15.15	-0.91	15.7	0.007	Feb 11, 12:14 PM	17985.89	2.019361
2026/02/11 12:15:00_000	15.24	-0.92	15.8	0.004	Feb 11, 12:15 PM	28920.98	2.302481
2026/02/11 12:16:00_000	15.12	-0.91	15.7	0.005	Feb 11, 12:16 PM	38824.77	3.023651
2026/02/11 12:17:00_000	15.08	-0.91	15.9	0.005	Feb 11, 12:17 PM	44380.45	3.226725
2026/02/11 12:18:00_000	14.98	-0.91	16	0.006	Feb 11, 12:18 PM	38613.59	2.810478
2026/02/11 12:19:00_000	16.1	-0.91	16	0.007	Feb 11, 12:19 PM	32246.21	2.671287
2026/02/11 12:20:00_000	16.49	-0.91	15.9	0.005	Feb 11, 12:20 PM	25944.66	2.34147
2026/02/11 12:21:00_000	16.48	-0.91	16	0.010	Feb 11, 12:21 PM	16258.28	2.066527
2026/02/11 12:22:00_000	16.36	-0.91	16	0.005	Feb 11, 12:22 PM	10186.33	1.784206
2026/02/11 12:23:00_000	16.41	-0.91	16	0.006	Feb 11, 12:23 PM	6466.595	1.505332
2026/02/11 12:24:00_000	16.51	-0.91	16	0.016	Feb 11, 12:24 PM	4072.512	1.330099
2026/02/11 12:25:00_000	16.5	-0.91	16	0.015	Feb 11, 12:25 PM	2627.853	1.221948
2026/02/11 12:26:00_000	16.58	-0.91	16.2	0.005	Feb 11, 12:26 PM	1738.744	1.164098
2026/02/11 12:27:00_000	16.4	-0.91	16.2	0.006	Feb 11, 12:27 PM	1129.957	1.108875
2026/02/11 12:28:00_000	16.42	-0.91	16.3	0.004	Feb 11, 12:28 PM	793.9217	1.096933
2026/02/11 12:29:00_000	16.4	-0.91	16.2	0.004	Feb 11, 12:29 PM	585.3981	1.091671
2026/02/11 12:30:00_000	16.49	-0.91	16.2	0.004	Feb 11, 12:30 PM	457.6657	1.08189
2026/02/11 12:31:00_000	16.38	-0.91	16.5	0.005	Feb 11, 12:31 PM	367.9438	1.093525
2026/02/11 12:32:00_000	16.42	-0.91	16.5	0.004	Feb 11, 12:32 PM	321.1295	1.099326
2026/02/11 12:33:00_000	16.48	-0.91	16.7	0.005	Feb 11, 12:33 PM	284.4811	1.101496
2026/02/11 12:34:00_000	16.38	-0.91	16.4	0.005	Feb 11, 12:34 PM	637.1922	1.107771
2026/02/11 12:35:00_000	16.37	-0.91	16.5	0.005	Feb 11, 12:35 PM	1397.444	1.144313
2026/02/11 12:36:00_000	16.34	-0.91	16.7	0.005	Feb 11, 12:36 PM	1270.558	1.147744
2026/02/11 12:37:00_000	16.31	-0.91	16.7	0.005	Feb 11, 12:37 PM	864.425	1.133879
2026/02/11 12:38:00_000	16.59	-0.91	16.7	0.005	Feb 11, 12:38 PM	591.2606	1.109439
2026/02/11 12:39:00_000	16.34	-0.91	16.8	0.005	Feb 11, 12:39 PM	482.2573	1.109015
2026/02/11 12:40:00_000	16.29	-0.91	16.8	0.004	Feb 11, 12:40 PM	380.7065	1.106694
2026/02/11 12:41:00_000	16.37	-0.91	16.9	0.019	Feb 11, 12:41 PM	437.799	1.101724
2026/02/11 12:42:00_000	16.53	-0.91	16.9	0.005	Feb 11, 12:42 PM	372.2411	1.085751
2026/02/11 12:43:00_000	16.48	-0.91	17.1	0.005	Feb 11, 12:43 PM	313.4647	1.092817
2026/02/11 12:44:00_000	16.38	-0.91	17.1	0.005	Feb 11, 12:44 PM	304.9381	1.090228
2026/02/11 12:45:00_000	16.42	-0.91	17.2	0.004	Feb 11, 12:45 PM	292.6413	1.098759
2026/02/11 12:46:00_000	16.38	-0.91	17.4	0.005	Feb 11, 12:46 PM	344.4835	1.095869
2026/02/11 12:47:00_000	16.47	-0.91	17.4	0.005	Feb 11, 12:47 PM	357.6065	1.088395
2026/02/11 12:48:00_000	16.5	-0.91	17.4	0.004	Feb 11, 12:48 PM	345.597	1.106107
2026/02/11 12:49:00_000	16.47	-0.91	17.1	0.004	Feb 11, 12:49 PM	402.3589	1.096121
2026/02/11 12:50:00_000	16.42	-0.91	17.1	0.004	Feb 11, 12:50 PM	439.6813	1.09762
2026/02/11 12:51:00_000	16.39	-0.91	17.1	0.005	Feb 11, 12:51 PM	441.6977	1.099109
2026/02/11 12:52:00_000	16.42	-0.91	16.9	0.005	Feb 11, 12:52 PM	373.9023	1.09606
2026/02/11 12:53:00_000	16.3	-0.92	17.1	0.005	Feb 11, 12:53 PM	330.6582	1.101607
2026/02/11 12:54:00_000	16.43	-0.91	17.3	0.005	Feb 11, 12:54 PM	302.1822	1.094337
2026/02/11 12:55:00_000	16.47	-0.91	17.4	0.005	Feb 11, 12:55 PM	260.4237	1.085276
2026/02/11 12:56:00_000	16.33	-0.91	17.4	0.005	Feb 11, 12:56 PM	254.678	1.103912
2026/02/11 12:57:00_000	16.46	-0.91	17.2	0.004	Feb 11, 12:57 PM	237.025	1.095232

2026/02/11 12:58:00_000	16.51	-0.91	17.4	0.005
2026/02/11 12:59:00_000	16.36	-0.91	17.3	0.006
2026/02/11 13:00:00_000	16.42	-0.91	17.1	0.005
2026/02/11 13:01:00_000	16.33	-0.91	17.2	0.005
2026/02/11 13:02:00_000	16.49	-0.91	17.2	0.005
2026/02/11 13:03:00_000	16.53	-0.91	17.1	0.004
2026/02/11 13:04:00_000	16.47	-0.91	17.1	0.004
2026/02/11 13:05:00_000	16.4	-0.91	17.1	0.004
2026/02/11 13:06:00_000	16.42	-0.91	17	0.006
2026/02/11 13:07:00_000	16.44	-0.91	17.1	0.005
2026/02/11 13:08:00_000	16.42	-0.92	16.9	0.033
2026/02/11 13:09:00_000	16.4	-0.91	17.1	0.005
2026/02/11 13:10:00_000	16.46	-0.92	17.1	0.005
averages	**16.29229508**	**-0.910655738**	**16.63278689**	**0.005961749**
2026/02/11 13:11:00_000	16.47	-0.92	17	0.005
2026/02/11 13:12:00_000	16.76	-0.92	17	0.004
2026/02/11 13:13:00_000	17.02	-0.92	17	0.005
2026/02/11 13:14:00_000	17.7	-0.92	17.1	0.033
2026/02/11 13:15:00_000	17.76	-0.92	17.1	0.004
2026/02/11 13:16:00_000	17.73	-0.92	17.3	0.005
2026/02/11 13:17:00_000	17.81	-0.92	17.3	0.005
2026/02/11 13:18:00_000	17.82	-0.92	17.3	0.005
2026/02/11 13:19:00_000	17.69	-0.92	17.5	0.009
2026/02/11 13:20:00_000	17.71	-0.92	17.7	0.005
2026/02/11 13:21:00_000	17.74	-0.92	17.2	0.004
2026/02/11 13:22:00_000	17.71	-0.92	17.7	0.009
2026/02/11 13:23:00_000	17.82	-0.92	17.8	0.006
2026/02/11 13:24:00_000	17.75	-0.92	17.7	0.005
2026/02/11 13:25:00_000	0.38	-0.95	18	0.005
2026/02/11 13:26:00_000	0	-0.95	18.1	0.004
2026/02/11 13:27:00_000	-0.02	-0.96	18.2	0.003
2026/02/11 13:28:00_000	-0.04	-0.96	18.4	0.003
2026/02/11 13:29:00_000	-0.05	-0.96	18.4	0.004
2026/02/11 13:30:00_000	-0.05	-0.96	18.6	0.003
2026/02/11 13:31:00_000	-0.05	-0.96	19.6	0.000
2026/02/11 13:32:00_000	-0.05	-0.96	18.7	-0.001
2026/02/11 13:33:00_000	-0.06	-0.96	18.7	0.000
2026/02/11 13:34:00_000	-0.04	-0.96	18.6	0.000
2026/02/11 13:35:00_000	-0.04	-0.96	18.4	0.000
2026/02/11 13:36:00_000	-0.04	-0.96	18.5	0.000
2026/02/11 13:37:00_000	-0.04	-0.96	18.7	0.000
2026/02/11 13:38:00_000	-0.02	-0.95	18.5	0.000
2026/02/11 13:39:00_000	0.03	-0.94	18.4	0.000
2026/02/11 13:40:00_000	0.88	-0.91	18.1	0.000
2026/02/11 13:41:00_000	5.37	-0.9	18.1	-0.001
2026/02/11 13:42:00_000	16.56	-0.88	18.2	0.000
2026/02/11 13:43:00_000	17.69	-0.88	18.1	0.001
2026/02/11 13:44:00_000	17.56	-0.88	18.2	0.000
2026/02/11 13:45:00_000	17.6	-0.88	18.3	0.000
2026/02/11 13:46:00_000	17.62	-0.9	18.4	0.000
2026/02/11 13:47:00_000	0.49	-0.93	18.2	0.000
2026/02/11 13:48:00_000	0	-0.94	18.4	0.000
2026/02/11 13:49:00_000	-0.02	-0.94	18.4	0.000
2026/02/11 13:50:00_000	-0.04	-0.93	18.4	0.000
2026/02/11 13:51:00_000	12.39	6.33	18.4	0.000
2026/02/11 13:52:00_000	12.34	9.96	18.3	0.000
2026/02/11 13:53:00_000	12.35	9.94	18.1	-0.001
2026/02/11 13:54:00_000	12.35	9.96	18	0.000
2026/02/11 13:55:00_000	17.47	-0.83	17.9	0.001
2026/02/11 13:56:00_000	17.57	-0.85	17.8	0.001
2026/02/11 13:57:00_000	17.57	-0.87	17.8	0.001
2026/02/11 13:58:00_000	17.5	-0.88	17.8	0.000
2026/02/11 13:59:00_000	17.56	-0.88	17.8	0.000
2026/02/11 14:00:00_000	17.61	-0.89	17.8	0.000
2026/02/11 14:01:00_000	17.62	-0.89	17.8	0.000
2026/02/11 14:02:00_000	17.63	-0.89	17.9	-0.001
2026/02/11 14:03:00_000	17.6	-0.89	17.9	0.001
2026/02/11 14:04:00_000	17.62	-0.9	17.1	0.000
2026/02/11 14:05:00_000	17.55	-0.9	18	0.000
2026/02/11 14:06:00_000	17.6	-0.9	18.2	0.001
2026/02/11 14:07:00_000	17.64	-0.9	18.3	0.000
2026/02/11 14:08:00_000	17.51	-0.9	18.4	0.000
2026/02/11 14:09:00_000	17.55	-0.9	18.5	0.000
2026/02/11 14:10:00_000	17.57	-0.9	18.4	-0.001
2026/02/11 14:11:00_000	17.55	-0.9	18.4	0.001
2026/02/11 14:12:00_000	17.56	-0.9	17.8	-0.001
2026/02/11 14:13:00_000	17.57	-0.9	18.6	0.000
2026/02/11 14:14:00_000	17.57	-0.9	18.8	0.000
2026/02/11 14:15:00_000	17.6	-0.9	18.8	0.005
2026/02/11 14:16:00_000	17.54	-0.9	19	0.017
2026/02/11 14:17:00_000	17.52	-0.91	19	0.007
2026/02/11 14:18:00_000	17.63	-0.9	19.2	0.004
2026/02/11 14:19:00_000	17.57	-0.9	19.5	0.005
2026/02/11 14:20:00_000	17.53	-0.9	19.7	0.023
2026/02/11 14:21:00_000	17.52	-0.9	19.9	0.004

Feb 11, 12:58 PM	240.562	1.094241
Feb 11, 12:59 PM	217.5517	1.087997
Feb 11, 1:00 PM	209.3008	1.090015
Feb 11, 1:01 PM	182.679	1.090541
Feb 11, 1:02 PM	195.4613	1.085867
Feb 11, 1:03 PM	184.3693	1.073979
Feb 11, 1:04 PM	199.5722	1.074676
Feb 11, 1:05 PM	218.2223	1.08505
Feb 11, 1:06 PM	242.1539	1.070225
Feb 11, 1:07 PM	216.4798	1.066923
Feb 11, 1:08 PM	209.3988	1.078478
Feb 11, 1:09 PM	177.5482	1.074404
Feb 11, 1:10 PM	173.6592	1.065432
	4772.87502	**1.3177794**
Feb 11, 1:11 PM	212.1553	1.069864
Feb 11, 1:12 PM	218.1515	1.03029
Feb 11, 1:13 PM	227.3996	1.021737
Feb 11, 1:14 PM	215.8335	1.024439
Feb 11, 1:15 PM	220.5418	1.012719
Feb 11, 1:16 PM	231.6277	1.029448
Feb 11, 1:17 PM	216.9827	1.028907
Feb 11, 1:18 PM	218.3011	1.023773
Feb 11, 1:19 PM	230.1576	1.030336
Feb 11, 1:20 PM	233.055	1.040671
Feb 11, 1:21 PM	196.8533	1.029035
Feb 11, 1:22 PM	169.9057	1.035595
Feb 11, 1:23 PM	178.4952	1.031882
Feb 11, 1:24 PM	2456.654	0.9552084
Feb 11, 1:25 PM	1676.068	0.1138471
Feb 11, 1:26 PM	423.004	0.0372557
Feb 11, 1:27 PM	321.1516	0.0277434
Feb 11, 1:28 PM	266.3878	0.0236294
Feb 11, 1:29 PM	228.6077	0.0209634
Feb 11, 1:30 PM	201.7609	0.018908
Feb 11, 1:31 PM	180.5457	0.0173816
Feb 11, 1:32 PM	64.51	0.015868
Feb 11, 1:33 PM	65.8885	0.029486
Feb 11, 1:34 PM	31.8603	0.0148637
Feb 11, 1:35 PM	58.0432	0.0128258
Feb 11, 1:36 PM	54.5407	0.0126803
Feb 11, 1:37 PM	240.0217	0.0296579
Feb 11, 1:38 PM	558.1361	1.009533
Feb 11, 1:39 PM	430.9408	1.083513
Feb 11, 1:40 PM	385.4196	1.08834
Feb 11, 1:41 PM	400.6295	1.087121
Feb 11, 1:42 PM	370.1645	1.068068
Feb 11, 1:43 PM	350.5236	1.077559
Feb 11, 1:44 PM	341.6833	1.081362
Feb 11, 1:45 PM	328.5839	1.086145
Feb 11, 1:46 PM	5259.671	0.6080025
Feb 11, 1:47 PM	2615.098	0.1865831
Feb 11, 1:48 PM	2559.751	0.1531842
Feb 11, 1:49 PM	2523.675	0.1307309
Feb 11, 1:50 PM	2328.661	0.3528266
Feb 11, 1:51 PM	298.6678	0.3194245
Feb 11, 1:52 PM	234.263	0.3114465
Feb 11, 1:53 PM	209.5617	0.3127721
Feb 11, 1:54 PM	327.2047	0.8923543
Feb 11, 1:55 PM	368.4023	1.070679
Feb 11, 1:56 PM	453.9189	1.073513
Feb 11, 1:57 PM	439.8603	1.080411
Feb 11, 1:58 PM	341.4185	1.072205
Feb 11, 1:59 PM	333.993	1.067691
Feb 11, 2:00 PM	313.0255	1.06897
Feb 11, 2:01 PM	301.5284	1.062768
Feb 11, 2:02 PM	309.9598	1.067238
Feb 11, 2:03 PM	278.6502	1.064898
Feb 11, 2:04 PM	311.5295	1.072706
Feb 11, 2:05 PM	372.9653	1.076101
Feb 11, 2:06 PM	391.5219	1.075068
Feb 11, 2:07 PM	385.1712	1.087029
Feb 11, 2:08 PM	336.5884	1.087673
Feb 11, 2:09 PM	318.8372	1.090773
Feb 11, 2:10 PM	298.7018	1.073361
Feb 11, 2:11 PM	250.4086	1.066627
Feb 11, 2:12 PM	243.909	1.075292
Feb 11, 2:13 PM	227.6558	1.077081
Feb 11, 2:14 PM	270.8151	1.091548
Feb 11, 2:15 PM	317.5443	1.065403
Feb 11, 2:16 PM	323.1395	1.07694
Feb 11, 2:17 PM	333.8744	1.06719
Feb 11, 2:18 PM	283.6154	1.068244
Feb 11, 2:19 PM	279.1139	1.068692
Feb 11, 2:20 PM	238.9917	1.08152
Feb 11, 2:21 PM	230.7206	1.085931

BCP_PID_560.	2/11/2026	5:53:53	ETO	1.016	268.946	
BCP_PID_561.	2/11/2026	5:55:47	ETO	1.03	56.69	
BCP_PID_562.	2/11/2026	5:57:41	ETO	1.02	24.9865	
BCP_PID_563.	2/11/2026	5:59:35	ETO	1.033	20.0782	
BCP_PID_564.	2/11/2026	6:01:29				
BCP_PID_565.	2/11/2026	6:03:24	ETO	1.04	10.7618	
BCP_PID_566.	2/11/2026	6:05:18	ETO	1.013	10.3123	
BCP_PID_567.	2/11/2026	6:07:12				
BCP_PID_568.	2/11/2026	6:09:06				
BCP_PID_569.	2/11/2026	6:11:00				
BCP_PID_570.	2/11/2026	6:12:54				
BCP_PID_571.	2/11/2026	6:14:48				
BCP_PID_572.	2/11/2026	6:16:42				
BCP_PID_573.	2/11/2026	6:18:37				
BCP_PID_574.	2/11/2026	6:20:31				
BCP_PID_575.	2/11/2026	6:22:25				
BCP_PID_576.	2/11/2026	6:24:19				
BCP_PID_577.	2/11/2026	6:26:13				
BCP_PID_578.	2/11/2026	6:28:07				
BCP_PID_579.	2/11/2026	6:30:01	ETO	1.023	286.533	
BCP_PID_580.	2/11/2026	6:31:55	ETO	1.02	55.9332	
BCP_PID_581.	2/11/2026	6:33:50	ETO	1.023	22.3639	
BCP_PID_582.	2/11/2026	6:35:44	ETO	1.02	23.2712	
BCP_PID_583.	2/11/2026	6:37:38				
BCP_PID_584.	2/11/2026	6:39:32	ETO	1.016	15.496	
BCP_PID_585.	2/11/2026	6:41:26				
BCP_PID_586.	2/11/2026	6:43:20	ETO	1.026	14.6708	
BCP_PID_587.	2/11/2026	6:45:39	ETO	1.053	23.5862	
BCP_PID_588.	2/11/2026	6:47:33				
BCP_PID_589.	2/11/2026	6:49:27				
BCP_PID_590.	2/11/2026	6:51:21				
BCP_PID_591.	2/11/2026	6:53:16				
BCP_PID_592.	2/11/2026	6:55:10	ETO	1.03	42.7453	
BCP_PID_593.	2/11/2026	6:57:04				
BCP_PID_594.	2/11/2026	6:58:58	ETO	1.023	163.2688	
BCP_PID_595.	2/11/2026	7:00:52	ETO	1.003	8243.66	
BCP_PID_596.	2/11/2026	7:02:46	ETO	1	13731.82	25265.17
BCP_PID_597.	2/11/2026	7:04:40	ETO	1	13737.03	25274.76
BCP_PID_598.	2/11/2026	7:06:35	ETO	1	13750	25298.63
BCP_PID_599.	2/11/2026	7:08:29	ETO	0.993	9790.978	18014.42
BCP_PID_600.	2/11/2026	7:10:23	ETO	0.996	9723.93	17891.06
BCP_PID_601.	2/11/2026	7:12:17	ETO	1	9718.703	17881.44
BCP_PID_602.	2/11/2026	7:14:11	ETO	0.993	9757.819	17953.41
BCP_PID_603.	2/11/2026	7:16:05	ETO	1	9718.586	17881.23
BCP_PID_604.	2/11/2026	7:18:00	ETO	0.993	9681.945	17813.81
BCP_PID_605.	2/11/2026	7:19:54	ETO	1.01	5517.979	10152.53
BCP_PID_606.	2/11/2026	7:21:48	ETO	1.013	5443.791	10016.03
BCP_PID_607.	2/11/2026	7:23:42	ETO	1.01	5523.858	10163.35
BCP_PID_608.	2/11/2026	7:25:36	ETO	1.01	5465.177	10055.38
BCP_PID_609.	2/11/2026	7:27:30	ETO	1.003	7910.698	14554.89
BCP_PID_610.	2/11/2026	7:29:24	ETO	1.006	7880.16	14498.71
BCP_PID_611.	2/11/2026	7:31:19	ETO	1.006	7894.082	14524.32
BCP_PID_612.	2/11/2026	7:33:13	ETO	0.993	7894.883	14525.79
BCP_PID_613.	2/11/2026	7:35:07	ETO	1.003	7827.839	14402.44
BCP_PID_614.	2/11/2026	7:37:01	ETO	1.003	7852.912	14448.57
BCP_PID_615.	2/11/2026	7:38:55	ETO	1.003	7856.41	14455.01
BCP_PID_616.	2/11/2026	7:40:49	ETO	1.013	3730.141	6863.087

BCP_PID_617.	2/11/2026	7:42:43 ETO	1.013	3665.611	6744.358
BCP_PID_618.	2/11/2026	7:44:37 ETO	1.013	3655.385	6725.542
BCP_PID_619.	2/11/2026	7:46:32 ETO	1.013	3644.71	6705.901
BCP_PID_620.	2/11/2026	7:48:26 ETO	1.013	3621.342	6662.908
BCP_PID_621.	2/11/2026	7:50:20 ETO	1.01	3617.009	6654.935
BCP_PID_622.	2/11/2026	7:52:14 ETO	1.01	3614.147	6649.67
BCP_PID_623.	2/11/2026	7:54:08 ETO	1.013	3605.867	6634.435
BCP_PID_624.	2/11/2026	7:56:02 ETO	1.016	3611.742	6645.244
BCP_PID_625.	2/11/2026	7:57:56 ETO	1.013	3608.021	6638.398
BCP_PID_626.	2/11/2026	7:59:51 ETO	1.016	3596.837	6617.82
BCP_PID_627.	2/11/2026	8:01:45 ETO	1.01	2982.045	5486.665
BCP_PID_628.	2/11/2026	8:03:39 ETO	1.013	2984.001	5490.264
BCP_PID_629.	2/11/2026	8:05:33 ETO	1.013	2988.439	5498.428
BCP_PID_630.	2/11/2026	8:07:27 ETO	1.013	3568.055	
BCP_PID_631.	2/11/2026	8:09:21 ETO	1.01	92.3904	
BCP_PID_632.	2/11/2026	8:11:15 ETO	1.013	4429.496	
BCP_PID_633.	2/11/2026	8:13:09 ETO	1.01	5557.415	
BCP_PID_634.	2/11/2026	8:15:04 ETO	1.016	2713.773	
BCP_PID_635.	2/11/2026	8:16:58 ETO	1.013	2838.403	
BCP_PID_636.	2/11/2026	8:18:52 ETO	1.02	46.6986	
BCP_PID_637.	2/11/2026	8:20:46 ETO	1.016	3612.32	
BCP_PID_638.	2/11/2026	8:22:40 ETO	1.016	2240.233	Strat Check
BCP_PID_639.	2/11/2026	8:24:34 ETO	1.016	3448.241	
BCP_PID_640.	2/11/2026	8:26:29 ETO	1.01	4082.627	
BCP_PID_641.	2/11/2026	8:28:23 ETO	1.013	2122.424	
BCP_PID_642.	2/11/2026	8:30:17 ETO	1.013	2405.893	
BCP_PID_643.	2/11/2026	8:32:11 ETO	1.013	3773.086	
BCP_PID_644.	2/11/2026	8:34:05 ETO	1.013	3722.489	
BCP_PID_645.	2/11/2026	8:35:59 ETO	1.016	2372.751	
BCP_PID_646.	2/11/2026	8:37:53 ETO	1.013	2804.548	
BCP_PID_647.	2/11/2026	8:39:47 ETO	1.003	4882.308	
BCP_PID_648.	2/11/2026	8:41:42 ETO	1.013	2341.306	
BCP_PID_649.	2/11/2026	8:43:36 ETO	1.013	2952.504	
BCP_PID_650.	2/11/2026	8:45:30 ETO	1.013	3810	
BCP_PID_651.	2/11/2026	8:47:24 ETO	1.013	2327.232	
BCP_PID_652.	2/11/2026	8:49:18 ETO	1.01	2691.689	
BCP_PID_653.	2/11/2026	8:51:12 ETO	1.016	2597.752	
BCP_PID_654.	2/11/2026	8:53:06 ETO	1.02	2647.421	
BCP_PID_655.	2/11/2026	8:55:00 ETO	1.013	2981.804	
BCP_PID_656.	2/11/2026	8:56:52 ETO	1.02	3028.382	
BCP_PID_657.	2/11/2026	8:58:46 ETO	1.013	4401.734	
BCP_PID_658.	2/11/2026	9:00:40 ETO	1.01	2241.435	
BCP_PID_659.	2/11/2026	9:02:34 ETO	1.003	2744.225	
BCP_PID_660.	2/11/2026	9:04:28 ETO	1.013	4897.918	
BCP_PID_661.	2/11/2026	9:06:23 ETO	1.013	2081.816	
BCP_PID_662.	2/11/2026	9:08:17 ETO	1.013	2316.599	
BCP_PID_663.	2/11/2026	9:10:11 ETO	1.01	2505.957	
BCP_PID_664.	2/11/2026	9:12:05 ETO	1.013	2584.138	
BCP_PID_665.	2/11/2026	9:13:59 ETO	1.006	2828.92	
BCP_PID_666.	2/11/2026	9:15:53 ETO	1.006	3700.572	
BCP_PID_667.	2/11/2026	9:17:47 ETO	1.006	5379.481	
BCP_PID_668.	2/11/2026	9:19:41 ETO	1.01	2547.539	
BCP_PID_669.	2/11/2026	9:21:35 ETO	1.006	4382.579	
BCP_PID_670.	2/11/2026	9:23:29 ETO	1	6527.503	
BCP_PID_671.	2/11/2026	9:25:24 ETO	1.01	2410.197	
BCP_PID_672.	2/11/2026	9:27:18 ETO	1.003	2950.068	
BCP_PID_673.	2/11/2026	9:29:12 ETO	1.01	2967.383	
BCP_PID_674.	2/11/2026	9:31:06 ETO	1.01	2993.54	

BCP_PID_675.	2/11/2026	9:33:00 ETO	1.006	2921.344	
				2960.756	
BCP_PID_676.	2/11/2026	9:34:54 ETO	0.996	5074.456	
BCP_PID_677.	2/11/2026	9:36:48 ETO	1.003	5804.237	
BCP_PID_678.	2/11/2026	9:38:42 ETO	1.006	5200.885	
BCP_PID_679.	2/11/2026	9:40:37 ETO	1	4717.485	
BCP_PID_680.	2/11/2026	9:42:31 ETO	1.013	129.304	
BCP_PID_681.	2/11/2026	9:44:25 ETO	1.01	68.402	
BCP_PID_682.	2/11/2026	9:46:19 ETO	1.006	0.289	
BCP_PID_683.	2/11/2026	9:48:13 ETO	1	0.639	
BCP_PID_684.	2/11/2026	9:50:07 ETO	1	0.027	
				0.318333	
BCP_PID_685.	2/11/2026	9:52:02 ETO	1.003	5641.113	
BCP_PID_686.	2/11/2026	9:53:56 ETO	0.99	7419.21	
BCP_PID_687.	2/11/2026	9:55:50 ETO	1.01	2619.953	
BCP_PID_688.	2/11/2026	9:57:44 ETO	1.01	2812.119	
BCP_PID_689.	2/11/2026	9:59:38 ETO	1	3334.145	
BCP_PID_690.	2/11/2026	10:01:32 ETO	1.006	4056.879	
BCP_PID_691.	2/11/2026	10:03:26 ETO	1.003	4430.131	
BCP_PID_692.	2/11/2026	10:05:21 ETO	1.003	3574.197	
BCP_PID_693.	2/11/2026	10:07:15 ETO	1.01	2750.235	
BCP_PID_694.	2/11/2026	10:09:09 ETO	1.01	2832.531	
BCP_PID_695.	2/11/2026	10:11:03 ETO	1.01	2832.095	
BCP_PID_696.	2/11/2026	10:12:57 ETO	1.03	9688.888	
BCP_PID_697.	2/11/2026	10:14:51 ETO	1.033	9662.711	
BCP_PID_698.	2/11/2026	10:16:45 ETO	1.036	9624.788	
BCP_PID_699.	2/11/2026	10:18:39 ETO	1.033	9625.13	
BCP_PID_700.	2/11/2026	10:20:34 ETO	1	8822.026	
BCP_PID_701.	2/11/2026	10:22:28 ETO	1.006	6026.387	
BCP_PID_702.	2/11/2026	10:24:22 ETO	1.01	4645.385	
BCP_PID_703.	2/11/2026	10:26:16 ETO	1	6499.777	
BCP_PID_704.	2/11/2026	10:28:10 ETO	1.01	4019.621	
BCP_PID_705.	2/11/2026	10:30:04 ETO	1.003	11173.31	
BCP_PID_706.	2/11/2026	10:31:58 ETO	1.006	3354.739	
BCP_PID_707.	2/11/2026	10:33:53 ETO	0.993	2581.539	
BCP_PID_708.	2/11/2026	10:35:47 ETO	1.016	2005.932	
BCP_PID_709.	2/11/2026	10:37:41 ETO	1	5852.216	
BCP_PID_710.	2/11/2026	10:39:35 ETO	0.996	8319.645	
BCP_PID_711.	2/11/2026	10:41:29 ETO	1.013	4116.772	
BCP_PID_712.	2/11/2026	10:43:23 ETO	1	5576.503	
BCP_PID_713.	2/11/2026	10:45:17 ETO	1.013	3049.318	
BCP_PID_714.	2/11/2026	10:47:11 ETO	1.016	2455.736	
BCP_PID_715.	2/11/2026	10:49:06 ETO	1.013	5227.342	
BCP_PID_716.	2/11/2026	10:51:00 ETO	1.006	2803.572	
BCP_PID_717.	2/11/2026	10:52:54 ETO	1.013	4027.057	
BCP_PID_718.	2/11/2026	10:54:48 ETO	1.02	2578.506	
BCP_PID_719.	2/11/2026	10:56:42 ETO	1.016	2016.671	
BCP_PID_720.	2/11/2026	10:58:36 ETO	1.013	2667.637	
BCP_PID_721.	2/11/2026	11:00:31 ETO	1.01	6743.828	
BCP_PID_722.	2/11/2026	11:02:25 ETO	1.016	2818.768	
BCP_PID_723.	2/11/2026	11:04:19 ETO	1.02	2175.256	
BCP_PID_724.	2/11/2026	11:06:13 ETO	1.013	4328.615	
BCP_PID_725.	2/11/2026	11:08:07 ETO	1.016	2574.192	
BCP_PID_726.	2/11/2026	11:10:01 ETO	1.013	3112.284	
			1.012212	**4964.811**	end run 1
BCP_PID_727.	2/11/2026	11:11:55 ETO	1.02	3040.662	
BCP_PID_728.	2/11/2026	11:13:50 ETO	1.016	2257.166	
BCP_PID_729.	2/11/2026	11:15:44 ETO	1.003	7565.727	

BCP_PID_730.	2/11/2026	11:17:38	ETO	1.016	2692.412
BCP_PID_731.	2/11/2026	11:19:32	ETO	1.016	2144.381
BCP_PID_732.	2/11/2026	11:21:26	ETO	1.016	4246.895
BCP_PID_733.	2/11/2026	11:23:20	ETO	1.02	2532.196
BCP_PID_734.	2/11/2026	11:25:15	ETO	1.02	1672.491
BCP_PID_735.	2/11/2026	11:27:09	ETO	1.023	36.5521
BCP_PID_736.	2/11/2026	11:29:03			
BCP_PID_737.	2/11/2026	11:30:57			
BCP_PID_738.	2/11/2026	11:32:51			
BCP_PID_739.	2/11/2026	11:34:45			
BCP_PID_740.	2/11/2026	11:36:39	ETO	1.02	2939.776
BCP_PID_741.	2/11/2026	11:38:33	ETO	1.01	6482.206
BCP_PID_742.	2/11/2026	11:40:27	ETO	1.016	2781.967
BCP_PID_743.	2/11/2026	11:42:22	ETO	1.02	2041.612
BCP_PID_744.	2/11/2026	11:44:16	ETO	1.013	4839.473
BCP_PID_745.	2/11/2026	11:46:10	ETO	1.016	2335.504
BCP_PID_746.	2/11/2026	11:48:04	ETO	1.016	3612.749
BCP_PID_747.	2/11/2026	11:49:58	ETO	1.02	2544.346
BCP_PID_748.	2/11/2026	11:51:52	ETO	1.003	7080.334
BCP_PID_749.	2/11/2026	11:53:46	ETO	1.016	2719.262
BCP_PID_750.	2/11/2026	11:55:40	ETO	1.016	2132.522
BCP_PID_751.	2/11/2026	11:57:34	ETO	1.006	1854.957
BCP_PID_752.	2/11/2026	11:59:29	ETO	1.013	3423.212
BCP_PID_753.	2/11/2026	12:01:23	ETO	1.013	2929.407
BCP_PID_754.	2/11/2026	12:03:17	ETO	1.013	2937.796
BCP_PID_755.	2/11/2026	12:05:11	ETO	1.016	2931.21
					2932.804
BCP_PID_756.	2/11/2026	12:07:05	ETO	1.013	3216.723
BCP_PID_757.	2/11/2026	12:08:59	ETO	1.01	5885.417
BCP_PID_758.	2/11/2026	12:10:53	ETO	1.013	2599.486
BCP_PID_759.	2/11/2026	12:12:48	ETO	1.043	9296.973
BCP_PID_760.	2/11/2026	12:14:42	ETO	1.043	9255.101
BCP_PID_761.	2/11/2026	12:16:36	ETO	1.046	9210.295
BCP_PID_762.	2/11/2026	12:18:30	ETO	1.043	9285.929
BCP_PID_763.	2/11/2026	12:20:24	ETO	1.01	7544.989
BCP_PID_764.	2/11/2026	12:22:18	ETO	1.01	6280.694
BCP_PID_765.	2/11/2026	12:24:12	ETO	1.016	4853.971
BCP_PID_766.	2/11/2026	12:26:07	ETO	1.016	2998.707
BCP_PID_767.	2/11/2026	12:28:01	ETO	1.016	3137.366
BCP_PID_768.	2/11/2026	12:29:55	ETO	1.013	3207.492
BCP_PID_769.	2/11/2026	12:31:49	ETO	1.006	3805.45
BCP_PID_770.	2/11/2026	12:33:43	ETO	1.03	7496.313
BCP_PID_771.	2/11/2026	12:35:37	ETO	1.016	3359.22
BCP_PID_772.	2/11/2026	12:37:31	ETO	1.01	6621.463
BCP_PID_773.	2/11/2026	12:39:25	ETO	1.016	3604.232
BCP_PID_774.	2/11/2026	12:41:19	ETO	1.006	4272.334
BCP_PID_775.	2/11/2026	12:43:13	ETO	1.01	5328.631
BCP_PID_776.	2/11/2026	12:45:08	ETO	1.01	6092.696
BCP_PID_777.	2/11/2026	12:47:02	ETO	0.99	9682.184
BCP_PID_778.	2/11/2026	12:48:56	ETO	1	8493.972
BCP_PID_779.	2/11/2026	12:50:50	ETO	1.013	4620.098
BCP_PID_780.	2/11/2026	12:52:44	ETO	0.993	7787.179
BCP_PID_781.	2/11/2026	12:54:38	ETO	1.01	4962.589
BCP_PID_782.	2/11/2026	12:56:33	ETO	1.013	4548.824
BCP_PID_783.	2/11/2026	12:58:27	ETO	1	6978.72
BCP_PID_784.	2/11/2026	13:00:21	ETO	1.013	3141.9
BCP_PID_785.	2/11/2026	13:02:15	ETO	1.013	3434.445
BCP_PID_786.	2/11/2026	13:04:09	ETO	1.003	4922.982

BCP_PID_787.	2/11/2026	13:06:03 ETO	1.01	3296.294	
BCP_PID_788.	2/11/2026	13:07:57 ETO	1.013	3222.769	
BCP_PID_789.	2/11/2026	13:09:52 ETO	1.003	4487.94	
				5557.226	end run 2
BCP_PID_790.	2/11/2026	13:11:46 ETO	1.006	4720.666	
BCP_PID_791.	2/11/2026	13:13:40 ETO	1.006	6834.893	
BCP_PID_792.	2/11/2026	13:15:34 ETO	0.996	6789.815	
BCP_PID_793.	2/11/2026	13:17:28 ETO	0.996	5963	
BCP_PID_794.	2/11/2026	13:19:22 ETO	1.006	4706.319	
BCP_PID_795.	2/11/2026	13:21:16 ETO	1.003	6855.465	
BCP_PID_796.	2/11/2026	13:23:11 ETO	1.01	4829.961	
BCP_PID_797.	2/11/2026	13:25:05 ETO	1	8670.664	
BCP_PID_798.	2/11/2026	13:26:59 ETO	1.006	5943.073	
BCP_PID_799.	2/11/2026	13:28:53 ETO	0.993	9532.331	
BCP_PID_800.	2/11/2026	13:30:47 ETO	1.01	5350.266	
BCP_PID_801.	2/11/2026	13:32:41 ETO	0.996	9070.529	
BCP_PID_802.	2/11/2026	13:34:35 ETO	0.996	8645.628	
BCP_PID_803.	2/11/2026	13:36:30 ETO	1.003	8381.354	
BCP_PID_804.	2/11/2026	13:38:24 ETO	1.01	6389.749	
BCP_PID_805.	2/11/2026	13:40:18 ETO	1.006	8382.824	
BCP_PID_806.	2/11/2026	13:42:12 ETO	1.003	8654.691	
BCP_PID_807.	2/11/2026	13:44:06 ETO	1.003	8560.715	
BCP_PID_808.	2/11/2026	13:46:00 ETO	1.006	7730.411	
BCP_PID_809.	2/11/2026	13:47:54 ETO	1.006	7055.782	
BCP_PID_810.	2/11/2026	13:49:49 ETO	1.006	8205.953	
BCP_PID_811.	2/11/2026	13:51:43 ETO	1.003	8314.575	
BCP_PID_812.	2/11/2026	13:53:37 ETO	1.01	6090.14	
BCP_PID_813.	2/11/2026	13:55:31 ETO	1.003	8755.85	
BCP_PID_814.	2/11/2026	13:57:25 ETO	1.003	8551.768	
BCP_PID_815.	2/11/2026	13:59:19 ETO	1.003	8339.718	
BCP_PID_816.	2/11/2026	14:01:13 ETO	1.006	7261.178	
BCP_PID_817.	2/11/2026	14:03:07 ETO	1.003	7769.907	
BCP_PID_818.	2/11/2026	14:05:01 ETO	0.993	9338.752	
BCP_PID_819.	2/11/2026	14:06:56 ETO	1.01	6434.408	
BCP_PID_820.	2/11/2026	14:08:50 ETO	1.016	2953.164	
BCP_PID_821.	2/11/2026	14:10:44 ETO	1.016	2949.887	
BCP_PID_822.	2/11/2026	14:12:38 ETO	1.02	2949.882	
				2950.978	
BCP_PID_823.	2/11/2026	14:14:32 ETO	1.01	3215.493	
BCP_PID_824.	2/11/2026	14:16:26 ETO	1.026	87.0219	
BCP_PID_825.	2/11/2026	14:18:20 ETO	1.016	2.94	
BCP_PID_826.	2/11/2026	14:20:14 ETO	1.023	0.0036	
BCP_PID_827.	2/11/2026	14:22:08 ETO	1.013	0.4756	
				1.139733	
BCP_PID_828.	2/11/2026	14:24:02 ETO	1.01	5944.827	
BCP_PID_829.	2/11/2026	14:25:57 ETO	1.003	8163.297	
BCP_PID_830.	2/11/2026	14:27:51 ETO	1.006	6733.154	
BCP_PID_831.	2/11/2026	14:29:45 ETO	1.006	6252.598	
BCP_PID_832.	2/11/2026	14:31:39 ETO	1.006	5909.549	
BCP_PID_833.	2/11/2026	14:33:33 ETO	1.006	10043.27	
BCP_PID_834.	2/11/2026	14:35:27 ETO	1	9566.637	
BCP_PID_835.	2/11/2026	14:37:22 ETO	1.003	7691.412	
BCP_PID_836.	2/11/2026	14:39:16 ETO	0.993	7359.257	
BCP_PID_837.	2/11/2026	14:41:10 ETO	1	9931.746	
BCP_PID_838.	2/11/2026	14:43:04 ETO	1.043	8040.638	
BCP_PID_839.	2/11/2026	14:44:58 ETO	1.043	8020.047	
BCP_PID_840.	2/11/2026	14:46:52 ETO	1.04	8007.819	
BCP_PID_841.	2/11/2026	14:48:46 ETO	1.036	7949.278	

BCP_PID_842.	2/11/2026	14:50:40 ETO	1.04	7897.036
BCP_PID_843.	2/11/2026	14:52:35 ETO	1.03	8430.404
BCP_PID_844.	2/11/2026	14:54:29 ETO	1.04	8428.719
BCP_PID_845.	2/11/2026	14:56:23 ETO	1.04	8465.815
BCP_PID_846.	2/11/2026	14:58:17 ETO	1.04	8462.198
BCP_PID_847.	2/11/2026	15:00:11 ETO	1.036	8356.154
BCP_PID_848.	2/11/2026	15:02:05 ETO	1.04	8408.246
BCP_PID_849.	2/11/2026	15:04:00 ETO	1.01	5538.196
BCP_PID_850.	2/11/2026	15:05:54 ETO	1.016	3466.58
BCP_PID_851.	2/11/2026	15:07:48 ETO	1.016	3854.346
BCP_PID_852.	2/11/2026	15:09:42 ETO	1.01	3579.63
BCP_PID_853.	2/11/2026	15:11:36 ETO	1	7894.369
BCP_PID_854.	2/11/2026	15:13:30 ETO	1.03	6460.818
BCP_PID_855.	2/11/2026	15:15:25 ETO	0.986	8749.142
BCP_PID_856.	2/11/2026	15:17:19 ETO	0.996	8721.568
BCP_PID_857.	2/11/2026	15:19:13 ETO	0.996	8408.013
BCP_PID_858.	2/11/2026	15:21:07 ETO	0.99	8632.015
BCP_PID_859.	2/11/2026	15:23:01 ETO	0.993	8647.075
BCP_PID_860.	2/11/2026	15:24:55 ETO	1.013	4277.719
BCP_PID_861.	2/11/2026	15:26:49 ETO	1	5902.5
BCP_PID_862.	2/11/2026	15:28:44 ETO	1.006	7025.204
BCP_PID_863.	2/11/2026	15:30:38 ETO	1.003	7050.618
BCP_PID_864.	2/11/2026	15:32:32 ETO	1.01	5576.516
BCP_PID_865.	2/11/2026	15:34:26 ETO	1.013	4111.94
BCP_PID_866.	2/11/2026	15:36:20 ETO	1.013	4276.12
BCP_PID_867.	2/11/2026	15:38:14 ETO	0.996	6486.724
BCP_PID_868.	2/11/2026	15:40:09 ETO	1.006	6206.051
				7039.476 end run3
BCP_PID_869.	2/11/2026	15:42:03 ETO	1.01	4851.718
BCP_PID_870.	2/11/2026	15:43:57 ETO	1.003	6064.252
BCP_PID_871.	2/11/2026	15:45:51 ETO	1.013	5216.945
BCP_PID_872.	2/11/2026	15:47:45 ETO	1.01	5717.935
BCP_PID_873.	2/11/2026	15:49:39 ETO	1.003	4239.058
BCP_PID_874.	2/11/2026	15:51:34 ETO	1.01	5170.926
BCP_PID_875.	2/11/2026	15:53:28 ETO	1.006	7320.08
BCP_PID_876.	2/11/2026	15:55:22 ETO	1.01	5841.973
BCP_PID_877.	2/11/2026	15:57:16 ETO	1.006	5438.955
BCP_PID_878.	2/11/2026	15:59:10 ETO	1.013	4921.048
BCP_PID_879.	2/11/2026	16:01:04 ETO	1	5864.712
BCP_PID_880.	2/11/2026	16:02:58 ETO	1	5342.295
BCP_PID_881.	2/11/2026	16:04:52 ETO	1.016	2922.563
BCP_PID_882.	2/11/2026	16:06:47 ETO	1.013	2952.913
BCP_PID_883.	2/11/2026	16:08:41 ETO	1.013	2932.312
BCP_PID_884.	2/11/2026	16:10:35 ETO	1.02	2951.992
				2939.945
BCP_PID_885.	2/11/2026	16:12:29 ETO	1.016	3058.189
BCP_PID_886.	2/11/2026	16:14:23 ETO	1.01	5105.694
BCP_PID_887.	2/11/2026	16:16:17 ETO	1.003	4560.916
BCP_PID_888.	2/11/2026	16:18:11 ETO	1.013	2914.137
BCP_PID_889.	2/11/2026	16:20:05 ETO	1.013	2971.841
BCP_PID_890.	2/11/2026	16:21:59 ETO	1.013	4076.118
BCP_PID_891.	2/11/2026	16:23:54 ETO	1.006	6220.986
BCP_PID_892.	2/11/2026	16:25:48 ETO	1	5989.347
BCP_PID_893.	2/11/2026	16:27:42 ETO	1.016	3306.017
BCP_PID_894.	2/11/2026	16:29:36 ETO	1.013	3739.166
BCP_PID_895.	2/11/2026	16:31:30 ETO	1.006	5688.879
BCP_PID_896.	2/11/2026	16:33:24 ETO	1.006	6569.452
BCP_PID_897.	2/11/2026	16:35:18 ETO	1.003	5048.297

BCP_FID_562.	2/11/2026	5:57:41 ETO	1.246	36.8473	
BCP_FID_563.	2/11/2026	5:59:35 ETO	1.243	33.2255	
BCP_FID_564.	2/11/2026	6:01:29 ETO	1.243	29.2144	
BCP_FID_565.	2/11/2026	6:03:24 ETO	1.243	25.4365	
BCP_FID_566.	2/11/2026	6:05:18 ETO	1.24	21.6986	
BCP_FID_567.	2/11/2026	6:07:12 ETO	1.246	18.2552	
BCP_FID_568.	2/11/2026	6:09:06 ETO	1.246	15.0649	
BCP_FID_569.	2/11/2026	6:11:00 ETO	1.246	12.4012	
BCP_FID_570.	2/11/2026	6:12:54 ETO	1.243	10.687	
BCP_FID_571.	2/11/2026	6:14:48 ETO	1.243	8.969	
BCP_FID_572.	2/11/2026	6:16:42 ETO	1.243	7.3384	
BCP_FID_573.	2/11/2026	6:18:37 ETO	1.236	6.142	
BCP_FID_574.	2/11/2026	6:20:31 ETO	1.243	5.0619	
BCP_FID_575.	2/11/2026	6:22:25 ETO	1.24	4.276	
BCP_FID_576.	2/11/2026	6:24:19 ETO	1.243	3.782	
BCP_FID_577.	2/11/2026	6:26:13 ETO	1.09	0.0394	
BCP_FID_578.	2/11/2026	6:28:07 ETO	1.223	0.0508	
BCP_FID_579.	2/11/2026	6:30:01 ETO	1.23	66.2962	
BCP_FID_580.	2/11/2026	6:31:55 ETO	1.22	14.4102	
BCP_FID_581.	2/11/2026	6:33:50 ETO	1.226	5.432	
BCP_FID_582.	2/11/2026	6:35:44 ETO	1.23	4.802	
BCP_FID_583.	2/11/2026	6:37:38 ETO	1.216	4.2736	
BCP_FID_584.	2/11/2026	6:39:32 ETO	1.206	3.3284	
BCP_FID_585.	2/11/2026	6:41:26 ETO	1.223	3.1189	
BCP_FID_586.	2/11/2026	6:43:20			
BCP_FID_587.	2/11/2026	6:45:39			
BCP_FID_588.	2/11/2026	6:47:33			
BCP_FID_589.	2/11/2026	6:49:27			
BCP_FID_590.	2/11/2026	6:51:21			
BCP_FID_591.	2/11/2026	6:53:16			
BCP_FID_592.	2/11/2026	6:55:10 ETO	1.24	10.413	
BCP_FID_593.	2/11/2026	6:57:04			
BCP_FID_594.	2/11/2026	6:58:58			
BCP_FID_595.	2/11/2026	7:00:52 ETO	1.23	11.676	
BCP_FID_596.	2/11/2026	7:02:46 ETO	1.213	2934.43	16948.68
BCP_FID_597.	2/11/2026	7:04:40 ETO	1.21	3548.292	20494.23
BCP_FID_598.	2/11/2026	7:06:35 ETO	1.21	3800.892	21953.19
BCP_FID_599.	2/11/2026	7:08:29 ETO	1.2	3940.548	22759.82
BCP_FID_600.	2/11/2026	7:10:23 ETO	1.203	4028.433	23267.42
BCP_FID_601.	2/11/2026	7:12:17 ETO	1.206	4107.942	23726.65
BCP_FID_602.	2/11/2026	7:14:11 ETO	1.196	4260.722	24609.08
BCP_FID_603.	2/11/2026	7:16:05 ETO	1.203	4270.572	24665.97
BCP_FID_604.	2/11/2026	7:18:00 ETO	1.2	4249.655	24545.16
				4260.316	24606.74
BCP_FID_605.	2/11/2026	7:19:54 ETO	1.21	3248.977	18765.44
BCP_FID_606.	2/11/2026	7:21:48 ETO	1.213	2499.384	14435.94
BCP_FID_607.	2/11/2026	7:23:42 ETO	1.213	2171.92	12544.57
BCP_FID_608.	2/11/2026	7:25:36 ETO	1.213	1999.704	11549.89
BCP_FID_609.	2/11/2026	7:27:30 ETO	1.21	2500.394	14441.77
BCP_FID_610.	2/11/2026	7:29:24 ETO	1.21	2739.179	15820.95
BCP_FID_611.	2/11/2026	7:31:19 ETO	1.21	2662.141	15376
BCP_FID_612.	2/11/2026	7:33:13 ETO	1.196	2663.073	15381.38
BCP_FID_613.	2/11/2026	7:35:07 ETO	1.203	2685.129	15508.77
				2670.114	15422.05
BCP_FID_614.	2/11/2026	7:37:01 ETO	1.206	3050.112	17616.84
BCP_FID_615.	2/11/2026	7:38:55 ETO	1.206	3147.55	18179.62
BCP_FID_616.	2/11/2026	7:40:49 ETO	1.21	2410.223	13920.97
BCP_FID_617.	2/11/2026	7:42:43 ETO	1.213	1804.345	10421.54
BCP_FID_618.	2/11/2026	7:44:37 ETO	1.213	1542.209	8907.493
BCP_FID_619.	2/11/2026	7:46:32 ETO	1.213	1388.707	8020.893
BCP_FID_620.	2/11/2026	7:48:26 ETO	1.213	1283.925	7415.695

BCP_FID_621.	2/11/2026	7:50:20 ETO	1.213	1214.277	7013.423
BCP_FID_622.	2/11/2026	7:52:14 ETO	1.213	1073.328	6199.33
BCP_FID_623.	2/11/2026	7:54:08 ETO	1.216	1037.025	5989.647
BCP_FID_624.	2/11/2026	7:56:02 ETO	1.216	1020.052	5891.613
				1043.468	6026.863
BCP_FID_625.	2/11/2026	7:57:56 ETO	1.216	1096.465	6332.964
BCP_FID_626.	2/11/2026	7:59:51 ETO	1.216	1083.463	6257.867
BCP_FID_627.	2/11/2026	8:01:45 ETO	1.216	1073.66	6201.247
BCP_FID_628.	2/11/2026	8:03:39 ETO	1.213	1071.347	6187.884
BCP_FID_629.	2/11/2026	8:05:33 ETO	1.216	1065.964	6156.792
BCP_FID_630.	2/11/2026	8:07:27 ETO	1.213	1057.139	6105.821
				1064.816	6150.166
BCP_FID_631.	2/11/2026	8:09:21 ETO	1.213	797.559	
BCP_FID_632.	2/11/2026	8:11:15 ETO	1.223	437.1877	
BCP_FID_633.	2/11/2026	8:13:09 ETO	1.223	271.4187	
BCP_FID_634.	2/11/2026	8:15:04 ETO	1.223	181.1686	
BCP_FID_635.	2/11/2026	8:16:58 ETO	1.223	121.5076	
BCP_FID_636.	2/11/2026	8:18:52 ETO	1.22	85.1698	
BCP_FID_637.	2/11/2026	8:20:46 ETO	1.223	0.0644	
BCP_FID_638.	2/11/2026	8:22:40 ETO	1.223	0.5538	
BCP_FID_639.	2/11/2026	8:24:34 ETO	1.22	0.8092	
BCP_FID_640.	2/11/2026	8:26:29 ETO	1.22	0.2452	
				0.536067	
BCP_FID_641.	2/11/2026	8:28:23 ETO	1.22	0.9427	
BCP_FID_642.	2/11/2026	8:30:17 ETO	1.216	36.9067	
BCP_FID_643.	2/11/2026	8:32:11 ETO	1.226	33.4442	
BCP_FID_644.	2/11/2026	8:34:05 ETO	1.216	31.0108	
BCP_FID_645.	2/11/2026	8:35:59 ETO	1.223	29.1472	
BCP_FID_646.	2/11/2026	8:37:53 ETO	1.223	27.2132	
BCP_FID_647.	2/11/2026	8:39:47 ETO	1.213	26.2784	
BCP_FID_648.	2/11/2026	8:41:42 ETO	1.223	25.5754	Strat Check
BCP_FID_649.	2/11/2026	8:43:36 ETO	1.223	25.2294	
BCP_FID_650.	2/11/2026	8:45:30 ETO	1.223	22.563	
BCP_FID_651.	2/11/2026	8:47:24 ETO	1.223	24.0016	
BCP_FID_652.	2/11/2026	8:49:18 ETO	1.22	24.4072	
BCP_FID_653.	2/11/2026	8:51:12 ETO	1.226	24.4972	
BCP_FID_654.	2/11/2026	8:53:06 ETO	1.226	25.0192	
BCP_FID_655.	2/11/2026	8:55:00 ETO	1.223	25.5322	
BCP_FID_656.	2/11/2026	8:56:52 ETO	1.23	25.2575	
BCP_FID_657.	2/11/2026	8:58:46 ETO	1.226	23.7198	
BCP_FID_658.	2/11/2026	9:00:40 ETO	1.223	26.0717	
BCP_FID_659.	2/11/2026	9:02:34 ETO	1.213	26.4538	
BCP_FID_660.	2/11/2026	9:04:28 ETO	1.226	24.1184	
BCP_FID_661.	2/11/2026	9:06:23 ETO	1.223	24.5828	
BCP_FID_662.	2/11/2026	9:08:17 ETO	1.22	23.9132	
BCP_FID_663.	2/11/2026	9:10:11 ETO	1.22	23.7692	
BCP_FID_664.	2/11/2026	9:12:05 ETO	1.223	23.2713	
BCP_FID_665.	2/11/2026	9:13:59 ETO	1.216	22.7014	
BCP_FID_666.	2/11/2026	9:15:53 ETO	1.22	21.981	
BCP_FID_667.	2/11/2026	9:17:47 ETO	1.22	20.061	
BCP_FID_668.	2/11/2026	9:19:41 ETO	1.223	15.1908	
BCP_FID_669.	2/11/2026	9:21:35 ETO	1.223	13.3176	
BCP_FID_670.	2/11/2026	9:23:29 ETO	1.22	12.1587	
BCP_FID_671.	2/11/2026	9:25:24 ETO	1.22	11.5928	
BCP_FID_672.	2/11/2026	9:27:18 ETO	1.216	11.2882	
BCP_FID_673.	2/11/2026	9:29:12 ETO	1.223	11.15	
BCP_FID_674.	2/11/2026	9:31:06 ETO	1.22	13.2586	
BCP_FID_675.	2/11/2026	9:33:00 ETO	1.216	19.7048	
BCP_FID_676.	2/11/2026	9:34:54 ETO	1.213	34.1174	
BCP_FID_677.	2/11/2026	9:36:48 ETO	1.22	40.699	
BCP_FID_678.	2/11/2026	9:38:42 ETO	1.22	41.8076	
BCP_FID_679.	2/11/2026	9:40:37 ETO	1.213	35.492	

BCP_FID_680.	2/11/2026	9:42:31	ETO	1.22	33.977
BCP_FID_681.	2/11/2026	9:44:25	ETO	1.206	31.6788
BCP_FID_682.	2/11/2026	9:46:19	ETO	1.216	31.0326
BCP_FID_683.	2/11/2026	9:48:13	ETO	1.213	25.7304
BCP_FID_684.	2/11/2026	9:50:07	ETO	1.216	17.846
BCP_FID_685.	2/11/2026	9:52:02	ETO	1.22	19.4515
BCP_FID_686.	2/11/2026	9:53:56	ETO	1.213	17.725
BCP_FID_687.	2/11/2026	9:55:50	ETO	1.22	18.6886
BCP_FID_688.	2/11/2026	9:57:44	ETO	1.216	32.9793
BCP_FID_689.	2/11/2026	9:59:38	ETO	1.21	34.5596
BCP_FID_690.	2/11/2026	10:01:32	ETO	1.216	18.28
BCP_FID_691.	2/11/2026	10:03:26	ETO	1.216	16.313
BCP_FID_692.	2/11/2026	10:05:21	ETO	1.216	13.4211
BCP_FID_693.	2/11/2026	10:07:15	ETO	1.223	10.6656
BCP_FID_694.	2/11/2026	10:09:09			
BCP_FID_695.	2/11/2026	10:11:03	ETO	1.22	11.2618
BCP_FID_696.	2/11/2026	10:12:57	ETO	1.216	13.1943
BCP_FID_697.	2/11/2026	10:14:51	ETO	1.22	13.8
BCP_FID_698.	2/11/2026	10:16:45	ETO	1.22	13.4956
BCP_FID_699.	2/11/2026	10:18:39	ETO	1.216	13.1208
BCP_FID_700.	2/11/2026	10:20:34	ETO	1.223	13.1154
BCP_FID_701.	2/11/2026	10:22:28	ETO	1.22	12.8972
BCP_FID_702.	2/11/2026	10:24:22	ETO	1.223	12.6992
BCP_FID_703.	2/11/2026	10:26:16	ETO	1.216	12.5823
BCP_FID_704.	2/11/2026	10:28:10	ETO	1.223	13.243
BCP_FID_705.	2/11/2026	10:30:04	ETO	1.226	13.4091
BCP_FID_706.	2/11/2026	10:31:58	ETO	1.22	12.8915
BCP_FID_707.	2/11/2026	10:33:53	ETO	1.206	12.6452
BCP_FID_708.	2/11/2026	10:35:47	ETO	1.223	12.297
BCP_FID_709.	2/11/2026	10:37:41	ETO	1.216	11.9322
BCP_FID_710.	2/11/2026	10:39:35	ETO	1.223	11.733
BCP_FID_711.	2/11/2026	10:41:29	ETO	1.223	12.0355
BCP_FID_712.	2/11/2026	10:43:23	ETO	1.22	11.777
BCP_FID_713.	2/11/2026	10:45:17	ETO	1.223	11.6735
BCP_FID_714.	2/11/2026	10:47:11	ETO	1.223	11.7976
BCP_FID_715.	2/11/2026	10:49:06	ETO	1.226	11.4674
BCP_FID_716.	2/11/2026	10:51:00	ETO	1.22	11.5325
BCP_FID_717.	2/11/2026	10:52:54	ETO	1.226	11.5569
BCP_FID_718.	2/11/2026	10:54:48	ETO	1.23	12.5794
BCP_FID_719.	2/11/2026	10:56:42	ETO	1.226	11.2696
BCP_FID_720.	2/11/2026	10:58:36	ETO	1.226	11.1257
BCP_FID_721.	2/11/2026	11:00:31	ETO	1.23	11.0502
BCP_FID_722.	2/11/2026	11:02:25	ETO	1.226	10.6963
BCP_FID_723.	2/11/2026	11:04:19	ETO	1.226	10.7884
BCP_FID_724.	2/11/2026	11:06:13	ETO	1.226	10.7305
BCP_FID_725.	2/11/2026	11:08:07	ETO	1.226	10.9674
BCP_FID_726.	2/11/2026	11:10:01	ETO	1.223	11.2951
					12.08314 Run 1
BCP_FID_727.	2/11/2026	11:11:55	ETO	1.226	13.551
BCP_FID_728.	2/11/2026	11:13:50	ETO	1.216	32.301
BCP_FID_729.	2/11/2026	11:15:44	ETO	1.216	32.658
BCP_FID_730.	2/11/2026	11:17:38	ETO	1.216	28.5145
BCP_FID_731.	2/11/2026	11:19:32	ETO	1.216	25.4649
BCP_FID_732.	2/11/2026	11:21:26	ETO	1.22	12.3984
BCP_FID_733.	2/11/2026	11:23:20	ETO	1.223	10.0084
BCP_FID_734.	2/11/2026	11:25:15			
BCP_FID_735.	2/11/2026	11:27:09			
BCP_FID_736.	2/11/2026	11:29:03			
BCP_FID_737.	2/11/2026	11:30:57			
BCP_FID_738.	2/11/2026	11:32:51			
BCP_FID_739.	2/11/2026	11:34:45	ETO	1.22	10.8582
BCP_FID_740.	2/11/2026	11:36:39			

BCP_FID_741.	2/11/2026	11:38:33			
BCP_FID_742.	2/11/2026	11:40:27			
BCP_FID_743.	2/11/2026	11:42:22			
BCP_FID_744.	2/11/2026	11:44:16			
BCP_FID_745.	2/11/2026	11:46:10	ETO	1.213	414.0102
BCP_FID_746.	2/11/2026	11:48:04	ETO	1.21	866.7788
BCP_FID_747.	2/11/2026	11:49:58	ETO	1.213	1024.212
BCP_FID_748.	2/11/2026	11:51:52	ETO	1.203	1092.823
BCP_FID_749.	2/11/2026	11:53:46	ETO	1.21	1027.875
BCP_FID_750.	2/11/2026	11:55:40	ETO	1.206	1048.264
BCP_FID_751.	2/11/2026	11:57:34	ETO	1.2	1056.463
					1044.201
BCP_FID_752.	2/11/2026	11:59:29	ETO	1.21	510.8242
BCP_FID_753.	2/11/2026	12:01:23	ETO	1.21	232.8539
BCP_FID_754.	2/11/2026	12:03:17	ETO	1.213	122.514
BCP_FID_755.	2/11/2026	12:05:11	ETO	1.213	70.8837
BCP_FID_756.	2/11/2026	12:07:05	ETO	1.213	44.8947
BCP_FID_757.	2/11/2026	12:08:59	ETO	1.21	30.6886
BCP_FID_758.	2/11/2026	12:10:53	ETO	1.216	21.3098
BCP_FID_759.	2/11/2026	12:12:48	ETO	1.22	17.2926
BCP_FID_760.	2/11/2026	12:14:42	ETO	1.22	15.3108
BCP_FID_761.	2/11/2026	12:16:36			
BCP_FID_762.	2/11/2026	12:18:30	ETO	1.223	13.66
BCP_FID_763.	2/11/2026	12:20:24	ETO	1.226	13.1544
BCP_FID_764.	2/11/2026	12:22:18	ETO	1.226	12.722
BCP_FID_765.	2/11/2026	12:24:12	ETO	1.226	12.5184
BCP_FID_766.	2/11/2026	12:26:07	ETO	1.223	11.9737
BCP_FID_767.	2/11/2026	12:28:01	ETO	1.223	11.9008
BCP_FID_768.	2/11/2026	12:29:55	ETO	1.223	11.4018
BCP_FID_769.	2/11/2026	12:31:49	ETO	1.22	11.6206
BCP_FID_770.	2/11/2026	12:33:43	ETO	1.22	11.4665
BCP_FID_771.	2/11/2026	12:35:37	ETO	1.226	11.359
BCP_FID_772.	2/11/2026	12:37:31	ETO	1.226	11.2088
BCP_FID_773.	2/11/2026	12:39:25	ETO	1.226	11.0156
BCP_FID_774.	2/11/2026	12:41:19	ETO	1.22	10.9132
BCP_FID_775.	2/11/2026	12:43:13	ETO	1.223	10.8172
BCP_FID_776.	2/11/2026	12:45:08	ETO	1.223	10.7844
BCP_FID_777.	2/11/2026	12:47:02	ETO	1.216	10.6992
BCP_FID_778.	2/11/2026	12:48:56	ETO	1.223	10.4034
BCP_FID_779.	2/11/2026	12:50:50	ETO	1.226	10.5434
BCP_FID_780.	2/11/2026	12:52:44	ETO	1.213	10.6946
BCP_FID_781.	2/11/2026	12:54:38			
BCP_FID_782.	2/11/2026	12:56:33	ETO	1.226	10.3608
BCP_FID_783.	2/11/2026	12:58:27	ETO	1.213	10.0475
BCP_FID_784.	2/11/2026	13:00:21			
BCP_FID_785.	2/11/2026	13:02:15	ETO	1.223	10.0966
BCP_FID_786.	2/11/2026	13:04:09	ETO	1.213	10.1827
BCP_FID_787.	2/11/2026	13:06:03	ETO	1.22	10.1166
BCP_FID_788.	2/11/2026	13:07:57			
BCP_FID_789.	2/11/2026	13:09:52			
					11.98424 R2
BCP_FID_790.	2/11/2026	13:11:46			0
BCP_FID_791.	2/11/2026	13:13:40			0
BCP_FID_792.	2/11/2026	13:15:34	ETO	1.21	0.8644
					0.288133
BCP_FID_793.	2/11/2026	13:17:28	ETO	1.21	7.717
BCP_FID_794.	2/11/2026	13:19:22	ETO	1.22	6.7952
BCP_FID_795.	2/11/2026	13:21:16	ETO	1.223	6.4026
BCP_FID_796.	2/11/2026	13:23:11	ETO	1.216	6.143
BCP_FID_797.	2/11/2026	13:25:05	ETO	1.22	5.9744
BCP_FID_798.	2/11/2026	13:26:59	ETO	1.223	6.9748
BCP_FID_799.	2/11/2026	13:28:53	ETO	1.216	9.5024

BCP_FID_800.	2/11/2026	13:30:47	ETO	1.22	8.27
BCP_FID_801.	2/11/2026	13:32:41	ETO	1.22	7.2812
BCP_FID_802.	2/11/2026	13:34:35	ETO	1.22	6.4198
BCP_FID_803.	2/11/2026	13:36:30	ETO	1.223	5.5018
BCP_FID_804.	2/11/2026	13:38:24	ETO	1.226	5.4036
BCP_FID_805.	2/11/2026	13:40:18	ETO	1.223	5.2884
BCP_FID_806.	2/11/2026	13:42:12	ETO	1.226	5.6292
BCP_FID_807.	2/11/2026	13:44:06	ETO	1.226	5.1109
BCP_FID_808.	2/11/2026	13:46:00	ETO	1.23	5.1593
BCP_FID_809.	2/11/2026	13:47:54	ETO	1.233	5.0385
BCP_FID_810.	2/11/2026	13:49:49	ETO	1.23	4.304
BCP_FID_811.	2/11/2026	13:51:43	ETO	1.233	4.9114
BCP_FID_812.	2/11/2026	13:53:37	ETO	1.226	5.468
BCP_FID_813.	2/11/2026	13:55:31	ETO	1.226	5.2898
BCP_FID_814.	2/11/2026	13:57:25	ETO	1.213	495.5826
BCP_FID_815.	2/11/2026	13:59:19	ETO	1.21	885.482
BCP_FID_816.	2/11/2026	14:01:13	ETO	1.206	1025.987
BCP_FID_817.	2/11/2026	14:03:07	ETO	1.206	1091.178
BCP_FID_818.	2/11/2026	14:05:01	ETO	1.203	1026.324
BCP_FID_819.	2/11/2026	14:06:56	ETO	1.206	1030.139
					1049.213
BCP_FID_820.	2/11/2026	14:08:50	ETO	1.21	818.8591
BCP_FID_821.	2/11/2026	14:10:44	ETO	1.21	319.0202
BCP_FID_822.	2/11/2026	14:12:38	ETO	1.213	161.2749
BCP_FID_823.	2/11/2026	14:14:32	ETO	1.203	88.5945
BCP_FID_824.	2/11/2026	14:16:26	ETO	1.213	53.3438
BCP_FID_825.	2/11/2026	14:18:20	ETO	1.213	34.4628
BCP_FID_826.	2/11/2026	14:20:14	ETO	1.213	23.7741
BCP_FID_827.	2/11/2026	14:22:08	ETO	1.213	17.6628
BCP_FID_828.	2/11/2026	14:24:02	ETO	1.213	13.7526
BCP_FID_829.	2/11/2026	14:25:57	ETO	1.213	26.3784
BCP_FID_830.	2/11/2026	14:27:51			
BCP_FID_831.	2/11/2026	14:29:45			
BCP_FID_832.	2/11/2026	14:31:39			
BCP_FID_833.	2/11/2026	14:33:33			
BCP_FID_834.	2/11/2026	14:35:27			
BCP_FID_834.	2/11/2026	14:37:22			
BCP_FID_835.	2/11/2026	14:39:16			
BCP_FID_836.	2/11/2026	14:41:10			
BCP_FID_837.	2/11/2026	14:43:04			
BCP_FID_838.	2/11/2026	14:44:58			
BCP_FID_839.	2/11/2026	14:46:52			
BCP_FID_840.	2/11/2026	14:48:46			
BCP_FID_841.	2/11/2026	14:50:40			
BCP_FID_842.	2/11/2026	14:52:35			
BCP_FID_843.	2/11/2026	14:54:29			
BCP_FID_844.	2/11/2026	14:56:23			
BCP_FID_845.	2/11/2026	14:58:17			
BCP_FID_846.	2/11/2026	15:00:11			
BCP_FID_847.	2/11/2026	15:02:05			
BCP_FID_848.	2/11/2026	15:04:00			
BCP_FID_849.	2/11/2026	15:05:54			
BCP_FID_850.	2/11/2026	15:07:48			
BCP_FID_851.	2/11/2026	15:09:42			
BCP_FID_852.	2/11/2026	15:11:36			
BCP_FID_853.	2/11/2026	15:13:30			
BCP_FID_854.	2/11/2026	15:15:25			
BCP_FID_855.	2/11/2026	15:17:19			
BCP_FID_856.	2/11/2026	15:19:13			
BCP_FID_857.	2/11/2026	15:21:07			
BCP_FID_858.	2/11/2026	15:23:01	ETO	1.22	4.4385
BCP_FID_859.	2/11/2026	15:24:55	ETO	1.216	6.4668

BCP_FID_860.	2/11/2026	15:26:49	ETO	1.213	8.0959
BCP_FID_861.	2/11/2026	15:28:44	ETO	1.226	7.559
BCP_FID_862.	2/11/2026	15:30:38	ETO	1.223	7.9478
BCP_FID_863.	2/11/2026	15:32:32	ETO	1.23	8.3156
BCP_FID_864.	2/11/2026	15:34:26	ETO	1.22	8.77
BCP_FID_865.	2/11/2026	15:36:20	ETO	1.226	8.0654
BCP_FID_866.	2/11/2026	15:38:14	ETO	1.21	8.2006
BCP_FID_867.	2/11/2026	15:40:09	ETO	1.22	8.4774
					7.6337 R3
BCP_FID_868.	2/11/2026	15:42:03	ETO	1.22	8.407
BCP_FID_869.	2/11/2026	15:43:57	ETO	1.226	8.1842
BCP_FID_870.	2/11/2026	15:45:51	ETO	1.22	8.0708
BCP_FID_871.	2/11/2026	15:47:45	ETO	1.22	7.8794
BCP_FID_872.	2/11/2026	15:49:39	ETO	1.216	7.5759
BCP_FID_873.	2/11/2026	15:51:34	ETO	1.226	8.4665
BCP_FID_874.	2/11/2026	15:53:28	ETO	1.223	7.9846
BCP_FID_875.	2/11/2026	15:55:22	ETO	1.223	7.1754
BCP_FID_876.	2/11/2026	15:57:16	ETO	1.22	8.1358
BCP_FID_877.	2/11/2026	15:59:10	ETO	1.23	7.2854
BCP_FID_878.	2/11/2026	16:01:04	ETO	1.22	7.6987
BCP_FID_879.	2/11/2026	16:02:58	ETO	1.206	7.3876
BCP_FID_880.	2/11/2026	16:04:52	ETO	1.233	7.3021
BCP_FID_881.	2/11/2026	16:06:47	ETO	1.22	7.7414
BCP_FID_882.	2/11/2026	16:08:41	ETO	1.226	7.3051
BCP_FID_883.	2/11/2026	16:10:35	ETO	1.23	7.2583
BCP_FID_884.	2/11/2026	16:12:29	ETO	1.226	7.072
BCP_FID_885.	2/11/2026	16:14:23	ETO	1.23	8.4636
BCP_FID_886.	2/11/2026	16:16:17	ETO	1.203	13.3717
BCP_FID_887.	2/11/2026	16:18:11	ETO	1.213	12.2637
BCP_FID_888.	2/11/2026	16:20:05	ETO	1.22	9.1564
BCP_FID_889.	2/11/2026	16:21:59	ETO	1.223	7.9604
BCP_FID_890.	2/11/2026	16:23:54	ETO	1.226	7.4267
BCP_FID_891.	2/11/2026	16:25:48	ETO	1.216	6.8328
BCP_FID_892.	2/11/2026	16:27:42	ETO	1.213	6.8578
BCP_FID_893.	2/11/2026	16:29:36	ETO	1.216	7.2086
BCP_FID_894.	2/11/2026	16:31:30	ETO	1.223	7.4014
BCP_FID_895.	2/11/2026	16:33:24	ETO	1.223	7.1173
BCP_FID_896.	2/11/2026	16:35:18	ETO	1.21	7.2402
BCP_FID_897.	2/11/2026	16:37:12	ETO	1.216	6.625
BCP_FID_898.	2/11/2026	16:39:06	ETO	1.233	3.753
BCP_FID_899.	2/11/2026	16:41:01			
BCP_FID_900.	2/11/2026	16:42:55	ETO	1.206	18.0088
BCP_FID_901.	2/11/2026	16:44:49			
BCP_FID_902.	2/11/2026	16:46:43			
BCP_FID_903.	2/11/2026	16:48:37			
BCP_FID_904.	2/11/2026	16:50:31			
BCP_FID_905.	2/11/2026	16:52:25			
BCP_FID_906.	2/11/2026	16:54:19			
BCP_FID_907.	2/11/2026	16:56:14			
BCP_FID_908.	2/11/2026	16:58:08			
BCP_FID_909.	2/11/2026	17:00:02			
BCP_FID_910.	2/11/2026	17:01:56			
BCP_FID_911.	2/11/2026	17:03:50	ETO	1.21	742.3706
BCP_FID_912.	2/11/2026	17:05:44	ETO	1.203	1025.039
BCP_FID_913.	2/11/2026	17:07:38	ETO	1.203	1009.712
BCP_FID_914.	2/11/2026	17:09:32	ETO	1.203	1031.012
BCP_FID_915.	2/11/2026	17:11:27	ETO	1.203	1045.083
BCP_FID_916.	2/11/2026	17:13:21	ETO	1.196	1024.707
					1033.601
BCP_FID_917.	2/11/2026	17:15:15	ETO	1.206	465.2162
BCP_FID_918.	2/11/2026	17:17:09	ETO	1.21	138.9134
BCP_FID_919.	2/11/2026	17:19:03	ETO	1.206	59.0987

BCP Ingredients, Inc. - Scrubber Outlet

LCH Consulting Associates
88 Glocker Way PMB287, Pottstown, PA 19465
www.lchconsulting.com

Date	Meter Box	ΔH@	Y-Factor
11-Feb	MB003	1.63	0.995

Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
	0.84	+/- 2	+/- 2

USEPA Method 1 Cyclonic Flow Check

Clock Time	Port/Traverse Point	Yaw Angle	Yaw Angle abs
630	1	2	
	2	2	
	3	4	
	4	4	
	5	1	
634	6	0	
	7		
	8		
	9		
	10		
	11		
	12		
Static Pressure ("H2O) 1	-0.01	Barometric Pressure ("Hg) 1	
Technicians		BB	

USEPA Method 1 Cyclonic Flow Check

Clock Time	Port/Traverse Point	Yaw Angle	Yaw Angle abs
636	1	5	
	2	5	
	3	3	
	4	4	
	5	2	
640	6	4	
	7		
	8		
	9		
	10		
	11		
	12		
Static Pressure ("H2O) 1	-0.01	Barometric Pressure ("Hg) 1	
Technicians		RB	

BCP Ingredients, Inc. - Inlet 2 (clean)

Date	Meter Box	ΔH@	Y-Factor
11-Feb	MB003	1.63	0.995

USEPA Method 1 Cyclonic Flow Check

Clock Time	Port/Traverse Point	Yaw Angle	Yaw Angle abs
610	1	-2	
	2	0	
	3	-2	
	4	4	
	5	0	
	6	0	
	7	4	
618	8	4	
	9		
	10		
	11		
	12		
Static Pressure ("H2O) 1	0.12	Barometric Pressure ("Hg) 1	
Technicians			

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Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
	0.84		

USEPA Method 1 Cyclonic Flow Check

Clock Time	Port/Traverse Point	Yaw Angle	Yaw Angle abs
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
Static Pressure ("H2O) 1		Barometric Pressure ("Hg) 1	
Technicians			

BCP Ingredients, Inc. - Inlet / (Dirty)

LCH Consulting Associates
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Date	Meter Box	ΔH@	Y-Factor
11-Feb	MB003	1.63	0.995

USEPA Method 1 Cyclonic Flow Check

Clock Time	Port/Traverse Point	Yaw Angle	Yaw Angle abs
650	1	0	0
	2	0	0
	3	1	1
	4	0	0
	5	-1	1
654	6	-1	1
	7		
	8		
	9		
	10		
	11		
	12		
Static Pressure ("H2O) 1	-3.2	Barometric Pressure ("Hg) 1	
Technicians			

Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
	0.84		

USEPA Method 1 Cyclonic Flow Check

Clock Time	Port/Traverse Point	Yaw Angle	Yaw Angle abs
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
Static Pressure ("H2O) 1		Barometric Pressure ("Hg) 1	
Technicians			

Outlet

34" - 22" = 12
OA Port ID

↑ ~~100"~~ >100
↓ 10'

12 pts

Inlet 2 (clean)

28" - 22.25 = 5.75
OA Port ID

↑ 6" (0.5')
↓ 44" (3.67')

16 pts

Inlet 1 (Dirty)

32.5 - 28.5 = 4"

↑ 32"
↓ >100"

12

BCP Ingredients, Inc. - Inlet 1 Run 1

LCH Consulting Associates
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Date	Meter Box	ΔH@	Y-Factor	Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
11-Feb	4-20 Board	NA	NA		0.84	X/-02	

USEPA Method 2 Field Data Run No. _____

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F) °C
1010	1	0.18	21
	2	0.17	21
	3	0.15	21
	4	0.16	21
	5	0.16	22
1015	6	0.17	22
	7	0.15	22
	8	0.17	22
	9	0.17	22
	10	0.15	22
1020	11	0.13	22
	12	0.14	22
	13	0.15	22
	14	0.16	22
	15	0.17	23
1025	16	0.16	23
	17	0.004	23
	18	0.15	24
	19	0.16	24
	20	0.17	24
1030	21	0.17	24
	22	0.16	24
	23	0.14	24
	24	0.15	23
	25	0.14	24
1035	26	0.15	24
	27	0.15	24
	28	0.15	24
	29	0.15	24
	30	0.15	24
Pbar		Static	

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F) °C
1040	31	0.16	24
	32	0.17	24
	33	0.15	24
	34	0.16	24
	35	0.16	24
1045	36	0.16	24
	37	0.15	24
	38	0.16	24
	39	0.16	24
	40	0.17	24
1050	41	0.15	24
	42	~~0.04~~ 0.18	24
	43	0.18	24
	44	0.15	24
	45	0.14	24
1055	46	0.14	24
	47	0.14	24
	48	0.14	24
	49	0.14	24
	50	0.13	24
1100	51	0.14	24
	52	0.14	24
	53	0.15	24
	54	0.15	24
	55	0.15	24
1105	56	0.14	24
	57	0.15	25
	58	0.15	25
	59	0.14	25
1109	60	0.14	25
Pbar		Static	-3.1

BCP Ingredients, Inc. - Inlet 1 R2

LCH Consulting Associates
88 Glocker Way PMB287, Pottstown, PA 19465
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Date	Meter Box	ΔH@	Y-Factor	Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
11-Feb	4-20 Board	NA	NA		0.84	+/- ok	+/- ok

USEPA Method 2 Field Data Run No. 2

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)	Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
1210	1	0.13	26	1240	31	0.14	28
	2	0.16	26		32	0.14	29
	3	0.15	26		33	0.18	29
	4	0.15	27		34	0.17	29
	5	0.14	27		35	0.16	30
1215	6	0.14	27	1245	36	0.16	30
	7	0.13	27		37	0.16	30
	8	0.15	27		38	0.17	30
	9	0.15	27		39	0.16	31
	10	0.16	26		40	0.16	30
1220	11	0.15	26	1250	41	0.16	30
	12	0.16	27		42	0.16	30
	13	0.16	26		43	0.15	30
	14	0.16	27		44	0.16	30
	15	0.15	28		45	0.16	30
1225	16	0.15	28	1255	46	0.16	30
	17	0.16	28		47	0.15	30
	18	0.14	28		48	0.15	31
	19	0.16	28		49	0.16	30
	20	0.16	28		50	0.16	30
1230	21	0.15	28	1300	51	0.16	30
	22	0.14	27		52	0.15	30
	23	0.15	28		53	0.17	31
	24	0.16	28		54	0.17	30
	25	0.16	28		55	0.14	30
1235	26	0.13	28	1305	56	0.16	30
	27	0.14	29		57	0.16	30
	28	0.14	29		58	0.17	30
	29	0.15	28		59	0.15	30
	30	0.16	28	1309	60	0.16	31
Pbar		Static		Pbar		Static	-3.4

BCP Ingredients, Inc. - Inlet 1 (Drying) Run 3

LCH Consulting Associates
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Date	Meter Box	ΔH@	Y-Factor	Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
11-Feb	4-20 Board	NA	NA	TBT	0.84	+/- 2	+/- 2

USEPA Method 2 Field Data Run No. 3

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
1440	1	0.09	27
	2	0.09	27
	3	0.10	27
	4	0.10	27
	5	0.10	27
1445	6	0.09	27
	7	0.09	28
	8	0.09	28
	9	0.09	28
	10	0.10	29
1450	11	0.10	28
	12	0.10	28
	13	0.10	27
	14	0.08	27
	15	0.09	27
1455	16	0.09	27
	17	0.07	27
	18	0.07	27
	19	0.08	26
	20	0.08	26
1500	21	0.08	26
	22	0.09	26
	23	0.09	26
	24	0.09	26
	25	0.10	26
1505	26	0.09	26
	27	0.08	26
	28	0.08	26
	29	0.09	26
	30	0.09	26
Pbar		Static	

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
1510	31	0.09	25
	32	0.09	26
	33	0.10	26
	34	0.10	26
	35	0.10	26
1515	36	0.10	26
	37	0.09	26
	38	0.09	26
	39	0.08	26
	40	0.09	26
1520	41	0.09	26
	42	0.10	26
	43	0.12	26
	44	0.13	26
	45	0.14	26
1525	46	0.14	27
	47	0.15	27
	48	0.13	27
	49	0.14	27
	50	0.14	27
1530	51	0.141	27
	52	0.12	27
	53	0.13	27
	54	0.13	27
	55	0.13	27
1535	56	0.13	28
	57	0.12	28
	58	0.13	27
	59	0.12	28
1541	60	0.12	28
Pbar		Static	

avg raw 0.10 avg $\sqrt{}$ = 0.3189 T_s 26.7 C 80 F

BCP Ingredients, Inc. - Inlet 1

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Date	Meter Box	ΔH@	Y-Factor	Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
11-Feb	4-20 Board	NA	NA		0.84	Y/-a	

USEPA Method 2 Field Data Run No. 4

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
1720	1	0.09	22
	2	0.09	22
	3	0.08	22
	4	0.07	22
	5	0.07	22
1725	6	0.06	22
	7	0.06	21
	8	0.07	21
	9	0.06	21
	10	0.07	21
1730	11	0.06	21
	12	0.07	20
	13	0.06	20
	14	0.07	20
	15	0.06	20
1735	16	0.07	20
	17	0.06	20
	18	0.07	20
	19	0.06	20
	20	0.06	19
1740	21	0.07	19
	22	0.06	19
	23	0.07	19
	24	0.07	19
	25	0.05	19
1745	26	0.05	19
	27	0.06	19
	28	0.06	19
	29	0.06	19
	30	0.07	19
Pbar		Static	

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
1750	31	0.07	18
	32	0.06	18
	33	0.06	18
	34	0.06	18
	35	0.07	18
1755	36	0.07	18
	37	0.07	18
	38	0.07	18
	39	0.06	18
	40	0.07	18
1800	41	0.07	18
	42	~~0.06~~ 0.10	18
	43	0.11	18
	44	0.10	18
	45	0.10	18
1805	46	0.11	19
	47	0.11	19
	48	0.11	19
	49	0.10	19
	50	0.10	19
1810	51	0.11	20
	52	0.12	20
	53	0.10	20
	54	0.11	20
	55	0.11	20
1815	56	0.10	21
	57	0.10	21
	58	0.11	21
	59	0.10	21
1819	60	0.10	21
Pbar		Static	

0.10

Dp raw 0.079 Ts 19.6 C

Dn 0.2784 67.3 F

BCP Ingredients, Inc. - Inlet 2

LCH Consulting Associates
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Date	Meter Box	ΔH@	Y-Factor
11-Feb	4-20 Board	NA	NA

Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
	0.84	+/-	+/-

USEPA Method 2 Field Data Run No. 5

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
1930	1	0.02	23
	2	0.01	24
	3	0.01	~~42~~ 24
	4	0.02	23
	5	0.01	23
1935	6	0.01	23
	7	0.02	23
	8	0.01	23
	9	0.01	23
	10	0.01	24
1940	11	0.02	24
	12	0.01	24
	13	0.02	24
	14	0.01	24
	15	0.02	25
1945	16	0.01	26
	17	0.02	26
	18	0.01	26
	19	0.02	26
	20	0.01	26
1950	21	0.02	26
	22	0.01	26
	23	0.01	26
	24	0.01	26
	25	0.01	26
1955	26	0.02	26
	27	0.01	26
	28	0.02	26
	29	0.01	27
	30	0.02	27
Pbar		Static	

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
2000	31	0.01	27
	32	0.01	27
	33	0.01	27
	34	0.01	27
	35	0.01	28
2005	36	0.02	27
	37	0.01	28
	38	0.02	28
	39	0.01	28
	40	0.02	28
2010	41	0.01	28
	42	0.01	28
	43	0.02	28
	44	0.01	28
	45	0.01	29
2015	46	0.01	29
	47	0.02	29
	48	0.02	29
	49	0.01	29
	50	0.01	29
2020	51	0.02	29
	52	0.02	29
	53	0.02	29
	54	0.01	29
	55	0.02	29
2025	56	0.02	29
	57	0.01	30
	58	0.02	30
	59	0.01	30
2029	60	0.01	30
Pbar		Static	-0.42

Ts 26.7C
80.1F

Ds ✓ 0.1166

BCP Ingredients, Inc. - Inlet 2 Run 1

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Date	Meter Box	ΔH@	Y-Factor	Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
11-Feb	4-20 Board	NA	NA		0.84	+/- 2	

USEPA Method 2 Field Data Run No._____

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)	Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
1010	1	0.04	13	1040	31	0.03	12
	2	0.03	12		32	0.03	12
	3	0.03	12		33	0.03	13
	4	0.02	12		34	0.03	13
	5	0.03	12		35	0.03	13
1015	6	0.02	11	1045	36	0.03	13
	7	0.02	11		37	0.02	13
	8	0.03	11		38	0.02	13
	9	0.03	11		39	0.03	13
	10	0.03	11		40	0.03	13
1020	11	0.02	11	1050	41	0.02	13
	12	0.02	11		42	0.02	13
	13	0.02	11		43	0.03	13
	14	0.03	12		44	0.03	13
	15	0.02	11		45	0.03	13
1025	16	0.02	12	1055	46	0.03	13
	17	0.03	12		47	0.03	13
	18	0.04	12		48	0.03	13
	19	0.05	12		49	0.03	14
	20	0.03	12		50	0.03	14
1030	21	0.04	13	1100	51	0.02	14
	22	0.03	12		52	0.03	14
	23	0.03	12		53	0.03	13
	24	0.03	12		54	0.03	13
	25	0.03	12		55	0.03	13
1035	26	0.03	12	1105	56	0.02	13
	27	0.03	12		57	0.03	13
	28	0.03	12		58	0.03	13
	29	0.03	12		59	0.03	14
	30	0.03	12	1109	60	0.03	14
Pbar		Static		Pbar		Static	-.037

BCP Ingredients, Inc. - Inlet 2 R2

LCH Consulting Associates
88 Glocker Way PMB287, Pottstown, PA 19465
www.lchconsulting.com

Date	Meter Box	ΔH@	Y-Factor	Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
11-Feb	4-20 Board	NA	NA		0.84	+/- 02	+/- 01

USEPA Method 2 Field Data Run No. 2

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)	Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
1210	1	0.03	16	1240	31	0.03	19
	2	0.03	16		32	0.03	19
	3	0.03	15		33	0.03	20
	4	0.03	15		34	0.03	20
	5	0.03	15		35	0.03	20
1215	6	0.03	15	1245	36	0.03	20
	7	0.02	14		37	0.03	19
	8	0.02	15		38	0.03	19
	9	0.02	15		39	0.02	19
	10	0.03	15		40	0.03	20
1220	11	0.03	16	1250	41	0.03	20
	12	0.03	16		42	0.04	21
	13	0.03	16		43	0.04	21
	14	0.03	17		44	0.04	21
	15	0.03	17		45	0.04	21
1225	16	0.03	17	1255	46	0.03	21
	17	0.03	17		47	0.04	20
	18	0.03	17		48	0.03	20
	19	0.03	17		49	0.03	20
	20	0.03	17		50	0.04	21
1230	21	0.03	18	1300	51	0.04	21
	22	0.03	18		52	0.04	21
	23	0.03	18		53	0.03	20
	24	0.02	18		54	0.04	21
	25	0.03	18		55	0.03	21
1235	26	0.03	16	1305	56	0.03	20
	27	0.03	16		57	0.04	21
	28	0.04	16		58	0.03	21
	29	0.03	18		59	0.04	21
	30	0.03	19	1309	60	0.03	21
Pbar		Static		Pbar		Static	-0.40

BCP Ingredients, Inc. - Inlet 2 Run 3

LCH Consulting Associates
88 Glocker Way PMB287, Pottstown, PA 19465
www.lchconsulting.com

Date	Meter Box	ΔH@	Y-Factor	Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
11-Feb	4-20 Board	NA	NA		0.84	+/- ok	+/ ok

USEPA Method 2 Field Data Run No. 3

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)	Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
1440	1	0.03	22	1510	31	0.02	23
	2	0.03	22		32	0.03	23
	3	0.03	22		33	0.03	23
	4	0.03	22		34	0.03	23
	5	0.03	22		35	0.03	23
1445	6	0.02	22	1515	36	0.03	23
	7	0.03	22		37	0.03	23
	8	0.03	22		38	0.03	23
	9	0.04	23		39	0.02	23
	10	0.03	23		40	0.02	23
1450	11	0.03	22	1520	41	0.03	23
	12	0.03	22		42	0.03	23
	13	0.02	22		43	0.03	23
	14	0.03	21		44	0.03	23
	15	0.02	21		45	0.03	23
1455	16	0.03	21	1525	46	0.02	23
	17	0.03	20		47	0.03	23
	18	0.03	20		48	0.03	23
	19	0.02	20		49	0.03	24
	20	0.02	20		50	0.03	23
1500	21	0.02	19	1530	51	0.03	23
	22	0.02	19		52	0.03	23
	23	0.02	20		53	0.03	23
	24	0.03	21		54	0.03	23
	25	0.03	22		55	0.03	23
1505	26	0.03	22	1535	56	0.02	24
	27	0.02	22		57	0.03	24
	28	0.03	23		58	0.03	24
	29	0.03	23		59	0.03	24
	30	0.03	23	1539	60	0.03	24
Pbar		Static		Pbar		Static	

rav Dp 0.08
Ts 22.4C
72.3F

BCP Ingredients, Inc. - Inlet 2

LCH Consulting Associates
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Date	Meter Box	ΔH@	Y-Factor	Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
11-Feb	4-20 Board	NA	NA		0.84	Y/ok	

USEPA Method 2 Field Data Run No. 4

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)	Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
1720	1	0.03	26	1750	31	0.01	27
	2	0.03	26		32	0.01	27
	3	0.02	26		33	0.01	27
	4	0.02	26		34	0.01	27
	5	0.01	26		35	0.01	27
1725	6	0.01	26	1755	36	0.01	27
	7	0.01	26		37	0.01	27
	8	0.02	26		38	0.02	27
	9	0.01	26		39	0.02	27
	10	0.01	26		40	0.01	27
1730	11	0.01	27	1800	41	0.02	27
	12	0.02	27		42	0.02	27
	13	0.01	26		43	0.02	27
	14	0.01	26		44	0.01	27
	15	0.01	26		45	0.01	27
1735	16	0.01	26	1805	46	0.01	27
	17	0.01	26		47	0.01	27
	18	0.01	26		48	0.01	27
	19	0.01	26		49	0.01	27
	20	0.01	26		50	0.01	26
1740	21	0.01	26	1810	51	0.01	26
	22	0.01	26		52	0.02	26
	23	0.01	27		53	0.02	26
	24	0.01	27		54	0.02	26
	25	0.01	27		55	0.01	26
1745	26	0.01	27	1815	56	0.01	26
	27	0.01	27		57	0.01	26
	28	0.01	27		58	0.01	26
	29	0.01	27		59	0.01	27
	30	0.01	27	1819	60	0.01	26
Pbar		Static		Pbar		Static	

ΔP raw 0.013
ΔP ✓ 0.1107
~~0.1091~~

Ts 26.5 C
79.7 F

BCP Ingredients, Inc. - Inlet 1

LCH Consulting Associates
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Date	Meter Box	ΔH@	Y-Factor
11-Feb	4-20 Board	NA	NA

Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
	0.84		

USEPA Method 2 Field Data Run No. 5

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
1930	1	~~0.012~~ 0.12	19
	2	0.13	19
	3	0.12	19
	4	~~0.012~~ 0.12	19
	5	0.12	19
1935	6	0.11	19
	7	0.11	19
	8	0.12	19
	9	0.12	19
	10	0.12	19
1940	11	0.12	19
	12	0.13	19
	13	0.12	19
	14	0.12	19
	15	0.12	20
1945	16	0.13	20
	17	0.12	20
	18	0.11	20
	19	0.12	20
	20	0.11	20
1950	21	0.11	20
	22	0.12	20
	23	0.12	20
	24	0.12	20
	25	0.11	20
1955	26	0.11	20
	27	0.12	20
	28	0.12	20
	29	0.12	20
~~2000~~	30	0.11	20
Pbar		Static	

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
2000	31	0.12	19
	32	0.12	19
	33	0.12	19
	34	0.11	19
	35	0.12	19
2005	36	0.12	20
	37	0.13	20
	38	0.13	19
	39	0.12	19
	40	0.11	19
2010	41	0.12	19
	42	0.12	19
	43	0.12	19
	44	0.13	19
	45	0.12	19
2015	46	0.13	19
	47	0.12	19
	48	0.12	19
	49	0.13	19
	50	0.12	19
2020	51	0.12	19
	52	0.12	19
	53	0.13	19
	54	0.12	19
	55	0.12	19
2025	56	0.11	19
	57	0.12	19
	58	0.12	19
	59	0.12	19
2029	60	0.12	19
Pbar		Static	-3.7

ΔH@ 0.3458 Ts 19.3C Cp 0.84

BCP Ingredients, Inc. - Inlet 1

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Date	Meter Box	ΔH@	Y-Factor	Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
11-Feb	4-20 Board	NA	NA		0.84	+/- 0	

USEPA Method 2 Field Data Run No. 6

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)	Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
1000	1	0.12	17	1030	31	0.12	17
	2	0.12	17		32	0.13	17
	3	0.11	17		33	0.12	17
	4	0.12	17		34	0.12	17
	5	0.12	17		35	0.12	17
1005	6	0.12	17	1035	36	0.11	17
	7	0.11	17		37	0.11	17
	8	0.12	17		38	0.12	17
	9	0.13	17		39	0.12	17
	10	0.12	17		40	0.11	17
1010	11	0.13	17	1040	41	0.12	17
	12	0.12	17		42	0.12	17
	13	0.12	17		43	0.12	17
	14	0.12	17		44	0.12	17
	15	0.12	17		45	0.12	17
1015	16	0.13	17	1045	46	0.12	17
	17	0.12	17		47	0.12	17
	18	0.12	17		48	0.11	17
	19	0.12	17		49	0.11	17
	20	0.13	17		50	0.12	17
1020	21	0.12	17	1050	51	0.11	17
	22	0.12	17		52	0.12	17
	23	0.12	17		53	0.13	17
	24	0.13	17		54	0.12	17
	25	0.13	17		55	0.12	17
1025	26	0.12	17	1055	56	0.13	17
	27	0.11	17		57	0.12	17
	28	0.12	17		58	0.13	17
	29	0.12	17		59	0.12	17
	30	0.11	17	1059	60	0.13	17
Pbar		Static		Pbar		Static	-39

ΔP avg 0.3465

T_s 17.0 C
62.6 F

BCP Ingredients, Inc. - Inlet 2

LCH Consulting Associates
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Date	Meter Box	ΔH@	Y-Factor	Pitot ID	Pitot Cp	Pitot Leak Check Pre-Test	Pitot Leak Check Post-Test
11-Feb	4-20 Board	NA	NA		0.84	V-82	

USEPA Method 2 Field Data Run No. 6

Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)	Clock Time	Minute	ΔP ("H2O)	Stack Temperature (°F)
1000	1	0.02	33	1030	31	0.02	35
	2	0.01	36		32	0.02	35
	3	0.02	36		33	0.01	35
	4	0.01	36		34	0.01	35
	5	0.01	36		35	0.01	35
1005	6	0.01	36	1035	36	0.01	35
	7	0.01	36		37	0.01	35
	8	0.02	36		38	0.02	35
	9	0.01	36		39	0.02	35
	10	0.01	36		40	0.02	35
1010	11	0.02	36	1040	41	0.01	35
	12	0.02	36		42	0.01	35
	13	0.01	36		43	0.01	35
	14	0.01	36		44	0.02	35
	15	0.01	36		45	0.02	35
1015	16	0.01	36	1045	46	0.01	35
	17	0.02	36		47	0.01	35
	18	0.01	36		48	0.02	35
	19	0.01	36		49	0.01	35
	20	0.02	36		50	0.02	35
1020	21	0.01	36	1050	51	0.02	35
	22	0.01	36		52	0.01	35
	23	0.01	36		53	0.01	35
	24	0.02	35		54	0.01	35
	25	0.01	34		55	0.02	35
1025	26	0.02	35	055	56	0.02	35
	27	0.01	35		57	0.01	35
	28	0.02	35		58	0.01	35
	29	0.01	35		59	0.01	35
	30	0.01	35	1059	60	0.01	34
Pbar		Static		Pbar		Static	-0.42

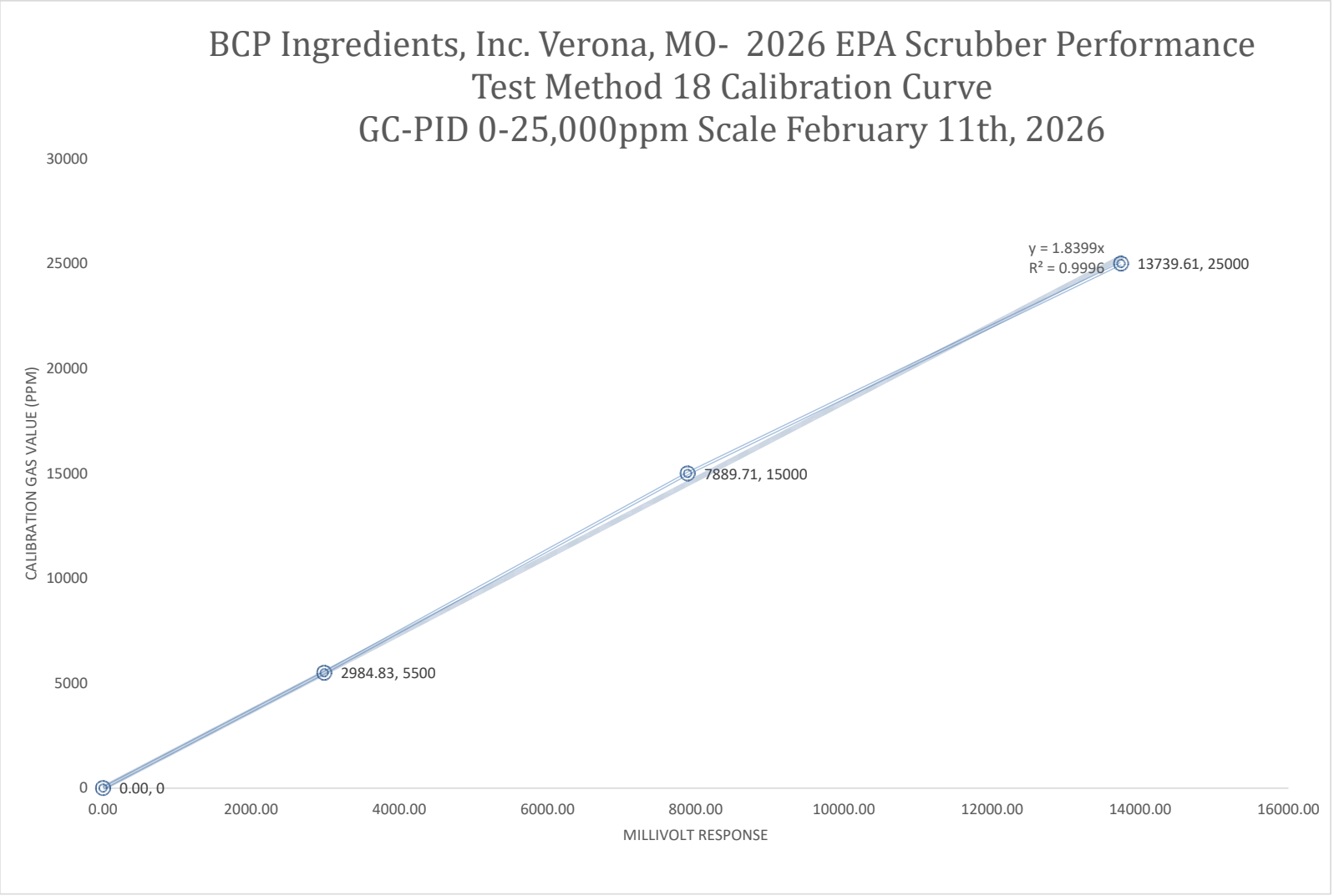
ΔP √ = 0.1150 Ts 35.3C 95.5F

rsat Bags
lchem
-11-2026

		O_2	CO_2
IV-1	Run 1	8.9	0.0
	2	3.7	0.0
	3	5.9	0.0
	4	19.0	0.0
T	5	19.0	0.0
	6	19.0	

IV-2	Run 1	4.0	0.0
	2	17.1	0.0
	3	2.0	0.0
	4	0.46	0.0
	5	0.40	0.0
	6	0.35	0.0

Attachment E – GC FID/PID Chromatogram Logsheets and Calibration Curves



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88 Glocker Way PMB 287
Pottstown, PA 19465
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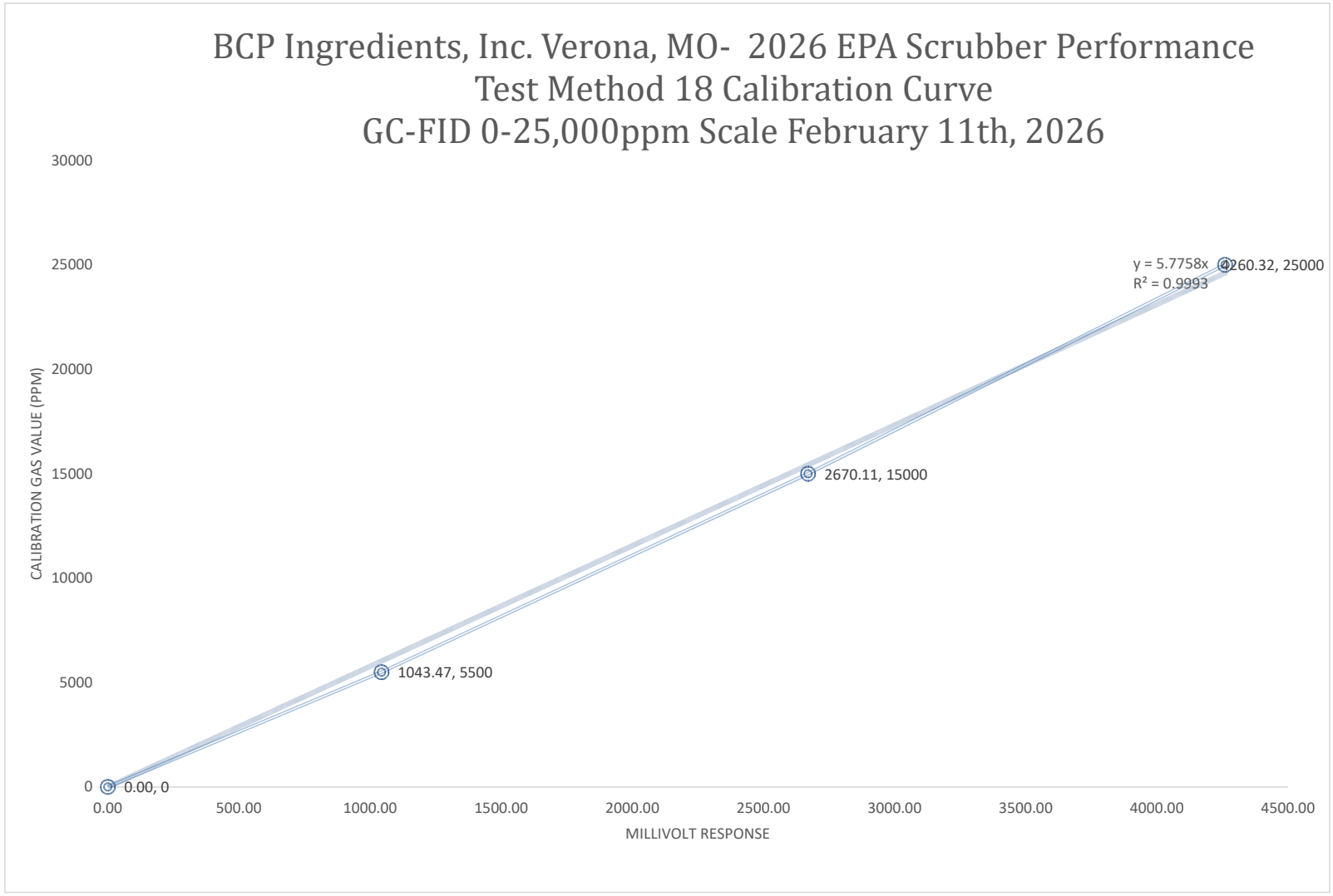
BCP Ingredients, Inc. Verona, MO						
2026 Performance Test						
GC PID Chromatogram Logsheet						
Date	type	description	response	average	score	calc'd conc
02/11/26	cal	25000ppm Calibration Gas	13731.8		99.94%	
			13737.0		99.98%	
			13750.0	13739.61	100.08%	25279.5
02/11/26	cal	15000ppm Calibration Gas	7880.2		99.88%	
			7894.1		100.06%	
			7894.9	7889.71	100.07%	14516.3
02/11/26	cal	5500ppm Calibration Gas	2982.0		99.91%	
			2984.0		99.97%	
			2988.4	2984.83	100.12%	5491.8
02/11/26	cal	Zero Nitrogen	0.000		#DIV/0!	
			0.000		#DIV/0!	
			0.000	0.00	#DIV/0!	0.0
02/11/26	cal	Bias 1	2960.756			5447.5
02/11/26	cal	Zero 1	0.318			0.6
02/11/26	Sample	Inlet 2 Run 1	4964.811			**9134.8**
02/11/26	cal	Bias 2	2932.804			5396.1
02/11/26	cal	Zero 2	0.000			0.0
02/11/26	Sample	Inlet 2 Run 2	5557.226			10224.7
02/11/26	cal	Bias 3	2950.978			5429.5
02/11/26	cal	Zero 3	1.140			2.1
02/11/26	Sample	Inlet 2 Run 3	7039.476			12951.9
02/11/26	cal	Bias 4	2939.945			5409.2
02/11/26	cal	Zero 4	0.000			0.0
02/11/26	Sample	Inlet 2 Run 4	6324.851			11637.1
02/11/26	cal	Bias 5	2911.664			5357.2
02/11/26	cal	Zero 5	0.000			0.0
02/11/26	Sample	Inlet 2 Run 5	5047.376			9286.7
02/11/26	cal	Bias 6	2884.568			5307.3
02/11/26	cal	Zero 6	0.000			0.0
02/11/26	Sample	Inlet 2 Run 6	6294.757			11581.7
02/11/26	cal	Bias 7	2884.568			5307.3
02/11/26	cal	Zero 7	0.000			0.0



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BCP Ingredients, Inc. Verona, MO						
2026 Performance Test						
GC FID Chromatogram Logsheet						
Date	type	description	response	average	score	calc'd conc
02/11/26	cal	25000ppm Calibration Gas	4260.7		100.01%	
			4270.6		100.24%	
			4249.7	4260.32	99.75%	24606.7
02/11/26	cal	15000ppm Calibration Gas	2662.1		99.70%	
			2663.1		99.74%	
			2685.1	2670.11	100.56%	15422.0
02/11/26	cal	5500ppm Calibration Gas	1073.3		102.86%	
			1037.0		99.38%	
			1020.1	1043.47	97.76%	6026.9
02/11/26	cal	Zero Nitrogen	0.000		#DIV/0!	
			0.000		#DIV/0!	
			0.000	0.00	#DIV/0!	0.0
02/11/26	cal	Bias 1	1064.816			6150.2
02/11/26	cal	Zero 1	0.536			3.1
02/11/26	Sample	Inlet 1 Run 1	12.083			69.8
02/11/26	cal	Bias 2	1044.201			6031.1
02/11/26	cal	Zero 2	0.000			0.0
02/11/26	Sample	Inlet 1 Run 2	11.984			69.2
02/11/26	cal	Bias 3	1049.213			6060.0
02/11/26	cal	Zero 3	0.288			1.7
02/11/26	Sample	Inlet 1 Run 3	7.634			44.1
02/11/26	cal	Bias 4	1033.601			5969.9
02/11/26	cal	Zero 4	0.000			0.0
02/11/26	Sample	Inlet 1 Run 4	272.328			1572.9
02/11/26	cal	Bias 5	1044.325			6031.8
02/11/26	cal	Zero 5	0.000			0.0
02/11/26	Sample	Inlet 1 Run 5	8.371			48.4
02/11/26	cal	Bias 6	1017.439			5876.5
02/11/26	cal	Zero 6	0.000			0.0
02/11/26	Sample	Inlet 1 Run 6	0.000			0.0
02/11/26	cal	Bias 7	1017.048			5874.3
02/11/26	cal	Zero 7	0.000			0.0

Attachment F – OTM-47 QA/QC and Method 18 QA/QC Summary

BCP Ingredient
2026 Scrubber Performance Test
STANDARD ADDITION CALCULATIONS

Analyzer	PI2910
Serial Number	6531-UVA1082
Technician	LCH
Date	Time
11-Feb	Feb 11, 7:48 AM

Q_{spike}	0.5	LPM		
Q_{total}	12.85	LPM		
CVS	2400	ppb		
DF	3.89%			
NATIVE	0.2955127	ppb	Native 1	Native 2
			0.25677	0.33426 ppb
CEXP	93.669228	ppb		
Cspike	98.23849	ppb		
R%	**104.88%**	80-120% required		
SAR	**97.954476**	ppb		
ESA	**3.8110108**	ppb		

Equation 47-6 (PS19 SA appendix equation A1) Dilution Factor

$$DF = \frac{Q_{Spike}}{Q_{Total}} < 20\%$$

Equation 47-7 Expected Spike Concentration

$$C_{Exp} = \left(C_{V_{spike}} x\, DF\right) + (1 - DF)(C_{Native})$$

Equation 47-8 Standard Addition % Recovery (R)

$$R = \frac{C_{Spike}}{C_{Exp}}, 0.80 \leq R \leq 1.20$$

Equation 47-9 (PS19 SA appendix equation A4) Standard Addition Response (SAR)

$$SAR = C_{Spike} - (1 - DF) * C_{Native}$$

Equation 47-10 (PS19 SA appendix equation A7) Effective Spike Addition (ESA)

$$ESA = DF * (C_{Spike} - C_{Native})$$

PS19 Equation 4 Average native concentration before and after each calibration check measurement

$$MN_{bi} = \frac{MN_i + MN_{i+1}}{2}$$

Picarro Certificate of Compliance

APPLICATION:	Ethylene Oxide in Air
DAS SN:	6531-UVA1082
MODEL:	PI2910

PARAMETER	SPECIFICATION	VALUE	UNITS	Pass/Fail	NOTES
EtO PRECISION (2 Sec)	≤ 800 + 0.1% of reading	367	ppt	Pass	1-sigma over 5 minutes of 2 second measurement
EtO PRECISION (300 Sec)	≤ 70 + 0.02% of reading	30	ppt	Pass	1-sigma over 1 hr, with 300 second average
EtO LOWER DETECTABLE LIMIT (300 Sec)	≤ 250	90	ppt	Pass	3-sigma over 1 hr, with 300 second average
EtO ZERO DRIFT; 72 HOURS	750	132	ppt	Pass	72 hours, peak to peak, 50 minute average
EtO ACCURACY	± 5%	0.06	percent	Pass	test instrument vs gold standard instrument
MEASUREMENT INTERVAL	≤ 2.0	1.01	seconds	Pass	
RISE TIME	≤ 10	by design	seconds	By Design	10 to 90%; response between elevated EtO and zero
FALL TIME	≤ 10	by design	seconds	By Design	90 to 10 %; response between zero and elevated EtO
GAS FLOW RATE	between 180 and 260		sccm	Pass	For sample input pressure of 760 Torr
EtO GUARANTEED MEASUREMENT RANGE	0 - 30	0 - 30	ppm	By Design	Concentration range that specifications are guaranteed over
EtO OPERATIONAL MEASUREMENT RANGE	0 - 60	0 - 60	ppm	By Design	Concentration range that the instrument will operate over

GENERAL COMMENTS: CO2 operating range: 300 to 1000 ppm
CH4 operating range: 1.5 to 10 ppm
H2O operating range: dry to 5 %

Approvals		
Manufacturing	EW	9/13/2023
Engineering	CH	9/13/2023
Marketing	GL	9/13/2023

v 20230817

Table 2 - Direct Interface Sample Train Recovery Study BCP Ingredients, Verona, Missouri 2026 Scrubber Performance Test Wednesday, February 11, 2026					
Date	Detector	Concentration EtO Standard (ppm)	Instrument Response		Recovery Efficiency (%)
			Cylinder Direct Inject (millivolts)	Direct Interface Sample Train Inject (millivolts)	
11-Feb	FID	5500.00	1043.47	1064.82	2.00%
11-Feb	PID	5500.00	2984.83	2960.76	0.81%

Table 3 Calibration Drift Assessment BCP Ingredients, Verona, Missouri 2026 Scrubber Performance Test February 11, 2026						
Date	Unit Tested	Detector	Concentration EtO Standard (ppm)	Initial Response (millivolts)	Final Response (millivolts)	Calibration Drift (%)
11-Feb	Inlet 1	FID	5500.00	1043.47	1017.0	2.60%
11-Feb	Inlet 2	PID	5500.00	2984.83	2884.6	3.48%

EPA Method 205
Field Calibration of Dilution System

Location: BCP Ingredients, Inc. Verona, Missouri
Project No.: Picarro - P2025
Date 2/11/26

Analyzer Make:	SRI Instruments
Analyzer Model:	8610C
Analyzer SN:	N7077
Dilution ID	Omega 1/15
Component/Balance	EtO/N2
Cylinder Gas ID (Dilution):	2508099031
Cylinder Gas Concentration (Dilution), ppm:	25000
Cylinder Gas ID (Mid-Level):	250808162
Cylinder Gas Concentration (Mid-Level), ppm:	5500

Target Mass Flow Contollers	Target Dilution (%)	Target Flow Rate lpm	Target Concentration (ppm)	Actual Concentration (ppm)	Injection 1 Analyzer Concentration (ppm)	Injection 2 Analyzer Concentration (ppm)	Injection 3 Analyzer Concentration (ppm)	Average Analyzer Concentration (ppm)	Difference (ppm)	Average Error (± 2 %)
10L/5L	100.0	1.0	25000.0	25000.000	24609.080	24665.968	24545.157	24606.74	-393.26	-1.6%
10L/5L	60.0	0.6	15000.0	15000.000	15375.996	15381.379	15508.766	15422.05	422.05	2.8%

Average Analyzer Concentration (ppm)	Injection 1 Error (± 2 %)	Injection 2 Error (± 2 %)	Injection 3 Error (± 2 %)
24606.74	0.010%	0.241%	-0.250%
15422.05	-0.299%	-0.264%	0.562%

Low-Level Supply Gas Calibration Direct to Analyzer

Calibration Gas Concentration (ppm)	Injection 1 Analyzer Concentration (ppm)	Injection 2 Analyzer Concentration (ppm)	Injection 3 Analyzer Concentration (ppm)	Average Analyzer Concentration (ppm)	Difference (ppm)	Average Error (± 2 %)
5500.00	6199.3	5989.6	5891.6	6026.86	526.86	9.6%

EPA Method 205
Field Calibration of Dilution System

Location: BCP Ingredients, Inc. Verona, Missouri
Project No.: Picarro - P2025
Date 2/11/26

Analyzer Make:	SRI Instruments
Analyzer Model:	8610C
Analyzer SN:	N7077
Dilution ID	Omega 1/15
Component/Balance	EtO/N2
Cylinder Gas ID (Dilution):	2508099031
Cylinder Gas Concentration (Dilution), ppm:	25000
Cylinder Gas ID (Mid-Level):	250808162
Cylinder Gas Concentration (Mid-Level), ppm:	5500

Target Mass Flow Contollers	Target Dilution (%)	Target Flow Rate lpm	Target Concentration (ppm)	Actual Concentration (ppm)	Injection 1 Analyzer Concentration (ppm)	Injection 2 Analyzer Concentration (ppm)	Injection 3 Analyzer Concentration (ppm)	Average Analyzer Concentration (ppm)	Difference (ppm)	Average Error (± 2 %)
10L/5L	100.0	1.0	25000.0	25000.000	25274.757	25298.628	25298.628	25290.67	290.67	1.2%
10L/5L	60.0	0.6	15000.0	15000.000	14498.706	14524.321	14525.795	14516.27	-483.73	-3.2%

Average Analyzer Concentration (ppm)	Injection 1 Error (± 2 %)	Injection 2 Error (± 2 %)	Injection 3 Error (± 2 %)
25290.67	-0.063%	0.031%	0.031%
14516.27	-0.121%	0.055%	0.066%

Mid-Level Supply Gas Calibration Direct to Analyzer

Calibration Gas Concentration (ppm)	Injection 1 Analyzer Concentration (ppm)	Injection 2 Analyzer Concentration (ppm)	Injection 3 Analyzer Concentration (ppm)	Average Analyzer Concentration (ppm)	Difference (ppm)	Average Error (± 2 %)
5500.00	5486.7	5490.3	5498.4	5491.79	-8.21	-0.1%

Attachment G – Source Flow and Emissions Calculations

BCP Ingredient, Verona, MO

LCH Project No. Picarro-P2026
Scrubber Outlet Flow Calculations

SYMBOL	DESCRIPTION	Run No.						
		1	2	3	4	5	6	Avg.
-	Test date	2/11/26	2/11/26	2/11/26	2/11/26	2/11/26	2/11/26	-
-	Test time start	10:10:00 AM	12:10:00 PM	2:40:00 PM	2:40:00 PM	7:30:00 PM	10:00:00 AM	-
-	Test time stop	11:10:00 AM	1:10:00 PM	3:40:00 PM	3:40:00 PM	8:30:00 PM	11:00:00 AM	-
θ	Duration of test, min.	60	60	60	60	60	60	60
$\sqrt{\Delta P}$	Average of square roots of pitot pressure , in. water	0.0738	0.0772	0.0735	0.0793	0.0690	0.0715	0.074
Ts	Average stack temperature, °F	53.4	61.9	66.9	1.0	1.0	66.9	41.850
O_2	O_2 in stack gas, %	16.5	16.1	16.9	16.9	16.5	16.6	16.575
CO_2	CO_2 in stack gas, %	0.030	0.030	0.040	0.010	0.010	0.050	0.028
$CO+N_2$	CO and N_2 in stack gas, %	83.46	83.87	83.10	83.11	83.52	83.32	83.397
Pbar	Barometric pressure, in. Hg	28.90	28.90	28.90	28.90	28.90	28.90	28.900
Pa	Static pressure, in. water	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.130
Ps	Stack pressure (absolute), in. Hg	28.89	28.89	28.89	28.89	28.89	28.89	28.890
Cp	Pitot correction factor, dimensionless	0.84	0.84	0.84	0.84	0.84	0.84	0.840
Ds	Diameter of stack, in.	12.0	12.0	12.0	12.0	12.0	12.0	12.000
	CALCULATED VALUES							
As	Area of the stack, sq. ft.	0.7854	0.7854	0.7854	0.7854	0.7854	0.7854	0.785
Md	Dry molecular weight of stack gas, dry basis, lb/lb-mole	28.67	28.65	28.68	28.68	28.66	28.67	28.668
Ms	Molecular weight of stack gas, wet basis, lb/lb-mole	28.53	28.51	28.54	28.54	28.54	28.53	28.532
Vs	Stack velocity, ft/sec	4.18	4.41	4.22	4.26	3.71	4.11	4.148
Bws	Moisture content of the gas stream, %	1.3	1.3	1.3	1.3	1.2	1.3	1.278
Qs	Stack gas flow, acfm	197	208	199	201	175	194	195.667
Qsd	Stack gas flow, dscfm	193	201	190	219	191	185	196.500

BCP Ingredient, Verona, MO

LCH Project No. Picarro-P2026
Inlet 2 Gas Flow Rate Calculations

SYMBOL	DESCRIPTION	Run No.						
		1	2	3	4	5	6	Avg.
	Test date	2/11/26	2/11/26	2/11/26	2/11/26	2/11/26	2/11/26	-
	Test time start	9:30:00 AM	9:30:00 AM	9:30:00 AM	5:20:00 PM	7:30:00 PM	10:00:00 PM	-
	Test time stop	10:30:00 AM	10:30:00 AM	10:30:00 AM	6:20:00 PM	8:30:00 PM	11:00:00 PM	-
Theta	Duration of test, min.	60	60	60	60	60	60	60
$\sqrt{\Delta P}$	Average of square roots of pitot pressure , in. water	0.1680	0.1759	0.1668	0.1107	0.1166	0.1152	0.1422
Ts	Average stack temperature, °F	54.4	65.3	72.2	79.7	80.0	95.5	74.5
O_2	O_2 in stack gas, %	4.0	17.2	2.0	0.4	0.4	0.3	4.0
CO_2	CO_2 in stack gas, %	0.1	0.1	0.1	0.1	0.1	0.1	0.1
$CO+N_2$	CO and N_2 in stack gas, %	95.90	82.68	97.91	99.53	99.53	99.58	95.86
Pbar	Barometric pressure, in. Hg	28.90	28.90	28.90	28.90	28.90	28.90	28.90
Pa	Static pressure, in. water	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
Ps	Stack pressure (absolute), in. Hg	28.87	28.87	28.87	28.87	28.87	28.87	28.87
Cp	Pitot correction factor, dimensionless	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Ds	Diameter of stack, in.	5.8	5.8	5.8	5.8	5.8	5.8	5.8
	CALCULATED VALUES							
As	Area of the stack, sq. ft.	0.1803	0.1803	0.1803	0.1803	0.1803	0.1803	0.180
Md	Dry molecular weight of stack gas, dry basis, lb/lb-mole	28.18	28.71	28.10	28.03	28.03	28.03	28.18
Ms	Molecular weight of stack gas, wet basis, lb/lb-mole	28.04	28.49	27.83	27.68	27.68	27.46	27.86
Vs	Stack velocity, ft/sec	9.62	10.10	9.75	6.53	6.88	6.92	8.30
Bws	Moisture content of the gas stream, %	1.4	2.1	2.6	3.5	3.5	5.7	3.1
Qs	Stack gas flow, acfm	104	109	105	71	74	75	90
Qsd	Stack gas flow, dscfm	102	104	98	65	67	65	84

BCP Ingredient, Verona, MO

LCH Project No. Picarro-P2026
Inlet 1 Gas Flow Rate Calculations

SYMBOL	DESCRIPTION	Run No.						
		1	2	3	4	5	6	Avg.
	Test date	2/11/26	2/11/26	2/11/26	2/11/26	2/11/26	2/11/26	-
	Test time start	9:30:00 AM	9:30:00 AM	9:30:00 AM	5:20:00 PM	7:30:00 PM	10:00:00 PM	-
	Test time stop	10:30:00 AM	10:30:00 AM	10:30:00 AM	6:20:00 PM	8:30:00 PM	11:00:00 PM	-
Theta	Duration of test, min.	60	60	60	60	60	60	60
$\sqrt{\Delta P}$	Average of square roots of pitot pressure , in. water	0.3921	0.3924	0.3189	0.2781	0.3458	0.3465	0.3456
Ts	Average stack temperature, °F	74.2	83.6	80.1	67.3	66.7	62.6	72.4
O_2	O_2 in stack gas, %	8.9	3.7	5.9	19.1	19.1	19.1	12.6
CO_2	CO_2 in stack gas, %	0.1	0.1	0.1	0.1	0.1	0.1	0.1
$CO+N_2$	CO and N_2 in stack gas, %	90.95	96.20	93.98	80.76	80.76	80.76	87.24
Pbar	Barometric pressure, in. Hg	28.90	28.90	28.90	28.90	28.90	28.90	28.90
Pa	Static pressure, in. water	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
Ps	Stack pressure (absolute), in. Hg	28.61	28.61	28.61	28.61	28.61	28.61	28.61
Ds	Diameter of stack, in.	4.0	4.0	4.0	4.0	4.0	4.0	4.0
	CALCULATED VALUES							
As	Area of the stack, sq. ft.	0.0873	0.0873	0.0873	0.0873	0.0873	0.0873	0.087
Md	Dry molecular weight of stack gas, dry basis, lb/lb-mole	28.38	28.17	28.26	28.78	28.78	28.78	28.53
Ms	Molecular weight of stack gas, wet basis, lb/lb-mole	28.09	27.77	27.91	28.54	28.54	28.57	28.24
Vs	Stack velocity, ft/sec	22.96	23.31	18.83	16.05	19.95	19.90	20.17
Bws	Moisture content of the gas stream, %	2.8	3.9	3.5	2.2	2.2	1.9	2.8
Qs	Stack gas flow, acfm	120	122	99	84	104	104	106
Qsd	Stack gas flow, dscfm	110	109	89	79	97	99	97

Attachment H – Source Method 1 Data

METHOD 1 POINT DETERMINATOR FOR A CIRCULAR STACK

SOURCE: BCP Verona, MO DATE: 2/11/2026

UNIT : Inlet 1 FILE: ========= ==========

STACK DIAMETER:	4	INCHES	0.33	FEET	PORT NIPPLE: 28.5 INCH
DOWNSTREAM FROM DISTURBANCE:			2.666667	FEET	
UPSTREAM FROM A DISTURBANCE:			100	FEET	
B VALUE:	8.0		A VALUE:	300.0	
# POINTS REQUIRED:	16				
# TRAVERSES:	2				
# TRAVERSE POINTS ON DIAMETER:			8		

TRAVERSE POINT #	# TRAVERSE POINTS ON DIAMETER							
ON DIAMETER	2	4	6	8	10	12	14	16
1	14.6	6.7	4.4	**3.2**	2.6	2.1	1.8	1.6
2	85.4	25.0	14.6	**10.5**	8.2	6.7	5.7	4.9
3		75.0	29.6	**19.4**	14.6	11.8	9.9	8.5
4		93.3	70.4	**32.3**	22.6	17.7	14.6	12.5
5			85.4	**67.7**	34.2	25.0	20.1	16.9
6			95.6	**80.6**	65.8	35.6	26.9	22.0
7				**89.5**	77.4	64.4	36.6	28.3
8				**96.8**	85.4	75.0	63.4	37.5
9					91.8	82.3	73.1	62.5
10					97.4	88.2	79.9	71.7
11						93.3	85.4	78.0
12						97.9	90.1	83.1
13							94.3	87.5
14							98.2	91.5
15								95.1
16								98.4

TRAVERSE POINT #	DISTANCE FROM INSIDE DIAMETER TO TRAVERSE POINT							
ON DIAMETER	2	4	6	8	10	12	14	16
1	0.6	0.3	0.2	**0.1**	0.1	0.1	0.1	0.1
2	3.4	1.0	0.6	**0.4**	0.3	0.3	0.2	0.2
3		3.0	1.2	**0.8**	0.6	0.5	0.4	0.3
4		3.7	2.8	**1.3**	0.9	0.7	0.6	0.5
5			3.4	**2.7**	1.4	1.0	0.8	0.7
6			3.8	**3.2**	2.6	1.4	1.1	0.9
7				**3.6**	3.1	2.6	1.5	1.1
8				**3.9**	3.4	3.0	2.5	1.5
9					3.7	3.3	2.9	2.5
10					3.9	3.5	3.2	2.9
11						3.7	3.4	3.1
12						3.9	3.6	3.3
13							3.8	3.5
14							3.9	3.7
15								3.8
16								3.9

TRAVERSE POINT #	DISTANCE FROM OUTSIDE NIPPLE TO TRAVERSE POINT							
ON DIAMETER	2	4	6	8	10	12	14	16
1	29.1	28.8	28.7	**28.6**	28.6	28.6	28.6	28.6
2	31.9	29.5	29.1	**28.9**	28.8	28.8	28.7	28.7
3		31.5	29.7	**29.3**	29.1	29.0	28.9	28.8
4		32.2	31.3	**29.8**	29.4	29.2	29.1	29.0
5			31.9	**31.2**	29.9	29.5	29.3	29.2
6			32.3	**31.7**	31.1	29.9	29.6	29.4
7				**32.1**	31.6	31.1	30.0	29.6
8				**32.4**	31.9	31.5	31.0	30.0
9					32.2	31.8	31.4	31.0
10					32.4	32.0	31.7	31.4
11						32.2	31.9	31.6
12						32.4	32.1	31.8
13							32.3	32.0
14							32.4	32.2
15								32.3
16								32.4

METHOD 1 POINT DETERMINATOR FOR A CIRCULAR STACK

SOURCE: BCP Verona, MO DATE: 2/11/2026

UNIT : Inlet 2 FILE: ========= ==========

STACK DIAMETER:	5.75 INCHES	0.48 FEET	PORT NIPPLE:	22.25 INCH	
DOWNSTREAM FROM DISTURBANCE:		3.67 FEET			
UPSTREAM FROM A DISTURBANCE:		0.5 FEET			
B VALUE:	7.7	A VALUE:	1.0		
# POINTS REQUIRED:	16				
# TRAVERSES:	2				
# TRAVERSE POINTS ON DIAMETER:		8			

TRAVERSE POINT #	# TRAVERSE POINTS ON DIAMETER							
ON DIAMETER	2	4	6	8	10	12	14	16
1	14.6	6.7	4.4	**3.2**	2.6	2.1	1.8	1.6
2	85.4	25.0	14.6	**10.5**	8.2	6.7	5.7	4.9
3		75.0	29.6	**19.4**	14.6	11.8	9.9	8.5
4		93.3	70.4	**32.3**	22.6	17.7	14.6	12.5
5			85.4	**67.7**	34.2	25.0	20.1	16.9
6			95.6	**80.6**	65.8	35.6	26.9	22.0
7				**89.5**	77.4	64.4	36.6	28.3
8				**96.8**	85.4	75.0	63.4	37.5
9					91.8	82.3	73.1	62.5
10					97.4	88.2	79.9	71.7
11						93.3	85.4	78.0
12						97.9	90.1	83.1
13							94.3	87.5
14							98.2	91.5
15								95.1
16								98.4

TRAVERSE POINT #	DISTANCE FROM INSIDE DIAMETER TO TRAVERSE POINT							
ON DIAMETER	2	4	6	8	10	12	14	16
1	0.8	0.4	0.3	**0.2**	0.1	0.1	0.1	0.1
2	4.9	1.4	0.8	**0.6**	0.5	0.4	0.3	0.3
3		4.3	1.7	**1.1**	0.8	0.7	0.6	0.5
4		5.4	4.0	**1.9**	1.3	1.0	0.8	0.7
5			4.9	**3.9**	2.0	1.4	1.2	1.0
6			5.5	**4.6**	3.8	2.0	1.5	1.3
7				**5.1**	4.5	3.7	2.1	1.6
8				**5.6**	4.9	4.3	3.6	2.2
9					5.3	4.7	4.2	3.6
10					5.6	5.1	4.6	4.1
11						5.4	4.9	4.5
12						5.6	5.2	4.8
13							5.4	5.0
14							5.6	5.3
15								5.5
16								5.7

TRAVERSE POINT #	DISTANCE FROM OUTSIDE NIPPLE TO TRAVERSE POINT							
ON DIAMETER	2	4	6	8	10	12	14	16
1	23.1	22.6	22.5	**22.4**	22.4	22.4	22.4	22.3
2	27.2	23.7	23.1	**22.9**	22.7	22.6	22.6	22.5
3		26.6	24.0	**23.4**	23.1	22.9	22.8	22.7
4		27.6	26.3	**24.1**	23.5	23.3	23.1	23.0
5			27.2	**26.1**	24.2	23.7	23.4	23.2
6			27.7	**26.9**	26.0	24.3	23.8	23.5
7				**27.4**	26.7	26.0	24.4	23.9
8				**27.8**	27.2	26.6	25.9	24.4
9					27.5	27.0	26.5	25.8
10					27.9	27.3	26.8	26.4
11						27.6	27.2	26.7
12						27.9	27.4	27.0
13							27.7	27.3
14							27.9	27.5
15								27.7
16								27.9

METHOD 1 POINT DETERMINATOR FOR A CIRCULAR STACK

SOURCE: BCP Verona, MO DATE: 2/11/2026

UNIT : Scrubber Outlet FILE:

STACK DIAMETER: 12 INCHES 1.00 FEET PORT NIPPLE: 22 INCH
DOWNSTREAM FROM DISTURBANCE: 10 FEET
UPSTREAM FROM A DISTURBANCE: 30 FEET
B VALUE: 10.0 A VALUE: 30.0
POINTS REQUIRED: 16
TRAVERSES: 2
TRAVERSE POINTS ON DIAMETER: 8

TRAVERSE POINT # ON DIAMETER	# TRAVERSE POINTS ON DIAMETER 2	4	6	8	10	12	14	16
1	14.6	6.7	4.4	**3.2**	2.6	2.1	1.8	1.6
2	85.4	25.0	14.6	**10.5**	8.2	6.7	5.7	4.9
3		75.0	29.6	**19.4**	14.6	11.8	9.9	8.5
4		93.3	70.4	**32.3**	22.6	17.7	14.6	12.5
5			85.4	**67.7**	34.2	25.0	20.1	16.9
6			95.6	**80.6**	65.8	35.6	26.9	22.0
7				**89.5**	77.4	64.4	36.6	28.3
8				**96.8**	85.4	75.0	63.4	37.5
9					91.8	82.3	73.1	62.5
10					97.4	88.2	79.9	71.7
11						93.3	85.4	78.0
12						97.9	90.1	83.1
13							94.3	87.5
14							98.2	91.5
15								95.1
16								98.4

TRAVERSE POINT # ON DIAMETER	DISTANCE FROM INSIDE DIAMETER TO TRAVERSE POINT 2	4	6	8	10	12	14	16
1	1.8	0.8	0.5	**0.4**	0.3	0.3	0.2	0.2
2	10.2	3.0	1.8	**1.3**	1.0	0.8	0.7	0.6
3		9.0	3.6	**2.3**	1.8	1.4	1.2	1.0
4		11.2	8.4	**3.9**	2.7	2.1	1.8	1.5
5			10.2	**8.1**	4.1	3.0	2.4	2.0
6			11.5	**9.7**	7.9	4.3	3.2	2.6
7				**10.7**	9.3	7.7	4.4	3.4
8				**11.6**	10.2	9.0	7.6	4.5
9					11.0	9.9	8.8	7.5
10					11.7	10.6	9.6	8.6
11						11.2	10.2	9.4
12						11.7	10.8	10.0
13							11.3	10.5
14							11.8	11.0
15								11.4
16								11.8

TRAVERSE POINT # ON DIAMETER	DISTANCE FROM OUTSIDE NIPPLE TO TRAVERSE POINT 2	4	6	8	10	12	14	16
1	23.8	22.8	22.5	**22.4**	22.3	22.3	22.2	22.2
2	32.2	25.0	23.8	**23.3**	23.0	22.8	22.7	22.6
3		31.0	25.6	**24.3**	23.8	23.4	23.2	23.0
4		33.2	30.4	**25.9**	24.7	24.1	23.8	23.5
5			32.2	**30.1**	26.1	25.0	24.4	24.0
6			33.5	**31.7**	29.9	26.3	25.2	24.6
7				**32.7**	31.3	29.7	26.4	25.4
8				**33.6**	32.2	31.0	29.6	26.5
9					33.0	31.9	30.8	29.5
10					33.7	32.6	31.6	30.6
11						33.2	32.2	31.4
12						33.7	32.8	32.0
13							33.3	32.5
14							33.8	33.0
15								33.4
16								33.8

Facility:	BCP Ingredient	**Response Time, O_2:**	30
Source:	Scrubber Outlet	**Response Time, CO_2:**	30
Date:	2/11/26	**Response Time, EtO:**	190
Operator:	LCH		

Time	EtO (ppb)		
Feb 11, 7:15 AM	0.2842081	**Stratification Check Point 1**	
Feb 11, 7:16 AM	0.1262945	**% of Stack ID =**	**16.7**
Feb 11, 7:17 AM	0.1185325	**Stack ID (inches) =**	**12**
Feb 11, 7:18 AM	0.1845851	**Wall thickness (inches) =**	**0**
Mean, Point 1	0.17840505	**Traverse point (inches)=**	**2.00**
Feb 11, 7:19 AM	0.2534826	**Stratification Check Point 2**	
Feb 11, 7:20 AM	0.08391687	**% of Stack ID =**	**50.0**
Feb 11, 7:21 AM	0.20795	**Stack ID (inches) =**	**12**
Feb 11, 7:22 AM	0.2204219	**Wall thickness (inches) =**	**0**
Mean, Point 2	0.19144284	**Traverse point (inches)=**	**6.00**
Feb 11, 7:23 AM	0.1636574	**Stratification Check Point 3**	
Feb 11, 7:24 AM	0.3112105	**% of Stack ID =**	**83.3**
Feb 11, 7:25 AM	0.4201862	**Stack ID (inches) =**	**12**
Feb 11, 7:26 AM	0.2365385	**Wall thickness (inches) =**	**0**
Mean, Point 3	0.28289815	**Traverse point (inches)=**	**10.00**

Mean, PointS 1, 2, & 3	**0.22**	
	-18.01	**Point 1 Difference from mean, %**
	-12.01	**Point 2 Difference from mean, %**
	30.02	**Point 3 Difference from mean, %**
	-0.04	**Point 1 Difference from mean, ppm or % for O_2 and CO_2**
	-0.03	**Point 2 Difference from mean, ppm or % for O_2 and CO_2**
	0.07	**Point 3 Difference from mean, ppb or % for O_2 and CO_2**

Gas stream is unstratified and single point sampling can be conducted if
the average difference from mean for each of the three traverse points is≤ ± 5% or ≤ ± 0.5 ppm
Gas stream is minimally stratified and three point sampling can be performed if
the average difference from mean is greater than ± 5% but ≤ ± 10% or 1.0 ppm (0.5% O_2 or CO_2).
Gas stream is considered stratified and 12 point sampling must be performed if
the average difference from mean is≥ ± 10% or 1.0 ppm (0.3% O_2 or CO_2)

Facility: BCP Ingredient **Response Time, O_2:** 30

Source: Inlet 2 **Response Time, CO_2:** 30

Date: 2/11/26 **Response Time, EtO:** 190

Operator: LCH

Time	EtO	
8:22:40 AM	4121.80433	**Stratification Check Point 1**
8:24:34 AM	6344.41788	**% of Stack ID =** **16.7**
8:26:29 AM	7511.62542	**Stack ID (inches) =** **5.75**
8:28:23 AM	3905.04773	**Wall thickness (inches) =** **0**
Mean, Point 1	5470.72384	**Traverse point (inches)=** **0.96**
8:28:23 AM	3905.04773	**Stratification Check Point 2**
8:30:17 AM	4426.60235	**% of Stack ID =** **50.0**
8:32:11 AM	6942.1013	**Stack ID (inches) =** **5.75**
8:34:05 AM	6849.00751	**Wall thickness (inches) =** **0**
Mean, Point 2	5530.68972	**Traverse point (inches)=** **2.88**
8:35:59 AM	4365.62493	**Stratification Check Point 3**
8:37:53 AM	5160.08805	**% of Stack ID =** **83.3**
8:39:47 AM	8982.95867	**Stack ID (inches) =** **5.75**
8:41:42 AM	4307.76836	**Wall thickness (inches) =** **0**
Mean, Point 3	5704.11	**Traverse point (inches)=** **4.79**
Mean, PointS 1, 2, & 3	**5568.51**	

-1.76	**Point 1 Difference from mean, %**
-0.68	**Point 2 Difference from mean, %**
2.44	**Point 3 Difference from mean, %**
-97.78	**Point 1 Difference from mean, ppm or % for O_2 and CO_2**
-37.82	**Point 2 Difference from mean, ppm or % for O_2 and CO_2**
135.60	**Point 3 Difference from mean, ppb or % for O_2 and CO_2**

Gas stream is unstratified and single point sampling can be conducted if
the average difference from mean for each of the three traverse points is≤ ± 5% or ≤ ± 0.5 ppm
Gas stream is minimally stratified and three point sampling can be performed if
the average difference from mean is greater than ± 5% but ≤ ± 10% or 1.0 ppm (0.5% O_2 or CO_2).
Gas stream is considered stratified and 12 point sampling must be performed if
the average difference from mean is≥ ± 10% or 1.0 ppm (0.3% O_2 or CO_2)

Facility: BCP Ingredient **Response Time, O_2:** 30

Source: Inlet 1 **Response Time, CO_2:** 30

Date: 2/11/26 **Response Time, EtO:** 190

Operator: LCH

Time	EtO		
8:41:42 AM	147.718395	**Stratification Check Point 1**	
8:43:36 AM	145.719969	**% of Stack ID =**	**16.7**
8:45:30 AM	130.319375	**Stack ID (inches) =**	**4**
8:47:24 AM	138.628441	**Wall thickness (inches) =**	**0**
Mean, Point 1	140.596545	**Traverse point (inches)=**	**0.67**
8:49:18 AM	140.971106	**Stratification Check Point 2**	
8:51:12 AM	141.490928	**% of Stack ID =**	**50.0**
8:53:06 AM	144.505895	**Stack ID (inches) =**	**4**
		Wall thickness (inches) =	**0**
Mean, Point 2	142.322643	**Traverse point (inches)=**	**2.00**
8:55:00 AM	147.468881	**Stratification Check Point 3**	
8:56:52 AM	145.882269	**% of Stack ID =**	**83.3**
8:58:46 AM	137.000821	**Stack ID (inches) =**	**4**
9:00:40 AM	150.584925	**Wall thickness (inches) =**	**0**
Mean, Point 3	145.234224	**Traverse point (inches)=**	**3.33**

Mean, PointS 1, 2, & 3 **142.72**

-1.49	**Point 1 Difference from mean, %**
-0.28	**Point 2 Difference from mean, %**
1.76	**Point 3 Difference from mean, %**
-2.12	**Point 1 Difference from mean, ppm or % for O_2 and CO_2**
-0.40	**Point 2 Difference from mean, ppm or % for O_2 and CO_2**
2.52	**Point 3 Difference from mean, ppm or % for O_2 and CO_2**

Gas stream is unstratified and single point sampling can be conducted if
the average difference from mean for each of the three traverse points is≤ ± 5% or ≤ ± 0.5 ppm
Gas stream is minimally stratified and three point sampling can be performed if
the average difference from mean is greater than ± 5% but ≤ ± 10% or 1.0 ppm (0.5% O_2 or CO_2).
Gas stream is considered stratified and 12 point sampling must be performed if
the average difference from mean is≥ ± 10% or 1.0 ppm (0.3% O_2 or CO_2)

Attachment I – Calibration Records

SATURATION TABLE (PS= 29.92 in Hg)

Stack Temp (F)	% H2O	Stack Temp (F)	% H2O	Stack Temp (F)	% H2O	Stack Temp (F)	% H2O
32	0.60	78	3.23	124	12.86	170	40.78
33	0.63	79	3.34	125	13.22	171	41.72
34	0.65	80	3.45	126	13.58	172	42.69
35	0.68	81	3.56	127	13.95	173	43.67
36	0.71	82	3.68	128	14.34	174	44.68
37	0.74	83	3.80	129	14.73	175	45.70
38	0.77	84	3.93	130	15.13	176	46.74
39	0.80	85	4.05	131	15.53	177	47.80
40	0.83	86	4.19	132	15.95	178	48.88
41	0.86	87	4.32	133	16.38	179	48.99
42	0.89	88	4.46	134	16.82	180	51.11
43	0.93	89	4.60	135	17.27	181	52.25
44	0.97	90	4.75	136	17.72	182	53.42
45	1.00	91	4.90	137	18.19	183	54.61
46	1.04	92	5.06	138	18.67	184	55.82
47	1.08	93	5.22	139	19.16	185	57.05
48	1.12	94	5.38	140	19.66	186	58.30
49	1.17	95	5.55	141	20.17	187	59.58
50	1.21	96	5.73	142	20.69	188	60.88
51	1.26	97	5.90	143	21.23	189	62.20
52	1.30	98	6.08	144	21.77	190	63.55
53	1.35	99	6.27	145	22.33	191	64.02
54	1.40	100	6.46	146	22.90	192	66.32
55	1.46	101	6.66	147	23.48	193	67.75
56	1.51	102	6.86	148	24.08	194	69.19
57	1.57	103	7.07	149	24.68	195	70.67
58	1.62	104	7.28	150	25.30	196	72.16
59	1.68	105	7.50	151	25.73	197	73.69
60	1.74	106	7.72	152	26.58	198	75.24
61	1.81	107	7.95	153	27.24	199	76.82
62	1.87	108	8.19	154	27.92	200	78.43
63	1.94	109	8.43	155	28.60	201	80.06
64	2.01	110	8.68	156	29.31	202	81.73
65	2.08	111	8.93	157	30.02	203	83.42
66	2.15	112	9.19	158	30.75	204	85.14
67	2.23	113	9.46	159	31.50	205	86.89
68	2.31	114	9.73	160	32.26	206	88.67
69	2.39	115	10.01	161	33.04	207	90.48
70	2.47	116	10.30	162	33.83	208	92.32
71	2.56	117	10.59	163	34.64	209	94.20
72	2.64	118	10.89	164	35.47	210	96.10
73	2.73	119	11.20	165	36.31	211	98.03
74	2.83	120	11.52	166	37.17	212	100.00
75	2.92	121	11.84	167	38.05		
76	3.02	122	12.17	168	38.84		
77	3.12	123	12.51	169	39.85		

at Ps other than 29.92 in

% M_2 = % M from chart $\times \frac{29.92}{P_S}$

P_S = Baro Press in Hg + $PST_{in\,H_2O}$

$PS_{in\,Hg}$ (static) = $\frac{PST_{in\,H_2O}}{13.6}$

TRC

Airgas Specialty Gases
Airgas USA LLC
630 United Drive
Durham, NC 27713
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E03NI61E15A02E5	Reference Number:	122-403412730-1
Cylinder Number:	CC16928	Cylinder Volume:	157.0 CF
Laboratory:	124 - Durham (SAP) - NC	Cylinder Pressure:	2015 PSIG
PGVP Number:	B22025	Valve Outlet:	590
Gas Code:	CO2,O2,BALN	Certification Date:	Aug 11, 2025

Expiration Date: Aug 11, 2033

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted. The results relate only to the items tested. The report shall not be reproduced except in full without approval of the laboratory. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	17.00 %	17.43 %	G1	+/- 0.5% NIST Traceable	08/11/2025
OXYGEN	22.00 %	21.96 %	G1	+/- 0.5% NIST Traceable	08/11/2025
NITROGEN	Balance				

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	12010104	K001296	17.97 % CARBON DIOXIDE/NITROGEN	+/- 0.5%	Jan 03, 2030
NTRM	10010928	K021508	20.89 % OXYGEN/NITROGEN	+/- 0.5%	Mar 22, 2028

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
SIEMENS ULTRAMAT 6 N1P3228	Nondispersive Infrared (NDIR)	Jul 23, 2025
Siemens Oxymat 61 M3299 O2	Paramagnetic	Jul 22, 2025

Triad Data Available Upon Request

Signature on file
Approved for Release

Airgas Specialty Gases
Airgas USA LLC
630 United Drive
Durham, NC 27713
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E03NI78E15A1066	Reference Number:	122-403412037-1
Cylinder Number:	CC421878	Cylinder Volume:	152.0 CF
Laboratory:	124 - Durham (SAP) - NC	Cylinder Pressure:	2015 PSIG
PGVP Number:	B22025	Valve Outlet:	590
Gas Code:	CO2,O2,BALN	Certification Date:	Aug 11, 2025

Expiration Date: Aug 11, 2033

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted. The results relate only to the items tested. The report shall not be reproduced except in full without approval of the laboratory. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	10.00 %	10.29 %	G1	+/- 0.6% NIST Traceable	08/11/2025
OXYGEN	12.00 %	11.99 %	G1	+/- 0.4% NIST Traceable	08/11/2025
NITROGEN	Balance				

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	19060402	6162642Y	11.105 % CARBON DIOXIDE/NITROGEN	+/- 0.6%	Dec 04, 2025
NTRM	100106	K-022358	9.967 % OXYGEN/NITROGEN	+/- 0.3%	Mar 22, 2028

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
SIEMENS ULTRAMAT 6 N1P3228	Nondispersive Infrared (NDIR)	Jul 23, 2025
Siemens Oxymat 61 M3299 O2	Paramagnetic	Jul 22, 2025

Triad Data Available Upon Request

Signature on file
Approved for Release

TYPE S PITOT TUBE INSPECTION DATA

Date: January 30, 2026 Pitot Number: 1-30-26-3

Pitot tube assembly level? yes x no ____

Pitot tube opening damage? yes ____ no x
If yes explain below.

$\alpha 1$ 0 (<10 °) $\alpha 2$ 1 (<10°)

$\beta 1$ = 0 (< 5°) $\beta 2$ 0 (< 5°)

γ = 0 ° θ = 0 ° A = 0.745 cm (in)

Z = A SINE γ = 0.000 cm (in) Where Z is <0.32 cm (<1/8 in)

W = A SINE θ = 0.000 cm (in) Where W is <0.08 cm (<1/32 in)

Pa = 0.373 cm, in Pb = 0.373 cm, in

P = Pa + Pb / 2 = 0.373 cm, in

Dt = 0.250 cm , in P/Dt = 1.490 Where P / Dþ ≥ 1.05 and ≤ 1.50

Comments: Client: TBA

Type of Probe and Effective length: 36" Heated Pitot

Cp = 0.84

Calibrated by Ruben

Leak Checked by: Ruben

Millennium Instruments Inc.
www.millinst.com

TYPE S PITOT TUBE INSPECTION DATA

Date: January 30, 2026 Pitot Number: 1-30-26-2

Pitot tube assembly level? yes x no

Pitot tube opening damage? yes no x
If yes explain below.

α1 0 (<10 °) α2 0 (<10°)

β1 = 0 (< 5°) β2 0 (< 5°)

γ = 0 ° θ = 0 ° A = 0.728 cm (in)

Z = A SINE γ = 0.000 cm (in) Where Z is <0.32 cm (<1/8 in)

W = A SINE θ = 0.000 cm (in) Where W is <0.08 cm (<1/32 in)

Pa = 0.364 cm, in Pb = 0.364 cm, in

P = Pa + Pb / 2 = 0.364 cm, in

Dt = 0.250 cm , in P/Dt = 1.456 Where P / Dþ ≥ 1.05 and ≤ 1.50

Comments: Client: TBA

Type of Probe and Effective length: 36" Heated Pitot

Cp = 0.84

Calibrated by Ruben

Leak Checked by: Ruben

Millennium Instruments Inc.
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TYPE S PITOT TUBE INSPECTION DATA

Date: January 30, 2026 Pitot Number: 1-30-26-1

Pitot tube assembly level? yes x no

Pitot tube opening damage? yes no x
If yes explain below.

α1 0 (<10 °) α2 0 (<10°)

β1 = 1 (< 5°) β2 0 (< 5°)

γ = 0 ° θ = 0 ° A = 0.736 cm (in)

Z = A SINE γ = 0.000 cm (in) Where Z is <0.32 cm (<1/8 in)

W = A SINE θ = 0.000 cm (in) Where W is <0.08 cm (<1/32 in)

Pa = 0.368 cm, in Pb = 0.368 cm, in

P = Pa + Pb / 2 = 0.368 cm, in

Dt = 0.250 cm , in P/Dt = 1.472 Where P / Dþ ≥ 1.05 and ≤ 1.50

Comments: Client: TBA

Type of Probe and Effective length: 36" Heated Pitot

Cp = 0.84

Calibrated by Ruben

Leak Checked by: Ruben

Millennium Instruments Inc.
www.millinst.com

PJLA Testing
Accreditation No: 103049

KEEN COMPRESSED GAS CO.
ISO/IEC 17025:2017 ACCREDITED

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Publication Date: 01/23/2019	Revision Date: 12/01/2025	Revision No: 1.6

CERTIFICATE OF CONFORMANCE

Keen Compressed Gas Co. Is Accredited to the ISO/IEC 17025:2017 Testing Laboratory Standard. Keen's Quality Management System Enables Keen to Provide the Highest Level of Testing, Calibration, and Traceability to Meet or Exceed the Minimum Specifications Listed for the Hydrogen Grade Requested.

Hydrogen (H2)

	Industrial	Zero [3,4]	Grade 5.0 [5]
Minimum Purity:	99.95	99.995	99.999
Carbon Dioxide[2,6]:	NT	NT	Sum ≤ 2.0 ppm
Carbon Monoxide[2,6]:	NT	NT	
Nitrogen [2,6]:	NT	NT	≤ 4.0 ppm
Oxygen [2]:	NT	NT	≤ 1.0 ppm
Total Hydrocarbon [2,6]:	NT	≤ 0.5 ppm	≤ 1.0 ppm
Moisture [2]:	NT	≤ 8.0 ppm	≤ 3.0 ppm
Dew Point:	-60°F	-92°F	-96°F
Boiling Point	-432°F	-432°F	-432°F
CGA Connection:	350	350	350
Lot Label Tracking:	No	Yes	Yes
Reference Item No:	HY2	RSG 252	RSG 250

TECHNICAL INFORMATION			
UN ID:	1049	**Molecular Weight:**	2.016 g/mol
DOT Classification:	2.1 Flammable Gas	**Specific Volume:**	192 ft^3/lb.
DOT Ship Name:	Hydrogen, Compressed	**CAS NO:**	1333-74-0

Notes:

1. NT – Not Tested
2. Certificate of Batch or Individual Analysis Specification Results Available Upon Request
3. Zero Grade Refers to Total Hydrocarbon Less Than 0.5 ppm
4. Meets MIL-BB-H-886E Type 1, Grade A Specification
5. Meets MIL-BB-H-886E Type 1, Grade B and C Specification
6. Specification Based on Raw Material Conformance to CGA QVL Grade (F&L) per CGA G5.3.7 2017

PJLA Testing
Accreditation No: 103049

KEEN COMPRESSED GAS CO.
ISO/IEC 17025:2017 ACCREDITED

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Publication Date: 08/16/2019	Revision Date: 12/01/2025	Revision No: 2.0

CERTIFICATE OF CONFORMANCE

Keen Compressed Gas Co. Is Accredited to the ISO/IEC 17025:2017 Testing Laboratory Standard. Keen's Quality Management System Enables Keen to Provide the Highest Level of Testing, Calibration, and Traceability to Meet or Exceed the Minimum Specifications Listed for the Helium Grade Requested.

Helium (He)

	Balloon Grade	Grade 4.7 [4,6]	Grade Zero [3,4,6]	Grade 5.0 [4,6]	Grade 5.5 [4,6]
Minimum Purity:	99.95	99.997	99.997	99.999	99.9995
Carbon Dioxide[5]:	NT	≤ 1.0 ppm	≤ 1.0 ppm	≤ 1.0 ppm	≤ 1.0 ppm
Carbon Monoxide[5]:	NT	≤ 1.0 ppm	≤ 1.0 ppm	≤ 1.0 ppm	≤ 1.0 ppm
Hydrogen[2,5]:	NT	≤ 1.0 ppm	≤ 1.0 ppm	≤ 1.0 ppm	≤ 1.0 ppm
Nitrogen[2]:	NT	≤ 5.0 ppm	≤ 5.0 ppm	< 4.0 ppm	≤ 1.0 ppm
Oxygen[2]:	NT	≤ 3.0 ppm	≤ 3.0 ppm	≤ 1.0 ppm	≤ 0.5 ppm
Odor[2]:	NT	None	None	None	None
Total Hydrocarbon[2]:	NT	≤ 1.0 ppm	≤ 0.5 ppm	≤ 0.5 ppm	≤ 0.2 ppm
Moisture[2]:	NT	≤ 3.0 ppm	≤ 3.0 ppm	≤ 1.0 ppm	≤ 1.0 ppm
Dew Point:	-72°F	-92°F	-92°F	-101°F	-101°F
Boiling Point:	-452°F	-452°F	-452°F	-452°F	-452°F
CGA Connection:	580	580	580	580	580
Lot Label Tracking:	No	Yes	Yes	Yes	Yes
Reference Item No:	HE2	RSG 218	RSG 217	RSG 220	RSG 221

TECHNICAL INFORMATION			
UN ID:	1046	**Molecular Weight:**	4 g/mol
DOT Classification:	2.2 Non-Flammable Gas	**Specific Volume:**	96.7 ft^3/lb.
DOT Ship Name:	Helium, Compressed	**CAS NO:**	7440-59-7

Notes:

1. NT – Not Tested
2. Certificate of Batch or Individual Analysis Specification Results Available Upon Request
3. Zero Grade Refers to Total Hydrocarbon Less Than 0.5 ppm
4. Meets MIL-PRF-27407D & BB-H-1168C, Type 1, Grade A and B Specification
5. Specification Based on Raw Material Conformance to CGA G9.1 Type 1, Grade L, N, P Specifications
   a. May Include Trace Argon Levels Not to Exceed ≤3 ppm
   b. May Include Trace Neon Levels Not to Exceed 23 ppm
   c. Actual Results Excluded from Conformance Guarantee
6. Meets AWS A5.32 (ISO 14175)-I2-He

PJLA Testing
Accreditation No: 103049

KEEN COMPRESSED GAS CO.
ISO/IEC 17025:2017 ACCREDITED

4063 New Castle Ave, Bldg. 4061
New Castle, DE 19720
www.keengas.com
P: (302) 594-4545

Publication Date: 08/30/2018	Revision Date: 12/01/2025	Revision No: 17

CERTIFICATE OF CONFORMANCE

Keen Compressed Gas Co. Is Accredited to the ISO/IEC 17025:2017 Testing Laboratory Standard. Keen's Quality Management System, Enables Keen to Provide the Highest Level of Testing, Calibration, and Traceability to Meet or Exceed the Minimum Specifications Listed for the Nitrogen Grade Requested.

NITROGEN (N2)

	Industrial [1]	NF / Food Grade [1,2,6,9,10]	Zero [1,4,7]	Grade 4.8 [1,7]	Grade 5.0 [1,7]
Minimum Purity [5]:	99.0	99.0	99.998	99.998	99.999
Carbon Monoxide [5,9]:	NT	≤ 10.0 ppm	NT	NT	NT
Oxygen [5]:	NT	1%	≤ 5.0 ppm	≤ 5.0 ppm	≤ 1.0 ppm
Odor[5]:	NT	None	None	None	None
Total Hydrocarbon [5]:	NT	NT	≤ 0.5 ppm	≤ 0.5 ppm	≤ 0.5 ppm
Moisture [5]:	NT	NT	≤ 5.0 ppm	≤ 3.0 ppm	≤ 1.0 ppm
Dew Point:	-77°F	-77°F	-85°F	-92°F	-105°F
Boiling Point:	-320°F	-320°F	-320°F	-320°F	-320°F
CGA Connection [8]:	580, 677	580	580	580,677	580
Lot Label Tracking:	No	Yes	Yes	Yes	Yes
Reference Item No:	N2	N2NF/N2FG	RSG 404	RSG 412	RSG 402

TECHNICAL			
UN ID:	1066	**Molecular Weight:**	28 g/mol
DOT Classification:	2.2 Non-Flammable Gas	**Specific Volume:**	13.89 ft^3/lb.
DOT Ship Name:	Nitrogen, Compressed	**CAS NO:**	7727-37-9

Notes:

1. Produced by Air Liquefaction Process Which Includes Trace Quantities of Neon, Helium & Argon
2. NF – Medical Nitrogen, National Formulary
3. NT – Not Tested
4. Zero Grade Refers to Total Hydrocarbon Less Than 0.5 ppm
5. Certificate of Batch or Individual Analysis Specification Results Available Upon Request
6. Meets USDA and CGA G-10.1 Food Grade Specifications
7. Meets MIL-PRF-27401G & MIL-A-A-59503C Specification
8. CGA Connection CGA 680 for 3500 PSI Cylinders and 677 for 6000 PSI Cylinders
9. Specification Based on Raw Material Bulk Supplier Certificate of Analysis
10. Meets CGA Type 1, QVL Grade B

GLOBAL CALIBRATION GASES LLC
ISO/IEC 17025:2017

Certificate of Analysis

Certified Standard

Customer:	Keen	Reference #:	082725KG-4
CGA:	350	Certification Date:	08/27/2025
Customer PO #:	166411	Expiration Date:	08/27/2026
Cylinder #:	222401026	Pressure, psig:	2000

Components	Requested Concentration	Certified Concentration	Analytical Accuracy
Ethylene Oxide	5ppm	4.9ppm	± 10%
Nitrogen	Balance	Balance	-

This mixture was prepared gravimetrically using a high load high sensitivity electronic scale. Prior to filling the scale is verified for accuracy throughout the target mass range against applicable NIST traceable weights.

This report states accurately the results of the investigation made upon the material submitted to the analytical laboratory. Every effort has been made to determine objectively the information requested. However, in connection with this report, Global Calibration Gases LLC shall have no liability in excess of the established charge for this service.

Produced by:
Global Calibration Gases LLC
1090 Commerce Blvd N.
Sarasota, Florida 34243 USA

Analyst: Signature on file

Approved for release: 9/3/2025

GLOBAL CALIBRATION GASES LLC
ISO/IEC 17025:2017

Certificate of Analysis

Certified Standard

Customer:	Keen	Reference #:	012626KG-4
CGA:	350 SS	Certification Date:	01/26/2026
Customer PO #:	173912	Expiration Date:	01/26/2028
Cylinder #:	250809031	Pressure, psig:	599

Components	Requested Concentration	Certified Concentration	Analytical Accuracy
Ethylene Oxide	2.50%	2.50%	± 2%
Nitrogen	Balance	Balance	-

This mixture was prepared gravimetrically using a high load high sensitivity electronic scale. Prior to filling the scale is verified for accuracy throughout the target mass range against applicable NIST traceable weights.

This report states accurately the results of the investigation made upon the material submitted to the analytical laboratory. Every effort has been made to determine objectively the information requested. However, in connection with this report, Global Calibration Gases LLC shall have no liability in excess of the established charge for this service.

Produced by:
Global Calibration Gases LLC
1090 Commerce Blvd N.
Sarasota, Florida 34243 USA

Analyst: Signature on file

Approved for release: 1/26/2026

GLOBAL CALIBRATION GASES LLC
ISO/IEC 17025:2017

Certificate of Analysis

Certified Standard

Customer:	Keen	Reference #:	012626KG-5
CGA:	350 SS	Certification Date:	01/26/2026
Customer PO #:	173912	Expiration Date:	01/26/2028
Cylinder #:	250808162	Pressure, psig:	2000

Components	Requested Concentration	Certified Concentration	Analytical Accuracy
Ethylene Oxide	5500 PPM	5500 PPM	± 2%
Nitrogen	Balance	Balance	-

This mixture was prepared gravimetrically using a high load high sensitivity electronic scale. Prior to filling the scale is verified for accuracy throughout the target mass range against applicable NIST traceable weights.

This report states accurately the results of the investigation made upon the material submitted to the analytical laboratory. Every effort has been made to determine objectively the information requested. However, in connection with this report, Global Calibration Gases LLC shall have no liability in excess of the established charge for this service.

Produced by:
Global Calibration Gases LLC
1090 Commerce Blvd N.
Sarasota, Florida 34243 USA

Analyst: Signature on file

Approved for release: 1/26/2026

GLOBAL CALIBRATION GASES LLC
ISO/IEC 17025:2017

Certificate of Analysis

Certified Standard

Customer:	Keen	Reference #:	082725KG-5
CGA:	350	Certification Date:	08/27/2025
Customer PO #:	166411	Expiration Date:	08/27/2026
Cylinder #:	222401039	Pressure, psig:	2000

Components	Requested Concentration	Certified Concentration	Analytical Accuracy
Ethylene Oxide	1.25ppm	1.19ppm	± 10%
Nitrogen	Balance	Balance	-

This mixture was prepared gravimetrically using a high load high sensitivity electronic scale. Prior to filling the scale is verified for accuracy throughout the target mass range against applicable NIST traceable weights.

This report states accurately the results of the investigation made upon the material submitted to the analytical laboratory. Every effort has been made to determine objectively the information requested. However, in connection with this report, Global Calibration Gases LLC shall have no liability in excess of the established charge for this service.

Produced by:
Global Calibration Gases LLC
1090 Commerce Blvd N.
Sarasota, Florida 34243 USA

Analyst: Signature on file

Approved for release: 9/3/2025

GLOBAL CALIBRATION GASES LLC
ISO/IEC 17025:2017

Certificate of Analysis

Certified Standard

Customer:	Keen	Reference #:	090225KG-2
CGA:	350	Certification Date:	09/02/2025
Customer PO #:	166411	Expiration Date:	09/02/2026
Cylinder #:	222401036	Pressure, psig:	2000

Components	Requested Concentration	Certified Concentration	Analytical Accuracy
Ethylene Oxide	2.5ppm	2.4ppm	± 10%
Nitrogen	Balance	Balance	-

This mixture was prepared gravimetrically using a high load high sensitivity electronic scale. Prior to filling the scale is verified for accuracy throughout the target mass range against applicable NIST traceable weights.

This report states accurately the results of the investigation made upon the material submitted to the analytical laboratory. Every effort has been made to determine objectively the information requested. However, in connection with this report, Global Calibration Gases LLC shall have no liability in excess of the established charge for this service.

Produced by:
Global Calibration Gases LLC
1090 Commerce Blvd N.
Sarasota, Florida 34243 USA

Analyst: Signature on file

Approved for release: 9/3/2025

Omega Engineering — 10 LPM Mass Flow Controller Calibration Worksheet

Device Information

Model:	Omega 15 LPM MFC
Serial / Asset #:	15-1
Full Scale (FS) [LPM]:	15
Gas / Medium:	Air
Calibration Date:	19-Feb
Technician:	LCH
Reference Standard:	bubble meter
Reference Uncertainty (LPM):	0.1

Point #	Setpoint (LPM)	MFC Indicated (LPM)	Reference Flow (LPM)	Error (LPM) = Indicated - Referenc	% Error (of Reading)	% of Full Scale (FS)	Pass/Fail	Notes
1	0	0	0	0		0	Pass	
2	0.5	0.5	0.5	0	0	0.000	Pass	
3	1	0.999	1	-0.001	-0.1	-0.007	Pass	
4	2	1.999	2	-0.001	-0.05	-0.007	Pass	
5	5	4.99	5	-0.01	-0.2	-0.067	Pass	
6	7.5	7.475	7.5	-0.025	-0.333333333	-0.167	Pass	
7	10	9.999	10	-0.001	-0.01	-0.007	Pass	
8	5	4.97	5	-0.03	-0.6	-0.200	Pass	
9	1	0.989	1	-0.011	-1.1	-0.073	Pass	

Summary

Worst-Case |% FS|:	0.2
Calibration Result:	PASS

Omega Engineering — 10 LPM Mass Flow Controller Calibration Worksheet

Device Information

Model:	Omega 15 LPM MFC
Serial / Asset #:	1-1
Full Scale (FS) [LPM]:	1
Gas / Medium:	Air
Calibration Date:	19-Feb
Technician:	LCH
Reference Standard:	bubble meter
Reference Uncertainty (LPM):	0.1

Point #	Setpoint (LPM)	MFC Indicated (LPM)	Reference Flow (LPM)	Error (LPM) = Indicated - Referenc	% Error (of Reading)	% of Full Scale (FS)	Pass/Fail	Notes
1	0	0	0	0		0	Pass	
2	0.05	0.049	0.05	-0.001	-2.000	-0.100	Pass	
3	0.15	0.15	0.15	0	0.000	0.000	Pass	
4	0.25	0.248	0.25	-0.002	-0.800	-0.200	Pass	
5	0.35	0.348	0.35	-0.002	-0.571	-0.200	Pass	
6	0.45	0.449	0.45	-0.001	-0.222	-0.100	Pass	
7	0.75	0.745	0.75	-0.005	-0.667	-0.500	Pass	
8	0.85	0.851	0.85	0.001	0.118	0.100	Pass	
9	1.15	1.152	1.15	0.002	0.174	0.200	Pass	

Summary

Worst-Case |% FS|:	0.5
Calibration Result:	PASS

THERMOCOUPLE CALIBRATION
EPA Method 2

Probe or Thermocouple ID:	1-30-26-1
Date:	02/18/26
Calibrated By:	LCH

TEMPERATURE SOURCE	REFERENCE TEMPERATURE (°F)	(°R)	THERMOCOUPLE TEMPERATURE (°F)	(°R)	DIFFERENCE (°F)	DIFFERENCE % (°R)
ICE WATER	35.0	495.0	36.0	496.0	-1.0	-0.2
AMBIENT AIR	45.0	505.0	46.0	506.0	-1.0	-0.2
BOILING WATER	208.0	668.0	209.0	669.0	-1.0	-0.1

According to EPA Method 2: If the absolute temperatures (°R) measured with the stack thermocouple and the reference gauge agree within 1.5 percent, the thermocouple calibration will be considered valid.

% Difference, °R = [(Reference Temp. °R - Thermocouple Temp. °R) / Reference Temp. °R X 100]

According to Alternative EPA Method 2 (Alt-011): If the temperature measured with the thermocouple and the refernce gauge agree within ±2 °F, the thermocouple calibration will be considered valid.

PITOT TUBE INSPECTION AND CALIBRATION

EPA Method 2

Probe or Pitot ID:	1-30-26-1
Date:	2/18/2026
Calibrated By:	LCH

Level and Perpendicular?	Yes
Obstruction?	No
Damaged?	No
α_1 ($-10° \leq \alpha_1 \leq +10°$)	0
α_2 ($-10° \leq \alpha_2 \leq +10°$)	0
β_1 ($-5° \leq \beta_1 \leq +5°$)	0
β_2 ($-5° \leq \beta_2 \leq +5°$)	0
γ	0
θ	0
A	0.575
D_t ($0.188" \leq D_t \leq 0.375"$)	0.248
$z = A \tan \gamma$ ($\leq 0.125"$)	0.000
$w = A \tan \theta$ ($\leq 0.03125"$)	0.00000
$A/2D_t = P_A/D_t$ ($1.05 \leq P_A/D_t \leq 1.5"$)	1.16

THERMOCOUPLE CALIBRATION
EPA Method 2

Probe or Thermocouple ID:	1-30-26-2
Date:	02/18/26
Calibrated By:	LCH

TEMPERATURE SOURCE	REFERENCE TEMPERATURE (°F)	(°R)	THERMOCOUPLE TEMPERATURE (°F)	(°R)	DIFFERENCE (°F)	DIFFERENCE % (°R)
ICE WATER	35.0	495.0	36.0	496.0	-1.0	-0.2
AMBIENT AIR	45.0	505.0	45.0	505.0	0.0	0.0
BOILING WATER	208.0	668.0	208.0	668.0	0.0	0.0

According to EPA Method 2: If the absolute temperatures (°R) measured with the stack thermocouple and the reference gauge agree within 1.5 percent, the thermocouple calibration will be considered valid.

% Difference, °R = [(Reference Temp. °R - Thermocouple Temp. °R) / Reference Temp. °R X 100]

According to Alternative EPA Method 2 (Alt-011): If the temperature measured with the thermocouple and the refernce gauge agree within ±2 °F, the thermocouple calibration will be considered valid.

PITOT TUBE INSPECTION AND CALIBRATION

EPA Method 2

Probe or Pitot ID:	1-30-26-2
Date:	2/18/2026
Calibrated By:	LCH

Level and Perpendicular?	Yes
Obstruction?	No
Damaged?	No
α_1 ($-10° \leq \alpha_1 \leq +10°$)	0
α_2 ($-10° \leq \alpha_2 \leq +10°$)	0
β_1 ($-5° \leq \beta_1 \leq +5°$)	0
β_2 ($-5° \leq \beta_2 \leq +5°$)	0
γ	0
θ	0
A	0.575
D_t ($0.188" \leq D_t \leq 0.375"$)	0.248
$z = A \tan \gamma$ ($\leq 0.125"$)	0.000
$w = A \tan \theta$ ($\leq 0.03125"$)	0.00000
$A/2D_t = P_A/D_t$ ($1.05 \leq P_A/D_t \leq 1.5"$)	1.16

PITOT TUBE INSPECTION AND CALIBRATION

EPA Method 2

Probe or Pitot ID:	1-30-26-3
Date:	2/18/2026
Calibrated By:	LCH

Level and Perpendicular?	Yes
Obstruction?	No
Damaged?	No
α_1 ($-10° \leq \alpha_1 \leq +10°$)	0
α_2 ($-10° \leq \alpha_2 \leq +10°$)	0
β_1 ($-5° \leq \beta_1 \leq +5°$)	1
β_2 ($-5° \leq \beta_2 \leq +5°$)	-1
γ	0
θ	0
A	0.575
D_t ($0.188" \leq D_t \leq 0.375"$)	0.248
$z = A \tan \gamma$ ($\leq 0.125"$)	0.000
$w = A \tan \theta$ ($\leq 0.03125"$)	0.00000
$A/2D_t = P_A/D_t$ ($1.05 \leq P_A/D_t \leq 1.5"$)	1.16

THERMOCOUPLE CALIBRATION
EPA Method 2

Probe or Thermocouple ID:	1-30-26-3
Date:	02/18/26
Calibrated By:	LCH

TEMPERATURE SOURCE	REFERENCE TEMPERATURE (°F)	(°R)	THERMOCOUPLE TEMPERATURE (°F)	(°R)	DIFFERENCE (°F)	DIFFERENCE % (°R)
ICE WATER	35.0	495.0	35.0	495.0	0.0	0.0
AMBIENT AIR	45.0	505.0	46.0	506.0	-1.0	-0.2
BOILING WATER	208.0	668.0	209.0	669.0	-1.0	-0.1

According to EPA Method 2: If the absolute temperatures (°R) measured with the stack thermocouple and the reference gauge agree within 1.5 percent, the thermocouple calibration will be considered valid.

% Difference, °R = [(Reference Temp. °R - Thermocouple Temp. °R) / Reference Temp. °R X 100]

According to Alternative EPA Method 2 (Alt-011): If the temperature measured with the thermocouple and the refernce gauge agree within ±2 °F, the thermocouple calibration will be considered valid.

Attachment J

Test Plan

EMISSIONS TEST PROTOCOL

For:

EtO Scrubber System Destruction Removal Efficiency Performance Test

BCP Ingredients, Inc.
299 Extension
St Verona, MO 65769

Prepared For:
Sean Cronin
Director, Field Operations
Picarro, Inc.

Prepared By:

L. Christopher Heilner
Owner
LCH Consulting Associates, LLC

Submitted to:
DOJ: eescdcopy.enrd@usdoj.gov
EPA: appier.christopher@epa.gov
Re: DJ # 90-5-2-12805

November 17, 2025

Contents

CONTACT SUMMARY SHEET

CLIENT CONTACT

Name	Sean Cronin
Title	Director, Field Services
Company Name	Picarro, Inc.
Street	3105 Patrick Henry Drive
City, ST ZIP	Santa Clara, CA 95054
Phone:	(815) 954-0857
Email:	scronin@picarro.com

FACILITY CONTACT

Name	Shawn P Thomas, PE
Title	EHS Director
Company Name	BCP Ingredients, Inc.
Street	299 Extension Street
City, ST ZIP	Verona, MO 65769
Email:	SThomas@Balchem.com
MoDNR ID.	109-0004
Permit No.	OP2019-025

REGULATORY AGENCY CONTACTS

Name:	Christopher Appier
Title:	Physical Scientist
Agency:	U.S. Environmental Protection Agency, Region 7
Street:	11201 Renner Blvd.
City, ST ZIP	Lenexa, KS 66219
Email:	appier.christopher@epa.gov

Agency	Missouri Department of Natural Resources
Street	1101 Riverside Dr
City, ST ZIP	Jefferson City, NE
Phone:	(573) 751-3443

TESTING CONTRACTOR

Name:	Chris Heilner
Company:	LCH Consulting Associates, LLC
Street:	88 Glocker Way PMB287
City, ST ZIP	Pottstown, PA 19465
Phone:	(484) 252-4335
Email:	chris@lchconsulting.com

SOURCE SUMMARY SHEET
BCP Ingredients, Verona, MO

Pollutant of Concern:	EtO (ethylene oxide)
Unit to be Tested:	EtO Scrubber System (two inlets, one outlet)
Control Methods:	Two acid/gas ethylene glycol scrubbers in series.
Test Purpose:	Initial test to verify the performance of the complete scrubber system in accordance with the 99.95% DRE required by Consent Decree
Test Summary:	Three sixty-minute test runs simultaneously at two inlets and one outlet of the Scrubber System to determine DRE% in terms of lbs/hr.
Test Conditions:	Representative operating conditions, as determined by BCP, will be implemented and documented for each test. Process operations will include tank venting (V25, V10, V8) and railcar unloading.
Applicable Regulation(s):	Missouri Department of Natural Resources Permit No. OP2019-25 40CFR63 Subpart A General Provisions
Quality Assurance:	All sampling, analytical, and data validation activities will be performed in accordance with the QA/QC procedures detailed in Section 2.5 of this Test Plan, consistent with the quality requirements specified in the Consent Decree.
Reference Test Methods:	40CFR60 Appendix A: Method 1 – traverse point locations Method 2 – volumetric flow rate determination Method 3 – molecular weight determination Method 4 – stack gas moisture content determination OTM-47 – Measurement of Ethylene Oxide Emissions from Stationary Sources by Cavity Ring-Down Spectroscopy Method 18 – Determination of Ethylene Oxide by Gas Chromatography Method 205 – Gas Dilution Calibration
EtO Analytical Device:	Picarro Cavity Ring-Down Spectroscopy (CRDS) Gas Chromatography Flame Ionization Detection (GCFID)

Proposed Test Schedule:

Day	Date	Schedule
1	1/19/26	Safety, set up, prelims
2	1/20/26	Conduct 2 one-hour runs*
3	1/21/26	Conduct 1 one-hour runs, tear down, leave facility
4	1/22/26	Contingency

* Process coordination limits testing to no more than two runs per day.

INTRODUCTION

BCP Ingredients, Inc. (BCP), of Verona, Missouri has contracted Picarro, Inc. in conjunction with LCH Consulting, to conduct performance testing on its recently modified scrubber system as required under the Consent Decree (CD) with the U.S. Environmental Protection Agency (US EPA) and U.S. Department of Justice (DOJ).

BCP produces choline and uses ethylene oxide (EtO) in its process. In accordance with the CD, BCP has installed an additional scrubber to further reduce EtO emissions from the facility's production and repackaging operations. The new system operates in series with the existing scrubber to achieve a combined EtO removal efficiency of at least 99.95%, in accordance with the CD, and as guaranteed by the manufacturer.

The objective of this performance test is to verify that the additional scrubber achieves the required destruction and removal efficiency (DRE). In accordance with Paragraph 21 in the CD, the performance test will be conducted under representative operating conditions. During the performance test, BCP will maintain a detailed log of process operations, consistent with the reporting requirements specified in Paragraph 23 of the CD.

A written report with the results of the performance test will be submitted to EPA within 60 days of the completion of the test. The report will include a description of the sampling and analysis procedures used, quality assurance procedures, EtO removal efficiency, the data used to calculate EtO removal efficiency, a log of process operations during the testing, and any deviations from this protocol.

The procedures and operating conditions for testing are discussed further below.

1.0 Ethylene Oxide Destruction Removal Testing

The performance test will determine the DRE for the complete scrubber system. Ethylene oxide concentrations and volumetric flow rates will be determined at both inlets and the outlet of the scrubber system. EPA methods 1, 2, 3, 4, 18, 205 and OTM-47 will be used to determine total pounds and/or pounds per hour of ethylene oxide introduced into the scrubber system and pounds per hour emitted to the atmosphere. Data will be reported in terms of EtO mass flow rate (lb/hr), and DRE will be calculated as the percentage reduction in EtO emissions between the inlets and outlet. The following equation will be used:

$$(DRE\% = (Inlets\frac{lbs}{hr} - Outlet\frac{lbs}{hr})/Inlets\frac{lbs}{hr}$$

2.0 EPA Reference Test Methods

2.1 Method 1: Velocity Traverse Point Determination

Two sample ports exist at each sample location meeting the minimum requirements set forth in EPA Method 1. A maximum of 16 traverse points will be used to determine average stack gas

velocity. The traverse points will be assigned as per USEPA Method 1 The absence of cyclonic flow will be determined using an S-type pitot prior to testing. An average Yaw angle of 20° or less will be considered non-cyclonic flow.

2.2 Method 2: Stack Gas Velocity and Volumetric Flow

Velocity (differential pressure and temperature) measurements are taken simultaneously to each test run. A standard or S-type pitot and K-type thermocouple and an oil-filled inclined manometer of appropriate range will be used for data collection during testing. An initial velocity traverse will be performed, and the pitot will be placed at a point that best represents the average pressure drop throughout the duct for continuous monitoring during each run. An instrument with data logging capabilities will record pressure drop and temperature at no greater than 5-minute intervals throughout each run.

2.3 Method 3/3A: Molecular Weight Determination

Sample gas from the outlet will be routed through a thermoelectric chiller and introduced to a paramagnetic oxygen analyzer and an infrared carbon dioxide analyzer. EPA Protocol 1 gases will be used to perform the pretest calibration error test and the posttest drift and bias tests. Additionally, an integrated Tedlar bag will be collected at the inlets of the scrubber system for subsequent analysis through the oxygen and carbon dioxide analyzers.

2.4 Method 4: Moisture Content

EPA method 4 is a manual, non-isokinetic method which may be used to measure the moisture content of gas streams. This method will be used at the inlet location. A Method 4 compliant moisture train will be constructed and charged with 100ml of water in each of the first two impingers, the third impinger will remain empty and the fourth will contain approximately 300grams of color indicating silica gel. Each impinger will be weighed and recorded prior to testing. Prior to testing the moisture train will be leak checked by plugging the inlet of the sample probe and applying a vacuum of 15" Hg to the entire sample train using a standard metering console. If the observed leak rate is less than 0.02CFM, the train will be considered leak-free. The probe and unheated transfer line will be placed within the centroid of the stack to be tested. Testing will be performed for 60 minutes and collect at least 21DSCF per sample run. At the completion of testing, the transfer line will be disconnected from the first impinger and the inlet of the first impinger will be plugged. Using the metering console, a vacuum 1-2" Hg greater than highest vacuum achieved during the test will be applied. If the observed leak-rate is less than 0.02CFM, the sample will be considered valid. The sample train will then be weighed on a calibrated field scale. The moisture gain will be compared to sample volume to determine moisture content. Due to high concentrations expected at one of the inlets, an approximation method using stoichiometric calculations or wet bulb/dry bulb may be used.

Picarro has real-time moisture measurements that will be reported for the outlet and second inlet locations.

2.5 OTM-47 and Quality Assurance Procedures

Ethylene oxide concentrations will be determined using a Picarro Cavity Ring-Down Spectroscopy (CRDS) analyzer. Measurements are generated via CRDS analysis using specific wavelengths of interest in the infrared (IR) spectroscopic region. The analyzer and sample manifold will be provided by Picarro. The quality assurance (QA) and quality control (QC) requirements of OTM-47 will ensure that the data generated by this method is of known quality.

2.5.1 Calibration Span and Gases

The calibration span upper limit will be defined by the concentration of the high-level calibration gas. No valid run average concentration may exceed the calibration span. To the extent practical, the measured emissions will fall between 20 to 100 percent of the selected calibration span.

The calibration gases consist of the primary target analyte at a known concentration. These gases will be prepared and certified in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards," May 2012 (or most recently updated version). The tests for analyzer calibration error, drift, and system bias require the use of calibration prepared according to this protocol, if available. The following certified calibration gas standards are proposed.

Analyte	Balance Gas	Certified Concentration (ppm)	Analytical Uncertainty	Expiration Date
Ethylene Oxide	Nitrogen	1.25	2.0%	TBD
Ethylene Oxide	Nitrogen	2.5	2.0%	TBD
Ethylene Oxide	Nitrogen	5.0	2.0%	TBD

Additional calibration standards prepared to ±2% analytical uncertainty are ordered. Ultra-High-Purity nitrogen will be used as zero gas. The manufacturer's certification of the calibration gases used in the testing will be included in the test report.

2.5.2 Sample System

The CRDS analyzer sample delivery system will consist of a stainless steel ¼" diameter probe connected to a Teflon ¼" diameter sample line. The sample line will connect to the sample manifold and deliver a consistent sample to the CRDS analyzer. All components of the sample system will be held above the dewpoint of the sample gas and heated if necessary. A 1-micron 99% DOP efficient filter will be placed between the probe and sample line and heated if necessary.

Prior to the start of testing, a stratification test will be performed. Three points along the diameter of the duct (16.7%, 50.0% and 83.3% of diameter) will be sampled for a duration of at least two times the system response time (RT).

The system RT is determined by observing the time required to achieve 95% stable readings for both zero and upscale calibration gases. The longer interval of the two gas responses shall be the system RT.

If each of the readings from the three sampling points agree to the mean concentration within 5% or ±0.5ppm$_v$ (whichever is less restrictive) the gas stream will be considered unstratified and a single sample point can be used. The sample point shall most closely represent the mean concentration of the stratification test. Should the sample location demonstrate stratification more than 5% or ±0.5ppm but less than 10% or ±1.0ppm (whichever is less restrictive), 3 traverse points will be used at 16.7%, 50.0% and 83.3% of the sample diameter for all subsequent testing. Should the sample location demonstrate stratification more than 10% or ±1.0ppm (whichever is less restrictive), 12 traverse points will be used in accordance with Table 1-1 or Table 1-2 of EPA Method 1 for all subsequent testing.

The sample system will be purged with stack gas for at least two times the RT before any valid data is recorded. Each time the probe is removed from the stack and replaced, the test must recondition the sampling system at least two times the system RT before any valid data is recorded.

The Picarro CRDS analyzer uses an external vacuum pump to maintain cavity pressure and provide a stable sample flow rate very precisely. The cavity pressure is recorded at every data point. For the analyzer data to be valid, the sample rate and cavity pressure will be maintained within 10% of the sample rate and cavity pressure established during the system RT check.

2.5.3 Calibration Error Test

Before the test, daily, and after any failed drift or bias tests, a 3-point calibration error test will be performed. Low-level, mid-level and high-level calibration gases will be introduced sequentially and directly into the analyzer. The analyzer responses will be recorded and compared against the certified gas concentrations for measured value, absolute difference, and error. The tester may adjust the system to maintain the correct flow rate at the analyzer during the test but may not make any other adjustments.

Analyzer Calibration Error (ACE) will be calculated using equation 47-1 of section 12.2 of OTM-47. Each calibration gas must demonstrate ACE within ±2% of the calibration span or ±0.5ppm, whichever is less stringent. Low, mid, and high-level direct checks and system checks must meet QA/QC requirements without any corrections or the direct calibration procedures must be repeated until acceptable results are obtained.

2.5.4 System Bias Test

Before and after every sample run, a system bias check will be performed. The upscale calibration gas that best represents the approximate emissions will be used as the bias gas. The bias gas will be introduced at the probe and upstream of all sample conditioning components. The time it takes to reach a stable value of at least 95% of the expected value or ±0.25ppm, whichever is less restrictive, will be recorded. The final stable value will be recorded. Zero gas will be introduced

the same way. The time it takes to reach a stable response within 5.0% or 0.25ppm (whichever is less restrictive) will be recorded. The final, stable value will be recorded.

Using these measurements, the system RT and initial system bias will be calculated. Initial system bias will be calculated using equation 47-2. For the test run to be considered valid, every system bias check must be within ±5% of the calibration span or ±0.1ppmv of the expected concentration, whichever is less stringent.

2.5.5 Analyzer Drift Assessment

After every sample run an analyzer drift assessment will be calculated using equation 47-4. If the system bias drifts greater than 3% of the bias gas and zero gas concentrations, the results will be considered invalid.

Should the results of any bias or drift tests exceed their allowable limits, the calibration procedure will be repeated, starting with the 3-point calibration error test, and must be successfully completed before any test data is considered valid.

2.5.6 Interference Test

The total interference response must not be greater than 2.5% of the calibration span for the analyzer evaluated. The sum of the interference responses shall consist of the larger of the absolute values obtained for the interferent evaluated, with and without the pollutant present. Alternatively, the results are acceptable if the sum of the responses does not exceed the 0.25ppmv for a calibration span of 5 to 10 ppmv, or 0.15ppmv for a calibration span <5ppmv, whichever is less stringent. This test has been performed by Picarro, and the data will be available in the final report.

2.5.7 Dynamic Spiking AKA Standard Addition Procedure

Prior to, during, or after sampling begins, the appropriateness of the measurement approach will be verified by completing a series of dynamic spikes. If possible, the standard addition (SA) testing will be performed while the unit is in operation, with the probe located in the stack. In instances where the process is intermittent or batch, the standard addition testing will be performed in an ambient air matrix, generally with the probe out of the stack. Recoveries (R) must be within 100±20% or have an absolute difference between the measured and expected concentrations less than or equal to 0.05 ppmv, whichever is more restrictive. R will be calculated using equation 47-8. Meeting these criteria will satisfy the standard addition spiking procedure.

Each standard addition, also known as a dynamic spike, will consist of a native sample, and a spiked sample, sequentially. The spike gas (standard addition) will be introduced so that the entire sampling system is challenged. The combined standard addition and native concentration will not exceed 100% of the instrument span. The instrument span is equal to the concentration of the high calibration gas standard. The volumetric flow rate of the addition of the spike gas will be measured by a calibrated mass flow meter and will not exceed 10% of the sampling system flow rate. The mid-level calibration gas, which includes a 500-ppm certified ethane concentration to be used as a certified tracer gas, will be used as the SA gas. The dilution factor (DF) is defined as the ratio of

standard addition flow to total sample flow. The dilution factor can be determined by use of mass flow meters or tracer gas concentration. The dilution factor must be 20% or less. The DF is calculated using equation 47-6.

All measurements should agree within 5.0% of three times the Picarro CRDS limit of detection (LOD) to avoid bias. The LOD is defined as three times the standard deviation of the measurements of a minimum of seven consecutive measurements separated by twice the response time. The LOD details will be supplied in the final report.

First, a minimum of two unspiked sample measurements will be collected for the pre-spike background. Two independent measurements of the native target analyte will be collected. The SA gas will be introduced; flow rates and calibration reference values will be documented. SA gas flow will be maintained for a minimum of 2 times the RT. Two independent spiked measurements of the target analyte will be collected. The standard addition response (SAR) and Effective Spike Addition (ESA) will be calculated, using equations 47-9 and 47-10 respectively, to evaluate the standard addition detection limit (SADL). The SADL should be equal to or greater than the LOD. If the ESA is greater than or equal to the LOD, the ESA will be used as the site-specific detection level.

2.5.8 Moisture Correction

The Picarro CRDS analyzer measures ethylene oxide as a wet sample. All ethylene oxide concentrations measured by the Picarro CRDS will be corrected to a dry basis.

2.5.9 Summary Table of OTM-47 QA/QC

Process	Specification	Criteria	Frequency	Corrective Action if Not Specification Not Met
Identify Data	--	Regulatory Agency or another primary end user of data	Pre-test	--
Analyzer Design	Resolution or sensitivity	<2.0% of the full-scale CRDS range or <1/2 of the applicable standard	Manufacturer design	Picarro meets this standard
Calibration Gases	Traceability Protocol (G1, G2)	Traceability Protocol (G1, G2)	Traceability Protocol (G1, G2)	Traceability Protocol (G1, G2)
	High-level Gas	Equal to calibration span. High-level gas concentration must exceed the average test run concentration	Each Test	Repeat calibration procedure with a higher high-level calibration gas
	Mid-level gas	40-60% of calibration span	Each Test	Repeat calibration procedure with appropriate gas
	Low-level gas	Zero air material	Each Test	Repeat calibration procedure with appropriate zero air material
	Resolution	<2.0% of full-scale CRDS range or <1/2 of applicable standard	Manufacturer design	Picarro meets this standard

Data Recorder (if applicable)	Frequency	</= 1-minute average	Each Test	Picarro meets this standard
Sample Extraction	Probe material	An appropriate material of sufficient length and physical integrity	Each Test	Repeat sampling with appropriate probe
	Probe, filter, and sample line temperature	Always keep sample above dew point (by heating or dilution)	Each Run	Repeat sampling with appropriately heated sample components
	Calibration valve material	Inert to target analyte and gas matrix	Each test	Repeat Calibration procedure with appropriate calibration valve
	Sample pump material	Inert to target analyte and gas matrix	Each test	Repeat Calibration procedure with appropriate sample pump material
	Manifold material	Inert to target analyte and gas matrix	Each test	Repeat Calibration procedure with appropriate manifold material
Particulate Removal (if applicable)	Filter Material	Pass system bias checks or pre- and post-test analyte spiking	Each test	Repeat Calibration procedure with appropriate filter material
Calibration Span	Set point	Upper limit of the expected highest measured concentration or 2.5 times emission limit (concentration equivalent)	Each test	Repeat with Use of appropriate calibration gases
Analyzer & Calibration Gas Performance	Analyzer calibration error (ACE)	Within ±2.0% of the calibration span of the analyzer for the low-, mid-, and high-level calibration gases or an absolute difference of </=0.05ppmv	Pre-test and after a failed system bias test, drift test, or dynamic spike	Repeat calibration procedure until specification is met
System Performance	System Bias	With ±5.0% of the analyzer calibration span for low-scale and upscale calibration gases. Alternatively, </=0.10 ppmv absolute difference	Before and after each run.	Invalidate run data and repeat test starting with ACE
	Standard Addition (SA)	Performed dynamically. Must be within ±20% of +/-0.05ppmv of expected concentration.	Once per source	Repeat procedure until specification met
	SADL Validation	Must be greater than or equal to instrument's LOD value.	Once per Source Type	Repeat procedure until specification met
	System Response Time	Determines minimum sampling time per point	Pre-test	NA
	Drift	</=3.0% of calibration span for low-level and mid- or high-level gases.	Before and after each run	Invalidate run data and repeat

		Alternatively, </=0.15ppmv absolute difference. Calculate using Equation 47-4.		test starting with ACE
	Spike Dilution Factor	</=10% of system volumetric flow rate	Pre-test	Repeat procedure until specification met
	Targeted Spiking Level	As practical, 50 to 150% of applicable standard but above native target analyte value	Pre-test	Repeat procedure until specification met
	Purge Time	>/=2 times system response time	Before starting the first run and after any event where the probe is removed from the source	Extend sample time to adequately purge system
	Minimum Sample Time	Defined as two times the system response time	Each sample point	Extend sampling time to meet specification
	Stable sample flow rate or CRDS pressure	Within 10% of flow rate or CRDS pressure established during system response time check.	Each run	Invalidate run data and repeat test starting with ACE.
Sample Point Selection	Stratification Test	All points within ±5% of mean for 1-point sampling, ±10% of mean for 3-point sampling, alternatively, ±0.25ppmv of mean for 1-point sampling and ±0.50ppmv of mean for 3-point sampling.	Prior to sampling	Use of EPA Method 1 maximum sampling points
Data parameters	Average run concentration	Run average </= calibration span	Each run	Invalidate run data and repeat test starting with ACE.

2.6 Method 18 – Hydrocarbon Analysis by Gas Chromatography

USEPA Method 18 may be used at the inlet sampling location from the repackaging process. Concentrations are expected to be 10 ppm or greater and well within the precision of the gas chromatograph. The current gas chromatograph has a detection of 0.25 ppmv. Procedures outlined in 40 CFR 60 Methods 18 will be used to determine ethylene oxide emission concentrations and are discussed as follows. The analysis will use the direct interface technique, introducing the sample through a heated Teflon sample line directly into the onboard GC heated gas sampling valves by pulling a vacuum through the entire system. Sample flow rate will be monitored and maintained continuously using a metering valve and mass flow meter.

Samples will be analyzed by gas chromatography using an SRI 8610C gas chromatograph with a flame ionization detector with heated sample loops, injectors, and a 3-meter packed Haysep D column. Gas in the sample loop is injected directly into the GC's analytical column by the gas sampling valve. The GC will be operated with carrier gas pressure of 18 psi and column temperature of 150˚C. The carrier gas is ultra-high purity helium. Ultra-high purity hydrogen and air are used to maintain the FID. ETO will elute at 1-2 minutes. Chromatograms will be produced every three minutes for a total of twenty integrations per hour test.

2.6.1 Calibration Standards

Three cylinders of calibration standard, ETO in nitrogen, in appropriate concentrations will be used to create a calibration curve to calculate ETO concentration in ppm given instrument response in millivolts. Calibration standards will be analyzed in triplicate, and the average value of the samples will be calculated. An analytical result is considered valid if its value is within 5% of the average value of the three analyses. Results of the calibration gas analyses will be compared to the certified value of the calibration gas.

A calibration curve will be generated using Microsoft Excel chart function by constructing a linear XY-Scatter graph that solves the quadratic equation of the line Y=mX+b where "y" is the calculated concentration of EtO, "x" is the instrument response, "m" is the constant and "b" is the y-coordinate intercept. The option forcing the graph through zero will be enabled so "b" = zero. The least squares R^2 value and the equation of the line will be shown. An $R^{2\ value}$ of 95% is acceptable according to Method 18. The gas chromatograph routinely exceeds the 95% R^2 value.

2.6.2 Chromatograms

The chromatogram log sheet is a Microsoft Excel spreadsheet that transposes run information in an easy-to-read format and provides the calculating capabilities to assess the QA/QC requirements of the method. The chromatograms are logged by the file path directory of the hard drive storage.

The chromatograms are automatically printed at the conclusion of each analysis in .pdf format. Each chromatogram includes information identifying the type of analysis, i.e., set up, calibration, sample, recovery study, date and time of analysis, comments, retention time, and integrated peak area. The results are in units of millivolts. Field corrections, if necessary, will be initiated by the operator.

2.6.3 QA/QC Measures

2.6.3.*1 Direct Interface Recovery Study*
Prior to testing, but after the initial calibration, a 10L Tedlar bag will be filled with the mid-level calibration gas and attached to the end of the sampling probe. The calibration gas will be sampled for at least three integrations within 5% of their arithmetical means. The result of the recovery study will be compared to the initial calibration. If the two values agree within 10%, the sample system will be considered leak-free and acceptable for testing. Should the values not agree within 10%, the system will be inspected for leaks or other issues and repeated until the results agree within 10%.

2.6.3.2 *Calibration Drift Assessment*
The mid-range calibration standard will be analyzed at the conclusion of testing, and the results will be compared to the initial analysis to determine if calibration drift has occurred. A 5% deviation between results is allowable. Should excessive calibration drift be observed all calibration standards be re-analyzed and a new calibration curve using all the pre-test and post-test data will be generated following the procedures of Method 18. The SRI gas chromatograph has historically met the 5% criteria.

2.7 Method 205 – Gas Dilution Calibration

If necessary, a method 205 compliant gas dilution system will be employed to create calibration standards appropriate for the test. Ideally, calibration standards will be bracketed such that the mean stack concentration is within 20% of the established span.

3.0 EQUIPMENT CALIBRATIONS

All sampling equipment will be in good working order and properly calibrated as per their respective EPA reference methods. Copies of the calibrations of flow meters, Method 205 system, pitot tubes, thermocouples, dry gas meters, gravimetric scales, and calibration standard certificates will be available at the start of testing and will be included in the final report.

4.0 CALCULATIONS and NOMENCLATURE

Mass emissions of ETO during operations are calculated using the following equations:

4.1 Equation 1:

MassRate = (VolFlow)(MolWt)(ppmv ETO)/(10^6 * MolVol)

Where:

MassRate = ETO mass flow rate, pounds per minute

VolFlow = Corrected volumetric flow rate, dscfm

MolWt = 44.05 pounds ETO per pound mole

ppmv ETO = ETO concentration, parts per million by volume

10^6 = Conversion factor, ppm

MolVol = 385.32 cubic feet per pound mole at 29.92-inch Hg and 68 deg ^{0} F

4.2 OTM-47 and PS-19 Nomenclature:

ACE *= Analyzer calibration error, percent of calibration span.*
B_{ws} *= Moisture content of sample gas, percent/100*
C_{Avg} *= Average unadjusted gas concentration indicated by data recorder for the run, ppmv*
CC *= Confidence coefficient (ppbv)*
C_D *= Analyte concentration on a dry basis, ppmv.*
C_{Dir} *= Measured calibration gas concentration (low, mid, or high) as introduced in direct calibration mode, ppmv.*
C_{Gas} *= Average gas concentration adjusted for bias, ppmv.*
C_M *= Average of initial and final system calibration bias check responses for the upscale calibration gas, ppmv.*
C_{MA} *= Actual concentration of the upscale calibration gas, ppmv.*
C_{Native} *= Native target analyte concentration in the gas stream, ppmv.*
C_O *= Average of the initial and final system calibration bias check responses from the low-level (or zero) calibration gas, ppmv.*
C_{OA} *= Actual concentration of the low-level calibration gas, ppmv.*

C_S or MC_i *= Measured concentration of a calibration gas (zero, low, mid, or high) when introduced in system calibration mode, ppmv.*
C_{Spike} *= Measured concentration of target analyte in spiked sample, ppmv.*
C_{Exp} = Expected concentration of target analyte in the spike gas diluted in the sample, ppmv.
C_V or C_i *= Certified concentration of a calibration gas (low, mid, or high), ppmv.*
C_W *= Analyte concentration on a wet basis, ppmv.*
CS *= Calibration span, ppmv.*
D and CD *= Drift assessment, percent of calibration span.*
d_{avg} *=Mean Difference between CEMS response and the reference gas (ppbv)*
DF *= Dilution factor of dilution system or spike gas, dimensionless.*
d_i *=Difference between CEMS response and the RM value (ppbv or units of emission standard)*
I *= Total interference from major matrix stack gases (percent)*
ΔMC_{avg} = average of the 3 absolute values of the difference between measured EtO calibration gas concentrations with and without interference from selected stack gases (ppbv)
ME *= Measurement Error, percent of calibration span*
MN_{avg} *= Average concentration at all sampling points (ppbv)*
MNbi *= Measured native concentration bracketing each calibration check measurement (ppbv)*
MNi *= Measured native concentration for test or run 1 (ppbv)*
n *= Number of measurements in an average value*
Q_{Spike} *= Flow rate of spike gas introduced in system calibration mode, LPM.*
Q_{Total} *= Total sample flow rate during the spike test, LPM.*
R *= spike recovery, percent.*
RA *= Relative accuracy of CEMS compared to a RM (percent)*
RM_i *= RM concentration for test run I (ppbv or units of the emission standard)*
RM_{avg} *= Mean measured RM value (ppbv or units of the emission standard)*
S *= system measurement span*
S_d *= Standard deviation of the differences (ppmv)*
S_{ti} *= Stratification at point i (%)*
SADL *= Standard addition detection level (ppmv)*
SB *= System bias, percent of calibration span.*
SB_i *= Pre-run system bias, percent of calibration span.*
SB_{final} *= post-run system bias, percent of calibration span.*
$t_{0.975}$ *= One-sided t-value at the 97.5th percentile obtained from Table 4 in section 17.0 of PS19 for n-1 measurements*

Equation 47-1 Analyzer Calibration Error

$$ACE = \frac{C_{Dir} - C_V}{CS}\ x\ 100\%$$

Equation 47-2 System Bias

$$SB = \frac{C_S - C_{Dir}}{CS}\ x\ 100\%$$

Equation 47-4 Drift Assessment

$$D = |SB_{final} - SB_i|$$

PS19 Equation 3A ME and 3B Drift Assessment

$$ME = \left|\frac{C_i - M_i}{s}\right|$$

$$D = \left|\frac{C_i - M_i}{s}\right|$$

Equation 47-5 Moisture Correction

$$C_D = \frac{C_W}{1 - B_{WS}}$$

Equation 47-6 (PS19 SA appendix equation A1) Dilution Factor

$$DF = \frac{Q_{Spike}}{Q_{Total}} < 20\%$$

Equation 47-7 Expected Spike Concentration

$$C_{Exp} = \left(C_{V_{spike}}\, x\, DF\right) + (1 - DF)(C_{Native})$$

Equation 47-8 Standard Addition % Recovery (R)

$$R = \frac{C_{Spike}}{C_{Exp}}, 0.80 \leq R \leq 1.20$$

Equation 47-9 (PS19 SA appendix equation A4) Standard Addition Response (SAR)

$$SAR = C_{Spike} - (1 - DF) * C_{Native}$$

Equation 47-10 (PS19 SA appendix equation A7) Effective Spike Addition (ESA)

$$ESA = DF * (C_{Spike} - C_{Native})$$

PS19 Equation 4 Average native concentration before and after each calibration check measurement

$$MN_{bi} = \frac{MN_i + MN_{i+1}}{2}$$

EQUATIONS FOR MOISTURE CONTENT AND FLOW RATE CALCULATIONS

(Based on Standard Conditions of 70ºF and 29.92"Hg)

1. $V_{w\,(std)} = 0.0473\ V_{wc}$

2. $V_{m\,(std)} = 17.71 V_m \dfrac{P_{bar} + (0.07355 \Delta H)}{T_m + 460} \gamma$

3. $B_{wo} = \dfrac{V_{w\,(std)}}{V_{m\,(std)} + V_{w\,(std)}}$

4. $B_{WS} = (B_{WO})\ (100)$

5. $M_d = 0.44\ (\%CO_2) = 0.28\ (\%CO) + 0.32\ (\%O_2) + 0.28\ (\%N_2)$

6. $M_s = M_d\ (1 - B_{wo}) + 18\ B_{wo}$

7. $P_s = P_{bar} + \dfrac{P_A}{13.6}$

8. $V_s = (85.49)(60)(C_p)\ \sqrt{\Delta P}\ \sqrt{\dfrac{T_s + 460}{(P_s)\ (M_s)}}$

9. $A_s = \dfrac{(\pi)\,(D/2)^2}{144}$

10. $Q_s = V_s\ A_s$

11. $Q_{s\,(std)} = Q_s\ (1\text{-}B_{wo})\ 17.71\ \dfrac{P_s}{T_s + 460}$

NOMENCLATURE

A_s =	Area of stack, ft^2
B_{wo} =	Moisture content of gas stream, fractional value
B_{ws} =	Moisture content of gas stream, percent by volume
C_p =	Pitot correction factor, dimensionless
D =	Inside diameter of stack, in.
E =	Emission rate, lb/hr
H =	Orifice pressure drop, in. H_2O
M_d =	Dry molecular weight of stack gas, lb/lb-mole

M_s = Molecular weight of stack gas, lb/lb-mole

P_A = Stack static pressure, in. H_20

P_{bar} = Barometric pressure, in. Hg

P_s = Absolute stack pressure, in. Hg

$\sqrt{\Delta P}$ = Average of square roots of pitot pressure differential, in. H_2O

Q_s = Stack gas flow rate, acfm

$Q_{s(std)}$ = Stack gas flow rate, dscfm

T_m = Average dry gas meter temperature, ºF

T_s = Average stack temperature, ºF

V_m = Dry sample volume (meter conditions), cf

$V_{m(std)}$ = Dry sample volume (standard conditions), dscf

V_s = Stack gas velocity, ft/min

V_{wc} = Volume of liquid collected in impingers and silica gel, ml

$V_{w(std)}$ = Volume of liquid collected, cf

γ = Meter box calibration factor, dimensionless

Attachment J

Test Plan

EMISSIONS TEST PROTOCOL

For:

EtO Scrubber System Destruction Removal Efficiency Performance Test

BCP Ingredients, Inc.
299 Extension
St Verona, MO 65769

Prepared For:
Sean Cronin
Director, Field Operations
Picarro, Inc.

Prepared By:

L. Christopher Heilner
Owner
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Submitted to:
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Re: DJ # 90-5-2-12805

November 17, 2025

Contents

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SOURCE SUMMARY SHEET
BCP Ingredients, Verona, MO

Pollutant of Concern:	EtO (ethylene oxide)
Unit to be Tested:	EtO Scrubber System (two inlets, one outlet)
Control Methods:	Two acid/gas ethylene glycol scrubbers in series.
Test Purpose:	Initial test to verify the performance of the complete scrubber system in accordance with the 99.95% DRE required by Consent Decree
Test Summary:	Three sixty-minute test runs simultaneously at two inlets and one outlet of the Scrubber System to determine DRE% in terms of lbs/hr.
Test Conditions:	Representative operating conditions, as determined by BCP, will be implemented and documented for each test. Process operations will include tank venting (V25, V10, V8) and railcar unloading.
Applicable Regulation(s):	Missouri Department of Natural Resources Permit No. OP2019-25 40CFR63 Subpart A General Provisions
Quality Assurance:	All sampling, analytical, and data validation activities will be performed in accordance with the QA/QC procedures detailed in Section 2.5 of this Test Plan, consistent with the quality requirements specified in the Consent Decree.
Reference Test Methods:	40CFR60 Appendix A: Method 1 – traverse point locations Method 2 – volumetric flow rate determination Method 3 – molecular weight determination Method 4 – stack gas moisture content determination OTM-47 – Measurement of Ethylene Oxide Emissions from Stationary Sources by Cavity Ring-Down Spectroscopy Method 18 – Determination of Ethylene Oxide by Gas Chromatography Method 205 – Gas Dilution Calibration
EtO Analytical Device:	Picarro Cavity Ring-Down Spectroscopy (CRDS) Gas Chromatography Flame Ionization Detection (GCFID)

Proposed Test Schedule:

Day	Date	Schedule
1	1/19/26	Safety, set up, prelims
2	1/20/26	Conduct 2 one-hour runs*
3	1/21/26	Conduct 1 one-hour runs, tear down, leave facility
4	1/22/26	Contingency

* Process coordination limits testing to no more than two runs per day.

INTRODUCTION

BCP Ingredients, Inc. (BCP), of Verona, Missouri has contracted Picarro, Inc. in conjunction with LCH Consulting, to conduct performance testing on its recently modified scrubber system as required under the Consent Decree (CD) with the U.S. Environmental Protection Agency (US EPA) and U.S. Department of Justice (DOJ).

BCP produces choline and uses ethylene oxide (EtO) in its process. In accordance with the CD, BCP has installed an additional scrubber to further reduce EtO emissions from the facility's production and repackaging operations. The new system operates in series with the existing scrubber to achieve a combined EtO removal efficiency of at least 99.95%, in accordance with the CD, and as guaranteed by the manufacturer.

The objective of this performance test is to verify that the additional scrubber achieves the required destruction and removal efficiency (DRE). In accordance with Paragraph 21 in the CD, the performance test will be conducted under representative operating conditions. During the performance test, BCP will maintain a detailed log of process operations, consistent with the reporting requirements specified in Paragraph 23 of the CD.

A written report with the results of the performance test will be submitted to EPA within 60 days of the completion of the test. The report will include a description of the sampling and analysis procedures used, quality assurance procedures, EtO removal efficiency, the data used to calculate EtO removal efficiency, a log of process operations during the testing, and any deviations from this protocol.

The procedures and operating conditions for testing are discussed further below.

1.0 Ethylene Oxide Destruction Removal Testing

The performance test will determine the DRE for the complete scrubber system. Ethylene oxide concentrations and volumetric flow rates will be determined at both inlets and the outlet of the scrubber system. EPA methods 1, 2, 3, 4, 18, 205 and OTM-47 will be used to determine total pounds and/or pounds per hour of ethylene oxide introduced into the scrubber system and pounds per hour emitted to the atmosphere. Data will be reported in terms of EtO mass flow rate (lb/hr), and DRE will be calculated as the percentage reduction in EtO emissions between the inlets and outlet. The following equation will be used:

$$(DRE\% = (Inlets\,\frac{lbs}{hr} - Outlet\,\frac{lbs}{hr})/Inlets\,\frac{lbs}{hr}$$

2.0 EPA Reference Test Methods

2.1 Method 1: Velocity Traverse Point Determination

Two sample ports exist at each sample location meeting the minimum requirements set forth in EPA Method 1. A maximum of 16 traverse points will be used to determine average stack gas

velocity. The traverse points will be assigned as per USEPA Method 1 The absence of cyclonic flow will be determined using an S-type pitot prior to testing. An average Yaw angle of 20̊ or less will be considered non-cyclonic flow.

2.2 Method 2: Stack Gas Velocity and Volumetric Flow

Velocity (differential pressure and temperature) measurements are taken simultaneously to each test run. A standard or S-type pitot and K-type thermocouple and an oil-filled inclined manometer of appropriate range will be used for data collection during testing. An initial velocity traverse will be performed, and the pitot will be placed at a point that best represents the average pressure drop throughout the duct for continuous monitoring during each run. An instrument with data logging capabilities will record pressure drop and temperature at no greater than 5-minute intervals throughout each run.

2.3 Method 3/3A: Molecular Weight Determination

Sample gas from the outlet will be routed through a thermoelectric chiller and introduced to a paramagnetic oxygen analyzer and an infrared carbon dioxide analyzer. EPA Protocol 1 gases will be used to perform the pretest calibration error test and the posttest drift and bias tests. Additionally, an integrated Tedlar bag will be collected at the inlets of the scrubber system for subsequent analysis through the oxygen and carbon dioxide analyzers.

2.4 Method 4: Moisture Content

EPA method 4 is a manual, non-isokinetic method which may be used to measure the moisture content of gas streams. This method will be used at the inlet location. A Method 4 compliant moisture train will be constructed and charged with 100ml of water in each of the first two impingers, the third impinger will remain empty and the fourth will contain approximately 300grams of color indicating silica gel. Each impinger will be weighed and recorded prior to testing. Prior to testing the moisture train will be leak checked by plugging the inlet of the sample probe and applying a vacuum of 15” Hg to the entire sample train using a standard metering console. If the observed leak rate is less than 0.02CFM, the train will be considered leak-free. The probe and unheated transfer line will be placed within the centroid of the stack to be tested. Testing will be performed for 60 minutes and collect at least 21DSCF per sample run. At the completion of testing, the transfer line will be disconnected from the first impinger and the inlet of the first impinger will be plugged. Using the metering console, a vacuum 1-2” Hg greater than highest vacuum achieved during the test will be applied. If the observed leak-rate is less than 0.02CFM, the sample will be considered valid. The sample train will then be weighed on a calibrated field scale. The moisture gain will be compared to sample volume to determine moisture content. Due to high concentrations expected at one of the inlets, an approximation method using stoichiometric calculations or wet bulb/dry bulb may be used.

Picarro has real-time moisture measurements that will be reported for the outlet and second inlet locations.

2.5 OTM-47 and Quality Assurance Procedures

Ethylene oxide concentrations will be determined using a Picarro Cavity Ring-Down Spectroscopy (CRDS) analyzer. Measurements are generated via CRDS analysis using specific wavelengths of interest in the infrared (IR) spectroscopic region. The analyzer and sample manifold will be provided by Picarro. The quality assurance (QA) and quality control (QC) requirements of OTM-47 will ensure that the data generated by this method is of known quality.

2.5.1 Calibration Span and Gases

The calibration span upper limit will be defined by the concentration of the high-level calibration gas. No valid run average concentration may exceed the calibration span. To the extent practical, the measured emissions will fall between 20 to 100 percent of the selected calibration span.

The calibration gases consist of the primary target analyte at a known concentration. These gases will be prepared and certified in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards," May 2012 (or most recently updated version). The tests for analyzer calibration error, drift, and system bias require the use of calibration prepared according to this protocol, if available. The following certified calibration gas standards are proposed.

Analyte	Balance Gas	Certified Concentration (ppm)	Analytical Uncertainty	Expiration Date
Ethylene Oxide	Nitrogen	1.25	2.0%	TBD
Ethylene Oxide	Nitrogen	2.5	2.0%	TBD
Ethylene Oxide	Nitrogen	5.0	2.0%	TBD

Additional calibration standards prepared to ±2% analytical uncertainty are ordered. Ultra-High-Purity nitrogen will be used as zero gas. The manufacturer's certification of the calibration gases used in the testing will be included in the test report.

2.5.2 Sample System

The CRDS analyzer sample delivery system will consist of a stainless steel ¼" diameter probe connected to a Teflon ¼" diameter sample line. The sample line will connect to the sample manifold and deliver a consistent sample to the CRDS analyzer. All components of the sample system will be held above the dewpoint of the sample gas and heated if necessary. A 1-micron 99% DOP efficient filter will be placed between the probe and sample line and heated if necessary.

Prior to the start of testing, a stratification test will be performed. Three points along the diameter of the duct (16.7%, 50.0% and 83.3% of diameter) will be sampled for a duration of at least two times the system response time (RT).

The system RT is determined by observing the time required to achieve 95% stable readings for both zero and upscale calibration gases. The longer interval of the two gas responses shall be the system RT.

If each of the readings from the three sampling points agree to the mean concentration within 5% or ±0.5ppm$_v$ (whichever is less restrictive) the gas stream will be considered unstratified and a single sample point can be used. The sample point shall most closely represent the mean concentration of the stratification test. Should the sample location demonstrate stratification more than 5% or ±0.5ppm but less than 10% or ±1.0ppm (whichever is less restrictive), 3 traverse points will be used at 16.7%, 50.0% and 83.3% of the sample diameter for all subsequent testing. Should the sample location demonstrate stratification more than 10% or ±1.0ppm (whichever is less restrictive), 12 traverse points will be used in accordance with Table 1-1 or Table 1-2 of EPA Method 1 for all subsequent testing.

The sample system will be purged with stack gas for at least two times the RT before any valid data is recorded. Each time the probe is removed from the stack and replaced, the test must recondition the sampling system at least two times the system RT before any valid data is recorded.

The Picarro CRDS analyzer uses an external vacuum pump to maintain cavity pressure and provide a stable sample flow rate very precisely. The cavity pressure is recorded at every data point. For the analyzer data to be valid, the sample rate and cavity pressure will be maintained within 10% of the sample rate and cavity pressure established during the system RT check.

2.5.3 Calibration Error Test

Before the test, daily, and after any failed drift or bias tests, a 3-point calibration error test will be performed. Low-level, mid-level and high-level calibration gases will be introduced sequentially and directly into the analyzer. The analyzer responses will be recorded and compared against the certified gas concentrations for measured value, absolute difference, and error. The tester may adjust the system to maintain the correct flow rate at the analyzer during the test but may not make any other adjustments.

Analyzer Calibration Error (ACE) will be calculated using equation 47-1 of section 12.2 of OTM-47. Each calibration gas must demonstrate ACE within ±2% of the calibration span or ±0.5ppm, whichever is less stringent. Low, mid, and high-level direct checks and system checks must meet QA/QC requirements without any corrections or the direct calibration procedures must be repeated until acceptable results are obtained.

2.5.4 System Bias Test

Before and after every sample run, a system bias check will be performed. The upscale calibration gas that best represents the approximate emissions will be used as the bias gas. The bias gas will be introduced at the probe and upstream of all sample conditioning components. The time it takes to reach a stable value of at least 95% of the expected value or ±0.25ppm, whichever is less restrictive, will be recorded. The final stable value will be recorded. Zero gas will be introduced

the same way. The time it takes to reach a stable response within 5.0% or 0.25ppm (whichever is less restrictive) will be recorded. The final, stable value will be recorded.

Using these measurements, the system RT and initial system bias will be calculated. Initial system bias will be calculated using equation 47-2. For the test run to be considered valid, every system bias check must be within ±5% of the calibration span or ±0.1ppmv of the expected concentration, whichever is less stringent.

2.5.5 Analyzer Drift Assessment

After every sample run an analyzer drift assessment will be calculated using equation 47-4. If the system bias drifts greater than 3% of the bias gas and zero gas concentrations, the results will be considered invalid.

Should the results of any bias or drift tests exceed their allowable limits, the calibration procedure will be repeated, starting with the 3-point calibration error test, and must be successfully completed before any test data is considered valid.

2.5.6 Interference Test

The total interference response must not be greater than 2.5% of the calibration span for the analyzer evaluated. The sum of the interference responses shall consist of the larger of the absolute values obtained for the interferent evaluated, with and without the pollutant present. Alternatively, the results are acceptable if the sum of the responses does not exceed the 0.25ppmv for a calibration span of 5 to 10 ppmv, or 0.15ppmv for a calibration span <5ppmv, whichever is less stringent. This test has been performed by Picarro, and the data will be available in the final report.

2.5.7 Dynamic Spiking AKA Standard Addition Procedure

Prior to, during, or after sampling begins, the appropriateness of the measurement approach will be verified by completing a series of dynamic spikes. If possible, the standard addition (SA) testing will be performed while the unit is in operation, with the probe located in the stack. In instances where the process is intermittent or batch, the standard addition testing will be performed in an ambient air matrix, generally with the probe out of the stack. Recoveries (R) must be within 100±20% or have an absolute difference between the measured and expected concentrations less than or equal to 0.05 ppmv, whichever is more restrictive. R will be calculated using equation 47-8. Meeting these criteria will satisfy the standard addition spiking procedure.

Each standard addition, also known as a dynamic spike, will consist of a native sample, and a spiked sample, sequentially. The spike gas (standard addition) will be introduced so that the entire sampling system is challenged. The combined standard addition and native concentration will not exceed 100% of the instrument span. The instrument span is equal to the concentration of the high calibration gas standard. The volumetric flow rate of the addition of the spike gas will be measured by a calibrated mass flow meter and will not exceed 10% of the sampling system flow rate. The mid-level calibration gas, which includes a 500-ppm certified ethane concentration to be used as a certified tracer gas, will be used as the SA gas. The dilution factor (DF) is defined as the ratio of

standard addition flow to total sample flow. The dilution factor can be determined by use of mass flow meters or tracer gas concentration. The dilution factor must be 20% or less. The DF is calculated using equation 47-6.

All measurements should agree within 5.0% of three times the Picarro CRDS limit of detection (LOD) to avoid bias. The LOD is defined as three times the standard deviation of the measurements of a minimum of seven consecutive measurements separated by twice the response time. The LOD details will be supplied in the final report.

First, a minimum of two unspiked sample measurements will be collected for the pre-spike background. Two independent measurements of the native target analyte will be collected. The SA gas will be introduced; flow rates and calibration reference values will be documented. SA gas flow will be maintained for a minimum of 2 times the RT. Two independent spiked measurements of the target analyte will be collected. The standard addition response (SAR) and Effective Spike Addition (ESA) will be calculated, using equations 47-9 and 47-10 respectively, to evaluate the standard addition detection limit (SADL). The SADL should be equal to or greater than the LOD. If the ESA is greater than or equal to the LOD, the ESA will be used as the site-specific detection level.

2.5.8 Moisture Correction

The Picarro CRDS analyzer measures ethylene oxide as a wet sample. All ethylene oxide concentrations measured by the Picarro CRDS will be corrected to a dry basis.

2.5.9 Summary Table of OTM-47 QA/QC

Process	Specification	Criteria	Frequency	Corrective Action if Not Specification Not Met
Identify Data	--	Regulatory Agency or another primary end user of data	Pre-test	--
Analyzer Design	Resolution or sensitivity	<2.0% of the full-scale CRDS range or <1/2 of the applicable standard	Manufacturer design	Picarro meets this standard
Calibration Gases	Traceability Protocol (G1, G2)	Traceability Protocol (G1, G2)	Traceability Protocol (G1, G2)	Traceability Protocol (G1, G2)
	High-level Gas	Equal to calibration span. High-level gas concentration must exceed the average test run concentration	Each Test	Repeat calibration procedure with a higher high-level calibration gas
	Mid-level gas	40-60% of calibration span	Each Test	Repeat calibration procedure with appropriate gas
	Low-level gas	Zero air material	Each Test	Repeat calibration procedure with appropriate zero air material
	Resolution	<2.0% of full-scale CRDS range or <1/2 of applicable standard	Manufacturer design	Picarro meets this standard

Data Recorder (if applicable)	Frequency	</= 1-minute average	Each Test	Picarro meets this standard
Sample Extraction	Probe material	An appropriate material of sufficient length and physical integrity	Each Test	Repeat sampling with appropriate probe
	Probe, filter, and sample line temperature	Always keep sample above dew point (by heating or dilution)	Each Run	Repeat sampling with appropriately heated sample components
	Calibration valve material	Inert to target analyte and gas matrix	Each test	Repeat Calibration procedure with appropriate calibration valve
	Sample pump material	Inert to target analyte and gas matrix	Each test	Repeat Calibration procedure with appropriate sample pump material
	Manifold material	Inert to target analyte and gas matrix	Each test	Repeat Calibration procedure with appropriate manifold material
Particulate Removal (if applicable)	Filter Material	Pass system bias checks or pre- and post-test analyte spiking	Each test	Repeat Calibration procedure with appropriate filter material
Calibration Span	Set point	Upper limit of the expected highest measured concentration or 2.5 times emission limit (concentration equivalent)	Each test	Repeat with Use of appropriate calibration gases
Analyzer & Calibration Gas Performance	Analyzer calibration error (ACE)	Within ±2.0% of the calibration span of the analyzer for the low-, mid-, and high-level calibration gases or an absolute difference of </=0.05ppmv	Pre-test and after a failed system bias test, drift test, or dynamic spike	Repeat calibration procedure until specification is met
System Performance	System Bias	With ±5.0% of the analyzer calibration span for low-scale and upscale calibration gases. Alternatively, </=0.10 ppmv absolute difference	Before and after each run.	Invalidate run data and repeat test starting with ACE
	Standard Addition (SA)	Performed dynamically. Must be within ±20% of +/-0.05ppmv of expected concentration.	Once per source	Repeat procedure until specification met
	SADL Validation	Must be greater than or equal to instrument's LOD value.	Once per Source Type	Repeat procedure until specification met
	System Response Time	Determines minimum sampling time per point	Pre-test	NA
	Drift	</=3.0% of calibration span for low-level and mid- or high-level gases.	Before and after each run	Invalidate run data and repeat

		Alternatively, </=0.15ppmv absolute difference. Calculate using Equation 47-4.		test starting with ACE
	Spike Dilution Factor	</=10% of system volumetric flow rate	Pre-test	Repeat procedure until specification met
	Targeted Spiking Level	As practical, 50 to 150% of applicable standard but above native target analyte value	Pre-test	Repeat procedure until specification met
	Purge Time	>/=2 times system response time	Before starting the first run and after any event where the probe is removed from the source	Extend sample time to adequately purge system
	Minimum Sample Time	Defined as two times the system response time	Each sample point	Extend sampling time to meet specification
	Stable sample flow rate or CRDS pressure	Within 10% of flow rate or CRDS pressure established during system response time check.	Each run	Invalidate run data and repeat test starting with ACE.
Sample Point Selection	Stratification Test	All points within ±5% of mean for 1-point sampling, ±10% of mean for 3-point sampling, alternatively, ±0.25ppmv of mean for 1-point sampling and ±0.50ppmv of mean for 3-point sampling.	Prior to sampling	Use of EPA Method 1 maximum sampling points
Data parameters	Average run concentration	Run average </= calibration span	Each run	Invalidate run data and repeat test starting with ACE.

2.6 Method 18 – Hydrocarbon Analysis by Gas Chromatography

USEPA Method 18 may be used at the inlet sampling location from the repackaging process. Concentrations are expected to be 10 ppm or greater and well within the precision of the gas chromatograph. The current gas chromatograph has a detection of 0.25 ppmv. Procedures outlined in 40 CFR 60 Methods 18 will be used to determine ethylene oxide emission concentrations and are discussed as follows. The analysis will use the direct interface technique, introducing the sample through a heated Teflon sample line directly into the onboard GC heated gas sampling valves by pulling a vacuum through the entire system. Sample flow rate will be monitored and maintained continuously using a metering valve and mass flow meter.

Samples will be analyzed by gas chromatography using an SRI 8610C gas chromatograph with a flame ionization detector with heated sample loops, injectors, and a 3-meter packed Haysep D column. Gas in the sample loop is injected directly into the GC's analytical column by the gas sampling valve. The GC will be operated with carrier gas pressure of 18 psi and column temperature of 150˚C. The carrier gas is ultra-high purity helium. Ultra-high purity hydrogen and air are used to maintain the FID. ETO will elute at 1-2 minutes. Chromatograms will be produced every three minutes for a total of twenty integrations per hour test.

2.6.1 Calibration Standards

Three cylinders of calibration standard, ETO in nitrogen, in appropriate concentrations will be used to create a calibration curve to calculate ETO concentration in ppm given instrument response in millivolts. Calibration standards will be analyzed in triplicate, and the average value of the samples will be calculated. An analytical result is considered valid if its value is within 5% of the average value of the three analyses. Results of the calibration gas analyses will be compared to the certified value of the calibration gas.

A calibration curve will be generated using Microsoft Excel chart function by constructing a linear XY-Scatter graph that solves the quadratic equation of the line Y=mX+b where "y" is the calculated concentration of EtO, "x" is the instrument response, "m" is the constant and "b" is the y-coordinate intercept. The option forcing the graph through zero will be enabled so "b" = zero. The least squares R^2 value and the equation of the line will be shown. An $R^{2\ value}$ of 95% is acceptable according to Method 18. The gas chromatograph routinely exceeds the 95% R^2 value.

2.6.2 Chromatograms

The chromatogram log sheet is a Microsoft Excel spreadsheet that transposes run information in an easy-to-read format and provides the calculating capabilities to assess the QA/QC requirements of the method. The chromatograms are logged by the file path directory of the hard drive storage.

The chromatograms are automatically printed at the conclusion of each analysis in .pdf format. Each chromatogram includes information identifying the type of analysis, i.e., set up, calibration, sample, recovery study, date and time of analysis, comments, retention time, and integrated peak area. The results are in units of millivolts. Field corrections, if necessary, will be initiated by the operator.

2.6.3 QA/QC Measures

2.6.3.*1 Direct Interface Recovery Study*
Prior to testing, but after the initial calibration, a 10L Tedlar bag will be filled with the mid-level calibration gas and attached to the end of the sampling probe. The calibration gas will be sampled for at least three integrations within 5% of their arithmetical means. The result of the recovery study will be compared to the initial calibration. If the two values agree within 10%, the sample system will be considered leak-free and acceptable for testing. Should the values not agree within 10%, the system will be inspected for leaks or other issues and repeated until the results agree within 10%.

2.6.3.2 *Calibration Drift Assessment*
The mid-range calibration standard will be analyzed at the conclusion of testing, and the results will be compared to the initial analysis to determine if calibration drift has occurred. A 5% deviation between results is allowable. Should excessive calibration drift be observed all calibration standards be re-analyzed and a new calibration curve using all the pre-test and post-test data will be generated following the procedures of Method 18. The SRI gas chromatograph has historically met the 5% criteria.

2.7 Method 205 – Gas Dilution Calibration

If necessary, a method 205 compliant gas dilution system will be employed to create calibration standards appropriate for the test. Ideally, calibration standards will be bracketed such that the mean stack concentration is within 20% of the established span.

3.0 EQUIPMENT CALIBRATIONS

All sampling equipment will be in good working order and properly calibrated as per their respective EPA reference methods. Copies of the calibrations of flow meters, Method 205 system, pitot tubes, thermocouples, dry gas meters, gravimetric scales, and calibration standard certificates will be available at the start of testing and will be included in the final report.

4.0 CALCULATIONS and NOMENCLATURE

Mass emissions of ETO during operations are calculated using the following equations:

4.1 Equation 1:

MassRate = (VolFlow)(MolWt)(ppmv ETO)/(10^6 * MolVol)

Where:

MassRate = ETO mass flow rate, pounds per minute

VolFlow = Corrected volumetric flow rate, dscfm

MolWt = 44.05 pounds ETO per pound mole

ppmv ETO = ETO concentration, parts per million by volume

10^6 = Conversion factor, ppm

MolVol = 385.32 cubic feet per pound mole at 29.92-inch Hg and 68 deg ^{0} F

4.2 OTM-47 and PS-19 Nomenclature:

ACE *= Analyzer calibration error, percent of calibration span.*
$\boldsymbol{B_{ws}}$ *= Moisture content of sample gas, percent/100*
$\boldsymbol{C_{Avg}}$ *= Average unadjusted gas concentration indicated by data recorder for the run, ppmv*
CC *= Confidence coefficient (ppbv)*
$\boldsymbol{C_D}$ *= Analyte concentration on a dry basis, ppmv.*
$\boldsymbol{C_{Dir}}$ *= Measured calibration gas concentration (low, mid, or high) as introduced in direct calibration mode, ppmv.*
$\boldsymbol{C_{Gas}}$ *= Average gas concentration adjusted for bias, ppmv.*
$\boldsymbol{C_M}$ *= Average of initial and final system calibration bias check responses for the upscale calibration gas, ppmv.*
$\boldsymbol{C_{MA}}$ *= Actual concentration of the upscale calibration gas, ppmv.*
$\boldsymbol{C_{Native}}$ *= Native target analyte concentration in the gas stream, ppmv.*
$\boldsymbol{C_O}$ *= Average of the initial and final system calibration bias check responses from the low-level (or zero) calibration gas, ppmv.*
$\boldsymbol{C_{OA}}$ *= Actual concentration of the low-level calibration gas, ppmv.*

C_S or MC_i *= Measured concentration of a calibration gas (zero, low, mid, or high) when introduced in system calibration mode, ppmv.*
C_{Spike} *= Measured concentration of target analyte in spiked sample, ppmv.*
C_{Exp} = Expected concentration of target analyte in the spike gas diluted in the sample, ppmv.
C_V or C_i *= Certified concentration of a calibration gas (low, mid, or high), ppmv.*
C_W *= Analyte concentration on a wet basis, ppmv.*
CS *= Calibration span, ppmv.*
D and CD *= Drift assessment, percent of calibration span.*
d_{avg} *=Mean Difference between CEMS response and the reference gas (ppbv)*
DF *= Dilution factor of dilution system or spike gas, dimensionless.*
d_i *=Difference between CEMS response and the RM value (ppbv or units of emission standard)*
I *= Total interference from major matrix stack gases (percent)*
ΔMC_{avg} = average of the 3 absolute values of the difference between measured EtO calibration gas concentrations with and without interference from selected stack gases (ppbv)
ME *= Measurement Error, percent of calibration span*
MN_{avg} *= Average concentration at all sampling points (ppbv)*
MNbi *= Measured native concentration bracketing each calibration check measurement (ppbv)*
MNi *= Measured native concentration for test or run 1 (ppbv)*
n *= Number of measurements in an average value*
Q_{Spike} *= Flow rate of spike gas introduced in system calibration mode, LPM.*
Q_{Total} *= Total sample flow rate during the spike test, LPM.*
R *= spike recovery, percent.*
RA *= Relative accuracy of CEMS compared to a RM (percent)*
RM_i *= RM concentration for test run I (ppbv or units of the emission standard)*
RM_{avg} *= Mean measured RM value (ppbv or units of the emission standard)*
S *= system measurement span*
S_d *= Standard deviation of the differences (ppmv)*
S_{ti} *= Stratification at point i (%)*
SADL *= Standard addition detection level (ppmv)*
SB *= System bias, percent of calibration span.*
SB_i *= Pre-run system bias, percent of calibration span.*
SB_{final} *= post-run system bias, percent of calibration span.*
$t_{0.975}$ *= One-sided t-value at the 97.5th percentile obtained from Table 4 in section 17.0 of PS19 for n-1 measurements*

Equation 47-1 Analyzer Calibration Error

$$ACE = \frac{C_{Dir} - C_V}{CS}\ x\ 100\%$$

Equation 47-2 System Bias

$$SB = \frac{C_S - C_{Dir}}{CS}\ x\ 100\%$$

Equation 47-4 Drift Assessment

$$D = |SB_{final} - SB_i|$$

PS19 Equation 3A ME and 3B Drift Assessment

$$ME = \left|\frac{C_i - M_i}{s}\right|$$

$$D = \left|\frac{C_i - M_i}{s}\right|$$

Equation 47-5 Moisture Correction

$$C_D = \frac{C_W}{1 - B_{WS}}$$

Equation 47-6 (PS19 SA appendix equation A1) Dilution Factor

$$DF = \frac{Q_{Spike}}{Q_{Total}} < 20\%$$

Equation 47-7 Expected Spike Concentration

$$C_{Exp} = \left(C_{V_{spike}}\, x\, DF\right) + (1 - DF)(C_{Native})$$

Equation 47-8 Standard Addition % Recovery (R)

$$R = \frac{C_{Spike}}{C_{Exp}}, 0.80 \leq R \leq 1.20$$

Equation 47-9 (PS19 SA appendix equation A4) Standard Addition Response (SAR)

$$SAR = C_{Spike} - (1 - DF) * C_{Native}$$

Equation 47-10 (PS19 SA appendix equation A7) Effective Spike Addition (ESA)

$$ESA = DF * (C_{Spike} - C_{Native})$$

PS19 Equation 4 Average native concentration before and after each calibration check measurement

$$MN_{bi} = \frac{MN_i + MN_{i+1}}{2}$$

EQUATIONS FOR MOISTURE CONTENT AND FLOW RATE CALCULATIONS

(Based on Standard Conditions of 70ºF and 29.92"Hg)

1. $V_{w\,(std)} = 0.0473\ V_{wc}$

2. $V_{m\,(std)} = 17.71 V_m \dfrac{P_{bar} + (0.07355 \Delta H)}{T_m + 460} \gamma$

3. $B_{wo} = \dfrac{V_{w\,(std)}}{V_{m\,(std)} + V_{w\,(std)}}$

4. $B_{WS} = (B_{WO})\ (100)$

5. $M_d = 0.44\ (\%CO_2) = 0.28\ (\%CO) + 0.32\ (\%O_2) + 0.28\ (\%N_2)$

6. $M_s = M_d\ (1 - B_{wo}) + 18\ B_{wo}$

7. $P_s = P_{bar} + \dfrac{P_A}{13.6}$

8. $V_s = (85.49)(60)(C_p)\ \sqrt{\Delta P}\ \sqrt{\dfrac{T_s + 460}{(P_s)\ (M_s)}}$

9. $A_s = \dfrac{(\pi)\,(D/2)^2}{144}$

10. $Q_s = V_s\ A_s$

11. $Q_{s\,(std)} = Q_s\ (1\text{-}B_{wo})\ 17.71\ \dfrac{P_s}{T_s + 460}$

NOMENCLATURE

A_s =	Area of stack, ft^2
B_{wo} =	Moisture content of gas stream, fractional value
B_{ws} =	Moisture content of gas stream, percent by volume
C_p =	Pitot correction factor, dimensionless
D =	Inside diameter of stack, in.
E =	Emission rate, lb/hr
H =	Orifice pressure drop, in. H_2O
M_d =	Dry molecular weight of stack gas, lb/lb-mole

M_s = Molecular weight of stack gas, lb/lb-mole

P_A = Stack static pressure, in. H_20

P_{bar} = Barometric pressure, in. Hg

P_s = Absolute stack pressure, in. Hg

$\sqrt{\Delta P}$ = Average of square roots of pitot pressure differential, in. H_2O

Q_s = Stack gas flow rate, acfm

$Q_{s(std)}$ = Stack gas flow rate, dscfm

T_m = Average dry gas meter temperature, ºF

T_s = Average stack temperature, ºF

V_m = Dry sample volume (meter conditions), cf

$V_{m(std)}$ = Dry sample volume (standard conditions), dscf

V_s = Stack gas velocity, ft/min

V_{wc} = Volume of liquid collected in impingers and silica gel, ml

$V_{w(std)}$ = Volume of liquid collected, cf

γ = Meter box calibration factor, dimensionless