2025 – 1st Quarter Report

Support for Conducting Systems & Performance Audits of Clean Air Status and Trends Network (CASTNET) Sites and National Atmospheric Deposition Program (NADP) Monitoring Stations - III

GSA Contract # GS-10F-075AA

Blanket Purchase Agreement # 68HERH22A0026

Prepared for:

U.S. Environmental Protection Agency
Office of Atmospheric Protection
Clean Air and Power Division

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Report Submitted
April 2025

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List of Acronyms and Abbreviations

% diff	percent difference
A/D	analog to digital converter
ARS	Air Resource Specialists, Inc.
ASTM	American Society for Testing and Materials
BLM	Bureau of Land Management
BLM-WSO	Bureau of Land Management – Wyoming State Office
CAL	Central Analytical Laboratory
CASTNET	Clean Air Status and Trends Network
CMAQ	Community Multiscale Air Quality
DAS	data acquisition system
deg	degree
DVM	digital voltmeter
ECCC	Environment and Climate Change Canada
EEMS	Environmental, Engineering & Measurement Services, Inc.
EPA	U.S. Environmental Protection Agency
ESC	Environmental Systems Corporation
FSA	Field Systems Audit
FSAD	Field Site Audit Database
GPS	geographical positioning system
HAL	Mercury Analytical Laboratory
LADCO	Lake Michigan Air Directors Consortium
lpm	liters per minute
ME DEP	Maine Department of Environmental Protection
MD DNR	Maryland Department of Natural Resources
MLM	Multilayer Model
MN PCA	Minnesota Pollution Control Agency
m/s	meters per second
mv	millivolt
NESCAUM	Northeast States for Coordinated Air Use Management
NIST	National Institute of Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NYDEC	New York Department of Conservation
NYSERDA	New York State Energy Research and Development Authority
OH EPA	Ohio Environmental Protection Agency
PE	Performance Evaluation
QAPP	Quality Assurance Project Plan
SLT	State, Local, and Tribal
SCDHEC	South Carolina Department of Health and Environmental Control
SFWMD	South Florida Water Management District
SOP	standard operating procedure
TDEP	Total Deposition
TEI	Thermo Environmental Instruments
USDA-FS	United States Department of Agriculture – Forest Service

USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USNO	United States Naval Observatory
VDC	volts direct current
WDEQ	Wyoming Department of Environmental Quality
WDNR	Wisconsin Department of Natural Resources
WRR	World Radiation Reference
WSLH	Wisconsin State Laboratory of Hygiene

1.0 CASTNET Quarterly Report

1.1 Introduction

The Clean Air Status and Trends Network (CASTNET) is a national air monitoring program established in 1988 by the US EPA. Nearly all CASTNET sites measures weekly concentrations of acidic gases and particles to provide accountability for EPA's emission reduction programs. Most sites measure ground-level ozone as well as supplemental measurements such as meteorology and/or other trace gas concentrations.

Ambient concentrations are used to estimate deposition rates of the various pollutants with the objective of determining relationships between emissions, air quality, deposition, and ecological effects. In conjunction with other national monitoring networks, CASTNET data are used to determine the effectiveness of national emissions control programs and to assess temporal trends and spatial deposition patterns in atmospheric pollutants. CASTNET data are also used for long-range transport model evaluations and critical loads research.

Historically, CASTNET pollutant flux measurements have been reported as the aggregate product of weekly measured concentrations and model-estimated deposition velocities. The Multi-layer Model (MLM) was used to derive deposition velocity estimates from on-site meteorological parameters, land use types, and site characteristics. In 2011, EPA discontinued meteorological measurements at most EPA-sponsored CASTNET sites.

Currently, CASTNET pollutant flux estimates are calculated as the aggregate product of weekly measured chemical concentrations and gridded model-estimated deposition velocities. Total deposition is assessed using the NADP's Total Deposition Hybrid Method (TDEP; EPA, 2015c; Schwede and Lear, 2014), which combines data from established ambient monitoring networks and chemical-transport models. To estimate dry deposition, ambient measurement data from CASTNET and other networks were merged with dry deposition rates and flux output from the Community Multiscale Air Quality (CMAQ) modeling system.

Since 2011 nearly all CASTNET ozone monitors have adhered to the requirements for State, Local, and Tribal (SLT) air monitoring stations as specified by the EPA in 40 CFR Part 58. As such, the ozone data collected must meet the requirements in 40 CFR Part 58 Appendix A, which defines the quality assurance (QA) requirements for gaseous pollutant ambient air monitoring. The audits performed by EEMS under this contract fulfilled the requirement for annual performance evaluation audits of pollutant monitors in the network. The QA requirements can be found at: https://www.epa.gov/amtic/regulations-guidance-and-monitoring-plans

Currently more than 85 CASTNET sites measure ground-level ozone concentrations. Annual performance evaluation (PE), ozone audit data are submitted to the Air Quality System (AQS) database.

As of January 2025, the network is comprised of 91 active rural sampling sites across the United States and Canada, cooperatively operated by the Environmental Protection Agency (EPA), the National Park Service (NPS), Bureau of Land Management – Wyoming State Office (BLM-WSO) and several independent partners. WSP is responsible for operating the EPA sponsored sites, and Air Resource Specialists, Inc. (ARS) is responsible for operating the NPS and BLM-WSO sponsored sites

1.2 Project Objectives

The objectives of this project are to establish an independent and unbiased program of performance and systems audits for all CASTNET sampling sites. Ongoing Quality Assurance (QA) programs are an essential part of any long-term monitoring network.

Performance audits verify that all reported variables are consistent with the accuracy goals as defined in the CASTNET Quality Assurance Project Plan (QAPP). The parameter specific accuracy goals are presented in Table 1.

Table 1. Performance Audit Challenge and Acceptance Criteria

Sensor	Parameter	Audit Challenge	Acceptance Criteria
Precipitation	Response	10 manual tips	1 DAS count per tip
Precipitation	Accuracy	2 introductions of known amounts of water	≤ ±10.0% of input amount
Relative Humidity	Accuracy	Compared to reference instrument or standard solution	≤ ±10.0% RH
Solar Radiation	Accuracy	Compared to WRR traceable standard	≤ ±10.0% of daytime average
Surface Wetness	Response	Distilled water spray mist	Positive response
Surface Wetness	Sensitivity	1% decade resistance	N/A
Temperature	Accuracy	Comparison to 3 NIST measured baths (~ 0° C, ambient, ~ full-scale)	≤ ± 0.5° C
Temperature Difference	Accuracy	Comparison to station temperature sensor	≤ ± 0.50° C

Sensor	Parameter	Audit Challenge	Acceptance Criteria
Shelter Temperature	Accuracy	Comparison to station temperature sensor	≤ ± 2.0° C
Wind Direction	Orientation Accuracy	Parallel to alignment rod/crossarm, or sighted to distant point	≤ ±5° from degrees true
Wind Direction	Linearity	Eight cardinal points on test fixture	≤ ±5° mean absolute error
Wind Direction	Response Threshold	Starting torque tested with torque gauge	< 10 g-cm Climatronics; < 20 g-cm R.M. Young
Wind Speed	Accuracy	Shaft rotational speed generated and measured with certified synchronous motor	≤ ±0.5 mps below 5.0 mps input; ≤ ±5.0% of input at or above 5.0 mps
Wind Speed	Starting Threshold	Starting torque tested with torque gauge	< 0.5 g-cm
Mass Flow Controller	Flow Rate	Comparison with Primary Standard	≤ ± 5.0% of designated rate
Ozone	Slope	Linear regression of multi-point test gas concentration as measured with a certified transfer standard	0.9000 ≤ m ≤ 1.1000
Ozone	Intercept		-5.0 ppb ≤ b ≤ 5.0 ppb
Ozone	Correlation Coefficient		0.9950 ≤ r
Ozone	Percent Difference	Comparison with Level 2 standard concentration	≤ ±15.1% of test gas concentration and ≤ ± 0.0015 ppm actual difference
DAS	Accuracy	Comparison with certified standard	≤ ± 0.003 VDC

Performance audits are conducted using standards that are traceable to the National Institute of Standards and Technology (NIST), or another authoritative organization, at least annually.

Field site systems audits (FSA) are intended to provide a qualitative appraisal of the total measurement system. Site planning, organization, and operation are evaluated to ensure that good Quality Assurance/Quality Control (QA/QC) practices are being applied. At a minimum the following audit issues were addressed at each site systems audit:

- Site locations and configurations match those provided in the CASTNET QAPP.
- Meteorological instruments are in good physical and operational condition and are sited to meet EPA ambient monitoring guidelines (EPA-600/4-82-060).
- Sites are accessible, orderly, and if applicable, compliant with OSHA safety standards.
- Sampling lines are free of leaks, kinks, visible contamination, weathering, and moisture.

- Site shelters provide adequate temperature control.
- All ambient air quality instruments are functional, being operated in the appropriate range, and the zero-air supply desiccant is unsaturated.
- All instruments are in current calibration.
- Site documentation (maintenance schedules, on-site SOPs, etc.) is current and log book records are complete.
- All maintenance and on-site SOPs are performed on schedule.
- Corrective actions are documented and appropriate for required maintenance/repair activity.
- Site operators demonstrate an adequate knowledge and ability to perform required site activities, including documentation and maintenance activities.

1.3 CASTNET Sites Visited First Quarter 2025

This report consists of the systems and performance, and other audit results from the CASTNET sites visited during the first quarter (January through March) of 2025. The site locations, sponsor, visit dates, and parameters audited, are included in Table 2.

Table 2. CASTNET Site Audit Visits

Site ID	Date	MET	FSA	O3 PE	SO2	CO	NOy	FLOW	Sponsor
SUM156	2/7/2025			**1**					EPA
ALC188	2/10/2025		**1**	**1**				**1**	EPA
BBE401	2/12/2025		**1**	**1**				**1**	NPS
CAV436	2/14/2025		**1**	**1**					NPS
PAL190	2/17/2025		**1**	**1**				**1**	EPA
CHA467	3/31/2025			**1**					NPS

1.4 CASTNET Audit Results

The observations and results of the systems, performance, and Ozone PE audits are included in Appendix A, *CASTNET Audit Report Forms* by site, arranged by audit date. Photographs of site conditions are included within each system report where necessary. Copies of the spot reports that were sent following the audit of each site are included as Appendix B, *CASTNET Site Spot Report Forms*.

Results of the PE audits of the gaseous pollutant monitors other than ozone, were submitted immediately following the PE and are not included in this report. All TTP PE results of gaseous pollutant monitors are uploaded to AQS and are available there. All audit data and reports are available from the EPA CASTNET website: https://www.epa.gov/castnet/documents-reports#QuarterlyQualityAssuranceReports

2.0 NADP Quarterly Report

2.1 Introduction

The National Atmospheric Deposition Program (NADP) operates two precipitation chemistry networks and two atmospheric concentration networks. The National Trends Network (NTN) has been measuring acidic precipitation since 1978. The network currently has more than 250 sites. The precipitation event-based Atmospheric Integrated Research Monitoring Network (AIRMoN) began operation in 1992, and as of July 2019 is no longer in operation. The Mercury Deposition Network (MDN) measures total mercury in precipitation samples from approximately 90 stations. The MDN began operation in 1996 and includes sites throughout the US and Canada. The Atmospheric Mercury Network (AMNet) and the Ammonia Monitoring Network (AMoN) measure ambient concentrations of mercury and ammonia, respectively.

The NADP and other long-term monitoring networks provide critical information to the EPA regarding evaluating the effectiveness of emission reduction control programs from the power industry. The networks of the NADP are sponsored by several federal, state, and local agencies as well as private organizations.

The NADP Program Office (PO) operates and administers the two precipitation chemistry networks (NTN and MDN), two atmospheric concentration networks (AMNet and AMoN), and the NADP analytical laboratory (NAL) from the Wisconsin State Lab of Hygiene (WSLH) at the University of Wisconsin in Madison. The network equipment depot (NED) is also located at the WSLH.

2.2 Project Objectives

The objective of this project is to perform independent and unbiased evaluations of the sites and their operation. These evaluations provide quality assurance pertaining to siting, sample collection and handling, equipment operation and maintenance, record keeping and field laboratory procedures.

More specifically, the audits determine and report findings based on an established methodology consisting of completing a site questionnaire, testing the equipment and documenting with photographs the location, siting criteria, existing equipment, and any issues encountered that require such documentation.

2.3 NADP Sites Visited First Quarter 2025

This report presents the NADP sites audited during the first quarter (January through March) of 2025. The station locations, sponsors, network. and dates of the surveys are presented in Table 3.

Table 3. NADP Site Audit Visits

Site ID	Date	NTN	MDN	AMoN	Site Sponsor	Site Name
FL23	2/7/2025			1	WSP - EPA	Sumatra
TX41	2/10/2025			1	WSP - EPA	Alabama-Coushatta
TX22	2/13/2025	1			USGS - NIFA	Guadalupe Mountains National Park Frijole Ranger Station
TX43	2/17/2025	1		1	Texas A&M University / WSP - EPA	Cañónceta
CO81	3/25/2025	1		1	Weld County	Missile Site Park
CO82	3/25/2025	1		1	Weld County	Orchard
CO01	3/26/2025	1			USGS - NIFA	Las Animas Fish Hatchery
AZ98	3/31/2025	1		1	NPS / WSP -EPA	Chiricahua

2.4 NADP Audit Results

NADP site audit results are entered into a relational database. The database in turn generates Site Spot Reports which are distributed among the interested parties as soon as all the site data has been entered. Database tables with all the data and photos collected, are available for download by the NADP Program Office and the U.S. EPA Project Officers, following the QA process, usually the month following site audits.

Given the volume of data generated, and the fact that data is distributed and/or is available via the internet, no audit results are included in this report.

APPENDIX A

CASTNET Audit Report Forms

Site Inventory by Site Visit

	Site Visit Date	*Parameter*	*Mfg*	*Owner ID*	*Model Number*	*Serial Number*
SUM156-Martin Valvur-02/07/2025						
1	2/7/2025	DAS	Campbell	000352	CR3000	2130
2	2/7/2025	Ozone	ThermoElectron Inc	000724	49i A1NAA	1105347328
3	2/7/2025	Ozone Standard	ThermoElectron Inc	000511	49i A3NAA	0922236888
4	2/7/2025	Zero air pump	Werther International	06882	C 70/4	000815255

Ozone Data Form

Mfg	Serial Number Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1105347328	SUM156	Martin Valvur	02/07/2025	Ozone	000724

Slope:	0.98252	Slope:	0.00000
Intercept	-0.15045	Intercept	0.00000
CorrCoff	0.99999	CorrCoff	0.00000

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	CM23147126	Tfer Desc.	Ozone primary stan
Tfer ID	01116		
Slope	0.99260	Intercept	0.04790
Cert Date	4/10/2024	CorrCoff	0.99999

DAS 1:		DAS 2:	
A Avg % Diff:	A Max % Di	A Avg %Diff	A Max % Di
0.0%	0.0%		

UseDescription	ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	-0.06	-0.10	0.09	ppb		0.19
primary	2	12.45	12.34	11.76	ppb		-0.58
primary	3	32.48	32.27	31.31	ppb	-3.02	
primary	4	62.71	62.35	61.17	ppb	-1.91	
primary	5	113.87	113.27	111.20	ppb	-1.84	

Sensor Component		Condition		Status	
Sensor Component	Audit Pressure	Condition	755 mmHg	Status	pass
Sensor Component	26.6 degree unobstructed rule	Condition	True	Status	pass
Sensor Component	Tree dewline >10m or below inlet	Condition	True	Status	pass
Sensor Component	ADT 1000-10000 vehicles further	Condition	True	Status	pass
Sensor Component	ADT <1000 vehicles further than	Condition	True	Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Offset	Condition	-0.2	Status	pass
Sensor Component	Span	Condition	1.006	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Cell A Freq.	Condition	98.6 kHz	Status	pass
Sensor Component	Cell A Noise	Condition	1.9 ppb	Status	pass
Sensor Component	Cell A Flow	Condition	0.72 lpm	Status	pass
Sensor Component	Cell A Pressure	Condition	726.2 mmHg	Status	pass
Sensor Component	Cell A Tmp.	Condition	37.4 C	Status	pass
Sensor Component	Cell B Freq.	Condition	97.1 kHz	Status	pass
Sensor Component	Cell B Noise	Condition	1.9 ppb	Status	pass
Sensor Component	Cell B Flow	Condition	0.71 lpm	Status	pass
Sensor Component	Cell B Pressure	Condition	725.9 mmHg	Status	pass
Sensor Component	Nafion dryer installed	Condition	True	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Site Inventory by Site Visit

	Site Visit Date	*Parameter*	*Mfg*	*Owner ID*	*Model Number*	*Serial Number*
ALC188-Martin Valvur-02/10/2025						
1	2/10/2025	Computer	Dell	07006	Inspiron 15	373MC12
2	2/10/2025	DAS	Campbell	000335	CR3000	2114
3	2/10/2025	Elevation	Elevation	None	1	None
4	2/10/2025	Filter pack flow pump	Thomas	02980	107CA18	608102A
5	2/10/2025	Flow Rate	Apex	000886	AXMC105LPMDPCV	illegible
6	2/10/2025	Infrastructure	Infrastructure	none	none	none
7	2/10/2025	Modem	Digi	07202	LR54	Illegible
8	2/10/2025	Ozone	ThermoElectron Inc	000742	49i A1NAA	1105347313
9	2/10/2025	Ozone Standard	ThermoElectron Inc	000512	49i A3NAA	0922236890
10	2/10/2025	Sample Tower	Aluma Tower	000136	B	none
11	2/10/2025	Shelter Temperature	Campbell	none	107-L	none
12	2/10/2025	Siting Criteria	Siting Criteria	None	1	None
13	2/10/2025	Temperature	RM Young	07289	41342	032128
14	2/10/2025	Zero air pump	Werther International	06899	C 70/4	000821902

DAS Data Form

DAS Time Max Error: 0

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2114	ALC188	Martin Valvur	02/10/2025	DAS	Primary

Das Date: 2 /10/2025
Das Time: 8:34:00
Das Day: 41

Audit Date 2 /10/2025
Audit Time 8:34:00
Audit Day 41

Low Channel:
Avg Diff: 0.0000
Max Diff: 0.0000

High Channel:
Avg Diff: 0.0000
Max Diff: 0.0000

Mfg Fluke
Parameter DAS
Serial Number 95740243
Tfer Desc. DVM
Tfer ID 01312
Slope 1.00000
Intercept 0.00000
Cert Date 1/5/2025
CorrCoff 1.00000

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
4	0.0000	0.0000	0.0000	V	V	0.0000

Flow Data Form

Mfg	Serial Number Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Apex	illegible	ALC188	Martin Valvur	02/10/2025	Flow Rate	000886

Mfg	BIOS	**Parameter**	Flow Rate
Serial Number	131818	**Tfer Desc.**	BIOS 220-H
Tfer ID	01417		
Slope	0.99266	**Intercept**	0.00014
Cert Date	4/6/2024	**CorrCoff**	0.99986

DAS 1:		DAS 2:			
A Avg % Diff:	**A Max % Di**	**A Avg %Diff**	**A Max % Di**	**Cal Factor Zero**	0.02
2.76%	3.47%			**Cal Factor Full Scale**	1
				Rotometer Reading:	1.4

Desc.	Test type	Input l/m	Input Corr_	MfcDisp.	OutputSignal	Output S E	InputUnit	OutputSignalI	PctDifference
primary	pump off	0.000	0.000	0.00	0.000	0.02	l/m	l/m	
primary	leak check	0.000	0.000	0.02	0.000	0.02	l/m	l/m	
primary	test pt 1	1.430	1.440	1.50	0.000	1.49	l/m	l/m	3.47%
primary	test pt 2	1.438	1.450	1.50	0.000	1.50	l/m	l/m	3.45%
primary	test pt 3	1.465	1.480	1.50	0.000	1.50	l/m	l/m	1.35%

Sensor Component	Leak Test	**Condition**		**Status**	pass
Sensor Component	Tubing Condition	**Condition**	Good	**Status**	pass
Sensor Component	Filter Position	**Condition**	Good	**Status**	pass
Sensor Component	Rotometer Condition	**Condition**	Clean and dry	**Status**	pass
Sensor Component	Moisture Present	**Condition**	See comments	**Status**	pass
Sensor Component	Filter Distance	**Condition**	4.0 cm	**Status**	pass
Sensor Component	Filter Depth	**Condition**	3.5 cm	**Status**	pass
Sensor Component	Filter Azimuth	**Condition**	180 deg	**Status**	pass
Sensor Component	System Memo	**Condition**		**Status**	pass

Ozone Data Form

Mfg	Serial Number Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1105347313	ALC188	Martin Valvur	02/10/2025	Ozone	000742

Slope:	0.96984	Slope:	0.00000
Intercept	-0.07461	Intercept	0.00000
CorrCoff	0.99999	CorrCoff	0.00000

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	CM23147126	Tfer Desc.	Ozone primary stan
Tfer ID	01116		
Slope	0.99260	Intercept	0.04790
Cert Date	4/10/2024	CorrCoff	0.99999

DAS 1:		DAS 2:	
A Avg % Diff:	A Max % Di	A Avg %Diff	A Max % Di
0.0%	0.0%		

UseDescription	ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.23	0.18	0.22	ppb		0.04
primary	2	11.83	11.72	11.08	ppb		-0.64
primary	3	32.00	31.79	30.97	ppb	-2.61	
primary	4	63.03	62.67	60.52	ppb	-3.49	
primary	5	114.97	114.36	110.90	ppb	-3.07	

Sensor Component	Condition	Status
Audit Pressure	750 mmHg	pass
26.6 degree unobstructed rule	True	pass
Tree dewline >10m or below inlet	True	pass
ADT 1000-10000 vehicles further	True	pass
ADT <1000 vehicles further than	True	pass
Sample Train	Good	pass
Inlet Filter Condition	Clean	pass
Offset	-0.4	pass
Span	1.107	pass
Zero Voltage	N/A	pass
Fullscale Voltage	N/A	pass
Cell A Freq.	88.3 kHz	pass
Cell A Noise	1.0 ppb	pass
Cell A Flow	0.65 lpm	pass
Cell A Pressure	732.5 mmHg	pass
Cell A Tmp.	31.6 C	pass
Cell B Freq.	92.7 kHz	pass
Cell B Noise	1.0 ppb	pass
Cell B Flow	0.67 lpm	pass
Cell B Pressure	732.5 mmHg	pass
Nafion dryer installed	True	pass
System Memo		pass

Temperature Data Form

Mfg	Serial Number Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	032128	ALC188	Martin Valvur	02/10/2025	Temperature	07289

Mfg	Fluke	**Parameter**	Temperature
Serial Number	2085085	**Tfer Desc.**	RTD
Tfer ID	01226		
Slope	1.00031	**Intercept**	-0.04252
Cert Date	1/8/2025	**CorrCoff**	0.99999

DAS 1:		DAS 2:	
Abs Avg Err	**Abs Max Err**	**Abs Avg Err**	**Abs Max Err**
0.10	0.17		

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Low Range	0.00	0.04	0.000	0.2	C	0.17
primary	Temp Mid Range	22.78	22.82	0.000	22.9	C	0.09
primary	Temp High Range	46.97	47.00	0.000	47.0	C	-0.05

Sensor Component	Shield	**Condition**	Clean	**Status**	pass
Sensor Component	Blower	**Condition**	N/A	**Status**	pass
Sensor Component	Properly Sited	**Condition**	Properly sited	**Status**	pass
Sensor Component	System Memo	**Condition**		**Status**	pass

Shelter Temperature Data For

Mfg	Serial Number Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	ALC188	Martin Valvur	02/10/2025	Shelter Temperature	none

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Err	Abs Avg Err	Abs Max Err
0.63	0.68		

Mfg	Fluke	Parameter	Shelter Temperatur
Serial Number	2085085	Tfer Desc.	RTD
Tfer ID	01226		
Slope	1.00031	Intercept	-0.04252
Cert Date	1/8/2025	CorrCoff	0.99999

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Mid Range	21.84	21.88	0.000	22.5	C	0.63
primary	Temp Mid Range	22.18	22.22	0.000	22.8	C	0.58
primary	Temp Mid Range	22.04	22.08	0.000	22.8	C	0.68

Sensor Component	System Memo	Condition		Status	pass

Siting Criteria Form

Sensor Component		Condition		Status	
Sensor Component	Large point source of So2 or Nox	Condition		Status	pass
Sensor Component	City > 50,000	Condition		Status	pass
Sensor Component	City 1,000 to 10,000	Condition		Status	pass
Sensor Component	City 10,000 to 50,000	Condition		Status	pass
Sensor Component	Feedlot operations	Condition		Status	pass
Sensor Component	Large parking lot	Condition		Status	pass
Sensor Component	Limited agriculture operations	Condition		Status	pass
Sensor Component	Major industrial source	Condition		Status	pass
Sensor Component	Secondary road < or = 100 per da	Condition		Status	pass
Sensor Component	Secondary road >100 vehicles/da	Condition		Status	pass
Sensor Component	Small parking lot	Condition		Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Major highway, airport, or rail yard	Condition		Status	pass
Sensor Component	Intensive agriculture operations	Condition		Status	pass

Infrastructure Data For

Site ID	Technician	Site Visit Date
ALC188	Martin Valvur	02/10/2025

Shelter Make	Shelter Model	Shelter Size
Shelter One	8128-2311	1024 cuft

Sensor Component		Condition		Status	
Sensor Component	Sample Tower Type	Condition	Type B	Status	pass
Sensor Component	Conduit	Condition	Good	Status	pass
Sensor Component	Met Tower	Condition	N/A	Status	pass
Sensor Component	Moisture Trap	Condition	Installed	Status	pass
Sensor Component	Moisture Trap Type	Condition	Glass bottle and filter	Status	pass
Sensor Component	Power Cables	Condition	Good	Status	pass
Sensor Component	Shelter Temp Control	Condition	Functioning	Status	pass
Sensor Component	Rotometer	Condition	Installed	Status	pass
Sensor Component	Sample Tower	Condition	Good	Status	pass
Sensor Component	Shelter Condition	Condition	Good	Status	pass
Sensor Component	Shelter Door	Condition	Good	Status	pass
Sensor Component	Shelter Roof	Condition	Good	Status	pass
Sensor Component	Shelter Floor	Condition	Good	Status	pass
Sensor Component	Shelter walls	Condition	Good	Status	pass
Sensor Component	Excessive mold present	Condition	Good	Status	pass
Sensor Component	Signal Cable	Condition	Good	Status	pass
Sensor Component	Tubing Type	Condition	3/8 teflon	Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Site Visit Comments

Parameter	Site	Technician	S.V. Date	Component	Mfg	Serial No.	Hazard	Problem
Flow Rate	ALC188	Martin Valvur	02/10/2025	Moisture Present	Apex	4735	☐	☐

The filter sample tubing has drops of moisture in low sections outside the shelter.

Field Systems Comments

1 **Parameter:** DocumentationCo

WIFI available at site and manuals and documents maintained on the site computer.

2 **Parameter:** SitingCriteriaCom

The site is well located with respect to CASTNET siting criteria, however there is a small campground 0.5 km to the northwest which may be a source of smoke.

3 **Parameter:** ShelterCleanNotes

The site is clean and neat.

4 **Parameter:** PollAnalyzerCom

There are moisture traps in both the flow and ozone sample lines.

Field Systems Data Form

F-02058-1500-S1-rev002

Site ID	ALC188	**Technician**	Martin Valvur	**Site Visit Date**	02/10/2025

Site Sponsor (agency)	EPA	**USGS Map**	Dallardsville
Operating Group	Alabama-Coushatta Environmental Gr	**Map Scale**	
AQS #	48-373-9991	**Map Date**	
Meteorological Type	R.M. Young		
Air Pollutant Analyzer	Ozone	**QAPP Latitude**	30.4210
Deposition Measurement	dry	**QAPP Longitude**	-94.4045
Land Use	woodland - mixed	**QAPP Elevation Meters**	101
Terrain	gently rolling	**QAPP Declination**	3.8
Conforms to MLM	Yes	**QAPP Declination Date**	9/16/2005
Site Telephone	(936) 563-2973	**Audit Latitude**	30.701577
Site Address 1	Poncho Rd.	**Audit Longitude**	-94.674011
Site Address 2	571 Park Rd. 56	**Audit Elevation**	105
County	Polk	**Audit Declination**	2.5
City, State	Livingston, TX		
Zip Code	77351	**Fire Extinguisher** ☑	New in 2015
Time Zone	Central	**First Aid Kit** ☑	
Primary Operator		**Safety Glasses** ☐	
Primary Op. Phone #		**Safety Hard Hat** ☐	
Primary Op. E-mail		**Climbing Belt** ☐	
Backup Operator		**Security Fence** ☑	
Backup Op. Phone #		**Secure Shelter** ☑	
Backup Op. E-mail		**Stable Entry Step** ☑	

Shelter Working Room	☑	**Make**	Shelter One	**Model**	8128-2311	**Shelter Size**	1024 cuft
Shelter Clean	☑	**Notes**	The site is clean and neat.				
Site OK	☑	**Notes**					

Driving Directions

From Livingston proceed east on route 190 approximately 16 miles. Turn right (south) onto Park Road 56 at the sign for Alabama-Coushatta Tribe and the Indian Village. Continue past the facility and campground by the small lake on the left. Just past the campground entrance, turn left onto a dirt road. Continue approximately 0.6 miles bearing right at the first fork and left at the second. You will see the site in the clearing.

Field Systems Data Form

F-02058-1500-S3-rev002

Site ID	ALC188	Technician	Martin Valvur	Site Visit Date	02/10/2025

1	Are wind speed and direction sensors sited so as to avoid being influenced by obstructions?	☑	N/A
2	Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind)	☑	N/A
3	Are the tower and sensors plumb?	☑	N/A
4	Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc?	☐	Temperature sensor facing west
5	Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided)	☑	
6	Is the solar radiation sensor plumb?	☑	N/A
7	Is it sited to avoid shading, or any artificial or reflected light?	☑	N/A
8	Is the rain gauge plumb?	☑	N/A
9	Is it sited to avoid sheltering effects from buildings, trees, towers, etc?	☑	N/A
10	Is the surface wetness sensor sited with the grid surface facing north?	☑	N/A
11	Is it inclined approximately 30 degrees?	☑	N/A

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S4-rev002

Site ID	ALC188	Technician	Martin Valvur	Site Visit Date	02/10/2025

1	Do all the meterological sensors appear to be intact, in good condition, and well maintained?	☑	Temperature only
2	Are all the meteorological sensors operational online, and reporting data?	☑	Temperature only
3	Are the shields for the temperature and RH sensors clean?	☑	
4	Are the aspirated motors working?	☑	N/A
5	Is the solar radiation sensor's lens clean and free of scratches?	☑	N/A
6	Is the surface wetness sensor grid clean and undamaged?	☑	N/A
7	Are the sensor signal and power cables intact, in good condition, and well maintained?	☑	
8	Are the sensor signal and power cable connections protected from the elements and well maintained?	☑	

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S5-rev002

Site ID	ALC188	Technician	Martin Valvur	Site Visit Date	02/10/2025

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

1	Do the sample inlets have at least a 270 degree arc of unrestricted airflow?	☑	
2	Are the sample inlets 3 - 15 meters above the ground?	☑	
3	Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?	☑	

Pollutant analyzers and deposition equipment operations and maintenance

1	Do the analyzers and equipment appear to be in good condition and well maintained?	☑	
2	Are the analyzers and monitors operational, on-line, and reporting data?	☑	
3	Describe ozone sample tube.		1/4 teflon by 12 meters
4	Describe dry dep sample tube.		3/8 teflon by 12 meters
5	Are in-line filters used in the ozone sample line? (if yes indicate location)	☑	At inlet
6	Are sample lines clean, free of kinks, moisture, and obstructions?	☑	
7	Is the zero air supply desiccant unsaturated?	☑	
8	Are there moisture traps in the sample lines?	☑	
9	Is there a rotometer in the dry deposition filter line, and is it clean?	☑	Clean and dry

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

There are moisture traps in both the flow and ozone sample lines.

Field Systems Data Form

F-02058-1500-S6-rev002

Site ID	ALC188	Technician	Martin Valvur	Site Visit Date	02/10/2025

DAS, sensor translators, and peripheral equipment operations and maintenance

1	Do the DAS instruments appear to be in good condition and well maintained?	☑	
2	Are all the components of the DAS operational? (printers, modem, backup, etc)	☑	
3	Do the analyzer and sensor signal leads pass through lightning protection circuitry?	☑	Temperature only
4	Are the signal connections protected from the weather and well maintained?	☑	
5	Are the signal leads connected to the correct DAS channel?	☑	
6	Are the DAS, sensor translators, and shelter properly grounded?	☑	
7	Does the instrument shelter have a stable power source?	☑	
8	Is the instrument shelter temperature controlled?	☑	

		Stable	Grounded
9	Is the met tower stable and grounded?	☐	☐
10	Is the sample tower stable and grounded?	☑	☑
11	Tower comments?	Met tower removed	

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S7-rev002

Site ID ALC188 **Technician** Martin Valvur **Site Visit Date** 02/10/2025

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	☐	☐	☑	Data logger	☐	☑	☐
Wind direction sensor	☐	☐	☑	Data logger	☐	☐	☑
Temperature sensor	☐	☑	☐	Strip chart recorder	☐	☐	☑
Relative humidity sensor	☐	☐	☑	Computer	☐	☑	☐
Solar radiation sensor	☐	☐	☑	Modem	☐	☑	☐
Surface wetness sensor	☐	☐	☑	Printer	☐	☑	☐
Wind sensor translator	☐	☐	☑	Zero air pump	☐	☑	☐
Temperature translator	☐	☐	☑	Filter flow pump	☐	☑	☐
Humidity sensor translator	☐	☐	☑	Surge protector	☐	☐	☑
Solar radiation translator	☐	☐	☑	UPS	☐	☑	☐
Tipping bucket rain gauge	☐	☐	☑	Lightning protection device	☐	☐	☑
Ozone analyzer	☐	☑	☐	Shelter heater	☐	☑	☐
Filter pack flow controller	☐	☑	☐	Shelter air conditioner	☐	☑	☐
Filter pack MFC power supply	☐	☐	☑				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	☑		☑
SSRF	☑		☑
Site Ops Manual	☑	Oct 2011	☑
HASP	☑	Oct 2014	☑
Field Ops Manual	☐		☐
Calibration Reports	☑		☑
Ozone z/s/p Control Charts	☐		☐
Preventive maintenance schedule	☑		☐

1	Is the station log properly completed during every site visit?	☑	Minimal information
2	Are the Site Status Report Forms being completed and current?	☑	
3	Are the chain-of-custody forms properly used to document sample transfer to and from lab?	☑	
4	Are ozone z/s/p control charts properly completed and current?	☑	Control charts not used

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

WIFI available at site and manuals and documents maintained on the site computer.

Field Systems Data Form

F-02058-1500-S8-rev002

Site ID	ALC188	Technician	Martin Valvur	Site Visit Date	02/10/2025

Site operation procedures

1	Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?	☐	Trained by previous site operator
2	Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?	☐	
3	Is the site visited regularly on the required Tuesday schedule?	☑	
4	Are the standard CASTNET operational procedures being flollowed by the site operator?	☑	
5	Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)	☑	

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	☑	Semiannually	☑
Visual Inspections	☑	Weekly	☑
Translator Zero/Span Tests (climatronics)	☐	N/A	☑
Manual Rain Gauge Test	☑	N/A	☑
Confirm Reasonableness of Current Values	☑	Weekly	☑
Test Surface Wetness Response	☑	N/A	☑

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	☑	Semiannually	☑
Automatic Zero/Span Tests	☑	Daily	☑
Manual Zero/Span Tests	☐	As needed	☑
Automatic Precision Level Tests	☑	Daily	☑
Manual Precision Level Test	☐	As needed	☑
Analyzer Diagnostics Tests	☑	Weekly	☑
In-line Filter Replacement (at inlet)	☑	Every 2 weeks	☑
In-line Filter Replacement (at analyze	☑	N/A	☑
Sample Line Check for Dirt/Water	☑	Weekly	☑
Zero Air Desiccant Check	☑	Weekly	☑

1	Do multi-point calibration gases go through the complete sample train including all filters?	☐	Unknown
2	Do automatic and manual z/s/p gasses go through the complete sample train including all filters?	☑	
3	Are the automatic and manual z/s/p checks monitored and reported? If yes, how?	☑	SSRF, call-in

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S9-rev002

Site ID	ALC188	Technician	Martin Valvur	Site Visit Date	02/10/2025

Site operation procedures

1	Is the filter pack being changed every Tuesday as scheduled?	☑	Filter changed afternoons
2	Are the Site Status Report Forms being completed and filed correctly?	☑	
3	Are data downloads and backups being performed as scheduled?	☐	No longer required
4	Are general observations being made and recorded? How?	☑	SSRF
5	Are site supplies on-hand and replenished in a timely fashion?	☑	
6	Are sample flow rates recorded? How?	☑	SSRF, call-in
7	Are samples sent to the lab on a regular schedule in a timely fashion?	☑	
8	Are filters protected from contamination during handling and shipping? How?	☑	Clean gloves on and off
9	Are the site conditions reported regularly to the field operations manager or staff?	☑	

QC Check Performed		Frequency	Compliant
Multi-point MFC Calibrations	☑	Semiannually	☑
Flow System Leak Checks	☑	Weekly	☑
Filter Pack Inspection	☐		☐
Flow Rate Setting Checks	☑	Weekly	☑
Visual Check of Flow Rate Rotometer	☑	Weekly	☑
In-line Filter Inspection/Replacement	☑	Semiannually	☑
Sample Line Check for Dirt/Water	☑	Weekly	☑

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S10-rev002

Site ID ALC188 **Technician** Martin Valvur **Site Visit Date** 02/10/2025

Site Visit Sensors

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Dell	Inspiron 15	373MC12	07006
DAS	Campbell	CR3000	2114	000335
Elevation	Elevation	1	None	None
Filter pack flow pump	Thomas	107CA18	608102A	02980
Flow Rate	Apex	AXMC105LPMDPC	illegible	000886
Infrastructure	Infrastructure	none	none	none
Modem	Digi	LR54	Illegible	07202
Ozone	ThermoElectron Inc	49i A1NAA	1105347313	000742
Ozone Standard	ThermoElectron Inc	49i A3NAA	0922236890	000512
Sample Tower	Aluma Tower	B	none	000136
Shelter Temperature	Campbell	107-L	none	none
Siting Criteria	Siting Criteria	1	None	None
Temperature	RM Young	41342	032128	07289
Zero air pump	Werther International	C 70/4	000821902	06899

Site Inventory by Site Visit

	Site Visit Date	*Parameter*	*Mfg*	*Owner ID*	*Model Number*	*Serial Number*
BBE401-Martin Valvur-02/12/2025						
1	2/12/2025	Computer	panasonic	none	Tough Book	CF-532BL28CM
2	2/12/2025	DAS	Campbell	None	CR1000X	12388
3	2/12/2025	Elevation	Elevation	None	1	None
4	2/12/2025	Filter pack flow pump	Thomas	none	107CA18A	608102A
5	2/12/2025	Flow Rate	Alicat	none	MC-10SLPM-D-PCV	134657
6	2/12/2025	Infrastructure	Infrastructure	none	none	none
7	2/12/2025	Ozone	Teledyne	none	T400	7455
8	2/12/2025	Ozone Standard	ThermoElectron Inc	none	49i A3NAA	1023943901
9	2/12/2025	Sample Tower	Aluma Tower	none	B	AT-5381-F9-1
10	2/12/2025	Shelter Temperature	ARS	none	none	none
11	2/12/2025	Siting Criteria	Siting Criteria	None	1	None
12	2/12/2025	Temperature2meter	Vaisala	none	WXT536	V4920649
13	2/12/2025	Zero air pump	Werther International	none	PC 70/4	000855581

DAS Data Form

DAS Time Max Error: 0.2

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	12388	BBE401	Martin Valvur	02/12/2025	DAS	Primary

Das Date: 2 /12/2025
Das Time: 8:25:00
Das Day: 43

Audit Date 2 /12/2025
Audit Time 8:25:12
Audit Day 43

Low Channel:

Avg Diff:	Max Diff:
0.0000	0.0000

High Channel:

Avg Diff:	Max Diff:
0.0000	0.0000

Mfg	HY	**Parameter**	DAS
Serial Number	12010039329	**Tfer Desc.**	Source generator (D
Tfer ID	01322		
Slope	1.00000	**Intercept**	0.00000
Cert Date	6/15/2014	**CorrCoff**	1.00000

Mfg	Fluke	**Parameter**	DAS
Serial Number	95740243	**Tfer Desc.**	DVM
Tfer ID	01312		
Slope	1.00000	**Intercept**	0.00000
Cert Date	1/5/2025	**CorrCoff**	1.00000

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
4	0.0000	0.0000	0.0000	V	V	0.0000

Flow Data Form

Mfg	Serial Number Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Alicat	134657	BBE401	Martin Valvur	02/12/2025	Flow Rate	none

Mfg	BIOS	**Parameter**	Flow Rate
Serial Number	131818	**Tfer Desc.**	BIOS 220-H
Tfer ID	01417		
Slope	0.99266	**Intercept**	0.00014
Cert Date	4/6/2024	**CorrCoff**	0.99986

DAS 1:		DAS 2:			
A Avg % Diff:	**A Max % Di**	**A Avg %Diff**	**A Max % Di**	**Cal Factor Zero**	0
0.70%	0.77%			**Cal Factor Full Scale**	1
				Rotometer Reading:	3.3

Desc.	Test type	Input l/m	Input Corr_	MfcDisp.	OutputSignal	Output S E	InputUnit	OutputSignalI	PctDifference
primary	pump off	0.000	0.000	0.00	0.000	0.00	l/m	l/m	
primary	leak check	0.000	0.000	0.04	0.000	0.00	l/m	l/m	
primary	test pt 1	2.983	3.000	2.98	0.000	2.98	l/m	l/m	-0.67%
primary	test pt 2	2.980	3.000	2.98	0.000	2.98	l/m	l/m	-0.77%
primary	test pt 3	2.980	3.000	2.98	0.000	2.98	l/m	l/m	-0.67%

Sensor Component	Leak Test	**Condition**		**Status**	pass
Sensor Component	Tubing Condition	**Condition**	Good	**Status**	pass
Sensor Component	Filter Position	**Condition**	Good	**Status**	pass
Sensor Component	Rotometer Condition	**Condition**	Clean and dry	**Status**	pass
Sensor Component	Moisture Present	**Condition**	No moisture present	**Status**	pass
Sensor Component	Filter Distance	**Condition**	5.5 cm	**Status**	pass
Sensor Component	Filter Depth	**Condition**	0.3 cm	**Status**	pass
Sensor Component	Filter Azimuth	**Condition**	180 deg	**Status**	pass
Sensor Component	System Memo	**Condition**		**Status**	pass

Ozone Data Form

Mfg	Serial Number Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Teledyne	7455	BBE401	Martin Valvur	02/12/2025	Ozone	none

Slope:	0.99424	Slope:	0.00000
Intercept	-0.34373	Intercept	0.00000
CorrCoff	0.99994	CorrCoff	0.00000

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	CM23147126	Tfer Desc.	Ozone primary stan
Tfer ID	01116		
Slope	0.99260	Intercept	0.04790
Cert Date	4/10/2024	CorrCoff	0.99999

DAS 1:		DAS 2:	
A Avg % Diff:	A Max % Di	A Avg %Diff	A Max % Di
0.0%	0.0%		

UseDescription	ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.12	0.07	0.40	ppb		0.33
primary	2	13.25	13.13	12.27	ppb		-0.86
primary	3	33.42	33.21	32.14	ppb	-3.27	
primary	4	63.62	63.26	62.77	ppb	-0.78	
primary	5	116.93	116.31	115.38	ppb	-0.8	

Sensor Component	Condition	Status
Audit Pressure	659 mmHg	pass
26.6 degree unobstructed rule	True	pass
Tree dewline >10m or below inlet	True	pass
ADT 1000-10000 vehicles further	True	pass
ADT <1000 vehicles further than	True	pass
Sample Train	Good	pass
Inlet Filter Condition	Clean	pass
Offset	0.9	pass
Span	4850.5	pass
Zero Voltage	N/A	pass
Fullscale Voltage	N/A	pass
Cell A Freq.	N/A	pass
Cell A Noise	N/A	pass
Cell A Flow	0.89 lpm	pass
Cell A Pressure	24.1 inHg	pass
Cell A Tmp.	25.4 C	pass
Cell B Freq.	N/A	pass
Cell B Noise	N/A	pass
Cell B Flow	N/A	pass
Cell B Pressure	N/A	pass
Nafion dryer installed	False	pass
System Memo		pass

2 Meter Temperature Data Form

Calc. Difference

Mfg	Serial Number Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Vaisala	V4920649	BBE401	Martin Valvur	02/12/2025	Temperature2meter	none

Mfg	Fluke	Parameter	Temperature
Serial Number	2085085	Tfer Desc.	RTD
Tfer ID	01226		
Slope	1.00031	Intercept	-0.04252
Cert Date	1/8/2025	CorrCoff	0.99999

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Err	Abs Avg Err	Abs Max Err
0	0	0	0

UseDescription	Test type	InputTmpRaw	InputTmpCorrected	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary		0.00	0.00	0.000	0.00	C	0

Sensor Component	Shield	Condition		Status	pass
Sensor Component	Properly Sited	Condition		Status	pass
Sensor Component	Blower	Condition		Status	pass
Sensor Component	System Memo	Condition		Status	pass

Shelter Temperature Data For

Mfg	Serial Number Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ARS	none	BBE401	Martin Valvur	02/12/2025	Shelter Temperature	none

DAS 1:

Abs Avg Err	Abs Max Err
0.14	0.20

DAS 2:

Abs Avg Err	Abs Max Err

Mfg	Fluke	**Parameter**	Shelter Temperatur
Serial Number	2085085	**Tfer Desc.**	RTD
Tfer ID	01226		
Slope	1.00031	**Intercept**	-0.04252
Cert Date	1/8/2025	**CorrCoff**	0.99999

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Mid Range	22.28	22.32	0.000	22.5	C	0.2
primary	Temp Mid Range	22.59	22.63	0.000	22.8	C	0.19
primary	Temp Mid Range	23.40	23.44	0.000	23.4	C	-0.04

Sensor Component System Memo **Condition** **Status** pass

Siting Criteria Form

Sensor Component		Condition		Status	
Sensor Component	Large point source of So2 or Nox	Condition		Status	pass
Sensor Component	City > 50,000	Condition		Status	pass
Sensor Component	City 1,000 to 10,000	Condition		Status	pass
Sensor Component	City 10,000 to 50,000	Condition		Status	pass
Sensor Component	Feedlot operations	Condition		Status	pass
Sensor Component	Large parking lot	Condition		Status	pass
Sensor Component	Limited agriculture operations	Condition		Status	pass
Sensor Component	Major industrial source	Condition		Status	pass
Sensor Component	Secondary road < or = 100 per da	Condition		Status	pass
Sensor Component	Secondary road >100 vehicles/da	Condition		Status	pass
Sensor Component	Small parking lot	Condition		Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Major highway, airport, or rail yard	Condition		Status	pass
Sensor Component	Intensive agriculture operations	Condition		Status	pass

Infrastructure Data For

Site ID	Technician	Site Visit Date
BBE401	Martin Valvur	02/12/2025

Shelter Make	Shelter Model	Shelter Size
Ekto	8814	896 cuft

Sensor Component		Condition		Status	
Sensor Component	Sample Tower Type	Condition	Type B	Status	pass
Sensor Component	Conduit	Condition	Good	Status	pass
Sensor Component	Met Tower	Condition	N/A	Status	pass
Sensor Component	Moisture Trap	Condition	Installed	Status	pass
Sensor Component	Moisture Trap Type	Condition	Filter	Status	pass
Sensor Component	Power Cables	Condition	Good	Status	pass
Sensor Component	Shelter Temp Control	Condition	Functioning	Status	Pass
Sensor Component	Rotometer	Condition	Installed	Status	pass
Sensor Component	Sample Tower	Condition	Good	Status	pass
Sensor Component	Shelter Condition	Condition	Good	Status	pass
Sensor Component	Shelter Door	Condition	Good	Status	pass
Sensor Component	Shelter Roof	Condition	Good	Status	pass
Sensor Component	Shelter Floor	Condition	Good	Status	pass
Sensor Component	Shelter walls	Condition	Good	Status	pass
Sensor Component	Excessive mold present	Condition	Good	Status	pass
Sensor Component	Signal Cable	Condition	Good	Status	pass
Sensor Component	Tubing Type	Condition	3/8 teflon	Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Site Visit Comments

Parameter	Site	Technician	S.V. Date	Component	Mfg	Serial No.	Hazard	Problem
Temperature2meter	BBE401	Martin Valvur	02/12/2025	System Memo	Vaisala	4852	☐	☐

Temperature and relative humidity are being measured using a combination sensor which cannot be submerged in a water bath for audits.

Field Systems Comments

1 **Parameter:** DasComments

Met tower no longer in use.

2 **Parameter:** SiteOpsProcedures

The ozone sample line is leak tested every two weeks when the inlet filter is replaced.

3 **Parameter:** ShelterCleanNotes

The shelter is clean, neat, and well organized.

4 **Parameter:** MetSensorComme

Meteorological parameters are being measured with an "all-in-one" sensor which is not submergible. Temperature data were not available for display on the site DAS and it was not tested.

Field Systems Data Form

F-02058-1500-S1-rev002

Site ID	BBE401	**Technician**	Martin Valvur	**Site Visit Date**	02/12/2025

Site Sponsor (agency)	NPS	**USGS Map**	Panther Junction
Operating Group	NPS	**Map Scale**	
AQS #	48-043-0101	**Map Date**	
Meteorological Type	Climatronics		
Air Pollutant Analyzer	Ozone, IMPROVE, PM2.5	**QAPP Latitude**	29.3022
Deposition Measurement	dry, wet	**QAPP Longitude**	-103.1772
Land Use	desert	**QAPP Elevation Meters**	1052
Terrain	complex	**QAPP Declination**	
Conforms to MLM	Marginally	**QAPP Declination Date**	
Site Telephone	(432) 477-2258	**Audit Latitude**	29.302651
Site Address 1	K-Bar Ranch	**Audit Longitude**	-103.177813
Site Address 2	Big Bend National Park	**Audit Elevation**	1057
County	Brewster	**Audit Declination**	7.0
City, State	Big Bend National Park, TX		**Present**
Zip Code	79834	**Fire Extinguisher**	☐
Time Zone	Central	**First Aid Kit**	☑
Primary Operator		**Safety Glasses**	☐
Primary Op. Phone #		**Safety Hard Hat**	☐
Primary Op. E-mail		**Climbing Belt**	☐
Backup Operator		**Security Fence**	☐
Backup Op. Phone #		**Secure Shelter**	☑
Backup Op. E-mail		**Stable Entry Step**	☑

Shelter Working Room	☑	**Make**	Ekto	**Model**	8814	**Shelter Size**	896 cuft
Shelter Clean	☑	**Notes**	The shelter is clean, neat, and well organized.				
Site OK	☑	**Notes**					

Driving Directions

From interstate 10 in Fort Stockton, turn south on highway 385 and drive approximately 120 miles to Big Bend National Park. Continue on the park road past the entrance station 26 miles to the stop sign at Panther Junction near the visitor center. Turn left (east) and continue approximately 2.5 miles. Turn left on the dirt road marked K-Bar and continue approximately 0.5 miles. Turn right on the service road just past the Chihuahuan Desert Research Station (old house) on the right. The site is 400 meters at the end of the road.

Field Systems Data Form

F-02058-1500-S3-rev002

Site ID	BBE401	Technician	Martin Valvur	Site Visit Date	02/12/2025

1	Are wind speed and direction sensors sited so as to avoid being influenced by obstructions?	☑	N/A
2	Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind)	☑	N/A
3	Are the tower and sensors plumb?	☑	N/A
4	Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc?	☑	
5	Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided)	☑	
6	Is the solar radiation sensor plumb?	☑	N/A
7	Is it sited to avoid shading, or any artificial or reflected light?	☑	N/A
8	Is the rain gauge plumb?	☑	N/A
9	Is it sited to avoid sheltering effects from buildings, trees, towers, etc?	☑	N/A
10	Is the surface wetness sensor sited with the grid surface facing north?	☑	N/A
11	Is it inclined approximately 30 degrees?	☑	N/A

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Meteorological parameters are being measured with an "all-in-one" sensor which is not submergible. Temperature data were not available for display on the site DAS and it was not tested.

Field Systems Data Form

F-02058-1500-S4-rev002

Site ID	BBE401	Technician	Martin Valvur	Site Visit Date	02/12/2025

1	Do all the meterological sensors appear to be intact, in good condition, and well maintained?	☑	Temperature only
2	Are all the meteorological sensors operational online, and reporting data?	☑	Temperature only
3	Are the shields for the temperature and RH sensors clean?	☑	Temperature only
4	Are the aspirated motors working?	☑	N/A
5	Is the solar radiation sensor's lens clean and free of scratches?	☑	N/A
6	Is the surface wetness sensor grid clean and undamaged?	☑	N/A
7	Are the sensor signal and power cables intact, in good condition, and well maintained?	☑	
8	Are the sensor signal and power cable connections protected from the elements and well maintained?	☑	

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S5-rev002

Site ID	BBE401	Technician	Martin Valvur	Site Visit Date	02/12/2025

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

1	Do the sample inlets have at least a 270 degree arc of unrestricted airflow?	☑	
2	Are the sample inlets 3 - 15 meters above the ground?	☑	
3	Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?	☑	

Pollutant analyzers and deposition equipment operations and maintenance

1	Do the analyzers and equipment appear to be in good condition and well maintained?	☑	
2	Are the analyzers and monitors operational, on-line, and reporting data?	☑	
3	Describe ozone sample tube.		1/4 teflon by 12 meters
4	Describe dry dep sample tube.		3/8 teflon by 12 meters
5	Are in-line filters used in the ozone sample line? (if yes indicate location)	☑	At inlet only
6	Are sample lines clean, free of kinks, moisture, and obstructions?	☑	
7	Is the zero air supply desiccant unsaturated?	☑	
8	Are there moisture traps in the sample lines?	☑	Flow line only
9	Is there a rotometer in the dry deposition filter line, and is it clean?	☑	Clean and dry

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S6-rev002

Site ID	BBE401	Technician	Martin Valvur	Site Visit Date	02/12/2025

DAS, sensor translators, and peripheral equipment operations and maintenance

1	Do the DAS instruments appear to be in good condition and well maintained?	☑	
2	Are all the components of the DAS operational? (printers, modem, backup, etc)	☑	
3	Do the analyzer and sensor signal leads pass through lightning protection circuitry?	☑	Temperature only
4	Are the signal connections protected from the weather and well maintained?	☑	
5	Are the signal leads connected to the correct DAS channel?	☑	
6	Are the DAS, sensor translators, and shelter properly grounded?	☑	
7	Does the instrument shelter have a stable power source?	☑	
8	Is the instrument shelter temperature controlled?	☑	

		Stable	Grounded
9	Is the met tower stable and grounded?	☐	☐
10	Is the sample tower stable and grounded?	☑	☑
11	Tower comments?		

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Met tower no longer in use.

Field Systems Data Form

F-02058-1500-S7-rev002

Site ID	BBE401	Technician	Martin Valvur	Site Visit Date	02/12/2025

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	☐	☐	☑	Data logger	☐	☑	☐
Wind direction sensor	☐	☐	☑	Data logger	☐	☐	☑
Temperature sensor	☐	☑	☐	Strip chart recorder	☐	☐	☑
Relative humidity sensor	☐	☐	☑	Computer	☑	☐	☐
Solar radiation sensor	☐	☐	☑	Modem	☐	☑	☐
Surface wetness sensor	☐	☐	☑	Printer	☐	☐	☑
Wind sensor translator	☐	☐	☑	Zero air pump	☐	☑	☐
Temperature translator	☐	☐	☑	Filter flow pump	☐	☑	☐
Humidity sensor translator	☐	☐	☑	Surge protector	☐	☐	☑
Solar radiation translator	☐	☐	☑	UPS	☐	☐	☑
Tipping bucket rain gauge	☐	☐	☑	Lightning protection device	☐	☐	☑
Ozone analyzer	☐	☑	☐	Shelter heater	☐	☑	☐
Filter pack flow controller	☐	☑	☐	Shelter air conditioner	☐	☑	☐
Filter pack MFC power supply	☐	☐	☑				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	☑	Dataview	☑
SSRF	☑		☑
Site Ops Manual	☑	outdated	☐
HASP	☐		☐
Field Ops Manual	☐		☐
Calibration Reports	☐	missing	☐
Ozone z/s/p Control Charts	☐		☐
Preventive maintenance schedule	☐		☐

1	Is the station log properly completed during every site visit?	☑	Dataview
2	Are the Site Status Report Forms being completed and current?	☑	Flow section only
3	Are the chain-of-custody forms properly used to document sample transfer to and from lab?	☑	
4	Are ozone z/s/p control charts properly completed and current?	☐	Control charts not used

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S8-rev002

Site ID	BBE401	Technician	Martin Valvur	Site Visit Date	02/12/2025

Site operation procedures

1	Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?	☐	
2	Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?	☐	
3	Is the site visited regularly on the required Tuesday schedule?	☑	
4	Are the standard CASTNET operational procedures being flollowed by the site operator?	☑	
5	Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)	☑	

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	☑	Semiannually	☑
Visual Inspections	☑	Weekly	☑
Translator Zero/Span Tests (climatronics)	☑	N/A	☑
Manual Rain Gauge Test	☑	N/A	☑
Confirm Reasonableness of Current Values	☑	Weekly	☑
Test Surface Wetness Response	☑	N/A	☑

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	☑	Semiannually	☑
Automatic Zero/Span Tests	☑	Daily	☑
Manual Zero/Span Tests	☑	Monthly	☑
Automatic Precision Level Tests	☑	Daily	☑
Manual Precision Level Test	☑	Monthly	☑
Analyzer Diagnostics Tests	☐	Alarm values only	☑
In-line Filter Replacement (at inlet)	☑	Every 2 weeks	☑
In-line Filter Replacement (at analyze	☑	N/A	☑
Sample Line Check for Dirt/Water	☑	Weekly	☐
Zero Air Desiccant Check	☑	Weekly	☐

1	Do multi-point calibration gases go through the complete sample train including all filters?	☐	Unknown
2	Do automatic and manual z/s/p gasses go through the complete sample train including all filters?	☑	
3	Are the automatic and manual z/s/p checks monitored and reported? If yes, how?	☑	Dataview

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The ozone sample line is leak tested every two weeks when the inlet filter is replaced.

Field Systems Data Form

F-02058-1500-S9-rev002

Site ID	BBE401	Technician	Martin Valvur	Site Visit Date	02/12/2025

Site operation procedures

1	Is the filter pack being changed every Tuesday as scheduled?	☑	Filter changed morinings
2	Are the Site Status Report Forms being completed and filed correctly?	☑	
3	Are data downloads and backups being performed as scheduled?	☐	No longer required
4	Are general observations being made and recorded? How?	☑	Dataview
5	Are site supplies on-hand and replenished in a timely fashion?	☑	
6	Are sample flow rates recorded? How?	☑	SSRF
7	Are samples sent to the lab on a regular schedule in a timely fashion?	☑	
8	Are filters protected from contamination during handling and shipping? How?	☑	Clean gloves on and off
9	Are the site conditions reported regularly to the field operations manager or staff?	☐	

QC Check Performed		Frequency	Compliant
Multi-point MFC Calibrations	☑	Semiannually	☑
Flow System Leak Checks	☑	Weekly	☑
Filter Pack Inspection	☐		☐
Flow Rate Setting Checks	☑	Weekly	☑
Visual Check of Flow Rate Rotometer	☑	Weekly	☑
In-line Filter Inspection/Replacement	☑	Semiannually	☑
Sample Line Check for Dirt/Water	☑	Weekly	☐

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S10-rev002

Site ID BBE401 **Technician** Martin Valvur **Site Visit Date** 02/12/2025

Site Visit Sensors

Parameter	Manufacturer	Model	S/N	Client ID
Computer	panasonic	Tough Book	CF-532BL28CM	none
DAS	Campbell	CR1000X	12388	None
Elevation	Elevation	1	None	None
Filter pack flow pump	Thomas	107CA18A	608102A	none
Flow Rate	Alicat	MC-10SLPM-D-PC	134657	none
Infrastructure	Infrastructure	none	none	none
Ozone	Teledyne	T400	7455	none
Ozone Standard	ThermoElectron Inc	49i A3NAA	1023943901	none
Sample Tower	Aluma Tower	B	AT-5381-F9-1	none
Shelter Temperature	ARS	none	none	none
Siting Criteria	Siting Criteria	1	None	None
Temperature2meter	Vaisala	WXT536	V4920649	none
Zero air pump	Werther International	PC 70/4	000855581	none

Site Inventory by Site Visit

Site Visit Date	*Parameter*	*Mfg*	*Owner ID*	*Model Number*	*Serial Number*
CAV436-Martin Valvur-02/14/2025					
1 2/14/2025	Computer	Hewlett Packard	none	ProBook	5CD01715DB
2 2/14/2025	DAS	Environmental Sys Corp	None	8864	C2602
3 2/14/2025	Modem	Sierra wireless	none	GX450	Unknown
4 2/14/2025	Ozone	ThermoElectron Inc	none	49i A3NAA	0733726103
5 2/14/2025	Ozone Standard	ThermoElectron Inc	none	49i A1NAA	CM08460009
6 2/14/2025	Shelter Temperature	ARS	none	none	none
7 2/14/2025	Temperature	Vaisala	none	WTX536	V5010145
8 2/14/2025	Zero air pump	Werther International	none	C 70/4	000915011

DAS Data Form

DAS Time Max Error: 1.5

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Environmental Sys	C2602	CAV436	Martin Valvur	02/14/2025	DAS	Primary

Das Date: 2 /14/2025
Das Time: 8:45:30
Das Day: 45

Audit Date 2 /14/2025
Audit Time 8:47:00
Audit Day 45

Low Channel:

Avg Diff:	Max Diff:
0.0000	0.0000

High Channel:

Avg Diff:	Max Diff:
0.0000	0.0000

Mfg	Fluke	**Parameter**	DAS
Serial Number	95740243	**Tfer Desc.**	DVM
Tfer ID	01312		
Slope	1.00000	**Intercept**	0.00000
Cert Date	1/5/2025	**CorrCoff**	1.00000

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
4	0.0000	0.0000	0.0000	V	V	0.0000

Ozone Data Form

Mfg	Serial Number Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	0733726103	CAV436	Martin Valvur	02/14/2025	Ozone	none

Slope:	0.98395	**Slope:**	0.00000
Intercept	-0.09027	**Intercept**	0.00000
CorrCoff	1.00000	**CorrCoff**	0.00000

Mfg	ThermoElectron Inc	**Parameter**	ozone
Serial Number	CM23147126	**Tfer Desc.**	Ozone primary stan
Tfer ID	01116		
Slope	0.99260	**Intercept**	0.04790
Cert Date	4/10/2024	**CorrCoff**	0.99999

DAS 1:		DAS 2:	
A Avg % Diff:	**A Max % Di**	**A Avg %Diff**	**A Max % Di**
0.0%	0.0%		

UseDescription	ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.38	0.33	0.41	ppb		0.08
primary	2	14.03	13.91	13.49	ppb		-0.42
primary	3	34.84	34.62	33.81	ppb	-2.37	
primary	4	65.57	65.20	64.14	ppb	-1.64	
primary	5	116.96	116.34	114.40	ppb	-1.68	

Sensor Component	Condition	Status
Audit Pressure	642 mmHg	pass
26.6 degree unobstructed rule	True	pass
Tree dewline >10m or below inlet	True	pass
ADT 1000-10000 vehicles further	True	pass
ADT <1000 vehicles further than	True	pass
Sample Train	Good	pass
Inlet Filter Condition	Moderately clean	pass
Offset	-0.2	pass
Span	1.004	pass
Zero Voltage	N/A	pass
Fullscale Voltage	N/A	pass
Cell A Freq.	112.7 kHz	pass
Cell A Noise	0.9 ppb	pass
Cell A Flow	0.71 lpm	pass
Cell A Pressure	638.7 mmHg	pass
Cell A Tmp.	34.3 C	pass
Cell B Freq.	64.8 kHz	pass
Cell B Noise	0.6 ppb	pass
Cell B Flow	0.73 lpm	pass
Cell B Pressure	639.1 mmHg	pass
Nafion dryer installed	False	pass
System Memo		pass

Temperature Data Form

Mfg	Serial Number Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Vaisala	V5010145	CAV436	Martin Valvur	02/14/2025	Temperature	none

Mfg	Fluke	**Parameter**	Temperature
Serial Number	2085085	**Tfer Desc.**	RTD
Tfer ID	01226		
Slope	1.00031	**Intercept**	-0.04252
Cert Date	1/8/2025	**CorrCoff**	0.99999

DAS 1:		DAS 2:	
Abs Avg Err	**Abs Max Err**	**Abs Avg Err**	**Abs Max Err**
0.39	0.97		

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Low Range	9.04	9.08	0.000	9.1	C	0.02
primary	Temp Mid Range	10.13	10.17	0.000	10.0	C	-0.17
primary	Temp Mid Range	13.03	13.07	0.000	12.1	C	-0.97

Sensor Component	Shield	**Condition**	Clean	**Status**	pass
Sensor Component	Blower	**Condition**	N/A	**Status**	pass
Sensor Component	Properly Sited	**Condition**	Properly sited	**Status**	pass
Sensor Component	System Memo	**Condition**	See comments	**Status**	pass

Shelter Temperature Data For

Mfg	Serial Number Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ARS	none	CAV436	Martin Valvur	02/14/2025	Shelter Temperature	none

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Err	Abs Avg Err	Abs Max Err
0.29	0.59		

Mfg	Fluke	Parameter	Shelter Temperatur
Serial Number	2085085	Tfer Desc.	RTD
Tfer ID	01226		
Slope	1.00031	Intercept	-0.04252
Cert Date	1/8/2025	CorrCoff	0.99999

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Mid Range	21.04	21.08	0.000	21.7	C	0.59
primary	Temp Mid Range	21.19	21.23	0.000	21.4	C	0.16
primary	Temp Mid Range	20.07	20.11	0.000	20.0	C	-0.13

Sensor Component	System Memo	Condition		Status	pass

Site Visit Comments

Parameter	Site	Technician	S.V. Date	Component	Mfg	Serial No.	Hazard	Problem
Temperature	CAV436	Martin Valvur	02/14/2025	System Memo	Vaisala	4853	☐	☐

Temperature and relative humidity are being measured using a combination sensor which cannot be submerged in a water bath for audits.

Field Systems Comments

1 **Parameter:** SiteOpsProcComm

Dry deposition samples are not collected at this site.

2 **Parameter:** DocumentationCo

The site is visited every other Tuesday. WIFI is available at the station and manuals and documents can be obtained online.

3 **Parameter:** MetSensorComme

The 2-meter temperature sensor has been replaced with an "all-in-one" meteorological sensor mounted at 10m on the sample tower. The sensor cannot be submerged and was tested by placing the RTD standard inside the naturally aspirated shield next to the site sensor.

Field Systems Data Form

F-02058-1500-S1-rev002

Site ID	CAV436	**Technician**	Martin Valvur	**Site Visit Date**	02/14/2025

Site Sponsor (agency)	NPS	**USGS Map**	
Operating Group	NPS	**Map Scale**	
AQS #	35-151-0745	**Map Date**	
Meteorological Type			
Air Pollutant Analyzer	Ozone	**QAPP Latitude**	
Deposition Measurement		**QAPP Longitude**	
Land Use		**QAPP Elevation Meters**	
Terrain		**QAPP Declination**	
Conforms to MLM		**QAPP Declination Date**	
Site Telephone		**Audit Latitude**	32.178141
Site Address 1		**Audit Longitude**	-104.443206
Site Address 2		**Audit Elevation**	1358
County		**Audit Declination**	7
City, State	Carlsbad, NM		
Zip Code	88220	**Fire Extinguisher** ☑	Inspected June 2024
Time Zone	Mountain	**First Aid Kit** ☐	in vehicle
Primary Operator		**Safety Glasses** ☐	
Primary Op. Phone #		**Safety Hard Hat** ☐	
Primary Op. E-mail		**Climbing Belt** ☐	
Backup Operator		**Security Fence** ☐	
Backup Op. Phone #		**Secure Shelter** ☑	
Backup Op. E-mail		**Stable Entry Step** ☑	

Shelter Working Room	☑	**Make**	Shelter One	**Model**	E8129-29034	**Shelter Size**	768 cutt
Shelter Clean	☑	**Notes**					
Site OK	☑	**Notes**					
Driving Directions							

Field Systems Data Form

F-02058-1500-S3-rev002

Site ID	CAV436	Technician	Martin Valvur	Site Visit Date	02/14/2025

1	Are wind speed and direction sensors sited so as to avoid being influenced by obstructions?	☑	N/A
2	Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind)	☑	N/A
3	Are the tower and sensors plumb?	☑	N/A
4	Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc?	☑	
5	Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided)	☑	
6	Is the solar radiation sensor plumb?	☑	
7	Is it sited to avoid shading, or any artificial or reflected light?	☑	
8	Is the rain gauge plumb?	☑	
9	Is it sited to avoid sheltering effects from buildings, trees, towers, etc?	☑	
10	Is the surface wetness sensor sited with the grid surface facing north?	☑	
11	Is it inclined approximately 30 degrees?	☑	

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The 2-meter temperature sensor has been replaced with an "all-in-one" meteorological sensor mounted at 10m on the sample tower. The sensor cannot be submerged and was tested by placing the RTD standard inside the naturally aspirated shield next to the site sensor.

Field Systems Data Form

F-02058-1500-S4-rev002

Site ID	CAV436	Technician	Martin Valvur	Site Visit Date	02/14/2025

1	Do all the meterological sensors appear to be intact, in good condition, and well maintained?	☑	Temperature only
2	Are all the meteorological sensors operational online, and reporting data?	☑	Temperature only
3	Are the shields for the temperature and RH sensors clean?	☑	
4	Are the aspirated motors working?	☑	N/A
5	Is the solar radiation sensor's lens clean and free of scratches?	☑	N/A
6	Is the surface wetness sensor grid clean and undamaged?	☑	N/A
7	Are the sensor signal and power cables intact, in good condition, and well maintained?	☑	
8	Are the sensor signal and power cable connections protected from the elements and well maintained?	☑	

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S5-rev002

Site ID	CAV436	Technician	Martin Valvur	Site Visit Date	02/14/2025

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

1	Do the sample inlets have at least a 270 degree arc of unrestricted airflow?	☑	
2	Are the sample inlets 3 - 15 meters above the ground?	☑	
3	Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?	☑	

Pollutant analyzers and deposition equipment operations and maintenance

1	Do the analyzers and equipment appear to be in good condition and well maintained?	☑	
2	Are the analyzers and monitors operational, on-line, and reporting data?	☑	
3	Describe ozone sample tube.		1/4 teflon by 10 meters
4	Describe dry dep sample tube.		N/A
5	Are in-line filters used in the ozone sample line? (if yes indicate location)	☑	At inlet only
6	Are sample lines clean, free of kinks, moisture, and obstructions?	☑	
7	Is the zero air supply desiccant unsaturated?	☑	
8	Are there moisture traps in the sample lines?	☐	
9	Is there a rotometer in the dry deposition filter line, and is it clean?	☑	N/A

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S6-rev002

Site ID	CAV436	Technician	Martin Valvur	Site Visit Date	02/14/2025

DAS, sensor translators, and peripheral equipment operations and maintenance

1	Do the DAS instruments appear to be in good condition and well maintained?	☑	
2	Are all the components of the DAS operational? (printers, modem, backup, etc)	☑	
3	Do the analyzer and sensor signal leads pass through lightning protection circuitry?	☑	Met sensors only
4	Are the signal connections protected from the weather and well maintained?	☑	
5	Are the signal leads connected to the correct DAS channel?	☑	
6	Are the DAS, sensor translators, and shelter properly grounded?	☑	
7	Does the instrument shelter have a stable power source?	☑	
8	Is the instrument shelter temperature controlled?	☑	

		Stable	Grounded
9	Is the met tower stable and grounded?	☐	☐
10	Is the sample tower stable and grounded?	☑	☑
11	Tower comments?		

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S7-rev002

Site ID	CAV436	Technician	Martin Valvur	Site Visit Date	02/14/2025

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	☐	☐	☑	Data logger	☐	☑	☐
Wind direction sensor	☐	☐	☑	Data logger	☐	☐	☑
Temperature sensor	☐	☑	☐	Strip chart recorder	☐	☐	☑
Relative humidity sensor	☐	☑	☐	Computer	☐	☑	☐
Solar radiation sensor	☐	☐	☑	Modem	☐	☑	☐
Surface wetness sensor	☐	☐	☑	Printer	☐	☐	☑
Wind sensor translator	☐	☐	☑	Zero air pump	☐	☑	☐
Temperature translator	☐	☐	☑	Filter flow pump	☐	☐	☑
Humidity sensor translator	☐	☐	☑	Surge protector	☐	☐	☑
Solar radiation translator	☐	☐	☑	UPS	☐	☐	☑
Tipping bucket rain gauge	☐	☐	☑	Lightning protection device	☐	☐	☑
Ozone analyzer	☐	☑	☐	Shelter heater	☐	☑	☐
Filter pack flow controller	☐	☐	☑	Shelter air conditioner	☐	☑	☐
Filter pack MFC power supply	☐	☐	☑				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	☑		☑
SSRF	☐		☐
Site Ops Manual	☐		☐
HASP	☐		☐
Field Ops Manual	☐		☐
Calibration Reports	☐		☐
Ozone z/s/p Control Charts	☐		☐
Preventive maintenance schedule	☐		☐

1	Is the station log properly completed during every site visit?	☑	Dataview
2	Are the Site Status Report Forms being completed and current?	☐	
3	Are the chain-of-custody forms properly used to document sample transfer to and from lab?	☐	
4	Are ozone z/s/p control charts properly completed and current?	☐	

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The site is visited every other Tuesday. WIFI is available at the station and manuals and documents can be obtained online.

Field Systems Data Form

F-02058-1500-S8-rev002

Site ID	CAV436	Technician	Martin Valvur	Site Visit Date	02/14/2025

Site operation procedures

1	Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?	☐	N/A
2	Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?	☐	N/A
3	Is the site visited regularly on the required Tuesday schedule?	☐	every other Tuesday
4	Are the standard CASTNET operational procedures being flollowed by the site operator?	☑	
5	Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)	☑	

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	☑	Semiannually	☐
Visual Inspections	☑	Bi-monthly	☐
Translator Zero/Span Tests (climatronics)	☐		☐
Manual Rain Gauge Test	☑	Bi-monthly	☐
Confirm Reasonableness of Current Values	☑	Bi-monthly	☐
Test Surface Wetness Response	☐		☐

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	☑	Semiannually	☑
Automatic Zero/Span Tests	☑	Daily	☑
Manual Zero/Span Tests	☑	Bi-monthly	☑
Automatic Precision Level Tests	☑	Daily	☑
Manual Precision Level Test	☐		☑
Analyzer Diagnostics Tests	☑	Bi-monthly	☑
In-line Filter Replacement (at inlet)	☑	Monthly	☑
In-line Filter Replacement (at analyze	☐	N/A	☑
Sample Line Check for Dirt/Water	☑	Bi-monthly	☑
Zero Air Desiccant Check	☑	Bi-monthly	☑

1	Do multi-point calibration gases go through the complete sample train including all filters?	☐	Unknown
2	Do automatic and manual z/s/p gasses go through the complete sample train including all filters?	☑	
3	Are the automatic and manual z/s/p checks monitored and reported? If yes, how?	☑	

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S9-rev002

Site ID	CAV436	Technician	Martin Valvur	Site Visit Date	02/14/2025

Site operation procedures

1	Is the filter pack being changed every Tuesday as scheduled?	☑	N/A
2	Are the Site Status Report Forms being completed and filed correctly?	☑	N/A
3	Are data downloads and backups being performed as scheduled?	☑	N/A
4	Are general observations being made and recorded? How?	☑	N/A
5	Are site supplies on-hand and replenished in a timely fashion?	☑	N/A
6	Are sample flow rates recorded? How?	☑	N/A
7	Are samples sent to the lab on a regular schedule in a timely fashion?	☑	N/A
8	Are filters protected from contamination during handling and shipping? How?	☐	N/A
9	Are the site conditions reported regularly to the field operations manager or staff?	☐	

QC Check Performed		Frequency	Compliant
Multi-point MFC Calibrations	☑	N/A	☑
Flow System Leak Checks	☑	N/A	☑
Filter Pack Inspection	☑	N/A	☑
Flow Rate Setting Checks	☑	N/A	☑
Visual Check of Flow Rate Rotometer	☑	N/A	☑
In-line Filter Inspection/Replacement	☑	N/A	☑
Sample Line Check for Dirt/Water	☑	N/A	☑

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Dry deposition samples are not collected at this site.

Field Systems Data Form

F-02058-1500-S10-rev002

Site ID CAV436 **Technician** Martin Valvur **Site Visit Date** 02/14/2025

Site Visit Sensors

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Hewlett Packard	ProBook	5CD01715DB	none
DAS	Environmental Sys Corp	8864	C2602	None
Modem	Sierra wireless	GX450	Unknown	none
Ozone	ThermoElectron Inc	49i A3NAA	0733726103	none
Ozone Standard	ThermoElectron Inc	49i A1NAA	CM08460009	none
Shelter Temperature	ARS	none	none	none
Temperature	Vaisala	WTX536	V5010145	none
Zero air pump	Werther International	C 70/4	000915011	none

Site Inventory by Site Visit

	Site Visit Date	*Parameter*	*Mfg*	*Owner ID*	*Model Number*	*Serial Number*
PAL190-Martin Valvur-02/17/2025						
1	2/17/2025	Computer	Dell	07056	Inspiron 15	FF3MC12
2	2/17/2025	DAS	Campbell	000343	CR3000	2122
3	2/17/2025	Elevation	Elevation	None	1	None
4	2/17/2025	Filter pack flow pump	Thomas	02752	107CA110	11920011905
5	2/17/2025	Flow Rate	Apex	000858	AXMC105LPMDPCV	illegible
6	2/17/2025	Infrastructure	Infrastructure	none	none	none
7	2/17/2025	Modem	Digi	07175	LR54	Illegible
8	2/17/2025	Ozone	ThermoElectron Inc	000726	49i A1NAA	1105347314
9	2/17/2025	Ozone Standard	ThermoElectron Inc	000375	49i A3NAA	0726124696
10	2/17/2025	Sample Tower	Aluma Tower	missing	B	AT-7200-582
11	2/17/2025	Shelter Temperature	Campbell	none	107-L	10755-148
12	2/17/2025	Siting Criteria	Siting Criteria	None	1	None
13	2/17/2025	Temperature	RM Young	06303	41342VO	12542
14	2/17/2025	Zero air pump	Werther International	06922	C 70/4	000836217

DAS Data Form

DAS Time Max Error: 0

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2122	PAL190	Martin Valvur	02/17/2025	DAS	Primary

Das Date: 2 /17/2025
Das Time: 8:28:20
Das Day: 48

Audit Date 2 /17/2025
Audit Time 8:28:20
Audit Day 48

Low Channel:

Avg Diff:	Max Diff:
0.0000	0.0000

High Channel:

Avg Diff:	Max Diff:
0.0000	0.0000

Mfg	HY	**Parameter**	DAS
Serial Number	12010039329	**Tfer Desc.**	Source generator (D
Tfer ID	01322		
Slope	1.00000	**Intercept**	0.00000
Cert Date	6/15/2014	**CorrCoff**	1.00000

Mfg	Fluke	**Parameter**	DAS
Serial Number	95740243	**Tfer Desc.**	DVM
Tfer ID	01312		
Slope	1.00000	**Intercept**	0.00000
Cert Date	1/5/2025	**CorrCoff**	1.00000

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
4	0.0000	0.0000	0.0000	V	V	0.0000

Flow Data Form

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID
Apex	illegible	PAL190	Martin Valvur	02/17/2025	Flow Rate	000858

Mfg	BIOS	**Parameter**	Flow Rate
Serial Number	131818	**Tfer Desc.**	BIOS 220-H
Tfer ID	01417		
Slope	0.99266	**Intercept**	0.00014
Cert Date	4/6/2024	**CorrCoff**	0.99986

DAS 1:		DAS 2:			
A Avg % Diff:	**A Max % Dif**	**A Avg %Diff**	**A Max % Dif**	**Cal Factor Zero**	0.03
				Cal Factor Full Scale	0.95
0.11%	0.33%			**Rotometer Reading:**	3.1

Desc.	Test type	Input l/m	Input Corr	MfcDisp.	OutputSignal	Output S E	InputUnit	OutputSignalU	PctDifference
primary	pump off	0.000	0.000	0.00	0.000	0.03	l/m	l/m	
primary	leak check	0.000	0.000	0.01	0.000	0.03	l/m	l/m	
primary	test pt 1	2.982	3.000	3.22	0.000	3.00	l/m	l/m	0.00%
primary	test pt 2	2.975	3.000	3.22	0.000	3.00	l/m	l/m	0.00%
primary	test pt 3	2.974	3.000	3.22	0.000	2.99	l/m	l/m	-0.33%

Sensor Component	Leak Test	**Condition**		**Status**	pass
Sensor Component	Tubing Condition	**Condition**	Good	**Status**	pass
Sensor Component	Filter Position	**Condition**	Good	**Status**	pass
Sensor Component	Rotometer Condition	**Condition**	Clean and dry	**Status**	pass
Sensor Component	Moisture Present	**Condition**	No moisture present	**Status**	pass
Sensor Component	Filter Distance	**Condition**	6.5 cm	**Status**	pass
Sensor Component	Filter Depth	**Condition**	0.5 cm	**Status**	pass
Sensor Component	Filter Azimuth	**Condition**	135 deg	**Status**	pass
Sensor Component	System Memo	**Condition**		**Status**	pass

Ozone Data Form

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1105347314	PAL190	Martin Valvur	02/17/2025	Ozone	000726

Slope:	0.92999	**Slope:**	0.00000
Intercept	0.19685	**Intercept**	0.00000
CorrCoff:	0.99998	**CorrCoff:**	0.00000

Mfg	ThermoElectron Inc	**Parameter**	ozone
Serial Number	CM23147126	**Tfer Desc.**	Ozone primary stan
Tfer ID	01116		
Slope	0.99260	**Intercept**	0.04790
Cert Date	4/10/2024	**CorrCoff**	0.99999

DAS 1:		DAS 2:	
A Avg % Diff:	**A Max % Dif**	**A Avg %Diff**	**A Max % Dif**
0.0%	0.0%		

UseDescription	ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.36	0.31	0.26	ppb		-0.05
primary	2	13.97	13.85	12.93	ppb		-0.92
primary	3	34.35	34.13	32.25	ppb	-5.66	
primary	4	64.90	64.53	60.51	ppb	-6.43	
primary	5	116.69	116.07	107.90	ppb	-7.3	

Sensor Component	Condition	Status
Audit Pressure	661 mmHg	pass
26.6 degree unobstructed rule	False	Fail
Tree dewline >10m or below inlet	True	pass
ADT 1000-10000 vehicles further t	True	pass
ADT <1000 vehicles further than 5	True	pass
Sample Train	Good	pass
Inlet Filter Condition	Clean	pass
Offset	-0.4	pass
Span	1.016	pass
Zero Voltage	N/A	pass
Fullscale Voltage	N/A	pass
Cell A Freq.	88.8 khz	pass
Cell A Noise	0.9 ppb	pass
Cell A Flow	0.68 lpm	pass
Cell A Pressure	649.8 mmHg	pass
Cell A Tmp.	30.1 C	pass
Cell B Freq.	102.5 kHz	pass
Cell B Noise	0.8 ppb	pass
Cell B Flow	0.69 lpm	pass
Cell B Pressure	649.5 mmHg	pass
Nafion dryer installed	False	pass
System Memo		pass

Temperature Data Form

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	12542	PAL190	Martin Valvur	02/17/2025	Temperature	06303

Mfg	Fluke	**Parameter**	Temperature
Serial Number	2085085	**Tfer Desc.**	RTD
Tfer ID	01226		
Slope	1.00031	**Intercept**	-0.04252
Cert Date	1/8/2025	**CorrCoff**	0.99999

DAS 1:		DAS 2:	
Abs Avg Err	**Abs Max Err**	**Abs Avg Err**	**Abs Max Err**
0.12	0.27		

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Low Range	0.00	0.04	0.000	0.1	C	0.01
primary	Temp Mid Range	23.17	23.21	0.000	23.1	C	-0.09
primary	Temp High Range	47.80	47.83	0.000	47.6	C	-0.27

Sensor Component	Shield	**Condition**	Clean	**Status**	pass
Sensor Component	Blower	**Condition**	N/A	**Status**	pass
Sensor Component	Properly Sited	**Condition**	Properly sited	**Status**	pass
Sensor Component	System Memo	**Condition**		**Status**	pass

Shelter Temperature Data For

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	10755-148	PAL190	Martin Valvur	02/17/2025	Shelter Temperature	none

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Err	Abs Avg Err	Abs Max Err
0.19	0.28		

Mfg	Fluke	Parameter	Shelter Temperature
Serial Number	2085085	Tfer Desc.	RTD
Tfer ID	01226		
Slope	1.00031	Intercept	-0.04252
Cert Date	1/8/2025	CorrCoff	0.99999

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Mid Range	23.16	23.20	0.000	23.0	C	-0.19
primary	Temp Mid Range	22.24	22.28	0.000	22.4	C	0.1
primary	Temp Mid Range	20.66	20.70	0.000	21.0	C	0.28

Sensor Component	System Memo	Condition		Status	pass

Siting Criteria Form

Sensor Component	Large point source of So2 or Nox	Condition		Status	pass
Sensor Component	City > 50,000	Condition		Status	pass
Sensor Component	City 1,000 to 10,000	Condition		Status	pass
Sensor Component	City 10,000 to 50,000	Condition		Status	pass
Sensor Component	Feedlot operations	Condition		Status	pass
Sensor Component	Large parking lot	Condition		Status	pass
Sensor Component	Limited agriculture operations	Condition		Status	pass
Sensor Component	Major industrial source	Condition		Status	pass
Sensor Component	Secondary road < or = 100 per da	Condition		Status	pass
Sensor Component	Secondary road >100 vehicles/da	Condition		Status	pass
Sensor Component	Small parking lot	Condition		Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Major highway, airport, or rail yard	Condition		Status	pass
Sensor Component	Intensive agriculture operations	Condition		Status	pass

Infrastructure Data For

Site ID	Technician	Site Visit Date
PAL190	Martin Valvur	02/17/2025

Shelter Make	Shelter Model	Shelter Size
Shelter One	E-8109-26012-2	720 cuft

Sensor Component		Condition		Status	
Sensor Component	Sample Tower Type	Condition	Type B	Status	pass
Sensor Component	Conduit	Condition	Good	Status	pass
Sensor Component	Met Tower	Condition	N/A	Status	pass
Sensor Component	Moisture Trap	Condition	Installed	Status	pass
Sensor Component	Moisture Trap Type	Condition	Glass bottle and filter	Status	pass
Sensor Component	Power Cables	Condition	Good	Status	pass
Sensor Component	Shelter Temp Control	Condition	Functioning	Status	pass
Sensor Component	Rotometer	Condition	Installed	Status	pass
Sensor Component	Sample Tower	Condition	Good	Status	pass
Sensor Component	Shelter Condition	Condition	Good	Status	pass
Sensor Component	Shelter Door	Condition	Good	Status	pass
Sensor Component	Shelter Roof	Condition	Good	Status	pass
Sensor Component	Shelter Floor	Condition	Good	Status	pass
Sensor Component	Shelter walls	Condition	Good	Status	pass
Sensor Component	Excessive mold present	Condition	Good	Status	pass
Sensor Component	Signal Cable	Condition	Good	Status	pass
Sensor Component	Tubing Type	Condition	3/8 teflon	Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Field Systems Comments

1 **Parameter:** SiteOpsProcedures

The ozone sample train is leak tested every two weeks.

2 **Parameter:** SitingCriteriaCom

The site is located 40 km southeast of Amarillo TX which has a population of approximately 178,000.

3 **Parameter:** ShelterCleanNotes

The shelter is in good condition.

4 **Parameter:** MetSensorComme

The meteorological tower and sensors have been removed.

Field Systems Data Form

F-02058-1500-S1-rev002

Site ID	PAL190	**Technician**	Martin Valvur	**Site Visit Date**	02/17/2025

Site Sponsor (agency)	EPA	**USGS Map**	Fortress Cliff
Operating Group	TX A&M University	**Map Scale**	
AQS #	48-381-9991	**Map Date**	
Meteorological Type	R.M. Young		
Air Pollutant Analyzer	Ozone	**QAPP Latitude**	
Deposition Measurement	dry, wet	**QAPP Longitude**	
Land Use	agriculture	**QAPP Elevation Meters**	
Terrain	Complex	**QAPP Declination**	
Conforms to MLM	Marginally	**QAPP Declination Date**	
Site Telephone		**Audit Latitude**	34.88061
Site Address 1		**Audit Longitude**	-101.664703
Site Address 2		**Audit Elevation**	1053
County	Randall	**Audit Declination**	6.6
City, State	Canyon, TX		**Present**
Zip Code	79015	**Fire Extinguisher**	☑ No inspection date
Time Zone	Central	**First Aid Kit**	☑
Primary Operator		**Safety Glasses**	☐
Primary Op. Phone #		**Safety Hard Hat**	☑
Primary Op. E-mail		**Climbing Belt**	☐
Backup Operator		**Security Fence**	☑
Backup Op. Phone #		**Secure Shelter**	☑
Backup Op. E-mail		**Stable Entry Steps**	☑

Shelter Working Room ☑ **Make** Shelter One **Model** E-8109-26012-2 **Shelter Size** 720 cuft

Shelter Clean ☑ **Notes** The shelter is in good condition.

Site OK ☑ **Notes**

Driving Directions From I27 take exit 99 and go east on Hungate road to the first stop sign. Turn right (south) onto Eastern which is a dirt road. At the next intersection turn left (east) on Lawrence (also dirt). Continue and follow sharp left turn onto Pullman. Continue and follow sharp right turn onto game lands. Continue through two gates and past storage building. Site will be visible on the left.

Field Systems Data Form

F-02058-1500-S3-rev002

Site ID	PAL190	Technician	Martin Valvur	Site Visit Date	02/17/2025

1	Are wind speed and direction sensors sited so as to avoid being influenced by obstructions?	☑	N/A
2	Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind)	☑	N/A
3	Are the tower and sensors plumb?	☑	N/A
4	Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc?	☑	
5	Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided)	☑	
6	Is the solar radiation sensor plumb?	☑	N/A
7	Is it sited to avoid shading, or any artificial or reflected light?	☑	N/A
8	Is the rain gauge plumb?	☑	N/A
9	Is it sited to avoid sheltering effects from buildings, trees, towers, etc?	☑	N/A
10	Is the surface wetness sensor sited with the grid surface facing north?	☑	N/A
11	Is it inclined approximately 30 degrees?	☑	N/A

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The meteorological tower and sensors have been removed.

Field Systems Data Form

F-02058-1500-S4-rev002

Site ID	PAL190	Technician	Martin Valvur	Site Visit Date	02/17/2025

1	Do all the meterological sensors appear to be intact, in good condition, and well maintained?	☑	Temperature only
2	Are all the meteorological sensors operational online, and reporting data?	☑	Temperature only
3	Are the shields for the temperature and RH sensors clean?	☑	
4	Are the aspirated motors working?	☑	N/A
5	Is the solar radiation sensor's lens clean and free of scratches?	☑	N/A
6	Is the surface wetness sensor grid clean and undamaged?	☑	N/A
7	Are the sensor signal and power cables intact, in good condition, and well maintained?	☑	
8	Are the sensor signal and power cable connections protected from the elements and well maintained?	☑	

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S5-rev002

Site ID	PAL190	Technician	Martin Valvur	Site Visit Date	02/17/2025

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

1	Do the sample inlets have at least a 270 degree arc of unrestricted airflow?	☑	
2	Are the sample inlets 3 - 15 meters above the ground?	☑	
3	Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?	☑	

Pollutant analyzers and deposition equipment operations and maintenance

1	Do the analyzers and equipment appear to be in good condition and well maintained?	☑	
2	Are the analyzers and monitors operational, on-line, and reporting data?	☑	
3	Describe ozone sample tube.		1/4 teflon by 15 meters
4	Describe dry dep sample tube.		3/8 teflon by 15 meters
5	Are in-line filters used in the ozone sample line? (if yes indicate location)	☑	At inlet only
6	Are sample lines clean, free of kinks, moisture, and obstructions?	☑	
7	Is the zero air supply desiccant unsaturated?	☑	
8	Are there moisture traps in the sample lines?	☑	Flow line only
9	Is there a rotometer in the dry deposition filter line, and is it clean?	☑	Clean and dry

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S6-rev002

Site ID PAL190 **Technician** Martin Valvur **Site Visit Date** 02/17/2025

DAS, sensor translators, and peripheral equipment operations and maintenance

1	Do the DAS instruments appear to be in good condition and well maintained?	☑	
2	Are all the components of the DAS operational? (printers, modem, backup, etc)	☑	
3	Do the analyzer and sensor signal leads pass through lightning protection circuitry?	☑	
4	Are the signal connections protected from the weather and well maintained?	☑	
5	Are the signal leads connected to the correct DAS channel?	☑	
6	Are the DAS, sensor translators, and shelter properly grounded?	☑	
7	Does the instrument shelter have a stable power source?	☑	
8	Is the instrument shelter temperature controlled?	☑	

		Stable	Grounded
9	Is the met tower stable and grounded?	☐	☐
10	Is the sample tower stable and grounded?	☑	☑
11	Tower comments?	met tower removed	

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S7-rev002

Site ID	PAL190	Technician	Martin Valvur	Site Visit Date	02/17/2025

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	☐	☐	☑	Data logger	☐	☑	☐
Wind direction sensor	☐	☐	☑	Data logger	☐	☐	☑
Temperature sensor	☐	☑	☐	Strip chart recorder	☐	☐	☑
Relative humidity sensor	☐	☐	☑	Computer	☑	☐	☐
Solar radiation sensor	☐	☐	☑	Modem	☐	☑	☐
Surface wetness sensor	☐	☐	☑	Printer	☐	☐	☑
Wind sensor translator	☐	☐	☑	Zero air pump	☐	☑	☐
Temperature translator	☐	☐	☑	Filter flow pump	☐	☑	☐
Humidity sensor translator	☐	☐	☑	Surge protector	☐	☐	☑
Solar radiation translator	☐	☐	☑	UPS	☐	☐	☑
Tipping bucket rain gauge	☐	☐	☑	Lightning protection device	☐	☐	☑
Ozone analyzer	☐	☑	☐	Shelter heater	☐	☑	☐
Filter pack flow controller	☐	☑	☐	Shelter air conditioner	☐	☑	☐
Filter pack MFC power supply	☐	☐	☑				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	☑		☑
SSRF	☑		☑
Site Ops Manual	☑	Oct 2014	☑
HASP	☑	Oct 2014	☑
Field Ops Manual	☐	Oct 2014	☑
Calibration Reports	☑	Electronic copy	☑
Ozone z/s/p Control Charts	☐		☐
Preventive maintenance schedule	☐		☐

1	Is the station log properly completed during every site visit?	☑	
2	Are the Site Status Report Forms being completed and current?	☑	
3	Are the chain-of-custody forms properly used to document sample transfer to and from lab?	☑	
4	Are ozone z/s/p control charts properly completed and current?	☐	Control charts not used

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S8-rev002

Site ID	PAL190	Technician	Martin Valvur	Site Visit Date	02/17/2025

Site operation procedures

1	Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?	☐	Trained by previous operator
2	Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?	☑	Trained on site by current operator
3	Is the site visited regularly on the required Tuesday schedule?	☑	
4	Are the standard CASTNET operational procedures being flollowed by the site operator?	☑	
5	Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)	☑	

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	☑	Semiannually	☑
Visual Inspections	☑	Weekly	☑
Translator Zero/Span Tests (climatronics)	☐	N/A	☑
Manual Rain Gauge Test	☑	N/A	☑
Confirm Reasonableness of Current Values	☑	Weekly	☑
Test Surface Wetness Response	☑	N/A	☑

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	☑	Semiannually	☑
Automatic Zero/Span Tests	☑	Daily	☑
Manual Zero/Span Tests	☑	As needed	☑
Automatic Precision Level Tests	☑	Daily	☑
Manual Precision Level Test	☑	As needed	☑
Analyzer Diagnostics Tests	☑	Weekly	☑
In-line Filter Replacement (at inlet)	☑	Every 2 weeks	☑
In-line Filter Replacement (at analyze	☐	N/A	☑
Sample Line Check for Dirt/Water	☑	Weekly	☑
Zero Air Desiccant Check	☑	Weekly	☑

1	Do multi-point calibration gases go through the complete sample train including all filters?	☐	Unknown
2	Do automatic and manual z/s/p gasses go through the complete sample train including all filters?	☑	
3	Are the automatic and manual z/s/p checks monitored and reported? If yes, how?	☑	SSRF

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The ozone sample train is leak tested every two weeks.

Field Systems Data Form

F-02058-1500-S9-rev002

Site ID	PAL190	Technician	Martin Valvur	Site Visit Date	02/17/2025

Site operation procedures

1	Is the filter pack being changed every Tuesday as scheduled?	☑	Filter changed morinings
2	Are the Site Status Report Forms being completed and filed correctly?	☑	
3	Are data downloads and backups being performed as scheduled?	☐	No longer required
4	Are general observations being made and recorded? How?	☑	SSRF, logbook
5	Are site supplies on-hand and replenished in a timely fashion?	☑	
6	Are sample flow rates recorded? How?	☑	SSRF
7	Are samples sent to the lab on a regular schedule in a timely fashion?	☑	
8	Are filters protected from contamination during handling and shipping? How?	☑	Clean gloves on and off
9	Are the site conditions reported regularly to the field operations manager or staff?	☑	

QC Check Performed		Frequency	Compliant
Multi-point MFC Calibrations	☑	Semiannually	☑
Flow System Leak Checks	☑	Weekly	☑
Filter Pack Inspection	☐		☐
Flow Rate Setting Checks	☑	Weekly	☑
Visual Check of Flow Rate Rotometer	☑	Weekly	☑
In-line Filter Inspection/Replacement	☑	As needed	☑
Sample Line Check for Dirt/Water	☑	Weekly	☑

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S10-rev002

Site ID PAL190 **Technician** Martin Valvur **Site Visit Date** 02/17/2025

Site Visit Sensors

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Dell	Inspiron 15	FF3MC12	07056
DAS	Campbell	CR3000	2122	000343
Elevation	Elevation	1	None	None
Filter pack flow pump	Thomas	107CA110	11920011905	02752
Flow Rate	Apex	AXMC105LPMDPC	illegible	000858
Infrastructure	Infrastructure	none	none	none
Modem	Digi	LR54	Illegible	07175
Ozone	ThermoElectron Inc	49i A1NAA	1105347314	000726
Ozone Standard	ThermoElectron Inc	49i A3NAA	0726124696	000375
Sample Tower	Aluma Tower	B	AT-7200-582	missing
Shelter Temperature	Campbell	107-L	10755-148	none
Siting Criteria	Siting Criteria	1	None	None
Temperature	RM Young	41342VO	12542	06303
Zero air pump	Werther International	C 70/4	000836217	06922

Site Inventory by Site Visit

	Site Visit Date	*Parameter*	*Mfg*	*Owner ID*	*Model Number*	*Serial Number*
CHA467-Martin Valvur-03/31/2025						
1	3/31/2025	DAS	Environmental Sys Corp	90611	8816	2613
2	3/31/2025	Ozone	ThermoElectron Inc	none	49i A3NAA	CM08460007
3	3/31/2025	Ozone Standard	ThermoElectron Inc	none	49i A1NAA	CM08460051
4	3/31/2025	Zero air pump	Werther International	none	PC70/4	531392

Ozone Data Form

Mfg	Serial Number Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	CM08460007	CHA467	Martin Valvur	03/31/2025	Ozone	none

Slope:	1.00226	Slope:	0.00000
Intercept	-0.19243	Intercept	0.00000
CorrCoff	1.00000	CorrCoff	0.00000

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	CM23147126	Tfer Desc.	Ozone primary stan
Tfer ID	01116		
Slope	0.99260	Intercept	0.04790
Cert Date	4/10/2024	CorrCoff	0.99999

DAS 1:		DAS 2:	
A Avg % Diff:	A Max % Di	A Avg %Diff	A Max % Di
0.0%	0.0%		

UseDescription	ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.26	0.21	0.05	ppb		-0.16
primary	2	14.37	14.25	13.97	ppb		-0.28
primary	3	32.19	31.98	31.96	ppb	-0.06	
primary	4	62.82	62.46	62.41	ppb	-0.08	
primary	5	114.36	113.75	113.80	ppb	0.04	

Sensor Component	Condition	Status
Audit Pressure	628 mmHg	pass
26.6 degree unobstructed rule	True	pass
Tree dewline >10m or below inlet	True	pass
ADT 1000-10000 vehicles further	True	pass
ADT <1000 vehicles further than	True	pass
Sample Train	Good	pass
Inlet Filter Condition	Clean	pass
Offset	-0.1	pass
Span	1.025	pass
Zero Voltage	0.000	pass
Fullscale Voltage	0.9999	pass
Cell A Freq.	101.2 kHz	pass
Cell A Noise	1.8 ppb	pass
Cell A Flow	0.70 lpm	pass
Cell A Pressure	631.5 mmHg	pass
Cell A Tmp.	35.0 C	pass
Cell B Freq.	85.1 kHz	pass
Cell B Noise	1.4 ppb	pass
Cell B Flow	0.67 lpm	pass
Cell B Pressure	631.2 mmHg	pass
Nafion dryer installed	False	pass
System Memo		pass

APPENDIX B

CASTNET Site Spot Report Forms

EEMS Spot Report

Data Compiled: 2/18/2025 3:12:07 PM

SiteVisitDate	Site	Technician
02/10/2025	ALC188	Martin Valvur

Records with valid pass/fail criteria

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	P	4	0.5	6	0.10	c	**P**
2	Temperature max error	P	4	0.5	6	0.17	c	**P**
3	Ozone Slope	P	0	1.1	4	0.96984	unitless	**P**
4	Ozone Intercept	P	0	5	4	-0.07461	ppb	**P**
5	Ozone correlation	P	0	0.995	4	0.99999	unitless	**P**
6	Ozone % difference avg	P	7	10	4	3.6	%	**P**
7	Ozone Absolute Difference g1	P	7	3	1	0.04	ppb	**P**
8	Ozone Absolute Difference g2	P	7	1.5	1	-0.64	ppb	**P**
9	Flow Rate average % difference	P	10	5	3	2.76	%	**P**
10	Flow Rate max % difference	P	10	5	3	3.47	%	**P**
11	DAS Voltage average error	P	4	0.003	16	0.0000	V	**P**
12	Shelter Temperature average error	P	5	2	21	0.63	c	**P**
13	Shelter Temperature max error	P	5	2	21	0.68	c	**P**

SiteVisitDate	Site	Technician
02/10/2025	ALC188	Martin Valvur

Field Performance Comments

1 **Parameter:** Flow Rate **SensorComponent:** Moisture Present **CommentCode:** 72

The filter sample tubing has drops of moisture in low sections outside the shelter.

Field Systems Comments

1 **Parameter:** DocumentationCo

WIFI available at site and manuals and documents maintained on the site computer.

2 **Parameter:** SitingCriteriaCom

The site is well located with respect to CASTNET siting criteria, however there is a small campground 0.5 km to the northwest which may be a source of smoke.

3 **Parameter:** ShelterCleanNotes

The site is clean and neat.

4 **Parameter:** PollAnalyzerCom

There are moisture traps in both the flow and ozone sample lines.

EEMS Spot Report

Data Compiled: 2/18/2025 3:15:10 PM

SiteVisitDate	Site	Technician
02/12/2025	BBE401	Martin Valvur

Records with valid pass/fail criteria

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	P	0	1.1	4	0.99424	unitless	**P**
2	Ozone Intercept	P	0	5	4	-0.34373	ppb	**P**
3	Ozone correlation	P	0	0.995	4	0.99994	unitless	**P**
4	Ozone % difference avg	P	7	10	4	2.8	%	**P**
5	Ozone Absolute Difference g1	P	7	3	1	0.33	ppb	**P**
6	Ozone Absolute Difference g2	P	7	1.5	1	-0.86	ppb	**P**
7	Flow Rate average % difference	P	10	5	3	0.70	%	**P**
8	Flow Rate max % difference	P	10	5	3	0.77	%	**P**
9	DAS Voltage average error	P	4	0.003	1	0.0000	V	**P**
10	Shelter Temperature average error	P	5	2	24	0.14	c	**P**
11	Shelter Temperature max error	P	5	2	24	0.20	c	**P**

SiteVisitDate	Site	Technician
02/12/2025	BBE401	Martin Valvur

Field Performance Comments

1 **Parameter:** Temperature2mete **SensorComponent:** System Memo **CommentCode:** 217

Temperature and relative humidity are being measured using a combination sensor which cannot be submerged in a water bath for audits.

Field Systems Comments

1 **Parameter:** DasComments

Met tower no longer in use.

2 **Parameter:** SiteOpsProcedures

The ozone sample line is leak tested every two weeks when the inlet filter is replaced.

3 **Parameter:** ShelterCleanNotes

The shelter is clean, neat, and well organized.

4 **Parameter:** MetSensorComme

Meteorological parameters are being measured with an "all-in-one" sensor which is not submergible. Temperature data were not available for display on the site DAS and it was not tested.

EEMS Spot Report

Data Compiled: 2/18/2025 3:46:54 PM

SiteVisitDate	Site	Technician
02/14/2025	CAV436	Martin Valvur

Records with valid pass/fail criteria

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	P	4	0.5	3	0.39	c	**P**
2	Temperature max error	P	4	0.5	3	0.97	c	**Fail**
3	Ozone Slope	P	0	1.1	4	0.98395	unitless	**P**
4	Ozone Intercept	P	0	5	4	-0.09027	ppb	**P**
5	Ozone correlation	P	0	0.995	4	1.00000	unitless	**P**
6	Ozone % difference avg	P	7	10	4	2.2	%	**P**
7	Ozone Absolute Difference g1	P	7	3	1	0.08	ppb	**P**
8	Ozone Absolute Difference g2	P	7	1.5	1	-0.42	ppb	**P**
9	DAS Voltage average error	P	4	0.003	5	0.0000	V	**P**
10	Shelter Temperature average error	P	5	2	12	0.29	c	**P**
11	Shelter Temperature max error	P	5	2	12	0.59	c	**P**

SiteVisitDate	Site	Technician
02/14/2025	CAV436	Martin Valvur

Field Performance Comments

1 **Parameter:** Temperature **SensorComponent:** System Memo **CommentCode:** 217

Temperature and relative humidity are being measured using a combination sensor which cannot be submerged in a water bath for audits.

Field Systems Comments

1 **Parameter:** SiteOpsProcComm

Dry deposition samples are not collected at this site.

2 **Parameter:** DocumentationCo

The site is visited every other Tuesday. WIFI is available at the station and manuals and documents can be obtained online.

3 **Parameter:** MetSensorComme

The 2-meter temperature sensor has been replaced with an "all-in-one" meteorological sensor mounted at 10m on the sample tower. The sensor cannot be submerged and was tested by placing the RTD standard inside the naturally aspirated shield next to the site sensor.

EEMS Spot Report

Data Compiled: 4/8/2025 12:33:56 PM

SiteVisitDate	Site	Technician
03/31/2025	CHA467	Martin Valvur

Records with valid pass/fail criteria

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	P	0	1.1	4	1.00226	unitless	**P**
2	Ozone Intercept	P	0	5	4	-0.19243	ppb	**P**
3	Ozone correlation	P	0	0.995	4	1.00000	unitless	**P**
4	Ozone % difference avg	P	7	10	4	0.5	%	**P**
5	Ozone Absolute Difference g1	P	7	3	1	-0.16	ppb	**P**
6	Ozone Absolute Difference g2	P	7	1.5	1	-0.28	ppb	**P**

EEMS Spot Report

Data Compiled: 3/2/2025 8:54:24 PM

SiteVisitDate	Site	Technician
02/17/2025	PAL190	Martin Valvur

Records with valid pass/fail criteria

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	P	4	0.5	27	0.12	c	**P**
2	Temperature max error	P	4	0.5	27	0.27	c	**P**
3	Ozone Slope	P	0	1.1	4	0.92999	unitless	**P**
4	Ozone Intercept	P	0	5	4	0.19685	ppb	**P**
5	Ozone correlation	P	0	0.995	4	0.99998	unitless	**P**
6	Ozone % difference avg	P	7	10	4	6.4	%	**P**
7	Ozone Absolute Difference g1	P	7	3	1	-0.05	ppb	**P**
8	Ozone Absolute Difference g2	P	7	1.5	1	-0.92	ppb	**P**
9	Flow Rate average % difference	P	10	5	3	0.11	%	**P**
10	Flow Rate max % difference	P	10	5	3	0.33	%	**P**
11	DAS Voltage average error	P	4	0.003	15	0.0000	V	**P**
12	Shelter Temperature average error	P	5	2	27	0.19	c	**P**
13	Shelter Temperature max error	P	5	2	27	0.28	c	**P**

SiteVisitDate	Site	Technician
02/17/2025	PAL190	Martin Valvur

Field Systems Comments

1 **Parameter:** SiteOpsProcedures

The ozone sample train is leak tested every two weeks.

2 **Parameter:** SitingCriteriaCom

The site is located 40 km southeast of Amarillo TX which has a population of approximately 178,000.

3 **Parameter:** ShelterCleanNotes

The shelter is in good condition.

4 **Parameter:** MetSensorComme

The meteorological tower and sensors have been removed.

EEMS Spot Report

Data Compiled: 4/8/2025 12:08:38 PM

SiteVisitDate	Site	Technician
02/07/2025	SUM156	Martin Valvur

Records with valid pass/fail criteria

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	P	0	1.1	4	0.98252	unitless	**P**
2	Ozone Intercept	P	0	5	4	-0.15045	ppb	**P**
3	Ozone correlation	P	0	0.995	4	0.99999	unitless	**P**
4	Ozone % difference avg	P	7	10	4	2.8	%	**P**
5	Ozone Absolute Difference g1	P	7	3	1	0.19	ppb	**P**
6	Ozone Absolute Difference g2	P	7	1.5	1	-0.58	ppb	**P**